

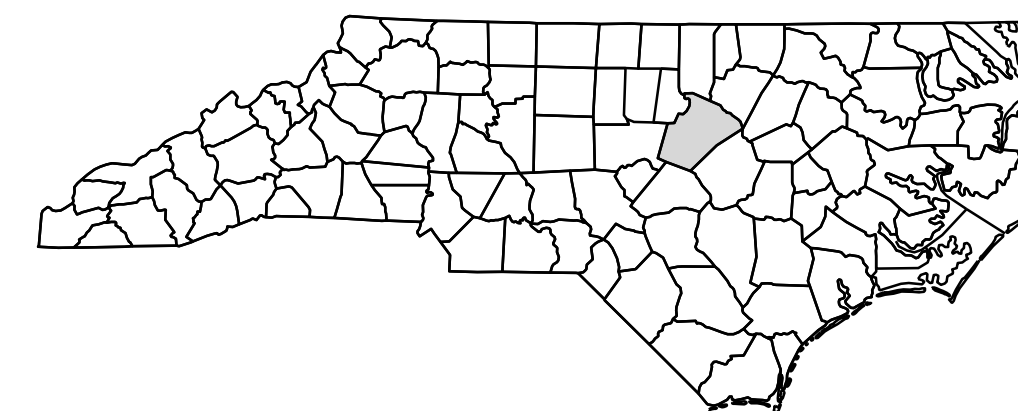
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**ITS PLANS
WAKE COUNTY**

LOCATION: COMPLETE 540 - FROM WEST OF NC55 BYPASS TO EAST OF PIERCE OLIVE ROAD (SR 1389)

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2721A	1	85
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
37673.3.GV3	(A) NHP-0540(041)	PE, R/W	

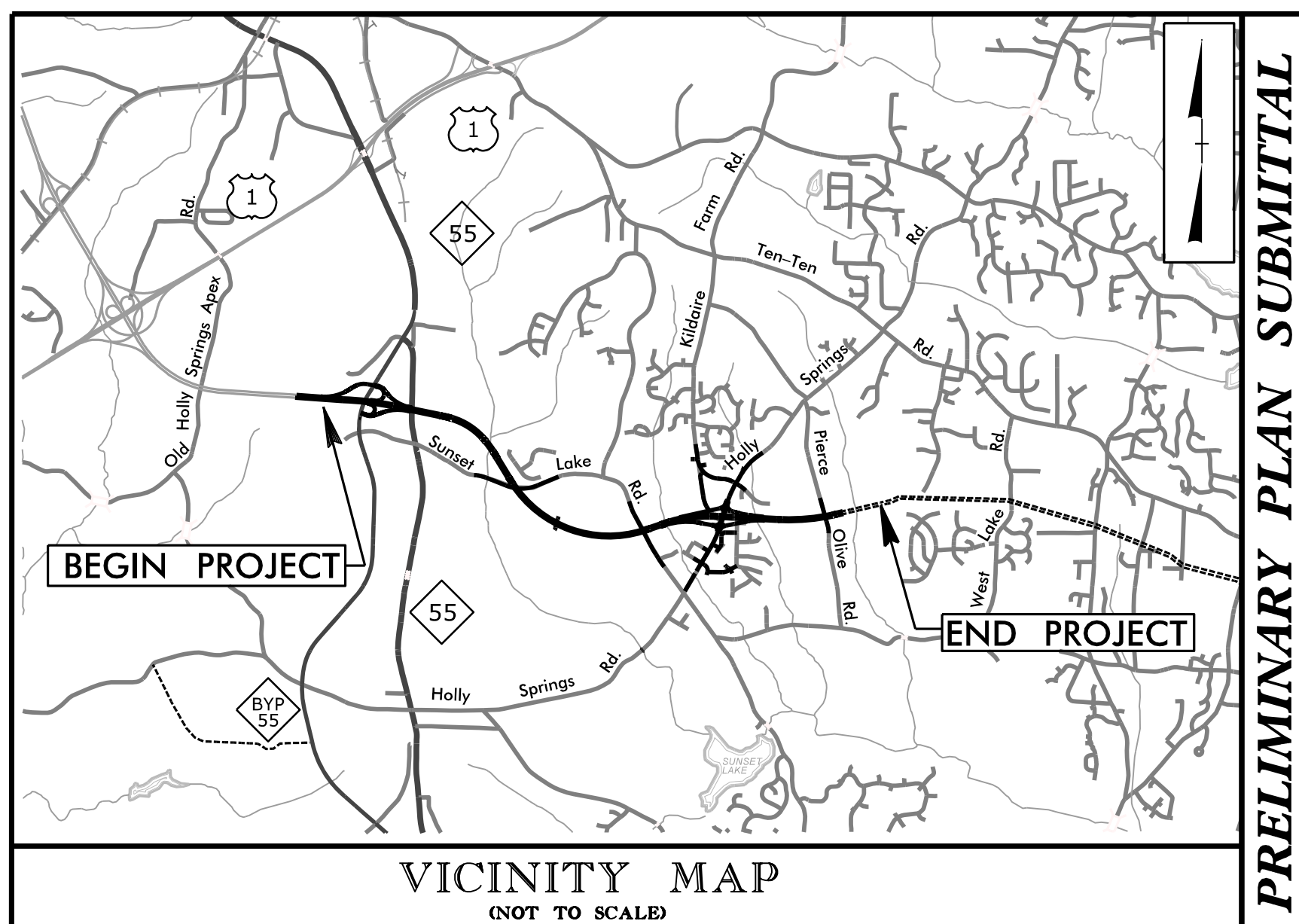


**RFC ITS PLANS
SUBMITTAL # A-152-R1
JANUARY 20, 2021**

**INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
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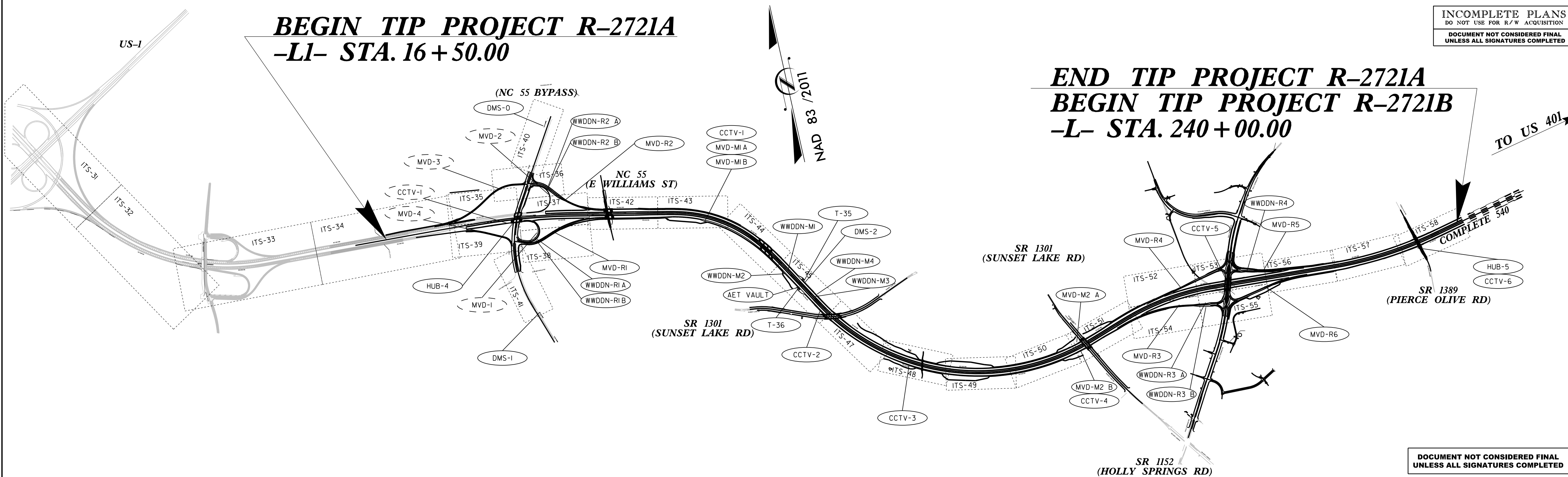
TIP PROJECT: R-2721A

CONTRACT: C204196



**BEGIN TIP PROJECT R-2721A
-L1- STA. 16+50.00**

**END TIP PROJECT R-2721A
BEGIN TIP PROJECT R-2721B
-L- STA. 240+00.00**



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UNLESS ALL SIGNATURES COMPLETED**

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY:

Gannett Fleming
Excellence Delivered As Promised

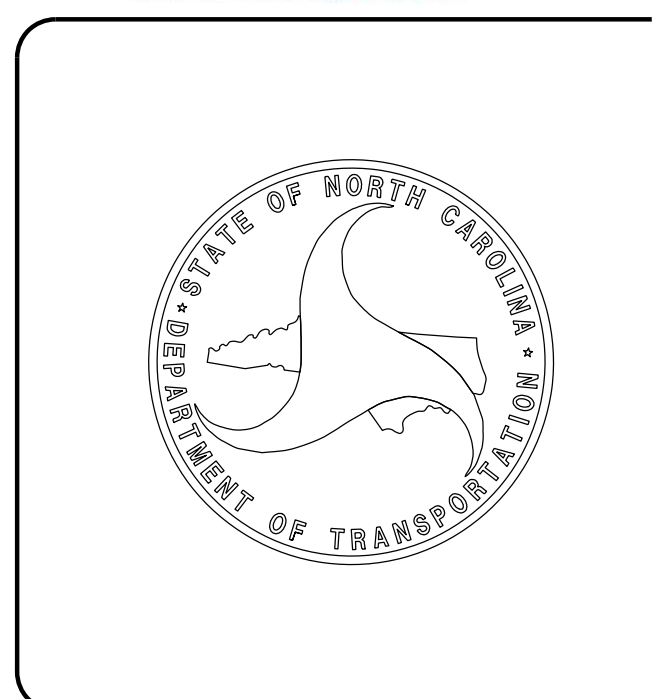
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7600
NC Lic. No. P-4270

SEAL

Anthony M. Barretto

SIGNATURE _____ DATE 01/20/2021

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**SEE SHEET ITS-02 FOR
INDEX OF SHEETS**

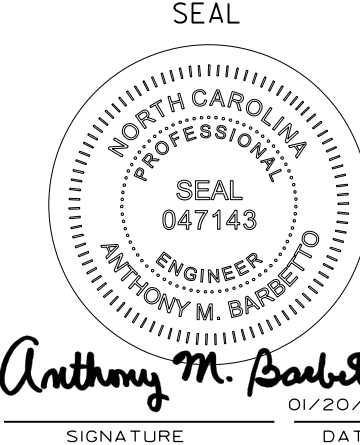

SHEET NUMBER	SHEET NAME
ITS-01	TITLE SHEET (PROJECT OVERVIEW, TOC VICINITY MAP, CONTACT INFO)
ITS-02	INDEX OF SHEETS
ITS-03	EQUIPMENT INSTALLATION SUMMARY
ITS-04	CONSTRUCTION NOTES
ITS-05	CONSTRUCTION NOTES AND LEGEND
ITS-06	ITS FIBER SCHEMATIC
ITS-07	C540 ITS CABLE SPLICING SCHEMATIC
ITS-08 THROUGH ITS-18	ITS SPLICING DETAILS
ITS-19	TOLLING FIBER SCHEMATIC
ITS-20 THROUGH ITS-25	TOLLING SPLICING DETAILS
ITS-26	ITS/TOLLING AET JUNCTION BOX
ITS-27	AET VAULT SPLICING
ITS-28 THROUGH ITS-30	ITS POWER BLOCK DIAGRAM
ITS-31 THROUGH ITS-45	ITS AND TOLLING CABLE & CONDUIT PLANS
ITS-46	TOLL ZONE POWER AND ITS COMMUNICATIONS DETAIL
ITS-47 THROUGH ITS-58	ITS AND TOLLING CABLE & CONDUIT PLANS
ITS-59	DUAL MVD SENSOR DETAIL
ITS-60	JUNCTION BOX CONCRETE APRON DETAIL
ITS-61	W-2A RAMP WWDDN DETAIL
ITS-62	W-2B RAMP WWDDN DETAIL
ITS-63	TRANSFORMER DETAIL
ITS-64 THROUGH ITS-85	ITS STANDARD DETAILS

1/18/2021
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 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered *As Promised* NC Lic. No. F-0270

Prepared in the Offices of:		 SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARRETTO 047143	
			
INDEX OF SHEETS			
DIVISION 05		WAKE COUNTY	RALEIGH
PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARRETTO		
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY		
SCALE	REVISIONS	INIT.	DATE
NO SCALE			
SIGNATURE		DATE	
Anthony M. Barretto		01/20/2021	

EQUIPMENT INSTALLATION SUMMARY

Name	DMS Type	MVD Type	WWDDN Type	Base Line	Station	Offset	Lowering Device	Pole Height	Mounting Height	NCTA Asset Number	Sheet Number
DMS-0	TYPE A			Y1	57+00	74' LT				41-XXXX	ITS-40
DMS-1	TYPE A			Y1	16+80	67' RT				41-XXXX	ITS-41
HUB-4				Y1	35+95	69' LT				41-XXXX	ITS-39
MVD-R1		RAMP		Y1RPBREV	21+43	21' RT		20'	15'	41-XXXX	ITS-38
MVD-R2		RAMP		Y1RPCREV	19+22	23' LT		20'	15'	41-XXXX	ITS-37
WWDDN-R1 A			RAMP	Y1LPBREV	17+52	30' RT				41-XXXX	ITS-38
WWDDN-R1 B			RAMP	Y1LPBREV	17+52	13' LT				41-XXXX	ITS-38
WWDDN-R2 A			RAMP	Y1RPCREV	23+50	32' RT				41-XXXX	ITS-36
WWDDN-R2 B			RAMP	Y1RPCREV	23+50	31' LT				41-XXXX	ITS-36
CCTV-1				LREV	69+91	101' LT	Yes	50'	50'	41-XXXX	ITS-43
MVD-M1 A		MAINLINE		LREV	69+91	101' RT		40'	39'	41-XXXX	ITS-43
MVD-M1 B	29'		41-XXXX						ITS-43		
WWDDN-M1 A			MAINLINE	L	90+50	17' RT				41-XXXX	ITS-45
WWDDN-M1 B			MAINLINE	L	90+50	97' RT				41-XXXX	ITS-45
AET Vault				L	94+30	105' RT				41-XXXX	ITS-45
DMS-2	TYPE B			L	94+57	50' LT				41-XXXX	ITS-45
WWDDN-M2 A			MAINLINE	L	98+00	14' LT				41-XXXX	ITS-45
WWDDN-M2 B			MAINLINE	L	98+00	88' LT				41-XXXX	ITS-45
CCTV-2				L	100+85	101' RT	Yes	50'	50'	41-XXXX	ITS-45
CCTV-3				L	122+03	101' RT	Yes	50'	50'	41-XXXX	ITS-48
MVD-M2 A		MAINLINE		L	157+67	74' LT		40'	33'	41-XXXX	ITS-51
MVD-M2 B		MAINLINE		L	157+57	93' RT		30'	29'	41-XXXX	ITS-51
CCTV-4				L	159+06	160' RT	Yes	50'	50'	41-XXXX	ITS-51
MVD-R3		RAMP		Y5RPC	23+61	25' LT		20'	18'	41-XXXX	ITS-54
MVD-R4		RAMP		Y5RPB	17+57	23' RT		20'	15'	41-XXXX	ITS-52
WWDDN-R3 A			RAMP	Y5RPC	28+17	23' LT				41-XXXX	ITS-55
WWDDN-R3 B			RAMP	Y5RPC	28+17	34' RT				41-XXXX	ITS-53
CCTV-5				L	190+84	146' LT	Yes	50'	50'	41-XXXX	ITS-53
WWDDN-R4			RAMP	Y5RPA	20+00	26' LT				41-XXXX	ITS-53
MVD-R5		RAMP		Y5RPA	18+44	27' LT		20'	18'	41-XXXX	ITS-53
MVD-R6		RAMP		Y5RPD	19+12	23' RT		20'	18'	41-XXXX	ITS-55
HUB-5				L	230+67	115' RT				41-XXXX	ITS-58
CCTV-6				L	230+91	152' RT	Yes	50'	50'	41-XXXX	ITS-58

NOTES:

1. TRACER WIRE SHALL BE INSTALLED WITH ALL COMMUNICATIONS CABLE INCLUDING COMMUNICATIONS CABLES TO AET/ITS DEVICES.
2. WHEN SLACK INSTALLATION IS SHOWN, SLACK IS REQUIRED FOR EACH INDIVIDUAL FIBER OPTIC CABLE.
3. MOUNTING HEIGHTS PROVIDED ARE APPROXIMATE. FINAL MOUNTING HEIGHTS TO BE DETERMINED BY MANUFACTURER SELECTED EQUIPMENT.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


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PLANS PREPARED BY:

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 Suite 900
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 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:



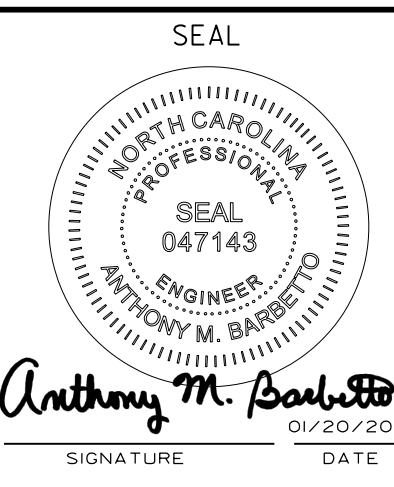
EQUIPMENT INSTALLATION SUMMARY

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE


 ANTHONY M. BARRETTO
 ENGINEER
 047143
 01/20/2021

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH N.C, DATED JANUARY, 2018, ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS.

STD.NO	TITLE
1101.01	WORK ZONE ADVANCED WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESS
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES-TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION - REFLECTIVE END TREATMENT
1165.01	TRUCK MOUNTED ATTENUATOR - DELINEATION
1180.01	SKINNY DRUM
1700.01	ELECTRICAL SERVICE OPTIONS
1700.02	ELECTRICAL SERVICE GROUNDING
1715.01	UNDERGROUND CONDUIT - TRENCHING
1716.01	JUNCTION BOXES
1720.01	WOOD POLES
1721.01	GUY ASSEMBLIES
1743.03	PEDESTALS - HEAVY DUTY TYPE III
1743.04	PEDESTALS - FOUNDATIONS

OTHER STANDARD DRAWINGS

THE FOLLOWING STANDARDS AS APPEAR IN "ITS STANDARD DETAILS" - N.C. TURNPIKE AUTHORITY - RALEIGH N.C, DATED MAY, 2018, ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS.

STD.NO	TITLE
V-1	CCTV- BLOCK DIAGRAM
V-2	CCTV- STEEL POLE
V-3	CCTV- POLE GROUNDING
V-4	CCTV- POLE-MOUNTED CABINET
V-5	CCTV- CAMERA LOWERING DEVICE
V-6	CCTV- CABINET LAYOUT
D-1	DMS- BLOCK DIAGRAM
D-2A	DMS- TYPICAL MOUNTING-AET GANTRY STRUCTURE
D-3	DMS- ELECTRICAL SERVICE AND GROUNDING
D-4	DMS- CABINET LAYOUT
M-1	MICROWAVE DETECTION- BLOCK DIAGRAM
M-2	MICROWAVE DETECTION- ELEVATION VIEW
M-3A	MICROWAVE DETECTION- CABINET LAYOUT
M-3B	MICROWAVE DETECTION- CABINET LAYOUT WITH CCTV EQUIPMENT
M-4	MICROWAVE DETECTION- GROUNDING
M-5A	MICROWAVE DETECTION- POLE PLACEMENT
M-5B	MICROWAVE DETECTION- POLE PLACEMENT WITH CCTV EQUIPMENT
M-6	MICROWAVE DETECTION- SENSOR MOUNTING
M-7	MICROWAVE DETECTION- PLACEMENT SCHEMATIC
P-1	POWER SERVICE DETAIL- GROUND-MOUNTED CABINET
P-2	POWER SERVICE DETAIL- POLE-MOUNTED CABINET
W-1	WRONG-WAY DRIVER DETECTION- MAINLINE SIGN INFRASTRUCTURE

GENERAL NOTES

- ALL WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
- LOCATIONS OF DEVICES SHOWN ON THE PLANS ARE APPROXIMATE. FIELD LOCATIONS SHALL BE APPROVED BY NCTA PRIOR TO INSTALLATION.
- PLAN SHEETS HAVE BEEN DEVELOPED AS CLOSE TO SCALE AS POSSIBLE. ACTUAL FIELD CONDITIONS MAY VARY AND SHALL PROVIDE THE BASIS OF INSTALLATION OF THE WORK SHOWN WITHIN THE PLANS.
- EXISTING UNDERGROUND PIPELINES, STORM SEWERS, POWER AND COMMUNICATIONS CABLES AND OTHER PUBLICLY AND PRIVATELY OWNED UTILITIES, EASEMENTS AND OTHER UNDERGROUND OBSTRUCTIONS ADJACENT TO AND WITHIN THE LIMITS OF THE PROJECT SHOWN WITHIN THESE PLANS ARE APPROXIMATE AND NOT CONSIDERED COMPLETE. THE LOCATIONS OF ALL UNDERGROUND PRIVATE AND PUBLIC UTILITIES SHALL BE INVESTIGATED BY THE CONTRACTOR. CALL 811 (1-800-632-4949) OR VISIT WWW.NC811.ORG PRIOR TO THE START OF ANY EXCAVATION.
- COORDINATE WITH THE OWNER OF ANY UTILITY FACILITY AFFECTED BY THE CONTRACTOR'S WORK ACTIVITIES. THE CONTRACTOR SHALL FOLLOW THE PROCEDURES OF THE UTILITY OWNER.
- STANDARD SIZED JUNCTION BOXES SHALL BE PLACED APPROXIMATELY 300 FEET APART UNLESS OTHERWISE NOTED ON THE PLANS. OVERSIZED JUNCTION BOXES SHALL BE PLACED APPROXIMATELY 1500 FEET APART UNLESS OTHERWISE NOTED ON THE PLANS. SPECIAL OVERSIZED JUNCTION BOXES SHALL BE USED AT EVERY SPLICE LOCATION AND AS SHOWN ON THE PLANS.
- A COMMUNICATIONS DUCTBANK CONSISTING OF FOUR (4) CONDUITS SHALL BE INSTALLED ALONG THE NEW MAINLINE THROUGHOUT PROJECT LIMITS. NCTA AND NCDOT ITS FIBER TRUNK LINES SHALL BE INSTALLED WITHIN THE SAME CONDUIT. A SEPARATE CONDUIT SHALL BE USED FOR THE INSTALLATION OF THE TOLLING FIBER TRUNK LINE. TWO CONDUITS SHALL REMAIN EMPTY AS SPARES. FOLLOW THE COLOR CODING BELOW FOR CONDUIT INSTALLATION. CONDUIT ROUTING FROM TRUNK LINE SHALL FOLLOW COLOR CODE BASED ON CABLES IN CONDUIT AS SHOWN ON THE PLAN SHEETS.
- CONDUIT AND JUNCTION BOX LOCATIONS SHOWN ON THE PLANS ARE DIAGRAMMATIC IN NATURE AND APPROXIMATE. CONTRACTOR SHALL DETERMINE FINAL CONDUIT AND JUNCTION BOX LOCATIONS BASED ON FIELD CONDITIONS. CONDUITS AND JUNCTION BOXES SHALL BE LOCATED IN A MANNER THAT AVOIDS CONFLICTS WITH ALL EXISTING AND PROPOSED FEATURES.
- ELECTRICAL SERVICE POINTS AND CONDUCTORS SHOWN ARE DIAGRAMMATIC IN NATURE AND HAVE NOT BEEN FULLY ACCEPTED BY THE ELECTRIC UTILITY. COORDINATE FINAL LOCATIONS WITH THE ELECTRIC UTILITY. DOCUMENT ANY CHANGES ON AS-BUILT DRAWINGS. INSTALL SERVICE WIRES FROM METER/DISCONNECT EITHER DIRECTLY TO THE ITS CABINET, OR TO A SECOND EQUIPMENT DISCONNECT AND THEN TO THE ITS CABINET, AS SHOWN ON THE PLANS.
- THE CONTRACTOR HAS THE OPTION TO INSTALL CONDUIT WITHIN TRENCH IN LIEU OF DIRECTIONAL BORING AT PERPENDICULAR ROAD CROSSINGS OR UNDERNEATH RAMP LOCATIONS IF INSTALLATION IS PERFORMED BEFORE THE NEW ROADWAY PAVEMENT IS INSTALLED.
- CCTV, MVD AND WDDN DEVICES ARE TO BE FURNISHED, INSTALLED, CONFIGURED AND INTEGRATED BY THE TOLL SYSTEM INTEGRATOR (TSI). CONTRACTOR SHALL SUPPLY ITS CABINETS AND CONNECTING UNDERGROUND INFRASTRUCTURE, POWER AND COMMUNICATIONS CABLES TO SUPPORT THE CCTV(S) AND MVD(S). CONTRACTOR SHALL SUPPLY UNDERGROUND INFRASTRUCTURE AND COMMUNICATIONS DROP CABLES TO RAMP WDDN DEVICES. TSI SHALL SUPPLY POWER TO ALL WDDN PEDESTALS AT RAMP LOCATIONS, AND DEVICE CABLES FROM CABINETS TO ALL TSI-FURNISHED DEVICES. ETHERNET SWITCHES SHALL BE FURNISHED AND CONFIGURED BY NCDOT AND INSTALLED BY THE CONTRACTOR.
- BOND TRACER WIRE TO EQUIPMENT GROUND BUS AT DEVICE LOCATIONS SHOWN ON THE PLANS.
- IF CONDUIT RISERS ARE USED ON WOOD UTILITY POLES, BOND RISER AND MESSENGER CABLE TO POLE.
- REEL-TO-REEL SPLICES OF FIBER OPTIC CABLES ARE NOT SHOWN ON THE PLANS. IF A REEL-TO-REEL SPLICE IS REQUIRED, INSTALL SPECIAL OVERSIZED JUNCTION BOX AND UNDERGROUND SPLICE ENCLOSURE FOR SPLICE. DOCUMENT LOCATIONS OF REEL-TO-REEL SPLICES ON AS-BUILT DRAWINGS. CONTRACTOR SHALL MAKE EFFORTS TO MINIMIZE REEL-TO-REEL SPLICES.
- FLEXIBLE DELINEATOR POSTS SHALL NOT BE INSTALLED TO MARK JUNCTION BOX LOCATIONS ALONG NCTA RIGHT-OF-WAY. FLEXIBLE DELINEATOR POSTS SHALL BE INSTALLED TO MARK COMMUNICATIONS JUNCTION BOX LOCATIONS ALONG NCDOT RIGHT-OF-WAY. SEE PLANS FOR ADDITIONAL DETAILS.
- SEE AET LOCATION AND LAYOUT PLANS, AET VAULT PLANS AND TOLL GANTRY PLANS FOR ADDITIONAL DETAILS.
- COORDINATE WITH OTHER DESIGN TEAMS FOR THE TRANSITION OF FIBER OPTIC CABLES FROM THE R-2721A SECTION TO THE R-2721B SECTION MATCHLINE AT THE END OF R-2721A PROJECT LIMITS. COORDINATE WITH R-2721B AND R-2828 PROJECT TEAMS TO ENSURE OVERALL NETWORK COMMUNICATIONS AND AS NECESSARY THROUGHOUT THE DURATION OF THE PROJECT.
- CONTRACTOR SHALL COORDINATE WITH THE ITS DEVICE MANUFACTURERS FOR THE SELECTION OF ITS DEVICE CABLES REQUIRED FOR DBT-FURNISHED ITS DEVICES. CONTRACTOR SHALL MAKE THEMSELVES AVAILABLE TO COORDINATE WITH THE TSI WHERE DBT IS REQUIRED TO ESTABLISH NETWORK COMMUNICATIONS FOR TSI-FURNISHED DEVICES.
- WHERE ITS AND TOLL FIBER BOXES ARE ADJACENT, MARK THE "TOLLS" JUNCTION BOX WITH A BLUE PLASTIC DISC SIMILARLY IN SIZE AND MATERIAL TO THOSE USED AT OTHER SUCH BOXES ON NCTA FACILITIES.
- MVD DEVICES ARE LABELED WITH AN "A" AND "B" DESIGNATION; "A" IS FOR MVD(S) CAPTURING TRAFFIC IN THE EASTBOUND DIRECTION. "B" IS FOR MVD(S) CAPTURING TRAFFIC IN THE WESTBOUND DIRECTION.


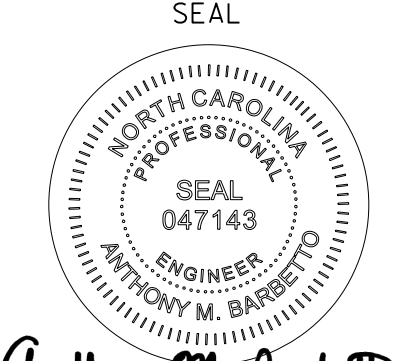


ABBREVIATIONS

AET	ALL-ELECTRONIC TOLLING
AVC	AUTOMATIC VEHICLE CLASSIFICATION
AVI	AUTOMATIC VEHICLE IDENTIFICATION
C	CONDUIT
CCTV	CLOSED-CIRCUIT TELEVISION
C/L	CENTERLINE
DMS	DYNAMIC MESSAGE SIGN
ELEC	ELECTRIC
EOP	EDGE OF PAVEMENT
ETC	ET CETERA
FO	FIBER OPTIC
FON	FIBER OPTIC NETWORK (INCLUDES CONDUITS, FIBER, BOXES, ETC.)
FT	FEET
GFI	GROUND FAULT INTERRUPTER
ITS	INTELLIGENT TRANSPORTATION SYSTEM
LD	LOWERING DEVICE
LPS	LIGHTING PROTECTION SYSTEM
MIN	MINIMUM
MVD	MICROWAVE VEHICLE DETECTION
NCDOT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
NCTA	NORTH CAROLINA TURNPIKE AUTHORITY
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OH	OVERHEAD
PVC	POLYVINYL CHLORIDE
RFP	REQUEST FOR PROPOSAL
R/W, ROW	RIGHT-OF-WAY
SMFO	SINGLE MODE FIBER OPTIC
SOW	SCOPE OF WORK
SPD	SURGE PROTECTION DEVICE
STA	STATION
TSI	TOLL SYSTEMS INTEGRATOR
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
VDS	VEHICLE DETECTION SYSTEM
WWD	WRONG-WAY DRIVER
WDDN	WRONG-WAY DRIVER DETECTION NOTIFICATION

CONDUIT COLOR CODE

NCTA AND NCDOT ITS CABLE	-BLACK
ITS SPARE	-ORANGE
TOLL CABLE	-BLUE
TOLL SPARE	-WHITE
POWER SERVICE	-GREY

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Prepared in the Offices of:		CONSTRUCTION NOTES		SEAL	
		DIVISION 05 WAKE COUNTY RALEIGH			
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY	SCALE	NO SCALE	INIT.	DATE
				One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270	
				SIGNATURE: <i>Anthony M. Barretto</i> DATE: 01/20/2021	

- 1 INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG
- 2 INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG
- 3 INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG
- 4 INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG
- 5 INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG
- 6 INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG
- 7 INSTALL SMFO CABLE
- 8 INSTALL FIBER OPTIC DROP CABLE
- 9 INSTALL TRACER WIRE
- 10 INSTALL DEVICE CABLE(S)
- 11 TRENCH
- 12 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 13 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 14 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 15 NOT USED
- 16 INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT
- 17 DIRECTIONAL DRILL CONDUIT
- 18 INSTALL CABLE(S) IN EXISTING CONDUIT
- 19 INSTALL CABLE(S) IN NEW CONDUIT
- 20 INSTALL CABLE(S) IN EXISTING RISER
- 21 INSTALL CABLE(S) IN NEW RISER
- 22 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 23 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 24 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG
- 26 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
- 27 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 28 INSTALL BASE MOUNTED SPLICE CABINET
- 29 MODIFY EXISTING SPLICE
- 30 INSTALL ETHERNET SWITCH
- 31 INSTALL CABINET FOUNDATION
- 32 INSTALL BASE MOUNTED CABINET (TYPE 336)
- 33 INSTALL POLE MOUNTED CABINET (TYPE 336)

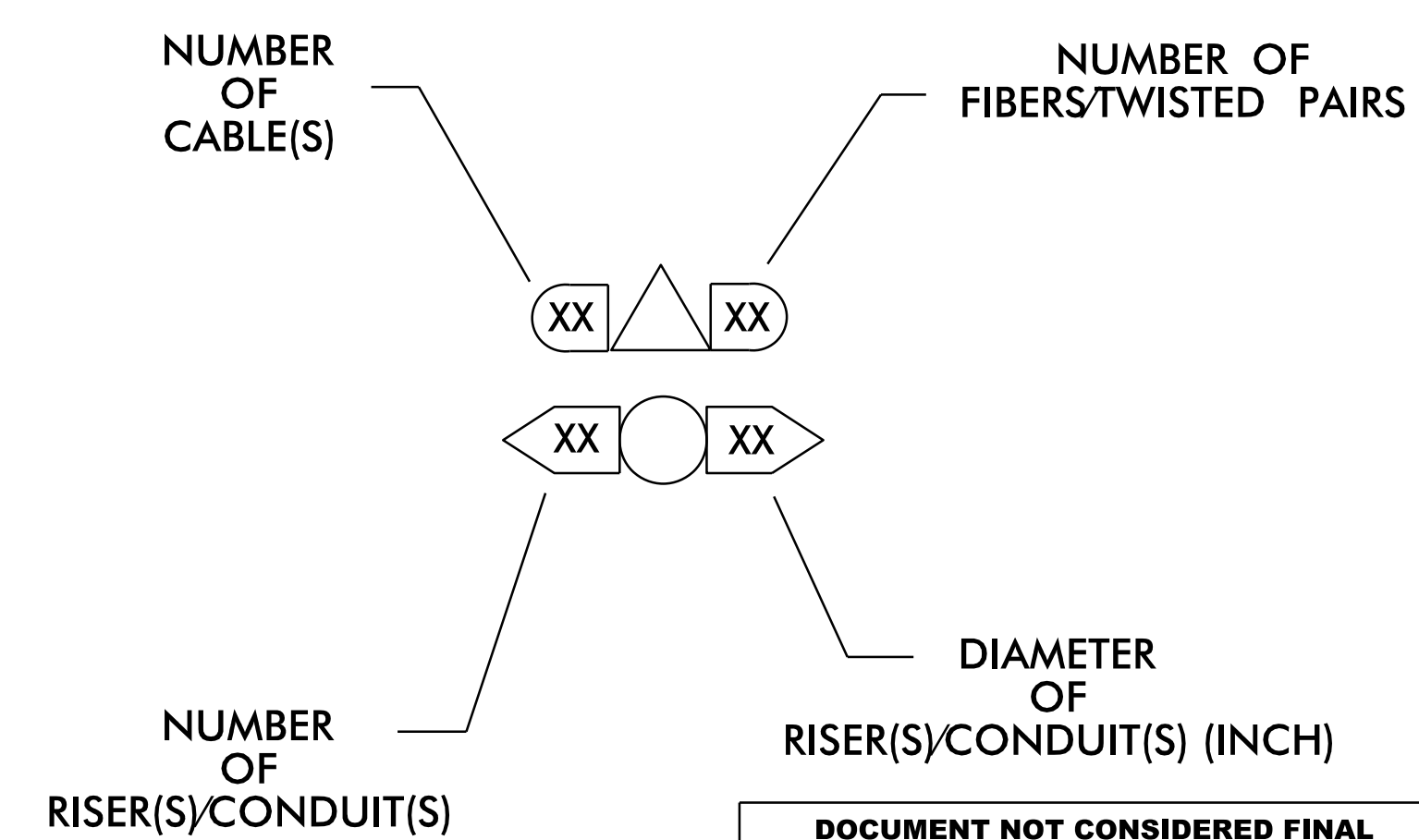
- 34 INSTALL HUB CABINET
- 35 INSTALL STANDARD JUNCTION BOX
- 36 INSTALL OVERSIZED JUNCTION BOX
- 37 INSTALL SPECIAL-SIZED JUNCTION BOX
- 38 REMOVE EXISTING JUNCTION BOX
- 39 MODIFY EXISTING JUNCTION BOX
- 40 INSTALL CCTV CAMERA ASSEMBLY
- 41 INSTALL CAMERA LOWERING DEVICE
- 42 INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION
- 43 INSTALL TYPE III PEDESTAL
- 44 INSTALL MVD
- 45 INSTALL MVD POLE AND FOUNDATION
- 46 INSTALL DMS ON PEDESTAL STRUCTURE
- 47 INSTALL DMS ON GANTRY STRUCTURE
- 48 INSTALL DMS FOUNDATION
- 49 INSTALL NEW ELECTRICAL SERVICE
- 50 MODIFY EXISTING ELECTRICAL SERVICE
- 51 INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT
- 52 INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT
- 53 INSTALL UPS IN HUB CABINET
- 54 NOT USED
- 55 INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL
- 56 INSTALL EQUIPMENT DISCONNECT
- 57 INSTALL DELINEATOR MARKER
- 58 INSTALL POLE MOUNTED MASTER MVD CABINET
- 59 REMOVE EXISTING COMMUNICATIONS CABLE
- 60 STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
- 61 INSTALL TECHNICIAN PAD
- 62 INSTALL GROUNDING SYSTEM
- 63 INSTALL POLE MOUNTED SLAVE MVD CABINET

LEGEND

	NEW FIBER OPTIC COMMUNICATIONS CABLE		EXISTING POWER POLE
	NEW TWISTED PAIR COMMUNICATIONS CABLE		EXISTING MVDS
	EXISTING COMMUNICATIONS CABLE		NEW MVDS
	EXISTING COMMUNICATIONS CABLE TO BE REMOVED		NEW DEVICE CABINET
	NEW AERIAL GUY ASSEMBLY		NEW DMS, TYPE A
	NEW CONDUIT		NEW DMS, TYPE B
	EXISTING CONDUIT		DEVICE INVENTORY NUMBER
	NEW DIRECTIONAL DRILLED CONDUIT		
	NEW STANDARD JUNCTION BOX		
	NEW OVERSIZE JUNCTION BOX		
	NEW SPECIAL-SIZED JUNCTION BOX		
	EXISTING JUNCTION BOX		
	NEW WOOD POLE		
	EXISTING WOOD POLE		
	NEW SPLICE ENCLOSURE		
	NEW METAL POLE		
	EXISTING METAL POLE		
	EXISTING CCTV CAMERA ASSEMBLY		
	NEW CCTV CAMERA ASSEMBLY		
	NEW HUB CABINET		
	EXISTING DEVICE CABINET		
	EXISTING TRANSFORMER		
	NEW TRANSFORMER		
	EXISTING METER AND DISCONNECT		
	NEW METER AND DISCONNECT		
	NEW EQUIPMENT DISCONNECT		
	NEW TRANSFORMER WITH EQUIPMENT DISCONNECT		

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)

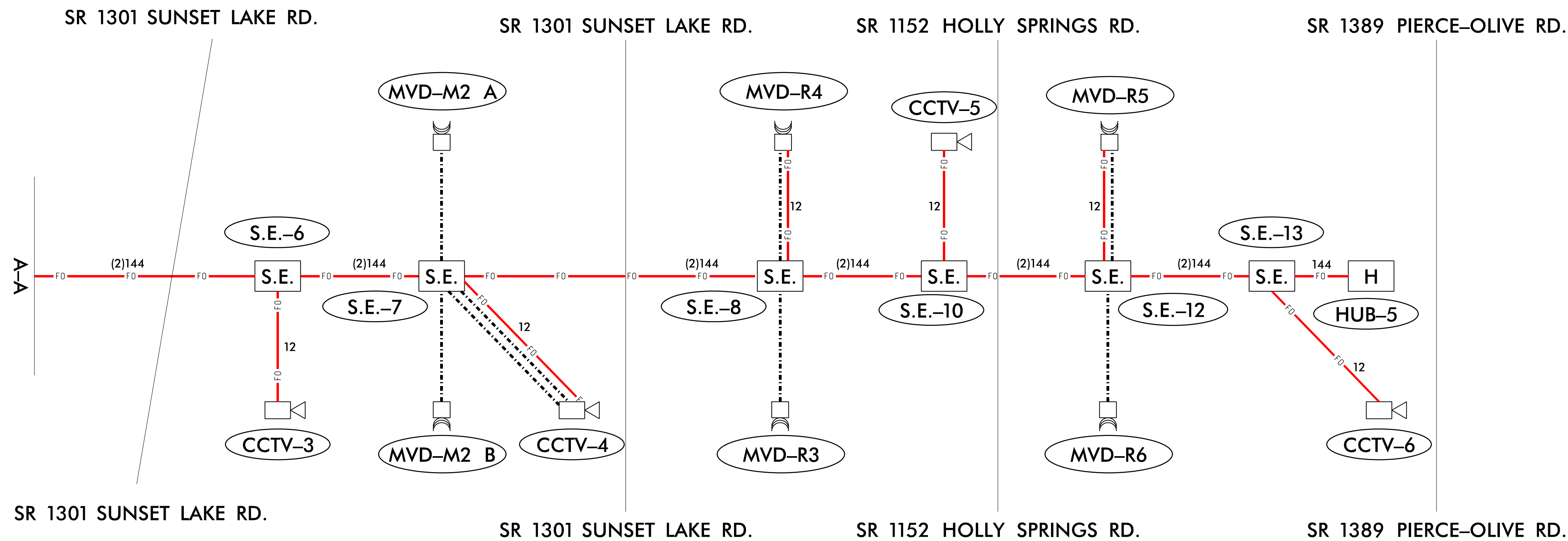
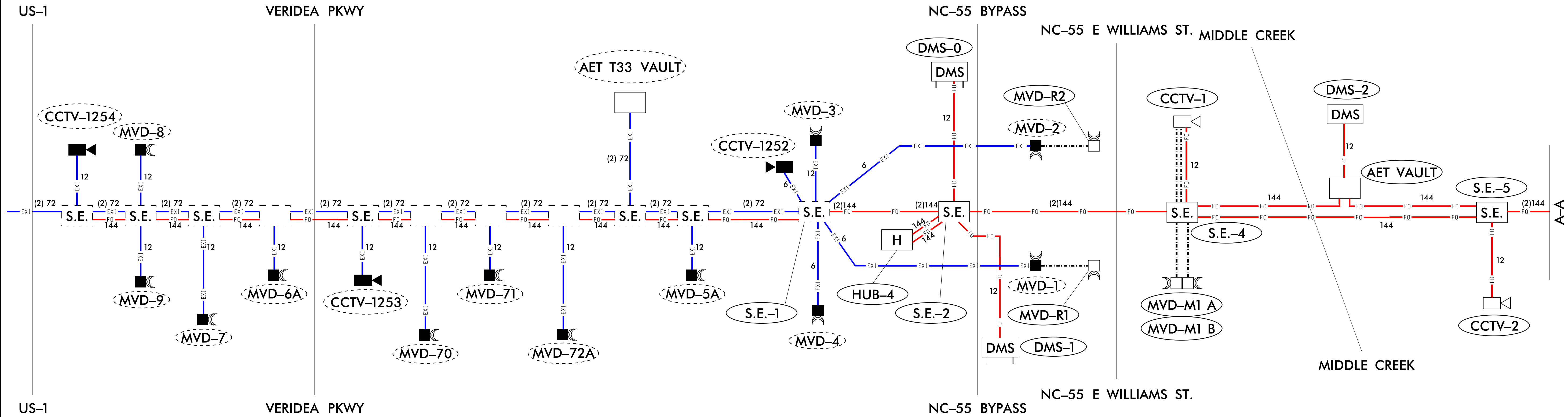


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PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

		CONSTRUCTION NOTES AND LEGEND		
DIVISION 05 WAKE COUNTY RALEIGH		PLAN DATE: 7/9/2020		REVIEWED BY: ANTHONY BARBETTO
PREPARED BY: MARK TRANSUE		REVIEWED BY: JASON MCCARTNEY		SIGNATURE: <i>Anthony M. Barretto</i>
SCALE: NO SCALE		REVISIONS:		DATE:



LEGEND

- XXXX PROPOSED DEVICE AND ID NUMBER
- XXXX EXISTING DEVICE AND ID NUMBER
- H PROPOSED HUB
- S.E. PROPOSED SPLICE ENCLOSURE
- S.E. EXISTING SPLICE ENCLOSURE
- [Camera Icon] PROPOSED CCTV CAMERA
- [Camera Icon] EXISTING CCTV CAMERA
- [MVD Icon] PROPOSED MVD
- [MVD Icon] EXISTING MVD
- [WDDN Icon] PROPOSED WWDDN
- DMS PROPOSED DMS (TYPE-A)
- DMS PROPOSED DMS (TYPE-B)
- xx FIBER OPTIC CABLE COUNT
- FD — PROPOSED FIBER OPTIC CABLE
- - - - - PROPOSED DEVICE CABLE
- EXI — EXISTING COMMUNICATION CABLE

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Prepared in the Offices of:

PLANS PREPARED BY: Gannett Fleming
 One Glenwood Avenue, Suite 900, Raleigh, NC 27603
 (919) 420-7660, NC Lic. No. F-0270

ITS FIBER SCHEMATIC

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

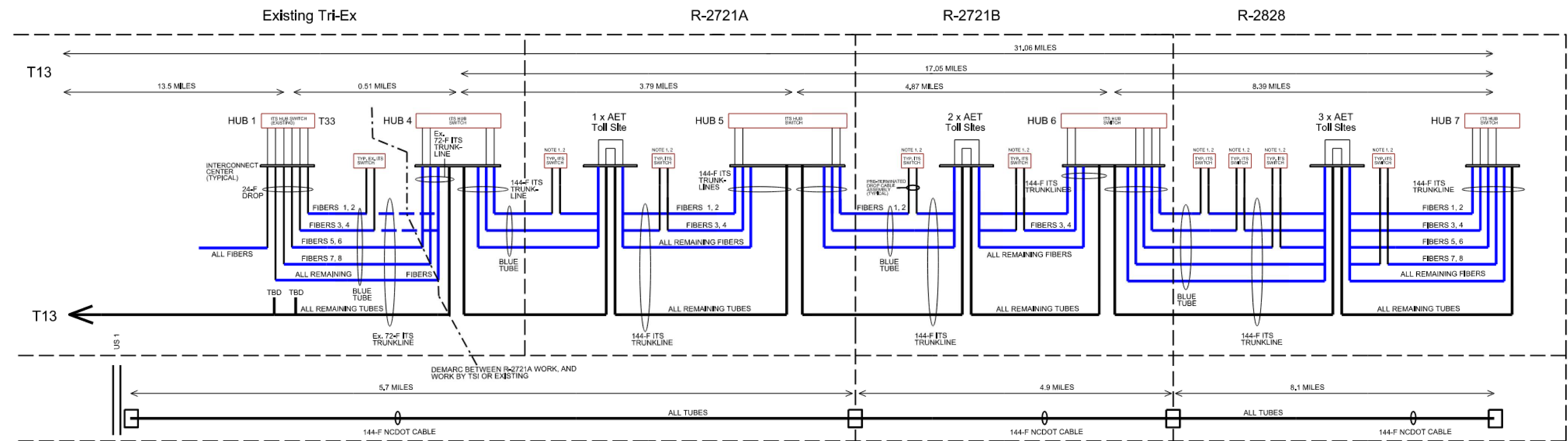
REVISIONS: _____

INIT. DATE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021

C540 ITS CABLE SPLICE SCHEMATIC



NOTES:

1. NO MORE THAN 3 CCTV CAMERAS PER FIBER PAIR.
2. CCTV CAMERAS ON FIBER PAIR SHOULD BE EVENLY DISTRIBUTED ACROSS THE DISTANCE BETWEEN HUBS.
3. ALL SWITCHING SUPPLIED BY NCDOT IT AND INSTALLED BY THE DESIGN-BUILD CONTRACTOR.
4. AT TOLL VAULTS, ALL FIBER WILL BE TERMINATED IN THE INTERCONNECT CENTERS. RESERVE BROWN FIBERS 1, 2 FOR HUB-TO-HUB COMMUNICATIONS. RESERVE BROWN FIBERS 3, 4 FOR END-TO-END BACKHAUL.

