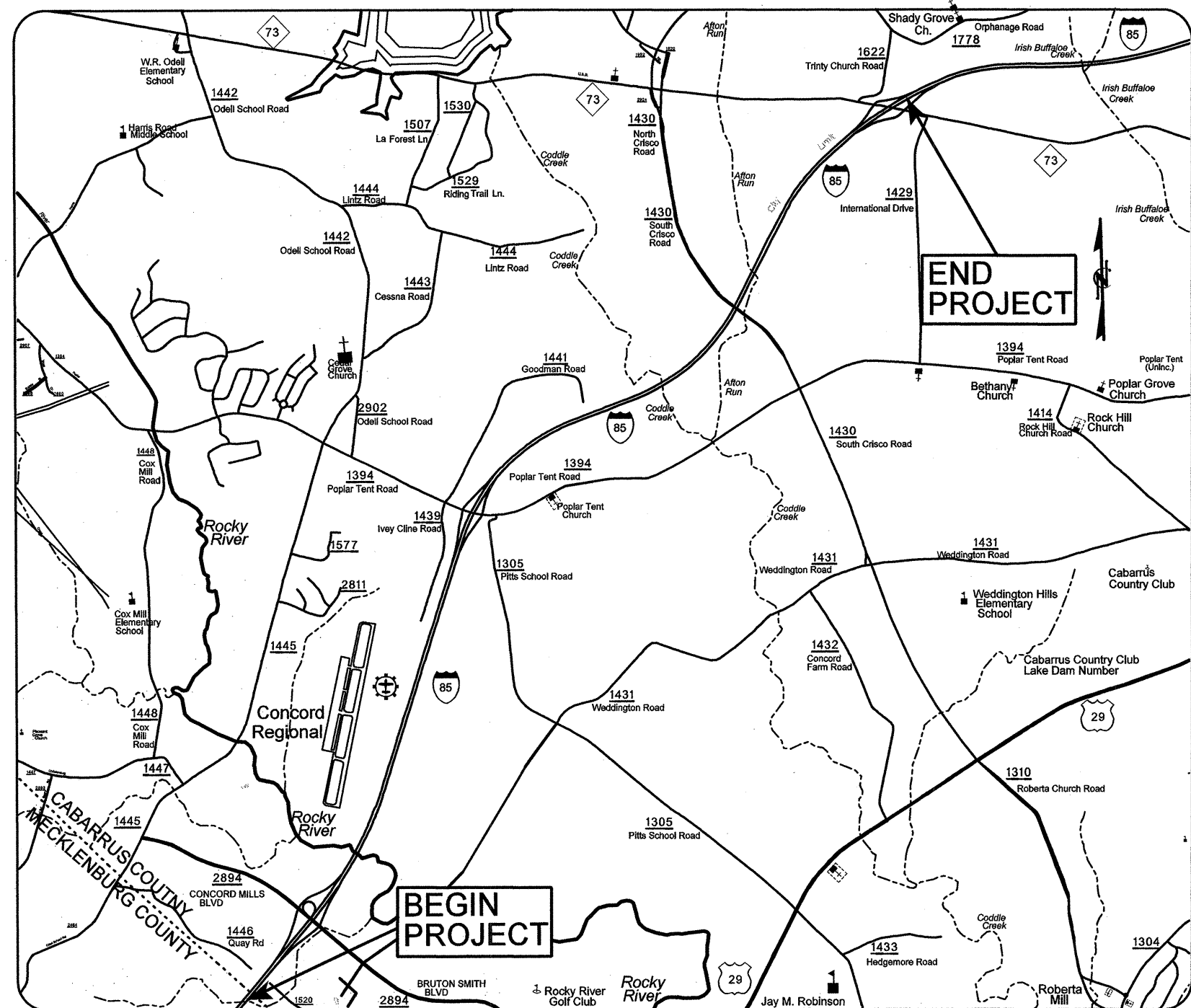


**CONTRACT: C203485 TIP PROJECT: I-3803BA**



**VICINITY MAP**

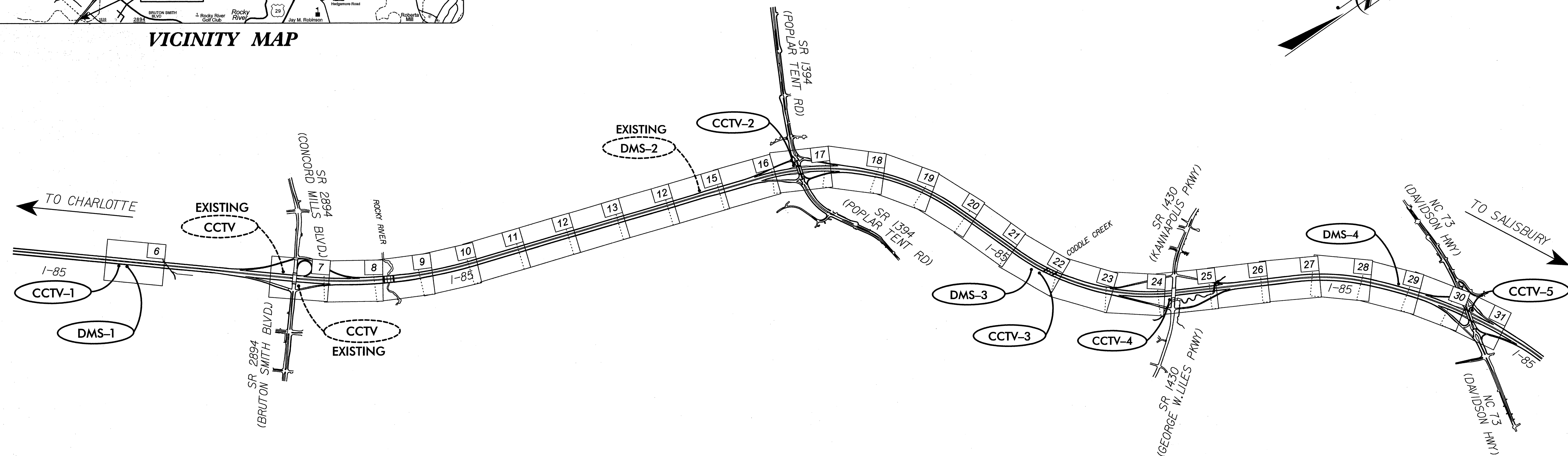
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CABARRUS COUNTY**

**LOCATION: I-85 FROM SOUTH OF SR 2894 (CONCORD MILLS BLVD/BRUTON SMITH BLVD) TO NC 73 (DAVIDSON HWY)**

**TYPE OF WORK: COMMUNICATIONS CABLE AND CONDUIT ROUTING, CCTV CAMERA AND DYNAMIC MESSAGE SIGN INSTALLATION**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I - 3803BA	ITS-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34187.3.FS4	NHPP-085-2(81)58	CONST.	
34187.1.1		PE	



2012 STANDARD SPECIFICATIONS

PROJECT LENGTH  
PROJECT LENGTH = 7.5 MILES

LETTING DATE:  
OCTOBER 21, 2014

INDEX OF SHEETS	
ITS-1	TITLE SHEET
ITS-2	TRAFFIC CONTROL NOTES
ITS-3-4	SCHEMATICS
ITS-5	CONSTRUCTION NOTES & LEGEND
ITS-6-31	CABLE ROUTING PLANS
ITS-32-34	DMS ELEVATIONS
ITS-35	GUARDRAIL SUMMARY
ITS-36-43	SPLICE DETAILS
ITS-44-45	CCTV METAL POLE SERVICES
ITS-46-47	DMS SERVICE
ITS-48	TYPICAL DETAILS

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" ROADWAY DESIGN UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE	STD. NO.	TITLE
862.01	GUARDRAIL PLACEMENT	1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
862.02	GUARDRAIL INSTALLATION	1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1101.01	WORK ZONE WARNING SIGNS	1262.01	GUARDRAIL END DELINEATION
1101.02	TEMPORARY LANE CLOSURES	1700.01	ELECTRICAL SERVICE OPTIONS
1101.04	TEMPORARY SHOULDER CLOSURES	1700.02	ELECTRICAL SERVICE GROUNDING
1101.11	TRAFFIC CONTROL DESIGN TABLES	1715.01	UNDERGROUND CONDUIT-TRENCHING
1110.02	PORTABLE WORK ZONE SIGNS	1716.01	JUNCTION BOXES
1115.01	FLASHING ARROW BOARDS	1720.01	WOOD POLES
1130.01	DRUMS	1730.01	FIBER OPTIC CABLE
1135.01	CONES	1751.01	CONTROLLER AND CABINETS
1165.01	WORK VEHICLE LIGHTING	1751.02	CONTROLLER AND CABINETS
1180.01	SYSTEMS AND TMA DELINEATION SKINNY - DRUM		

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

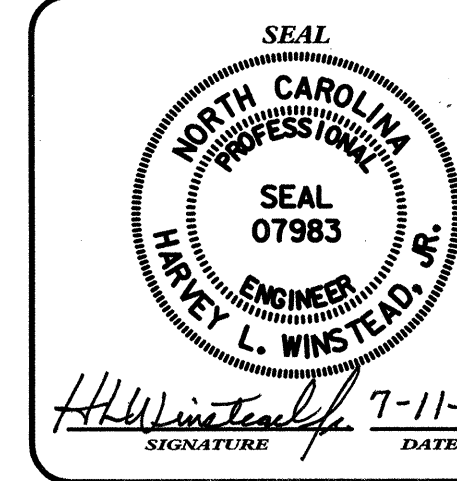
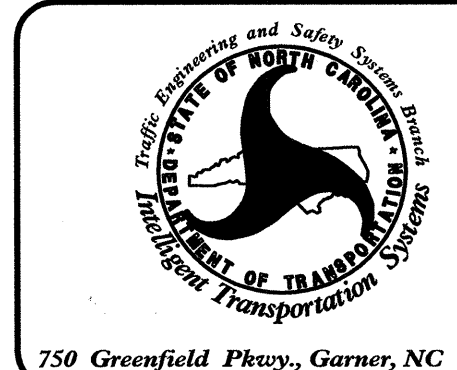
PLANS PREPARED BY:

**HNTB**

HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
(919) 546-8997  
NC License No: C-1554

HNTB CONTACTS:

HARVEY L. WINSTEAD, PE - PROJECT MANAGER  
NATASHA M. RODEVICK, PE, PTOE - PROJECT ENGINEER



## WORK ZONE TRAFFIC CONTROL GENERAL NOTES

MAINTAIN TRAFFIC IN ACCORDANCE WITH DIVISIONS 10 AND 11 OF THE JANUARY 2012 NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES & JANUARY 2012 ROADWAY STANDARD DRAWINGS (RSD) AND THE FOLLOWING PROVISIONS:

COORDINATE WITH THE NCDOT RESIDENT ENGINEER IN CHARGE OF ANY PROJECT IN THE VICINITY OF THIS PROJECT FOR ANY WORK THAT MAY AFFECT THE CONSTRUCTION AND THE TRAFFIC CONTROL OF THIS PROJECT.

PERFORM WORK ONLY WHEN WEATHER AND VISIBILITY CONDITIONS ALLOW SAFE OPERATIONS AS DIRECTED BY THE ENGINEER.

PROVIDE APPROPRIATE LIGHTING IN ACCORDANCE WITH SECTION 105-14, STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

OPERATE EQUIPMENT AND CONDUCT OPERATIONS IN THE SAME DIRECTION AS THE FLOW OF TRAFFIC. DO NOT CROSS MEDIANS WITH EQUIPMENT, EXCEPT AT PROPERLY DESIGNATED INTERCHANGES.

USE LANE CLOSURES FOR EITHER RIGHT OR LEFT LANES WITH EITHER ON OR OFF RAMP SIGNING, AS REQUIRED, (REFER TO ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEETS 1, 3, 4, 5, 6, 8, 9 AND 10 OF 15), USE ROLLING ROAD BLOCK OPERATIONS FOR TEMPORARY ROAD CLOSURES (REFER TO ROADWAY STANDARD DRAWINGS NO 1101.03 SHEET 9 OF 9) OR TEMPORARY SHOULDER CLOSURES (REFER TO ROADWAY STANDARD DRAWINGS 1101.04, SHEET 1 OF 1). MAINTAIN THE EXISTING TRAFFIC PATTERN AT ALL TIMES, EXCEPT IN THE IMMEDIATE WORK ZONE WHERE LANE CLOSURES ARE ALLOWED AS DETERMINED BY THE ENGINEER.

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE ROADWAY STANDARD DRAWINGS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES, MODIFICATIONS MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

### TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. ONE LANE OF I-85 AND NC 73	MONDAY THRU FRIDAY 6:00 AM - 9:00 PM SATURDAY 10:00 AM - SUNDAY 9:00 PM
2. SR 2894 (CONCORD MILLS BLVD)	MONDAY THRU FRIDAY 6:00 AM - 9:00 PM SATURDAY 10:00 AM - SUNDAY 9:00 PM
3. SR 1394 (POPLAR TENT RD)	MONDAY THRU FRIDAY 6:00 AM - 9:00 PM SATURDAY 10:00 AM - SUNDAY 9:00 PM
4. SR 1430 (GEORGE W. LILES PKWY/ KANNAPOLIS PKWY)	MONDAY THRU FRIDAY 6:00 AM - 9:00 PM SATURDAY 10:00 AM - SUNDAY 9:00 PM

B) DO NOT CLOSE OR NARROW SHOULDERS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-85, I-485 AND I-277	MONDAY THRU FRIDAY 6:00 AM - 9:00 AM 4:00 PM - 7:00 PM

C) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
I-85, NC 73, SR 2894, SR 1394 AND SR 1430

### HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.

- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR NASCAR EVENT AT CHARLOTTE MOTOR SPEEDWAY, BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE THE WEEK OF THE EVENT AND 9:00 P.M. THE FOLLOWING MONDAY AFTER THE EVENT.
- FOR ANY EVENT AT THE PNC MUSIC PAVILION, BETWEEN 6:00 A.M. THE FRIDAY BEFORE THE EVENT AND 9:00 P.M. THE FOLLOWING MONDAY AFTER THE EVENT.

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

### LANE CLOSURE REQUIREMENTS

- REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.  
  
WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAINS WITHIN THE CLOSED TRAVEL LANE.

### TRAFFIC PATTERN ALTERATIONS

I) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

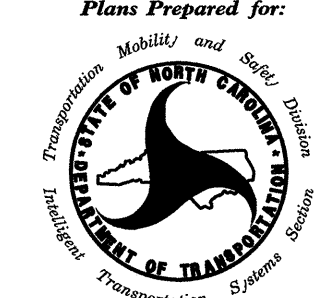
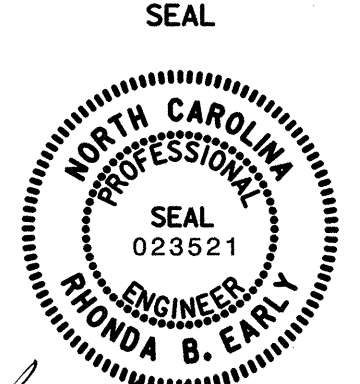
### TRAFFIC CONTROL DEVICES

K) WHEN LANE CLOSURES ARE NOT IN EFFECT, SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPENED TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES), AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

### MISCELLANEOUS

- LAW ENFORCEMENT SHALL BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- CONTRACTOR MAY REMOVE & REPLACE EXISTING GUARDRAIL AND/OR CONCRETE BARRIER IN THOSE AREAS AS NEEDED TO PERFORM THE REQUIRED WORK/OPERATION IN THIS CONTRACT WITH THE PERMISSION OF THE ENGINEER. PROTECT THE APPROACH END OF THE GUARDRAIL AND/OR CONCRETE BARRIER AT ALL TIMES BY EITHER A TRUCK MOUNTED IMPACT ATTENUATION (MAXIMUM 72 HOURS), TEMPORARY CRASH CUSHION OR TEMPORARY GRAU-350, AS DIRECTED BY THE ENGINEER.

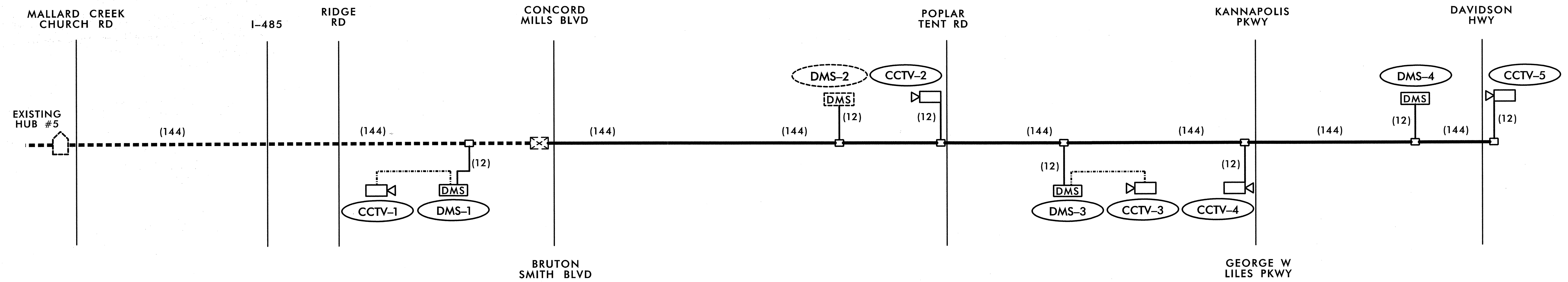
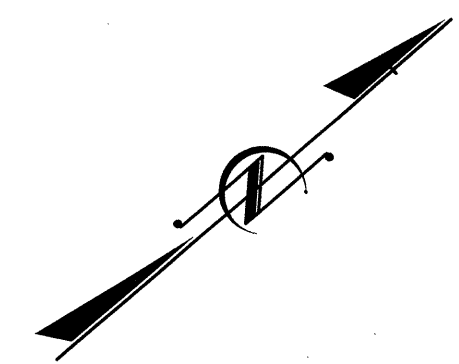
N) WHEN WORK IS NOT IN PROGRESS, KEEP ALL PERSONNEL, MACHINERY, TOOLS, CONSTRUCTION DEBRIS AND SUPPLIES AT LEAST 40 FT AWAY FROM ACTIVE TRAVEL LANES. WHEN VEHICLES, EQUIPMENT AND MATERIALS ARE PROTECTED BY CONCRETE BARRIER OR GUARDRAIL, THEY SHALL BE OFFSET AT LEAST 5 FT FROM THE BARRIER OR GUARDRAIL.

 Plans Prepared for: Transportation, Safety, and State Division DEPARTMENT OF TRANSPORTATION 750 N. Greenfield Pkwy., Garner, NC 27529	<b>TRAFFIC CONTROL NOTES</b>		SEAL  NORTH CAROLINA PROFESSIONAL ENGINEER RYONDA B. EALY
	DIVISION 10 CABARRUS CO. CONCORD PLAN DATE: JULY 2014 PREPARED BY: T.R. TERRELL REVISIONS:	REVIEWED BY: N.W. RODEVICK REVIEWED BY: H.L. WINSTEAD INIT. DATE	



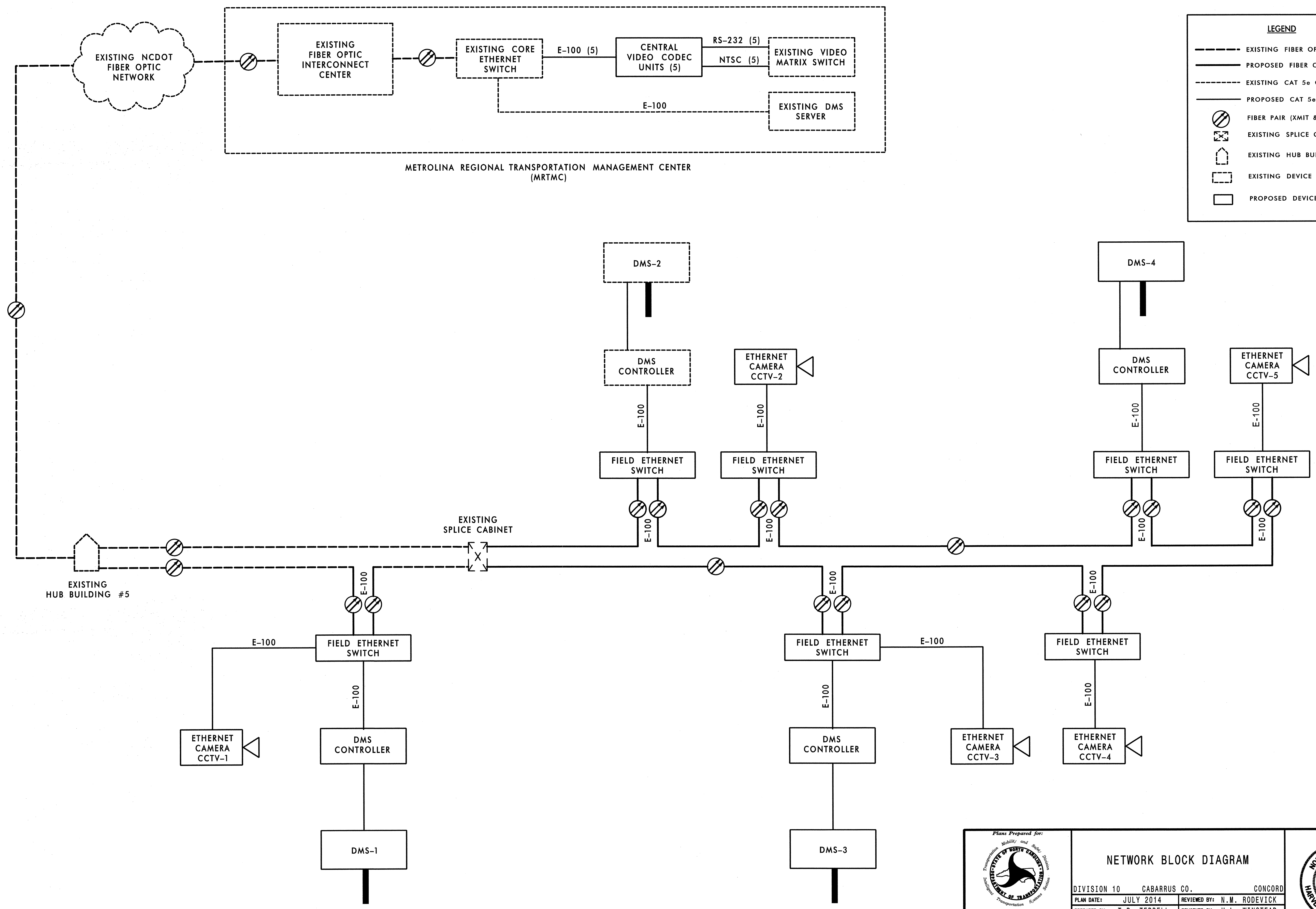
**LEGEND**

- XXXX DEVICE ID NUMBER
- (XX) XX-SINGLE MODE FIBERS
- EXISTING 144 FIBER OPTIC CABLE
- ===== PROPOSED 144 FIBER OPTIC CABLE
- ===== PROPOSED 12 FIBER OPTIC CABLE
- PROPOSED CAT 5e CABLE
- PROPOSED SPLICE ENCLOSURE
- ⊠ EXISTING SPLICE CABINET
- ◻ PROPOSED CCTV
- DMS PROPOSED DMS
- DMS EXISTING DMS
- ⌂ EXISTING HUB BUILDING



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	<b>DEVICES LOCATION SCHEMATIC</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK		SIGNATURE: <i>H.L. Winstead</i> DATE: 7-11-14
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD		
SCALE: NONE	REVISIONS	INIT.	DATE
CADD File name: I3803BA ITS-04.dgn			



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 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
 NC License No: C-1554

	<b>NETWORK BLOCK DIAGRAM</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	REVIEWED BY: N.W. RODEVICK		
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD		
SCALE: NONE	REVISIONS:	INIT.:	DATE:
		SIGNATURE: <i>H. L. Winstead</i>	DATE: 7-11-14
CAD FILE NAME: I3803BA ITS-4.dgn			



- 1 INSTALL 3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
- 2 INSTALL 4-WIRE COPPER FEEDER CONDUCTORS
- 3 INSTALL 3-WIRE COPPER FEEDER CONDUCTORS
- 4 INSTALL SMFO CABLE
- 5 INSTALL CAT 5e ETHERNET CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL POLYETHYLENE CONDUIT IN EXISTING OUTERDUCT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO NEW POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO 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
- 29 INSTALL UNDERGROUND SPlice ENCLOSURE
- 30 MODIFY EXISTING UNDERGROUND SPlice ENCLOSURE
- 31 MODIFY EXISTING BASE MOUNTED SPlice CABINET
- 32 INSTALL BASE MOUNTED SPlice CABINET
- 33 REMOVE EXISTING SPlice CABINET

- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA METAL POLE WITH LOWERING DEVICE AND FOUNDATION
- 38 INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL STANDARD JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 INSTALL SPECIAL OVERSIZED JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 INSTALL 6" x 6" WOOD PEDESTAL
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
- 49 REMOVE EXISTING COMMUNICATIONS CABLE
- 50 INSTALL TELEPHONE SERVICE
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 30 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
- 54 LASH CABLE(S) TO NEW MESSENGER CABLE
- 55 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 56 INSTALL NEW EQUIPMENT CABINET DISCONNECT
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 59 INSTALL NEW POLE MOUNTED CABINET
- 60 INSTALL FIELD ETHERNET SWITCH
- 61 INSTALL VIDEO CODEC UNIT
- 62 INSTALL DMS ASSEMBLY
- 63 REMOVE EXISTING JUNCTION BOX
- 64 INSTALL ISOLATION TRANSFORMER

**LEGEND**

- NEW FIBER OPTIC COMMUNICATIONS CABLE
- NEW CONDUIT
- EXISTING CONDUIT
- NEW DIRECTIONAL DRILLED CONDUIT
- EXISTING GUARDRAIL
- EXISTING RIGHT OF WAY
- NEW JUNCTION BOX
- EXISTING JUNCTION BOX
- NEW WOOD POLE
- EXISTING WOOD POLE
- NEW SPlice ENCLOSURE
- EXISTING SPlice ENCLOSURE
- NEW METAL POLE
- EXISTING METAL POLE
- EXISTING CCTV CAMERA ASSEMBLY
- NEW CCTV CAMERA ASSEMBLY
- EXISTING OVERHEAD DMS STRUCTURE
- PROPOSED OVERHEAD DMS STRUCTURE
- EXISTING PEDESTAL-MOUNTED DMS STRUCTURE
- PROPOSED PEDESTAL-MOUNTED DMS STRUCTURE
- NEW STANDARD GUY ASSEMBLY
- EXISTING STANDARD GUY ASSEMBLY
- NEW SIDEWALK GUY ASSEMBLY
- NEW CABLE STORAGE RACKS (SNOW SHOES)
- EXISTING FIELD EQUIPMENT CABINET
- NEW FIELD EQUIPMENT CABINET
- NEW ELECTRICAL SERVICE
- EXISTING ELECTRICAL SERVICE
- SIGNAL POLE
- EXISTING ITS DEVICE NUMBER
- NEW ITS DEVICE NUMBER

**CONSTRUCTION NOTE SYMBOLOGY KEY**

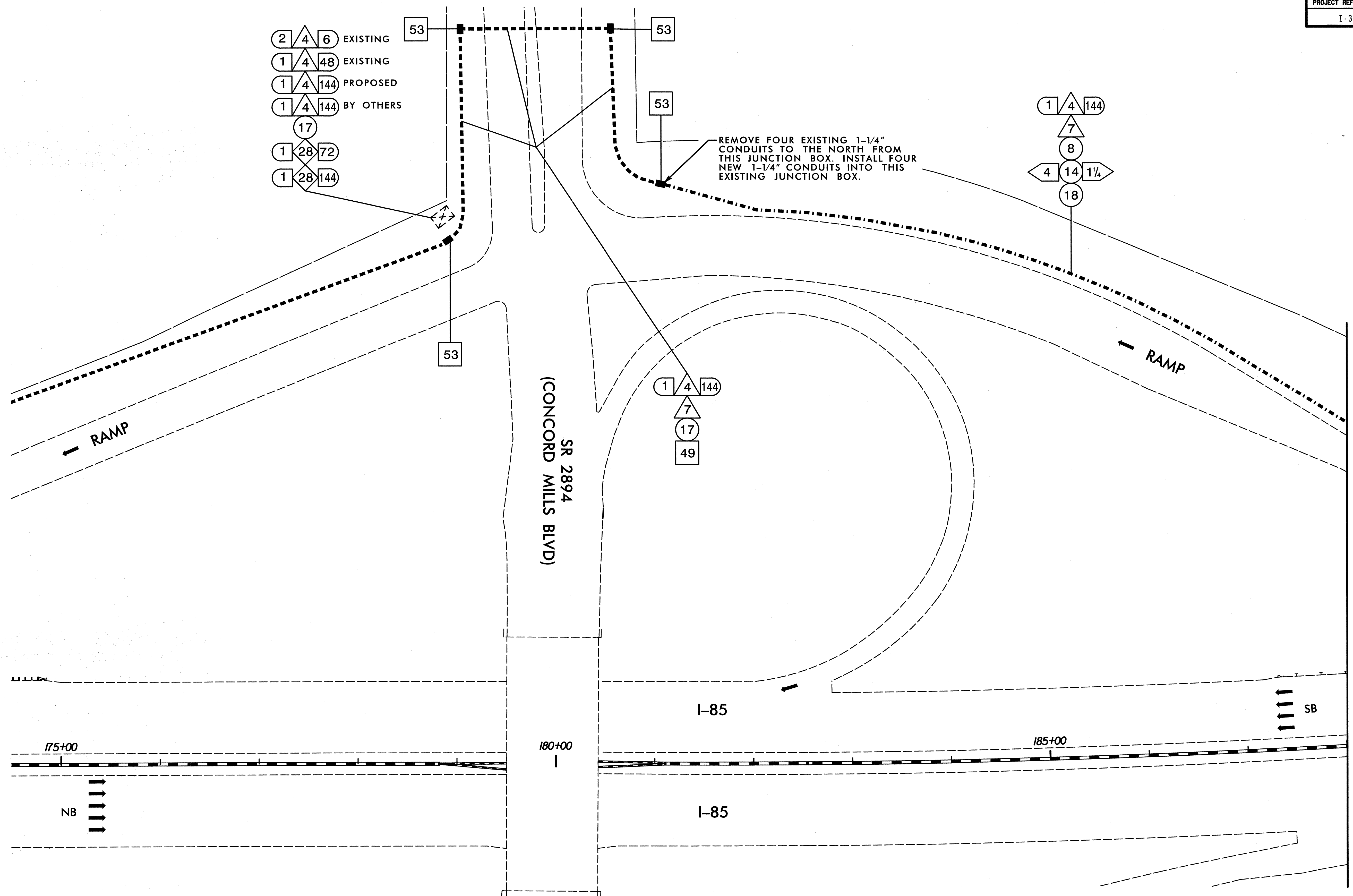
- INDICATES NUMBER OF CABLES, LOOPS, ETC.
  - INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
  - INDICATES NUMBER OF RISER(S)/CONDUIT(S)
  - INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)
- NUMBER OF CABLE(S) NUMBER OF FIBERS / TWISTED PAIRS  
 NUMBER OF RISER(S) / CONDUIT(S) DIAMETER OF RISER(S) / CONDUIT(S) (INCH)

 NORTH CAROLINA STATE SEAL HARVEY L. WINSTEAD, JR. ENGINEER	<b>CONSTRUCTION NOTES AND LEGEND</b>		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 07983 HARVEY L. WINSTEAD, JR.
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.W. RODEVICK	
SCALE: NONE	REVISIONS:	INIT. DATE	
		SIGNATURE: <i>H.L. Winstead</i>	DATE: 7-11-14
CADD File name: I3803BA ITS-05.dgn			



- (2 | 4 | 6) EXISTING
- (1 | 4 | 48) EXISTING
- (1 | 4 | 144) PROPOSED
- (1 | 4 | 144) BY OTHERS
- (17)
- (1 | 28 | 72)
- (1 | 28 | 144)

REMOVE FOUR EXISTING 1-1/4" CONDUITS TO THE NORTH FROM THIS JUNCTION BOX. INSTALL FOUR NEW 1-1/4" CONDUITS INTO THIS EXISTING JUNCTION BOX.