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Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
 One Glenwood Avenue, Suite 900, Raleigh, NC 27603
 (919) 420-7660, NC Lic. No. F-0270

C540 ITS CABLE SPLICING SCHEMATIC

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

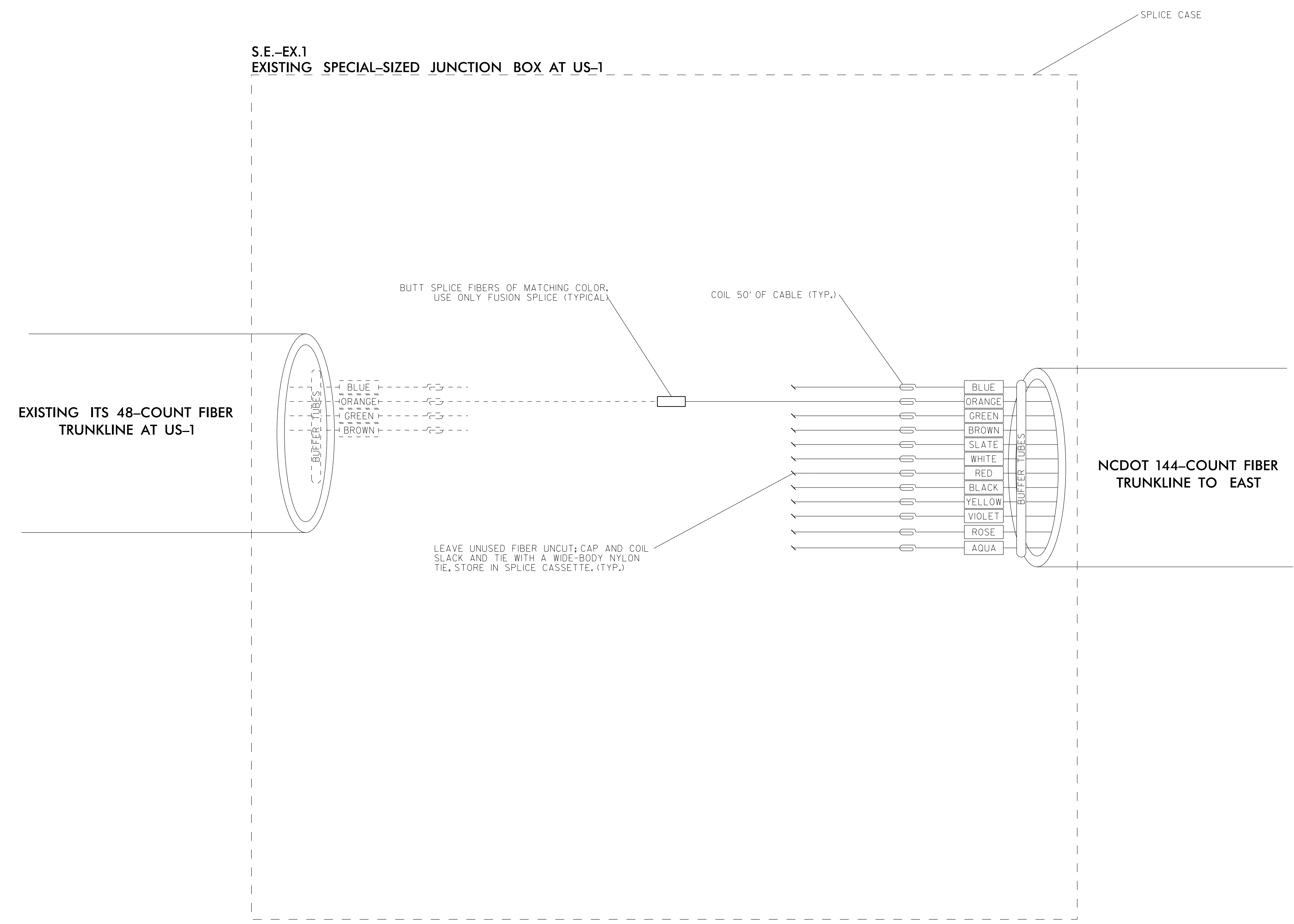
SCALE: NO SCALE

SEAL: ANTHONY M. BARBETTO, PROFESSIONAL ENGINEER, NO. 047143, DATE: 01/20/2021

S.E.-EX.1

(SEE SHEET ITS-31)

- NOTES:
1. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
 2. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
 3. EDGE SWITCH CONFIGURATIONS ARE GENERIC, CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 4. SPLICING OF BUFFER TUBES IS TO BE CONFIRMED BY NCDOT ITS.



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PLANS PREPARED BY:

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 Excellence Delivered *As Promised* NC Lic. No. F-0270

Prepared in the Offices of:

ITS SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARBETTO
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

SCALE: NO SCALE

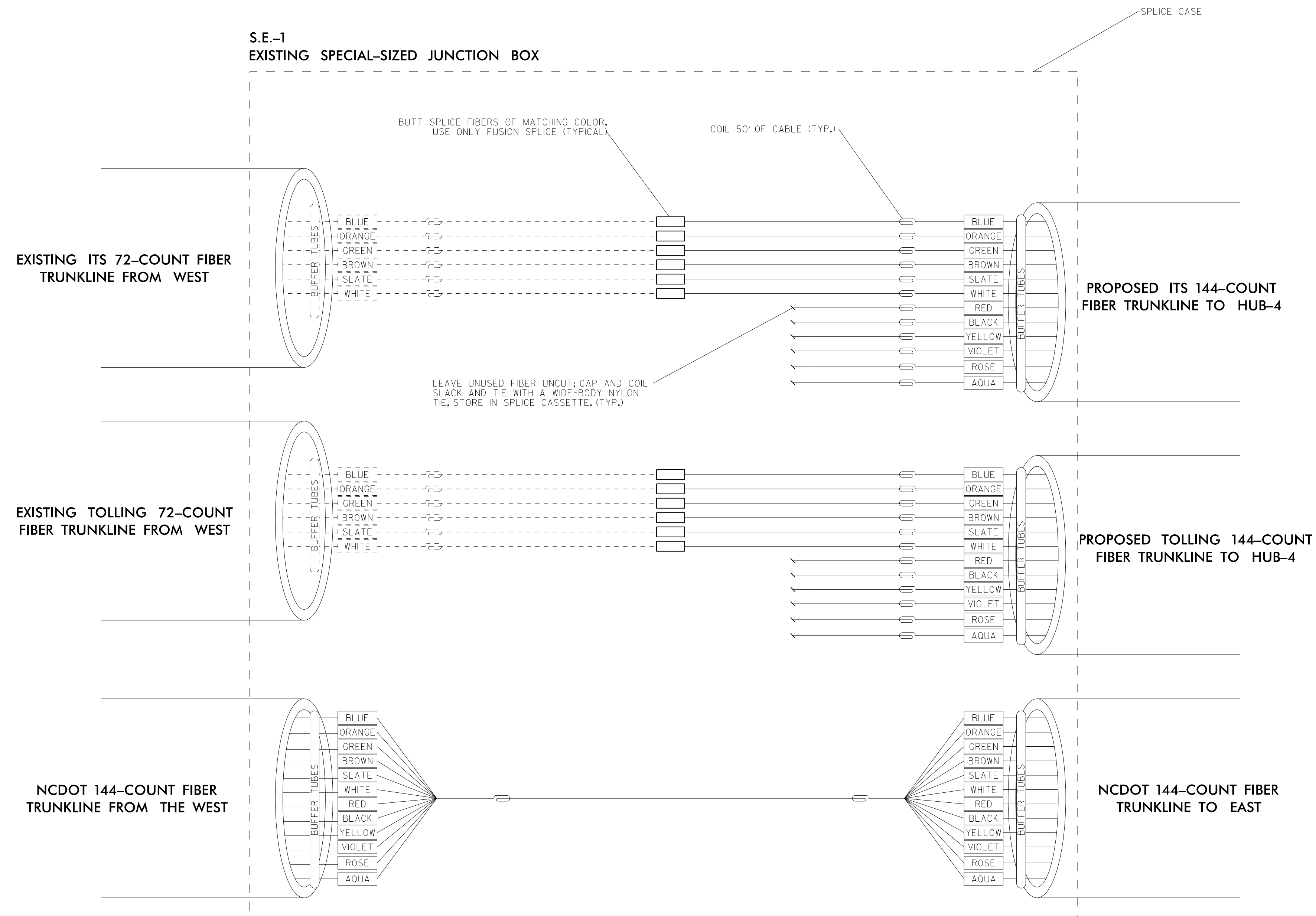
ANTHONY M. BARRETTO
 ENGINEER
 SEAL 047143
 SIGNATURE DATE 01/20/2021

S.E.-1

(SEE SHEET ITS-39)

NOTES:

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



1/18/2021
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PLANS PREPARED BY:

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 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:

ITS SPLICING DETAILS

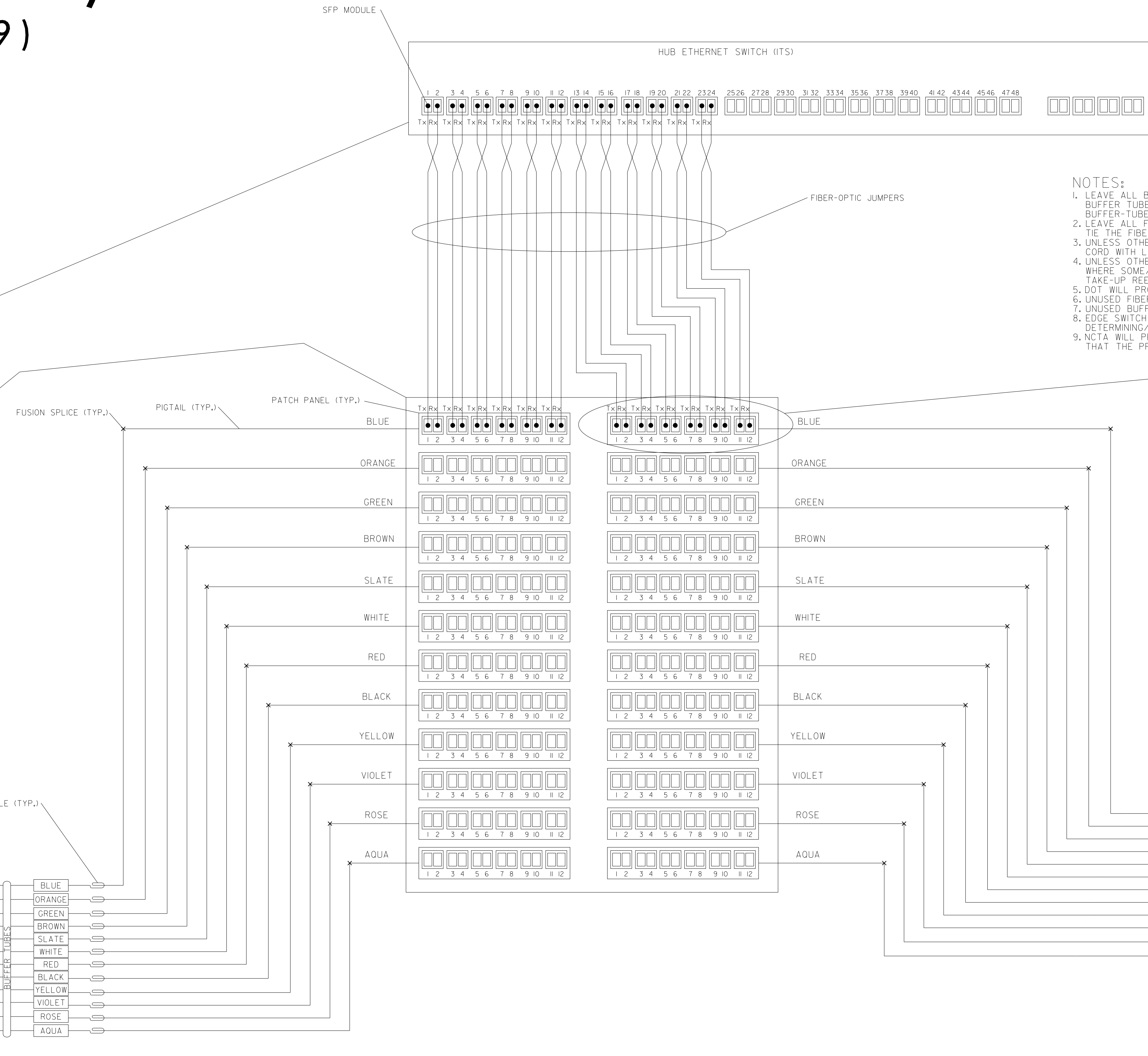
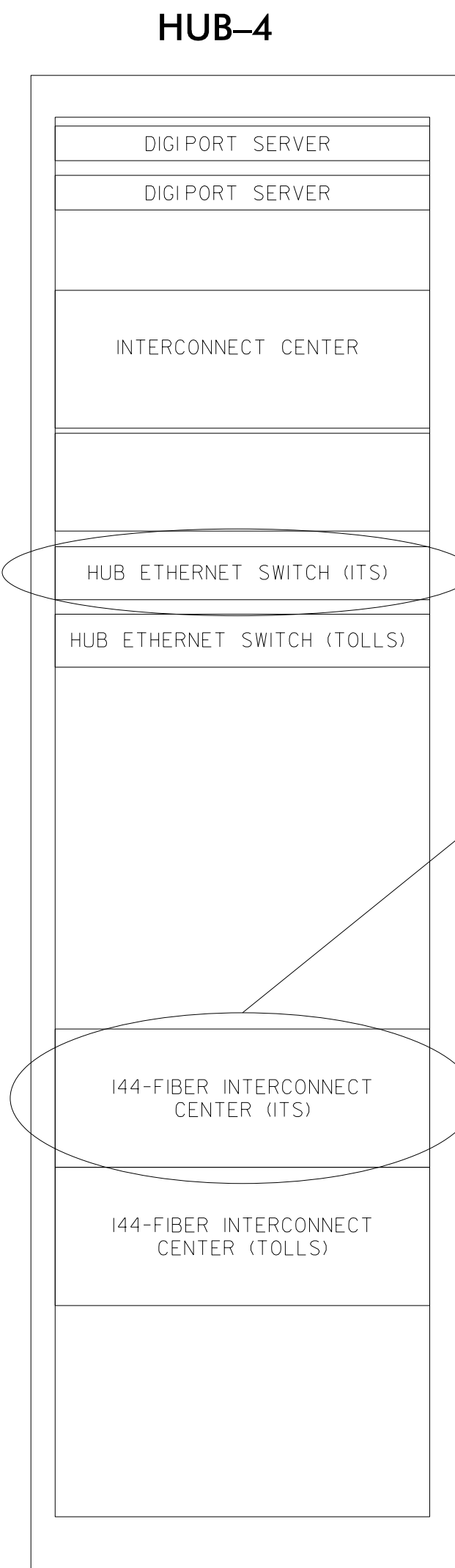
DIVISION 05 WAKE COUNTY RALEIGH
 PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE	REVISIONS	INIT.	DATE
NO SCALE			

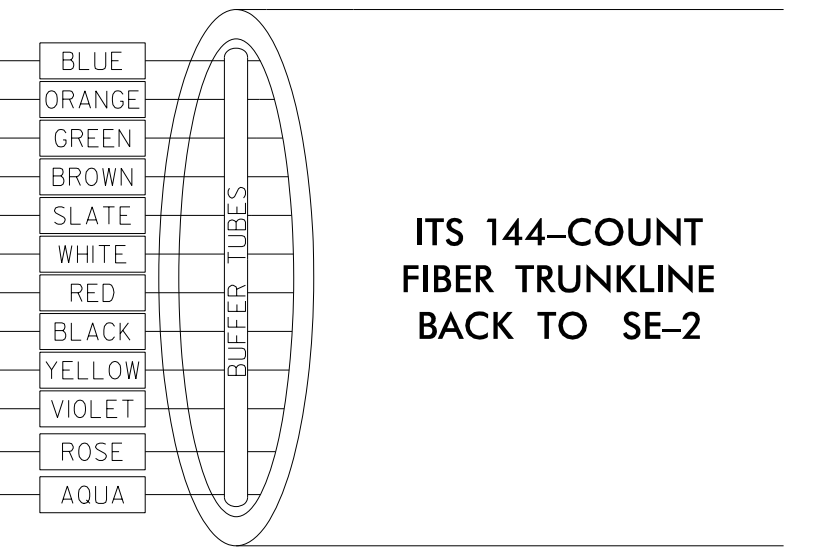
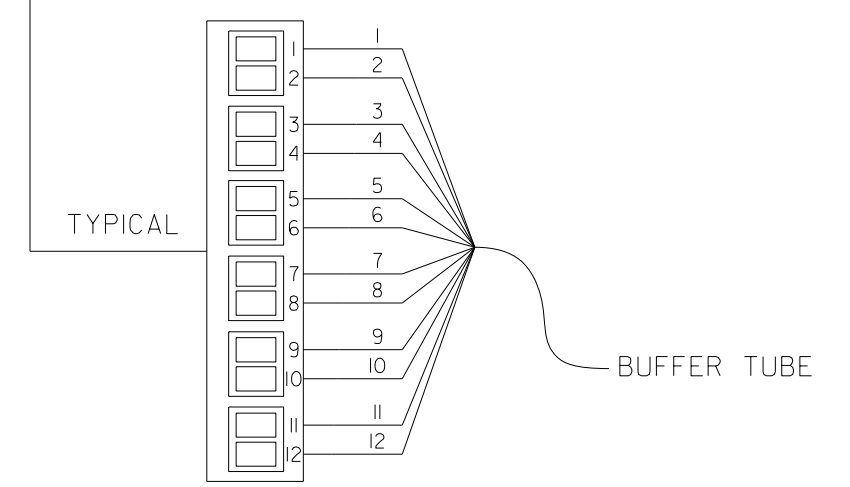
Signature: *Anthony M. Barretto* DATE: 01/20/2021

HUB-4 (ITS)

(SEE SHEET ITS-39)



- NOTES:**
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY. NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
 4. UNLESS OTHERWISE STATED ELSEWHERE, LEAVE 6-FOOT CABLE SLACK IN EACH CABINET WHERE SOME/ALL OF ITS FIBERS ARE TERMINATED. COIL CABLE SLACK(S) NEATLY AROUND A TAKE-UP REEL/MECHANISM.
 5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
 6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
 7. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
 8. EDGE SWITCH CONFIGURATIONS ARE GENERIC, CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IT IN ORDER THAT THE PROPER GBICS ARE PROVIDED IN THE SWITCHES.



ITS 144-COUNT FIBER TRUNKLINE FROM S.E.-2

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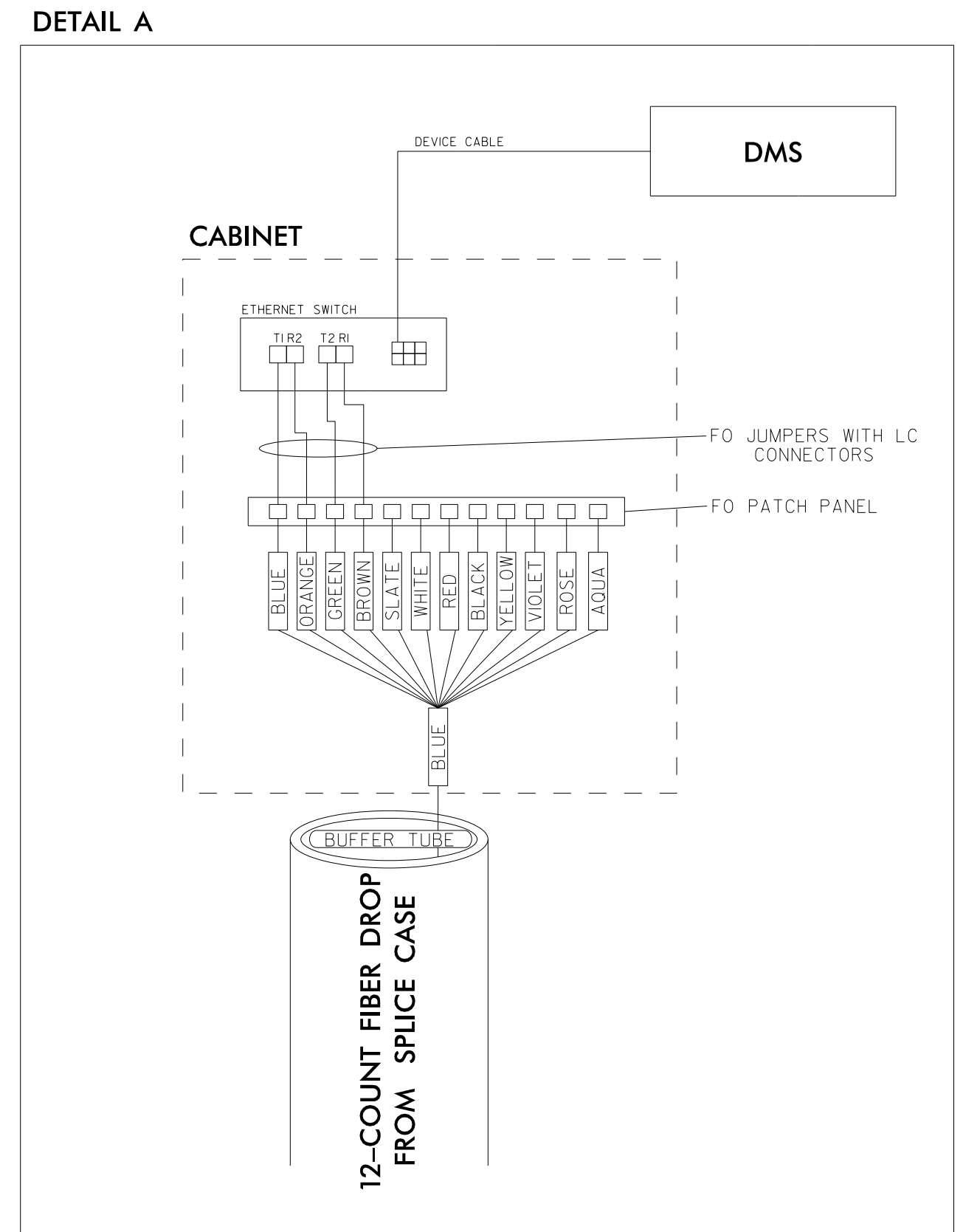
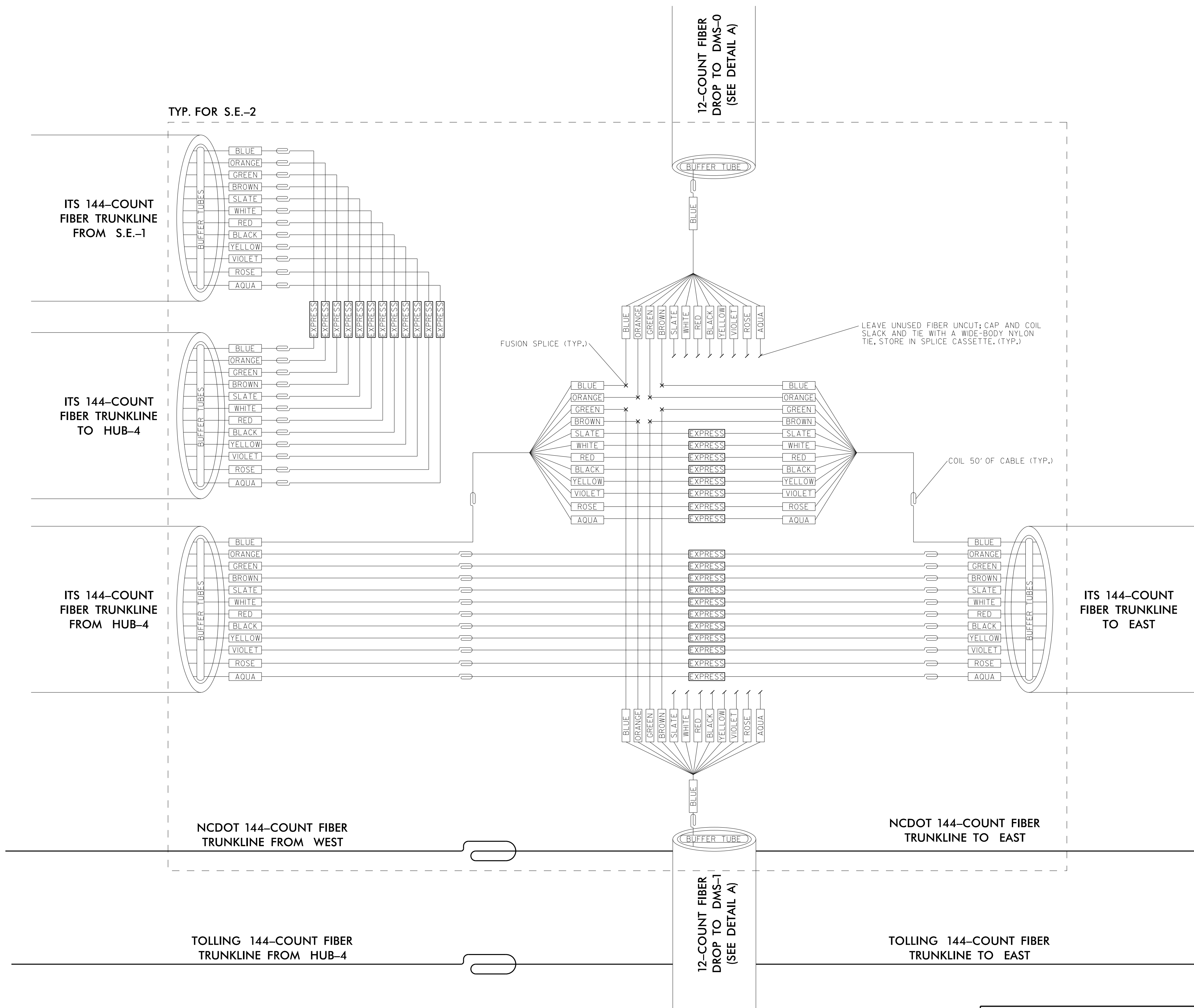
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 	Prepared in the Offices of: 		ITS SPLICING DETAILS		
	PLANS PREPARED BY: One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270		DIVISION 05 WAKE COUNTY RALEIGH PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY		
SCALE NO SCALE		REVISIONS _____		INIT. DATE _____	

S.E.-2

(SEE SHEET ITS-39)

- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UNCU; MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UNCU; MAINTAIN CONTINUITY. NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SFP MODULES.
 4. UNLESS OTHERWISE STATED ELSEWHERE, LEAVE 6-FOOT CABLE SLACK IN EACH CABINET WHERE SOME/ALL OF ITS FIBERS ARE TERMINATED. COIL CABLE SLACK(S) NEATLY AROUND A TAKE-UP REEL/MECHANISM.
 5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
 6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
 7. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
 8. EDGE SWITCH CONFIGURATIONS ARE GENERIC, CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IN ORDER THAT THE PROPER GBICs ARE PROVIDED IN THE SWITCHES.



TYP. FOR DMS-0, DMS-1

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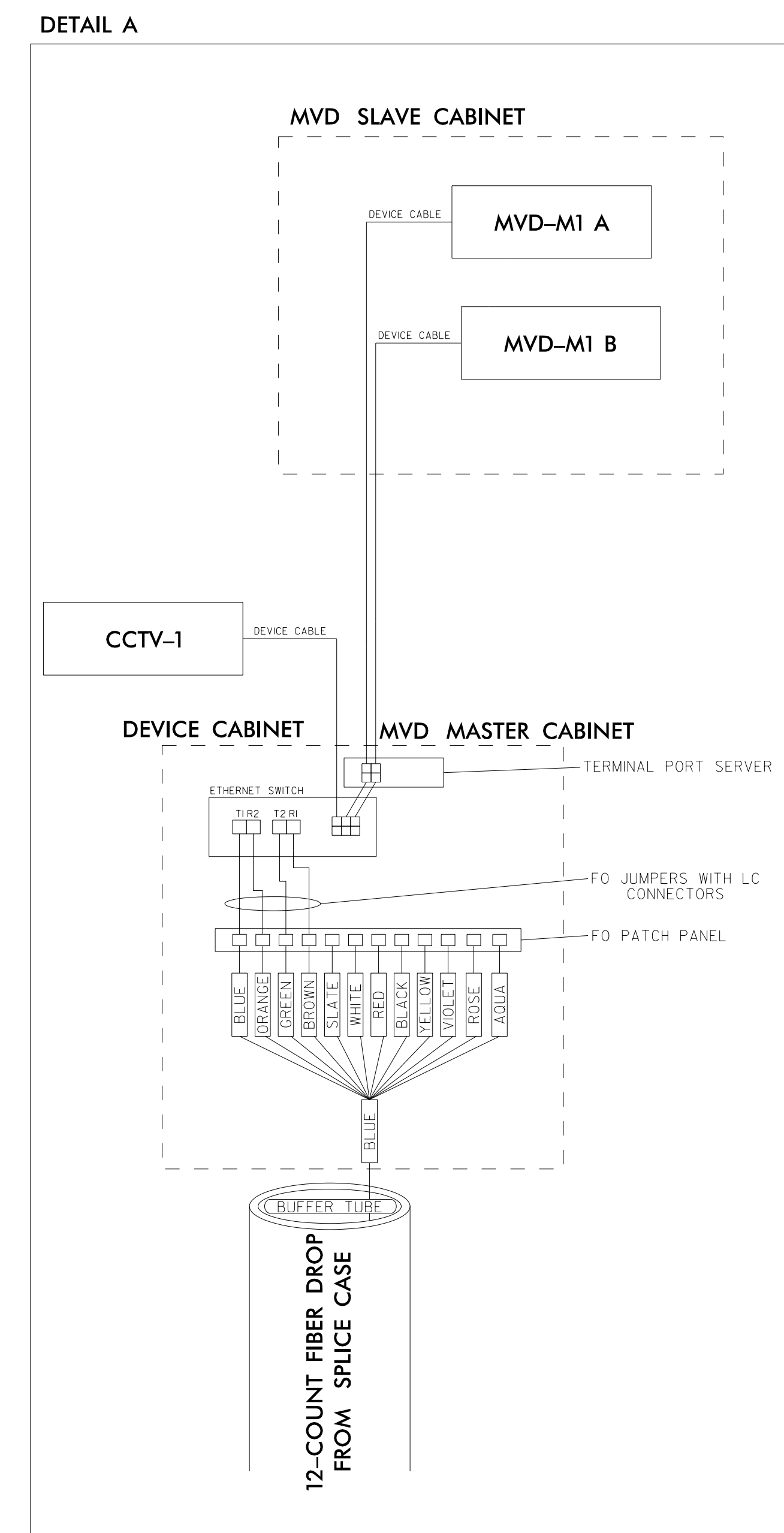
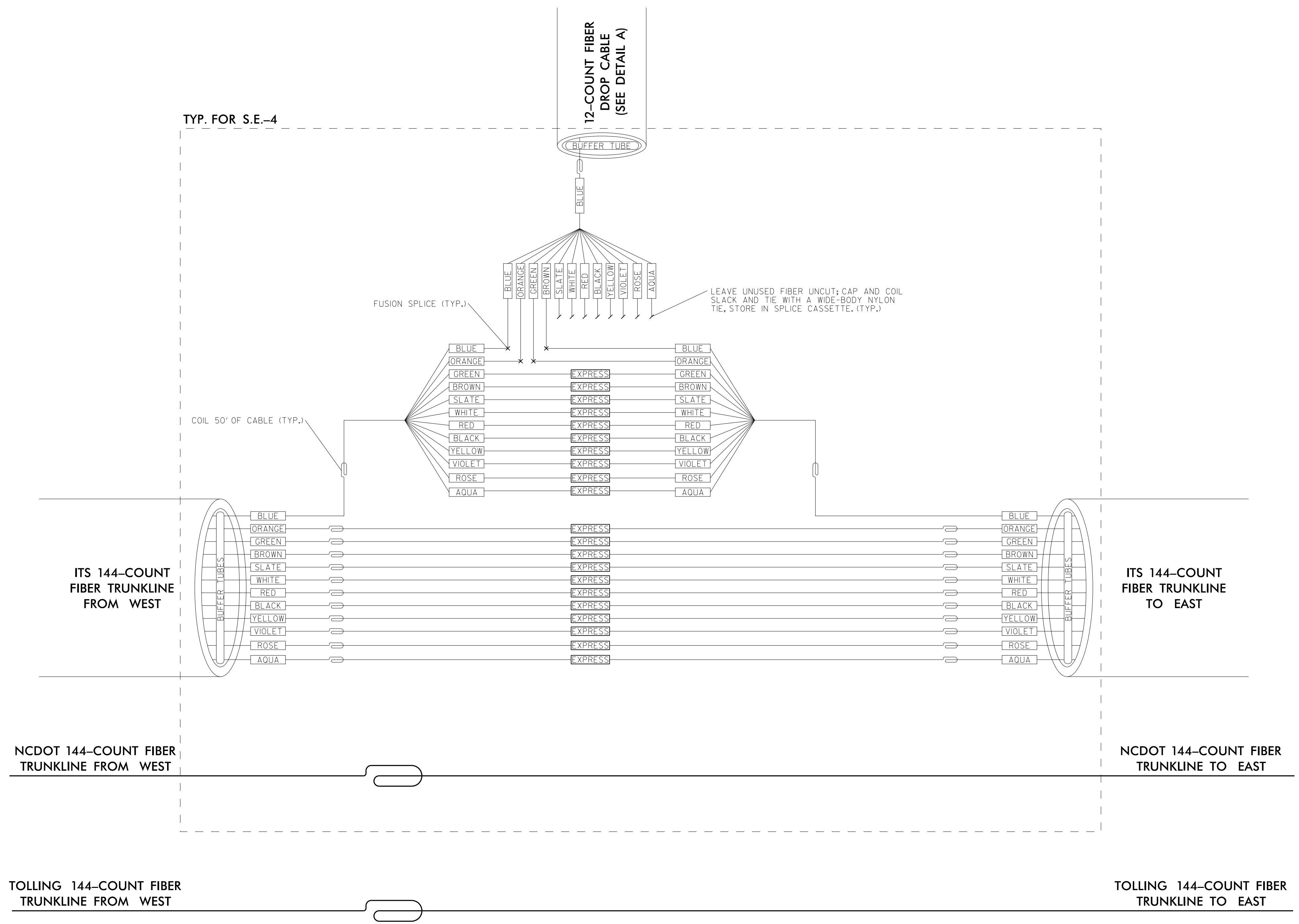
Prepared in the Offices of:				
SCALE	NO SCALE	REVISIONS	INIT.	DATE
PLANS PREPARED BY: One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270		Signature: <i>Anthony M. Barretto</i> DATE: 01/20/2021		

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S.E.-4

(SEE SHEET ITS-43)

- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED, NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
 4. UNLESS OTHERWISE STATED ELSEWHERE, LEAVE 6-FOOT CABLE SLACK IN EACH CABINET WHERE SOME/ALL OF ITS FIBERS ARE TERMINATED, COIL CABLE SLACK(S) NEATLY AROUND A TAKE-UP REEL/MECHANISM.
 5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
 6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
 7. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
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 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IT IN ORDER THAT THE PROPER GBICS ARE PROVIDED IN THE SWITCHES.



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Prepared in the Offices of:

PLANS PREPARED BY:

Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

ITS SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE	REVISIONS	INIT.	DATE
NO SCALE			

SEAL

Anthony M. Barretto
 SIGNATURE DATE 01/20/2021

S.E.-5

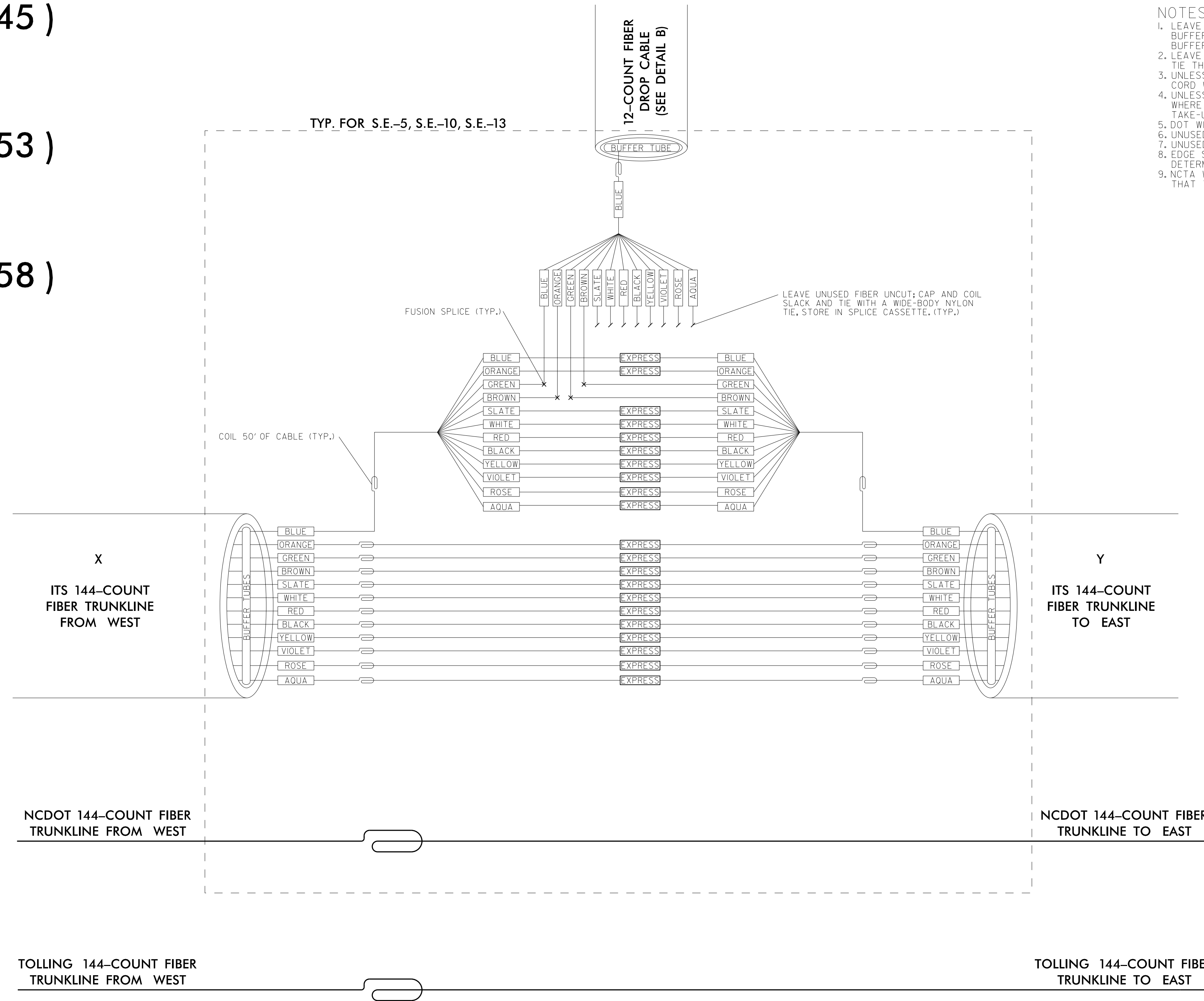
(SEE SHEET ITS-45)

S.E.-10

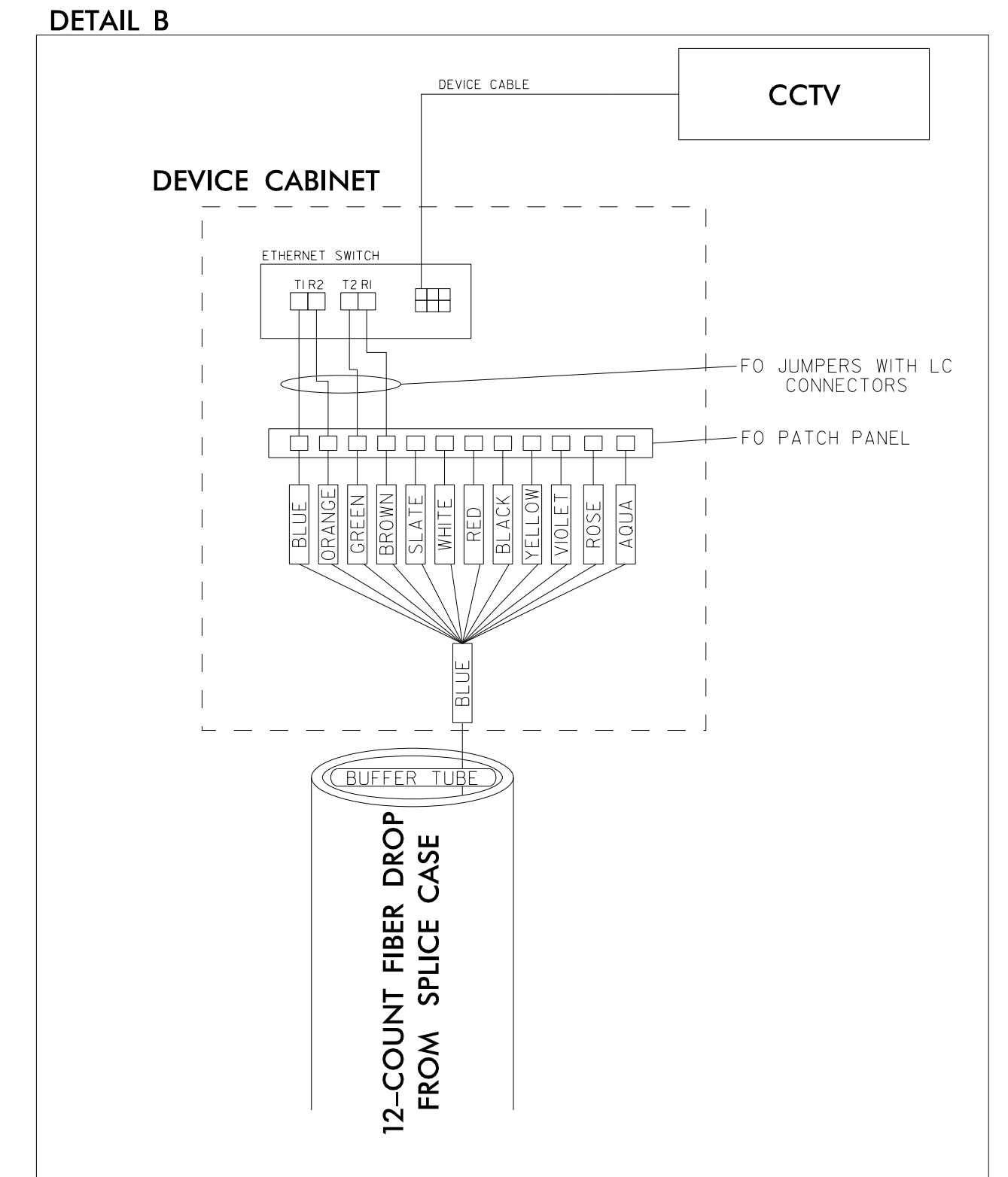
(SEE SHEET ITS-53)

S.E.-13

(SEE SHEET ITS-58)



- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UNCU... MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UNCU... MAINTAIN CONTINUITY. NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMD CIRCUITS.
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 8. EDGE SWITCH CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IN ORDER THAT THE PROPER GBICS ARE PROVIDED IN THE SWITCHES.