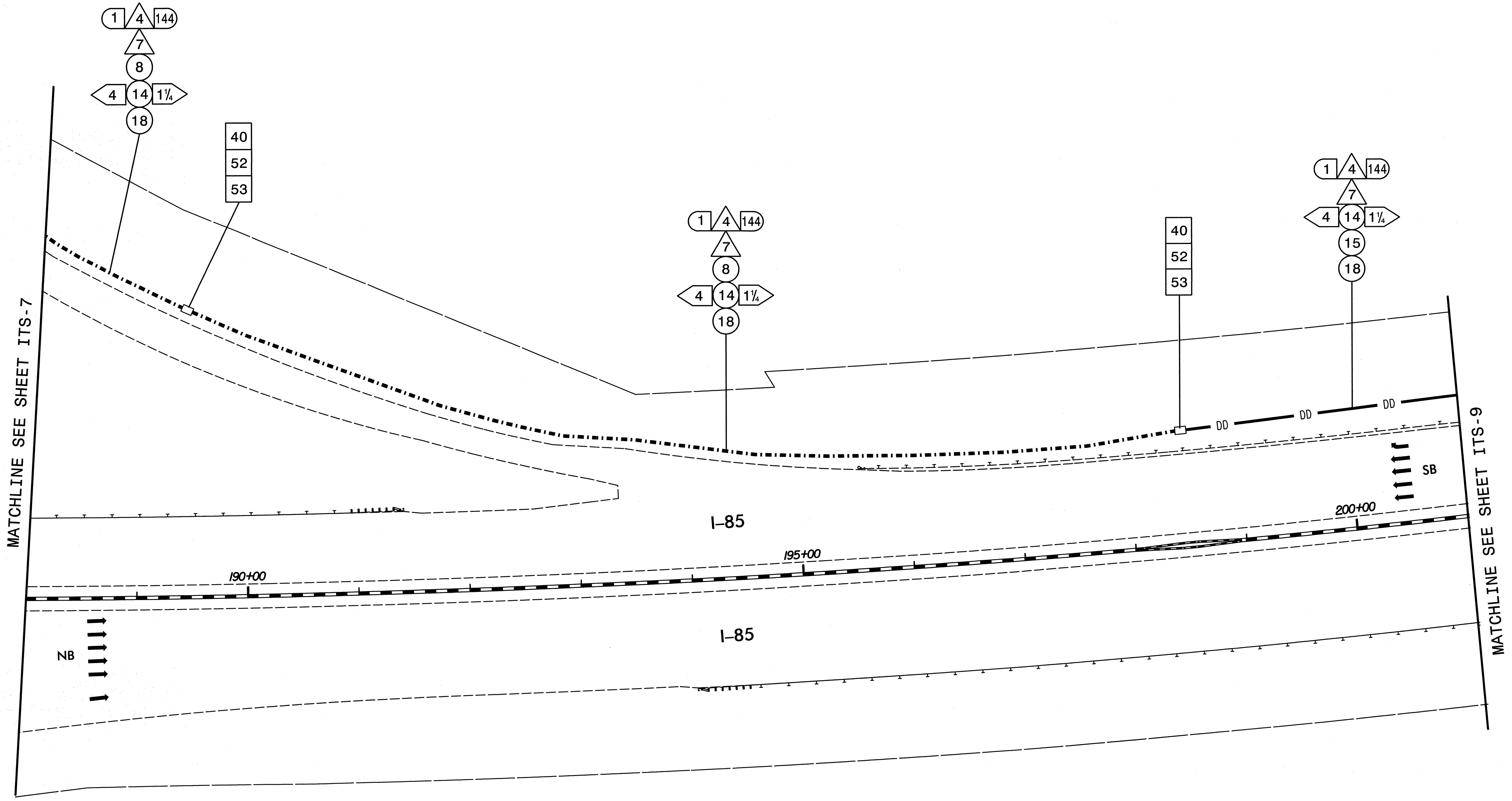
MATCHLINE SEE SHEET ITS-8

NOTE:  
1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.

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Raleigh, North Carolina 27609  
NC License No: C-1554

	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.M. RODEVICK	SIGNATURE: <i>H. Winstead</i> DATE: 7-11-14
SCALE: 1"=50'	REVISIONS:	INIT. DATE:	





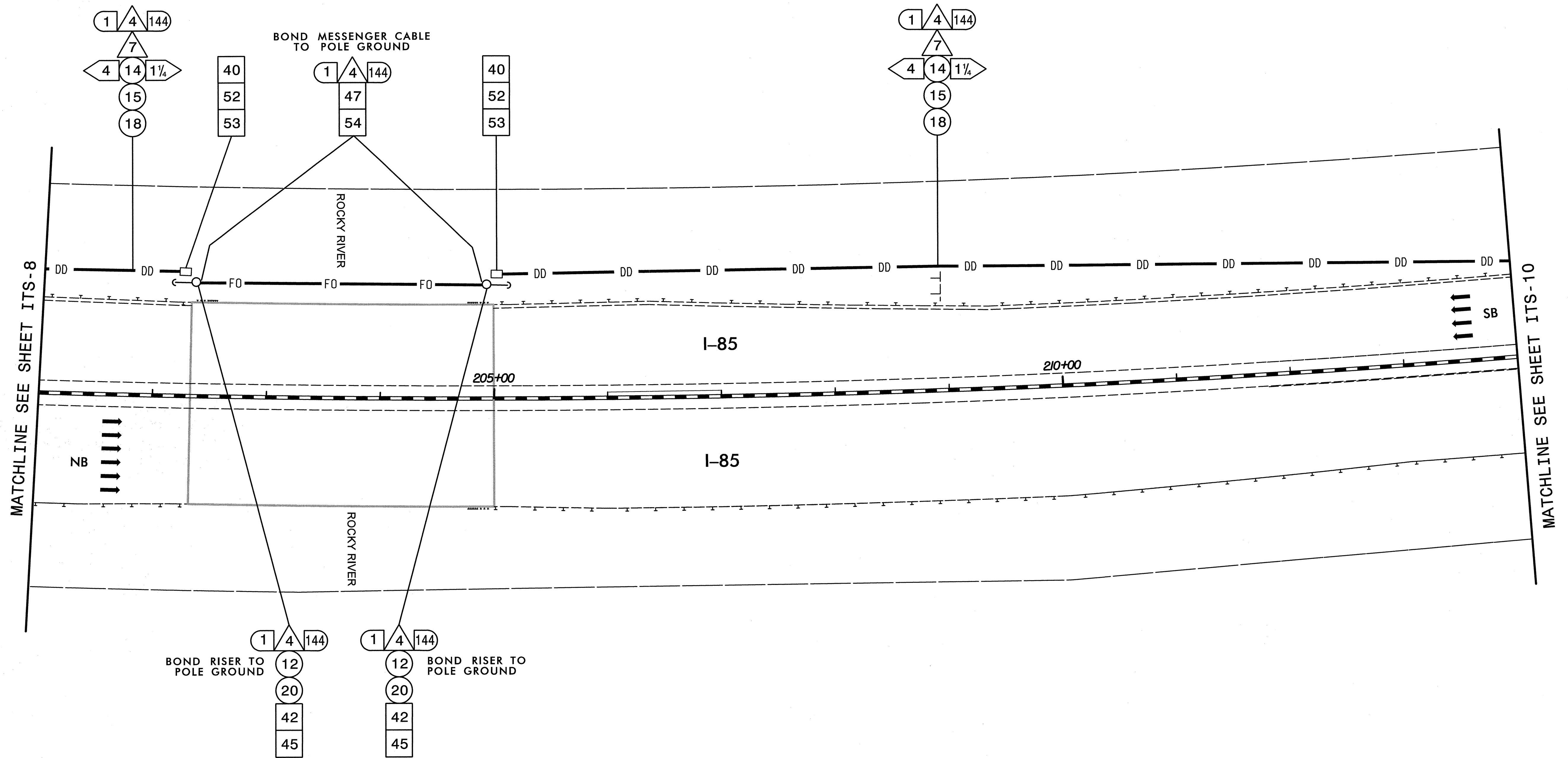
NOTE:  
 1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.

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 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
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	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK		DATE: 7-11-14
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD		
REVISIONS	INIT.	DATE	SIGNATURE: <i>H.L. Winstead</i>

SCALE: 1"=50'

CADD File name: I-3803BA ITS-08.dgn

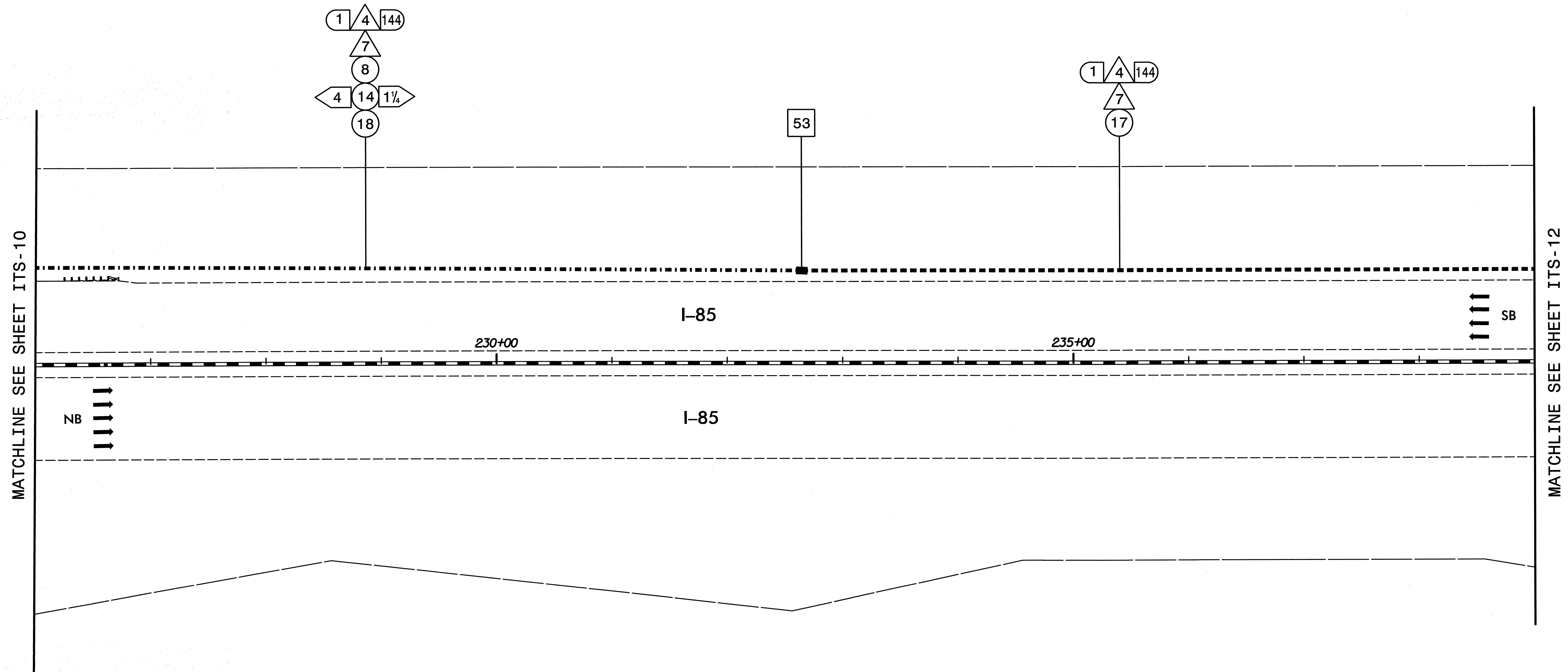


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	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK	PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	
SCALE: 1"=50'	REVISIONS	INIT.	DATE
SIGNATURE: <i>H. Winstead</i>		DATE: 7-11-14	
CAD FILE NAME: I3803BA ITS-09.dgn			



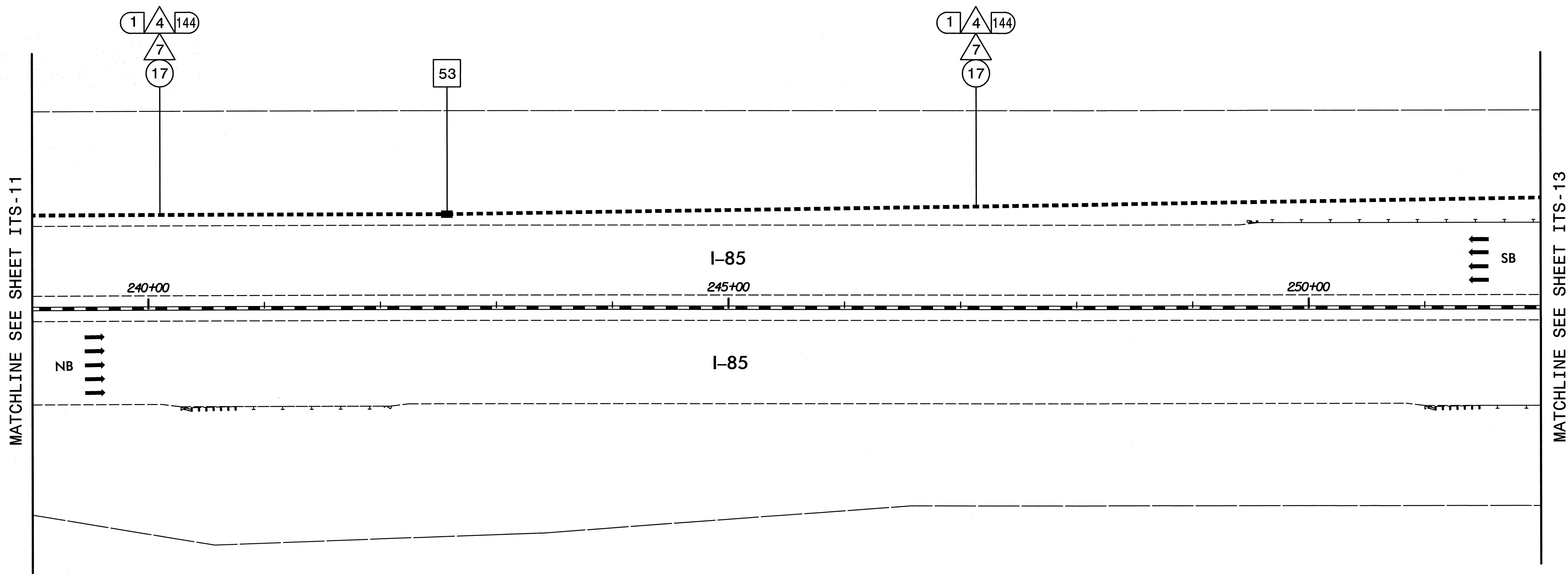




NOTE:  
 1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.

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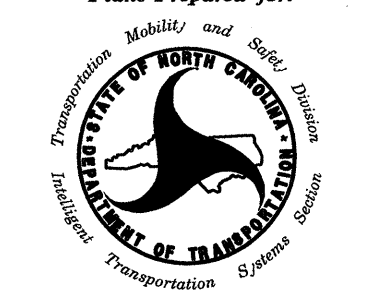
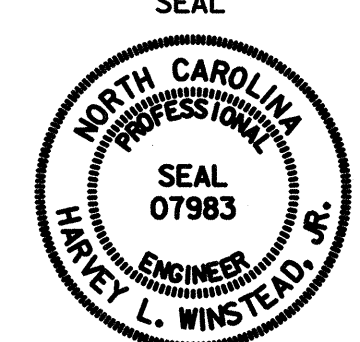
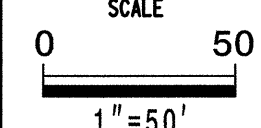
	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK		SIGNATURE: <i>H. L. Winstead</i> DATE: 7-11-14
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD		
SCALE: 1"=50' 	REVISIONS	INIT.	DATE
CADD File name: I3803BA ITS-11.dgn			



MATCHLINE SEE SHEET ITS-11

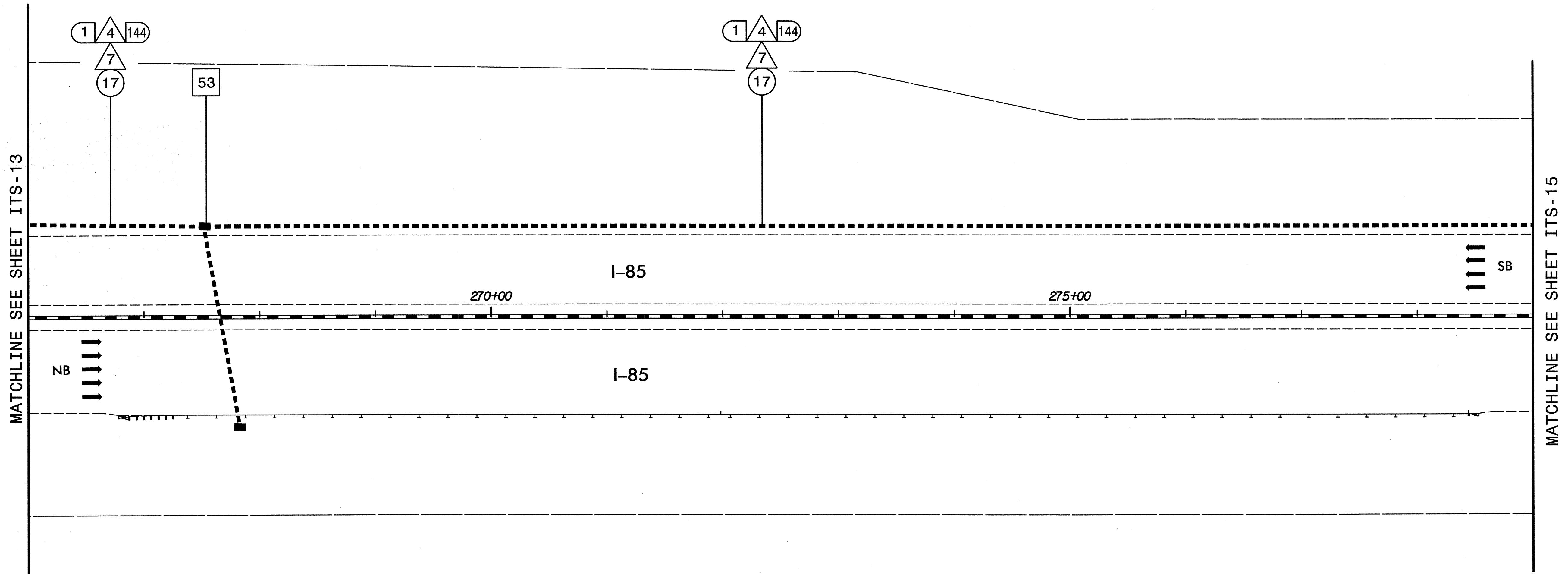
MATCHLINE SEE SHEET ITS-13

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 <small>750 N. Greenfield Pkwy., Garner, NC 27529</small>	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.W. RODEVICK	H.L. Winstead, Jr. ENGINEER DATE: 7-11-14
SCALE: 1"=50' 	REVISIONS	INIT. DATE	CAD FILE NAME: I3803BA ITS-12.dgn

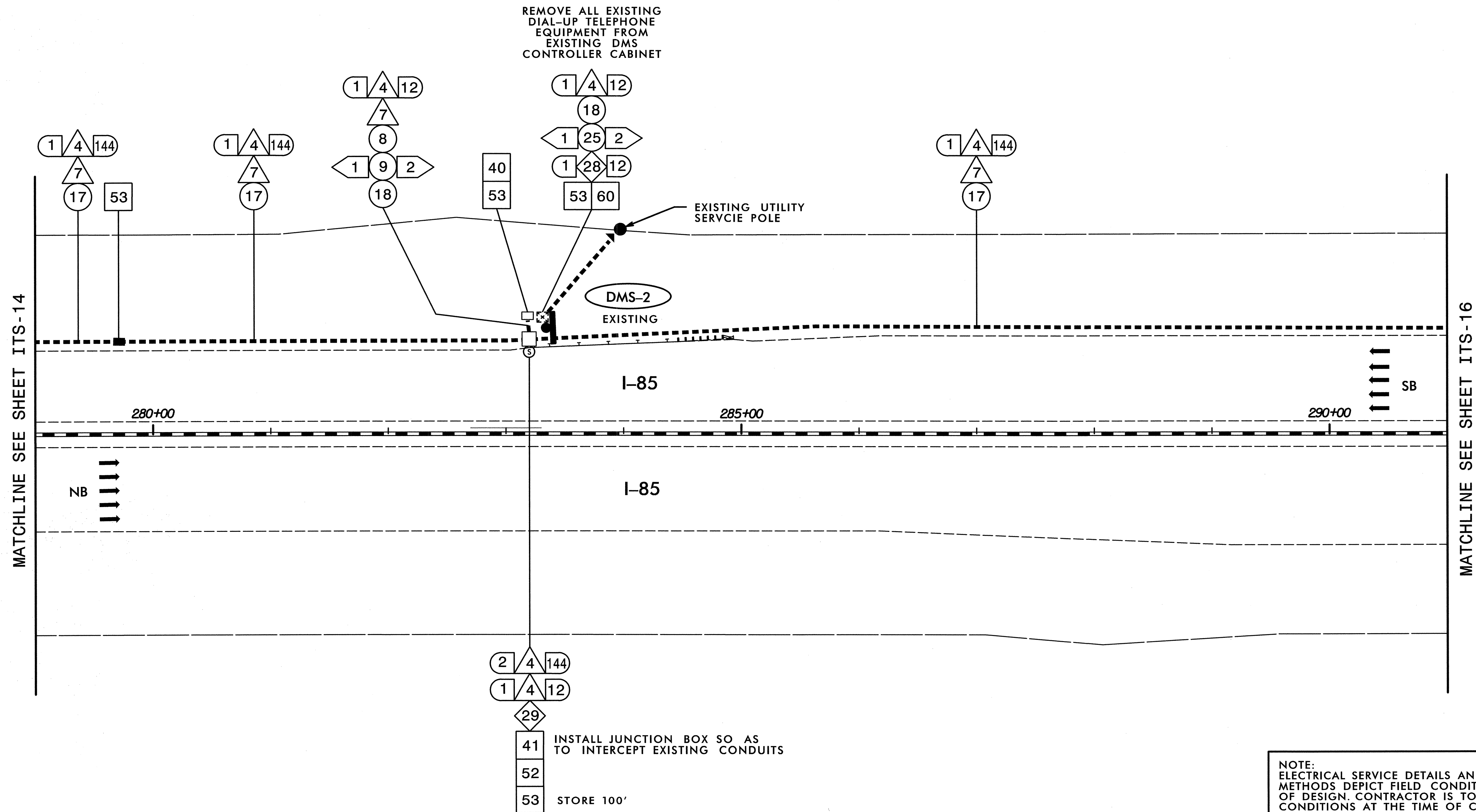






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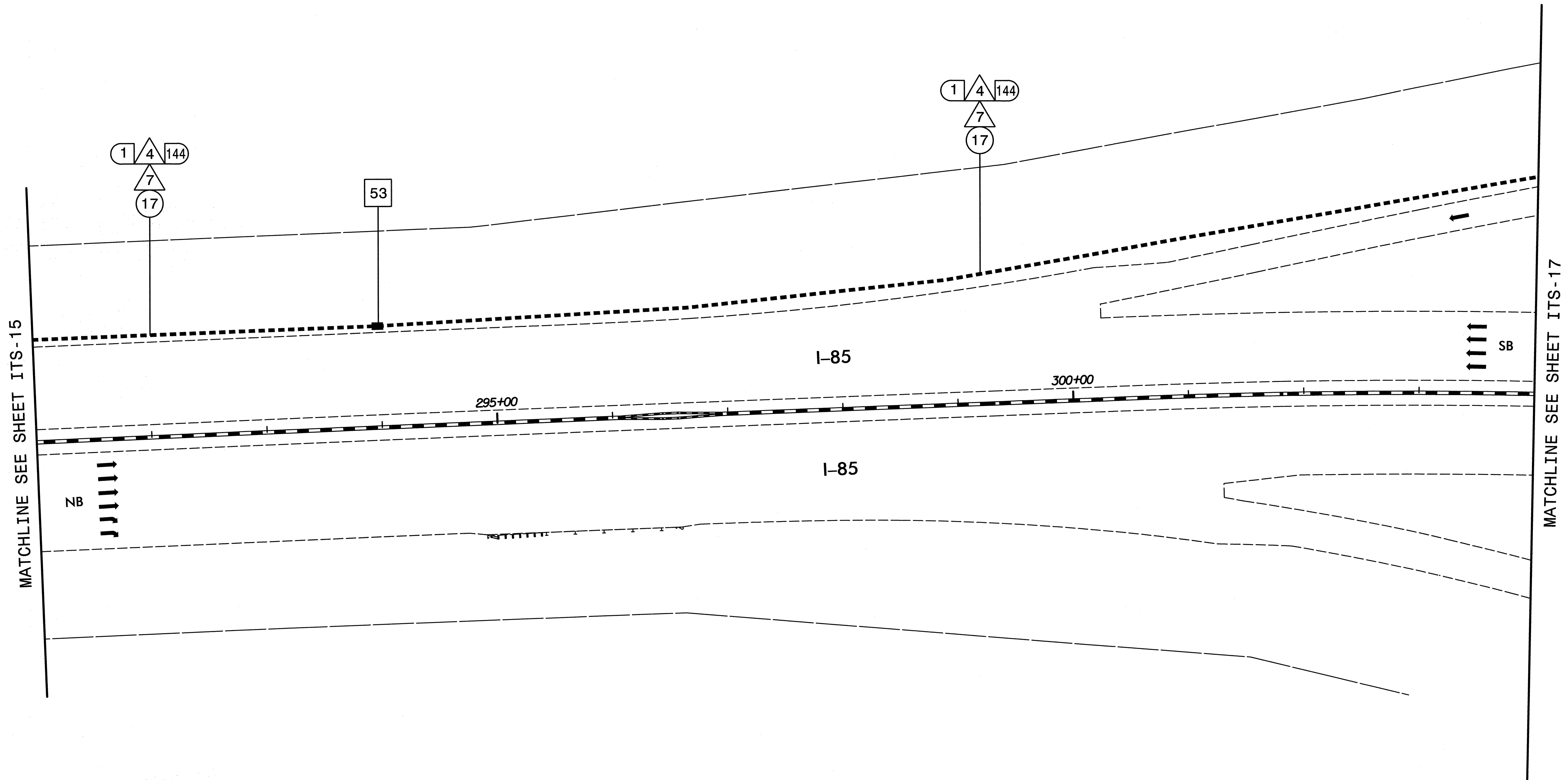
	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK	PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	
SCALE: 1"=50' 	REVISIONS	INIT.	DATE
SIGNATURE: <i>H. Winstead</i> 7-11-14		DATE: 7-11-14	
CADD File name: I3803BA ITS-14.dgn			



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

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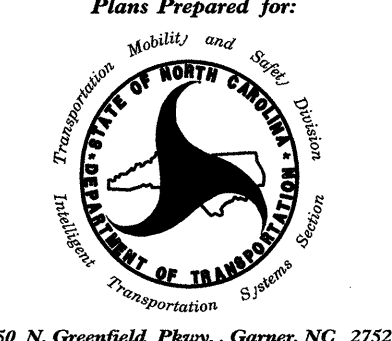

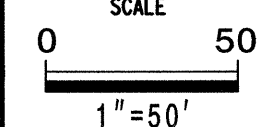
<p>750 N. Greenfield Pkwy., Garner, NC 27529</p>	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.M. RODEVICK	REVIEWED BY: H.L. WINSTEAD
REVISIONS	INIT.	DATE	SIGNATURE: <i>H.L. Winstead, Jr.</i> 7-11-14 DATE
SCALE 0 50 1"=50'			
CADD Filename: I3803BA ITS-15.dgn			



MATCHLINE SEE SHEET ITS-15

MATCHLINE SEE SHEET ITS-17

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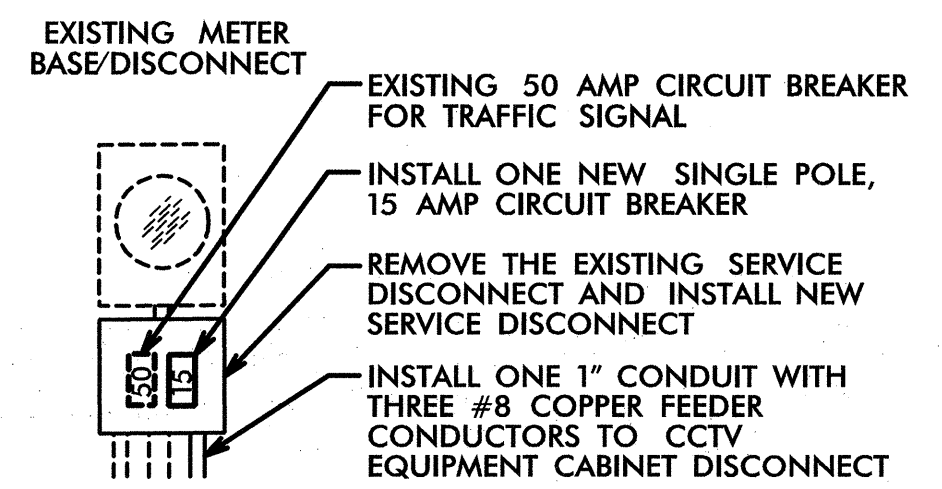
 <small>750 N. Greenfield Pkwy., Garner, NC 27529</small>	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.M. RODEVICK	H.L. Winstead ENGINEER DATE: 7-11-14
SCALE: 1"=50' 	REVISIONS	INIT.	DATE

CADD Filename: I3803BA ITS-16.dgn



DRAWING 1

**MODIFY EXISTING ELECTRICAL SERVICE**

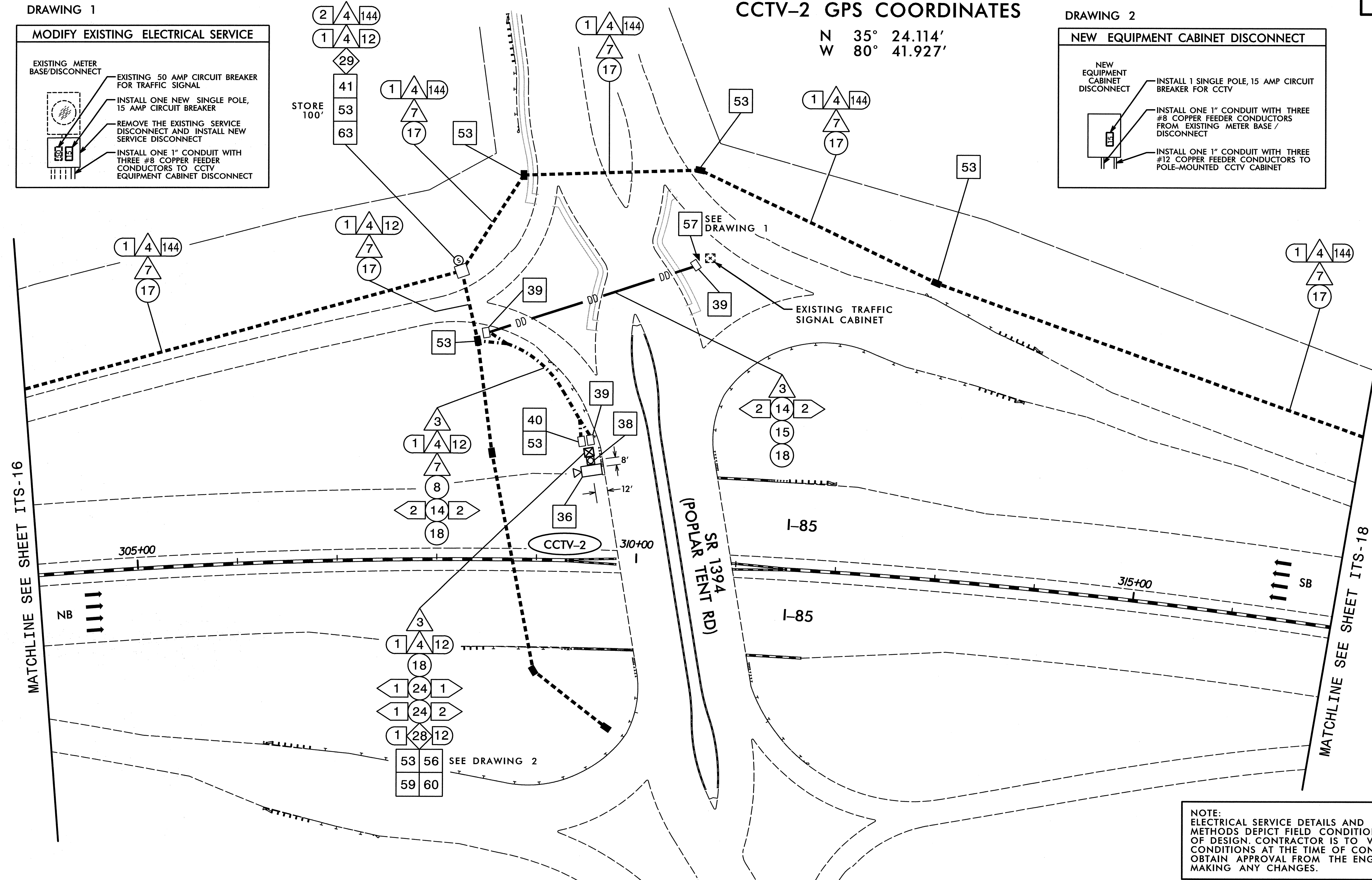
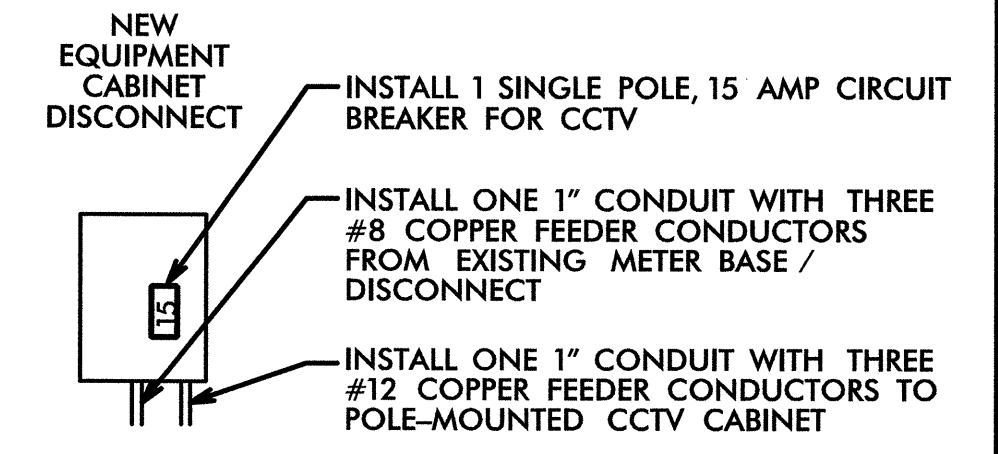


**CCTV-2 GPS COORDINATES**

N 35° 24.114'  
W 80° 41.927'

DRAWING 2

**NEW EQUIPMENT CABINET DISCONNECT**



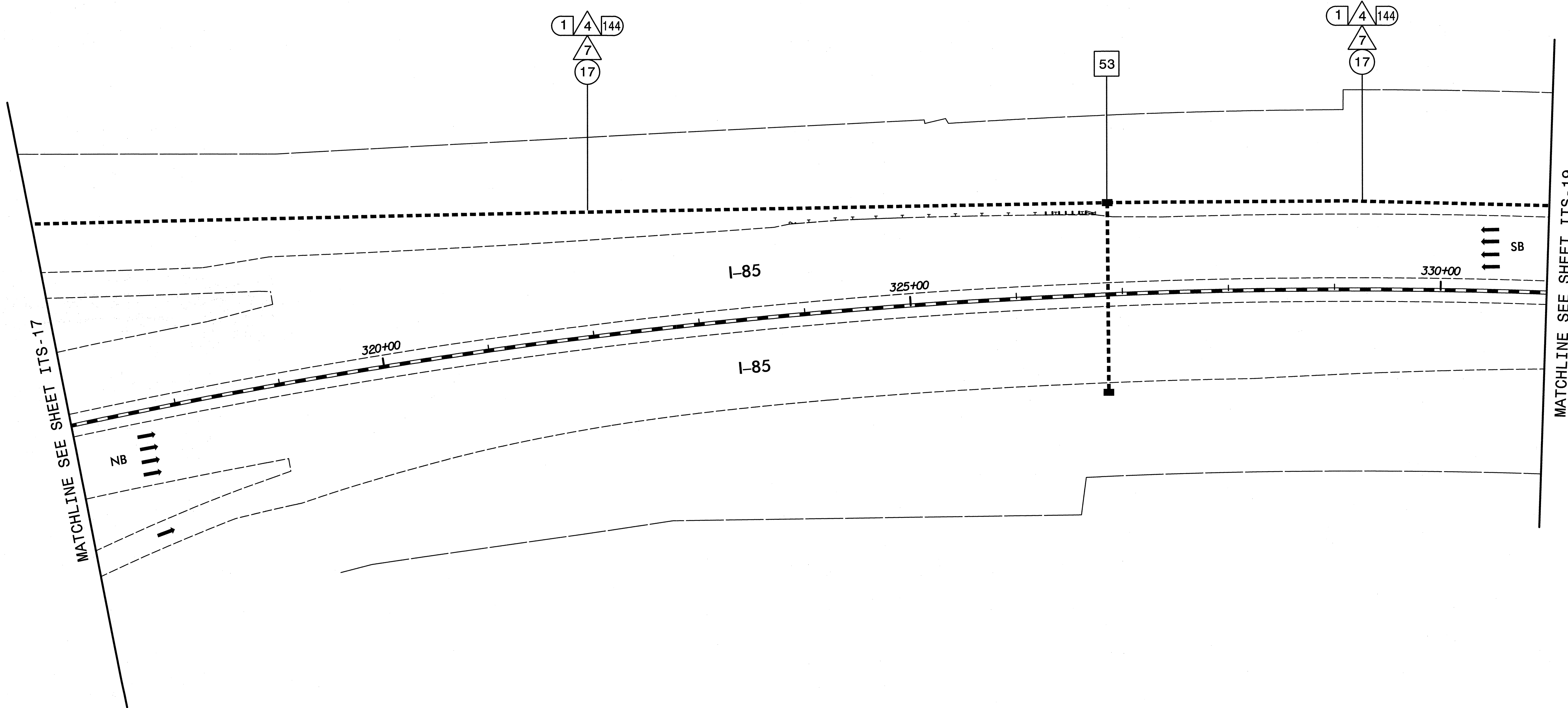
**NOTES:**

1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
2. CONTACT REGIONAL ITS ENGINEER TO CONFIRM LOCATION OF THE CCTV CAMERA.
3. MOUNT CCTV CAMERA 45' ABOVE GRADE.
4. INSTALL A LEVEL CONCRETE TECHNICIAN PAD MEASURING A MINIMUM 4 INCHES THICK, 24 INCHES WIDE AND 36 INCHES LONG AT THE FRONT DOOR OF THE CCTV EQUIPMENT CABINETS. SEE TYPICAL DETAILS SHEET.
5. MODIFY THE EXISTING TRAFFIC SIGNAL SERVICE PEDESTAL AS SHOWN TO OBTAIN POWER FOR THE CCTV CAMERA.
6. INSTALL CONDUITS FOR FEEDER CONDUCTORS AND FIBER-OPTIC CABLE IN SAME BORE AND/OR TRENCH. USE SEPARATE CONDUITS, BLACK FOR POWER AND ORANGE FOR FIBER-OPTIC CABLE.
7. CONTACT MIKE SANDOK (DUKE ENERGY) AT (704) 787-3815 TO OBTAIN POWER TO ELECTRICAL SERVICE.

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

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Raleigh, North Carolina 27609  
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	<b>CABLE ROUTING PLAN</b>								
	DIVISION 10 CABARRUS CO. CONCORD								
	PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK							
750 N. Greenfield Pkwy., Garner, NC 27529	PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD							
SCALE 0 50 1"=50'	<table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		REVISIONS	INIT.	DATE				 H. L. WINSTEAD 7-11-14 DATE
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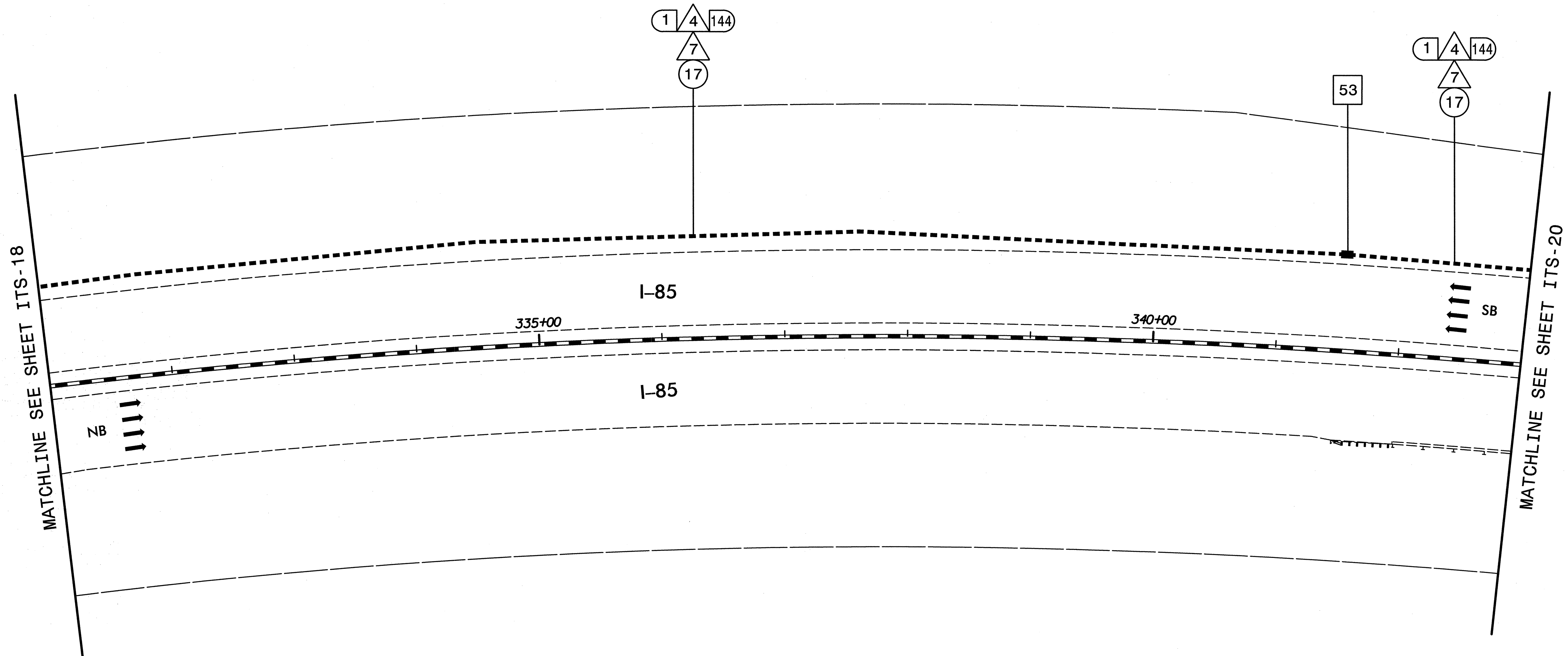


MATCHLINE SEE SHEET ITS-17

MATCHLINE SEE SHEET ITS-19

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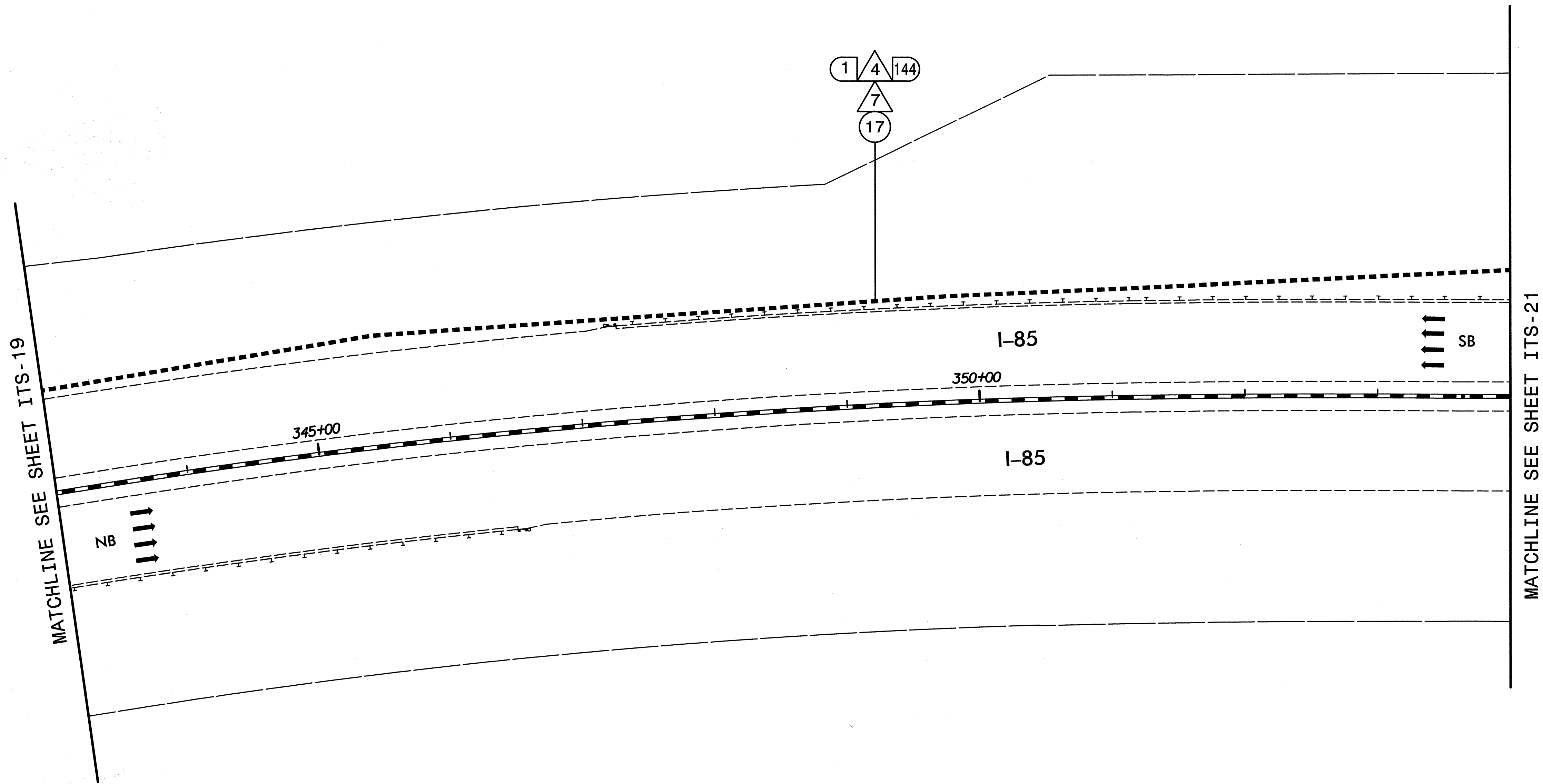
	<b>CABLE ROUTING PLAN</b>		SEAL 
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014 PREPARED BY: T.R. TERRELL REVISIONS: _____ SCALE: 1"=50' 	REVIEWED BY: N.M. RODEVICK REVIEWED BY: H.L. WINSTEAD INIT. DATE _____ _____	SIGNATURE: <i>H.L. Winstead</i> DATE: 7-11-14 CADD File Name: I3803BA ITS-18.dgn	



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	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
750 N. Greenfield Pkwy., Garner, NC 27529	PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK	SIGNATURE: <i>H.L. Winstead</i> DATE: 7-11-14
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD	REVISIONS:	
	SCALE: 0 50 1"=50'	INIT. DATE	SEAL

CADD File name: I3803BA ITS-20.dgn



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 Raleigh, North Carolina 27609  
 NC License No: C-1554

Plans Prepared for:  
 Transportation, Mobility and Safety Division  
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 750 N. Greenfield Pkwy., Garner, NC 27529

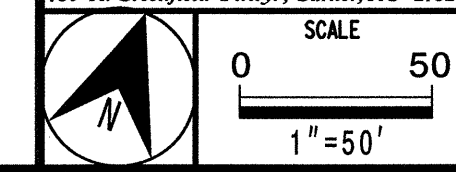
<b>CABLE ROUTING PLAN</b>	
DIVISION 10	CABARRUS CO. CONCORD
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD
REVISIONS	INIT. DATE

SEAL

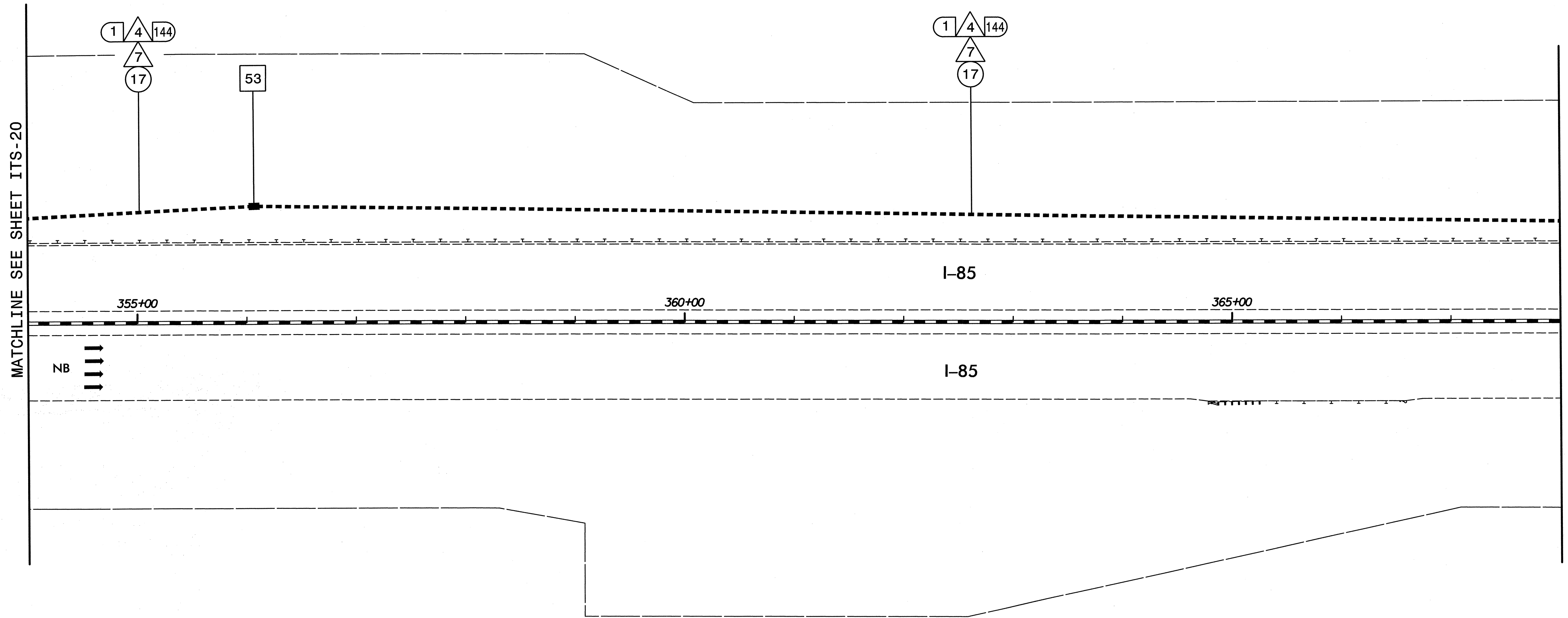
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 07983  
 HARVEY L. WINSTEAD, P.E.