TYP. FOR CCTV-2, CCTV-10, CCTV-13

SPLICE ENCLOSURE TYPICAL

SPLICE ENCLOSURE	DEVICE ID	ITS SHEET	TO	
			X	Y
S.E.-5	CCTV-2	ITS-45	S.E.-4 CCTV-1, MVD-MI A&B	S.E.-6 CCTV-5
S.E.-10	CCTV-5	ITS-53	S.E.-8 MVD-R3, MVD-R4	S.E.-12 CCTV-6
S.E.-13	CCTV-6	ITS-58	S.E.-12 MVD-R5, MVD-R6	HUB-5

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PLANS PREPARED BY:
Gannett Fleming
Excellence Delivered As Promised

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

ITS SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSHIE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

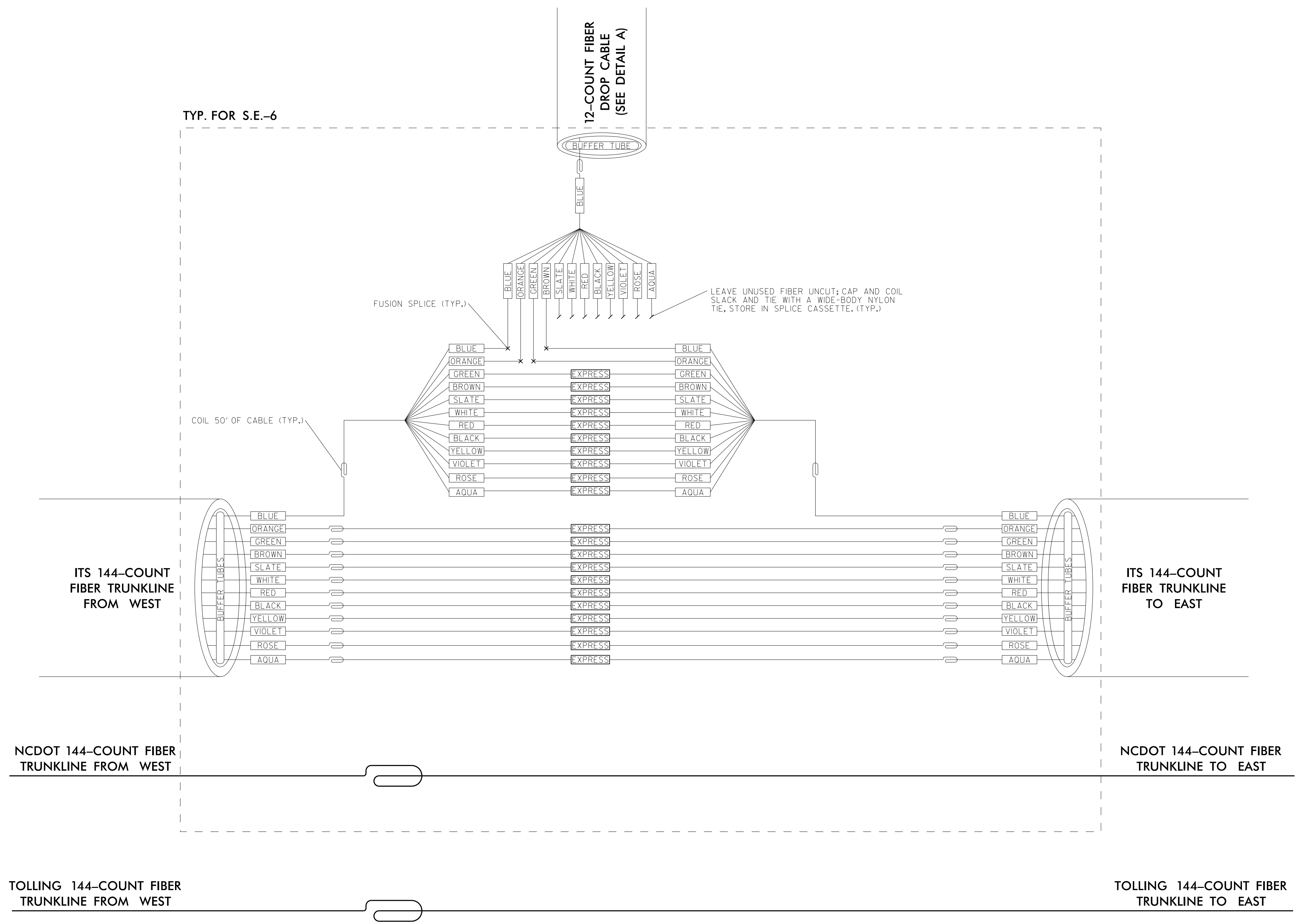
SEAL

Anthony M. Barretto
ENGINEER
01/20/2021
SIGNATURE DATE

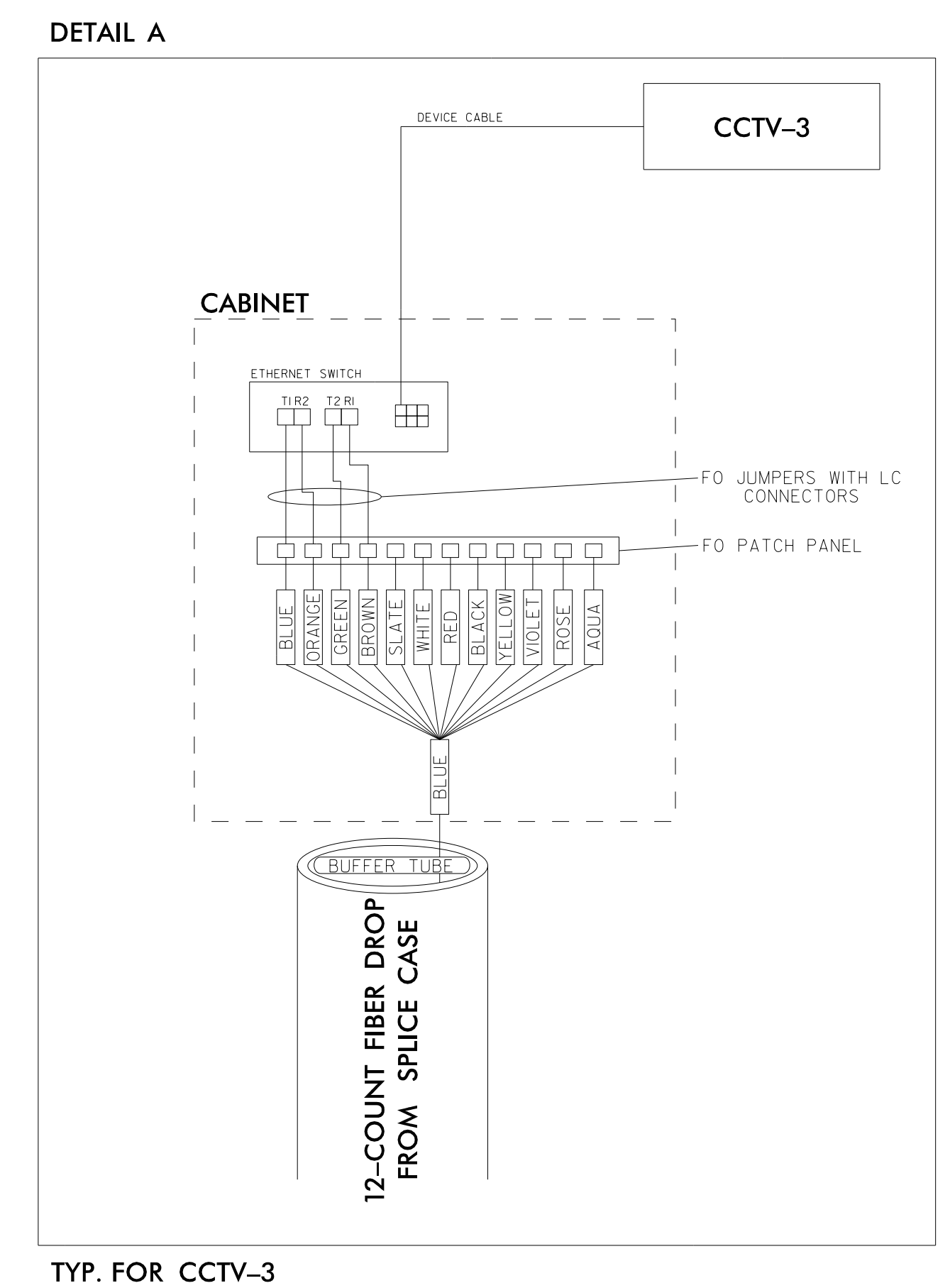
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S.E.-6

(SEE SHEET ITS-48)



- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED, NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
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 5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
 6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
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 8. EDGE SWITCH CONFIGURATIONS ARE GENERIC, CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IN ORDER THAT THE PROPER GBICS ARE PROVIDED IN THE SWITCHES.



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PLANS PREPARED BY:

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 Excellence Delivered As Promised

One Glenwood Avenue
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 NC Lic. No. F-0270

Prepared in the Offices of:

ITS SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE	REVISIONS	INIT.	DATE
NO SCALE			

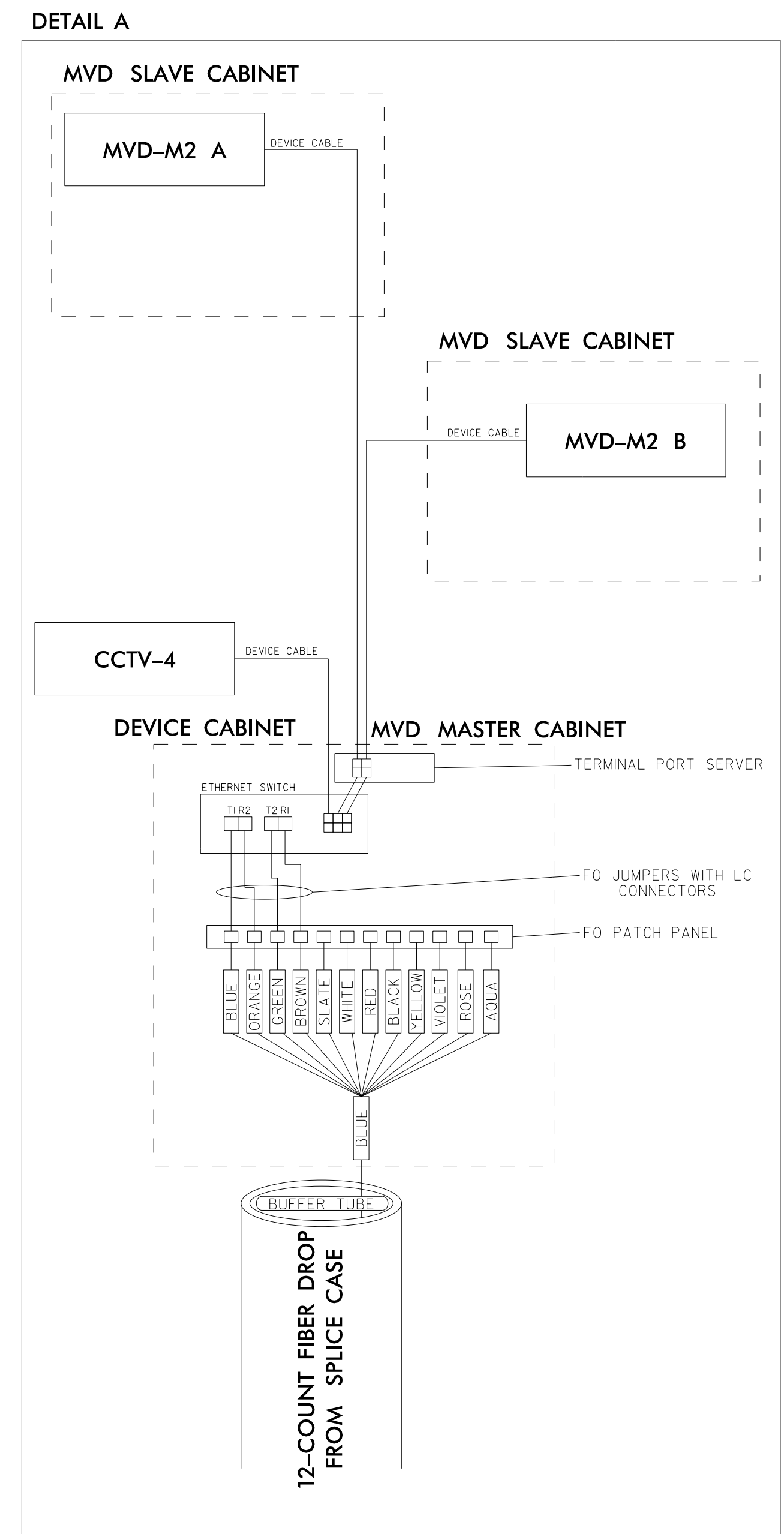
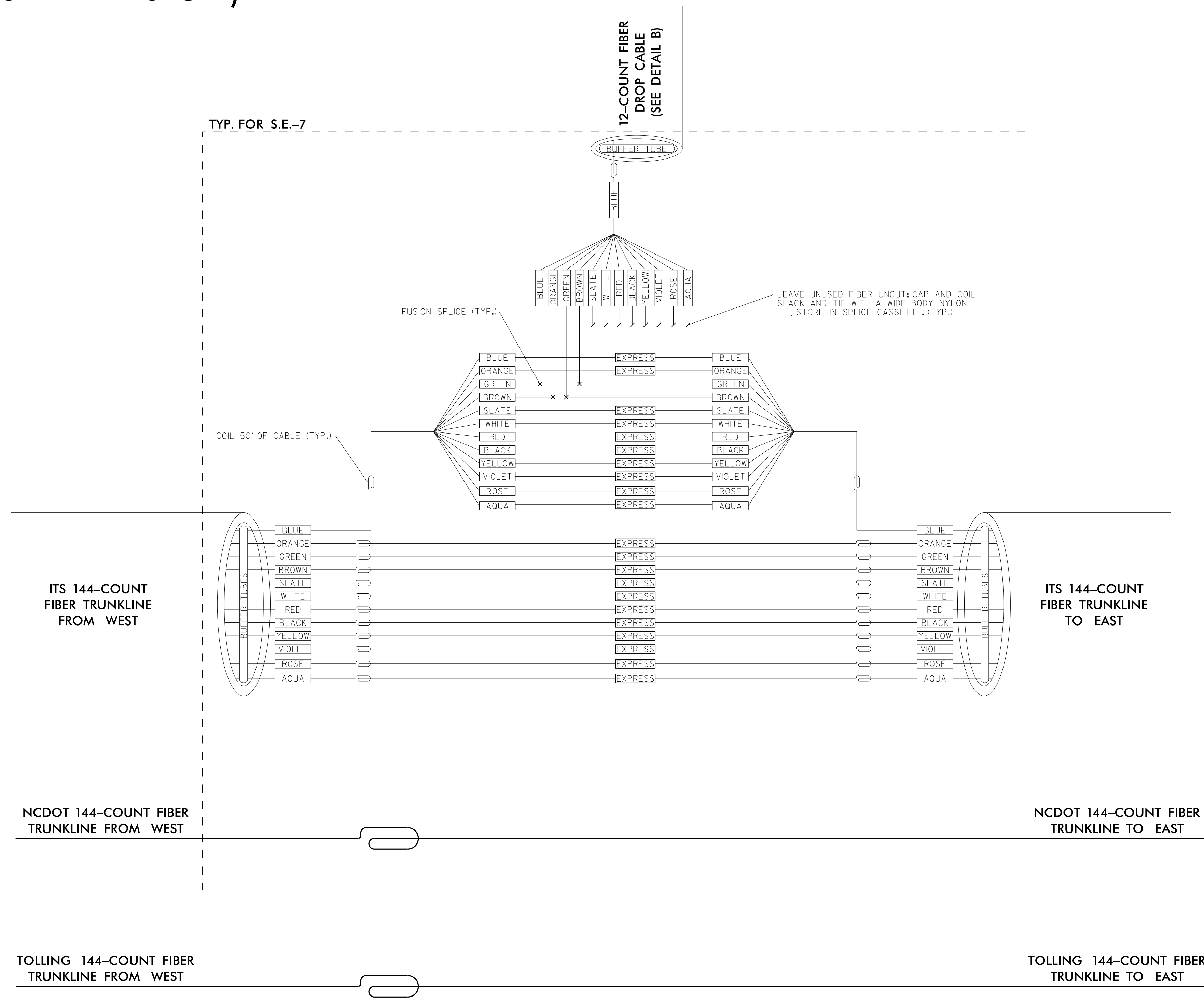
SEAL

Anthony M. Barretto
 SIGNATURE DATE 01/20/2021

S.E.-7

(SEE SHEET ITS-51)

- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED, NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
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 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IN ORDER THAT THE PROPER GBICs ARE PROVIDED IN THE SWITCHES.



TYP. FOR CCTV-4, MVD-M2 A, MVD-M2 B

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Prepared in the Offices of:

PLANS PREPARED BY:
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 NC Lic. No. F-0270

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DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE	REVISIONS	INIT.	DATE
NO SCALE			

SEAL

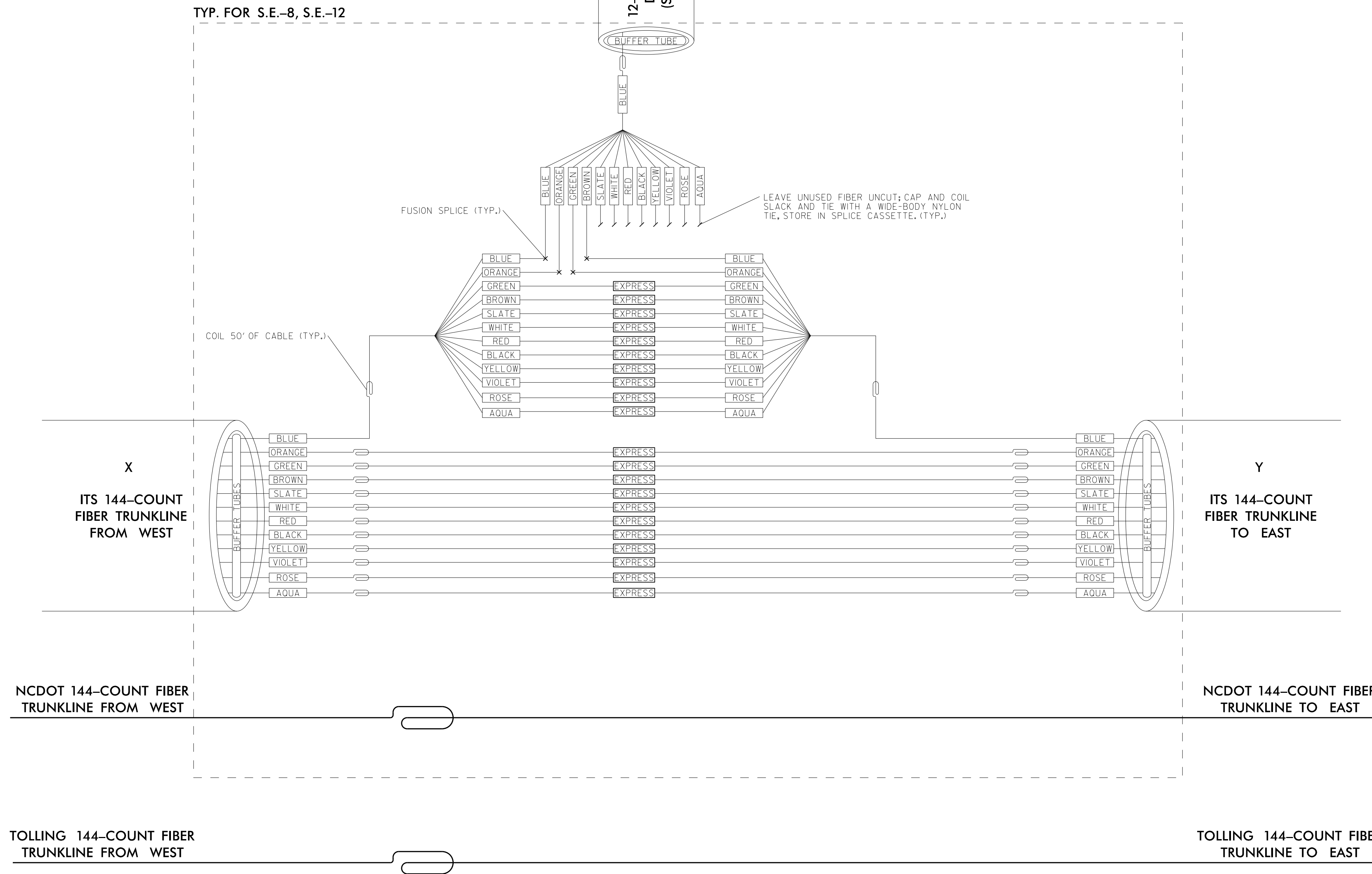
Signature: *Anthony M. Barretto* DATE: 01/20/2021

S.E.-8

(SEE SHEET ITS-54)

S.E.-12

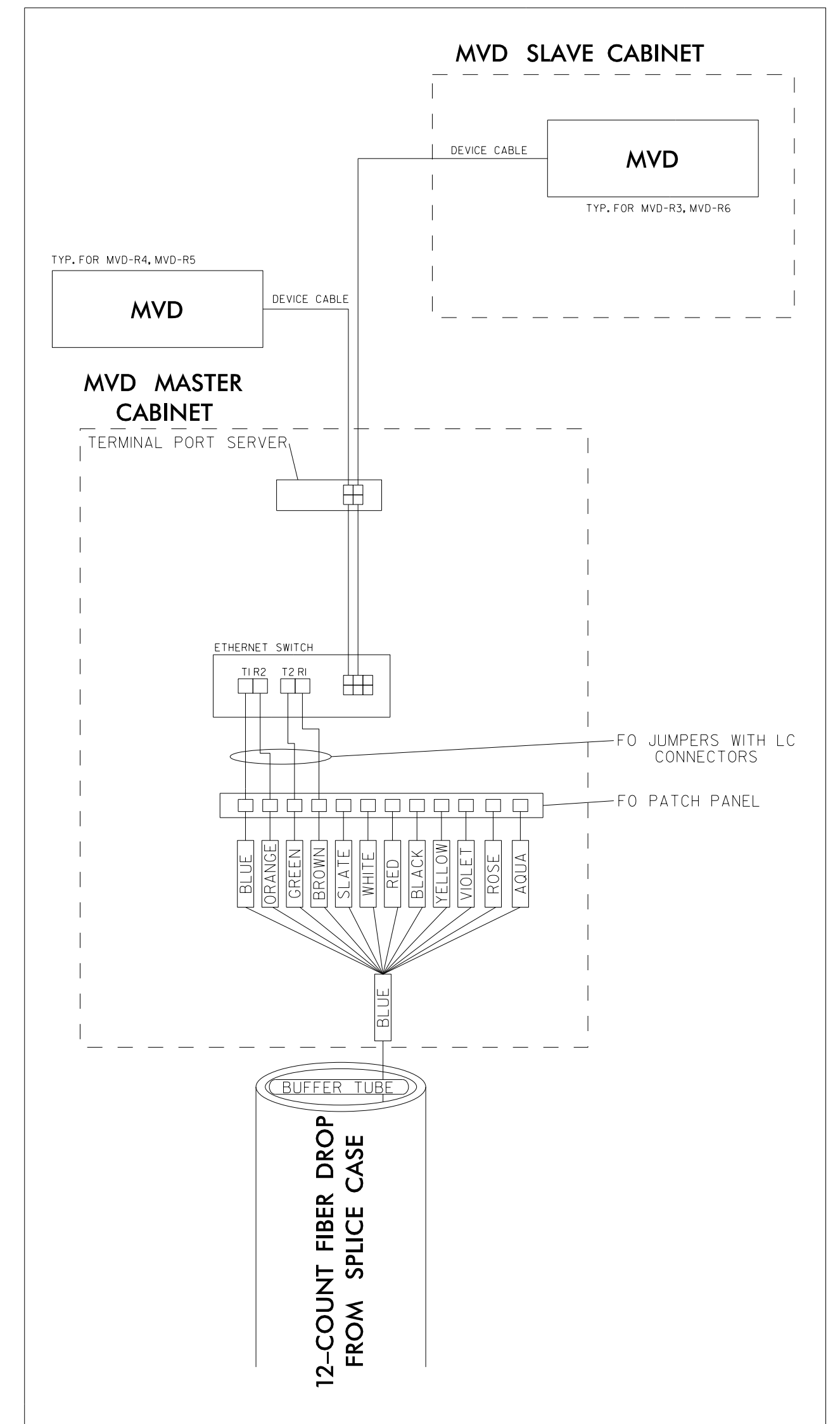
(SEE SHEET ITS-53)



NOTES:

1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UNCU... MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
2. LEAVE ALL FIBERS NOT BEING TERMINATED UNCU... MAINTAIN CONTINUITY. NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
4. UNLESS OTHERWISE STATED ELSEWHERE, LEAVE 6-FOOT CABLE SLACK IN EACH CABINET WHERE SOME/ALL OF ITS FIBERS ARE TERMINATED. COIL CABLE SLACK(S) NEATLY AROUND A TAKE-UP REEL/MECHANISM.
5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
7. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
8. EDGE SWITCH CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IT IN ORDER THAT THE PROPER GBICs ARE PROVIDED IN THE SWITCHES.

DETAIL A



SPLICE ENCLOSURE TYPICAL

SPLICE ENCLOSURE	DEVICE ID	ITS SHEET	TO	
			X	Y
S.E.-8	MVD-R3, MVD-R4	ITS-54	S.E.-7 CCTV-4, MVD-M2 A&B	S.E.-10 CCTV-5
S.E.-12	MVD-R5, MVD-R6	ITS-53	S.E.-10 CCTV-5	S.E.-13 CCTV-6

TYP. FOR MVD-R3, MVD-R4, MVD-R5, MVD-R6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
Gannett Fleming
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
Excellence Delivered As Promised NC Lic. No. F-0270

ITS SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

REVISIONS: _____ INIT: _____ DATE: _____

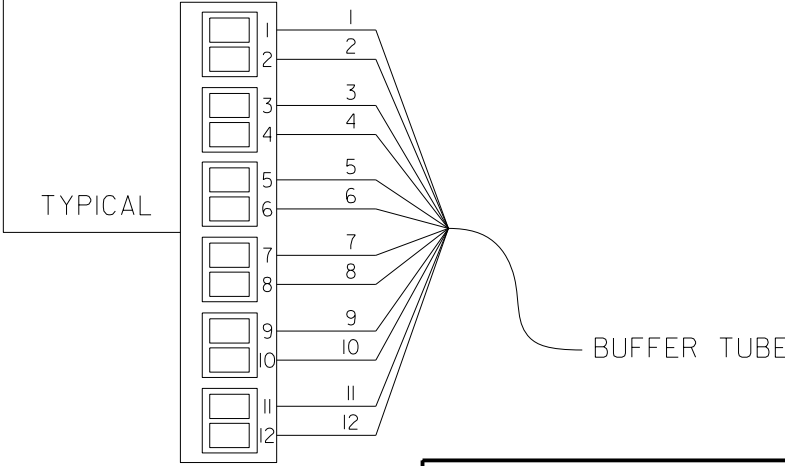
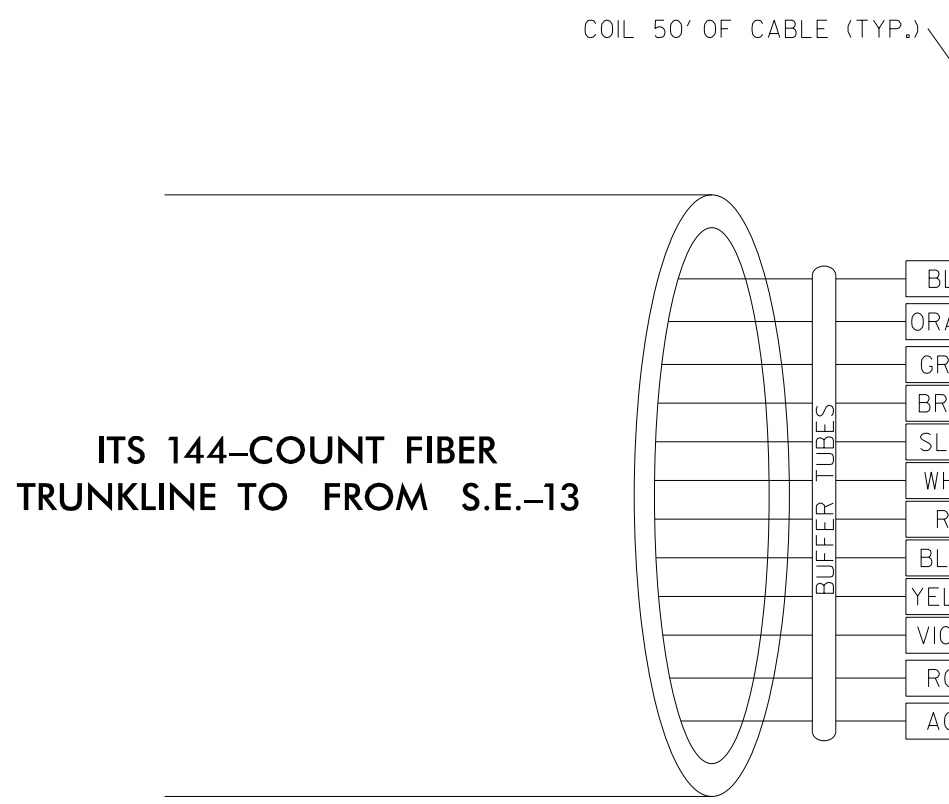
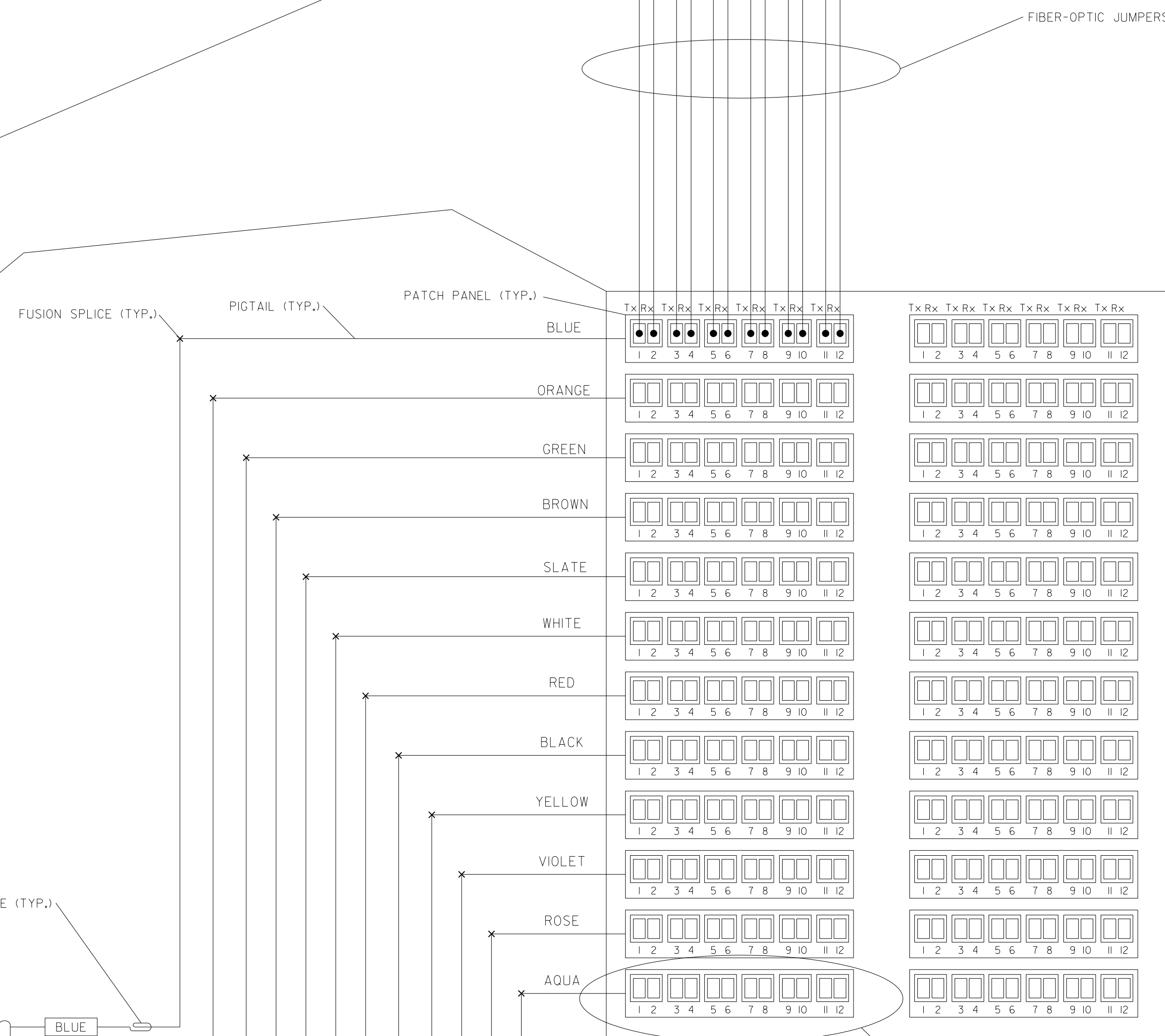
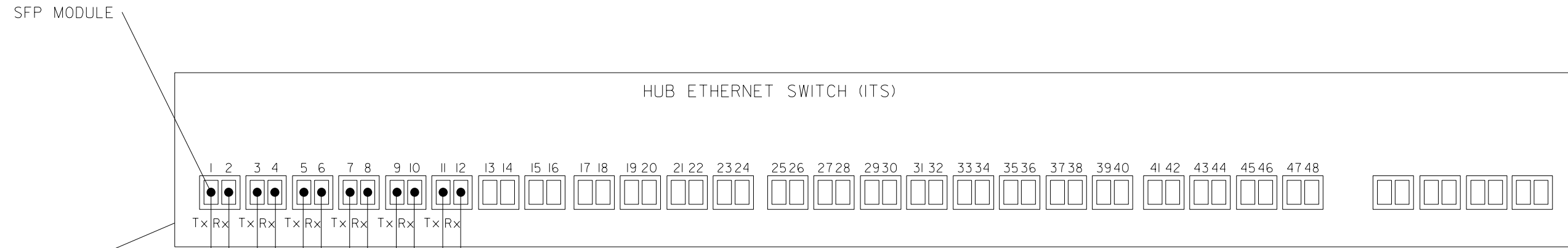
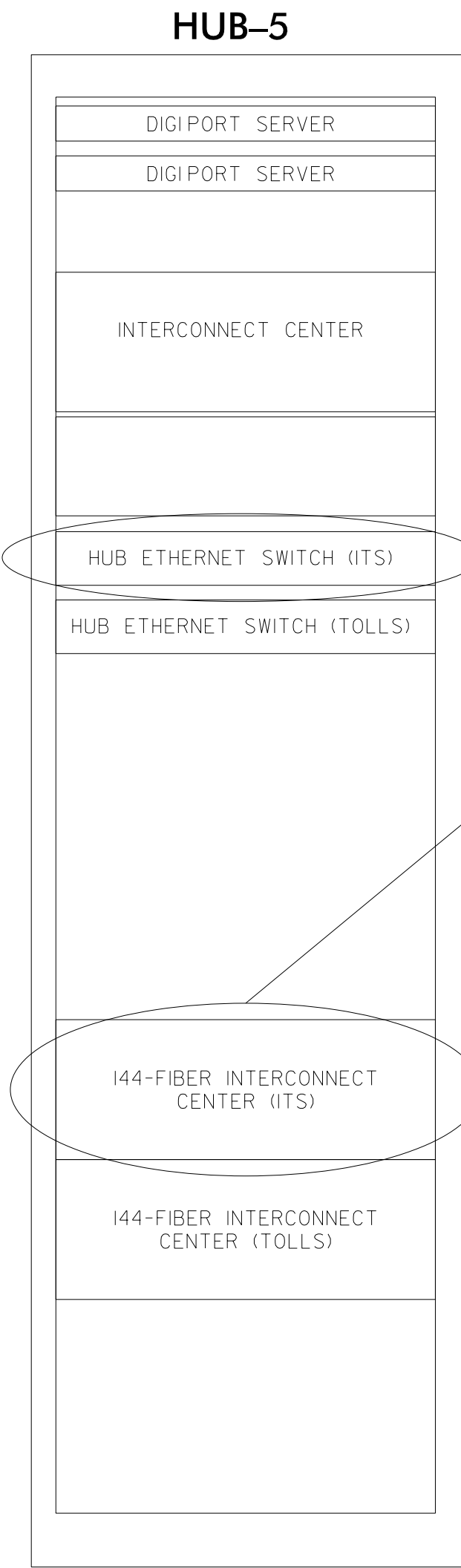
SEAL

Anthony M. Barretto
SIGNATURE DATE: 01/20/2021

1/18/2021
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 mtransue

HUB-5 (ITS)

(SEE SHEET ITS-58)



- NOTES:**
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY, NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
 4. UNLESS OTHERWISE STATED ELSEWHERE, LEAVE 6-FOOT CABLE SLACK IN EACH CABINET WHERE SOME/ALL OF ITS FIBERS ARE TERMINATED. COIL CABLE SLACK(S) NEATLY AROUND A TAKE-UP REEL/MECHANISM.
 5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
 6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
 7. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.
 8. EDGE SWITCH CONFIGURATIONS ARE GENERIC, CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.
 9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IT IN ORDER THAT THE PROPER GBICs ARE PROVIDED IN THE SWITCHES.

1/18/2021
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PLANS PREPARED BY: **Gannett Fleming**
 One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:

ITS SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

REVISIONS: _____ INIT: _____ DATE: _____

SEAL

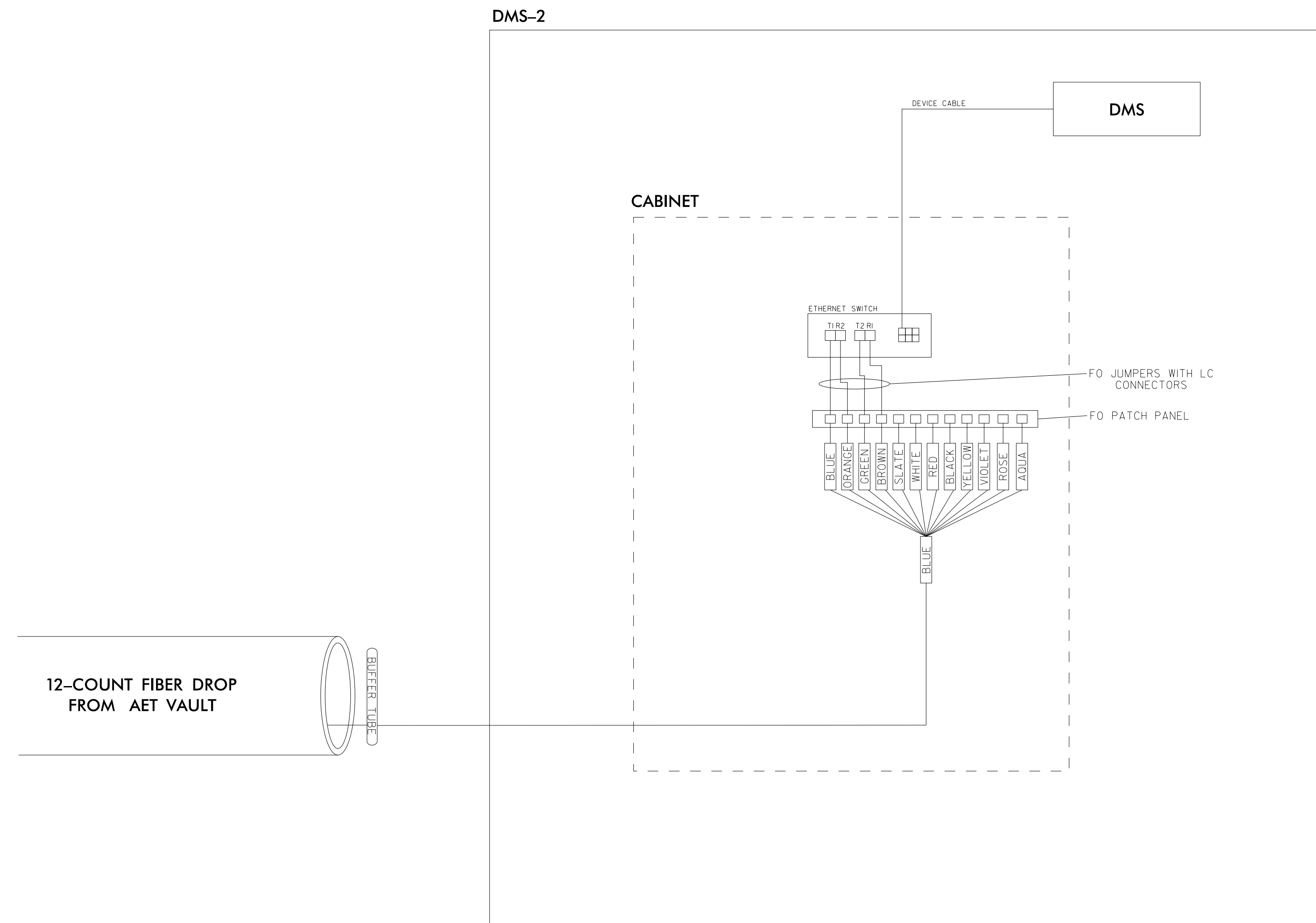
 SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021

DMS-2

(SEE SHEETS ITS-45 AND ITS-46)

NOTES:

1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
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9. NCTA WILL PROVIDE THE COORDINATION AND ORDERING INSTRUCTIONS TO NCDOT IT IN ORDER THAT THE PROPER GBICs ARE PROVIDED IN THE SWITCHES.



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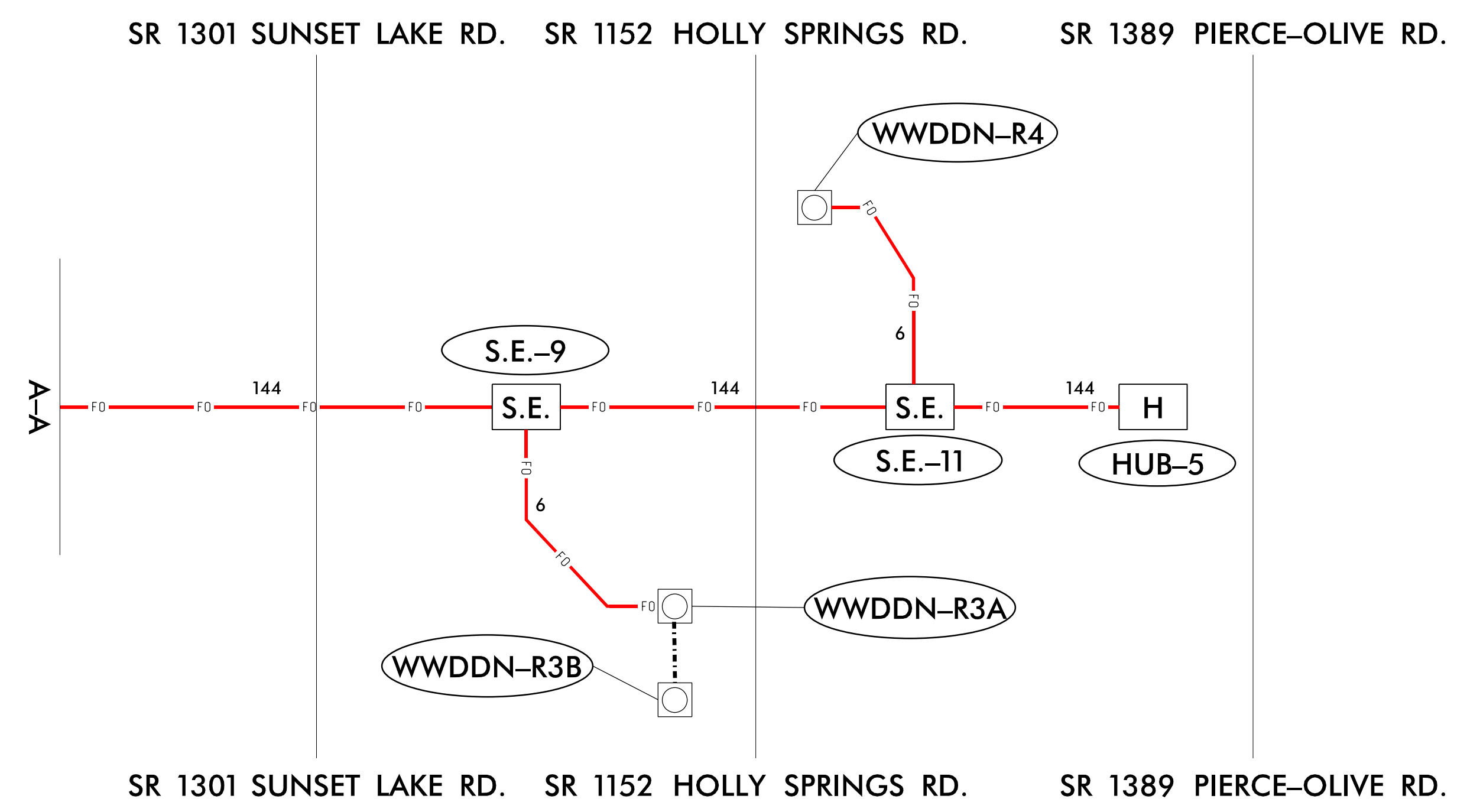
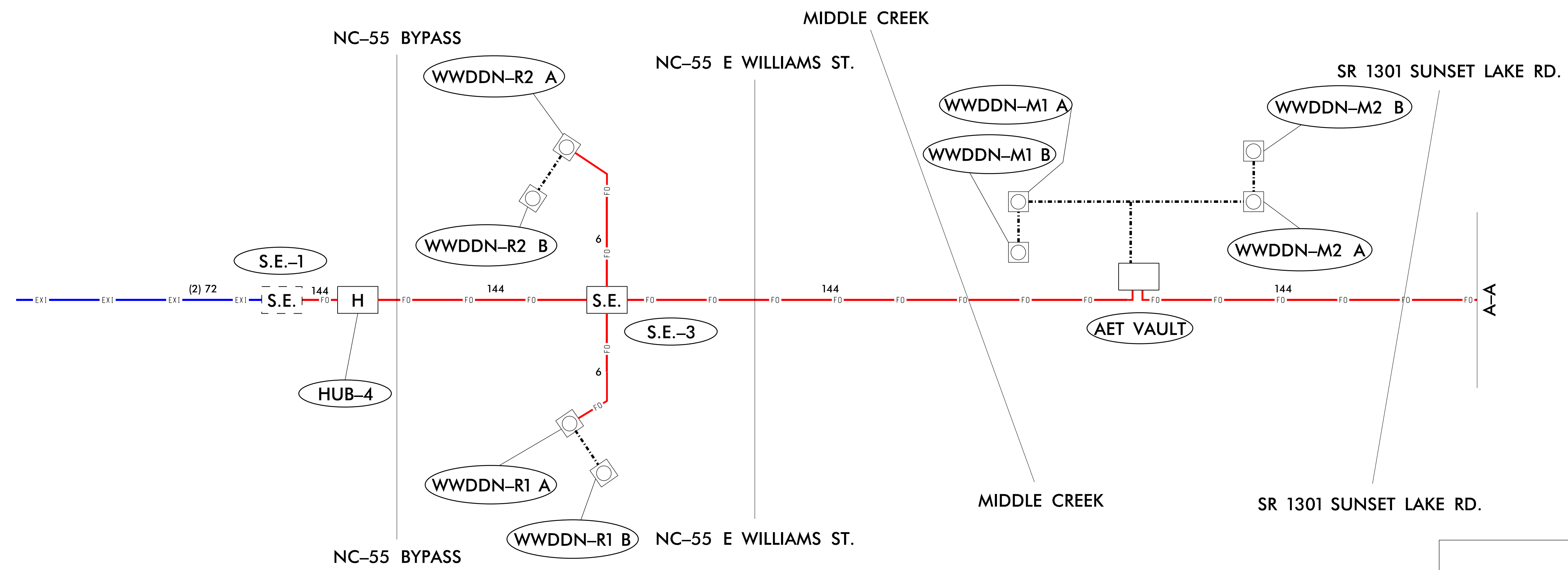
PLANS PREPARED BY:

 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered *As Promised* NC Lic. No. F-0270

Prepared in the Offices of:			
ITS SPLICING DETAILS			
DIVISION 05		WAKE COUNTY RALEIGH	
PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARBETTO		
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY		
SCALE	REVISIONS	INIT.	DATE
NO SCALE			

SEAL

ANTHONY M. BARRETTO
 ENGINEER
 01/20/2021
 SIGNATURE DATE



LEGEND

- XXXX PROPOSED DEVICE AND ID NUMBER
- XXXX EXISTING DEVICE AND ID NUMBER
- H PROPOSED HUB
- S.E. PROPOSED SPLICE ENCLOSURE
- S.E. EXISTING SPLICE ENCLOSURE
- PROPOSED CCTV CAMERA
- EXISTING CCTV CAMERA
- PROPOSED MVD
- EXISTING MVD
- PROPOSED WWDDN
- DMS PROPOSED DMS (TYPE-A)
- DMS PROPOSED DMS (TYPE-B)
- xx FIBER OPTIC CABLE COUNT
- FO— PROPOSED FIBER OPTIC CABLE
- - - - - PROPOSED DEVICE CABLE (BY OTHERS)
- EX1— EXISTING COMMUNICATION CABLE

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UNLESS ALL SIGNATURES COMPLETED

1/18/2021
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PLANS PREPARED BY:

 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:

TOLLING FIBER SCHEMATIC

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

NO	REVISIONS	INIT.	DATE

SCALE: NO SCALE

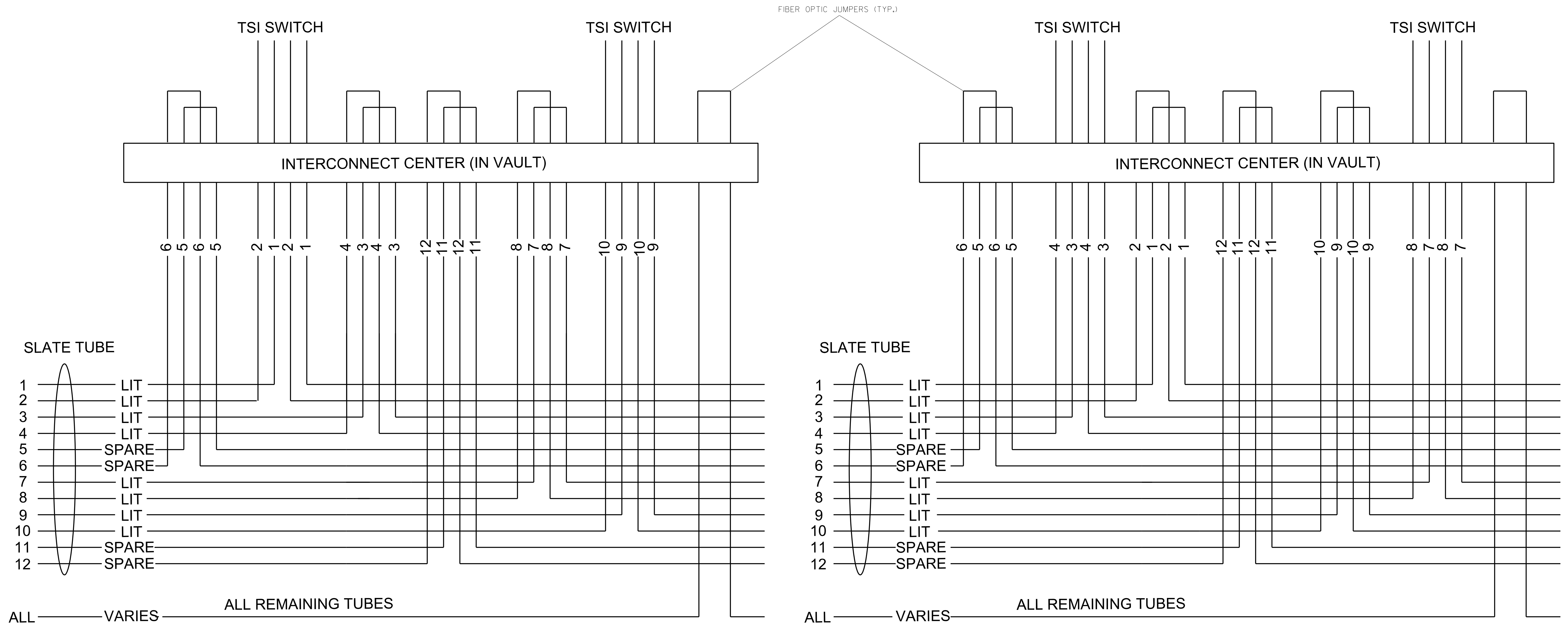
SEAL

SIGNATURE: *Anthony M. Barretto*
 DATE: 01/20/2021

C540 AET SITE SPLICING DETAIL

TOLL SITES T36, T40, T43

TOLL SITES T38, T41



NOTES:

- 1. AT TOLL VAULTS, ALL FIBERS WILL BE TERMINATED IN THE INTERCONNECT CENTERS. RESERVE BROWN FIBERS 1, 2 FOR HUB-TO-HUB COMMUNICATIONS. RESERVE BROWN FIBERS 3, 4 FOR END-TO-END BACKHAUL.