SIGNATURE: *H. Winstead* DATE: 7-1-14

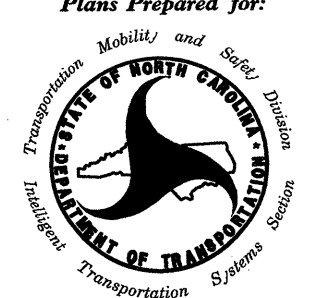

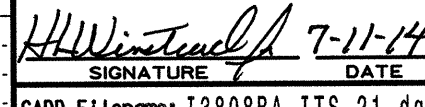
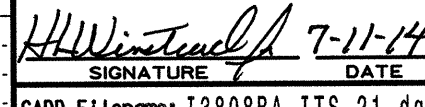
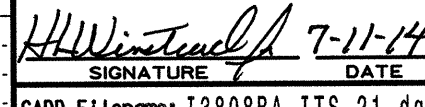
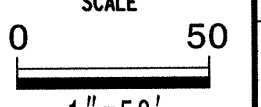
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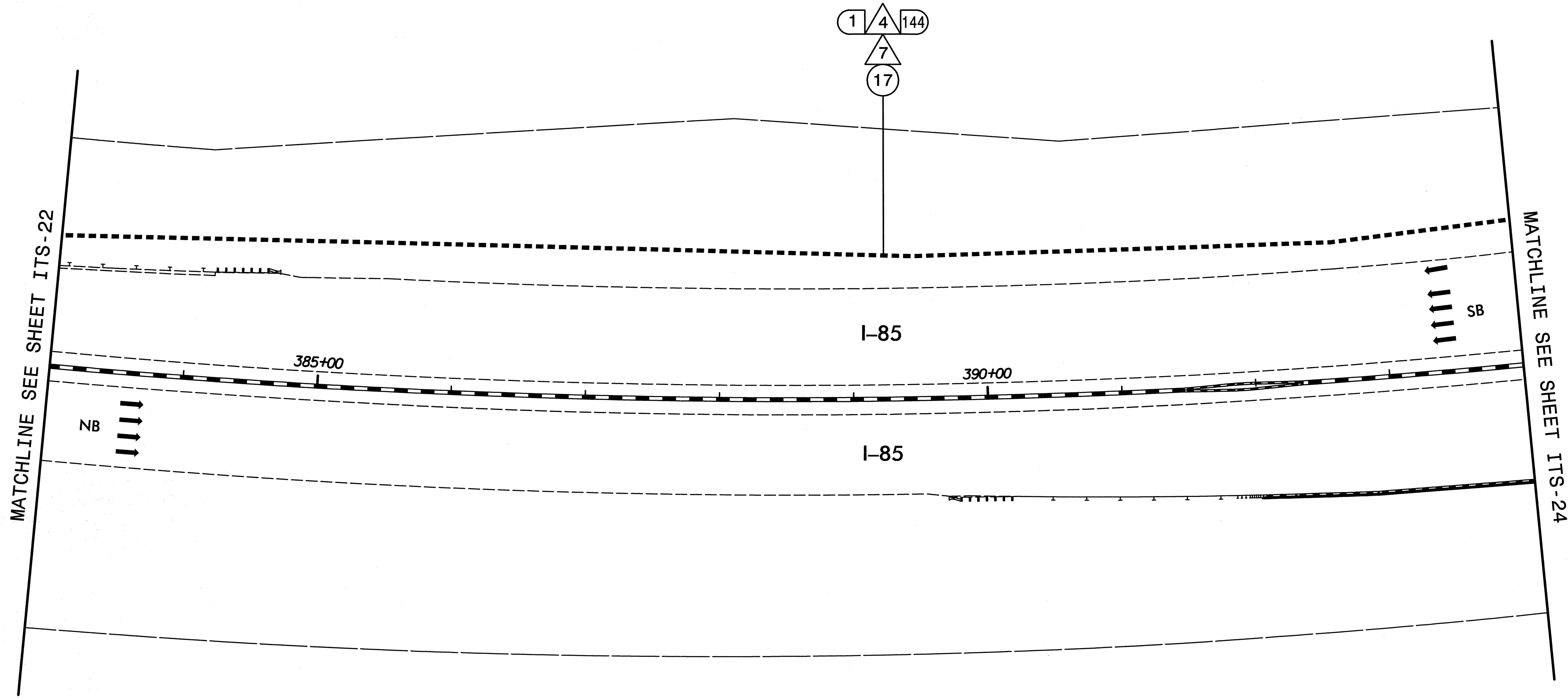




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 <small>750 N. Greenfield Pkwy., Garner, NC 27529</small>	<b>CABLE ROUTING PLAN</b>		 <small>SEAL 07983 HARVEY L. WINSTEAD, P.E.</small>							
	DIVISION 10 CABARRUS CO. CONCORD									
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK									
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD									
<table border="1"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	INIT.	DATE				<table border="1"> <tr> <td>   <small>7-11-14</small> </td> <td> <small>DATE</small> </td> </tr> </table>		 <small>7-11-14</small>	<small>DATE</small>
REVISIONS	INIT.	DATE								
 <small>7-11-14</small>	<small>DATE</small>									
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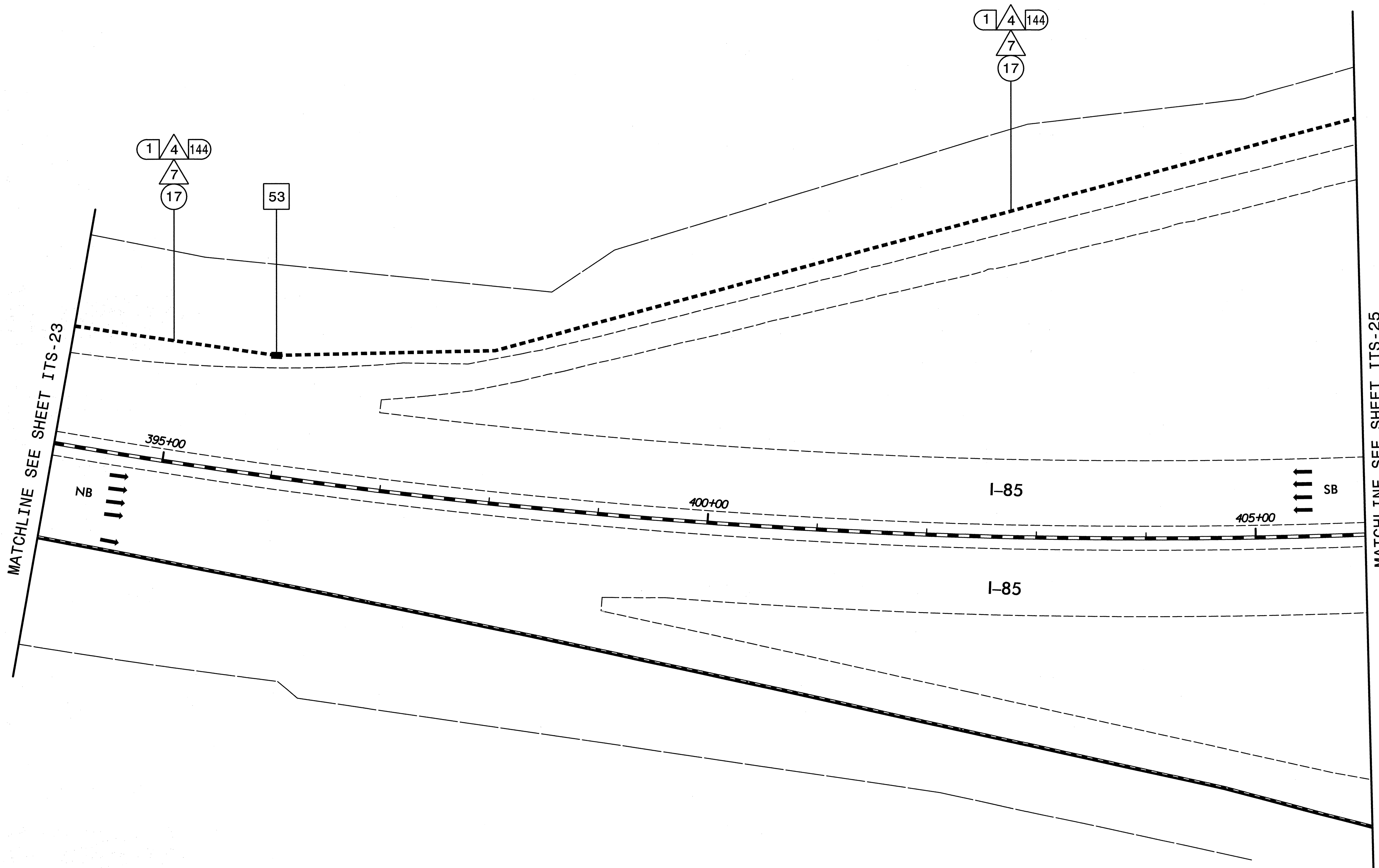
**HNTB** HNTB NORTH CAROLINA, P.C.  
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 Raleigh, North Carolina 27609  
 NC License No: C-1554

Plans Prepared for:  
 Transportation Mobility and Safety Division  
 NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 Transportation Systems Section  
 750 N. Greenfield Pkwy., Garner, NC 27529

<b>CABLE ROUTING PLAN</b>	
DIVISION 10 CABARRUS CO. CONCORD	
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PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD
REVISIONS	INIT. DATE

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 07983  
 ENGINEER  
 HARVEY L. WINSTEAD, JR.  
 H.L. Winstead 7-11-14  
 SIGNATURE DATE  
 CADD File name: I3803BA ITS-23.dgn

SCALE  
 0 50  
 1"=50'



MATCHLINE SEE SHEET ITS-23

MATCHLINE SEE SHEET ITS-25

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	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014 PREPARED BY: T.R. TERRELL REVISIONS:	REVIEWED BY: N.M. RODEVICK REVIEWED BY: H.L. WINSTEAD	INIT. DATE	SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 07983 HARVEY L. WINSTEAD, P.E.
SCALE: 1"=50' 	SIGNATURE: <i>H. Winstead</i> DATE: 7-11-14	DATE:	CAD FILE NAME: I3803BA ITS-24.dgn



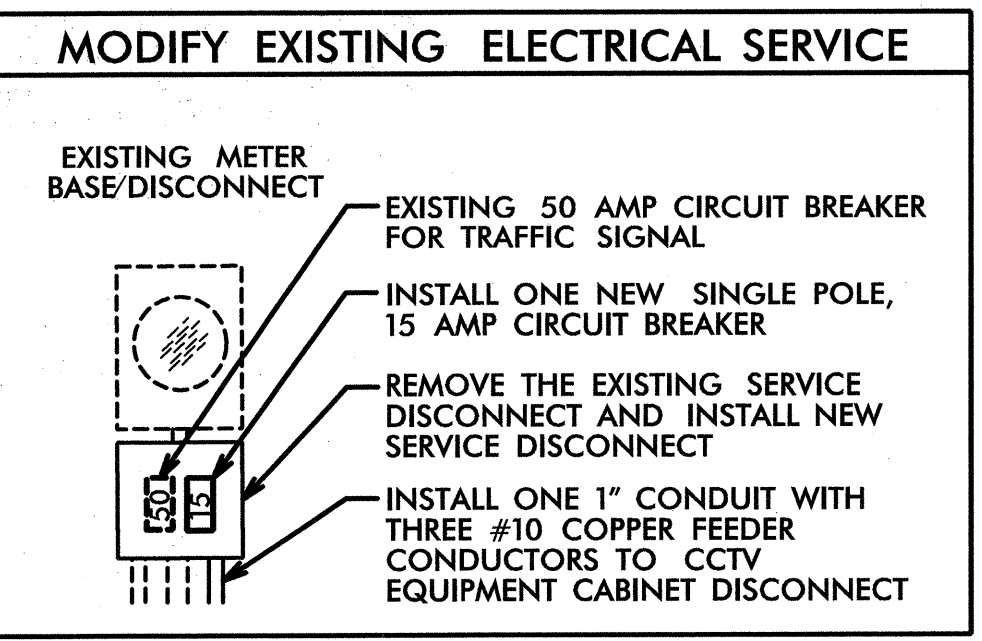
# CCTV-4 GPS COORDINATES

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W 80° 40.340'

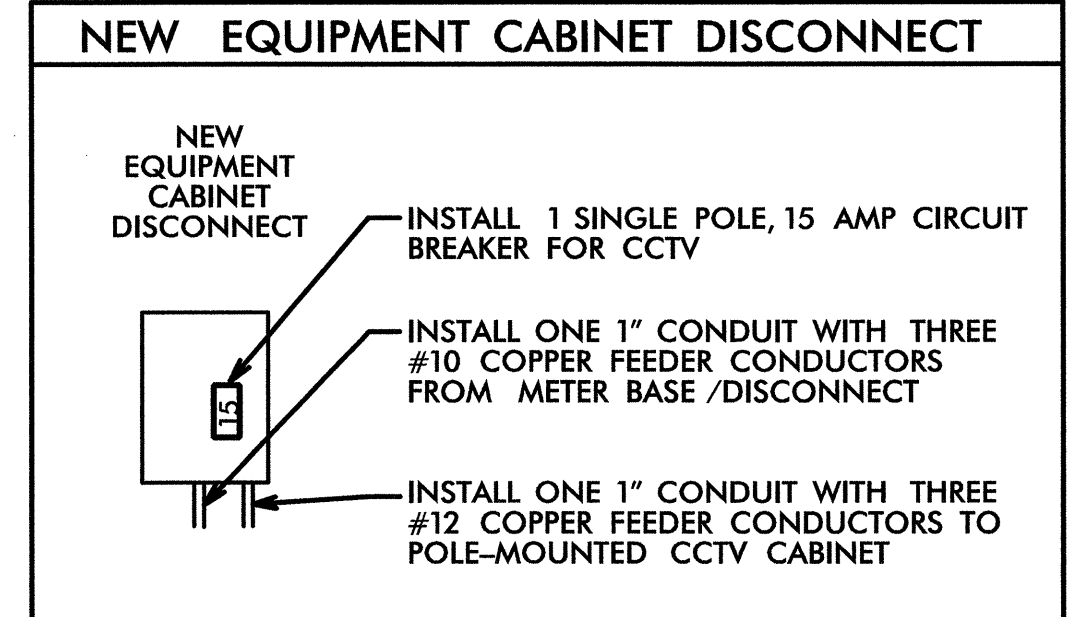
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MATCHLINE SEE SHEET ITS-26

DRAWING 1



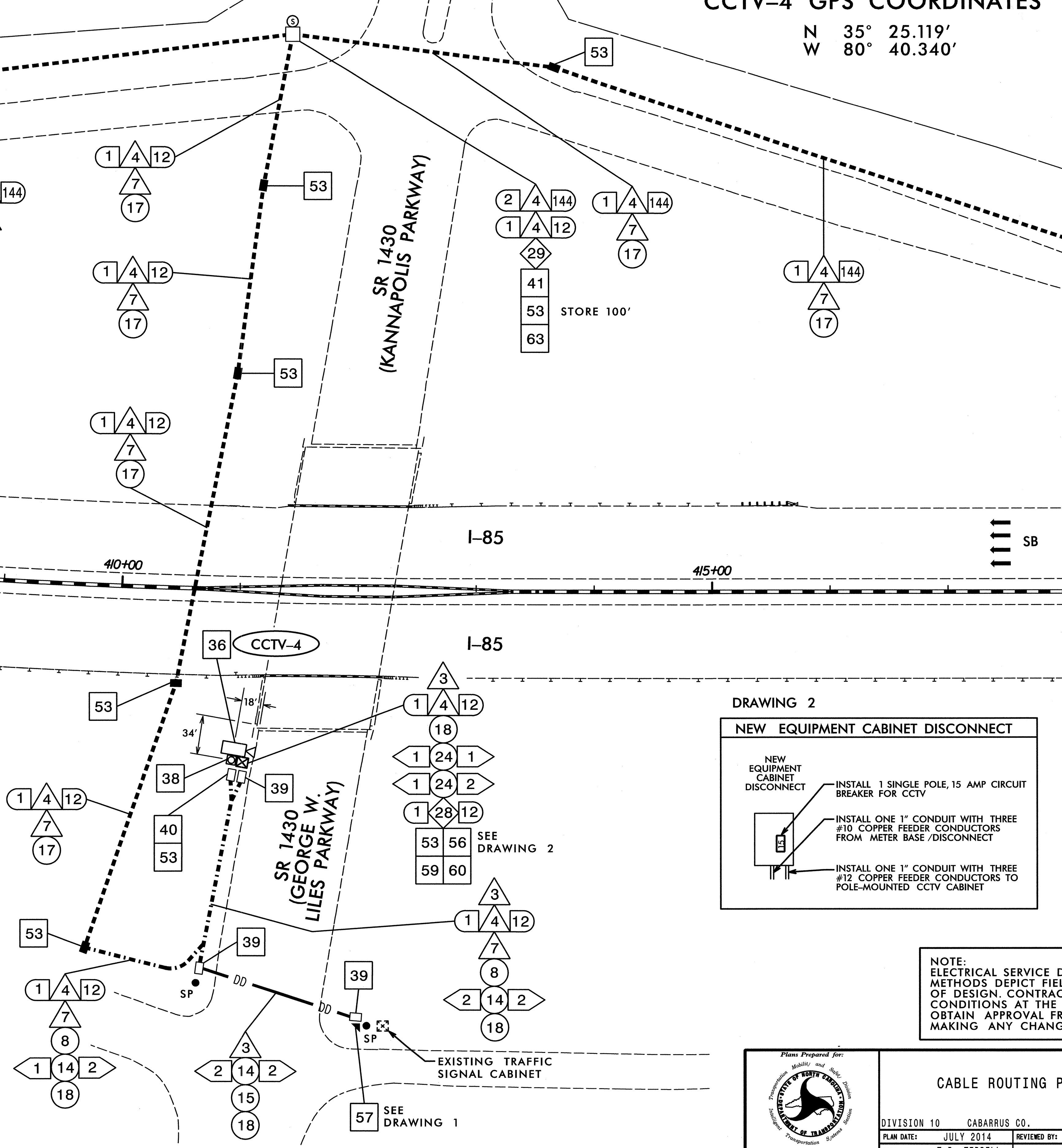
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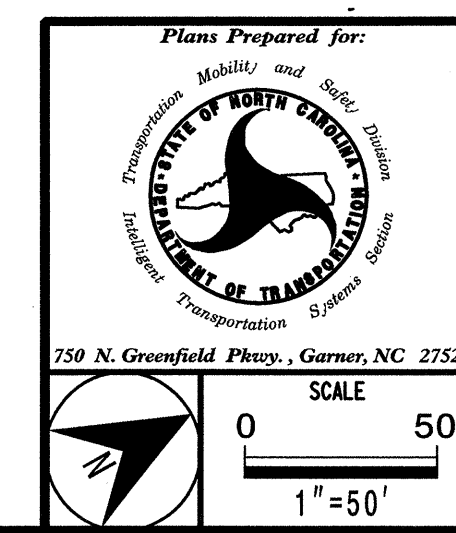
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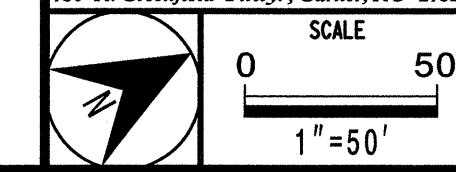


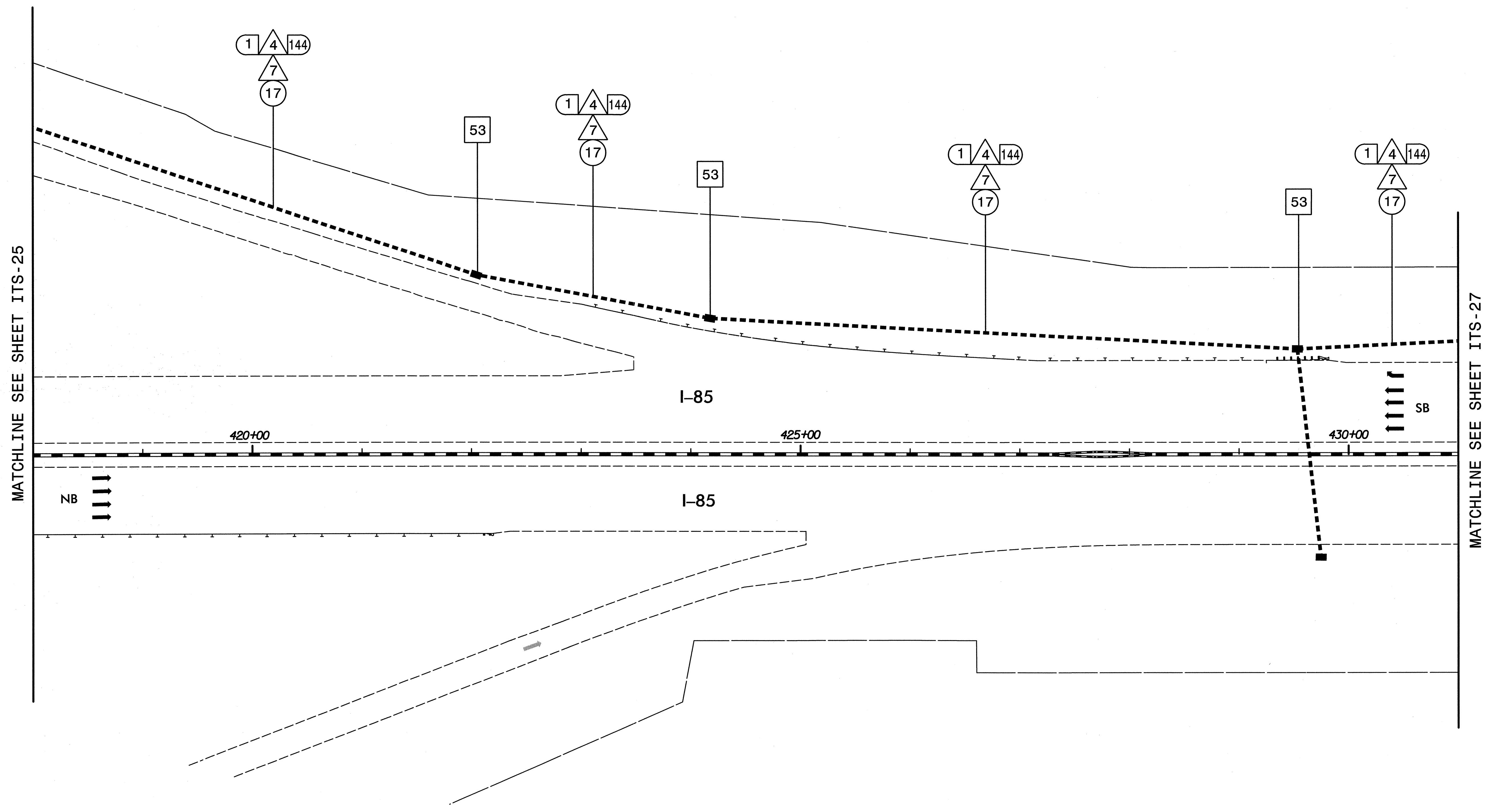
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DIVISION 10	CABARRUS CO.
CONCORD	
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PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD
REVISIONS	INIT. DATE

SEAL  
NORTH CAROLINA  
PROFESSIONAL  
ENGINEER  
H. L. WINSTEAD, JR.  
07983  
DATE: 7-11-14  
SIGNATURE: [Signature]  
DATE: 7-11-14



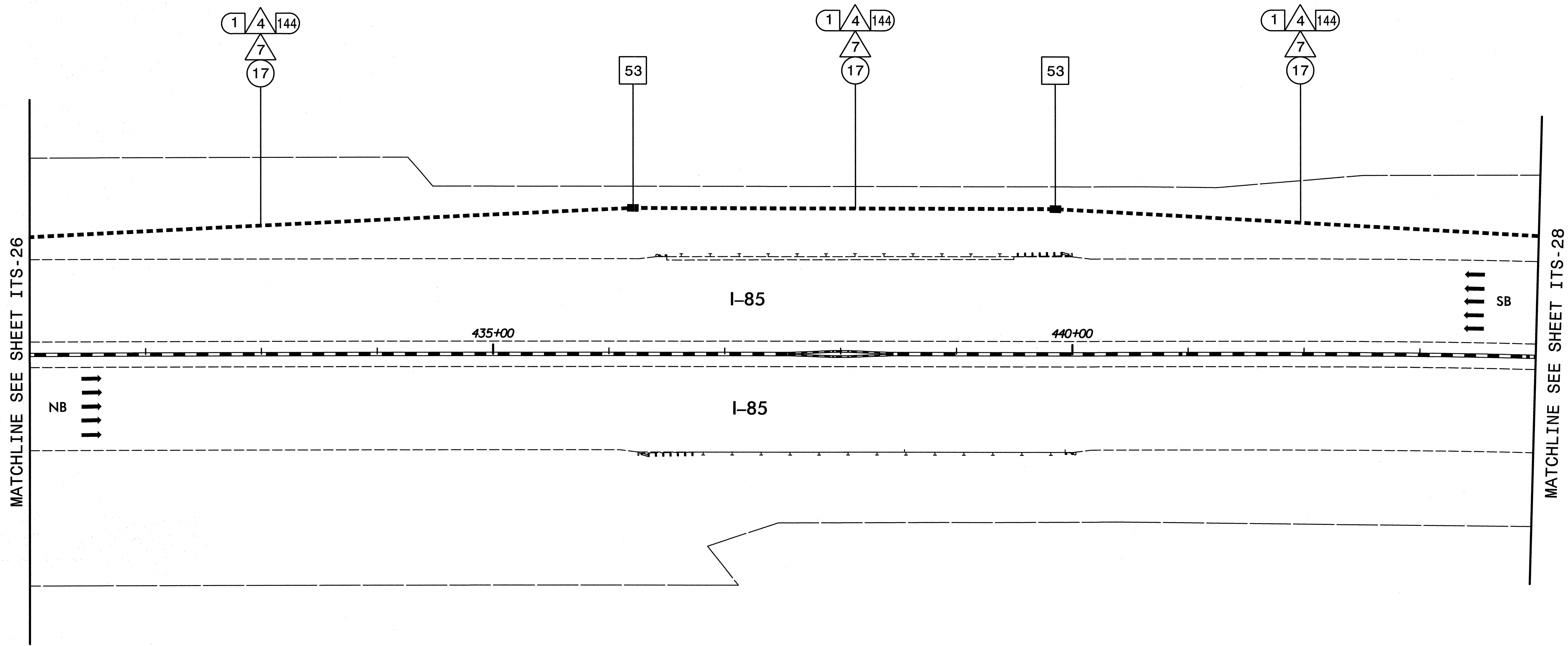


MATCHLINE SEE SHEET ITS-25

MATCHLINE SEE SHEET ITS-27

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	DIVISION 10 CABARRUS CO. CONCORD		
750 N. Greenfield Pkwy., Garner, NC 27529	PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD	DATE: 7-1-14
SCALE: 1" = 50'	REVISIONS:	INIT.:	DATE:



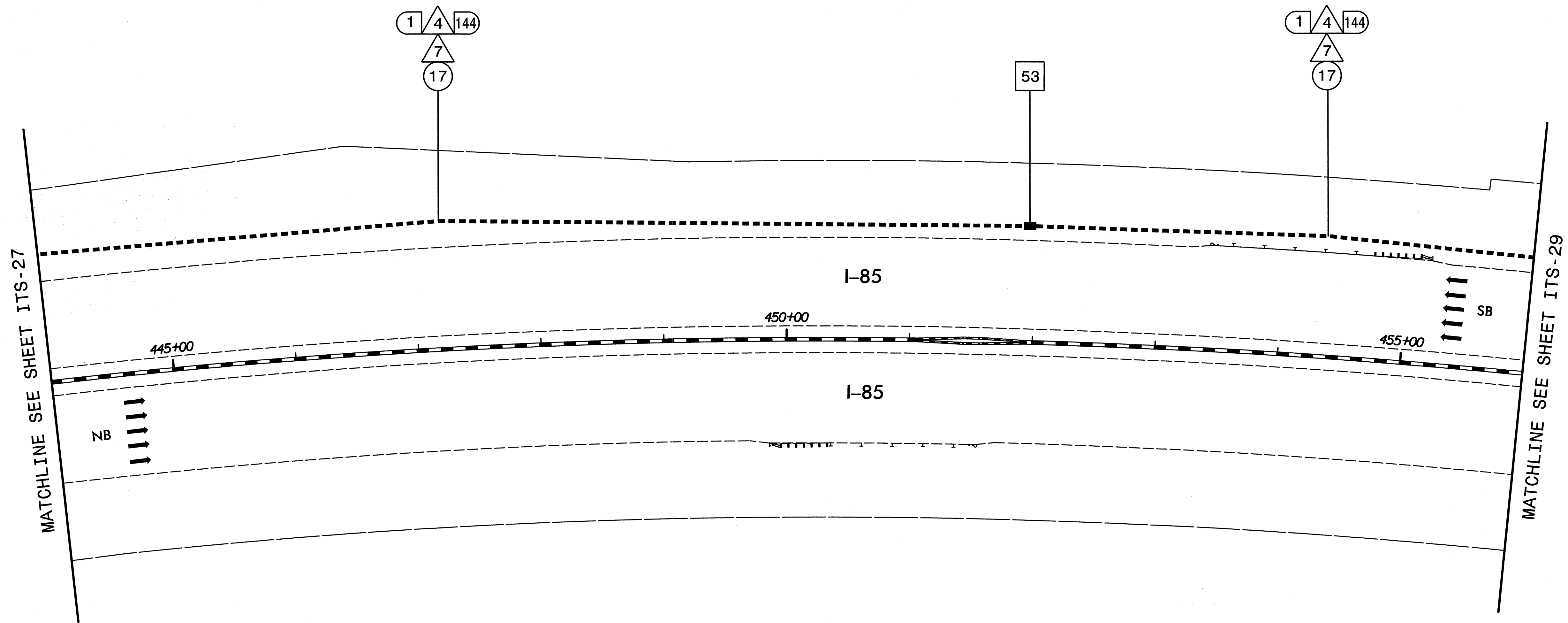
MATCHLINE SEE SHEET ITS-26

MATCHLINE SEE SHEET ITS-28

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	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK	REVISIONS INIT. DATE	SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 07983 H. L. WINSTEAD, P.E. SIGNATURE: <i>H. L. Winstead</i> 7-11-14 DATE: 7-11-14

SCALE: 1"=50'



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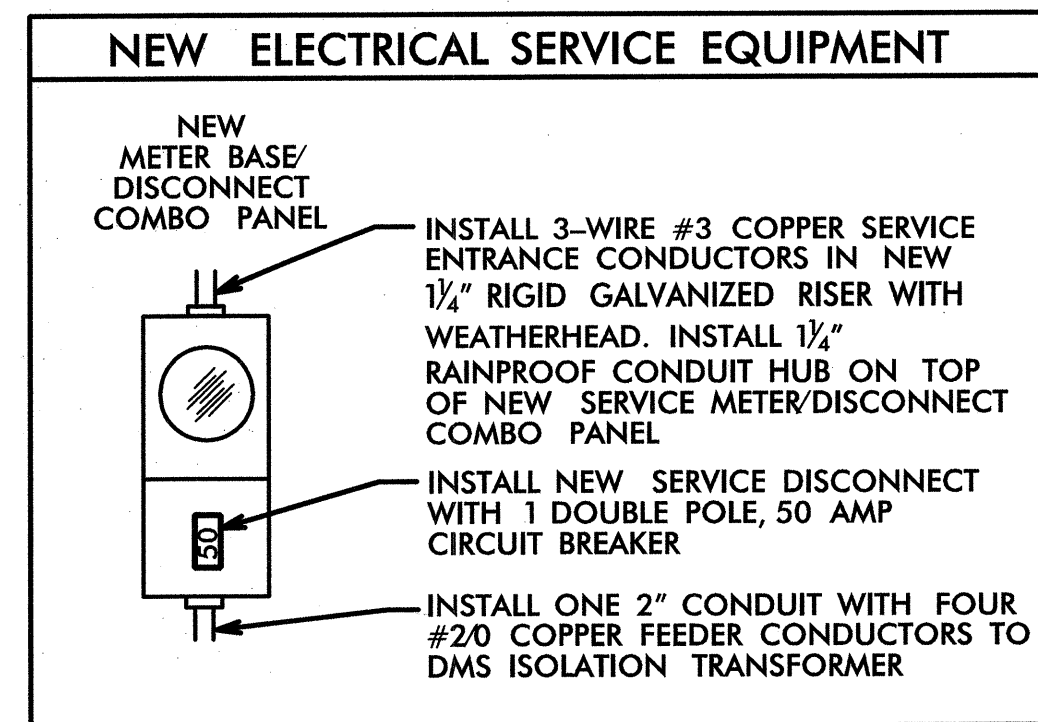
	<b>CABLE ROUTING PLAN</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
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REVISIONS	INIT.	DATE	
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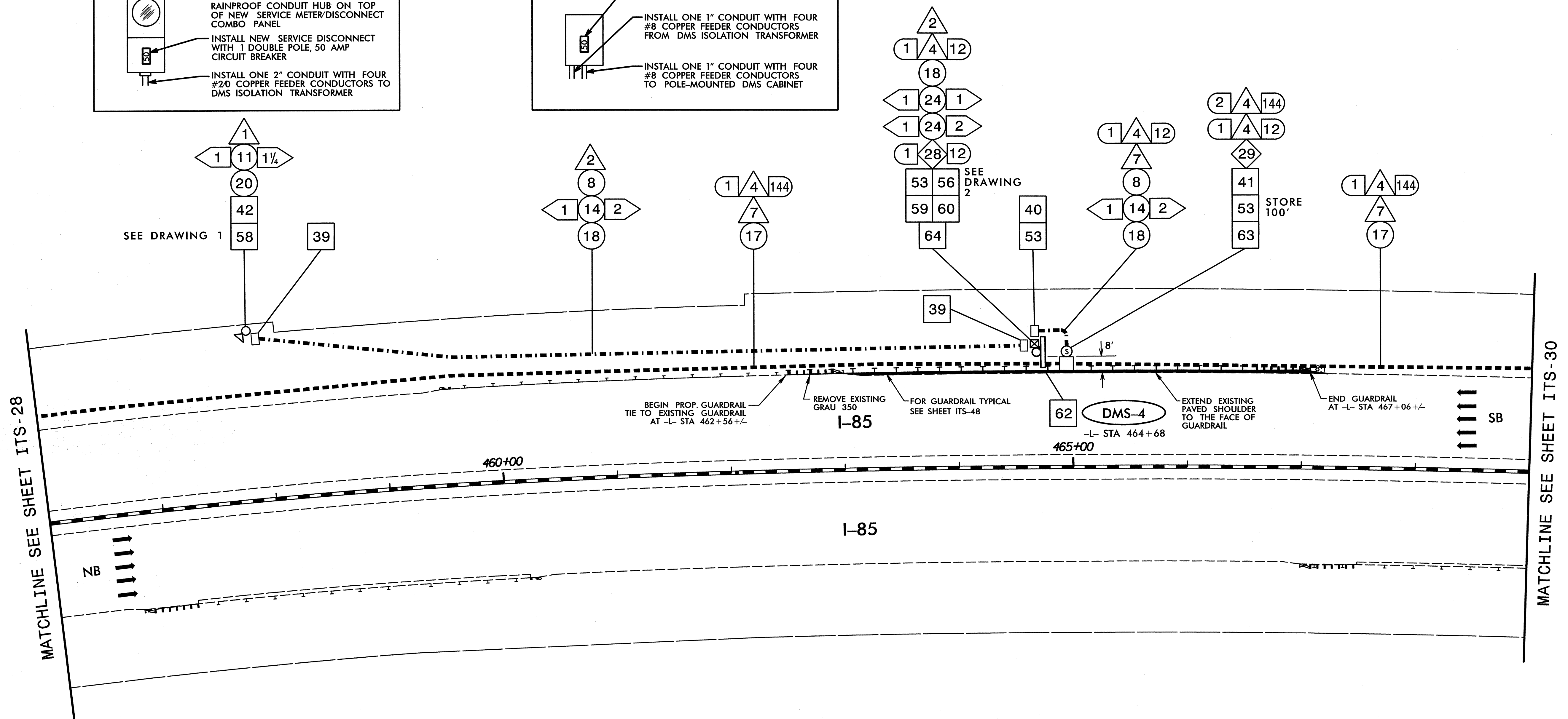
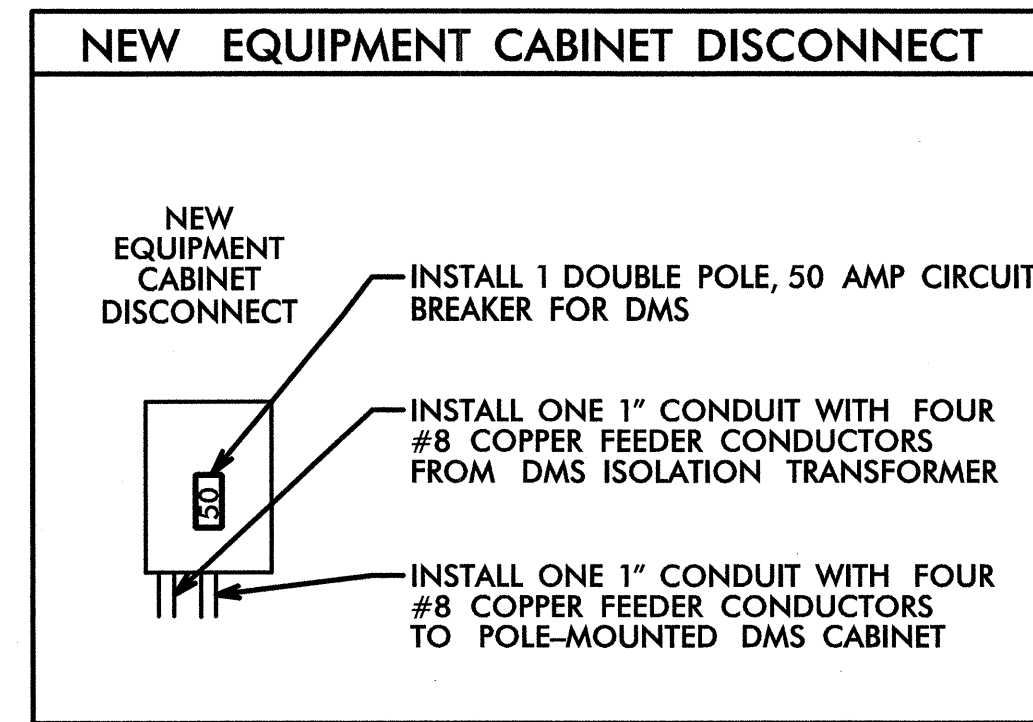
DMS-4 GPS COORDINATES

N 35° 25.897'  
W 80° 39.828'

DRAWING 1



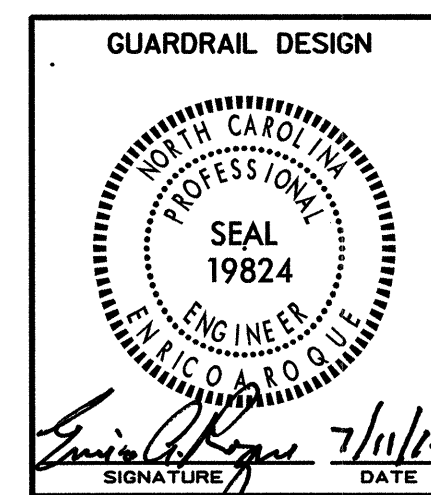
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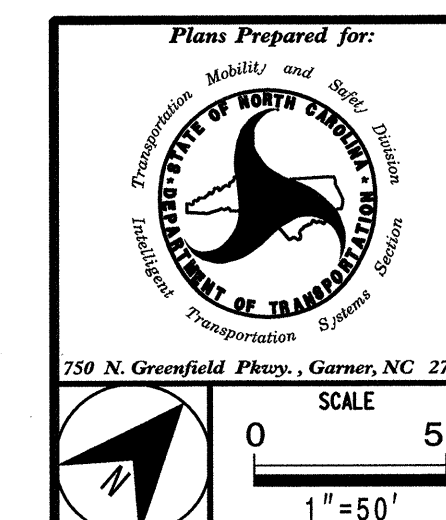
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1. MAINTAIN A MINIMUM OF SIX (6) FEET FROM THE EDGE OF PAVEMENT WHEN TRENCHING PARALLEL TO THE ROADWAY.
2. CONTACT REGIONAL ITS ENGINEER TO CONFIRM LOCATION OF THE DMS.
3. INSTALL NEW DMS, WALKWAY, LADDER, AND POLE MOUNTED CABINET ON NEW DMS STRUCTURE.
4. INSTALL A LEVEL CONCRETE TECHNICIAN PAD MEASURING A MINIMUM 4 INCHES THICK, 24 INCHES WIDE AND 36 INCHES LONG AT THE FRONT DOOR OF THE DMS EQUIPMENT CABINET. SEE TYPICAL DETAILS SHEET.
5. CONTACT MIKE SANDOK (DUKE ENERGY) AT (704) 787-3815 TO OBTAIN POWER TO ELECTRICAL SERVICE.

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



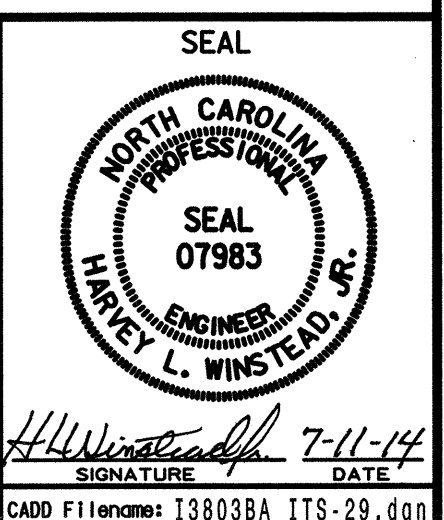
**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

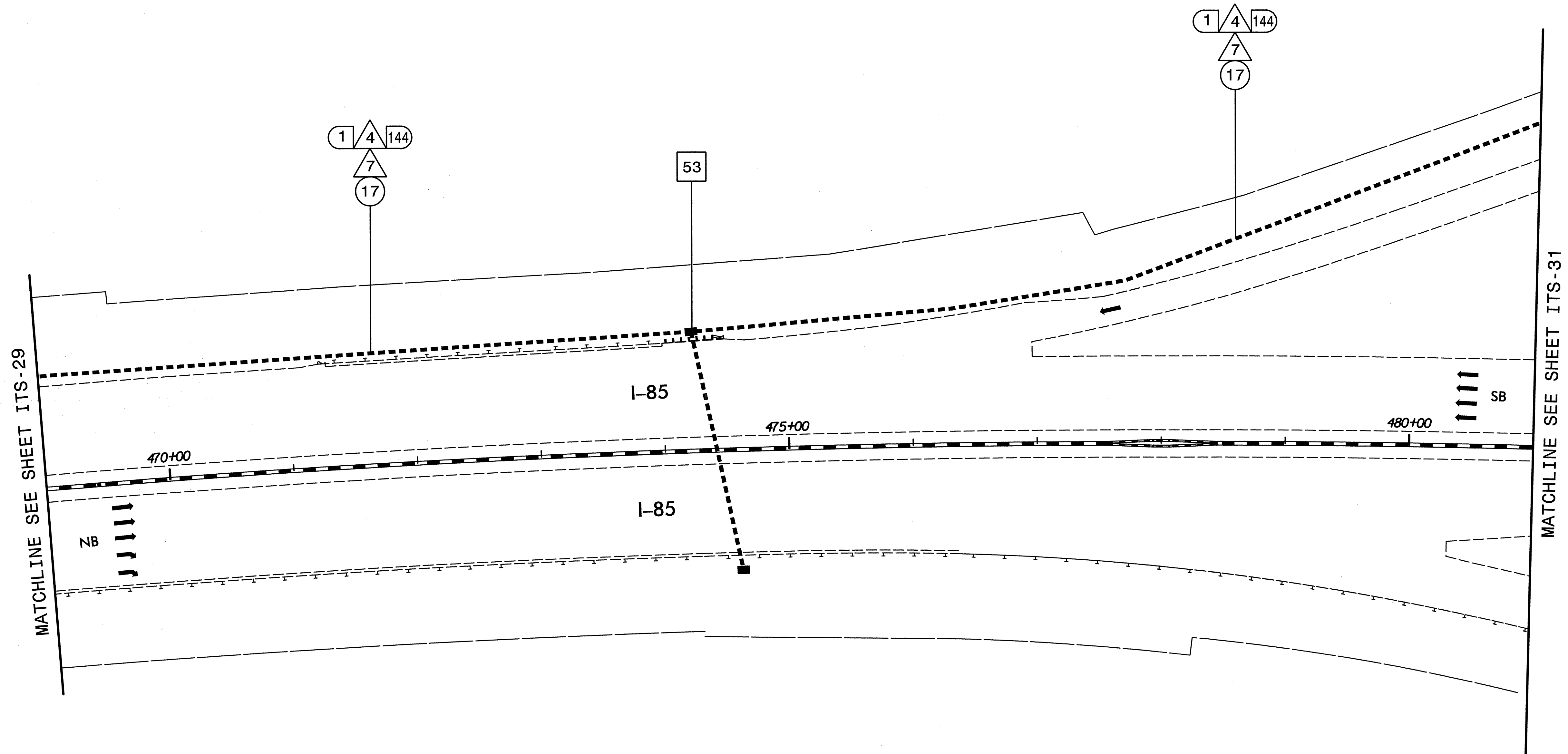


**CABLE ROUTING PLAN**

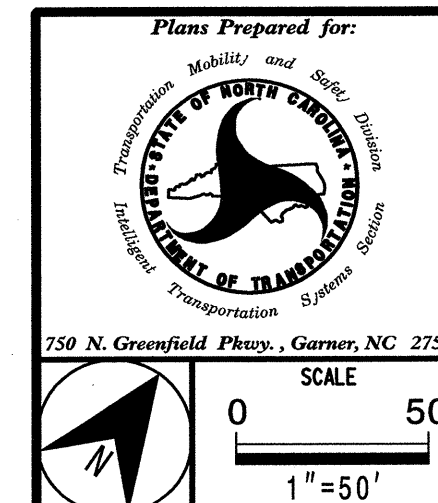
DIVISION 10 CABARRUS CO. CONCORD

PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD
REVISIONS	INIT. DATE





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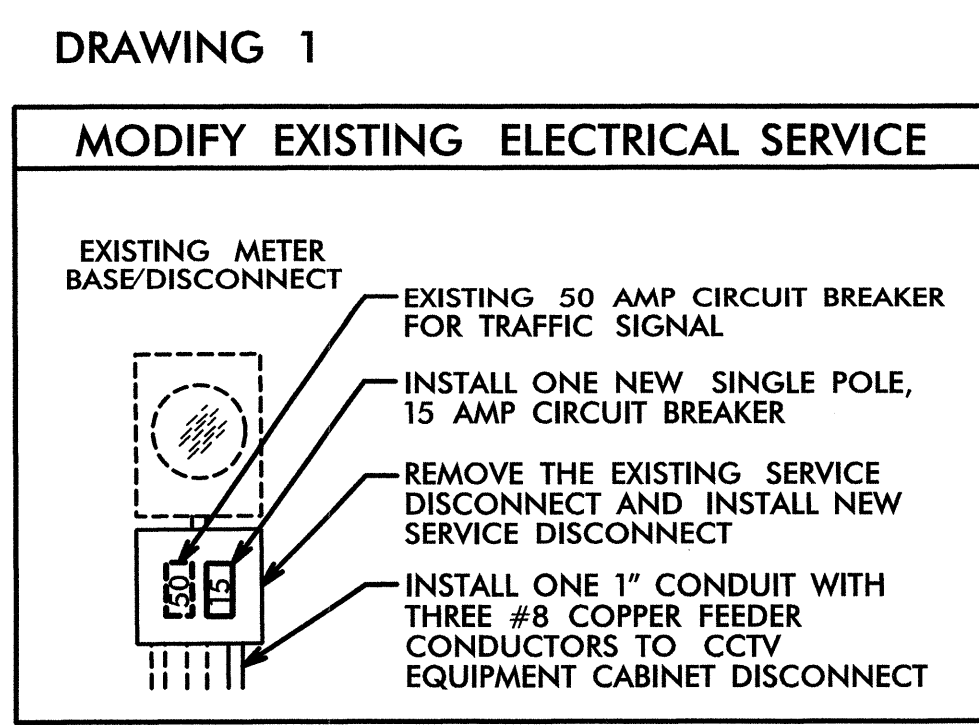
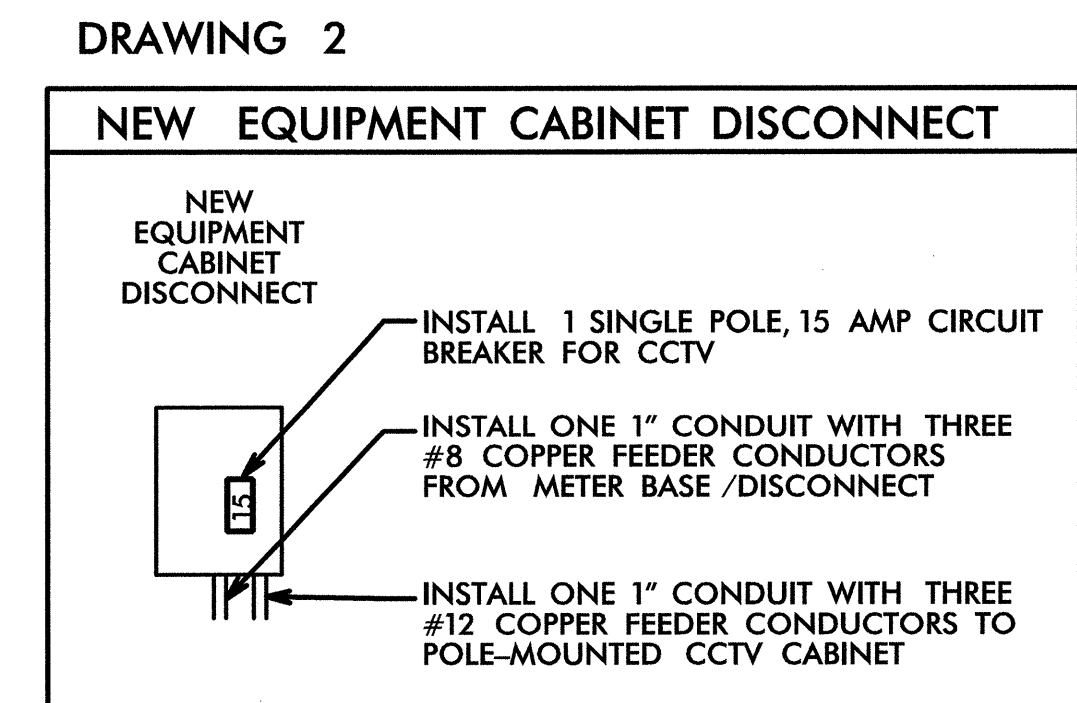
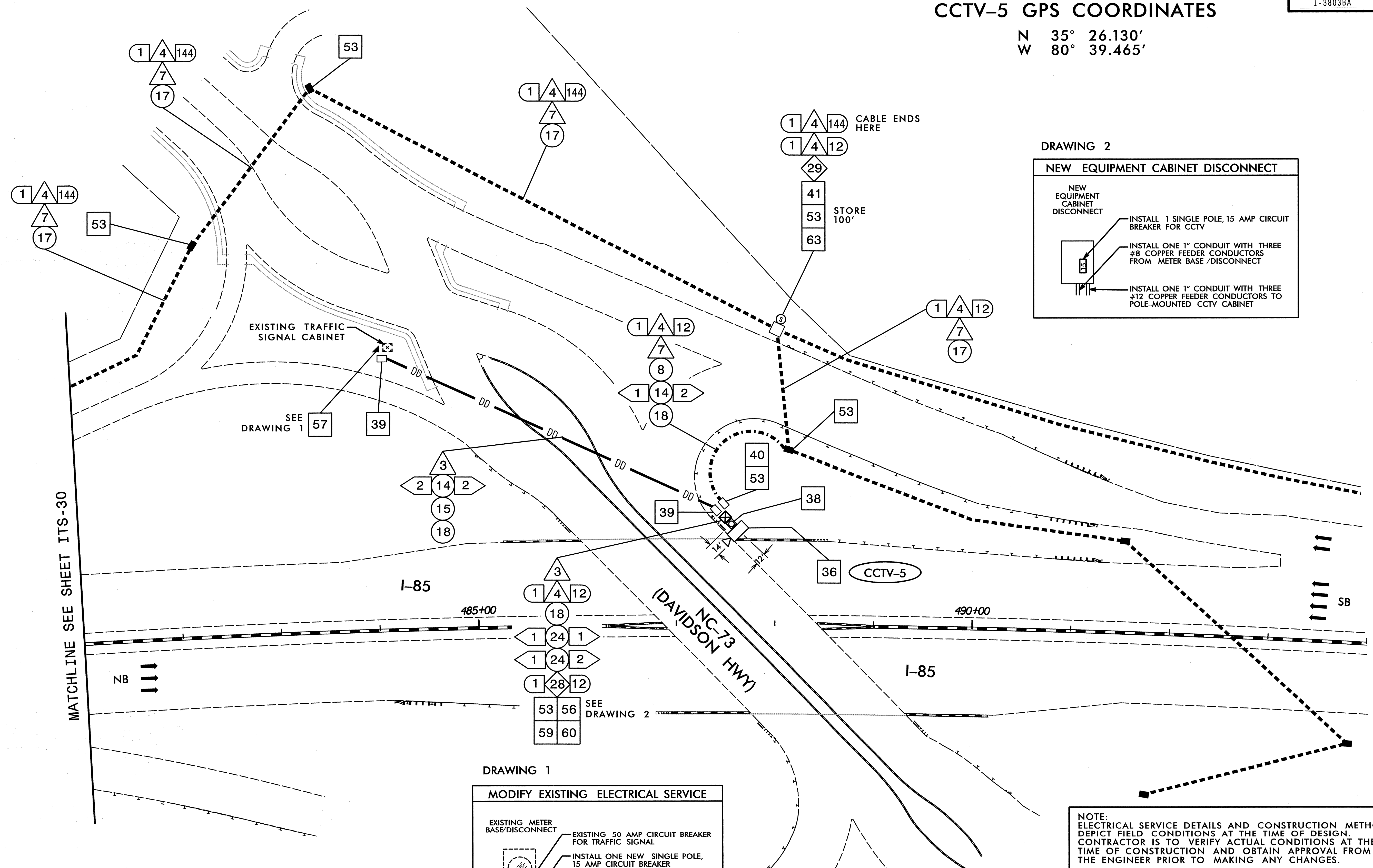


<b>CABLE ROUTING PLAN</b>	
DIVISION 10	CABARRUS CO. CONCORD
PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK
PREPARED BY: T.R. TERRELL	REVIEWED BY: H.L. WINSTEAD
REVISIONS	INIT. DATE



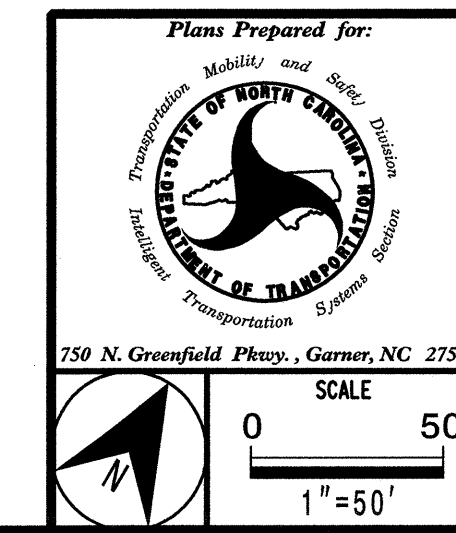
# CCTV-5 GPS COORDINATES

N 35° 26.130'  
W 80° 39.465'



**NOTE:**  
ELECTRICAL SERVICE DETAILS AND CONSTRUCTION METHODS DEPICT FIELD CONDITIONS AT THE TIME OF DESIGN. CONTRACTOR IS TO VERIFY ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION AND OBTAIN APPROVAL FROM THE 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 REGIONAL ITS ENGINEER TO CONFIRM LOCATION OF THE CCTV CAMERA.
  3. MOUNT CCTV CAMERA 45' ABOVE GRADE.
  4. INSTALL A LEVEL CONCRETE TECHNICIAN PAD MEASURING A MINIMUM 4 INCHES THICK, 24 INCHES WIDE AND 36 INCHES LONG AT THE FRONT DOOR OF THE CCTV EQUIPMENT CABINET. SEE TYPICAL DETAILS SHEET.
  5. CONTACT MIKE SANDOK (DUKE ENERGY) AT (704) 787-3815 TO OBTAIN POWER TO ELECTRICAL SERVICE.



**CABLE ROUTING PLAN**

DIVISION 10 CABARRUS CO. CONCORD

PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK

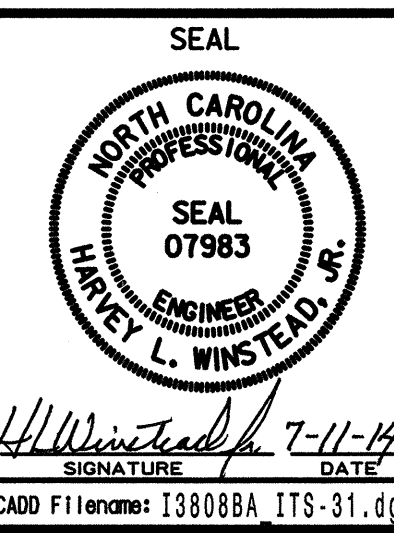
PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD

REVISIONS	INIT.	DATE

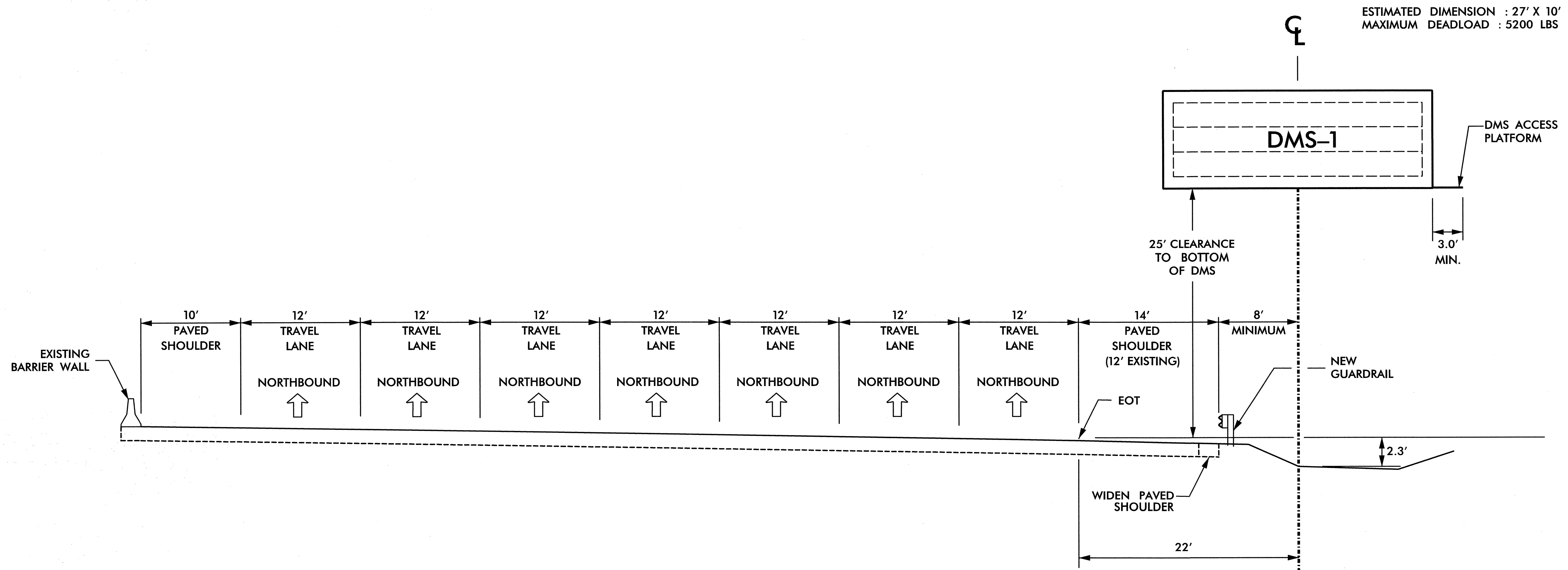
750 N. Greenfield Pkwy., Garner, NC 27529

SCALE: 0 50  
1"=50'

SIGNATURE: *H. Winstead* DATE: 7-11-14  
CADD Filename: I3803BA ITS-31.dgn



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NOTES:

- CONTRACTOR IS RESPONSIBLE FOR FURNISHING ELEVATION DRAWINGS FOR ENGINEER'S APPROVAL.
- PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
- EQUIP THE LADDER WITH A SECURITY COVER (LADDER GUARD) AND LOCK. START THE FIRST LADDER RUNG NO MORE THAN 18 INCHES ABOVE A CONCRETE LANDING PAD. DESIGN RUNGS ON 12 INCH CENTER-TO-CENTER TYPICAL SPACING.
- INSTALL A LEVEL CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
- USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
- FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- ENSURE THAT THE TOP OF THE FOOTING EXTENDS AT LEAST 6 INCHES AND NOT MORE THAN 24 INCHES ABOVE THE HIGHEST POINT OF THE GROUND SURFACE AT THE FOOTING.
- DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 90 MPH.
- VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.
- SEE CABLE ROUTING SHEET FOR GUARDRAIL DETAILS.