1/2/2020
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PLANS PREPARED BY:

 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:

TOLLING SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

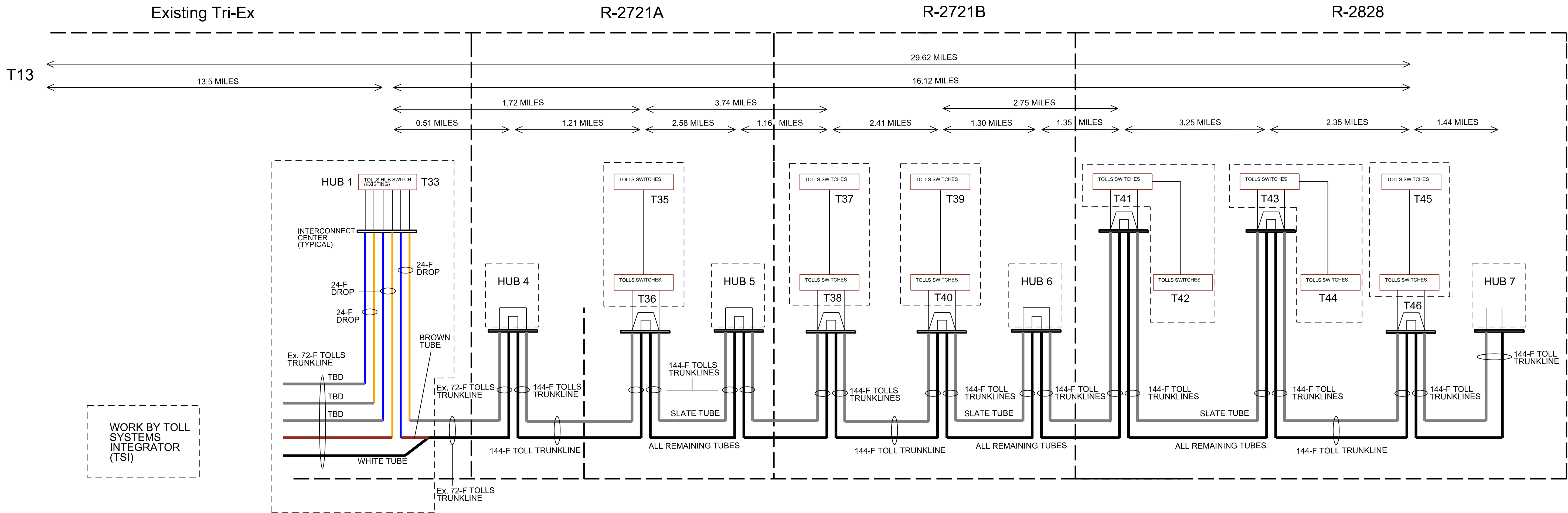
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

REVISIONS: _____ INIT. DATE: _____

SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 047143
 ANTHONY M. BARBETTO
 Signature: *Anthony M. Barbetto* DATE: 01/20/2021

C540 TOLLS CABLE SPLICE SCHEMATIC



NOTES:

- ALL SWITCHING SUPPLIED AND INSTALLED BY THE TOLL SYSTEM INTEGRATOR.
- AT TOLL VAULTS, ALL FIBER WILL BE TERMINATED IN THE INTERCONNECT CENTERS. RESERVE BROWN FIBERS 1, 2 FOR HUB-TO-HUB COMMUNICATIONS. RESERVE BROWN FIBERS 3, 4 FOR END-TO-END BACKHAUL.
- SEE "C540 AET SITE SPlicing DETAIL" FOR SPECIFICS OF SPlicing IN THE TOLL VAULTS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

12/23/2020 c:\pwworking\gfm\01\mtransue\00958946\R2721A_ITS_DET_15.dgn mtransue

PLANS PREPARED BY:

FLATIRON | **BRANCH CIVIL**

Gannett Fleming | One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:

NORTH CAROLINA Turnpike Authority

TOLLING SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

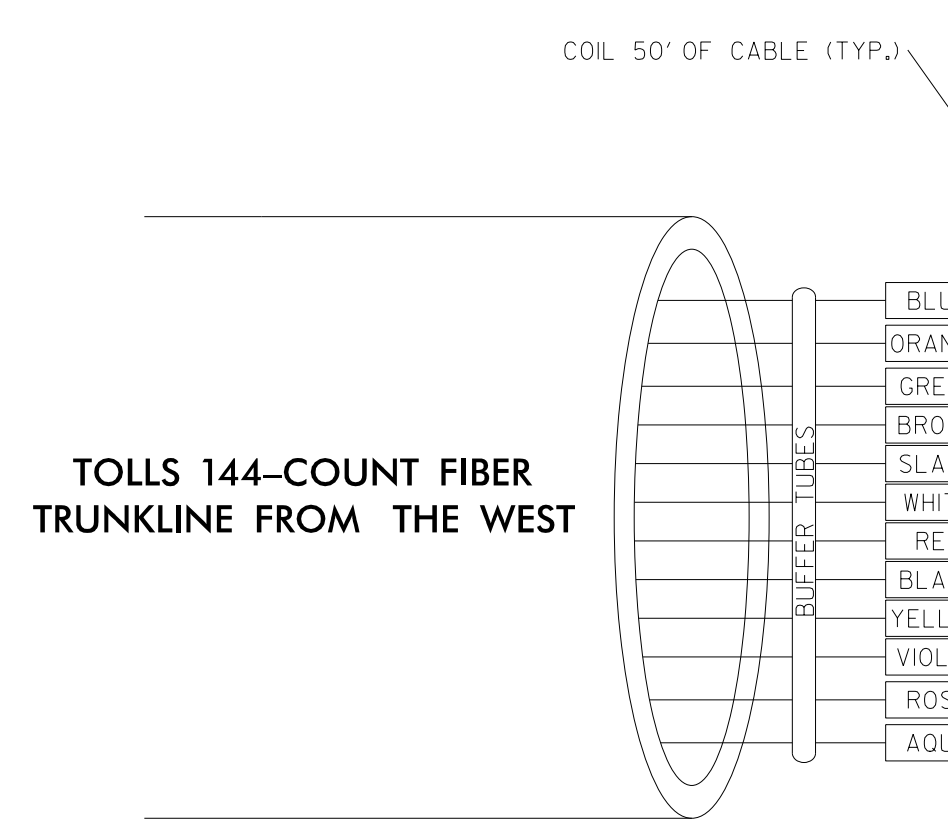
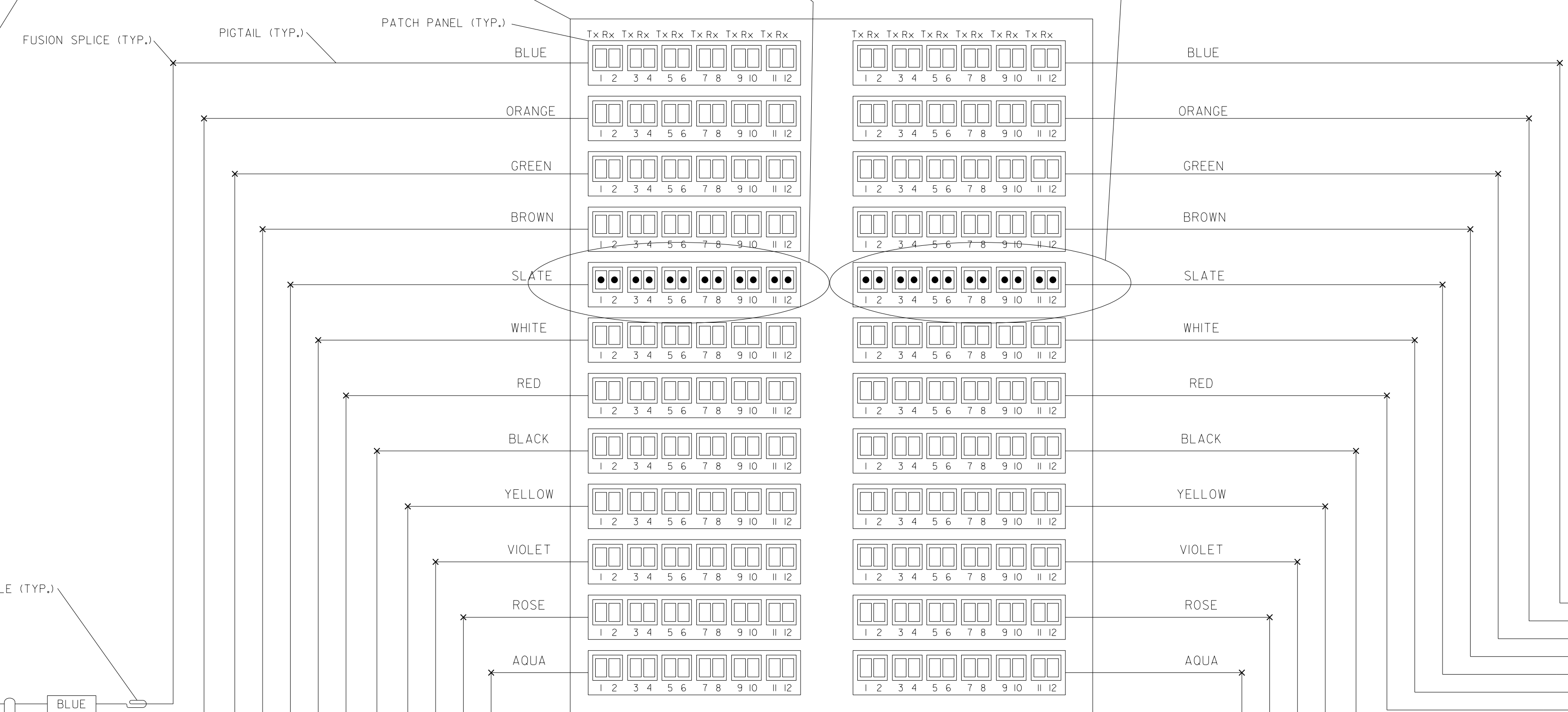
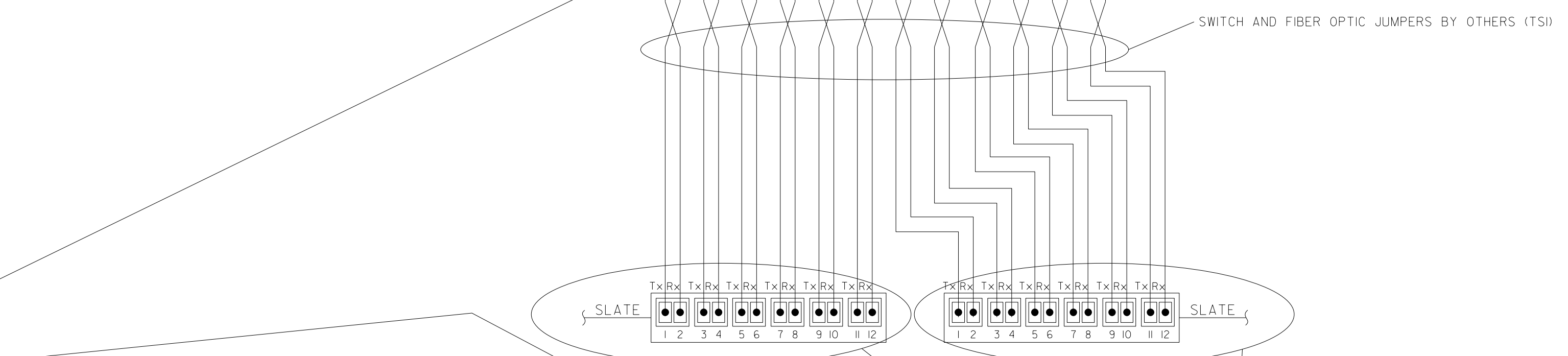
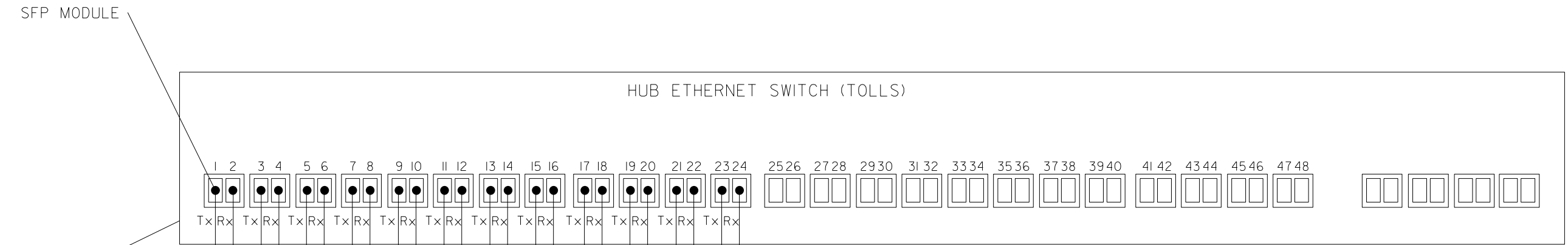
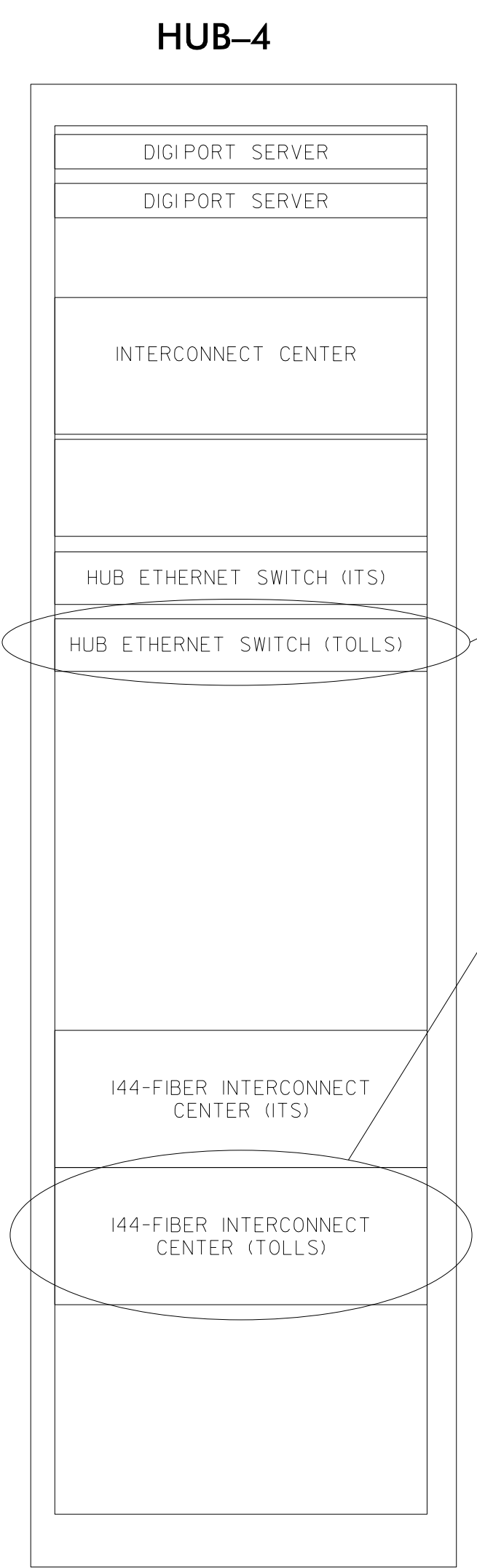
REVISIONS: _____ INIT: _____ DATE: _____

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047143 ANTHONY M. BARBETTO

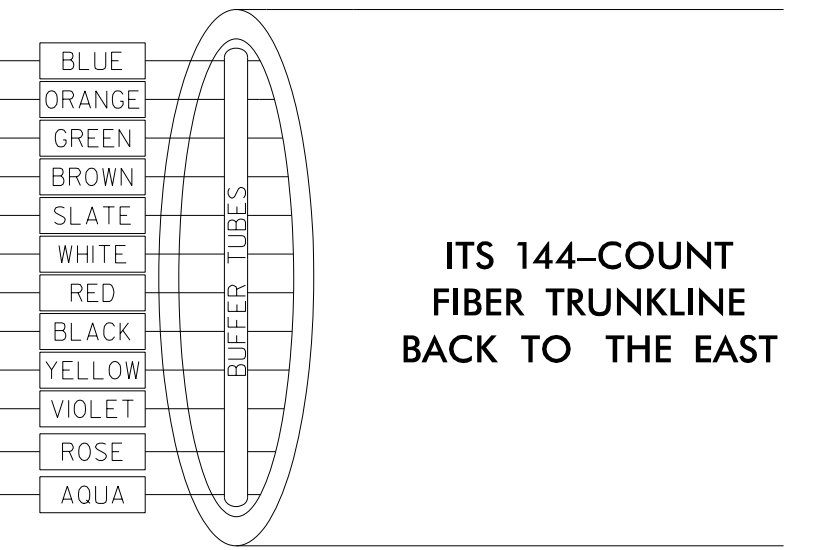
SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021

HUB-4 (TOLLING)

(SEE SHEET ITS-39)



- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
 2. LEAVE ALL FIBERS NOT BEING TERMINATED UN CUT; MAINTAIN CONTINUITY. NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
 3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
 4. UNLESS OTHERWISE STATED ELSEWHERE, LEAVE 6-FOOT CABLE SLACK IN EACH CABINET WHERE SOME/ALL OF ITS FIBERS ARE TERMINATED. COIL CABLE SLACK(S) NEATLY AROUND A TAKE-UP REEL/MECHANISM.
 5. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
 6. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.



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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
 One Glenwood Avenue, Suite 900, Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared by: **North Carolina Turnpike Authority**

TOLLING SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

REVISIONS: _____

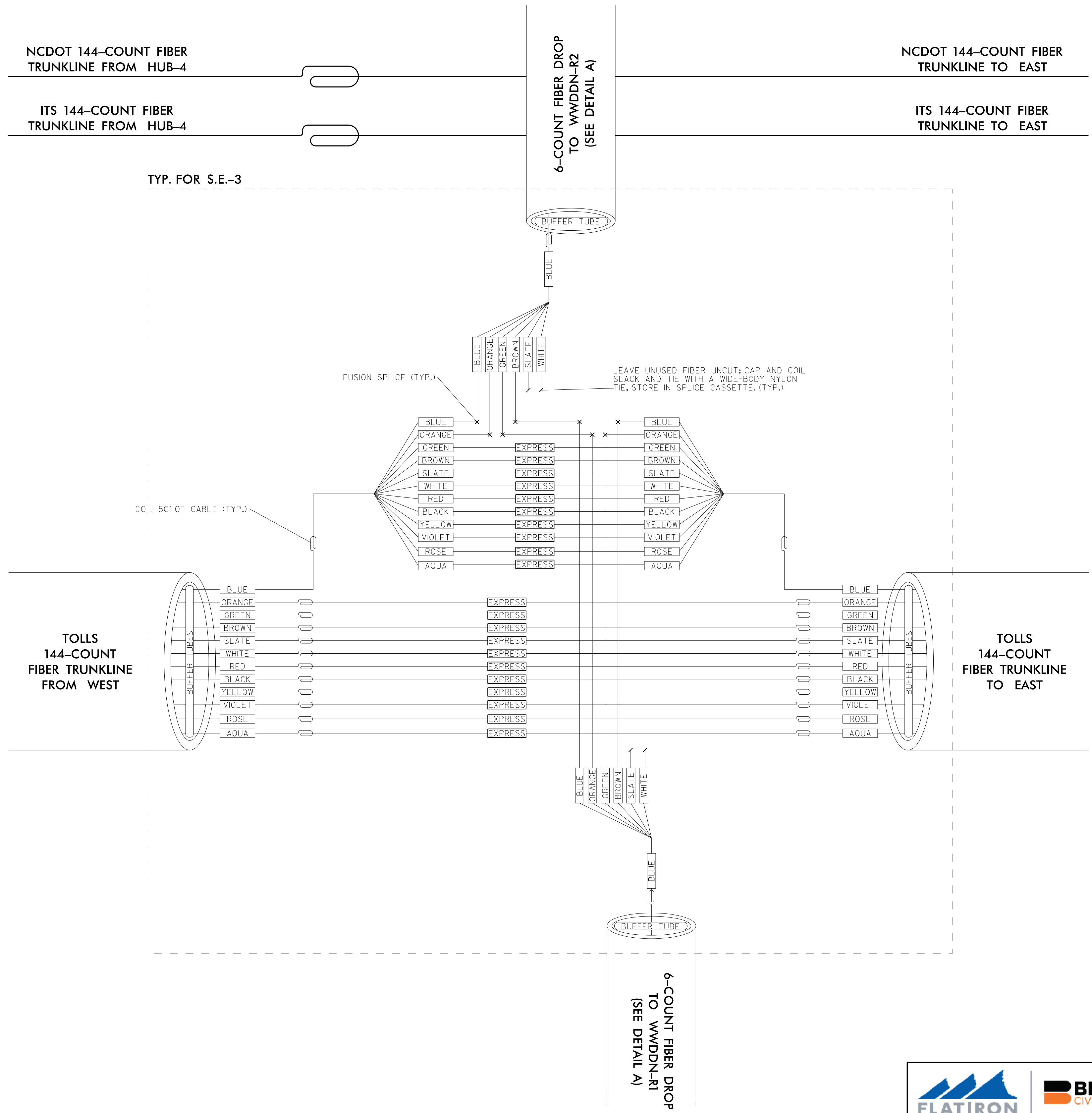
INIT. DATE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047143 ANTHONY M. BARBETTO

SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021

S.E.-3

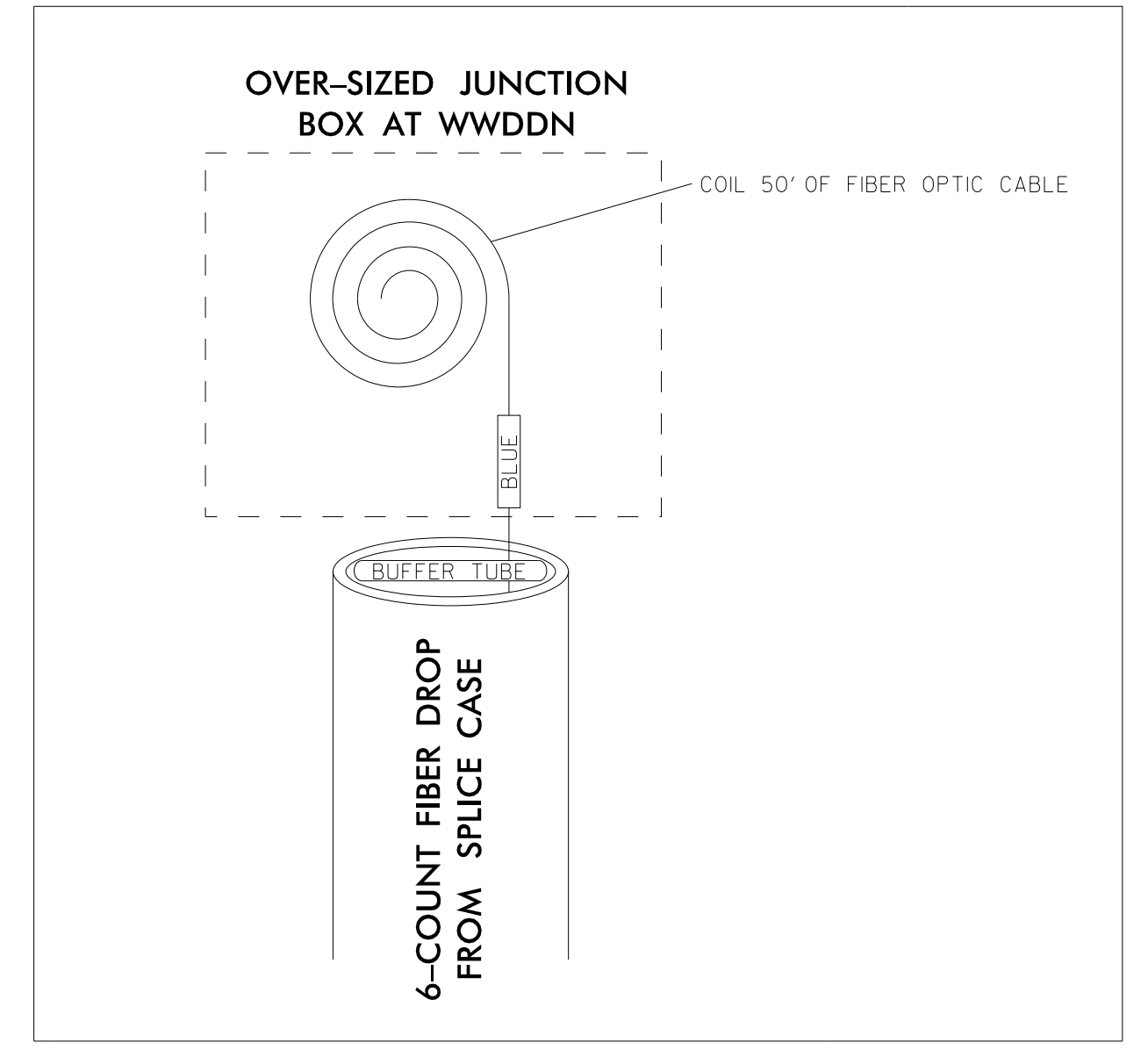
(SEE SHEET ITS-37)



NOTES:

1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UNCUIT; MAINTAIN CONTINUITY, ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
2. LEAVE ALL FIBERS NOT BEING TERMINATED UNCUIT; MAINTAIN CONTINUITY. NEATLY COIL AND TIE THE FIBER SLACKS WITH NYLON TIES.
3. UNLESS OTHERWISE STATED ELSEWHERE, USE LC TYPE CONNECTORS, PIGTAILS AND PATCH CORD WITH LC CONNECTORS ON SMFO CIRCUITS.
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5. DOT WILL PROVIDE SWITCHES WITH SFP MODULES FOR INSTALLATION BY CONTRACTOR.
6. UNUSED FIBERS LEFT COILED AND STORED IN SPLICE TRAY.
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8. EDGE SWITCH CONFIGURATIONS ARE GENERIC, CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING THE PROPER TERMINATIONS.

DETAIL A



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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

<p>TOLLING SPLICING DETAILS</p> <p>DIVISION 05 WAKE COUNTY RALEIGH</p> <p>PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO</p> <p>PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY</p>		<p>SCALE</p> <p>NO SCALE</p>
<p>SCALE</p> <p>NO SCALE</p>	<p>REVISIONS</p> <p>INIT. DATE</p>	

SEAL

ANTHONY M. BARBETTO

PROFESSIONAL ENGINEER

SEAL 047143

01/20/2021

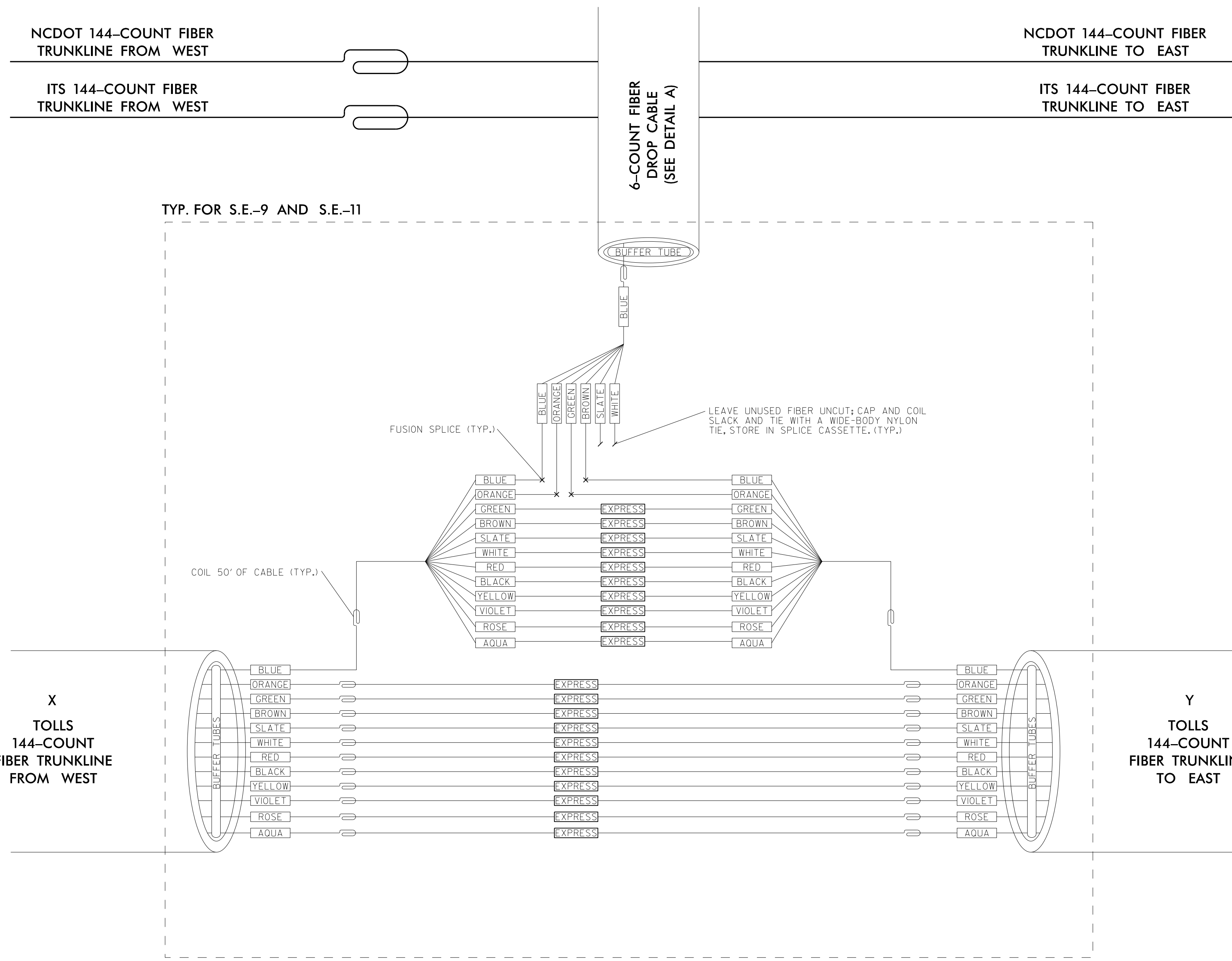
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S.E.-9

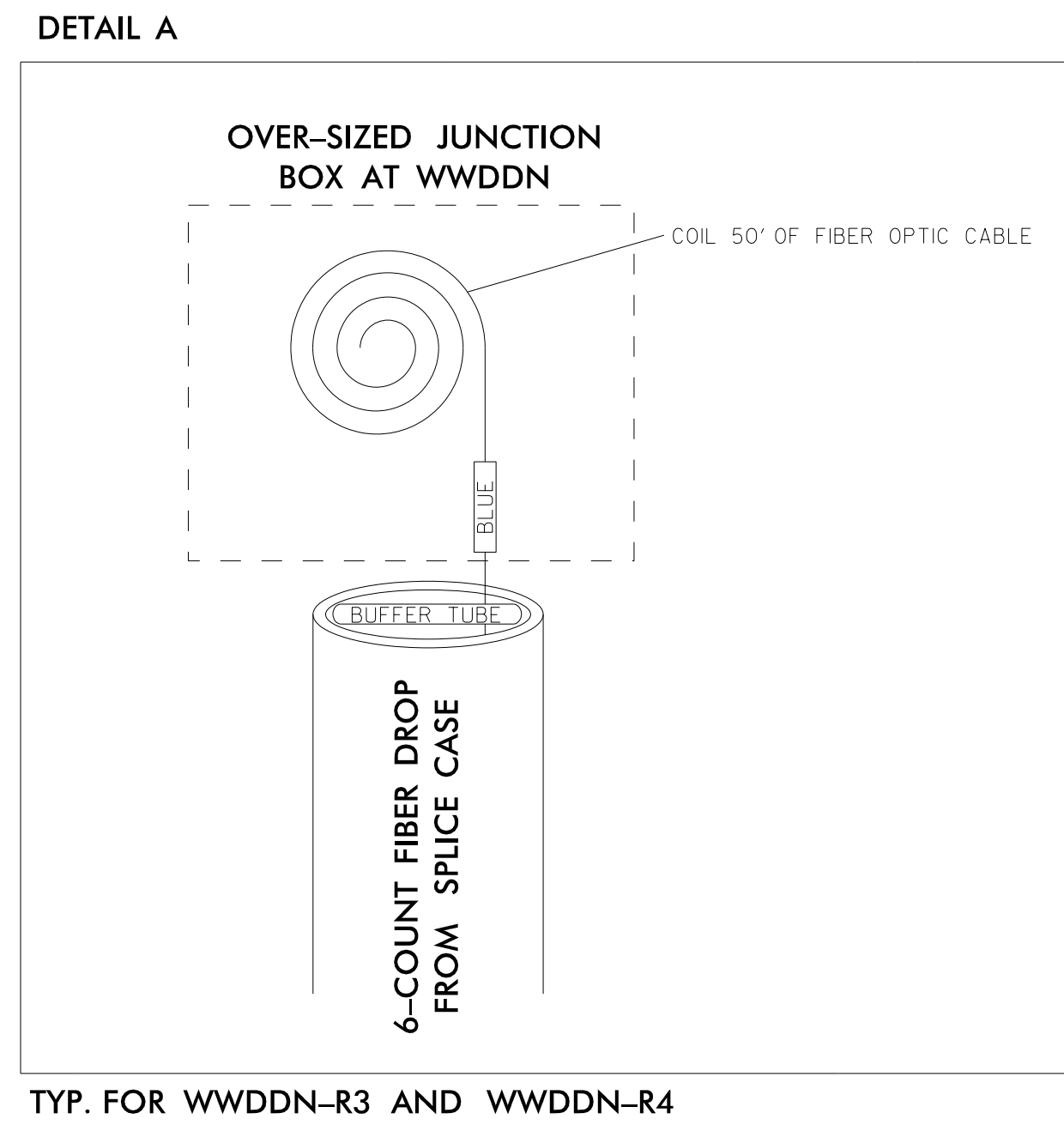
(SEE SHEET ITS-53)

S.E.-11

(SEE SHEET ITS-54)



- NOTES:
1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UNCUt; MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
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SPlice ENCLOSURE TYPICAL

SPlice ENCLOSURE	DEVICE ID	ITS SHEET	TO	
			X	Y
S.E.-9	WWDDN-R3A&B	ITS-53	AET VAULT	S.E.-11 WWDDN-R4
S.E.-11	WWDDN-R4	ITS-54	S.E.-9 WWDDN-R3A&B	HUB-5

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Prepared in the Offices of:

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:

TOLLING SPlicing DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSHIE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

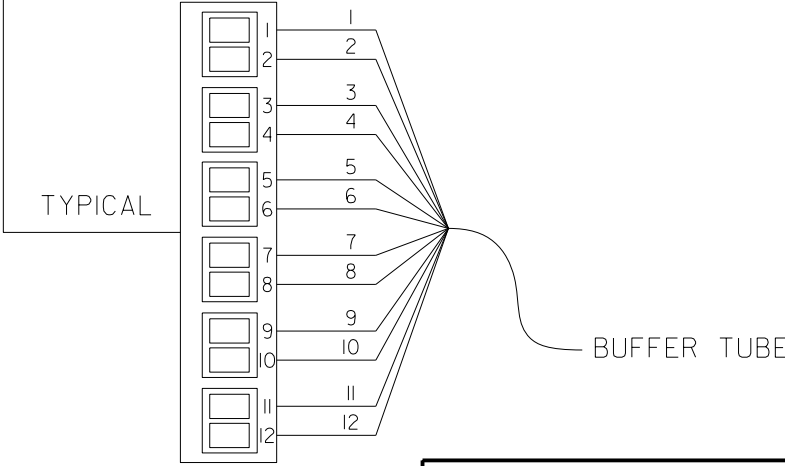
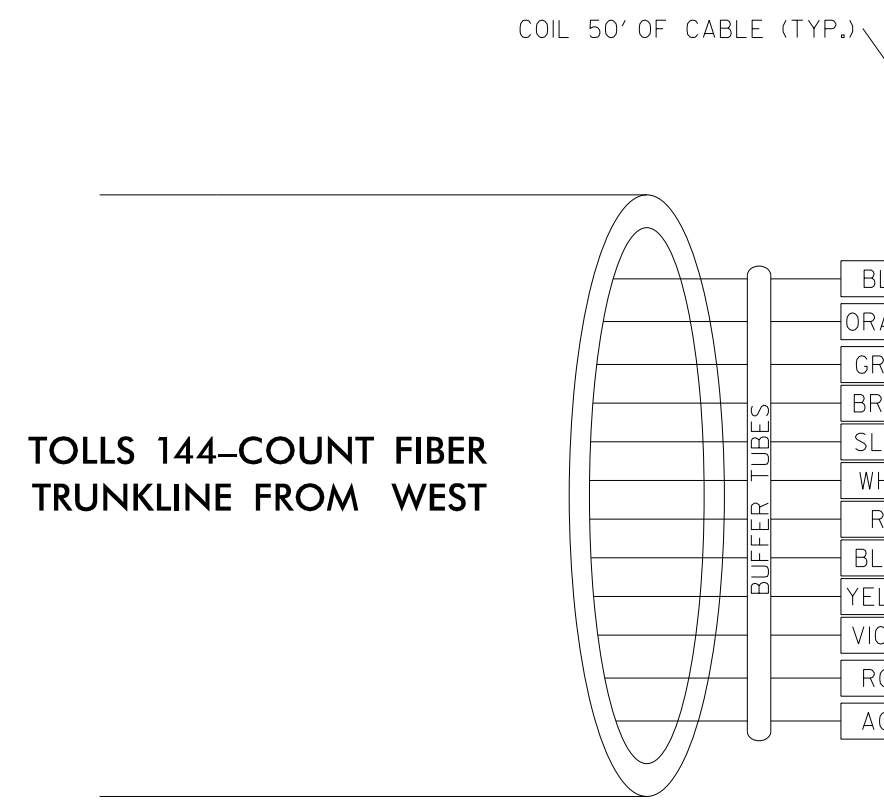
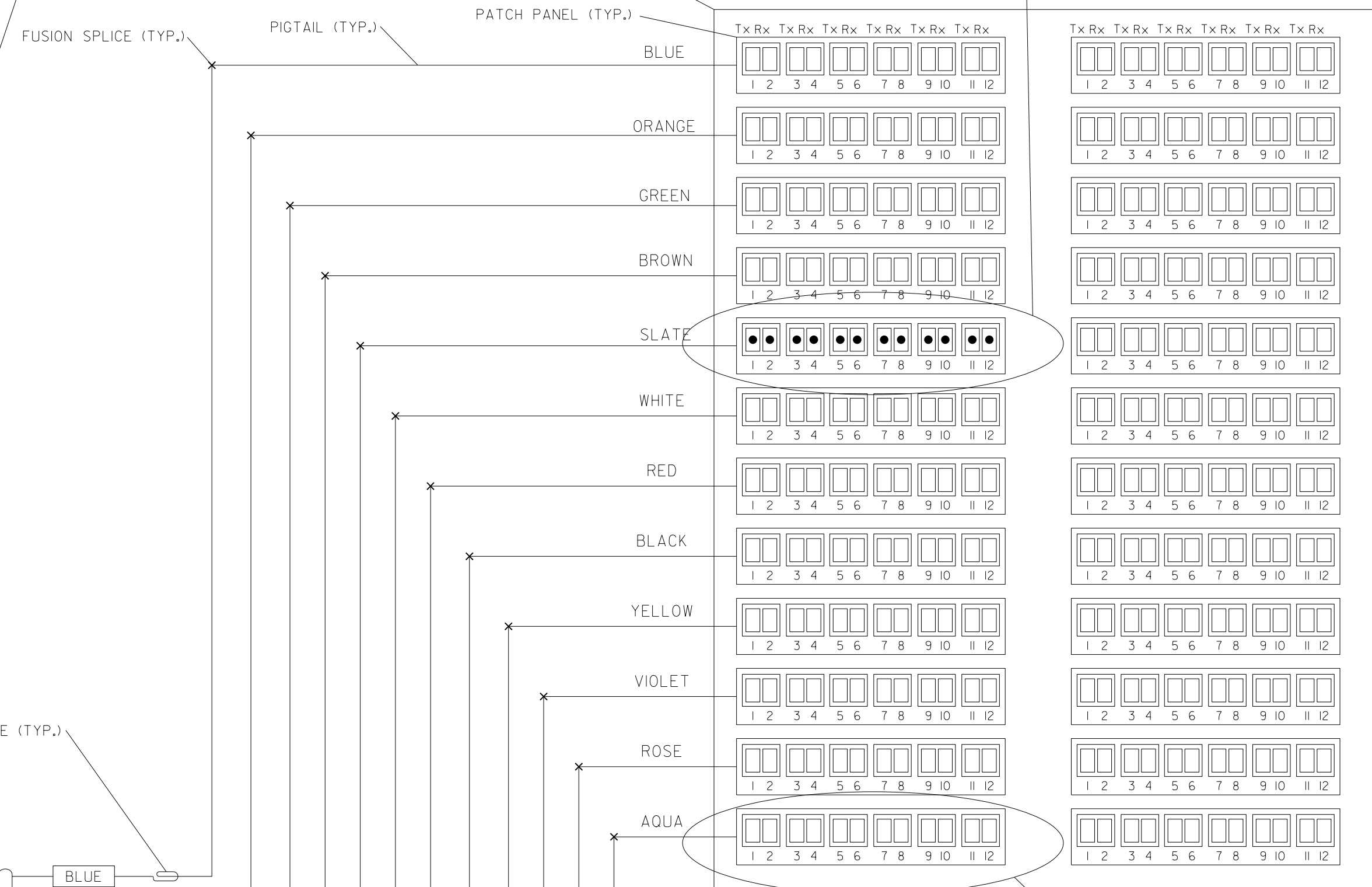
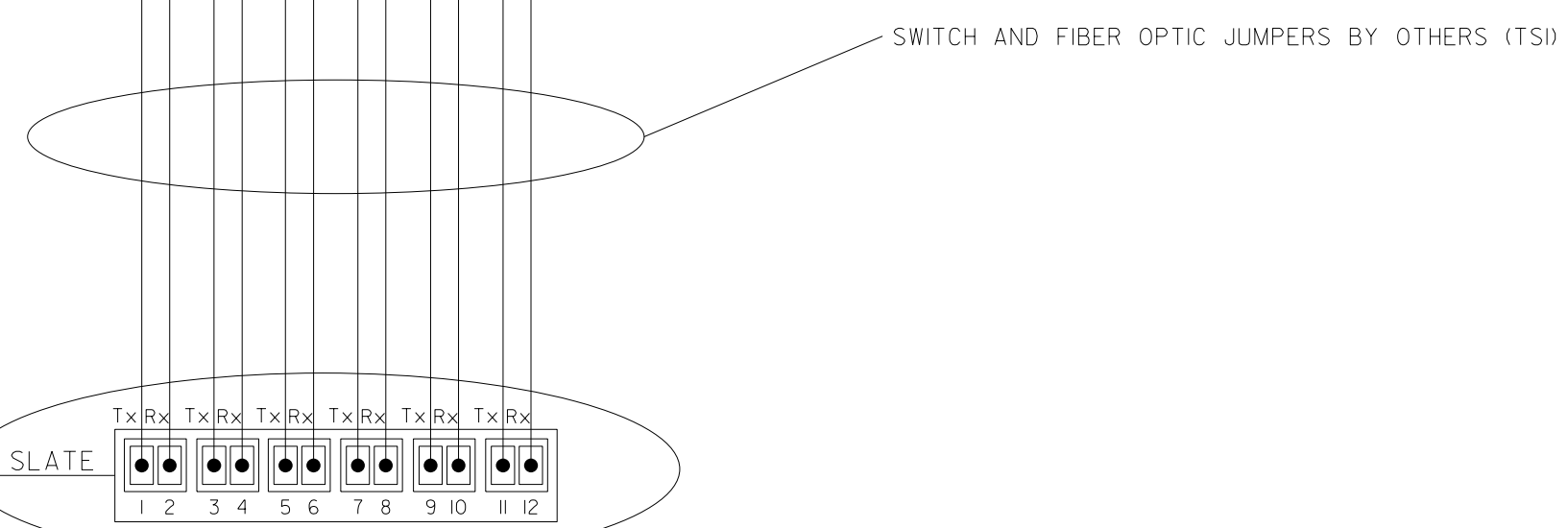
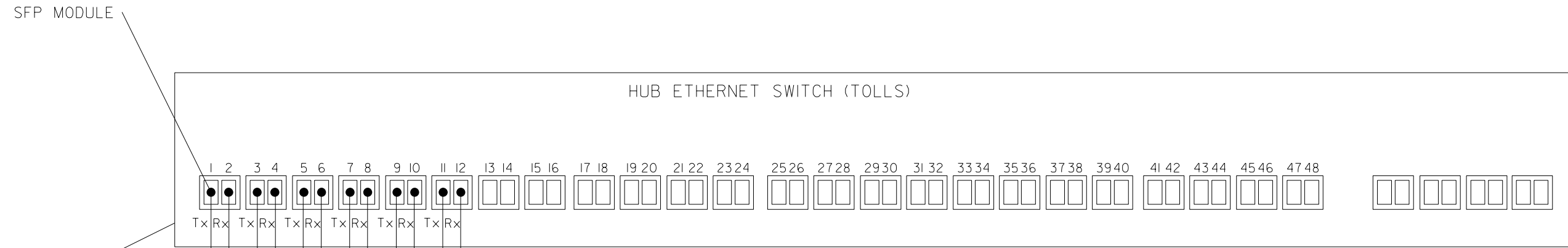
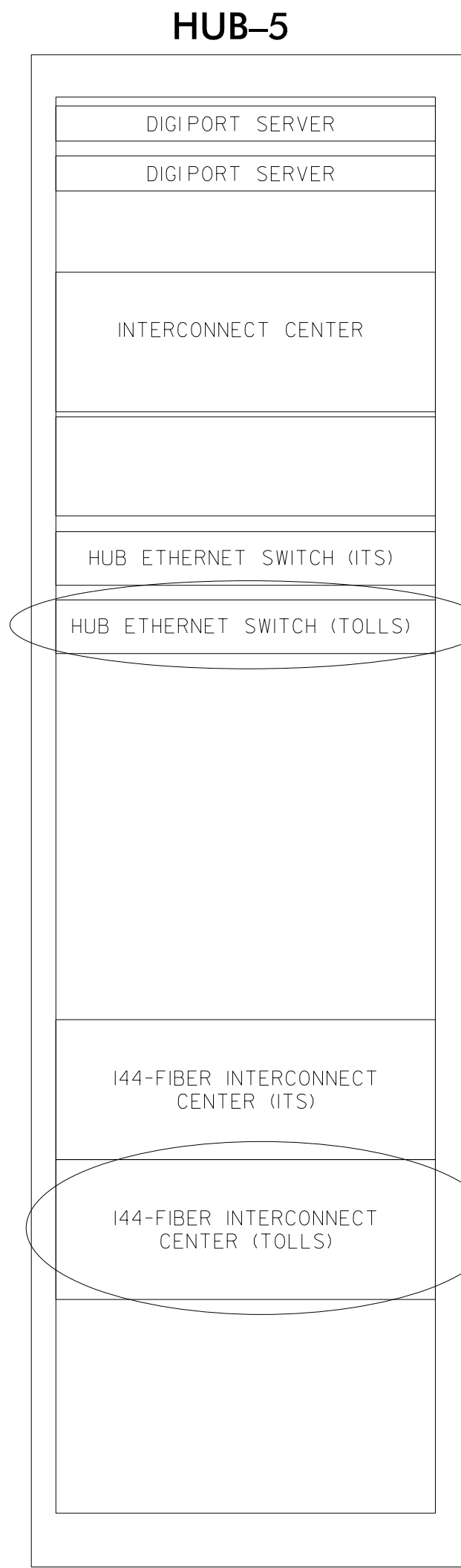
REVISIONS: _____ INIT: _____ DATE: _____

SEAL

Signature: *Anthony M. Barretto* DATE: 01/20/2021

HUB-5 (TOLLING)

(SEE SHEET ITS-58)



NOTES:

1. LEAVE ALL BUFFER TUBES NOT BEING TERMINATED UNCUT; MAINTAIN CONTINUITY. ONLY PEEL BUFFER TUBES IN WHICH FIBERS ARE BEING TERMINATED. NEATLY COIL AND TIE THE BUFFER-TUBE SLACKS WITH NYLON TIES.
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6. UNUSED BUFFER TUBES LEFT COILED AND STORED IN SPLICE ENCLOSURE.

1/18/2021
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PLANS PREPARED BY:

 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of:

TOLLING SPLICING DETAILS

DIVISION 05 WAKE COUNTY RALEIGH
 PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

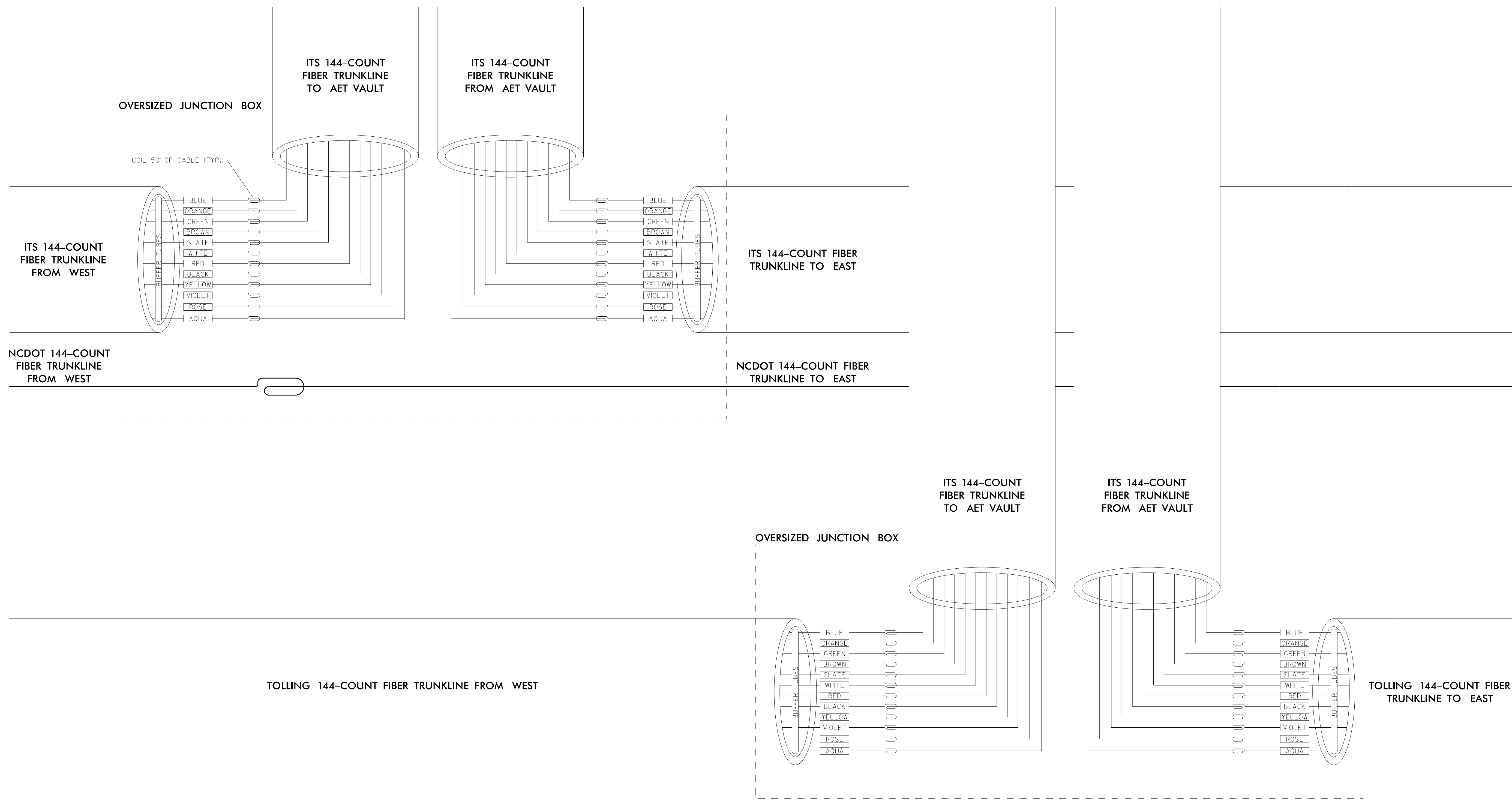
REVISIONS: _____ INIT. DATE

SEAL

 Anthony M. Barretto
 SIGNATURE DATE: 01/20/2021

AET OVERSIZED JUNCTION BOX

(SEE SHEET ITS-45)



NOTES:

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


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PLANS PREPARED BY:

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 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:


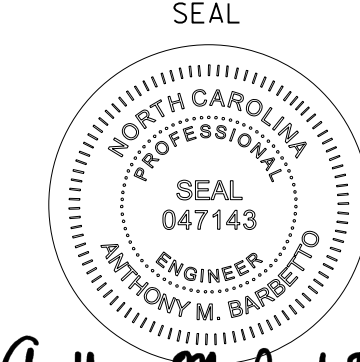
ITS/TOLLING AET JUNCTION BOX

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

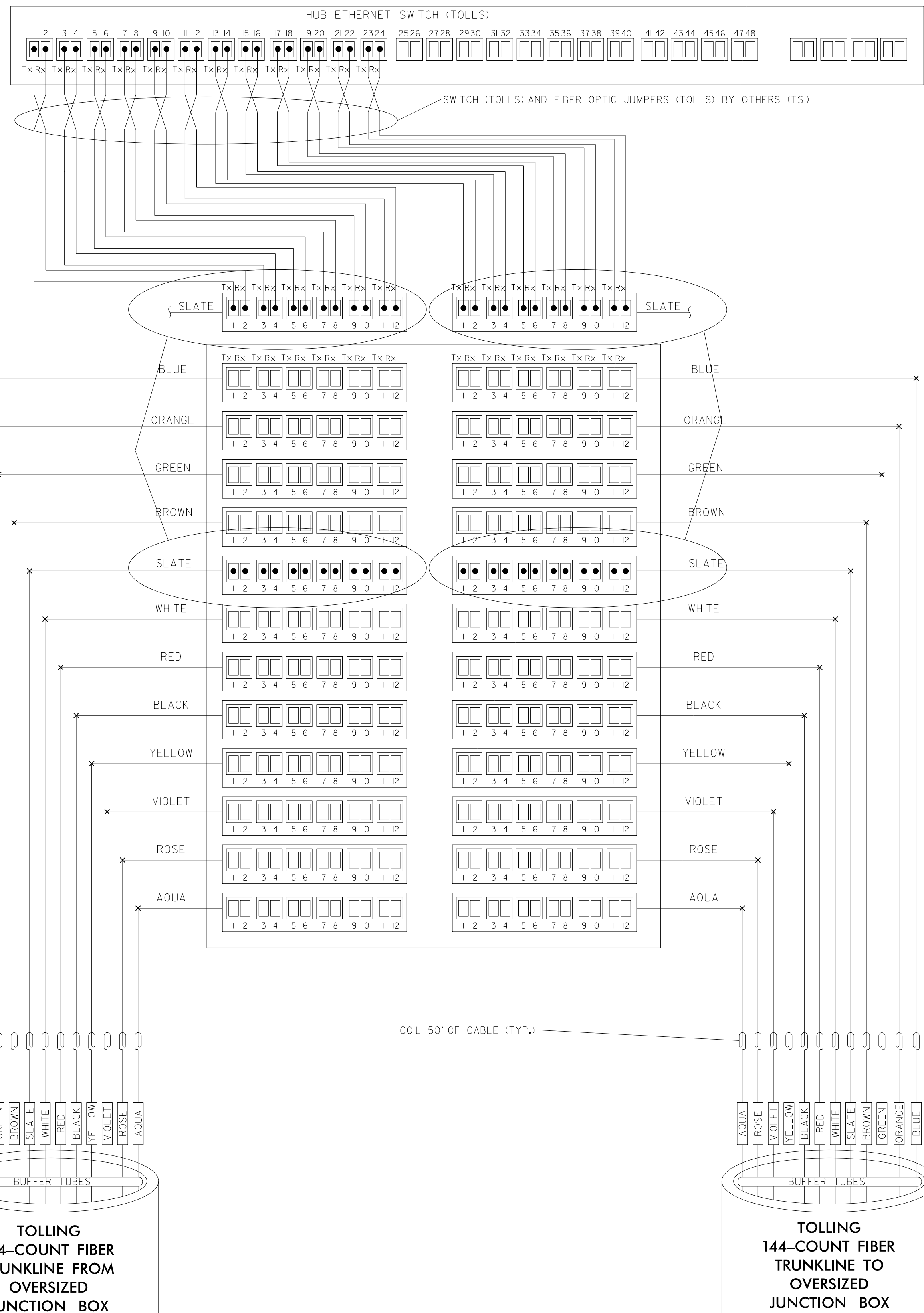
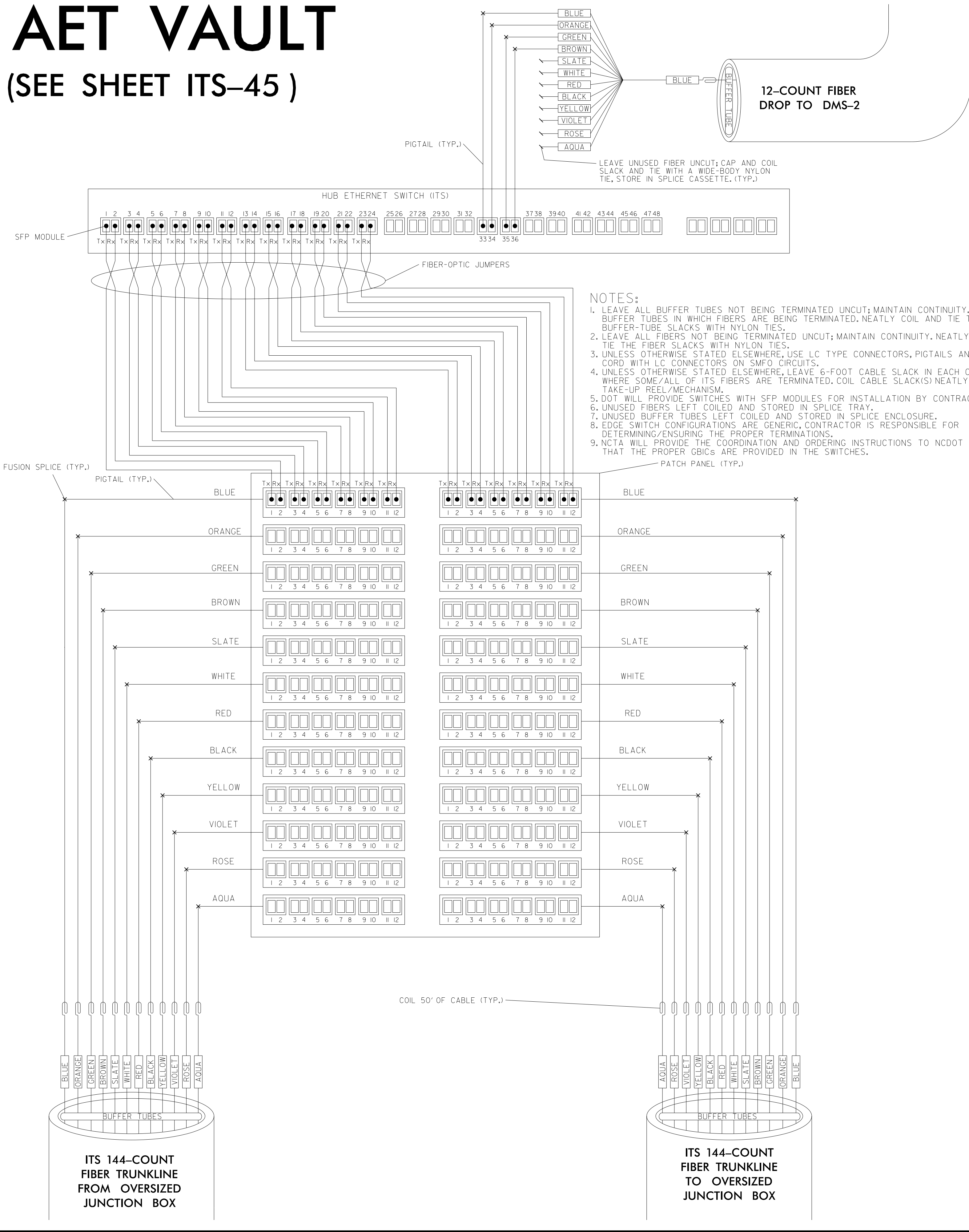
SCALE: NO SCALE



SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 ANTHONY M. BARRETTO
 047143
 01/20/2021
 SIGNATURE DATE

AET VAULT

(SEE SHEET ITS-45)



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Prepared in the Offices of:

NORTH CAROLINA Turnpike Authority

AET VAULT SPLICING

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSHIE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

REVISIONS: _____ INIT. DATE

SEAL

ANTHONY M. BARBETTO

SEAL 047143

ENGINEER

SIGNATURE DATE 01/20/2021

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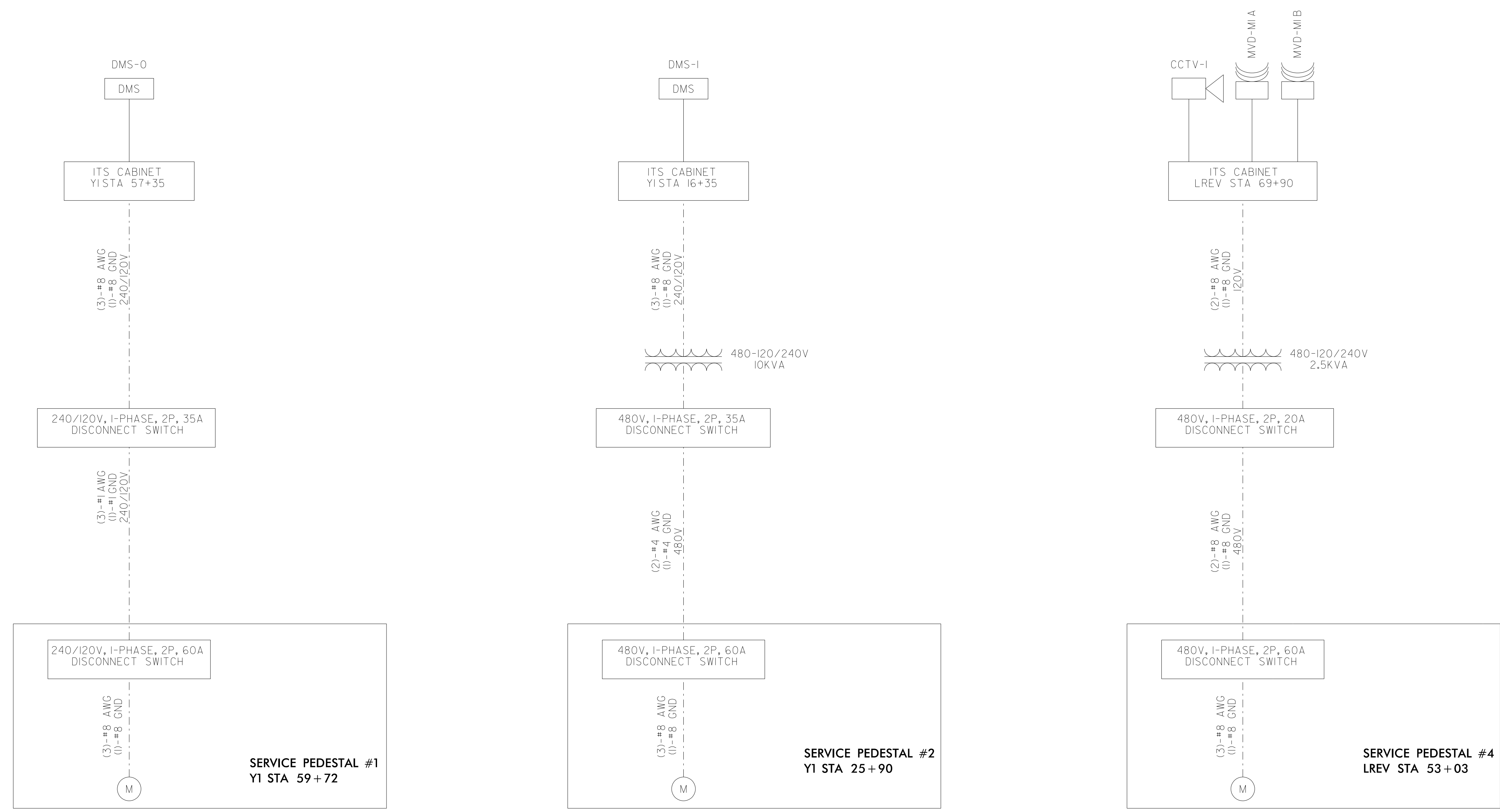
BRANCH CIVIL

PLANS PREPARED BY:

Gannett Fleming

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

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LEGEND

- METER
- DYNAMIC MESSAGE SIGN
- CCTV CAMERA SITE
- MICROWAVE VEHICLE DETECTION SITE
- STEP-DOWN TRANSFORMER
- POWER CABLE
- DEVICE CABLE

1/18/2021
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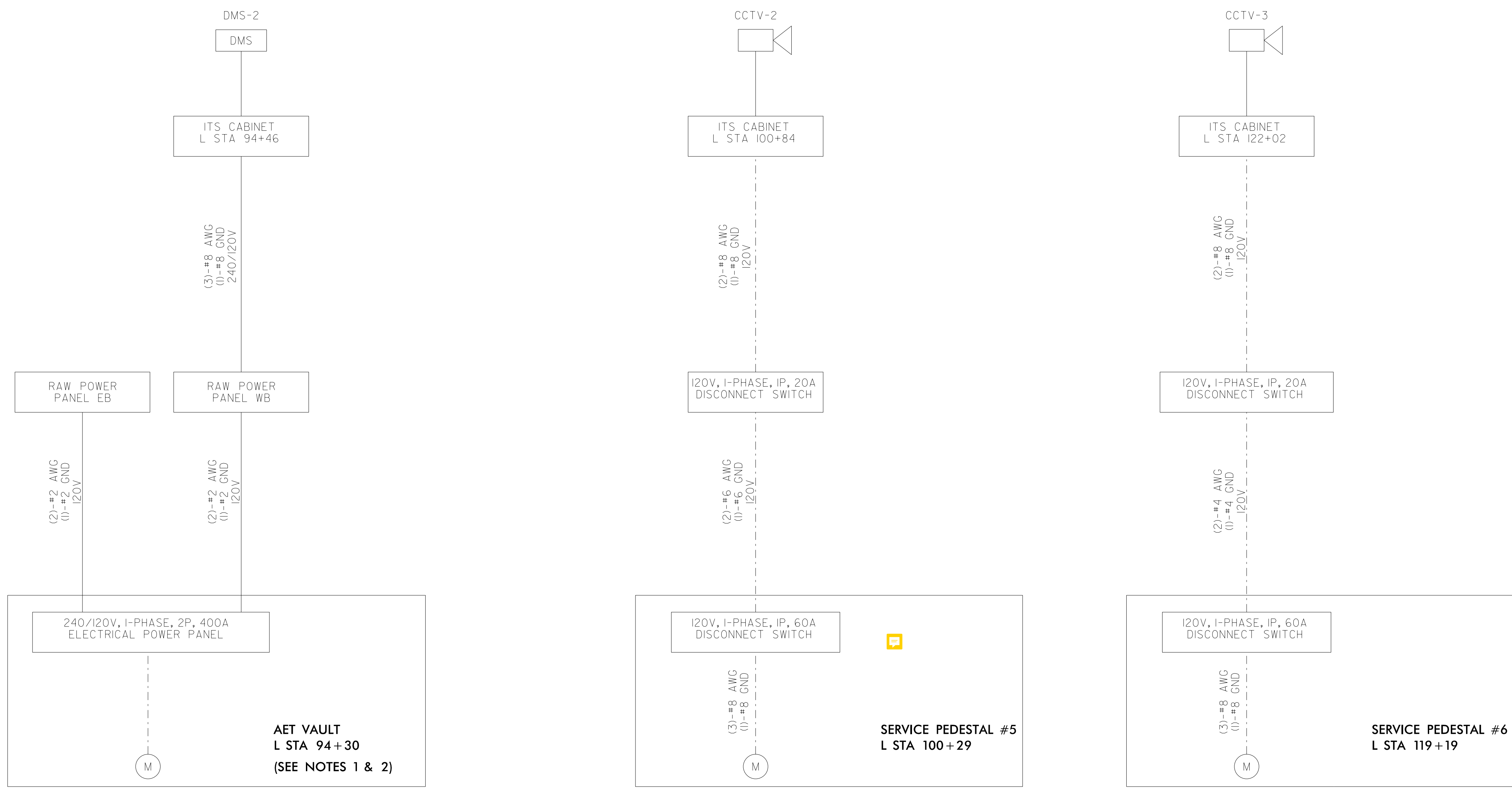
Prepared in the Offices of:

ITS POWER BLOCK DIAGRAM
 DIVISION 05 WAKE COUNTY RALEIGH
 PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE	REVISIONS	INIT.	DATE
NO SCALE			

SEAL

 ANTHONY M. BARBETTO
 SIGNATURE DATE 01/20/2021



LEGEND

- METER
- DMS DYNAMIC MESSAGE SIGN
- CCTV CAMERA SITE
- MICROWAVE VEHICLE DETECTION SITE
- STEP-DOWN TRANSFORMER
- POWER CABLE
- DEVICE CABLE

NOTES:

1. SEE AET VAULT PLANS AND AET LOCATION AND LAYOUT PLANS FOR DETAILS ON CONNECTED DEVICES, CABLING, AND CABINET LOCATIONS.
2. COORDINATE WITH ELECTRIC UTILITY TO PROVIDE POWER SERVICE TO METER SOCKET AT AET VAULT.

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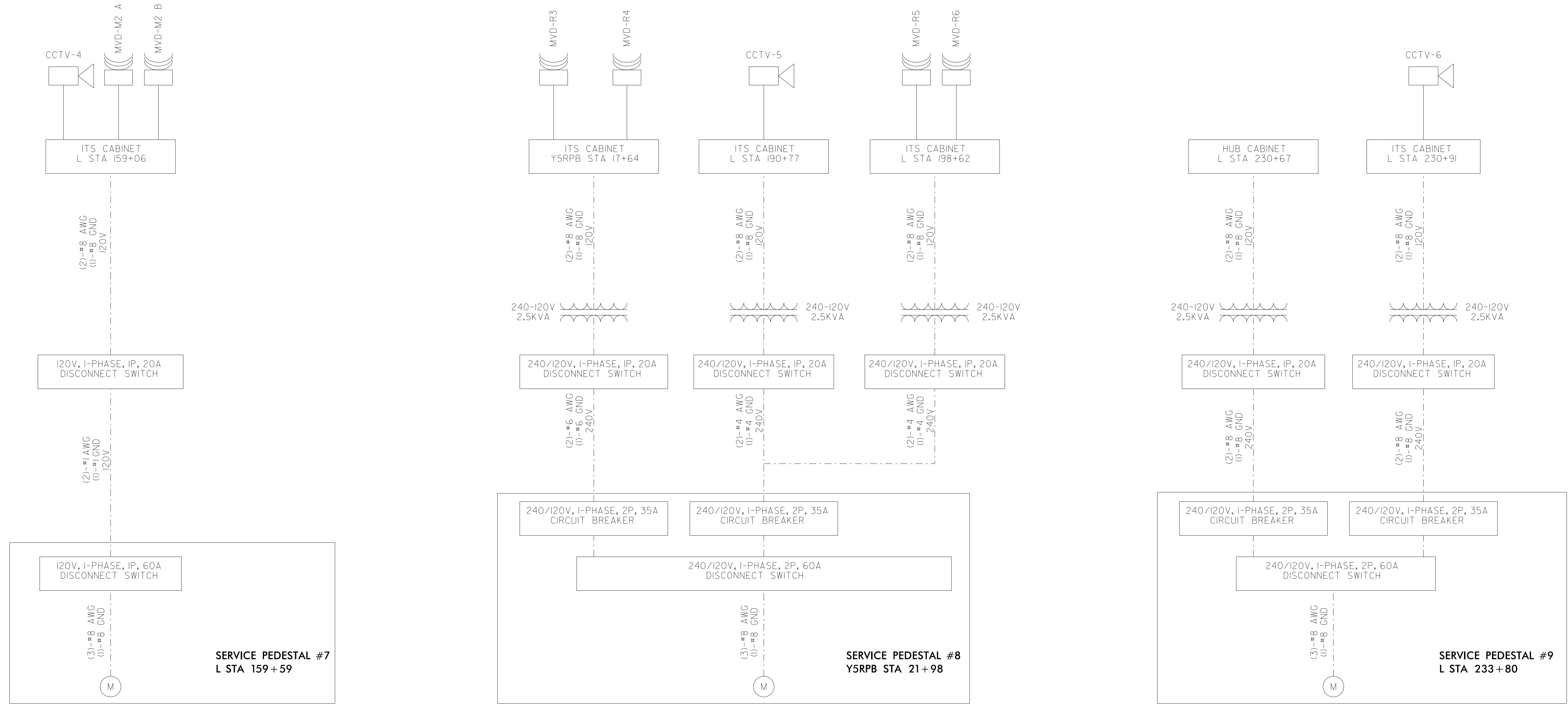
PLANS PREPARED BY:

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 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:

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 DIVISION 05 WAKE COUNTY RALEIGH
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 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY
 SCALE: NO SCALE
 REVISIONS: _____ INIT. DATE: _____
 SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021





LEGEND

- METER
- DMS
- CCTV CAMERA SITE
- MICROWAVE VEHICLE DETECTION SITE
- STEP-DOWN TRANSFORMER
- POWER CABLE
- DEVICE CABLE

1/18/2021
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PLANS PREPARED BY:

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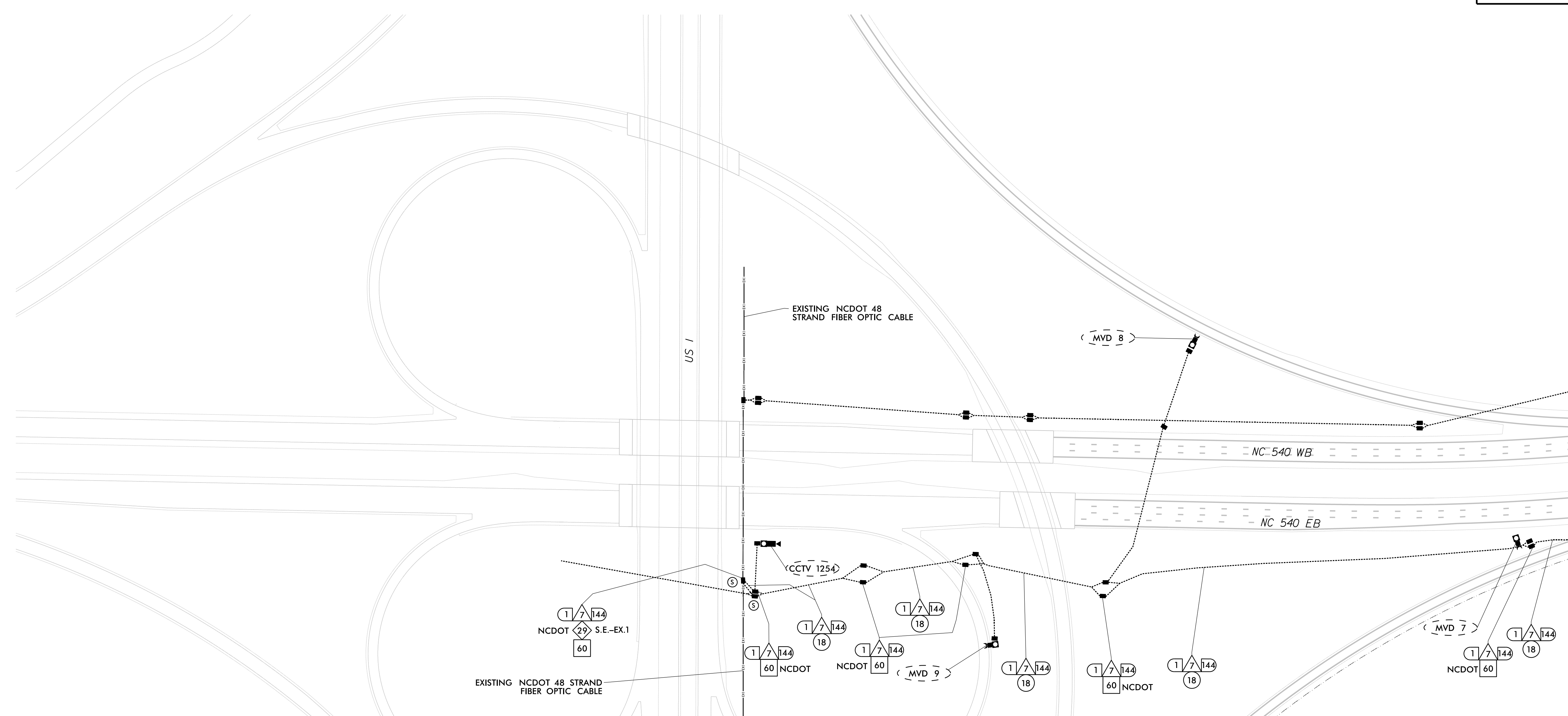
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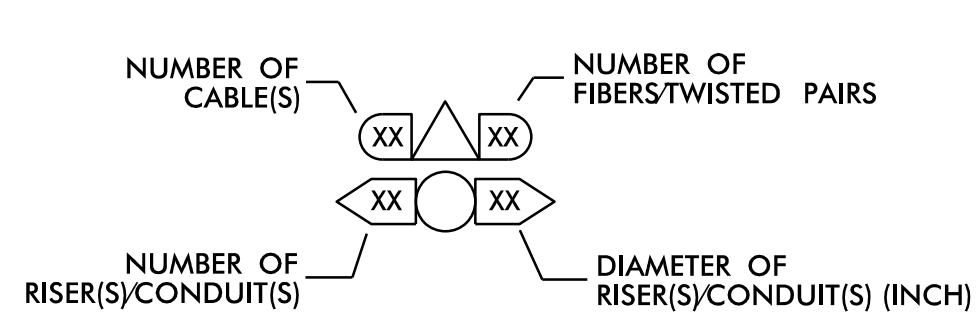
SEAL

 SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021



MATCHLINE SHEET ITS-32

- | | | | | |
|--|--|--|--|--|
| 1 INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 DIRECTIONAL DRILL CONDUIT | 33 INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 INSTALL NEW ELECTRICAL SERVICE | 60 STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 INSTALL CABLE(S) IN EXISTING CONDUIT | 34 INSTALL HUB CABINET | 50 MODIFY EXISTING ELECTRICAL SERVICE | 61 INSTALL TECHNICIAN PAD |
| 3 INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 INSTALL CABLE(S) IN NEW CONDUIT | 35 INSTALL STANDARD JUNCTION BOX | 51 INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 INSTALL GROUNDING SYSTEM |
| 4 INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 INSTALL CABLE(S) IN EXISTING RISER | 36 INSTALL OVERSIZED JUNCTION BOX | 52 INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 INSTALL CABLE(S) IN NEW RISER | 37 INSTALL SPECIAL-SIZED JUNCTION BOX | 53 INSTALL UPS IN HUB CABINET | |
| 6 INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 REMOVE EXISTING JUNCTION BOX | 54 NOT USED | |
| 7 INSTALL SMFO CABLE | 23 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 MODIFY EXISTING JUNCTION BOX | 55 INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | |
| 8 INSTALL FIBER OPTIC DROP CABLE | 24 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 40 INSTALL CCTV CAMERA ASSEMBLY | 56 INSTALL EQUIPMENT DISCONNECT | |
| 9 INSTALL TRACER WIRE | 25 INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 INSTALL CAMERA LOWERING DEVICE | 57 INSTALL DELINEATOR MARKER | |
| 10 INSTALL DEVICE CABLE(S) | 26 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 42 INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 INSTALL POLE MOUNTED MASTER MVD CABINET | |
| 11 TRENCH | 27 INSTALL UNDERGROUND SPLICE ENCLOSURE | 43 INSTALL TYPE III PEDESTAL | 59 REMOVE EXISTING COMMUNICATIONS CABLE | |
| 12 INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 INSTALL BASE MOUNTED SPLICE CABINET | 44 INSTALL MVD | | |
| 13 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 MODIFY EXISTING SPLICE | 45 INSTALL MVD POLE AND FOUNDATION | | |
| 14 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 INSTALL ETHERNET SWITCH | 46 INSTALL DMS ON PEDESTAL STRUCTURE | | |
| 15 NOT USED | 31 INSTALL CABINET FOUNDATION | 47 INSTALL DMS ON GANTRY STRUCTURE | | |
| 16 INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 INSTALL DMS FOUNDATION | | |



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PLANS PREPARED BY: **Gannett Fleming**

 One Glenwood Avenue, Suite 900, Raleigh, NC 27603, (919) 420-7660, NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

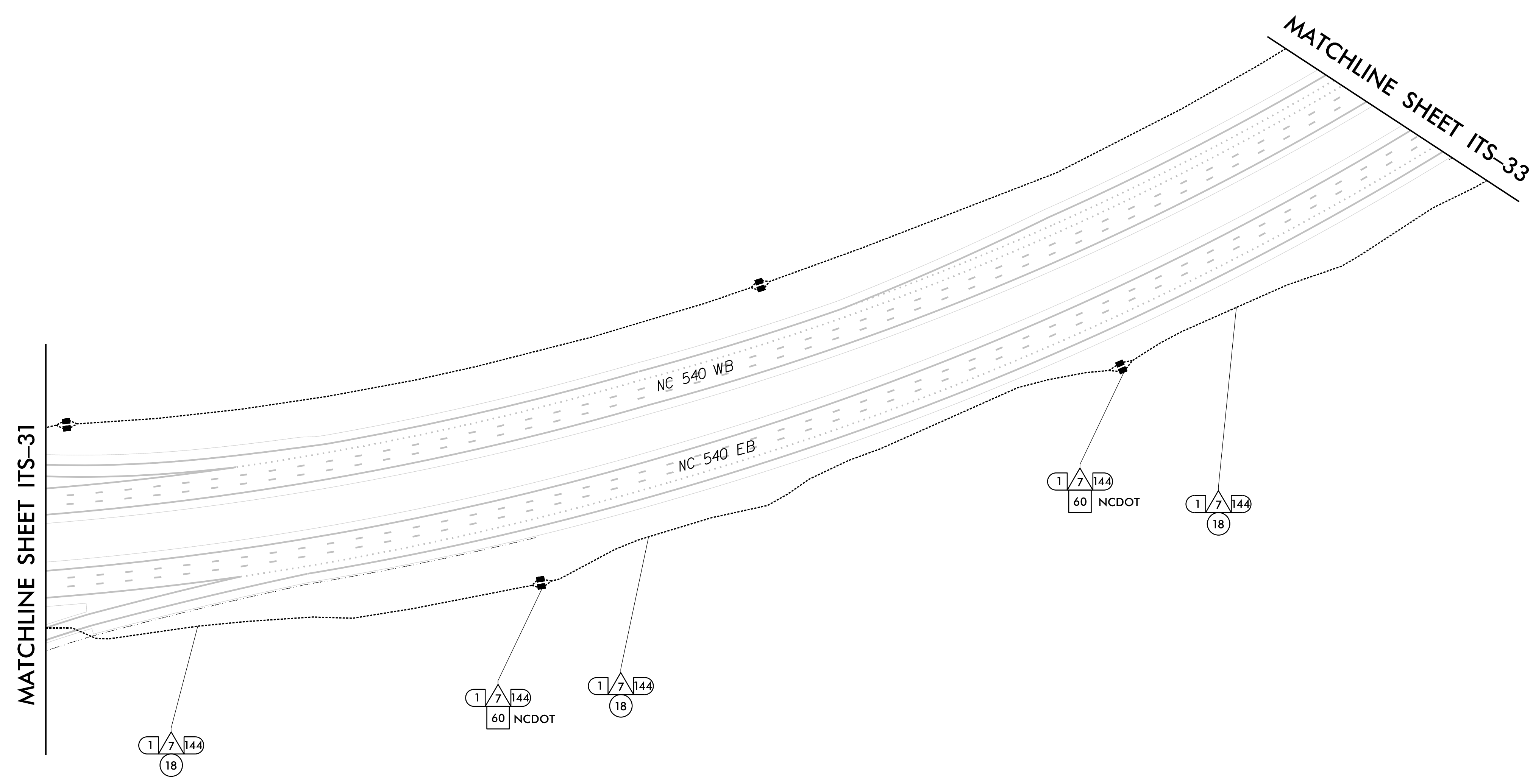
 DIVISION 05 WAKE COUNTY RALEIGH

 PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

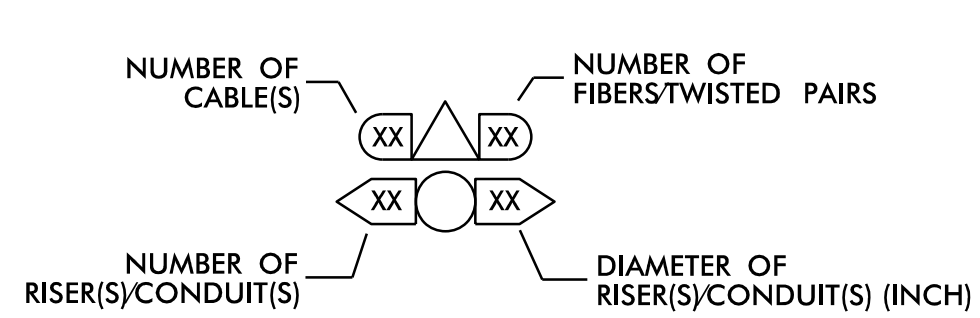
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

 REVISIONS: _____ INIT. DATE: _____

 Signature: *Anthony M. Barretto* DATE: 01/20/2021



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



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ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

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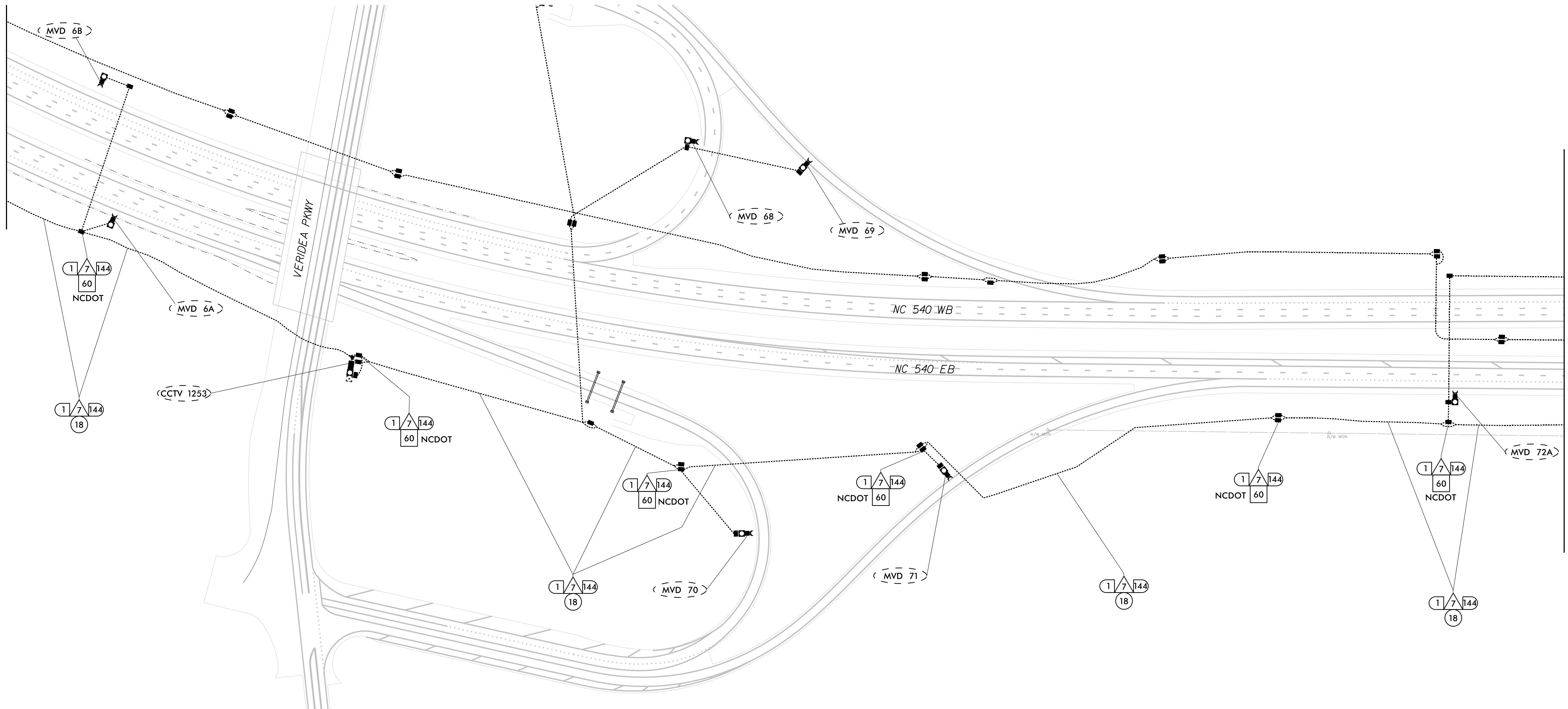
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Anthony M. Barretto
SIGNATURE DATE 01/20/2021