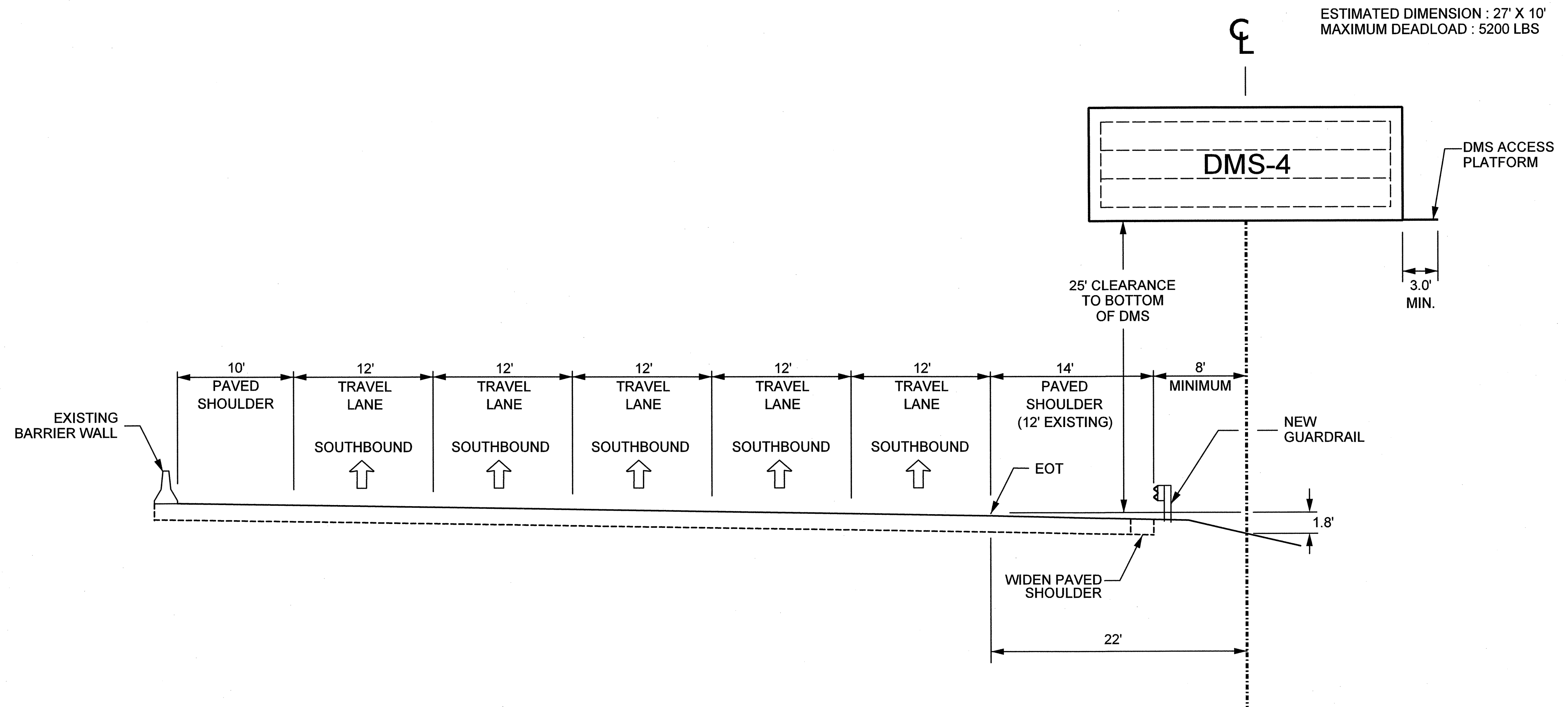
**HNTB** HNTB NORTH CAROLINA, P.C.  
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Raleigh, North Carolina 27609  
NC License No: C-1554

	<b>DMS-1 ELEVATION</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
SCALE NONE	PLAN DATE: JULY 2014 PREPARED BY: T.R. TERRELL	REVIEWED BY: N.M. RODEVICK REVIEWED BY: H.L. WINSTEAD	SIGNATURE: <i>H.L. Winstead</i> DATE: 7-11-14
REVISIONS			INIT. DATE
REVISIONS			INIT. DATE
REVISIONS			INIT. DATE
REVISIONS			INIT. DATE
REVISIONS			INIT. DATE

CADD File name: I3803BA ITS-32.dgn







NOTES:

- CONTRACTOR IS RESPONSIBLE FOR FURNISHING ELEVATION DRAWINGS FOR ENGINEER'S APPROVAL.
- PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
- EQUIP THE LADDER WITH A SECURITY COVER (LADDER GUARD) AND LOCK. START THE FIRST LADDER RUNG NO MORE THAN 18 INCHES ABOVE A CONCRETE LANDING PAD. DESIGN RUNGS ON 12 INCH CENTER-TO-CENTER TYPICAL SPACING.
- INSTALL A LEVEL CONCRETE LANDING PAD MEASURING A MINIMUM 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG DIRECTLY BENEATH THE LADDER.
- USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
- FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- ENSURE THAT THE TOP OF THE FOOTING EXTENDS AT LEAST 6 INCHES AND NOT MORE THAN 24 INCHES ABOVE THE HIGHEST POINT OF THE GROUND SURFACE AT THE FOOTING.
- DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 90 MPH.
- VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.
- SEE CABLE ROUTING SHEET FOR GUARDRAIL DETAILS.

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 Raleigh, North Carolina 27609  
 NC License No: C-1554

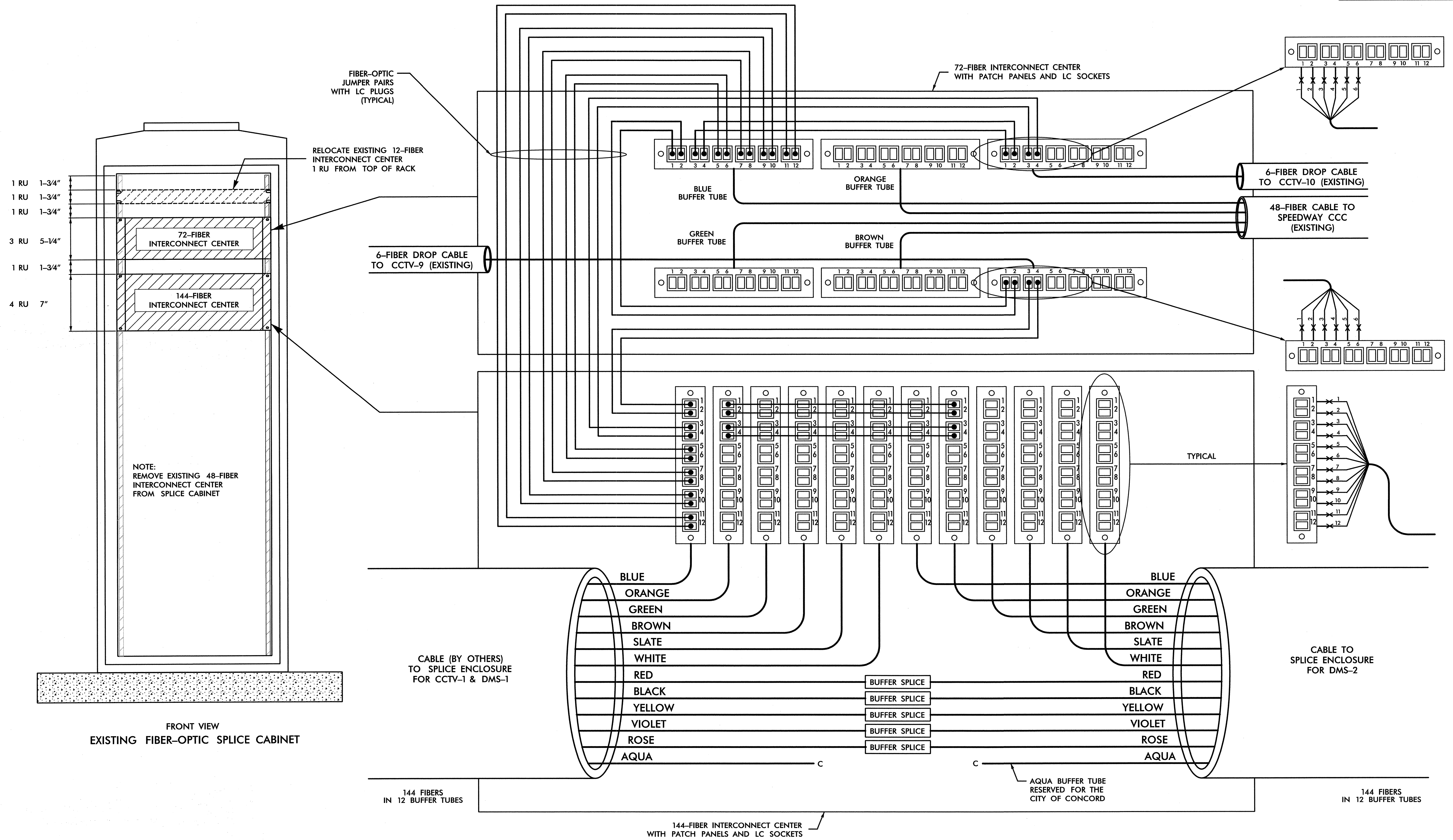
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	DIVISION 10 CABARRUS CO. CONCORD PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD		
SCALE NONE	REVISIONS _____ _____ _____	INIT. DATE _____ _____	SIGNATURE DATE <i>H.L. Winstead</i> 7-11-14 _____

CADD File name: I3803BA ITS-34.dgn









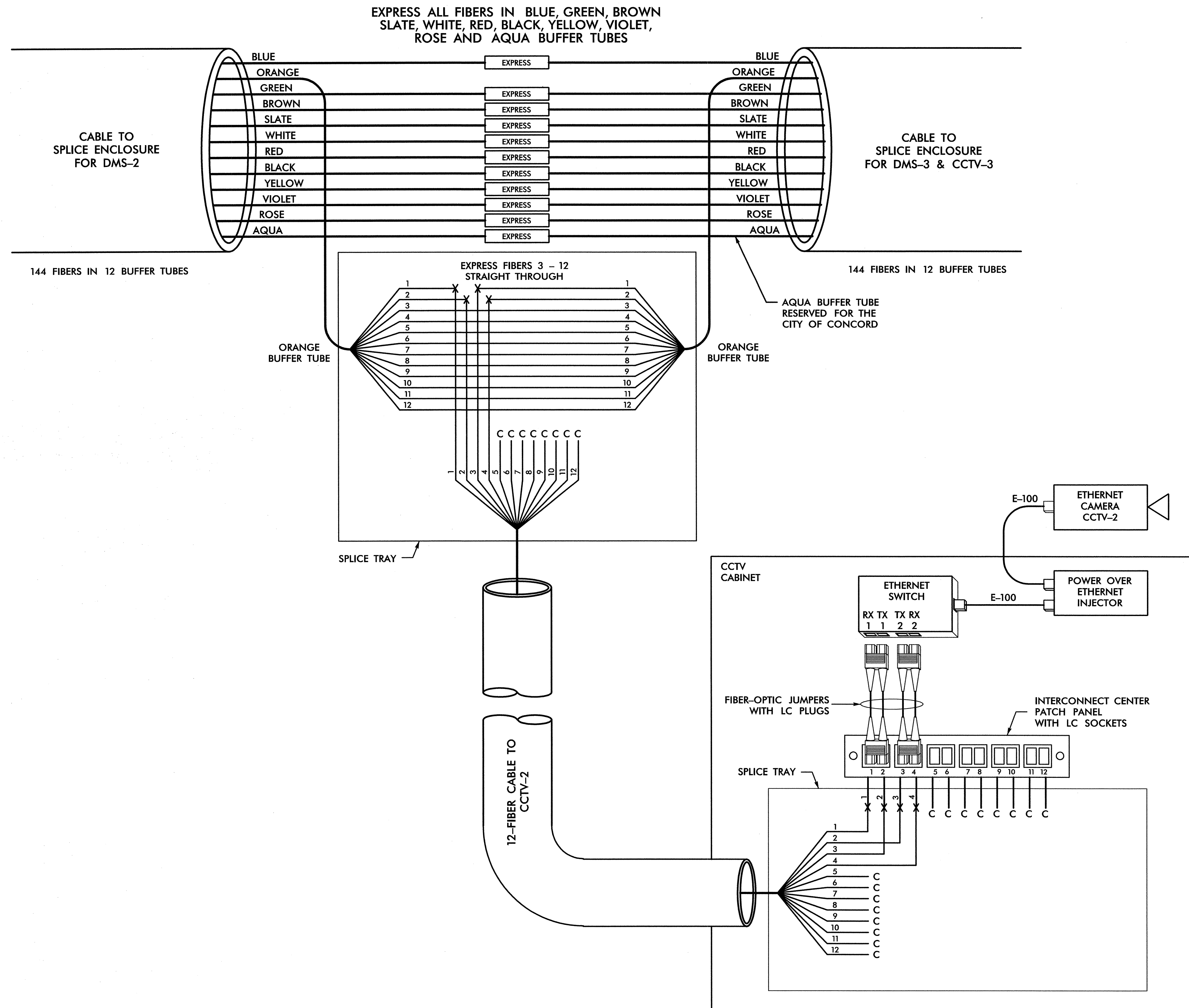
COLOR CODE TIA/EIA 598-C		LEGEND	
(1) BLUE	(7) RED	X =	NEW FUSION SPLICE INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	● =	EXISTING FUSION SPLICE
(3) GREEN	(9) YELLOW	C =	CAP AND SEAL
(4) BROWN	(10) VIOLET	EXPRESS	EXPRESS ENTIRE BUFFER TUBE THROUGH WITHOUT CUTTING
(5) SLATE	(11) ROSE	BUFFER SPLICE	SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR
(6) WHITE	(12) AQUA		

- NOTES**
- UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
  - UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
  - ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

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	<b>EXISTING SPLICE CABINET FIBER-OPTIC SPLICE DETAIL</b>		
	DIVISION 10 CABARRUS CO. CONCORD PLAN DATE: JULY 2014 REVIEWED BY: N.W. RODEVICK PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	SCALE: NONE REVISIONS: _____ INIT. DATE: _____	
SIGNATURE: <i>H. L. Winstead</i> DATE: 7-1-14 CADD Filename: I3803BA ITS-37.dgn			SEAL





COLOR CODE TIA/EIA 598-C	
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

**LEGEND**

- X = NEW FUSION SPLICE INDIVIDUAL FIBER
- = EXISTING FUSION SPLICE
- C = CAP AND SEAL
- EXPRESS** = EXPRESS ENTIRE BUFFER TUBE THROUGH WITHOUT CUTTING
- BUFFER SPLICE** = SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR

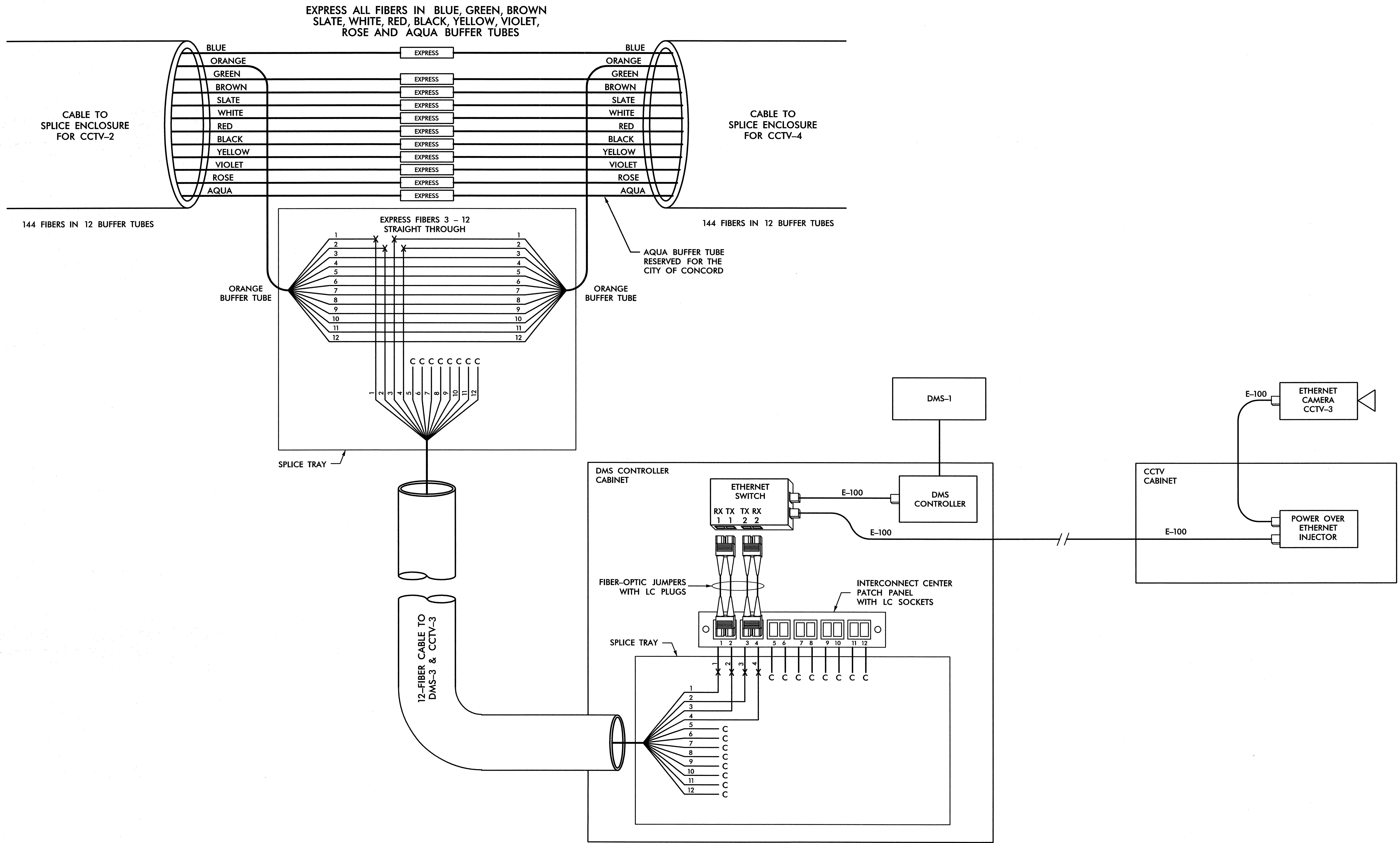
**NOTES**

1. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
3. ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

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	<p><b>CCTV-2</b>  <b>FIBER-OPTIC SPLICE DETAIL</b></p>		<p>SEAL</p>
	<p>DIVISION 10 CABARRUS CO. CONCORD</p>		
<p>PLAN DATE: JULY 2014</p>		<p>REVIEWED BY: N.M. RODEVICK</p>	
<p>PREPARED BY: T.R. TERRELL</p>		<p>REVIEWED BY: H.L. WINSTEAD</p>	
SCALE	REVISIONS	INIT.	DATE
NONE			
		<p><i>H.L. Winstead</i> 7-11-14          SIGNATURE DATE</p>	
<p>CADD Filename: I3803BA ITS-39.dgn</p>			





COLOR CODE TIA/EIA 598-C	
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

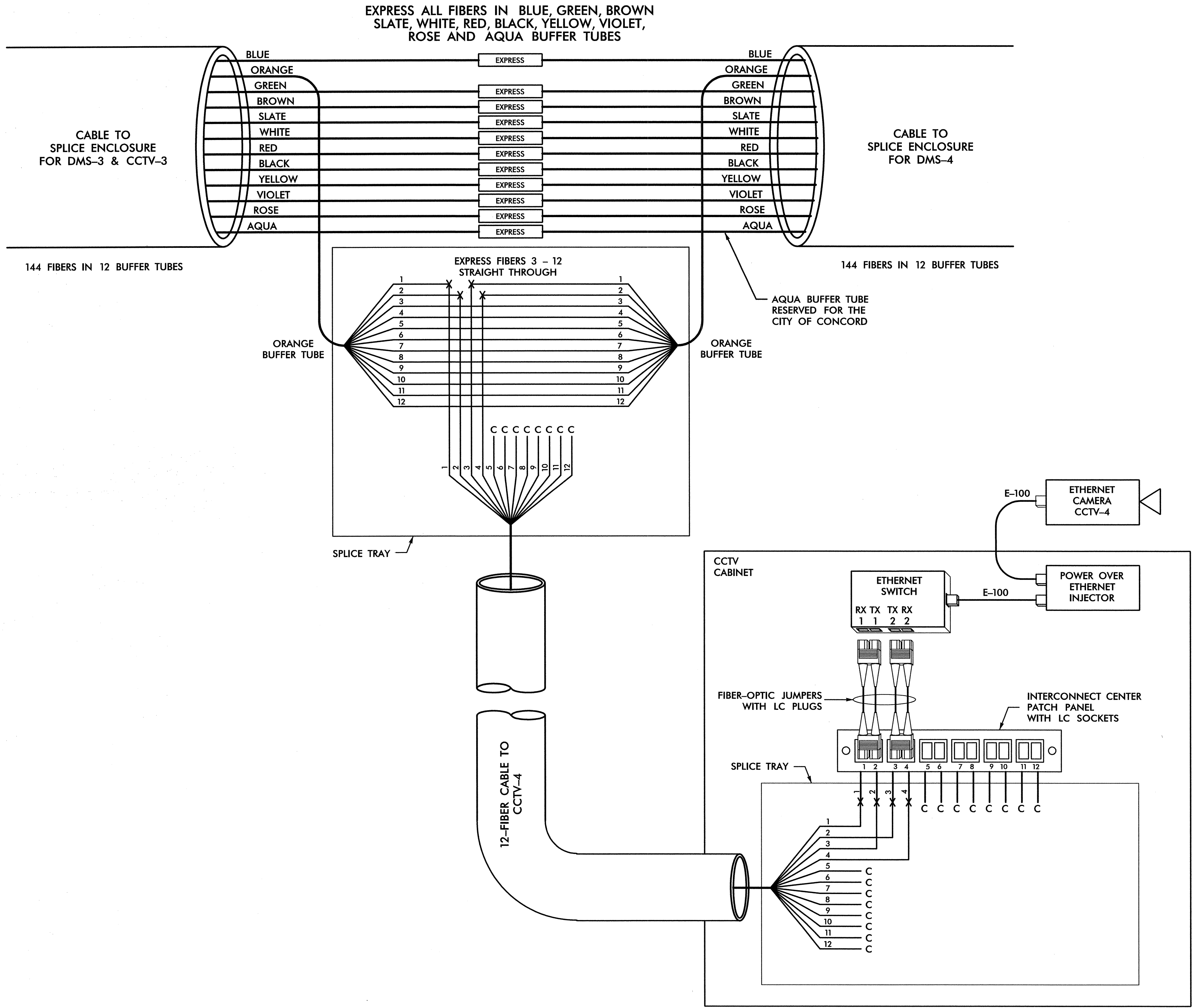
LEGEND	
X	= NEW FUSION SPlice INDIVIDUAL FIBER
•	= EXISTING FUSION SPlice
C	= CAP AND SEAL
EXPRESS	= EXPRESS ENTIRE BUFFER TUBE THROUGH WITHOUT CUTTING
BUFFER SPlice	= SPlice ALL FIBERS IN BUFFER TUBE COLOR TO COLOR

- NOTES**
- UNUSED FIBERS LEFT COILED AND STORED IN SPlice TRAY.
  - UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPlice ENCLOSURE.
  - ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

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	<b>DMS-3 &amp; CCTV-3 FIBER-OPTIC SPlice DETAIL</b>	
	DIVISION 10 CABARRUS CO. CONCORD	
	PLAN DATE: JULY 2014 PREPARED BY: T.R. TERRELL SCALE: NONE	REVIEWED BY: N.M. RODEVICK REVIEWED BY: H.L. WINSTEAD INIT. DATE
REVISIONS		
SIGNATURE: <i>H. Winstead</i> DATE: 7-11-14 SEAL: HNTB		



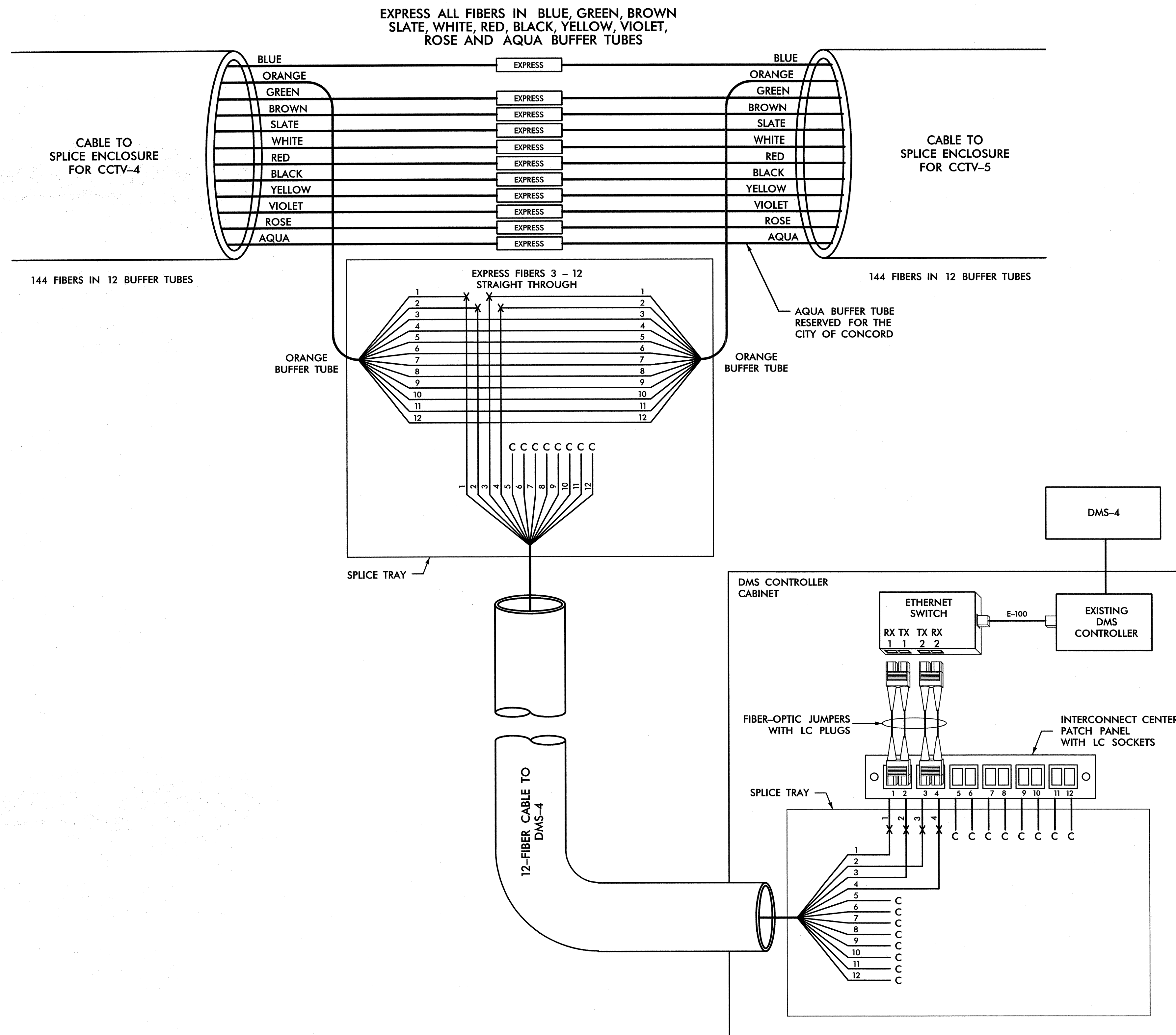


COLOR CODE TIA/EIA 598-C		LEGEND	
(1) BLUE	(7) RED	X =	NEW FUSION SPlice INDIVIDUAL FIBER
(2) ORANGE	(8) BLACK	• =	EXISTING FUSION SPlice
(3) GREEN	(9) YELLOW	C =	CAP AND SEAL
(4) BROWN	(10) VIOLET	EXPRESS	EXPRESS ENTIRE BUFFER TUBE THROUGH WITHOUT CUTTING
(5) SLATE	(11) ROSE	BUFFER SPlice	SPlice ALL FIBERS IN BUFFER TUBE COLOR TO COLOR
(6) WHITE	(12) AQUA		

- NOTES**
- UNUSED FIBERS LEFT COILED AND STORED IN SPlice TRAY.
  - UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPlice ENCLOSURE.
  - ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

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 Raleigh, North Carolina 27609  
 NC License No: C-1554

	<b>CCTV-4 FIBER-OPTIC SPlice DETAIL</b>		DIVISION 10 CABARRUS CO. CONCORD PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	SCALE NONE	REVISIONS INIT. DATE
	PREPARED FOR: 				



COLOR CODE  
TIA/EIA 598-C

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

**LEGEND**

- X = NEW FUSION SPLICE INDIVIDUAL FIBER  
 ● = EXISTING FUSION SPLICE  
 C = CAP AND SEAL
- EXPRESS** = EXPRESS ENTIRE BUFFER TUBE THROUGH WITHOUT CUTTING  
**BUFFER SPLICE** = SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR