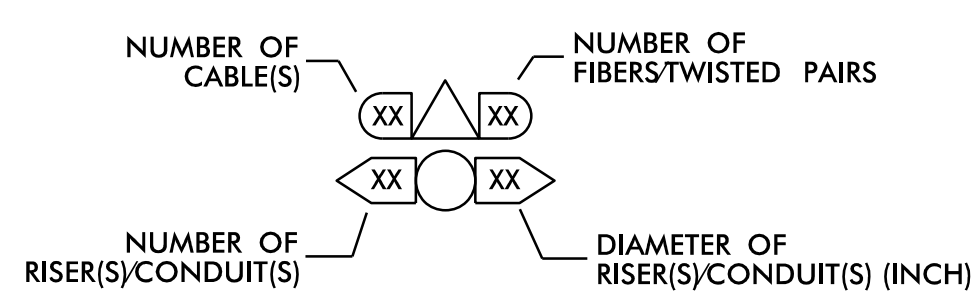
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MATCHLINE SHEET ITS-34



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|----|---|----|--|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
| 8 | INSTALL FIBER OPTIC DROP CABLE | 24 | INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 40 | INSTALL CCTV CAMERA ASSEMBLY | 56 | INSTALL EQUIPMENT DISCONNECT | | |
| 9 | INSTALL TRACER WIRE | 25 | INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 | INSTALL CAMERA LOWERING DEVICE | 57 | INSTALL DELINEATOR MARKER | | |
| 10 | INSTALL DEVICE CABLE(S) | 26 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPICE CABLE IN CABINET | 42 | INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 | INSTALL POLE MOUNTED MASTER MVD CABINET | | |
| 11 | TRENCH | 27 | INSTALL UNDERGROUND SPICE ENCLOSURE | 43 | INSTALL TYPE III PEDESTAL | 59 | REMOVE EXISTING COMMUNICATIONS CABLE | | |
| 12 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 | INSTALL BASE MOUNTED SPICE CABINET | 44 | INSTALL MVD | | | | |
| 13 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 | MODIFY EXISTING SPICE | 45 | INSTALL MVD POLE AND FOUNDATION | | | | |
| 14 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 | INSTALL ETHERNET SWITCH | 46 | INSTALL DMS ON PEDESTAL STRUCTURE | | | | |
| 15 | NOT USED | 31 | INSTALL CABINET FOUNDATION | 47 | INSTALL DMS ON GANTRY STRUCTURE | | | | |
| 16 | INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 | INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 | INSTALL DMS FOUNDATION | | | | |



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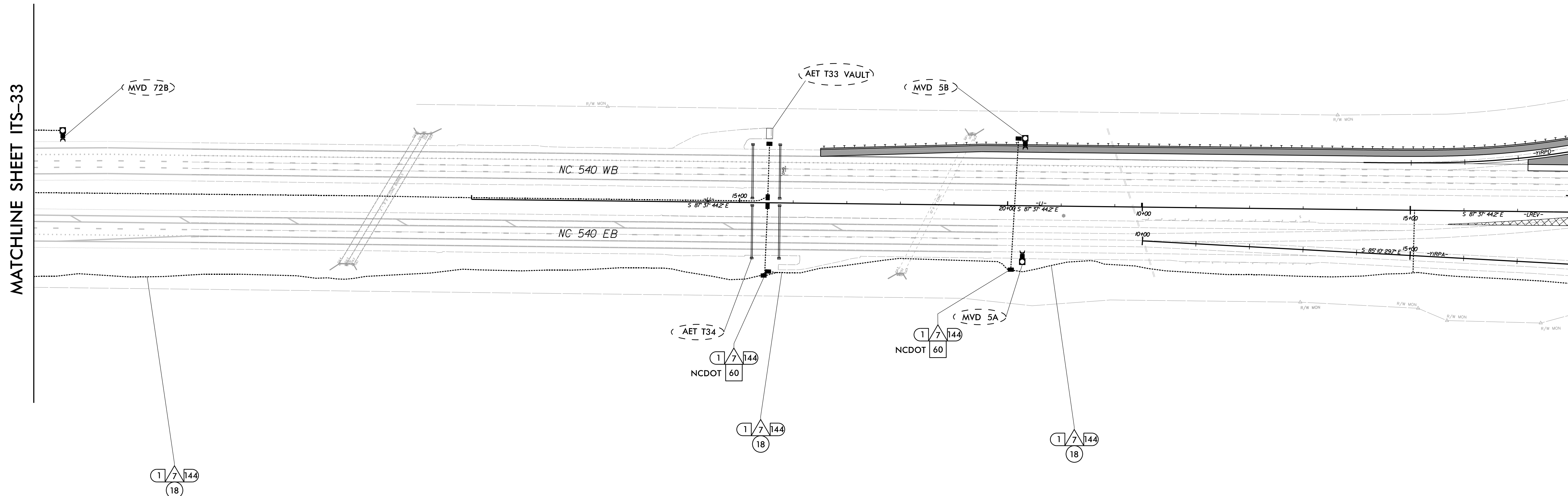
PLANS PREPARED BY:
 Gannett Fleming
 One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270
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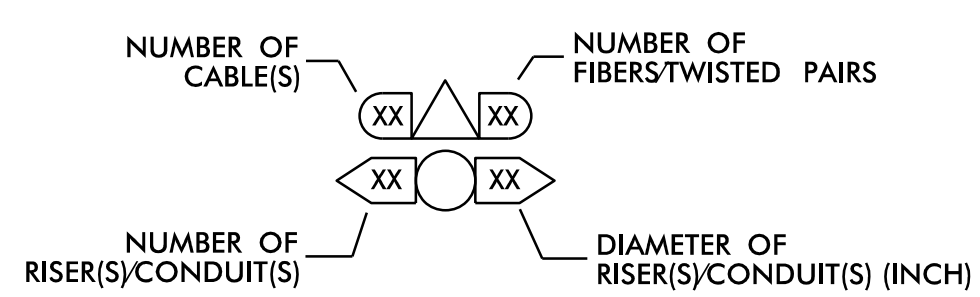
ITS AND TOLLING CABLE & CONDUIT PLANS
 DIVISION 05 WAKE COUNTY RALEIGH
 PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO
 PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SEAL

 ANTHONY M. BARRETTO
 ENGINEER
 01/20/2021
 SIGNATURE DATE



- | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
| 8 | INSTALL FIBER OPTIC DROP CABLE | 24 | INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 40 | INSTALL CCTV CAMERA ASSEMBLY | 56 | INSTALL EQUIPMENT DISCONNECT | | |
| 9 | INSTALL TRACER WIRE | 25 | INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 | INSTALL CAMERA LOWERING DEVICE | 57 | INSTALL DELINEATOR MARKER | | |
| 10 | INSTALL DEVICE CABLE(S) | 26 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 42 | INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 | INSTALL POLE MOUNTED MASTER MVD CABINET | | |
| 11 | TRENCH | 27 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 43 | INSTALL TYPE III PEDESTAL | 59 | REMOVE EXISTING COMMUNICATIONS CABLE | | |
| 12 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 | INSTALL BASE MOUNTED SPLICE CABINET | 44 | INSTALL MVD | | | | |
| 13 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 | MODIFY EXISTING SPLICE | 45 | INSTALL MVD POLE AND FOUNDATION | | | | |
| 14 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 | INSTALL ETHERNET SWITCH | 46 | INSTALL DMS ON PEDESTAL STRUCTURE | | | | |
| 15 | NOT USED | 31 | INSTALL CABINET FOUNDATION | 47 | INSTALL DMS ON GANTRY STRUCTURE | | | | |
| 16 | INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 | INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 | INSTALL DMS FOUNDATION | | | | |



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

Gannett Fleming
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

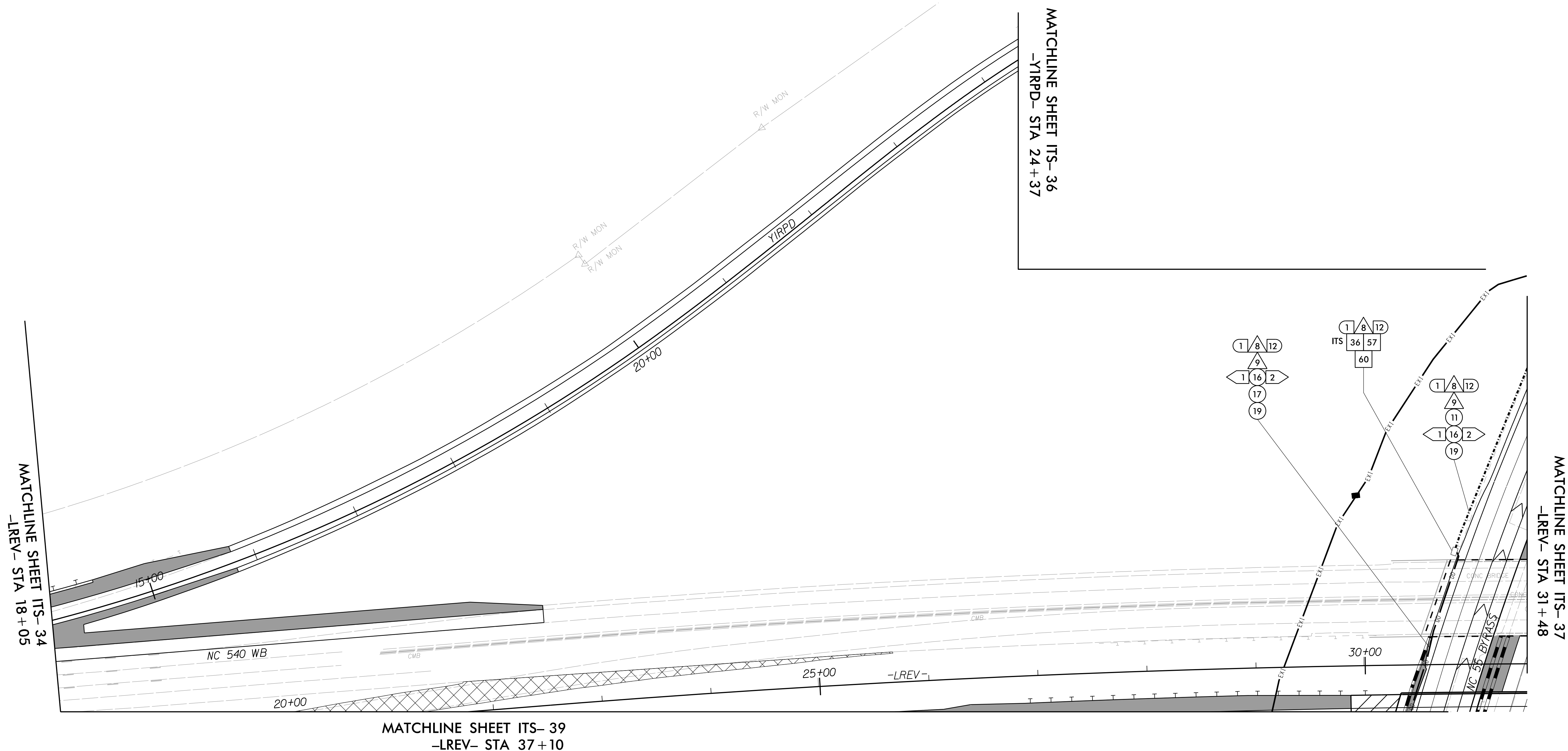
PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

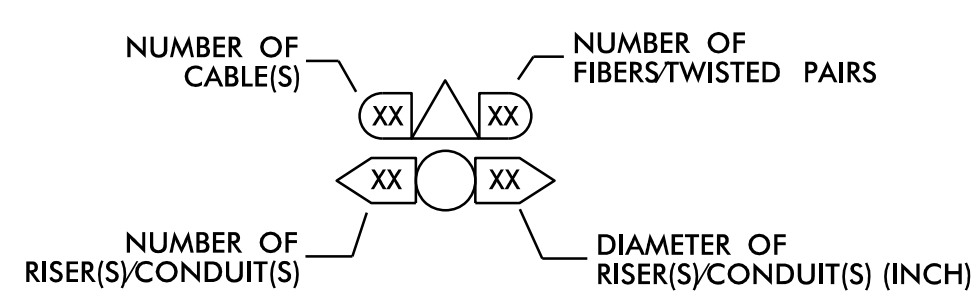
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SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO 047143

SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021



- | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
| 8 | INSTALL FIBER OPTIC DROP CABLE | 24 | INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 40 | INSTALL CCTV CAMERA ASSEMBLY | 56 | INSTALL EQUIPMENT DISCONNECT | | |
| 9 | INSTALL TRACER WIRE | 25 | INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 | INSTALL CAMERA LOWERING DEVICE | 57 | INSTALL DELINEATOR MARKER | | |
| 10 | INSTALL DEVICE CABLE(S) | 26 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 42 | INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 | INSTALL POLE MOUNTED MASTER MVD CABINET | | |
| 11 | TRENCH | 27 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 43 | INSTALL TYPE III PEDESTAL | 59 | REMOVE EXISTING COMMUNICATIONS CABLE | | |
| 12 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 | INSTALL BASE MOUNTED SPLICE CABINET | 44 | INSTALL MVD | | | | |
| 13 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 | MODIFY EXISTING SPLICE | 45 | INSTALL MVD POLE AND FOUNDATION | | | | |
| 14 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 | INSTALL ETHERNET SWITCH | 46 | INSTALL DMS ON PEDESTAL STRUCTURE | | | | |
| 15 | NOT USED | 31 | INSTALL CABINET FOUNDATION | 47 | INSTALL DMS ON GANTRY STRUCTURE | | | | |
| 16 | INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 | INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 | INSTALL DMS FOUNDATION | | | | |



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PLANS PREPARED BY:

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NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

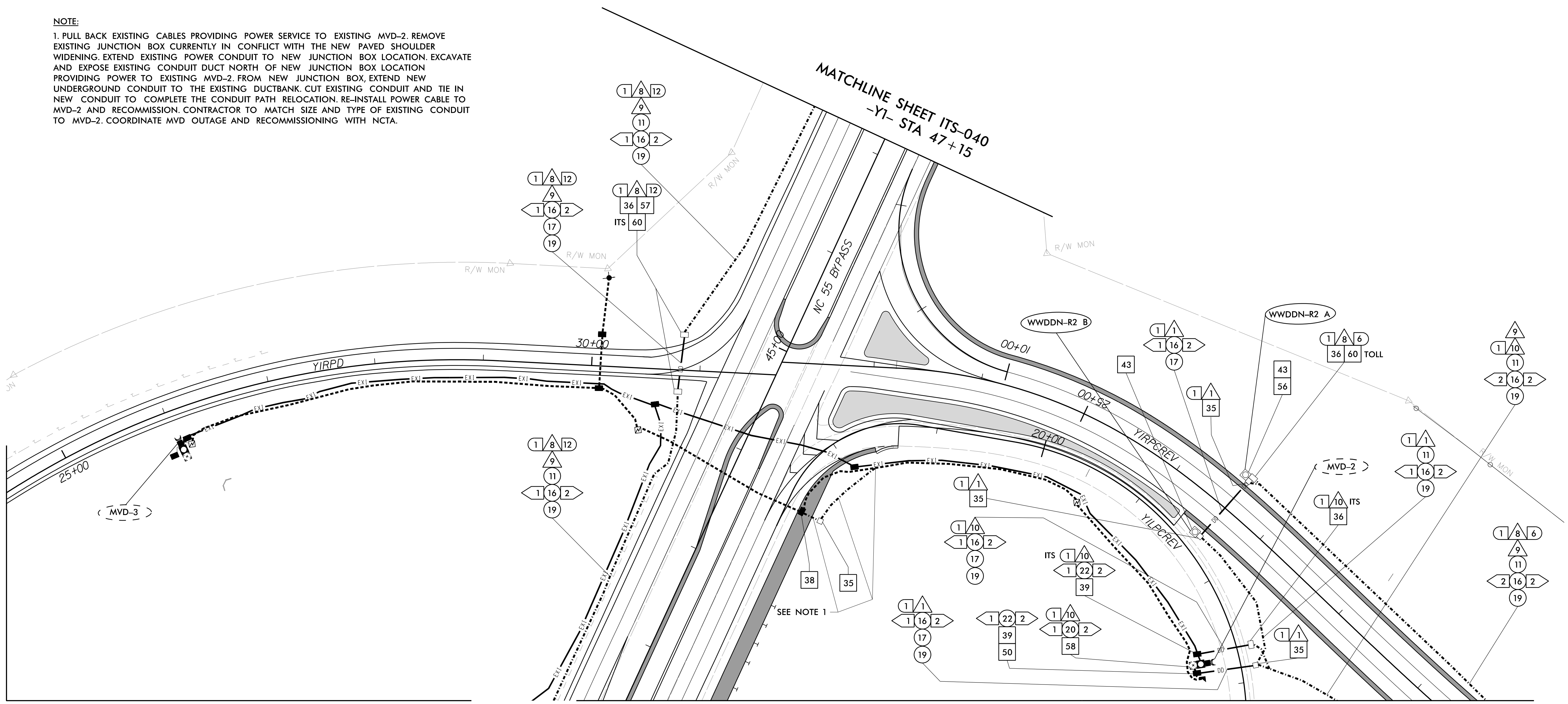
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SEAL

SIGNATURE: *Anthony M. Barbetta* DATE: 01/20/2021

NOTE:
 1. PULL BACK EXISTING CABLES PROVIDING POWER SERVICE TO EXISTING MVD-2. REMOVE EXISTING JUNCTION BOX CURRENTLY IN CONFLICT WITH THE NEW PAVED SHOULDER WIDENING. EXTEND EXISTING POWER CONDUIT TO NEW JUNCTION BOX LOCATION. EXCAVATE AND EXPOSE EXISTING CONDUIT DUCT NORTH OF NEW JUNCTION BOX LOCATION PROVIDING POWER TO EXISTING MVD-2. FROM NEW JUNCTION BOX, EXTEND NEW UNDERGROUND CONDUIT TO THE EXISTING DUCTBANK. CUT EXISTING CONDUIT AND TIE IN NEW CONDUIT TO COMPLETE THE CONDUIT PATH RELOCATION. RE-INSTALL POWER CABLE TO MVD-2 AND RECOMMISSION. CONTRACTOR TO MATCH SIZE AND TYPE OF EXISTING CONDUIT TO MVD-2. COORDINATE MVD OUTAGE AND RECOMMISSIONING WITH NCTA.

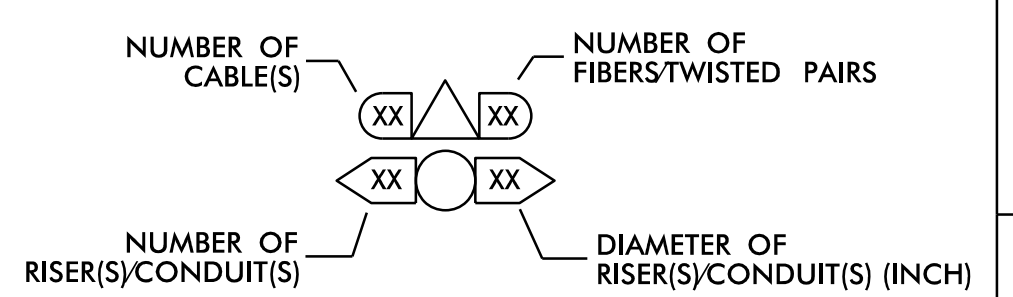
MATCHLINE SHEET ITS-035
 -YIRPD- STA 24+37



MATCHLINE SHEET ITS-037
 -Y1- STA 41+46

MATCHLINE SHEET ITS-037
 -Y1LPCREV- STA 20+83

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



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1/18/2021
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PLANS PREPARED BY:

 Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

SCALE: 0 50

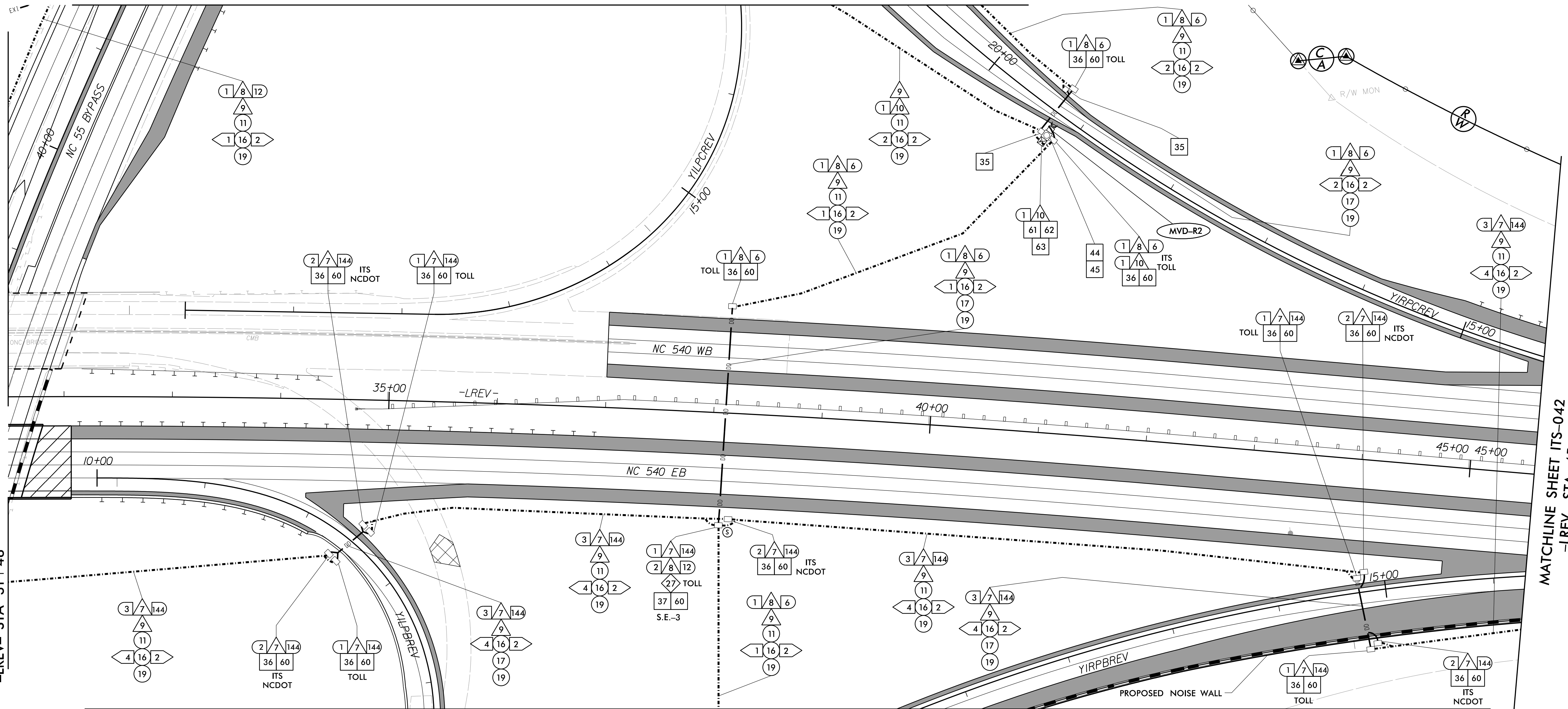
SEAL
 ANTHONY M. BARBETTO
 PROFESSIONAL ENGINEER
 047143
 01/20/2021
 SIGNATURE DATE

MATCHLINE SHEET ITS-036
-YIRPCREV- STA 20+83

MATCHLINE SHEET ITS-035
-LREV- STA 31+48

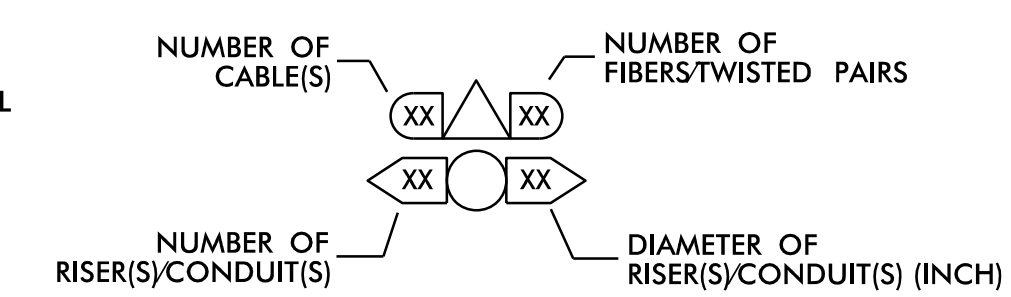
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-LREV- STA 31+48

MATCHLINE SHEET ITS-042
-LREV- STA 45+59



MATCHLINE SHEET ITS- 38
-YIRPBREV- STA 19+45

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:
FLATIRON | **BRANCH CIVIL**
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(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:
NORTH CAROLINA Turnpike Authority

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

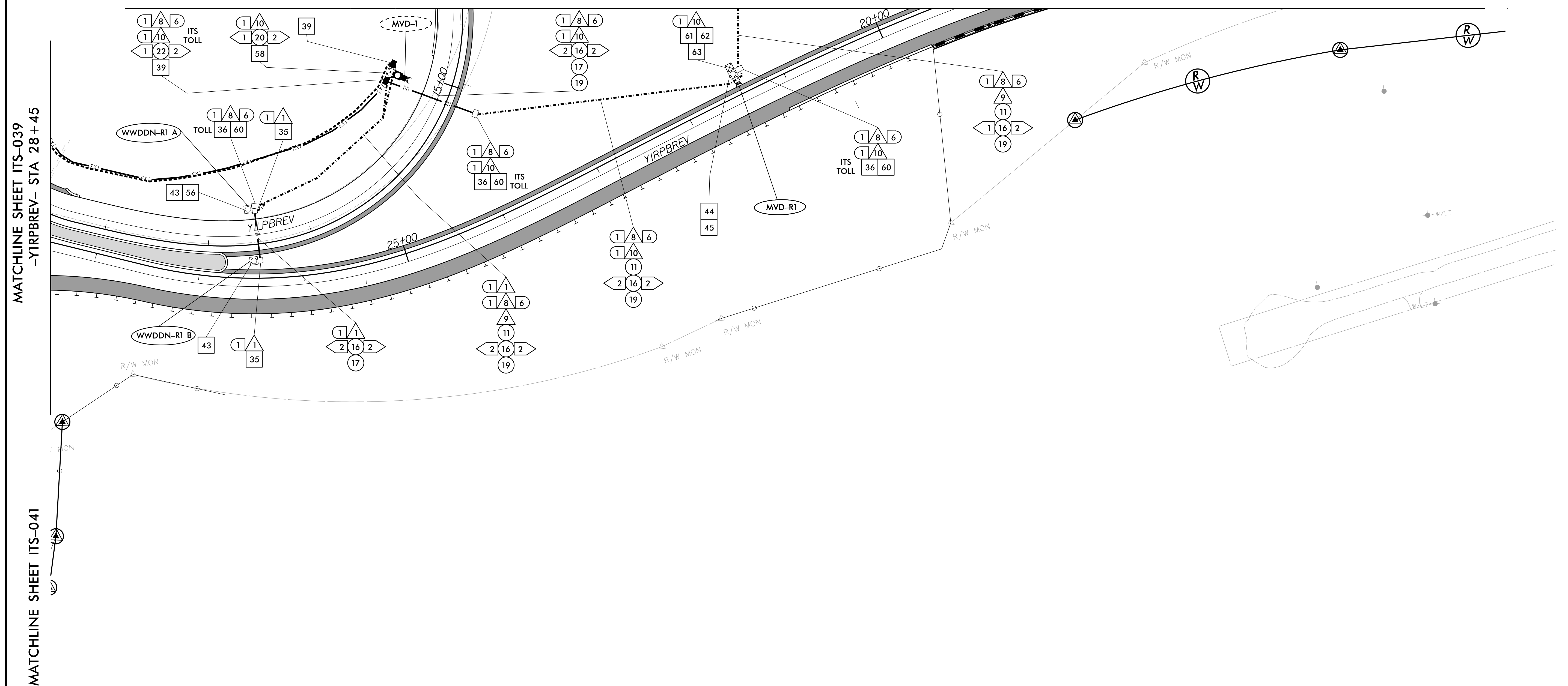
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SEAL
ANTHONY M. BARBETTO
ENGINEER
01/20/2021

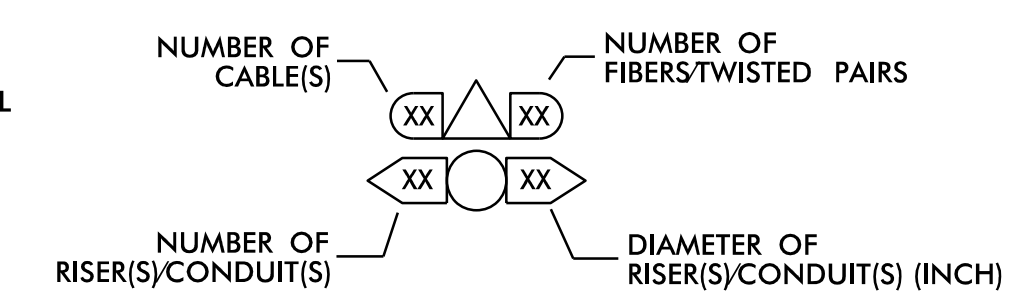
SIGNATURE: *Anthony M. Barbetto* DATE: _____

MATCHLINE SHEET ITS-037
-YIRPBREV- STA 19+45

PROJECT REFERENCE NO. R-2721A SHEET NO. ITS-38



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
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14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
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16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



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 mtransue

PLANS PREPARED BY:

One Glenwood Avenue
Suite 900
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NC Lic. No. F-0270

Prepared in the Offices of:

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DIVISION 05 WAKE COUNTY RALEIGH

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PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

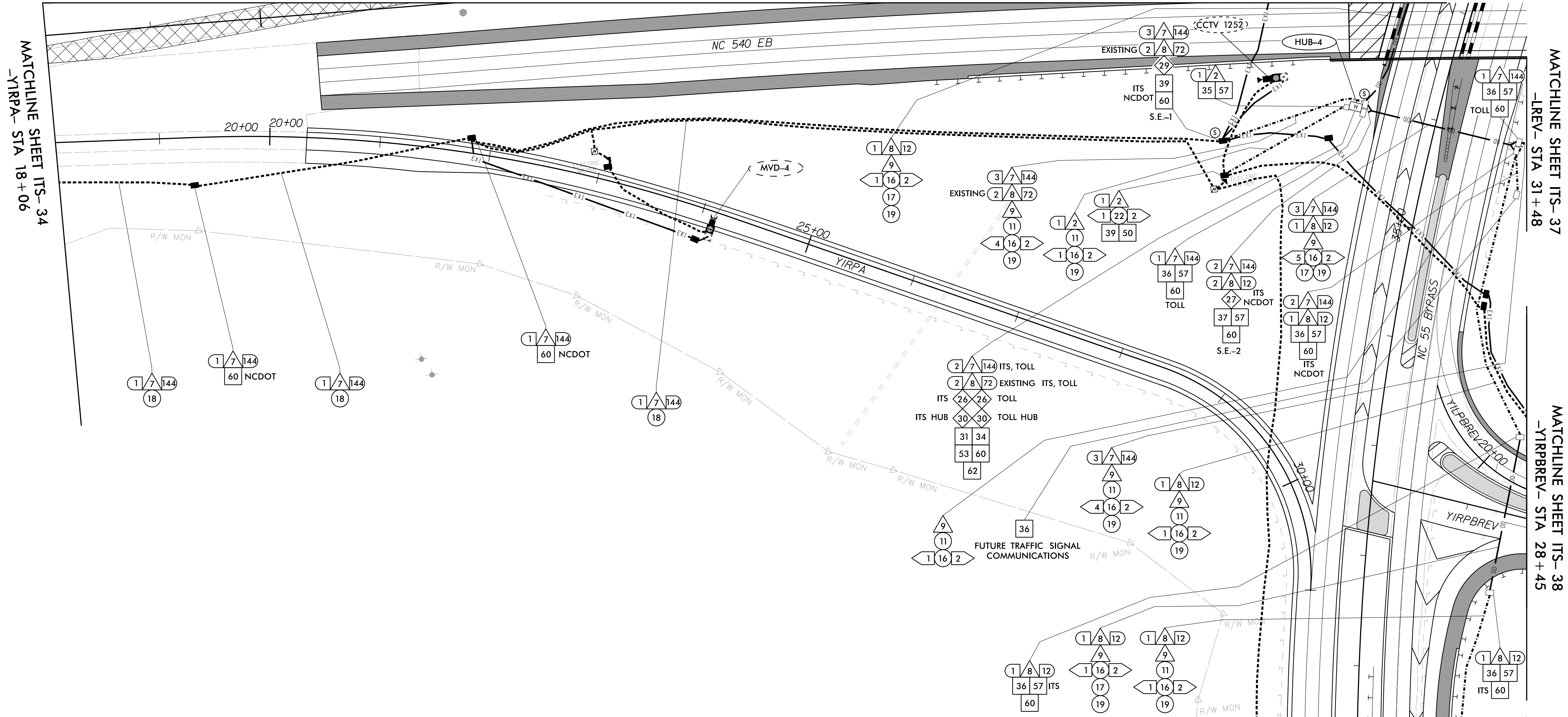
REVISIONS	INIT.	DATE

SCALE: 0 50

SEAL

Anthony M. Barretto
SIGNATURE DATE

MATCHLINE SHEET ITS-35
-LREV- STA 37+10



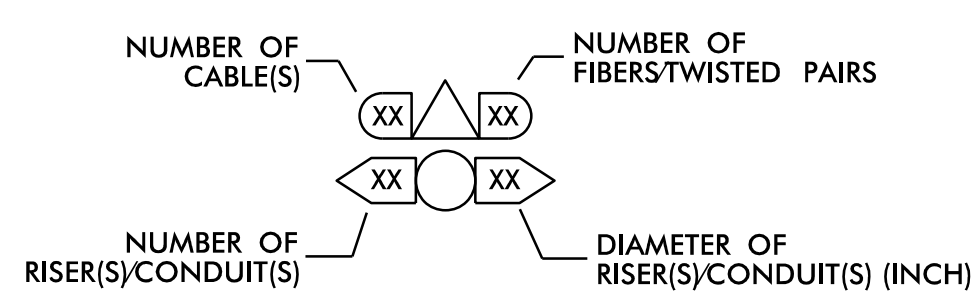
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MATCHLINE SHEET ITS-37
-LREV- STA 31+48

MATCHLINE SHEET ITS-38
-YIRPBREV- STA 28+45

MATCHLINE SHEET ITS-41
-Y1- STA 30+51

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
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Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSHIE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

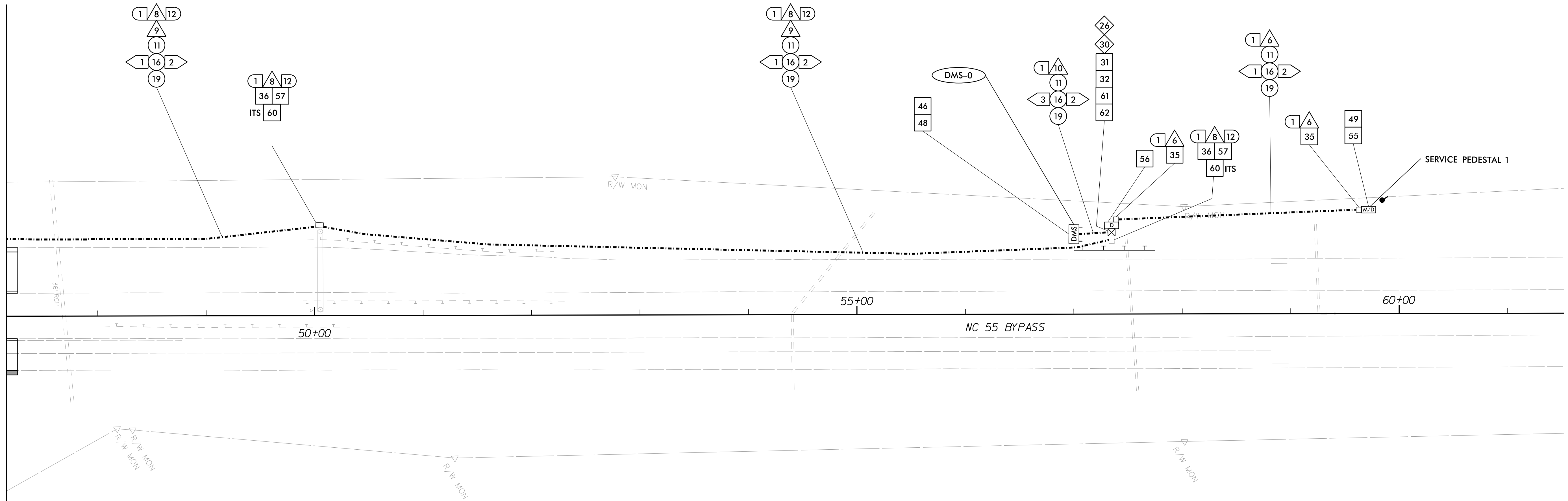
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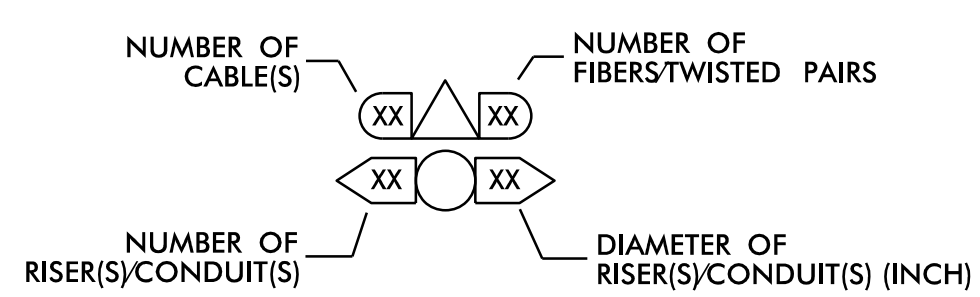
Anthony M. Barretto
SIGNATURE DATE

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MATCHLINE SHEET ITS-036
-Y1- STA 47+15



- | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
| 8 | INSTALL FIBER OPTIC DROP CABLE | 24 | INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 40 | INSTALL CCTV CAMERA ASSEMBLY | 56 | INSTALL EQUIPMENT DISCONNECT | | |
| 9 | INSTALL TRACER WIRE | 25 | INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 | INSTALL CAMERA LOWERING DEVICE | 57 | INSTALL DELINEATOR MARKER | | |
| 10 | INSTALL DEVICE CABLE(S) | 26 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 42 | INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 | INSTALL POLE MOUNTED MASTER MVD CABINET | | |
| 11 | TRENCH | 27 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 43 | INSTALL TYPE III PEDESTAL | 59 | REMOVE EXISTING COMMUNICATIONS CABLE | | |
| 12 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 | INSTALL BASE MOUNTED SPLICE CABINET | 44 | INSTALL MVD | | | | |
| 13 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 | MODIFY EXISTING SPLICE | 45 | INSTALL MVD POLE AND FOUNDATION | | | | |
| 14 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 | INSTALL ETHERNET SWITCH | 46 | INSTALL DMS ON PEDESTAL STRUCTURE | | | | |
| 15 | NOT USED | 31 | INSTALL CABINET FOUNDATION | 47 | INSTALL DMS ON GANTRY STRUCTURE | | | | |
| 16 | INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 | INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 | INSTALL DMS FOUNDATION | | | | |



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

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PLANS PREPARED BY:
 Gannett Fleming
 One Glenwood Avenue, Suite 900, Raleigh, NC 27603, (919) 420-7660, NC Lic. No. F-0270

Prepared in the Offices of:
 NORTH CAROLINA Turnpike Authority

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

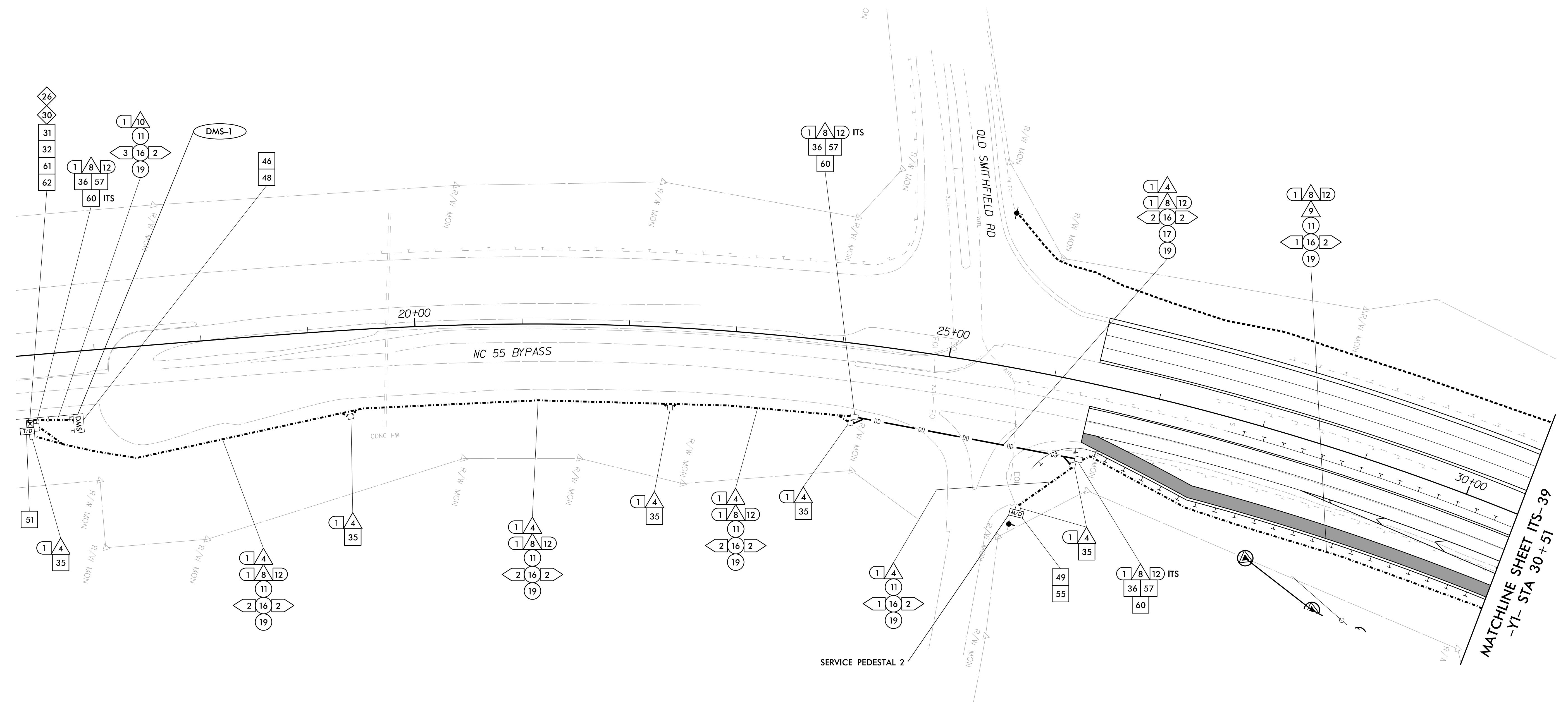
PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

SCALE: 0 50

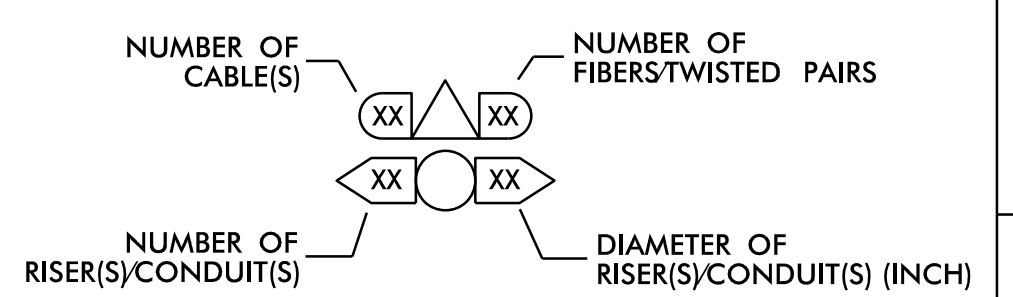
SEAL: ANTHONY M. BARBETTO, NORTH CAROLINA PROFESSIONAL ENGINEER, SEAL 047143, DATE 01/20/2021

SIGNATURE: *Anthony M. Barretto* DATE: _____



MATCHLINE SHEET ITS-39
-Y1- STA 30+51

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

PLANS PREPARED BY: Gannett Fleming
One Glenwood Avenue, Suite 900, Raleigh, NC 27603
Excellence Delivered As Promised

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020
REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE
REVIEWED BY: JASON MCCARTNEY

SCALE: 0 50

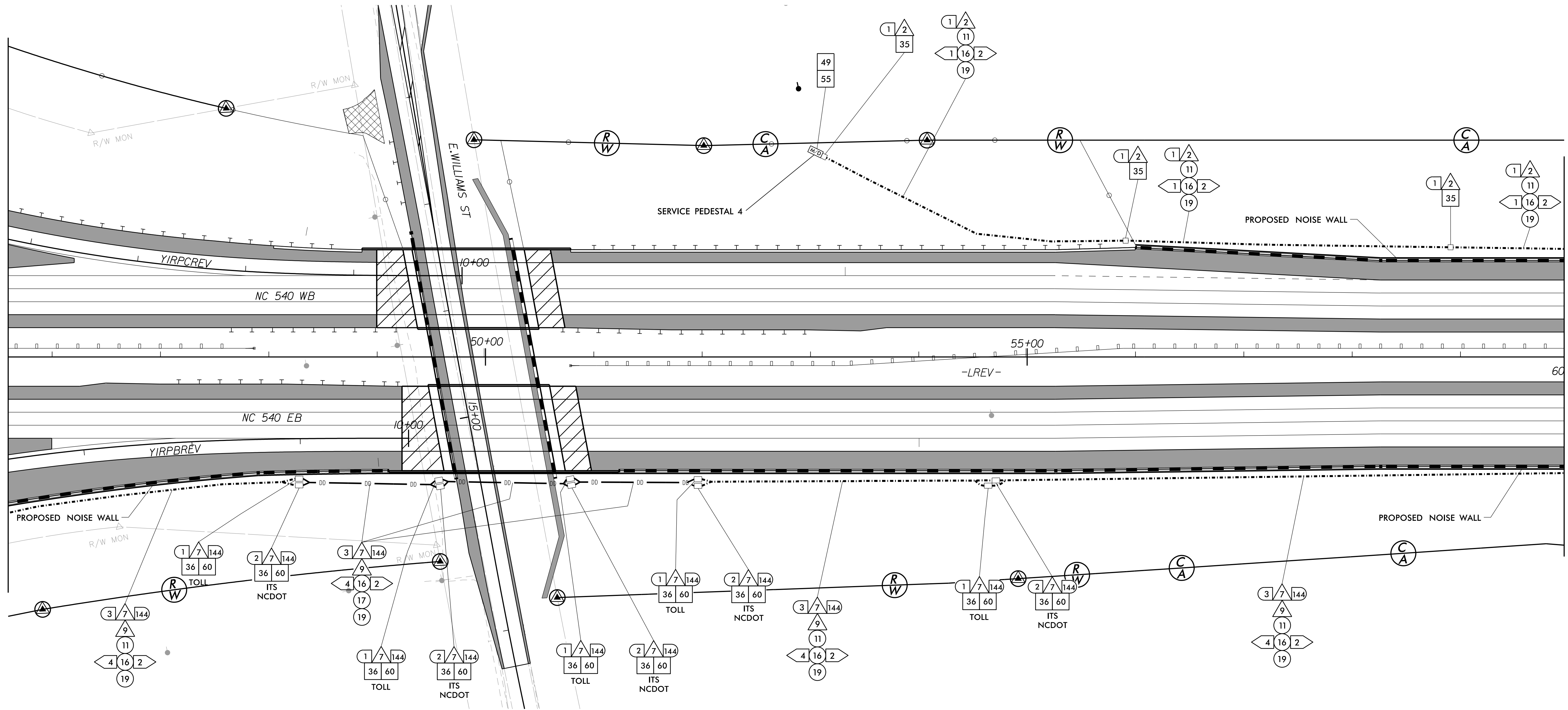
SEAL

ANTHONY M. BARRETTO
ENGINEER
01/20/2021

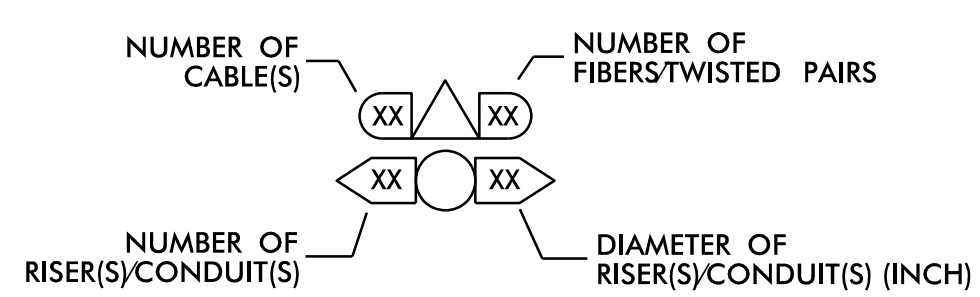
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MATCHLINE SHEET ITS-037
-LREV- STA 45+59