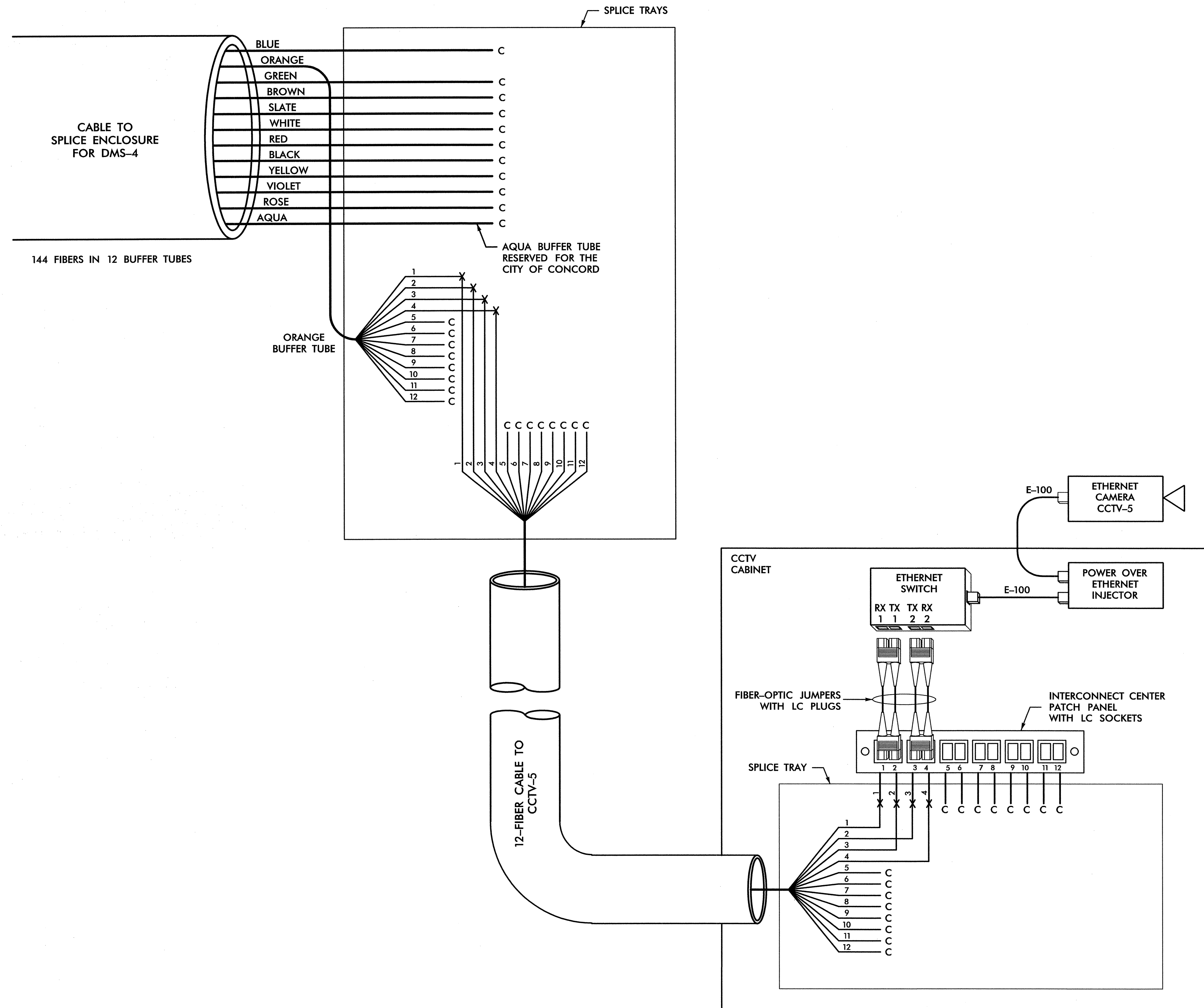
**NOTES**

- UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
- UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
- ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

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	<b>DMS-4</b>		
	<b>FIBER-OPTIC SPLICE DETAIL</b>		
DIVISION 10 CABARRUS CO. CONCORD		PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK	
PREPARED BY: T.R. TERRELL		REVIEWED BY: H.L. WINSTEAD	
SCALE	REVISIONS	INIT.	DATE
NONE			
		Signature: <i>H. L. Winstead</i> 7-11-14 DATE	

CADD File Name: I3803BA ITS-42.dwg



COLOR CODE TIA/EIA 598-C		
(1) BLUE	(7) RED	
(2) ORANGE	(8) BLACK	
(3) GREEN	(9) YELLOW	
(4) BROWN	(10) VIOLET	
(5) SLATE	(11) ROSE	
(6) WHITE	(12) AQUA	

**LEGEND**

- X = NEW FUSION SPLICE INDIVIDUAL FIBER
- = EXISTING FUSION SPLICE
- C = CAP AND SEAL
- EXPRESS** = EXPRESS ENTIRE BUFFER TUBE THROUGH WITHOUT CUTTING
- BUFFER SPLICE** = SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR

**NOTES**

1. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
3. ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

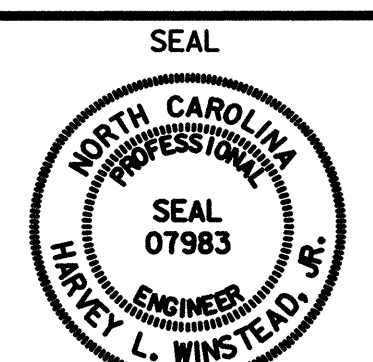
**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554



**CCTV-5  
FIBER-OPTIC SPLICE DETAIL**

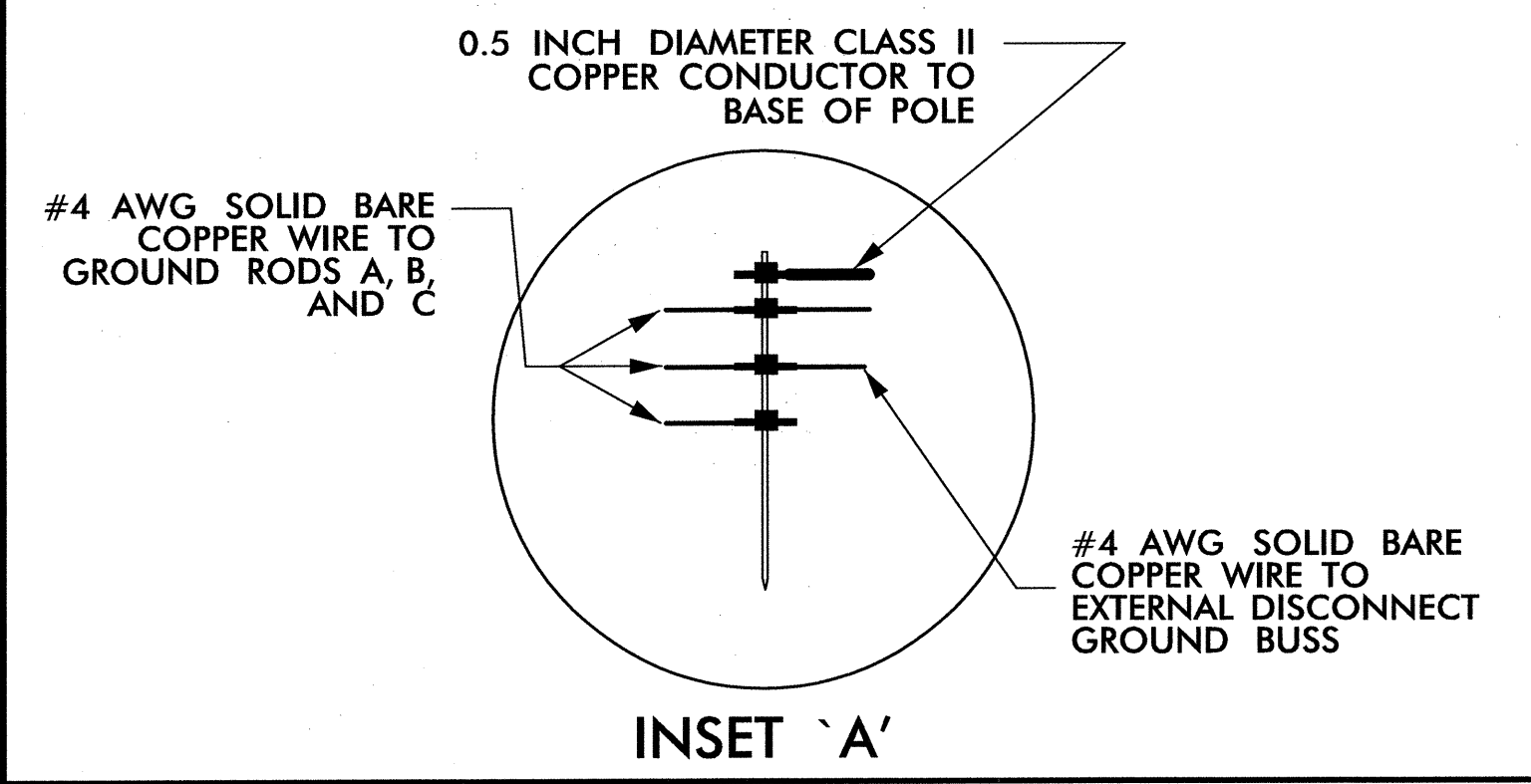
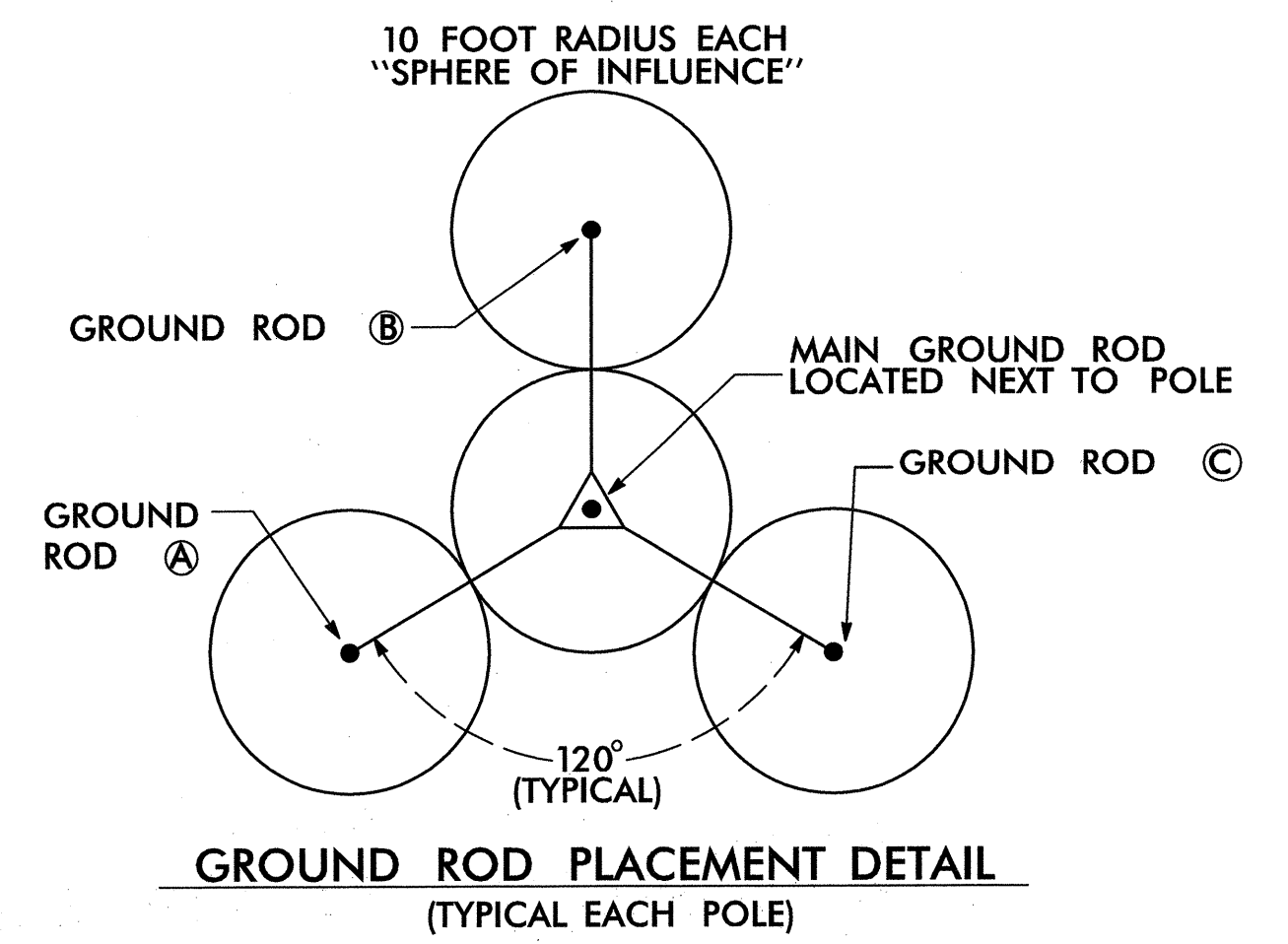
DIVISION 10 CABARRUS CO. CONCORD  
PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK  
PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD

REVISIONS	INIT.	DATE

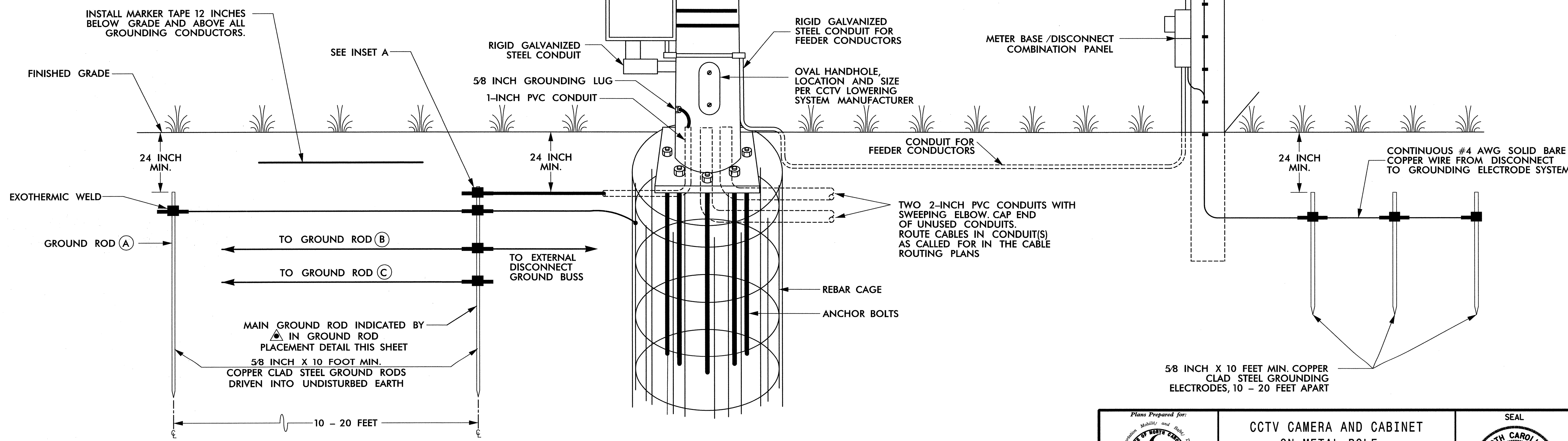
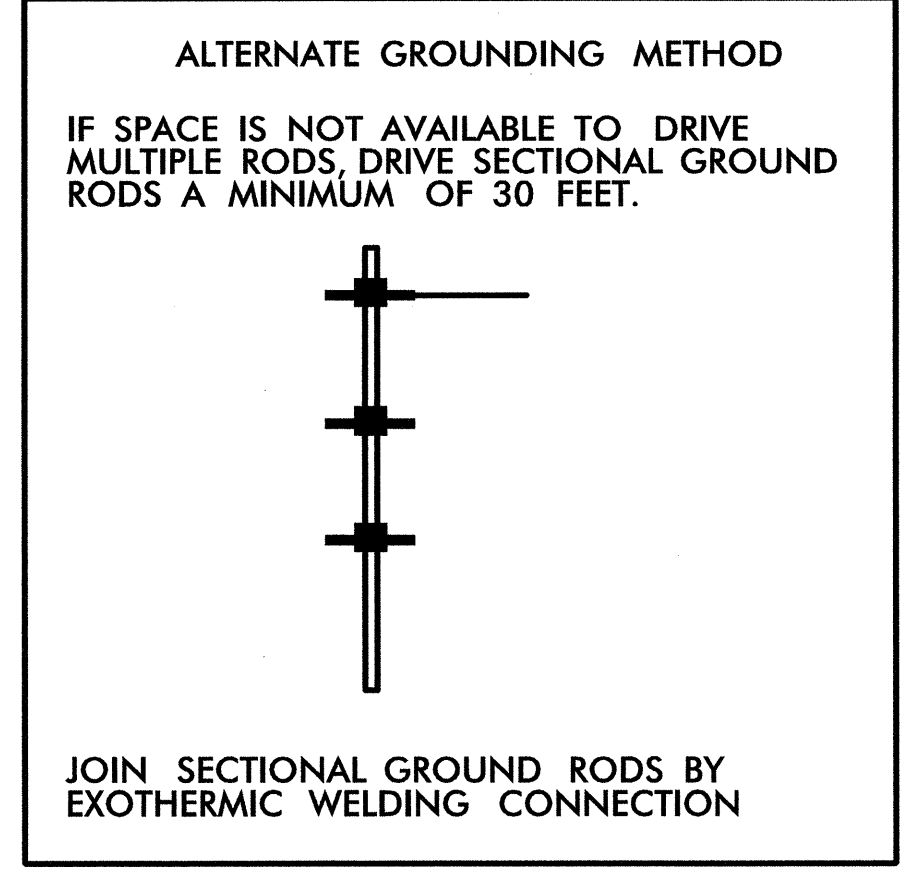


SCALE: NONE  
DATE: 7-11-14  
SIGNATURE: H.L. WINSTEAD  
CADD Filename: I3803BA ITS-43.dgn





- NOTES**
1. BOND 0.5 INCH DIAMETER, 28 STRAND (MINIMUM) CLASS II COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  2. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
  3. BOND #4 AWG SOLID BARE COPPER WIRE TO REBAR CAGE AND THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  4. ENSURE CAMERA HOUSING, CAMERA, AND PAN-TILT UNIT ARE BONDED TO POLE.
  5. REMOVE BONDING JUMPER, IF PRESENT, BETWEEN EQUIPMENT CABINET GROUND BUSS AND NEUTRAL BUSS.
  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 INCHES.

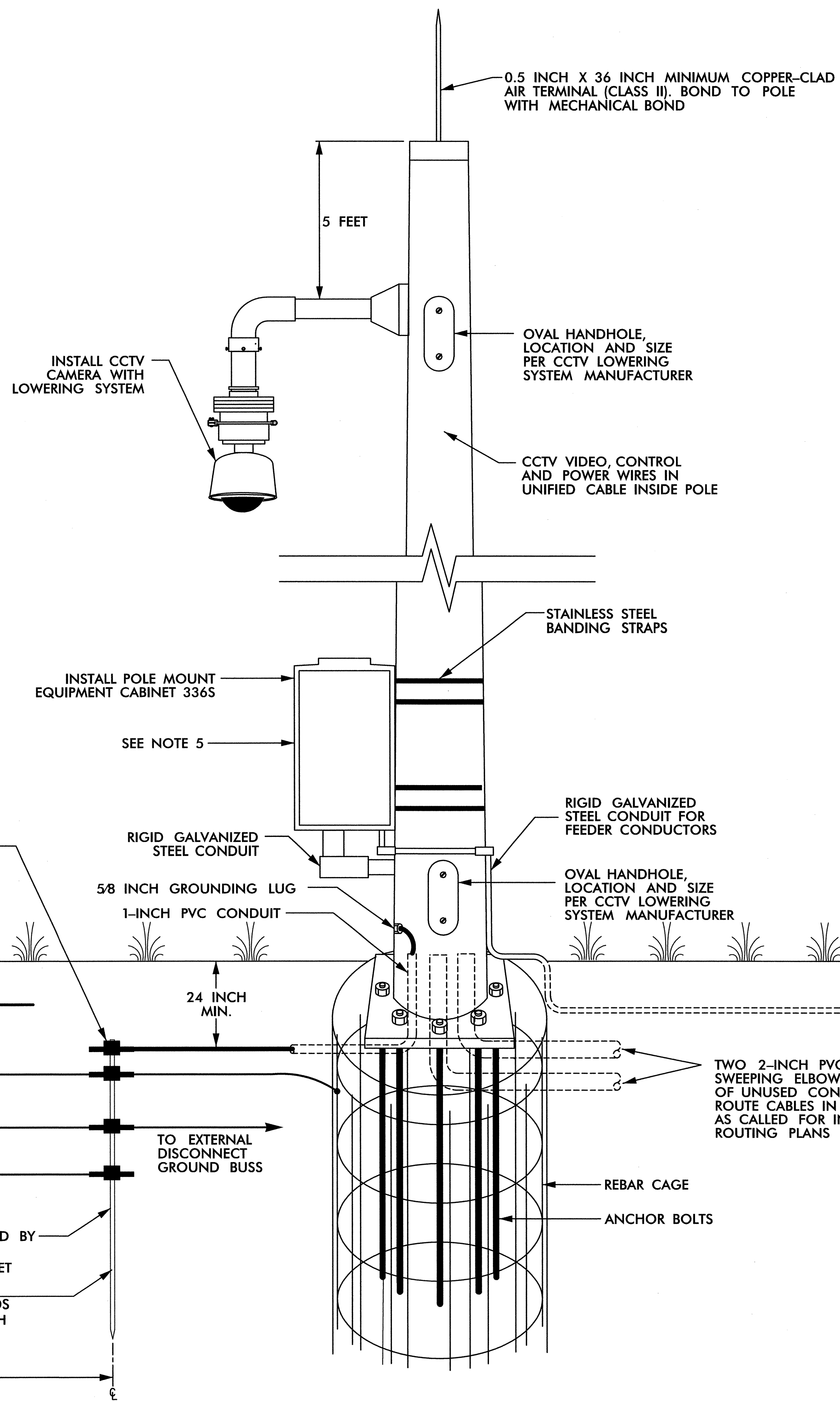
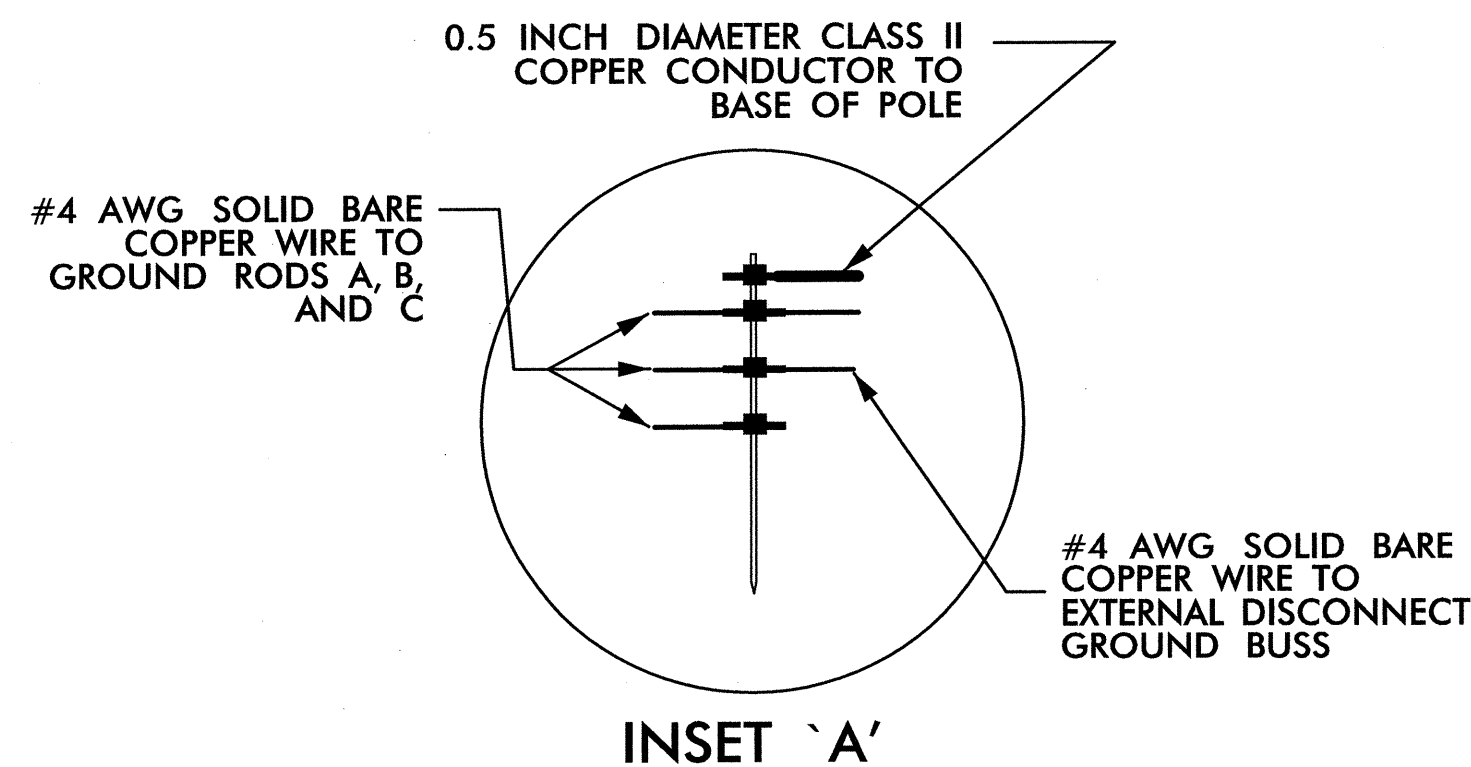
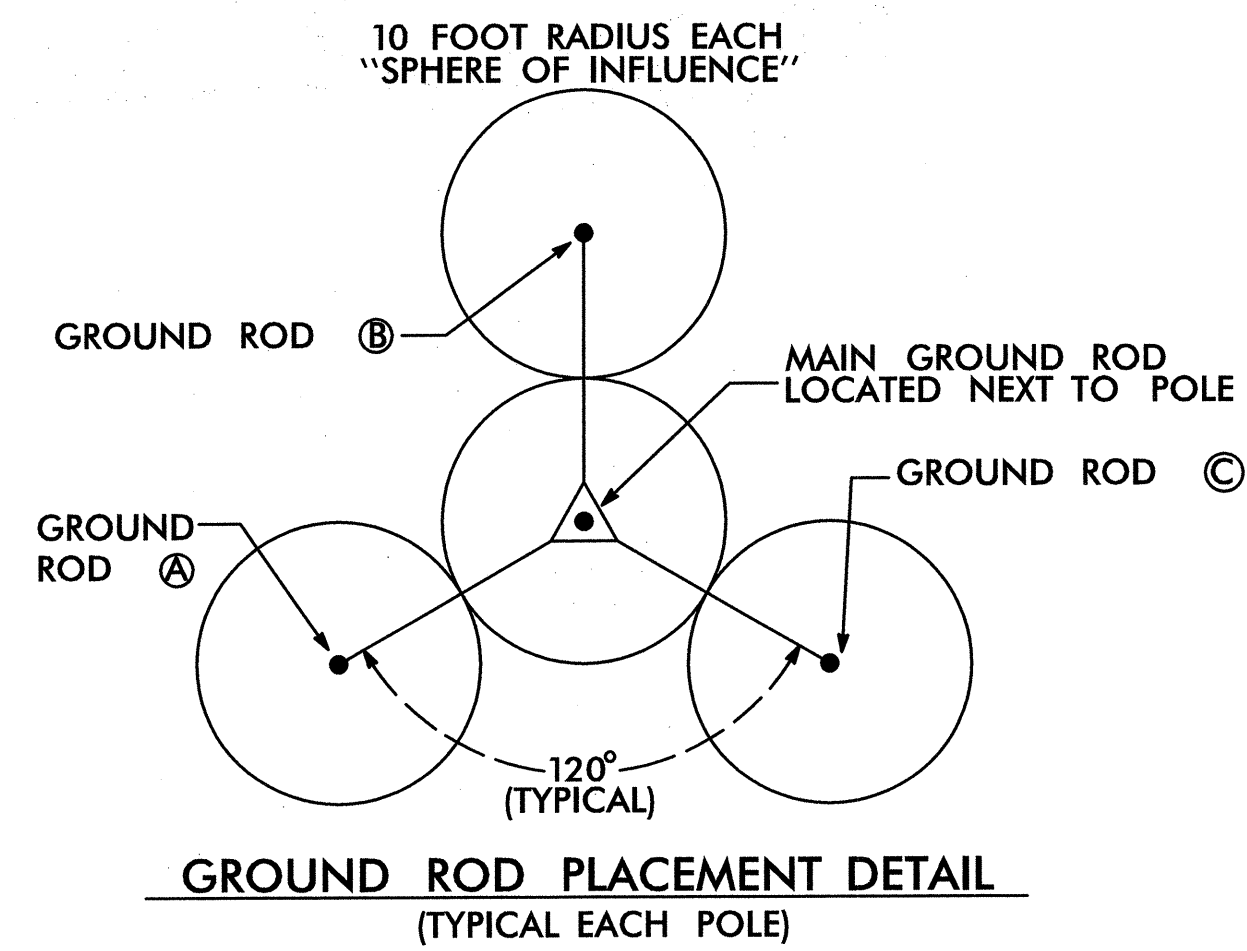


	<b>CCTV CAMERA AND CABINET ON METAL POLE - OVERHEAD SERVICE</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.M. RODEVICK	H.L. WINSTEAD 7-11-14 SIGNATURE DATE
SCALE: NONE	REVISIONS:	INIT.:	DATE:

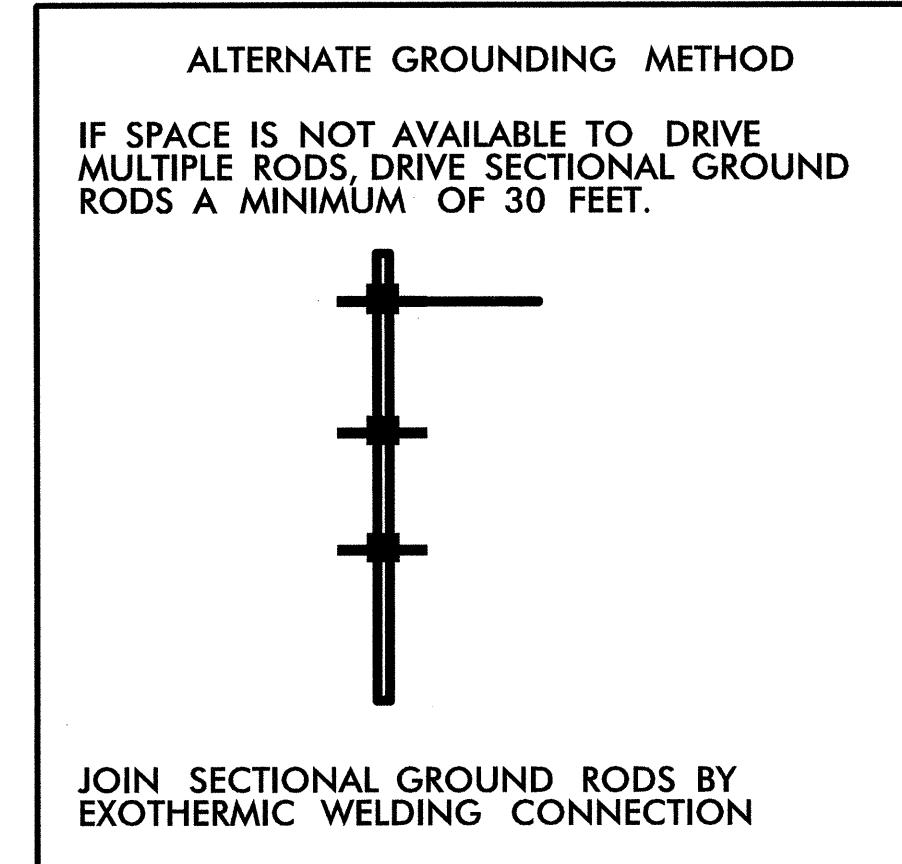
CADD File name: I3803BA ITS-44.dgn

**HNTB** HNTB NORTH CAROLINA, P.C.  
 343 E. Six Forks Road, Suite 200  
 Raleigh, North Carolina 27609  
 NC License No: C-1554





- NOTES**
1. BOND 0.5 INCH DIAMETER, 28 STRAND (MINIMUM) CLASS II COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  2. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
  3. BOND #4 AWG SOLID BARE COPPER WIRE TO REBAR CAGE AND THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD.
  4. ENSURE CAMERA HOUSING, CAMERA, AND PAN -TILT UNIT ARE BONDED TO POLE.
  5. REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUSS AND NEUTRAL BUSS.
  6. 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 - RADIALGROUND RODS.
  7. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12 INCHES.