MATCHLINE SHEET ITS-43
-LREV- STA 59+96



- | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
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| 9 | INSTALL TRACER WIRE | 25 | INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 | INSTALL CAMERA LOWERING DEVICE | 57 | INSTALL DELINEATOR MARKER | | |
| 10 | INSTALL DEVICE CABLE(S) | 26 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 42 | INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 | INSTALL POLE MOUNTED MASTER MVD CABINET | | |
| 11 | TRENCH | 27 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 43 | INSTALL TYPE III PEDESTAL | 59 | REMOVE EXISTING COMMUNICATIONS CABLE | | |
| 12 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 | INSTALL BASE MOUNTED SPLICE CABINET | 44 | INSTALL MVD | | | | |
| 13 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 | MODIFY EXISTING SPLICE | 45 | INSTALL MVD POLE AND FOUNDATION | | | | |
| 14 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 | INSTALL ETHERNET SWITCH | 46 | INSTALL DMS ON PEDESTAL STRUCTURE | | | | |
| 15 | NOT USED | 31 | INSTALL CABINET FOUNDATION | 47 | INSTALL DMS ON GANTRY STRUCTURE | | | | |
| 16 | INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 | INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 | INSTALL DMS FOUNDATION | | | | |



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSHIE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

SCALE: 0 50

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047143 ANTHONY M. BARBETTO

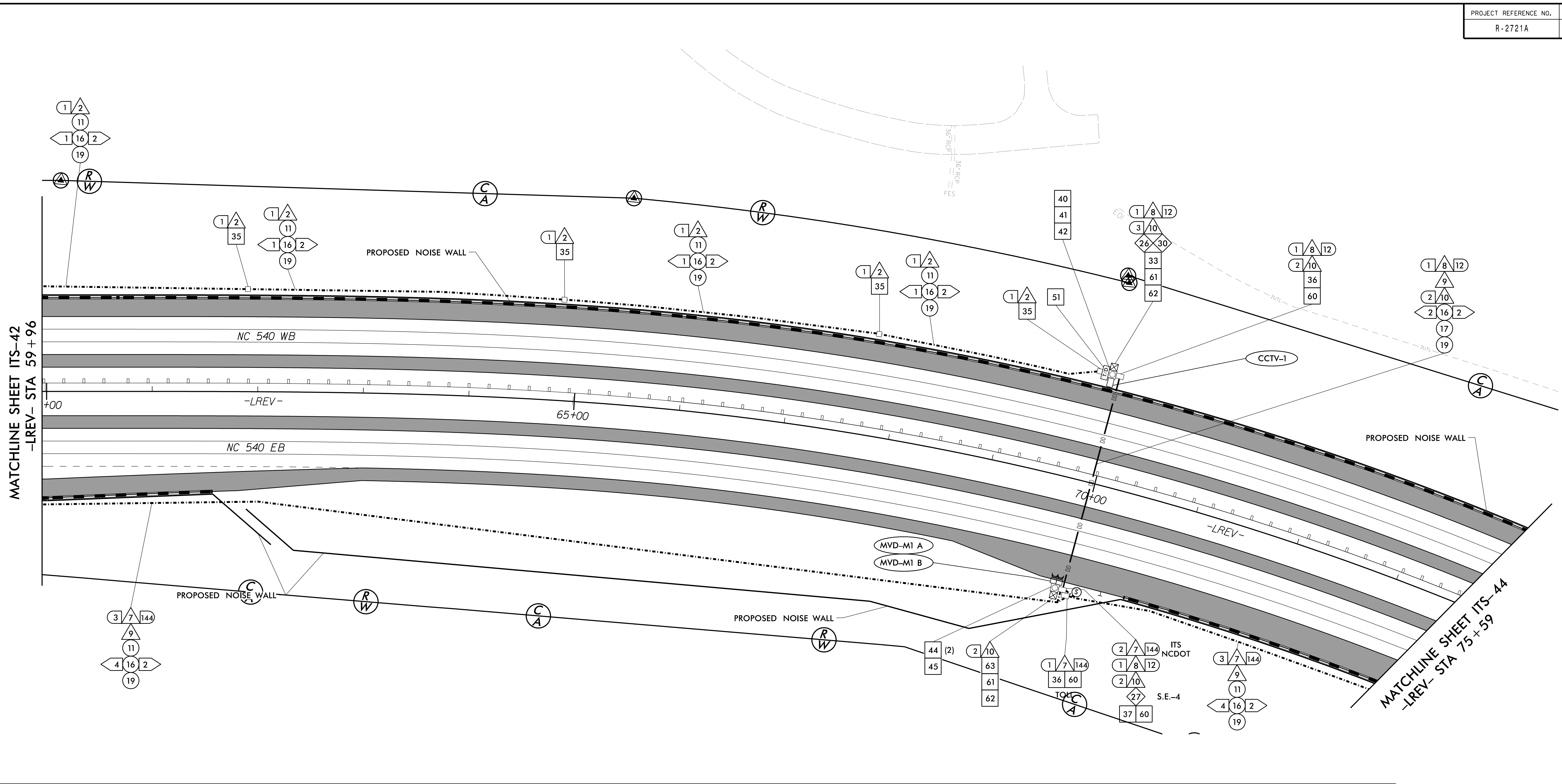
SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021

PLANS PREPARED BY:

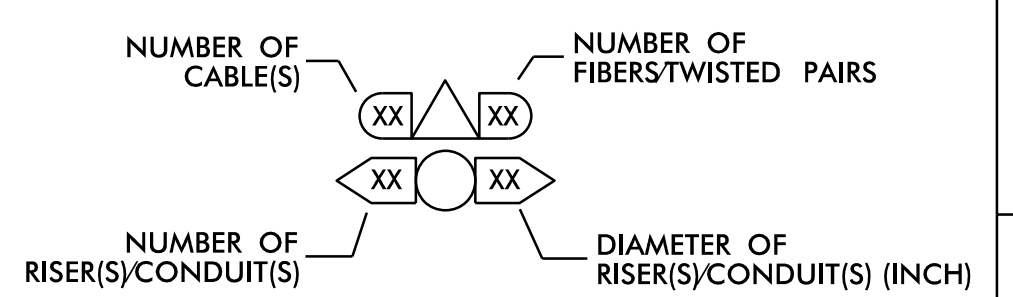
FLATIRON | **BRANCH CIVIL**

Gannett Fleming | One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

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4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:
NORTH CAROLINA Turnpike Authority

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

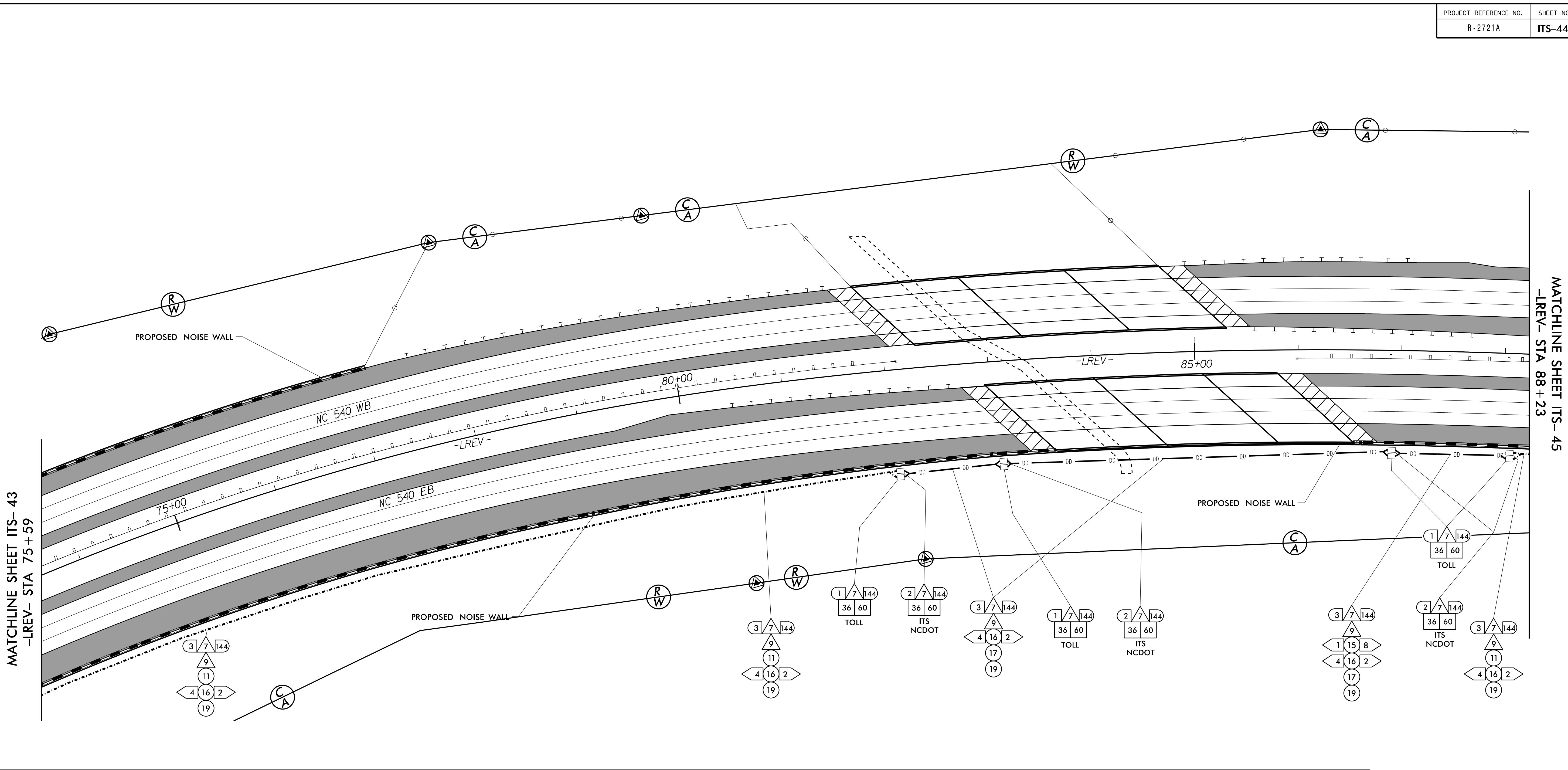
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

SCALE: 0 50

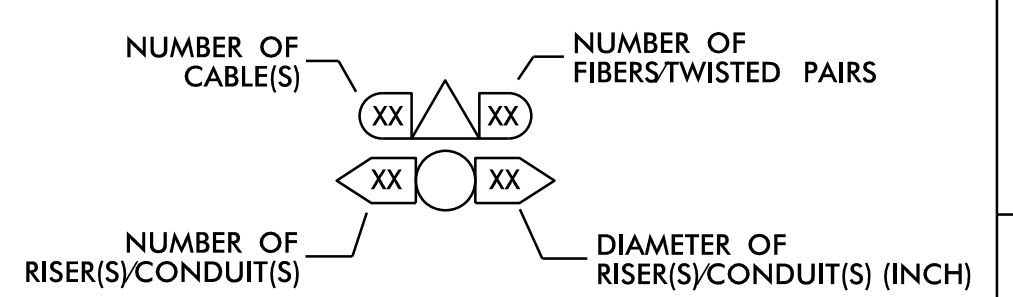
SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 047143
 ANTHONY M. BARBETTO
 SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021



MATCHLINE SHEET ITS-43
-LREV- STA 75 + 59

MATCHLINE SHEET ITS-45
-LREV- STA 88 + 23

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
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Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue, Suite 900, Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

SCALE: 0 50

SEAL

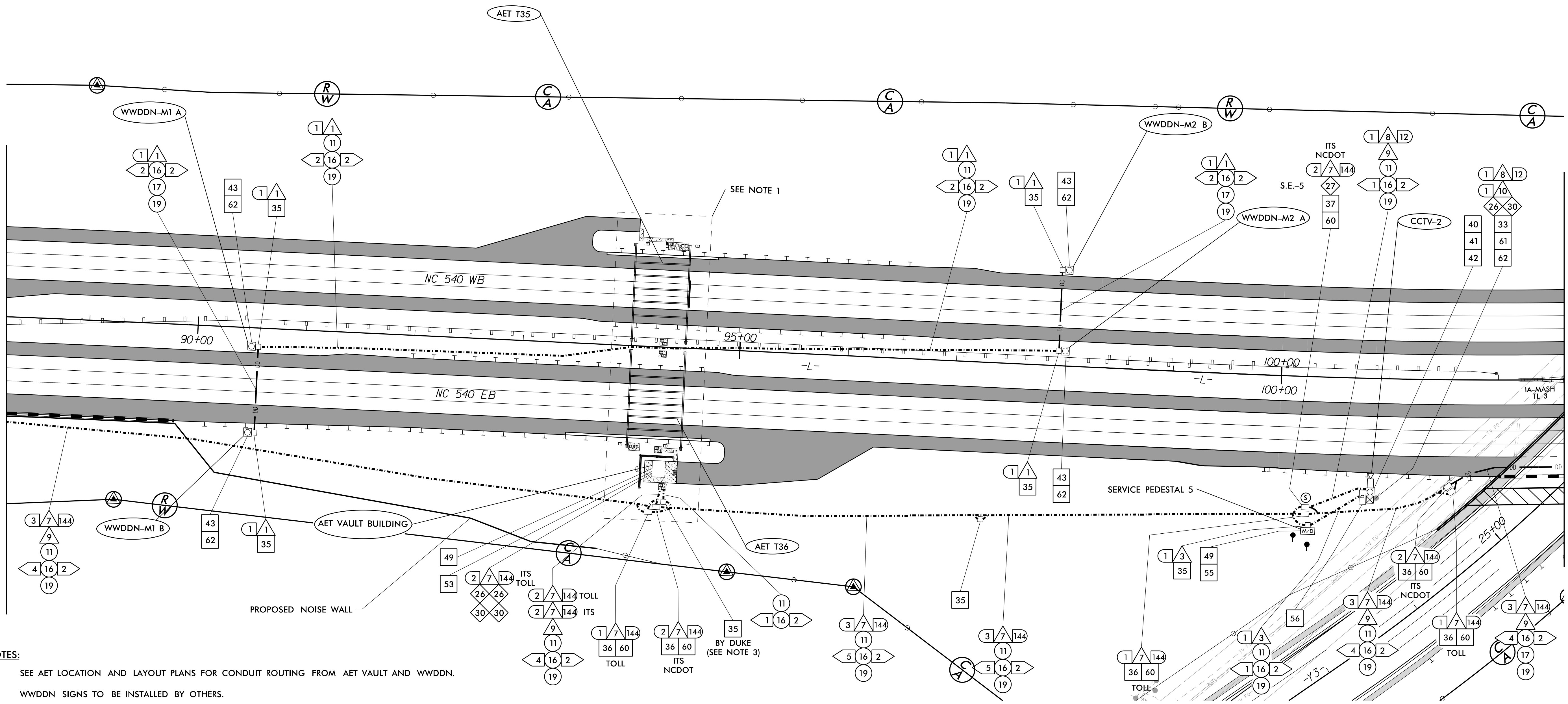
ANTHONY M. BARBETTO
NORTH CAROLINA PROFESSIONAL ENGINEER
047143

DATE: 01/20/2021

1/18/2021 c:\pwworking\gfm\01\mtransue\00958946\R2721A_ITS_PSH_10.dgn mtransue

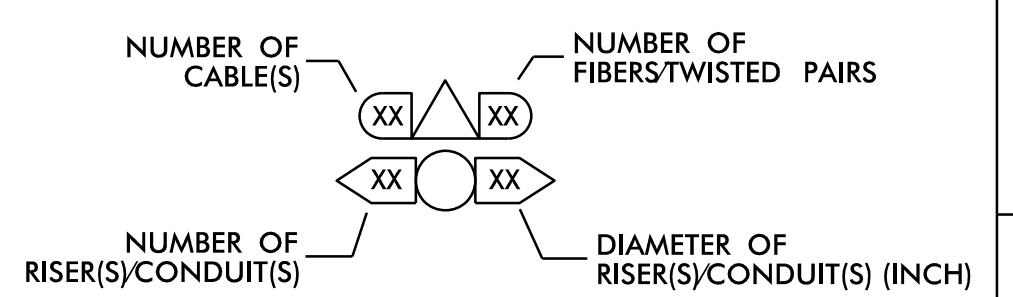
MATCHLINE SHEET ITS-44
-LREV- STA 88+23

MATCHLINE SHEET ITS-47
-L- STA 102+61



- NOTES:**
- SEE AET LOCATION AND LAYOUT PLANS FOR CONDUIT ROUTING FROM AET VAULT AND WDDN.
 - WDDN SIGNS TO BE INSTALLED BY OTHERS.
 - SEE AET VAULT PLANS FOR ELECTRICAL SERVICE CONNECTION DETAILS.
 - SEE SHEET ITS-46 FOR CABLING DETAILS FROM THE AET VAULT.

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
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8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** | One Glenwood Avenue, Suite 900, Raleigh, NC 27603 | (919) 420-7660 | NC Lic. No. F-0270

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 | REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE | REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

SCALE: 0 50

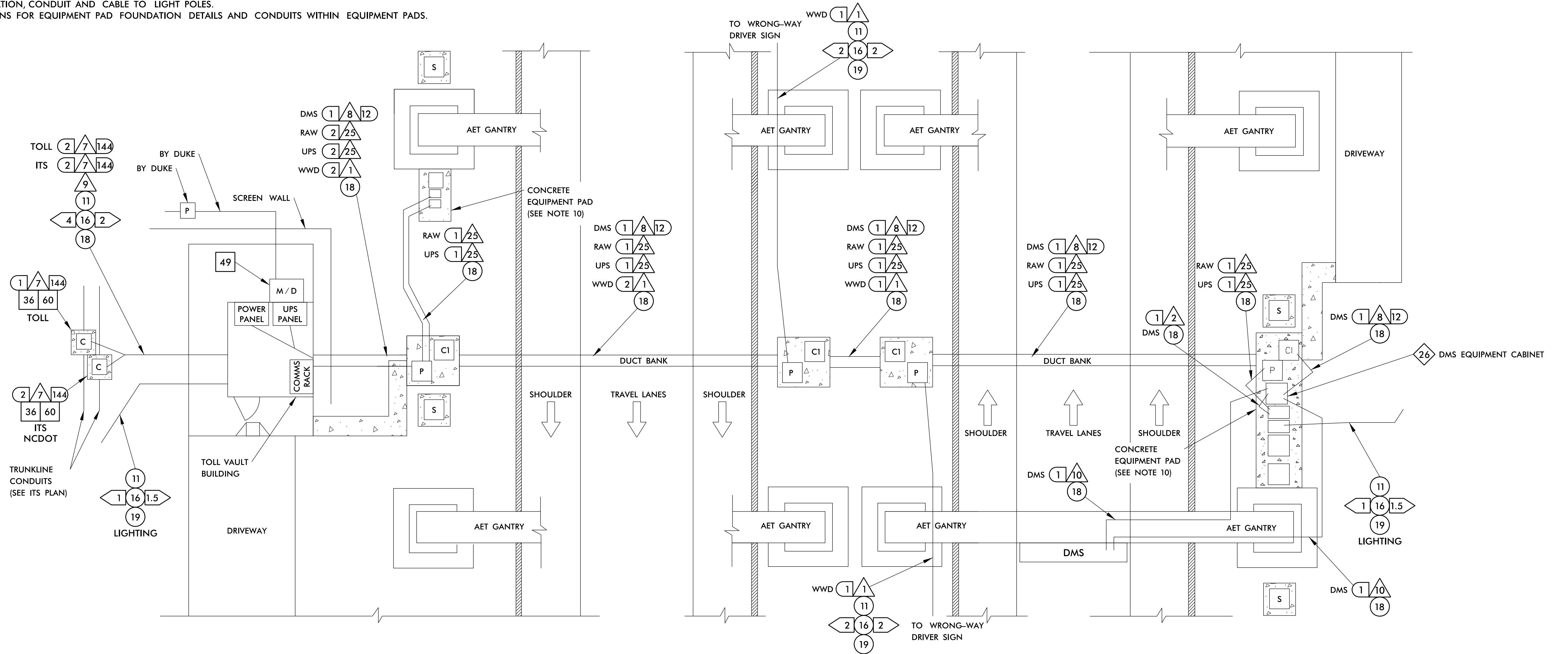
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO 047143

SIGNATURE: *Anthony M. Barretto* | DATE: 01/20/2021

1/18/2021
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NOTES:

- THIS DETAIL IS DIAGRAMMATIC IN NATURE AND DOES NOT FULLY DEPICT ALL CONDUITS AND WORK BY OTHERS. LAYOUT OF JUNCTION BOXES AND CABINETS ARE DIAGRAMMATIC IN NATURE AND MAY VARY. THE PURPOSE OF THIS DETAIL IS TO SHOW THE POWER CONDUCTOR AND COMMUNICATIONS CABLE RUNS AND CONNECTIONS THAT ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- FOR COMPLETE DETAILS ON THE MINIMUM CONDUIT INFRASTRUCTURE REQUIRED, SEE AET LOCATION AND LAYOUT PLANS.
- POWER TO WRONG-WAY DRIVER SIGNS MAY BE INSTALLED WITHIN THE SHOULDER OR WITHIN THE MEDIAN. IF THE POWER TO THE WRONG-WAY DRIVER SIGNS IS INSTALLED WITHIN THE SHOULDER, DO NOT INSTALL IT BETWEEN THE GANTRY COLUMN AND EDGE OF PAVEMENT (EOP).
- ALL INFRASTRUCTURE, CONDUIT, JUNCTION BOXES, AND WIRING IS BY CONTRACTOR UNLESS OTHERWISE NOTED.
- INSTALL CONDUCTORS FROM THE VAULT TO BOTH THE RAW POWER SUB-PANEL AND THE UPS POWER SUB-PANEL ON EACH SIDE OF THE ROADWAY.
- CONDUCTORS RUN TO THE RAW AND UPS POWER SUB-PANELS ARE ANTICIPATED TO BE (3) - 2 AWG CONDUCTORS, PLUS GROUND WIRE. COORDINATE WITH TSI ON ACTUAL WIRE SIZES ONCE MORE DETAILED LOAD INFORMATION IS AVAILABLE.
- COIL AND STORE UPS CONDUCTORS IN THE AET VAULT FOR FUTURE CONNECTION TO UPS PANEL A BY THE TSI.
- SIZE AND INSTALL ALL BREAKERS NECESSARY FOR 100A SERVICE TO EACH SUB-PANEL.
- CONSULT LIGHTING PLANS FOR LOCATION, CONDUIT AND CABLE TO LIGHT POLES.
- SEE AET LOCATION AND LAYOUT PLANS FOR EQUIPMENT PAD FOUNDATION DETAILS AND CONDUITS WITHIN EQUIPMENT PADS.



- 1 INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG
- 2 INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG
- 3 INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG
- 4 INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG
- 5 INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG
- 6 INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG
- 7 INSTALL SMFO CABLE
- 8 INSTALL FIBER OPTIC DROP CABLE
- 9 INSTALL TRACER WIRE
- 10 INSTALL DEVICE CABLE(S)
- 11 TRENCH
- 12 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 13 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 14 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 15 NOT USED
- 16 INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT

- 17 DIRECTIONAL DRILL CONDUIT
- 18 INSTALL CABLE(S) IN EXISTING CONDUIT
- 19 INSTALL CABLE(S) IN NEW CONDUIT
- 20 INSTALL CABLE(S) IN EXISTING RISER
- 21 INSTALL CABLE(S) IN NEW RISER
- 22 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 23 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 24 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG
- 26 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
- 27 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 28 INSTALL BASE MOUNTED SPLICE CABINET
- 29 MODIFY EXISTING SPLICE
- 30 INSTALL ETHERNET SWITCH
- 31 INSTALL CABINET FOUNDATION
- 32 INSTALL BASE MOUNTED CABINET (TYPE 336)

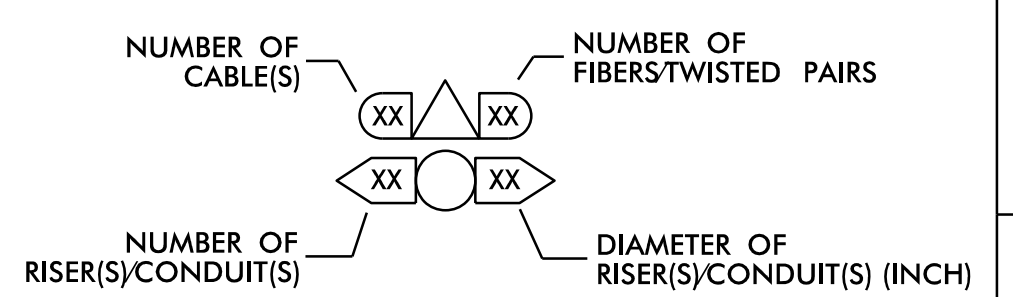
- 33 INSTALL POLE MOUNTED CABINET (TYPE 336)
- 34 INSTALL HUB CABINET
- 35 INSTALL STANDARD JUNCTION BOX
- 36 INSTALL OVERSIZED JUNCTION BOX
- 37 INSTALL SPECIAL-SIZED JUNCTION BOX
- 38 REMOVE EXISTING JUNCTION BOX
- 39 MODIFY EXISTING JUNCTION BOX
- 40 INSTALL CCTV CAMERA ASSEMBLY
- 41 INSTALL CAMERA LOWERING DEVICE
- 42 INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION
- 43 INSTALL TYPE III PEDESTAL
- 44 INSTALL MVD
- 45 INSTALL MVD POLE AND FOUNDATION
- 46 INSTALL DMS ON PEDESTAL STRUCTURE
- 47 INSTALL DMS ON GANTRY STRUCTURE
- 48 INSTALL DMS FOUNDATION

- 49 INSTALL NEW ELECTRICAL SERVICE
- 50 MODIFY EXISTING ELECTRICAL SERVICE
- 51 INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT
- 52 INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT
- 53 INSTALL UPS IN HUB CABINET
- 54 NOT USED
- 55 INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL
- 56 INSTALL EQUIPMENT DISCONNECT
- 57 INSTALL DELINEATOR MARKER
- 58 INSTALL POLE MOUNTED MASTER MVD CABINET
- 59 REMOVE EXISTING COMMUNICATIONS CABLE

- 60 STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
- 61 INSTALL TECHNICIAN PAD
- 62 INSTALL GROUNDING SYSTEM
- 63 INSTALL POLE MOUNTED SLAVE MVD CABINET

LEGEND

C1	AET COMM. JUNCTION BOX (48"x30"x24" MIN.)
C	COMMUNICATIONS JUNCTION BOX
P	AET POWER JUNCTION BOX
S	LOOP SPLICE BOX



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

Gannett Fleming
One Glenwood Avenue Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

TOLL ZONE POWER AND ITS COMMUNICATIONS DETAIL

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVISIONS: _____

PREPARED BY: MARK TRANSHIE REVIEWED BY: ANTHONY BARBETTO

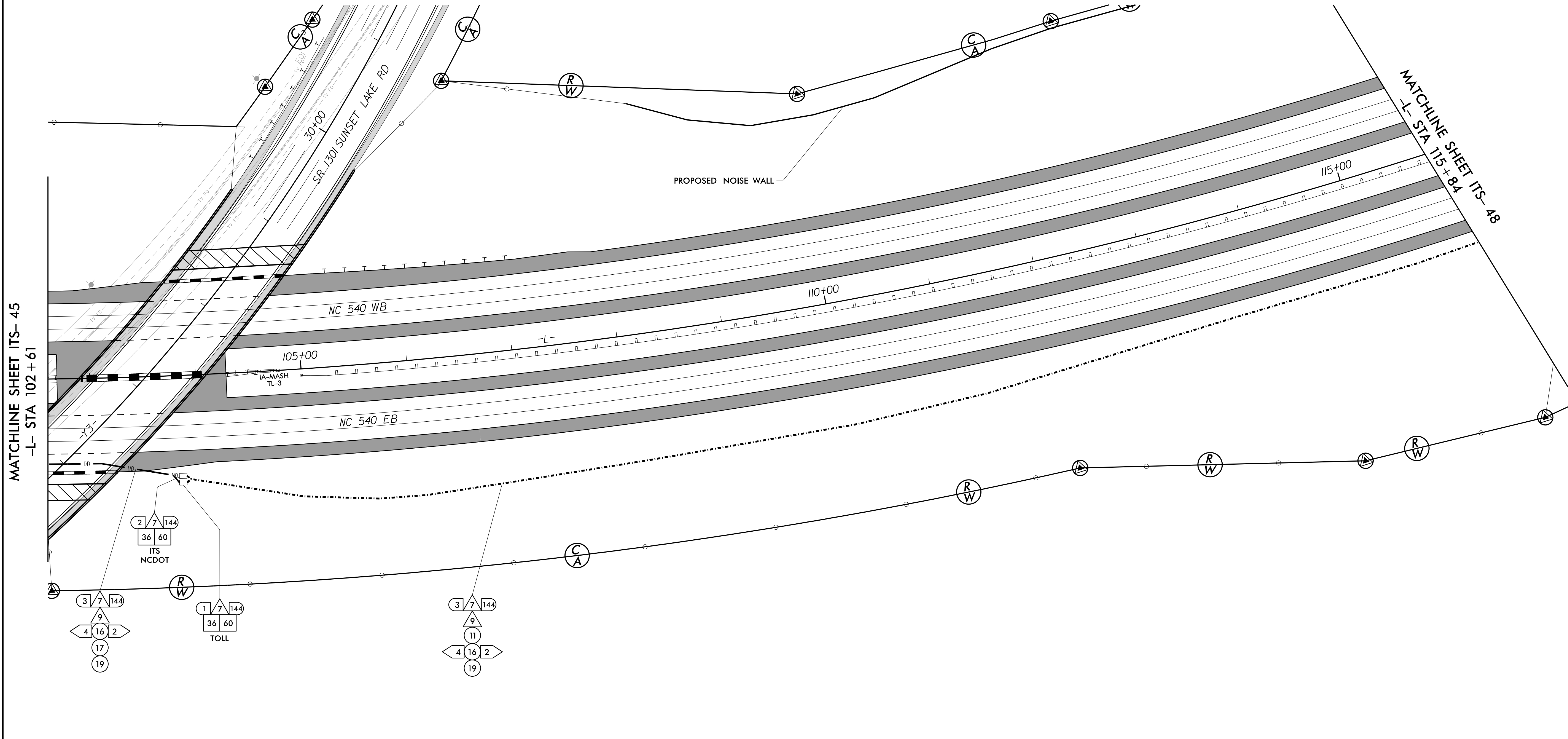
REVIEWED BY: JASON MCCARTNEY

SCALE: N.T.S.

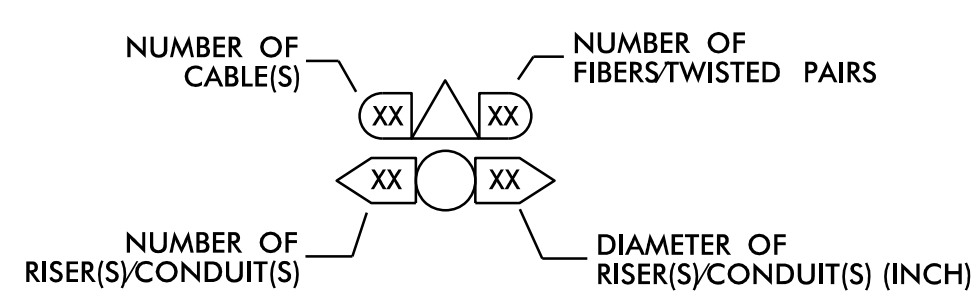
INIT. DATE

SEAL

Anthony M. Barbetta
SIGNATURE DATE



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
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14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

SCALE 0 50

SEAL

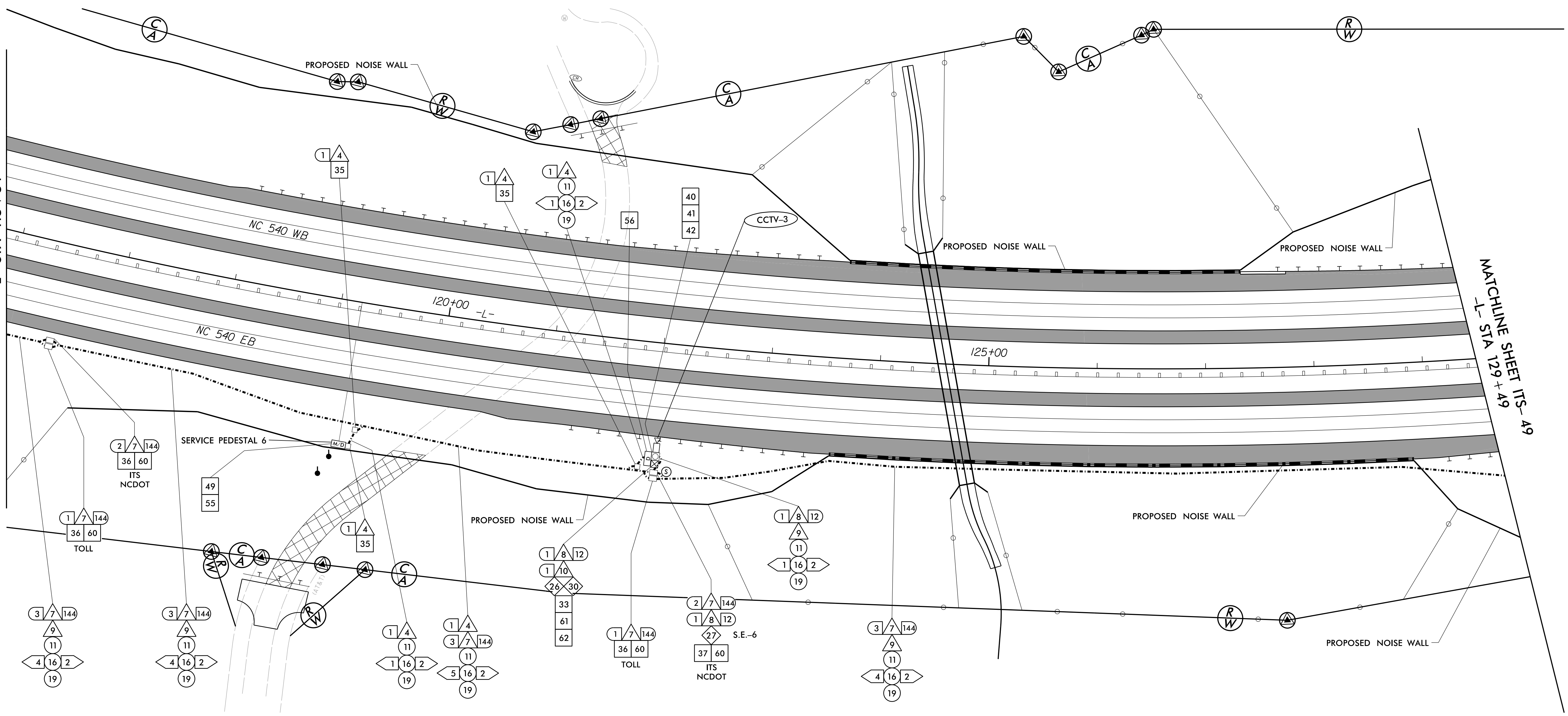
ANTHONY M. BARRETTO
ENGINEER

SIGNATURE DATE

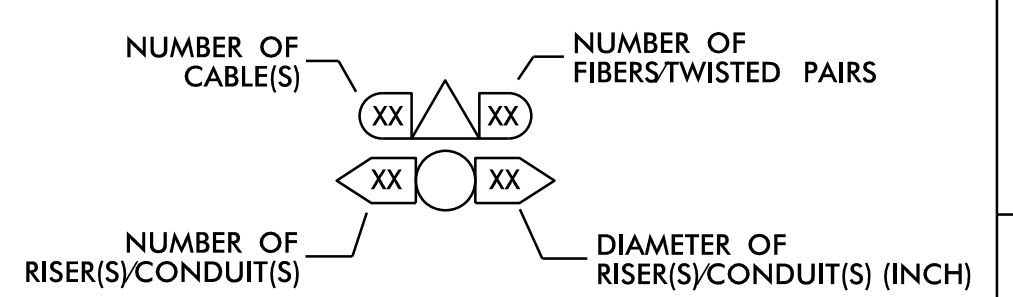
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MATCHLINE SHEET ITS-47
-L- STA 115+84

MATCHLINE SHEET ITS-49
-L- STA 129+49



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
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15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

Gannett Fleming
One Glenwood Avenue Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

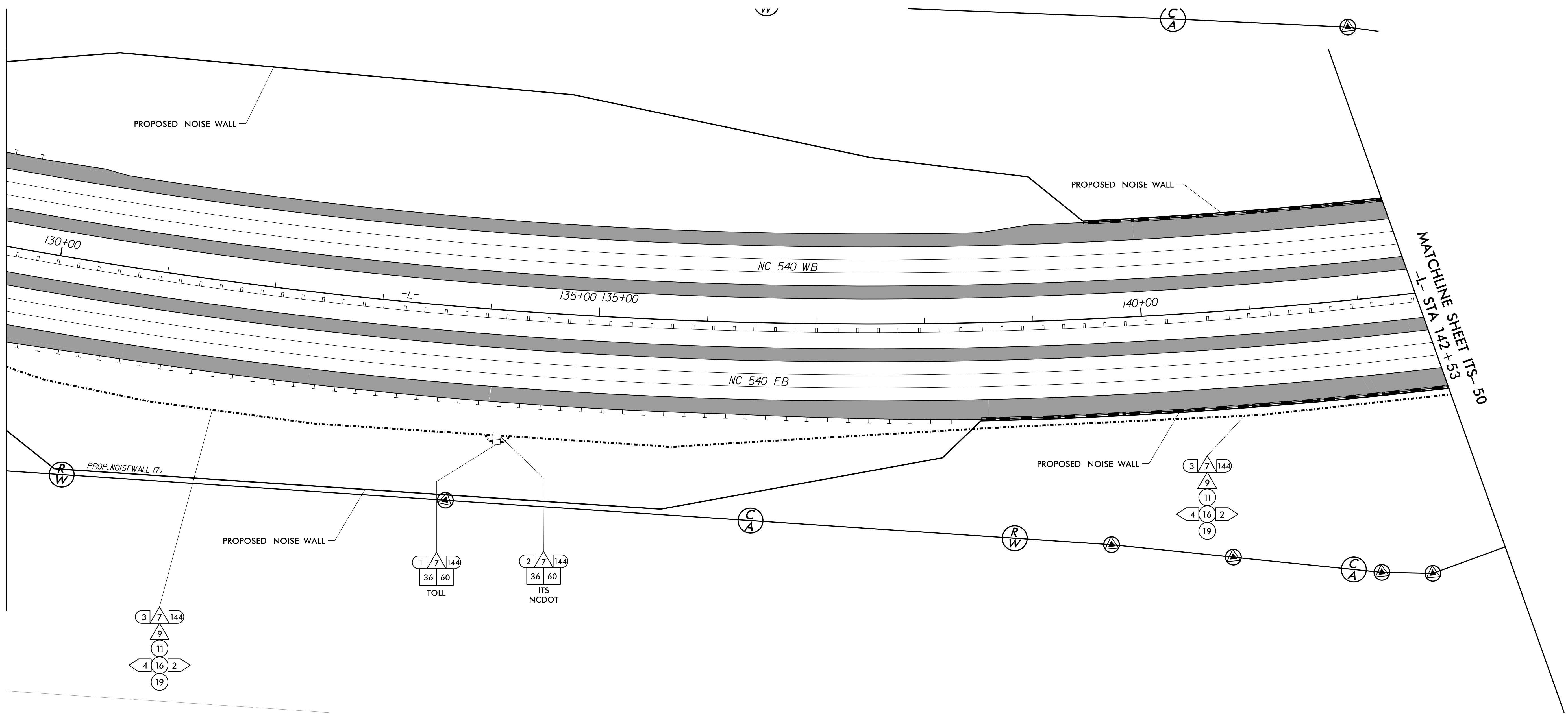
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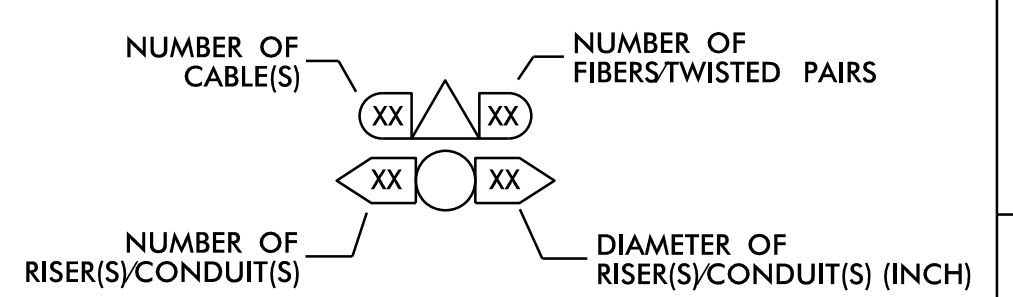
Anthony M. Barbetta
SIGNATURE DATE: 01/20/2021

MATCHLINE SHEET ITS-48
-L- STA 129+49

MATCHLINE SHEET ITS-50
-L- STA 142+53



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
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UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:
 Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:
 NORTH CAROLINA Turnpike Authority

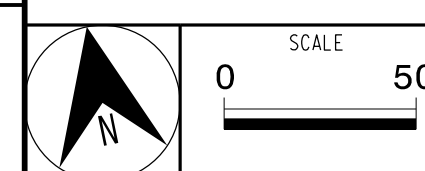
ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARBETTO
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY
REVISIONS	INIT. DATE

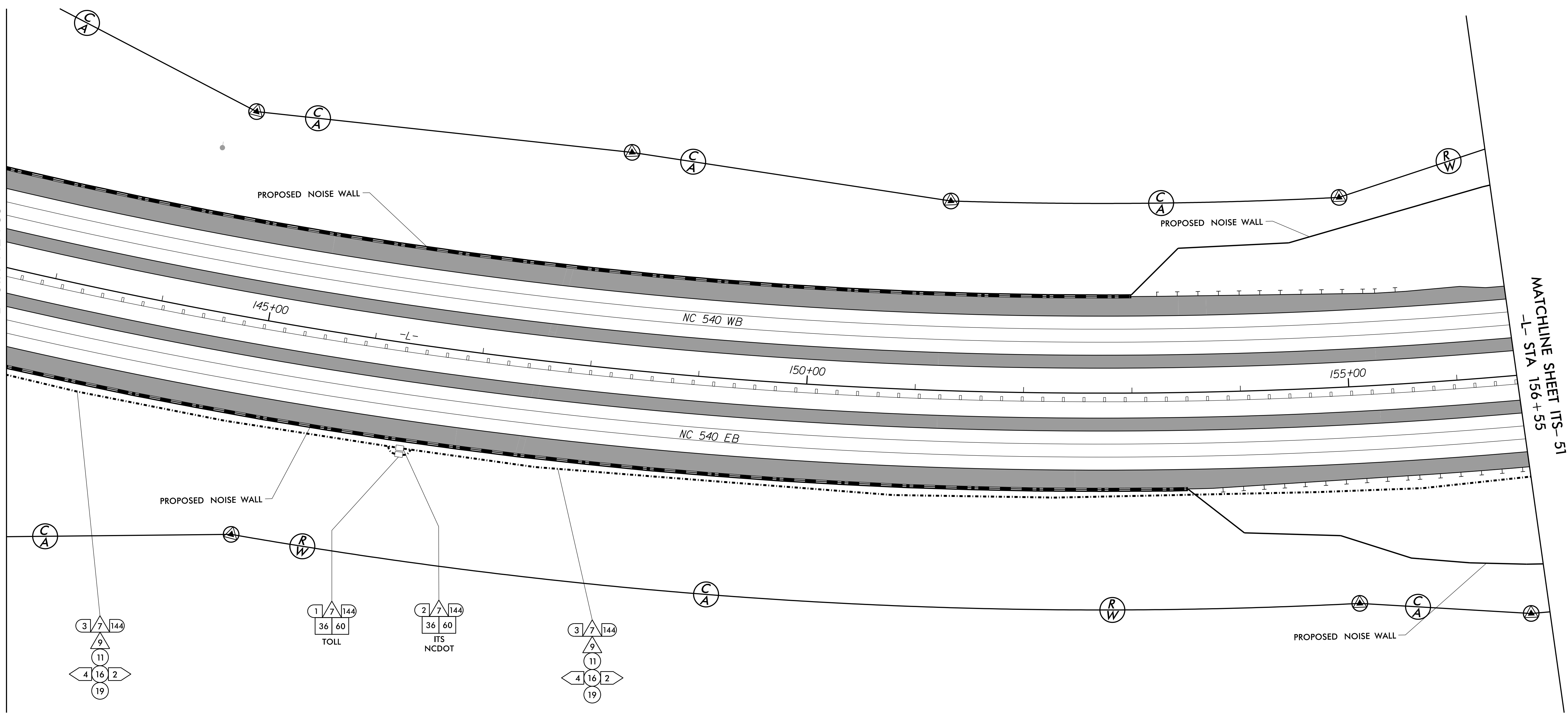
SEAL

 ANTHONY M. BARRETTO
 ENGINEER
 NORTH CAROLINA
 04/20/2021
 SIGNATURE DATE

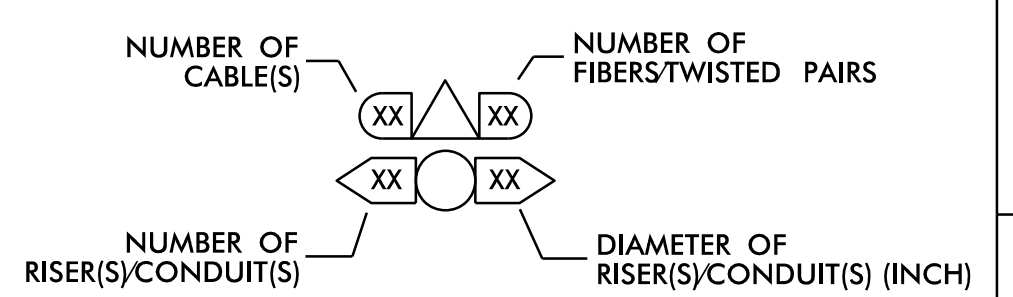


MATCHLINE SHEET ITS-49
-L- STA 142+53

MATCHLINE SHEET ITS-51
-L- STA 156+55



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
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9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
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14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