5/8 INCH X 10 FEET MIN. COPPER CLAD STEEL GROUNDING ELECTRODES, 10 - 20 FEET APART

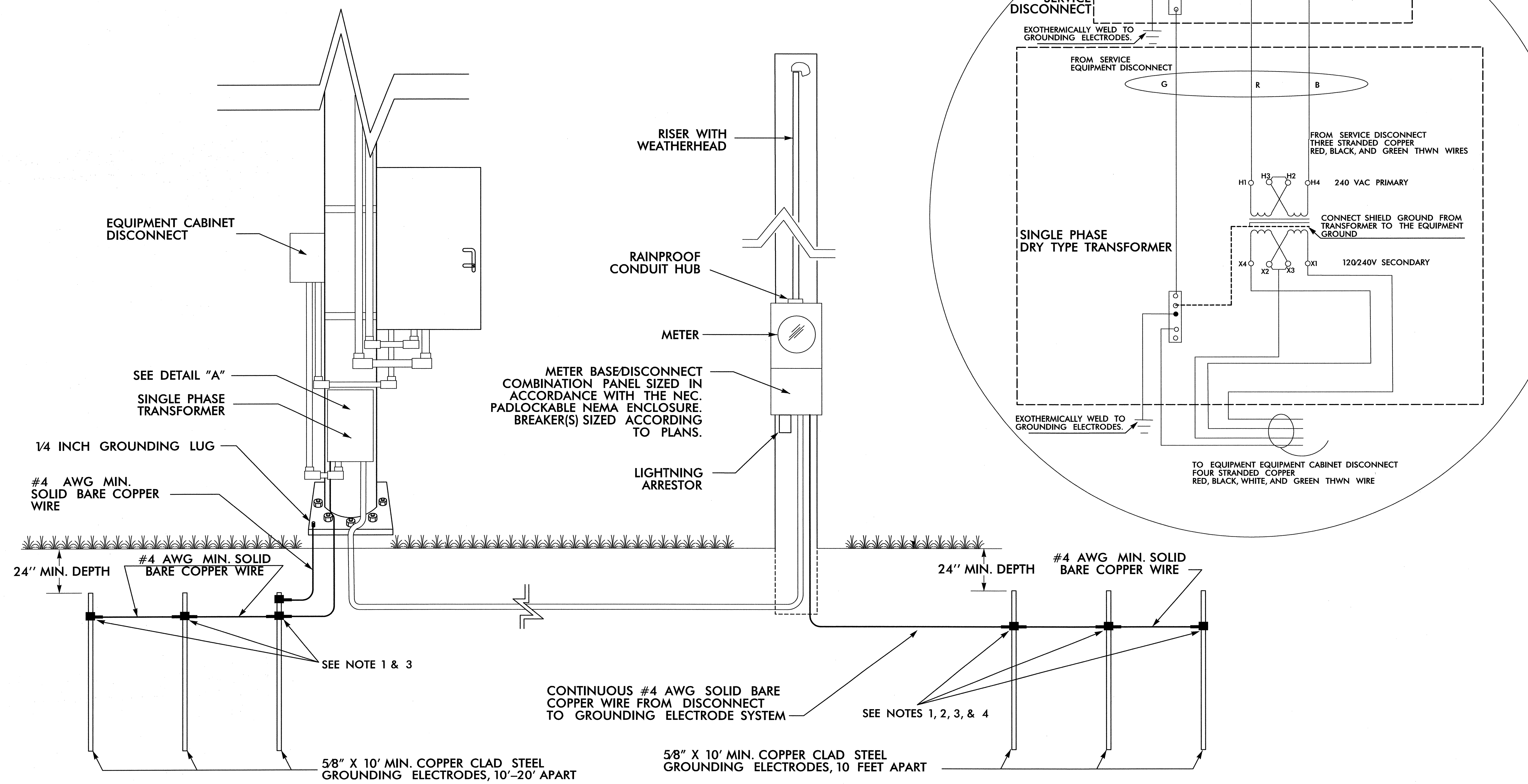
	<b>CCTV CAMERA AND CABINET ON METAL POLE - UNDERGROUND SERVICE</b>		
	DIVISION 10 CABARRUS CO. CONCORD		
SCALE	PLAN DATE: JULY 2014	REVIEWED BY: N.M. RODEVICK	PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD DATE: 7-11-14
NONE	REVISIONS	INIT.	

750 N. Greenfield Pkwy., Garner, NC 27529

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# DETAIL "A"



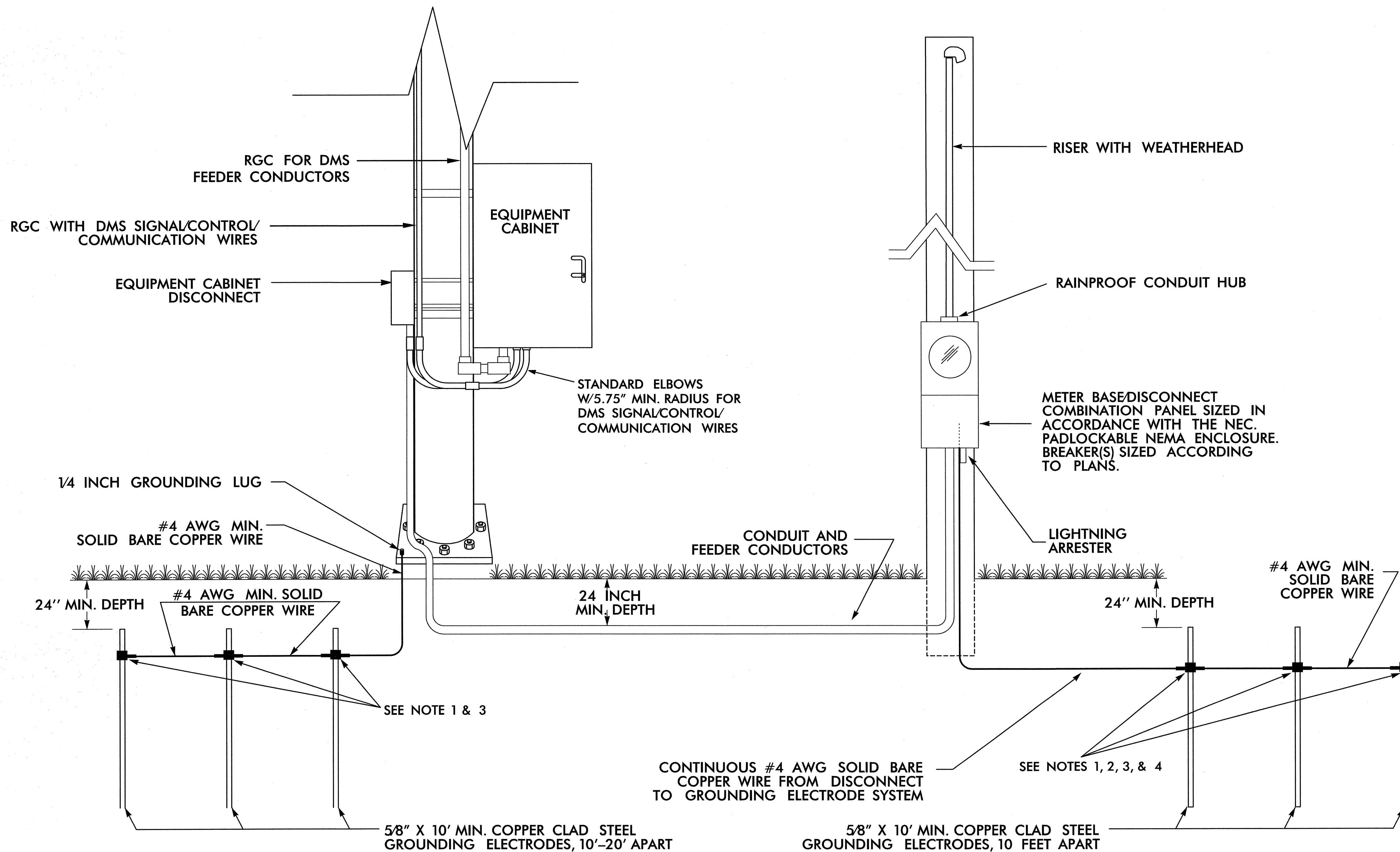
## NOTES

1. INSTALL A MINIMUM OF 3 GROUND RODS 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 SHALL MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUND RODS 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, TRANSFORMER, AND CABINET.
8. ENSURE EQUIPMENT GROUND IS ELECTRICALLY BONDED TO EQUIPMENT CABINET.
9. CONNECTIONS TO ISOLATION TRANSFORMER AS SHOWN IN DETAIL "A" ARE GENERIC.

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	Plans Prepared for: <b>DYNAMIC MESSAGE SIGNS 1 &amp; 4          NEW ELECTRICAL SERVICE AND          GROUNDING DETAIL WITH          ISOLATION TRANSFORMER</b>	
	DIVISION 10 CABARRUS CO. CONCORD PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	
SCALE NONE	REVISIONS _____	INIT. DATE _____
SIGNATURE <i>H.L. Winstead</i>		DATE 7-11-14

CADD File name: I3803BA ITS-46.dgn



**NOTES**

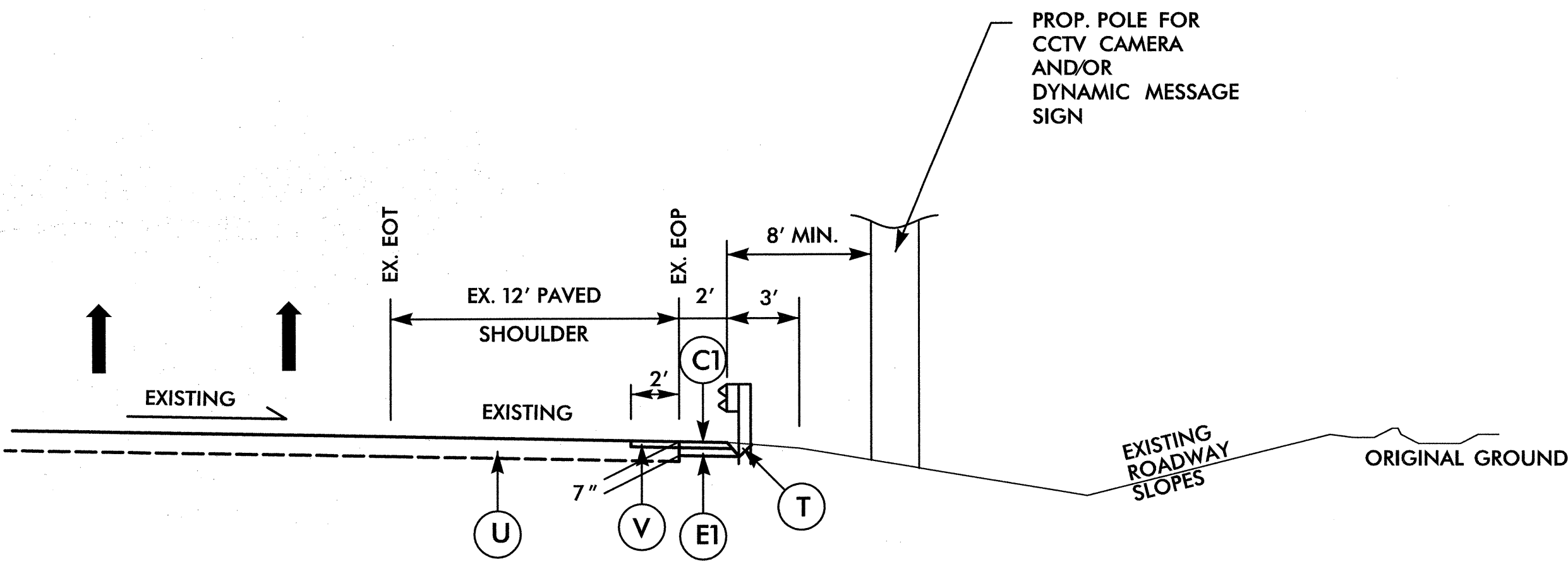
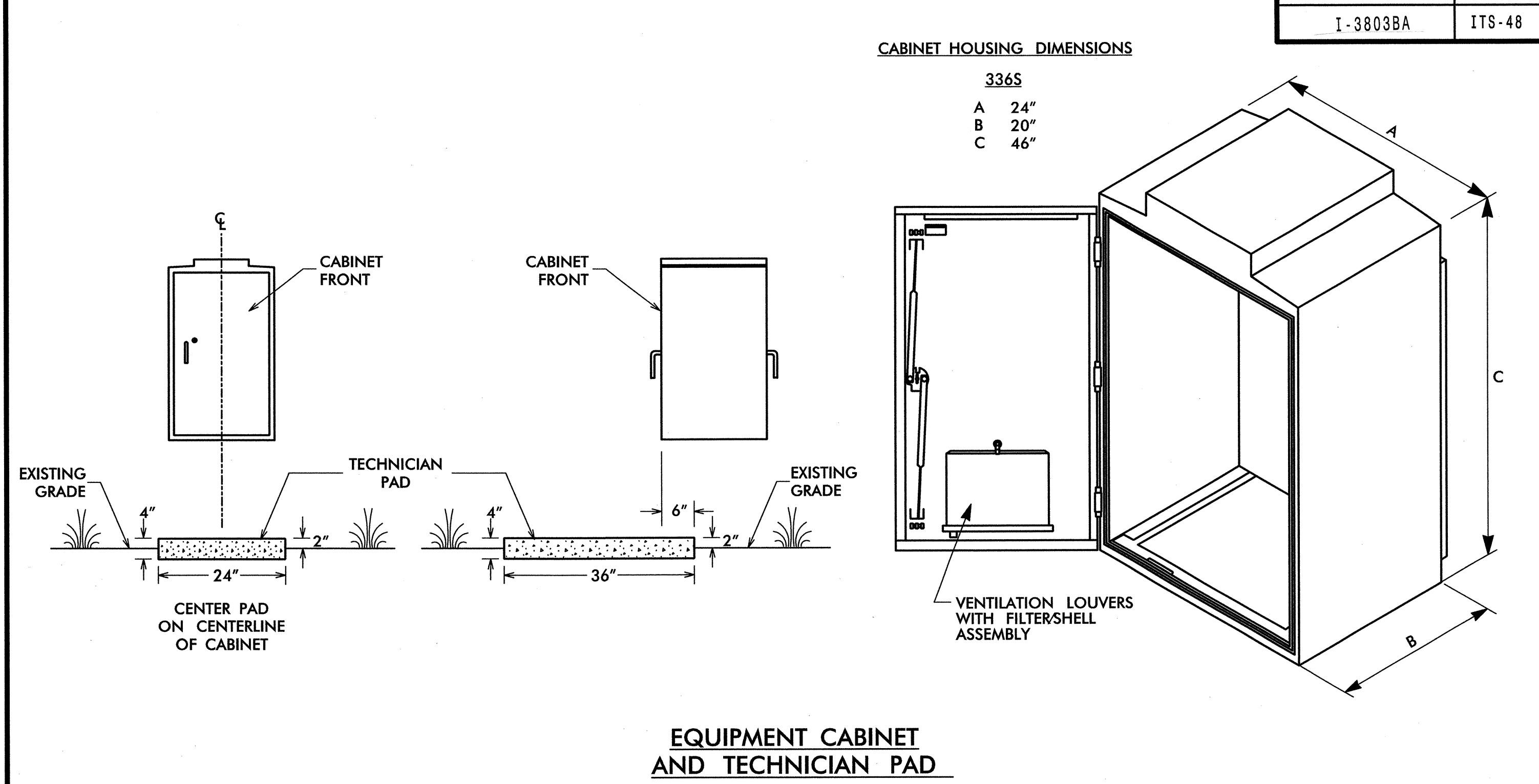
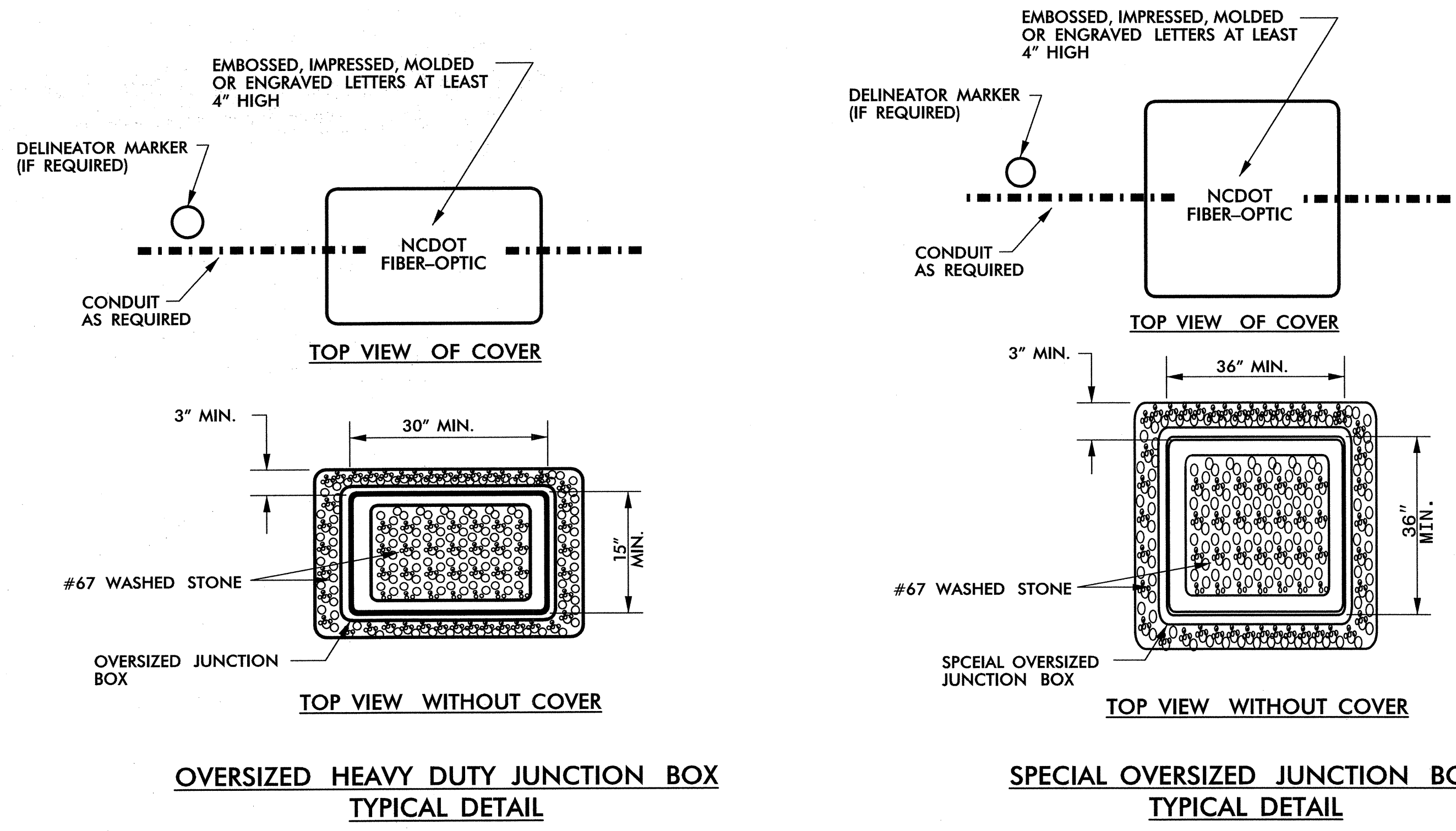
1. INSTALL A MINIMUM OF 3 GROUND RODS SPACED A MINIMUM OF 10 FEET APART. ENSURE THAT EXISTING UNDERGROUND FACILITIES ARE NOT DAMAGED DURING INSTALLATION.
2. TEST GROUNDING SYSTEM USING AN APPROVED METHOD. SYSTEM SHALL MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUND RODS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER TO MEET THIS REQUIREMENT.
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	DYNAMIC MESSAGE SIGN 3 NEW ELECTRICAL SERVICE AND GROUNDING DETAIL		SEAL 
	DIVISION 10 CABARRUS CO. CONCORD		
PLAN DATE: JULY 2014	PREPARED BY: T.R. TERRELL	REVIEWED BY: N.M. RODEVICK	
SCALE: NONE	REVISIONS:	INIT.:	DATE:
			SIGNATURE: <i>H. Winstead</i> 7-11-14 DATE:

CADD File name: I3803BA ITS-47.dgn

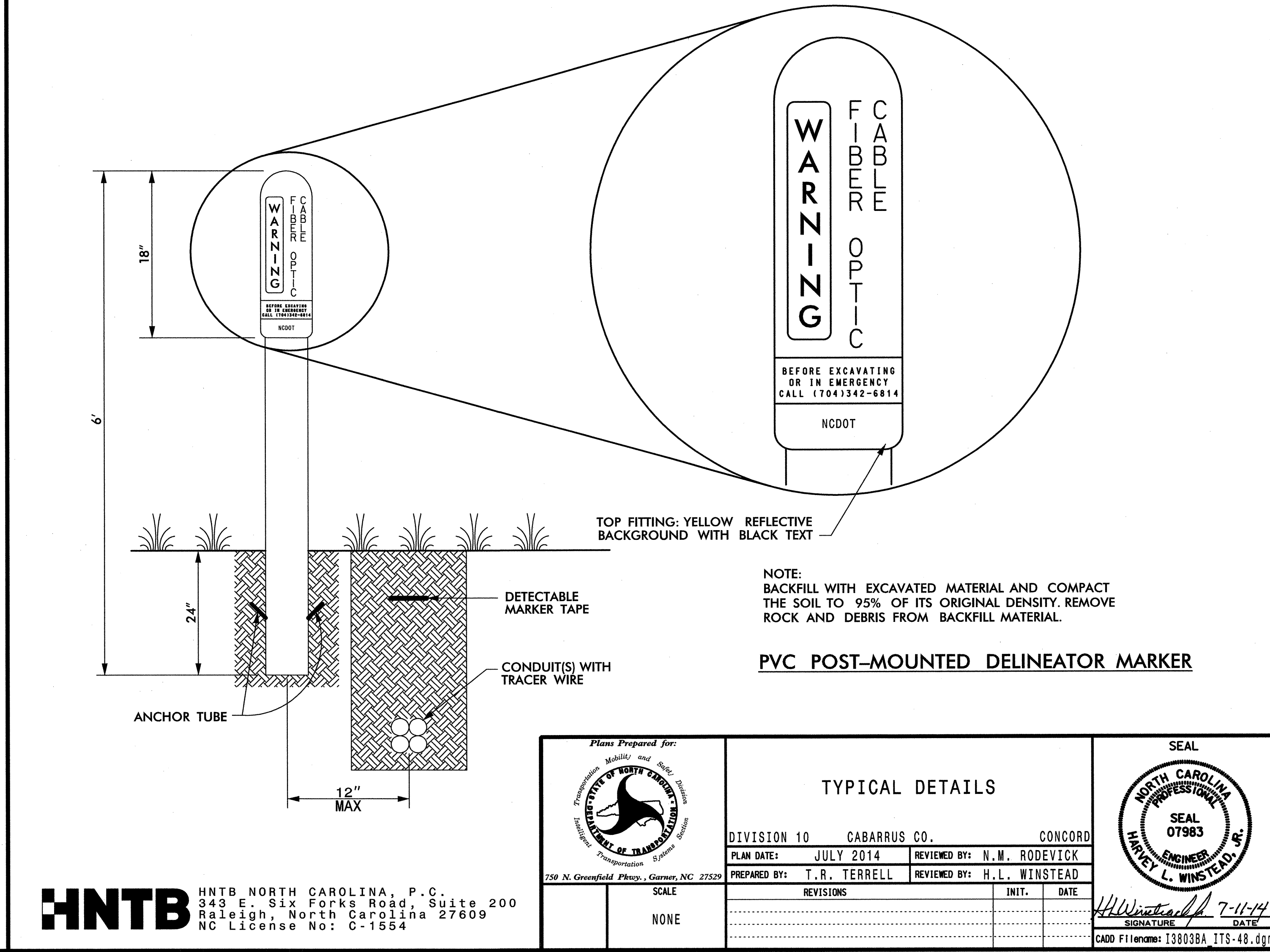
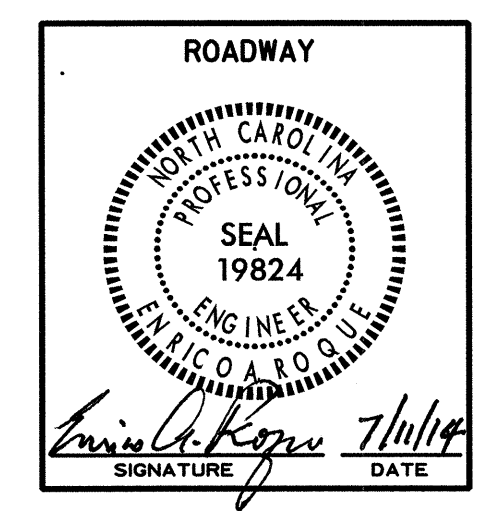




**TYPICAL SECTION 1**  
 -L- STA 136+00 TO STA 138+62.50 RT  
 -L- STA 373+59 TO STA 375+84 RT  
 -L- STA 462+56 TO STA 467+06 LT

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 3" DEPTH.

ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



**PVC POST-MOUNTED DELINEATOR MARKER**

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 Raleigh, North Carolina 27609  
 NC License No: C-1554

Plans Prepared for: 750 N. Greenfield Pkwy., Garner, NC 27529	<b>TYPICAL DETAILS</b>		SEAL H. L. WINSTEAD, JR. ENGINEER
	DIVISION 10 CABARRUS CO. CONCORD PLAN DATE: JULY 2014 REVIEWED BY: N.M. RODEVICK PREPARED BY: T.R. TERRELL REVIEWED BY: H.L. WINSTEAD	SCALE: NONE REVISIONS:	