SCALE: 0 50

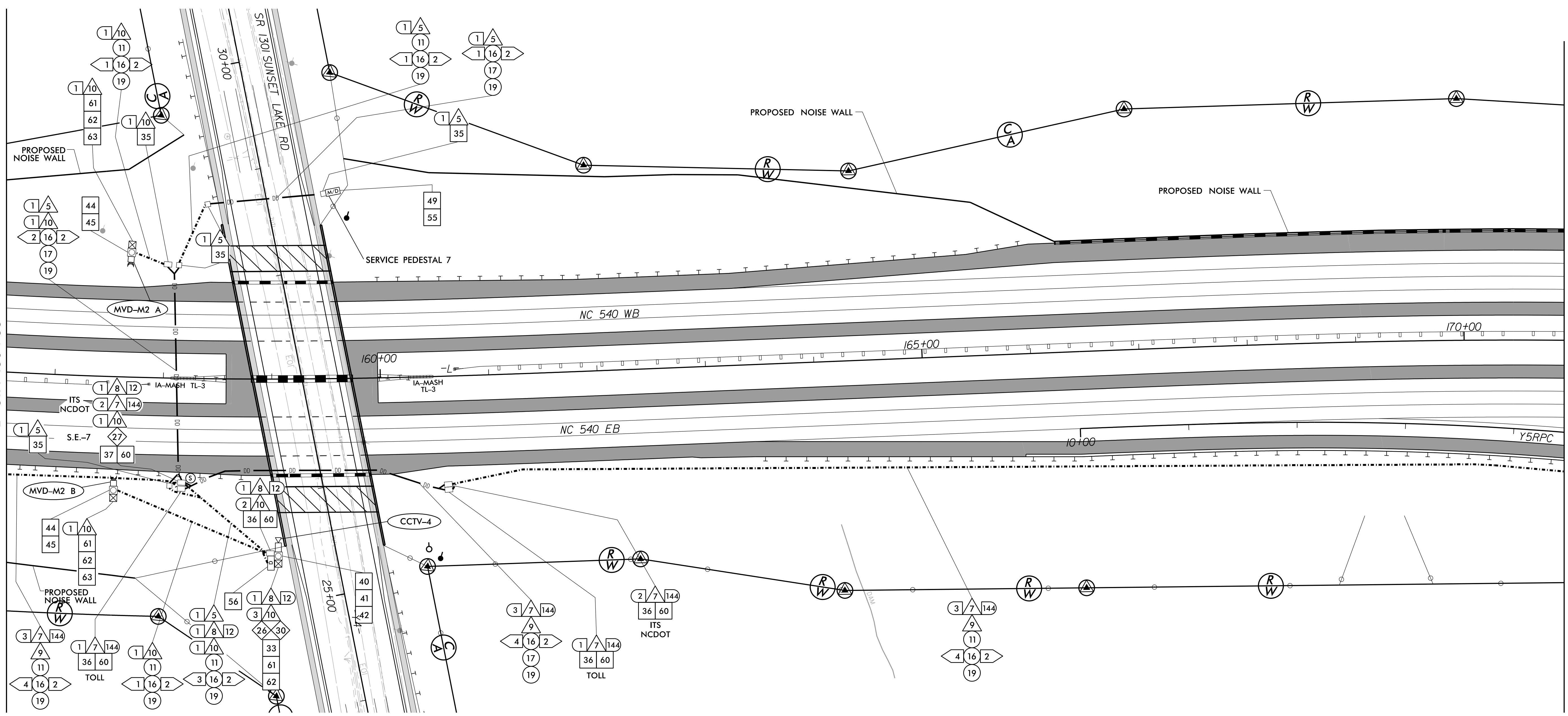
SEAL

Anthony M. Barretto
SIGNATURE DATE: 01/20/2021

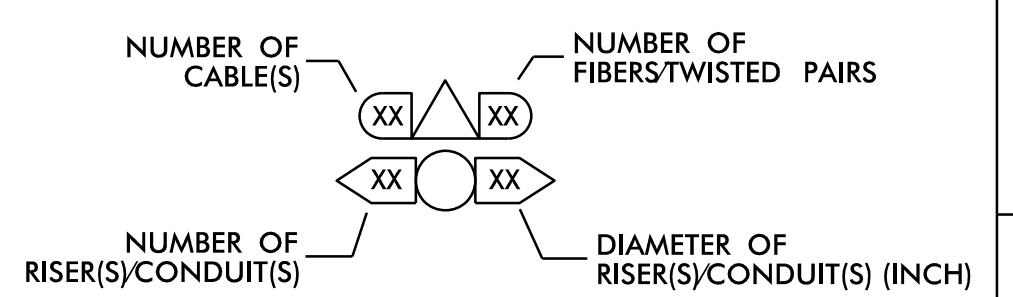
MATCHLINE SHEET ITS-52
-L- STA 170+92

MATCHLINE SHEET ITS-54
-L- STA 170+92

MATCHLINE SHEET ITS-50
-L- STA 156+55



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue, Suite 900, Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

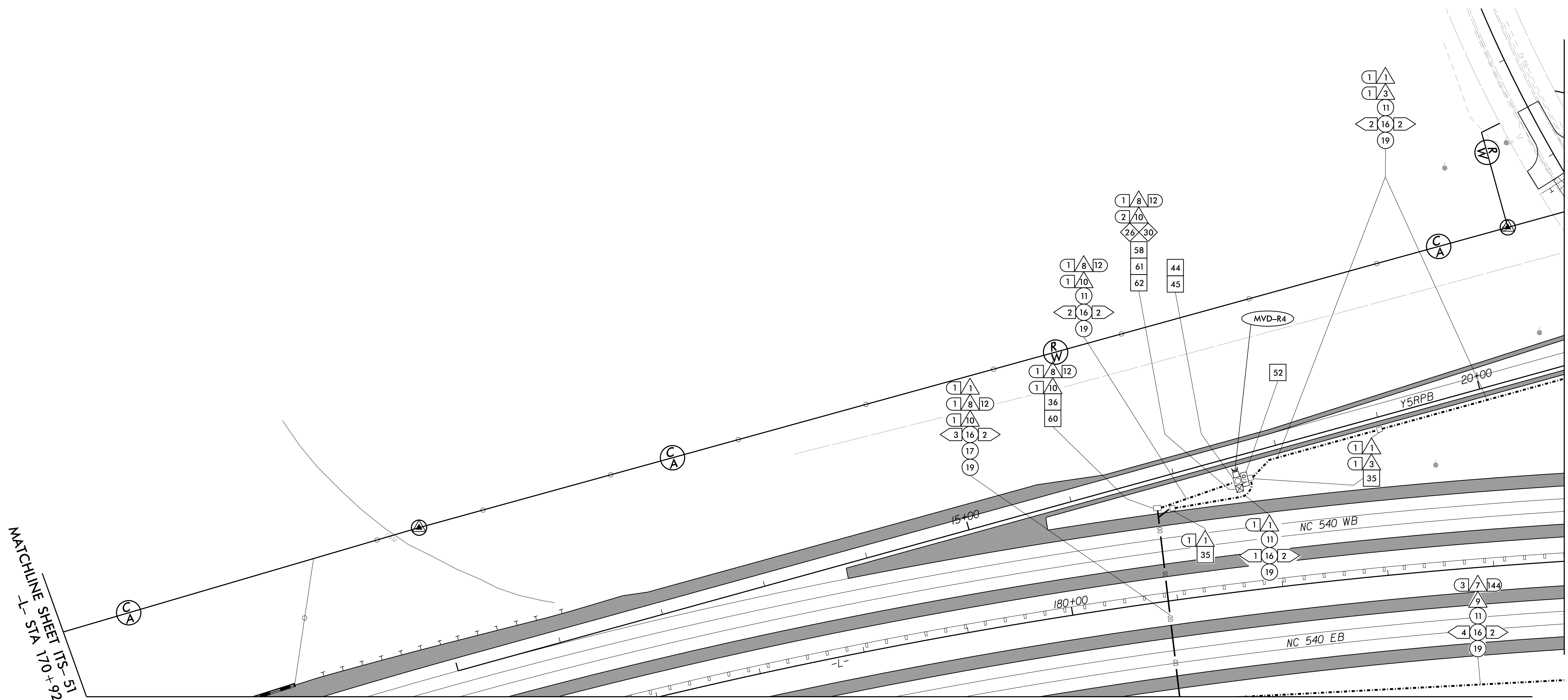
PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: 0 50

SEAL

ANTHONY M. BARBETTO
ENGINEER
01/20/2021
SIGNATURE DATE

1/18/2021 c:\pwworking\gfm\01\mtransue\0958946\R2721A_ITS_PSH_16.dgn
 mtransue

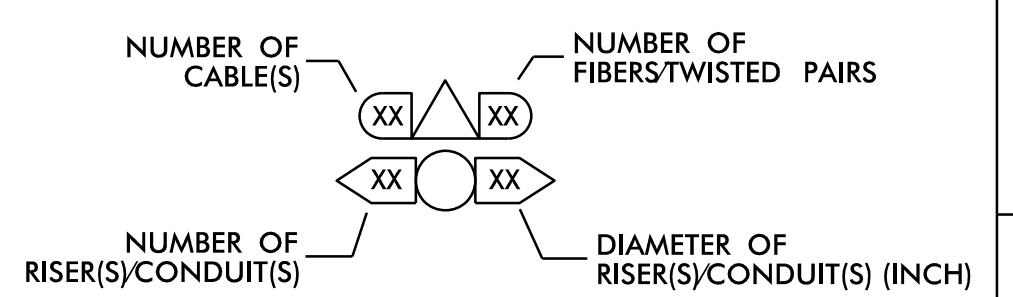


MATCHLINE SHEET ITS-51
-L- STA 170+92

MATCHLINE SHEET ITS-53
-L- STA 184+67

MATCHLINE SHEET ITS- 54
-L- STA 176+02

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

1/18/2021
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 mtransue

PLANS PREPARED BY:

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

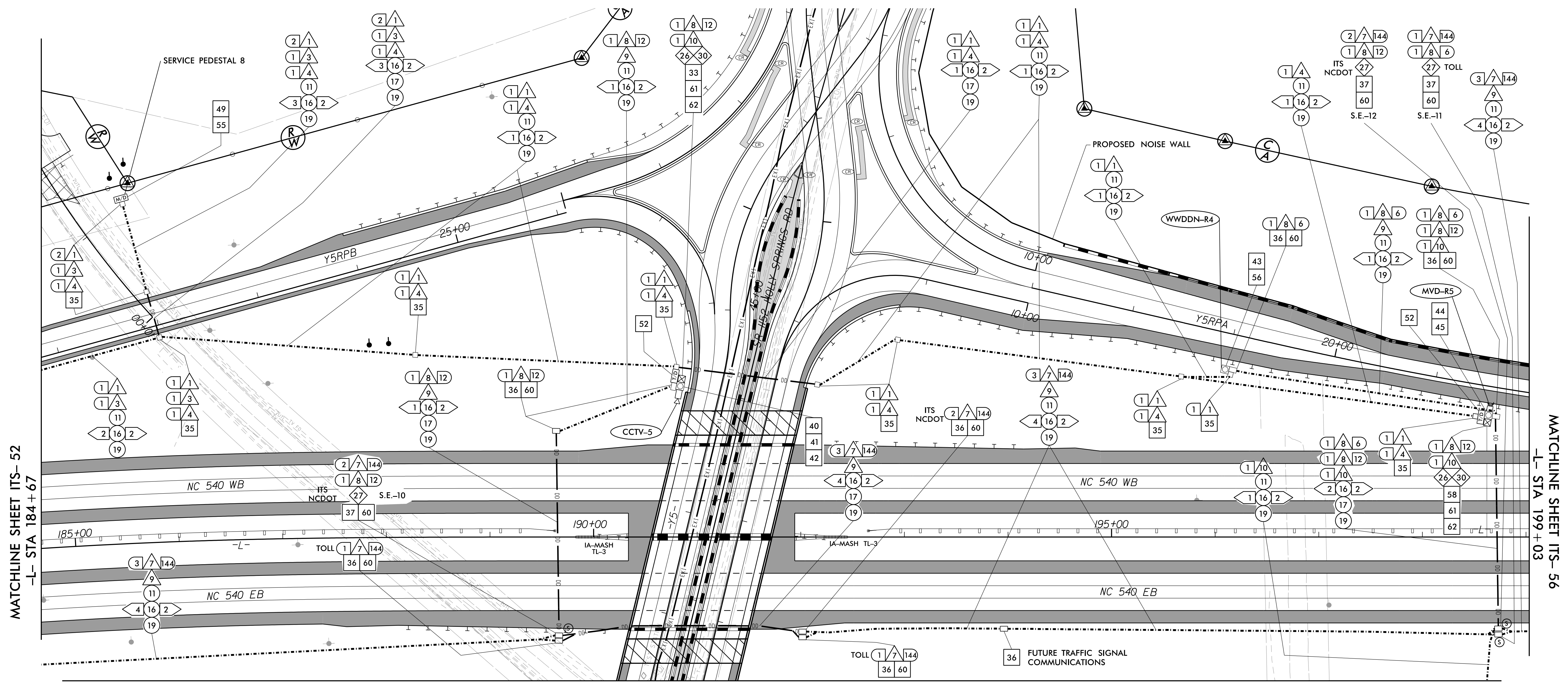
SCALE 0 50

REVISIONS

INIT. DATE

SEAL

Anthony M. Barretto
SIGNATURE DATE

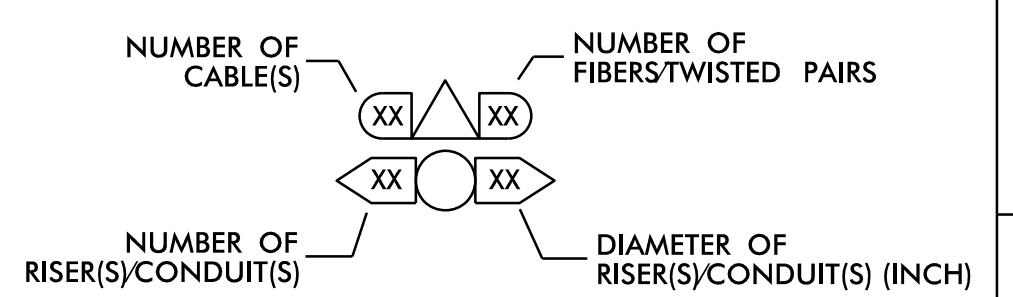


MATCHLINE SHEET ITS- 52
-L- STA 184+67

MATCHLINE SHEET ITS- 56
-L- STA 199+03

MATCHLINE SHEET ITS- 55
-Y5- STA 41+20

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

1/18/2021
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 mtransue

PLANS PREPARED BY:

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

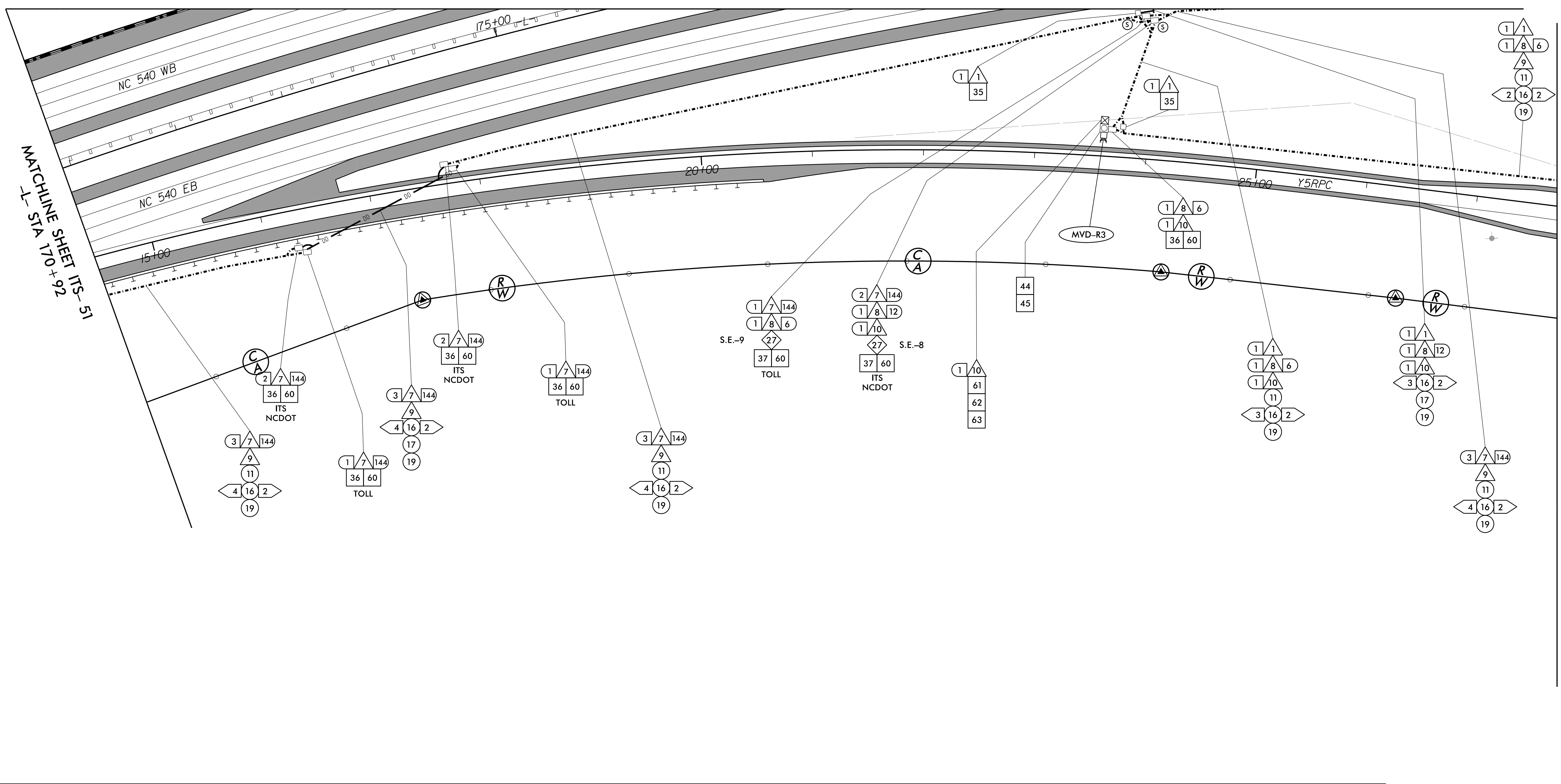
SCALE: 0 50

SEAL: ANTHONY M. BARBETTO, PROFESSIONAL ENGINEER, NO. 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021

MATCHLINE SHEET ITS- 52
-L- STA 176+02

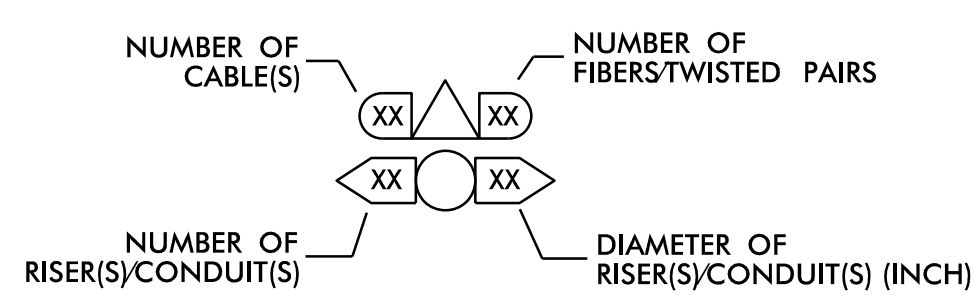
PROJECT REFERENCE NO. R-2721A SHEET NO. ITS-54



MATCHLINE SHEET ITS- 51
-L- STA 170+92

MATCHLINE SHEET ITS- 55
-Y5- STA 27+72

1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPLICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPLICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPLICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:
FLATIRON | **BRANCH CIVIL**
Gannett Fleming
One Glenwood Avenue Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

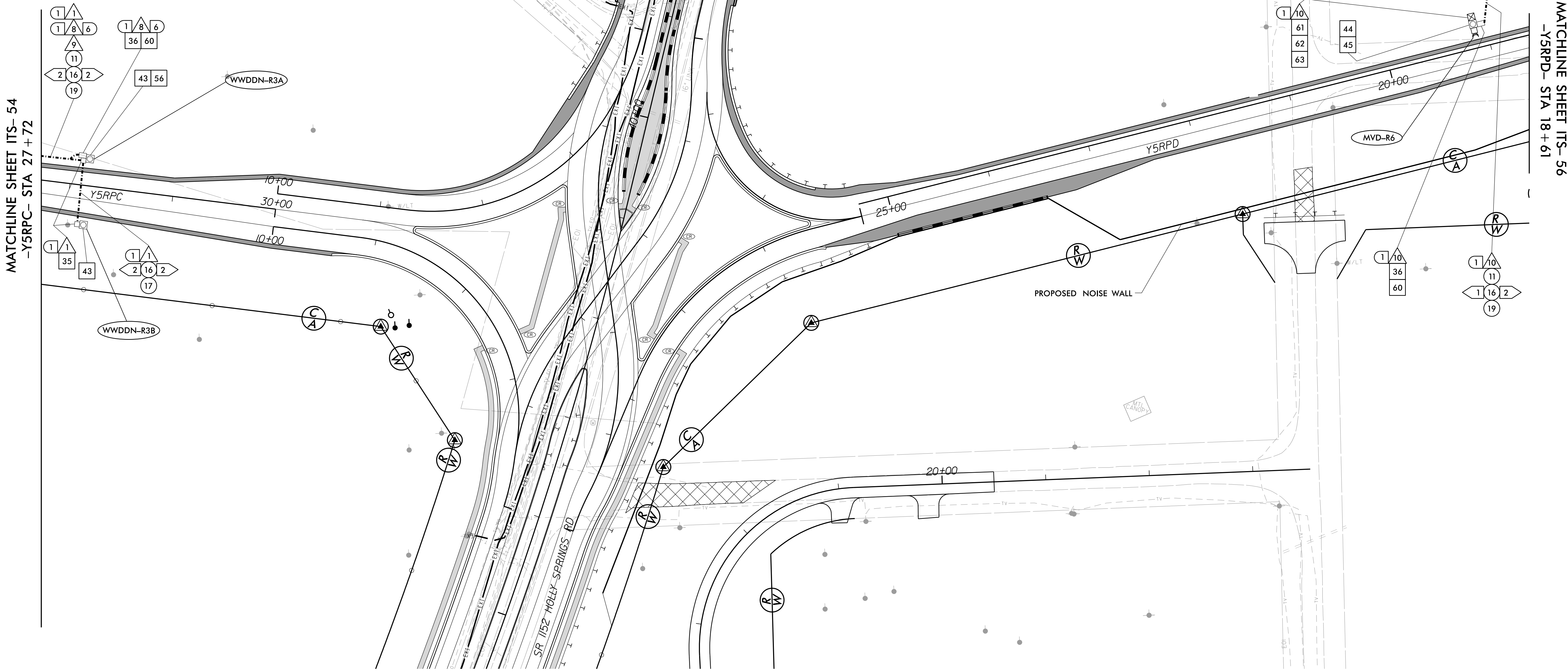
Prepared in the Offices of:
NORTH CAROLINA Turnpike Authority

ITS AND TOLLING CABLE & CONDUIT PLANS
DIVISION 05 WAKE COUNTY RALEIGH
PLAN DATE: 7/9/2020
REVIEWED BY: ANTHONY BARBETTO
PREPARED BY: MARK TRANSUE
REVIEWED BY: JASON MCCARTNEY

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 047143
ANTHONY M. BARBETTO
SIGNATURE DATE 01/20/2021

MATCHLINE SHEET ITS- 53
-Y5- STA 41+20

PROJECT REFERENCE NO. R-2721A SHEET NO. ITS-55



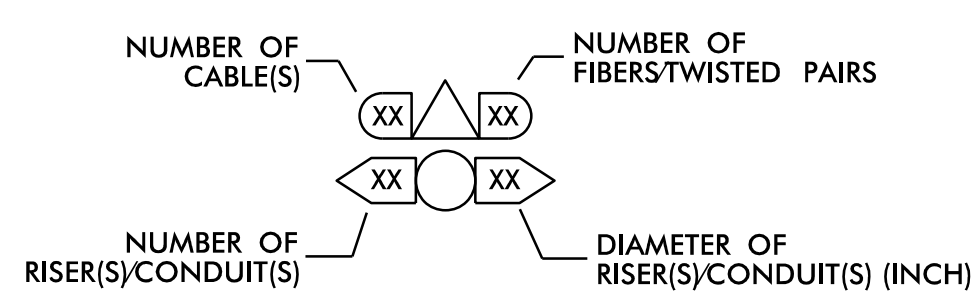
- 1 INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG
- 2 INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG
- 3 INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG
- 4 INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG
- 5 INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG
- 6 INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG
- 7 INSTALL SMFO CABLE
- 8 INSTALL FIBER OPTIC DROP CABLE
- 9 INSTALL TRACER WIRE
- 10 INSTALL DEVICE CABLE(S)
- 11 TRENCH
- 12 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 13 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 14 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 15 NOT USED
- 16 INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT

- 17 DIRECTIONAL DRILL CONDUIT
- 18 INSTALL CABLE(S) IN EXISTING CONDUIT
- 19 INSTALL CABLE(S) IN NEW CONDUIT
- 20 INSTALL CABLE(S) IN EXISTING RISER
- 21 INSTALL CABLE(S) IN NEW RISER
- 22 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
- 23 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 24 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG
- 26 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
- 27 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 28 INSTALL BASE MOUNTED SPLICE CABINET
- 29 MODIFY EXISTING SPLICE
- 30 INSTALL ETHERNET SWITCH
- 31 INSTALL CABINET FOUNDATION
- 32 INSTALL BASE MOUNTED CABINET (TYPE 336)

- 33 INSTALL POLE MOUNTED CABINET (TYPE 336)
- 34 INSTALL HUB CABINET
- 35 INSTALL STANDARD JUNCTION BOX
- 36 INSTALL OVERSIZED JUNCTION BOX
- 37 INSTALL SPECIAL-SIZED JUNCTION BOX
- 38 REMOVE EXISTING JUNCTION BOX
- 39 MODIFY EXISTING JUNCTION BOX
- 40 INSTALL CCTV CAMERA ASSEMBLY
- 41 INSTALL CAMERA LOWERING DEVICE
- 42 INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION
- 43 INSTALL TYPE III PEDESTAL
- 44 INSTALL MVD
- 45 INSTALL MVD POLE AND FOUNDATION
- 46 INSTALL DMS ON PEDESTAL STRUCTURE
- 47 INSTALL DMS ON GANTRY STRUCTURE
- 48 INSTALL DMS FOUNDATION

- 49 INSTALL NEW ELECTRICAL SERVICE
- 50 MODIFY EXISTING ELECTRICAL SERVICE
- 51 INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT
- 52 INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT
- 53 INSTALL UPS IN HUB CABINET
- 54 NOT USED
- 55 INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL
- 56 INSTALL EQUIPMENT DISCONNECT
- 57 INSTALL DELINEATOR MARKER
- 58 INSTALL POLE MOUNTED MASTER MVD CABINET
- 59 REMOVE EXISTING COMMUNICATIONS CABLE

- 60 STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
- 61 INSTALL TECHNICIAN PAD
- 62 INSTALL GROUNDING SYSTEM
- 63 INSTALL POLE MOUNTED SLAVE MVD CABINET



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

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PLANS PREPARED BY:
Gannett Fleming
Excellence Delivered As Promised

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:
NORTH CAROLINA Turnpike Authority

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

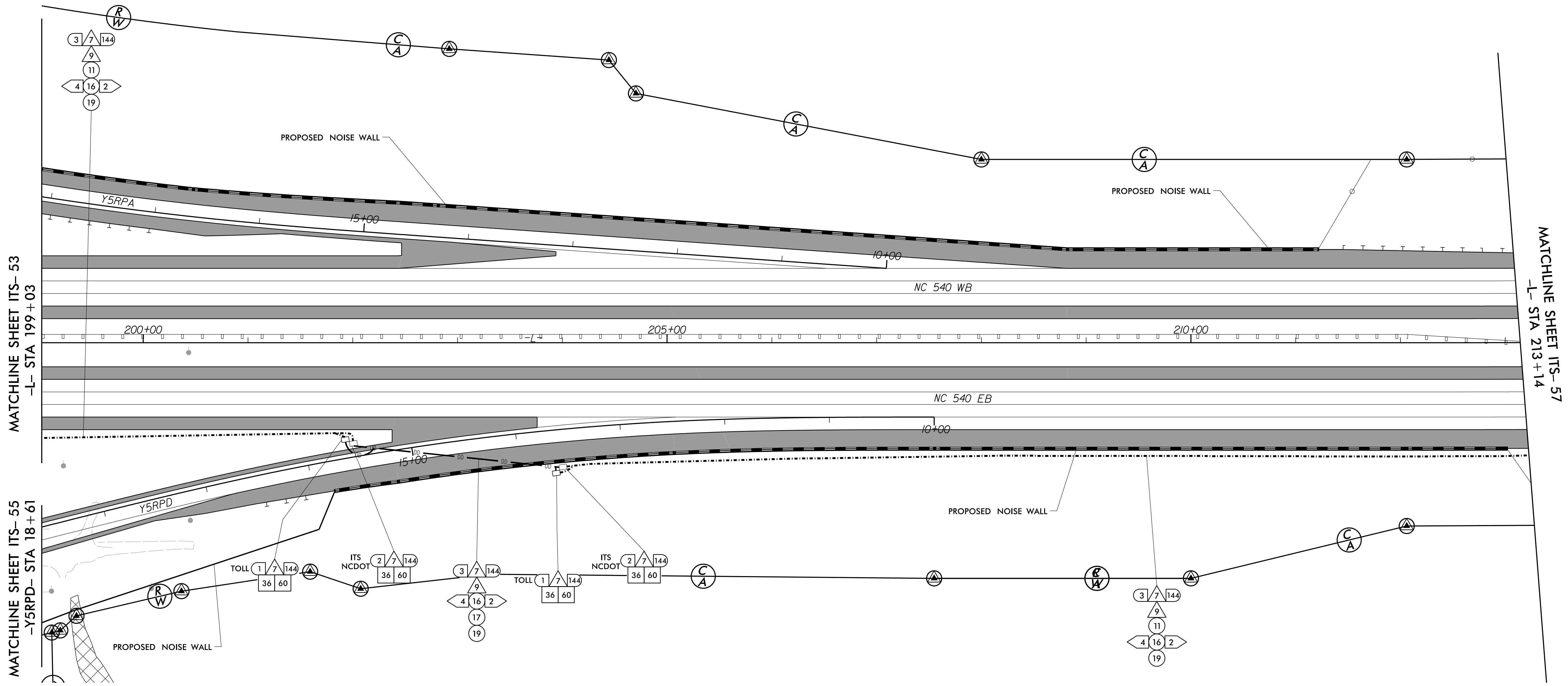
PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

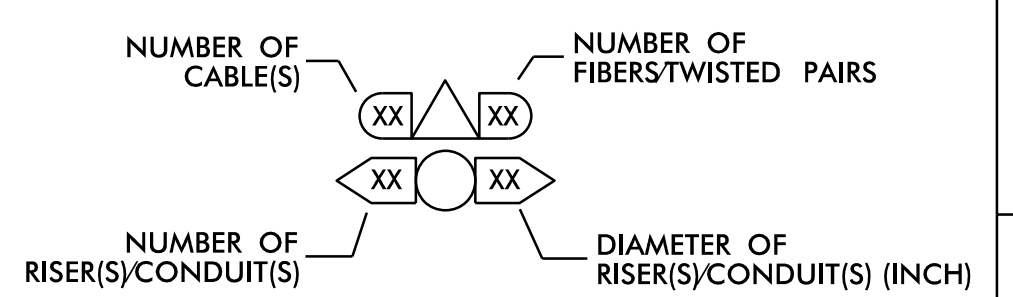
SEAL

ANTHONY M. BARBETTO
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 047143
DATE 01/20/2021

Signature: *Anthony M. Barretto*



1	INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG	17	DIRECTIONAL DRILL CONDUIT	33	INSTALL POLE MOUNTED CABINET (TYPE 336)	49	INSTALL NEW ELECTRICAL SERVICE	60	STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION
2	INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG	18	INSTALL CABLE(S) IN EXISTING CONDUIT	34	INSTALL HUB CABINET	50	MODIFY EXISTING ELECTRICAL SERVICE	61	INSTALL TECHNICIAN PAD
3	INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG	19	INSTALL CABLE(S) IN NEW CONDUIT	35	INSTALL STANDARD JUNCTION BOX	51	INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	62	INSTALL GROUNDING SYSTEM
4	INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG	20	INSTALL CABLE(S) IN EXISTING RISER	36	INSTALL OVERSIZED JUNCTION BOX	52	INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT	63	INSTALL POLE MOUNTED SLAVE MVD CABINET
5	INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG	21	INSTALL CABLE(S) IN NEW RISER	37	INSTALL SPECIAL-SIZED JUNCTION BOX	53	INSTALL UPS IN HUB CABINET		
6	INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG	22	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	38	REMOVE EXISTING JUNCTION BOX	54	NOT USED		
7	INSTALL SMFO CABLE	23	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET	39	MODIFY EXISTING JUNCTION BOX	55	INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL		
8	INSTALL FIBER OPTIC DROP CABLE	24	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET	40	INSTALL CCTV CAMERA ASSEMBLY	56	INSTALL EQUIPMENT DISCONNECT		
9	INSTALL TRACER WIRE	25	INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG	41	INSTALL CAMERA LOWERING DEVICE	57	INSTALL DELINEATOR MARKER		
10	INSTALL DEVICE CABLE(S)	26	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPICE CABLE IN CABINET	42	INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION	58	INSTALL POLE MOUNTED MASTER MVD CABINET		
11	TRENCH	27	INSTALL UNDERGROUND SPICE ENCLOSURE	43	INSTALL TYPE III PEDESTAL	59	REMOVE EXISTING COMMUNICATIONS CABLE		
12	INSTALL RIGID, GALVANIZED STEEL CONDUIT	28	INSTALL BASE MOUNTED SPICE CABINET	44	INSTALL MVD				
13	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	29	MODIFY EXISTING SPICE	45	INSTALL MVD POLE AND FOUNDATION				
14	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL	30	INSTALL ETHERNET SWITCH	46	INSTALL DMS ON PEDESTAL STRUCTURE				
15	NOT USED	31	INSTALL CABINET FOUNDATION	47	INSTALL DMS ON GANTRY STRUCTURE				
16	INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	32	INSTALL BASE MOUNTED CABINET (TYPE 336)	48	INSTALL DMS FOUNDATION				



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

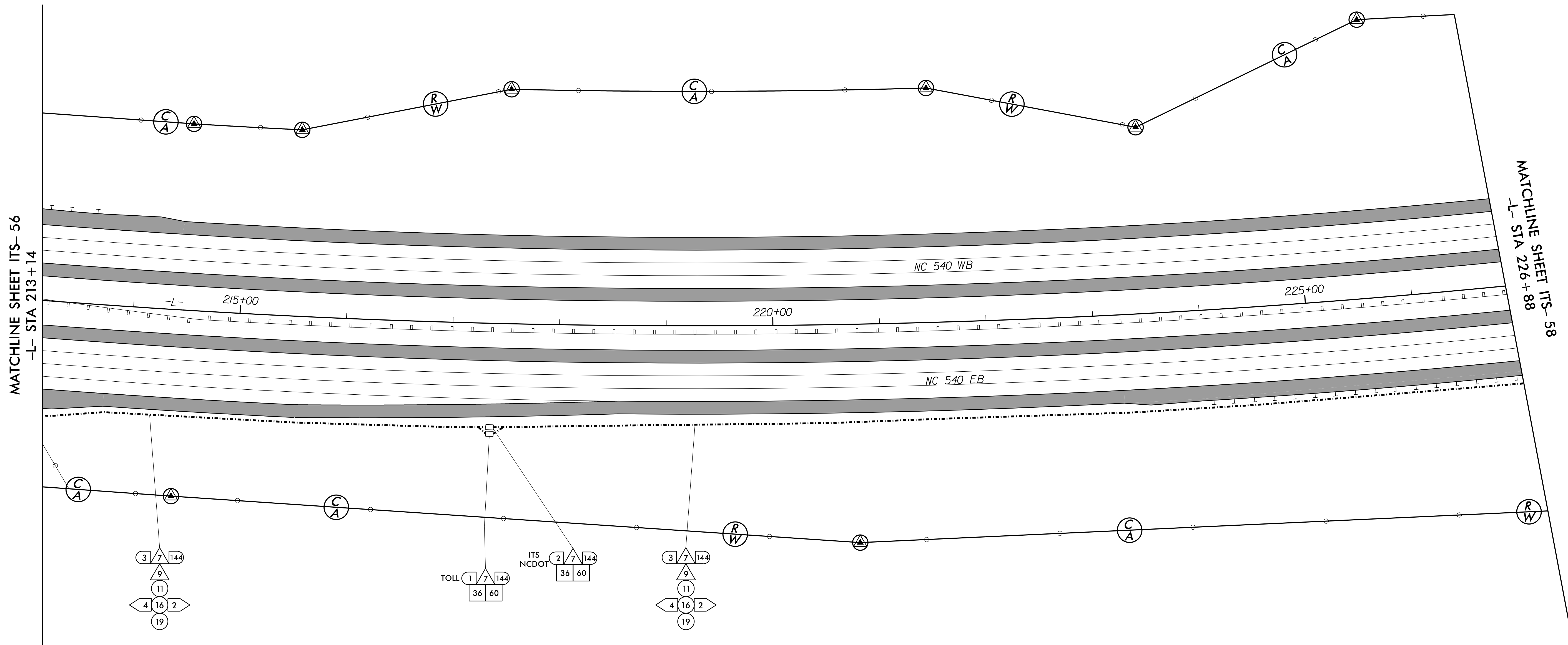
PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS	INIT.	DATE

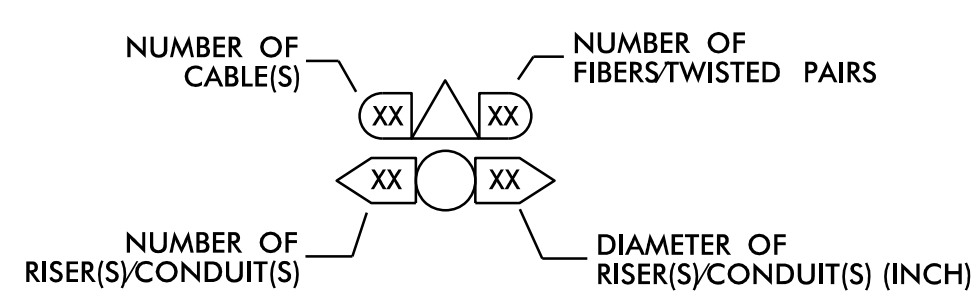
SCALE: 0 50

SEAL: ANTHONY M. BARBETTO, PROFESSIONAL ENGINEER, SEAL 047143, NC Lic. No. E-12021

SIGNATURE: Anthony M. Barretto DATE: 01/20/2021



- | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
| 8 | INSTALL FIBER OPTIC DROP CABLE | 24 | INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET | 40 | INSTALL CCTV CAMERA ASSEMBLY | 56 | INSTALL EQUIPMENT DISCONNECT | | |
| 9 | INSTALL TRACER WIRE | 25 | INSTALL 3-WIRE COPPER CONDUCTOR, 2 AWG | 41 | INSTALL CAMERA LOWERING DEVICE | 57 | INSTALL DELINEATOR MARKER | | |
| 10 | INSTALL DEVICE CABLE(S) | 26 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 42 | INSTALL 50' CCTV CAMERA METAL POLE AND FOUNDATION | 58 | INSTALL POLE MOUNTED MASTER MVD CABINET | | |
| 11 | TRENCH | 27 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 43 | INSTALL TYPE III PEDESTAL | 59 | REMOVE EXISTING COMMUNICATIONS CABLE | | |
| 12 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 28 | INSTALL BASE MOUNTED SPLICE CABINET | 44 | INSTALL MVD | | | | |
| 13 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 29 | MODIFY EXISTING SPLICE | 45 | INSTALL MVD POLE AND FOUNDATION | | | | |
| 14 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL | 30 | INSTALL ETHERNET SWITCH | 46 | INSTALL DMS ON PEDESTAL STRUCTURE | | | | |
| 15 | NOT USED | 31 | INSTALL CABINET FOUNDATION | 47 | INSTALL DMS ON GANTRY STRUCTURE | | | | |
| 16 | INSTALL HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT | 32 | INSTALL BASE MOUNTED CABINET (TYPE 336) | 48 | INSTALL DMS FOUNDATION | | | | |



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PLANS PREPARED BY:

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Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

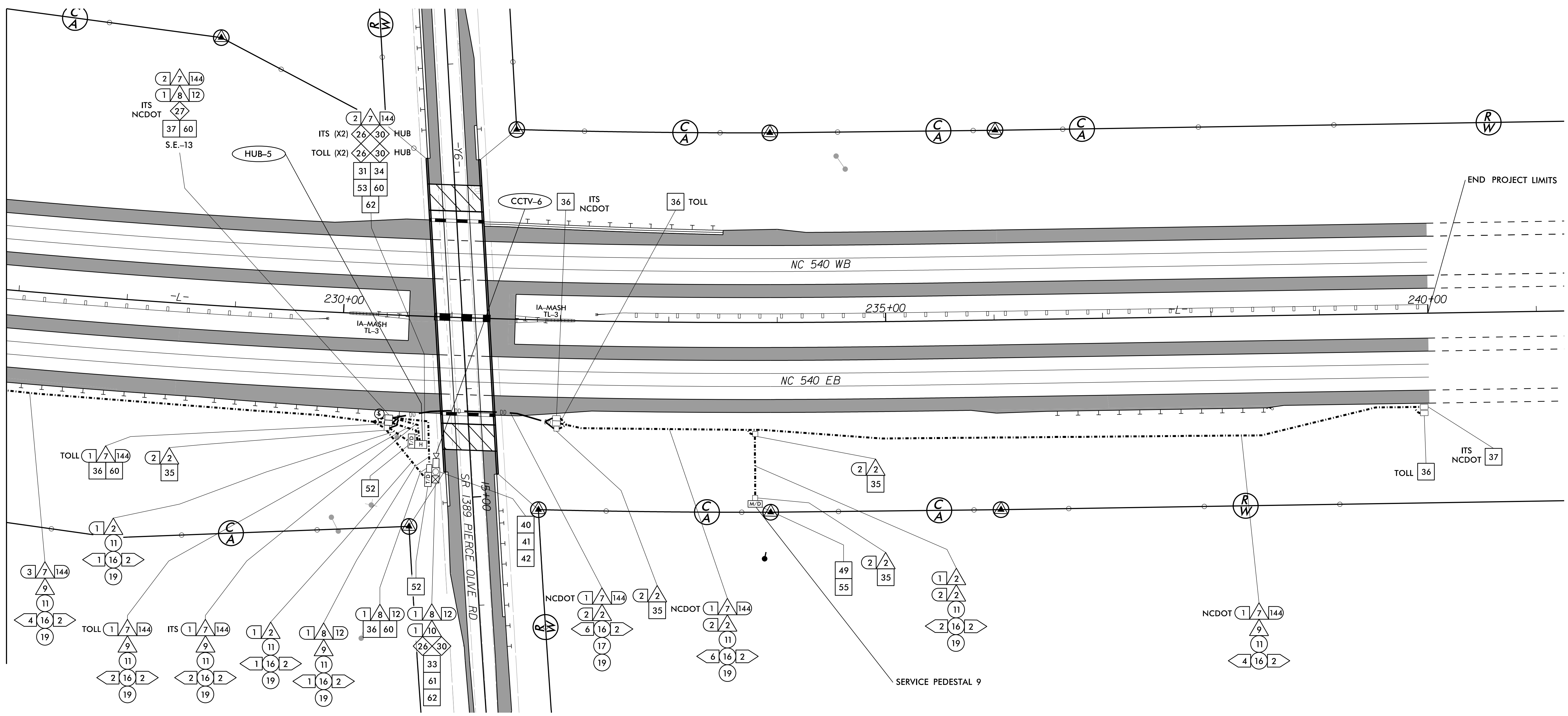
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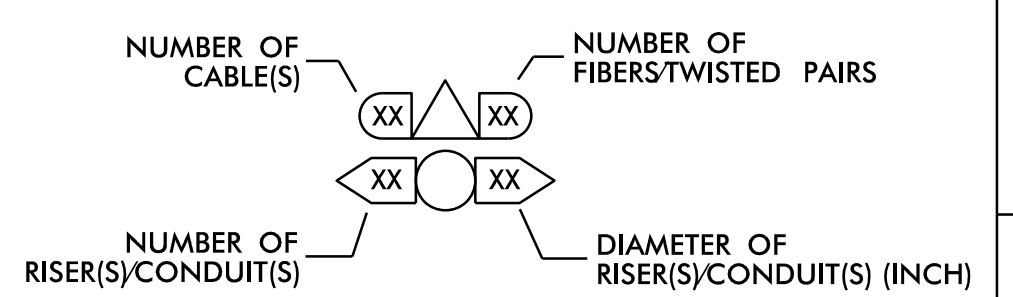
SEAL: ANTHONY M. BARBETTO, ENGINEER, SEAL 047143, DATE 01/20/2021

SIGNATURE: *Anthony M. Barretto* DATE: _____

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|----|---|----|---|----|---|----|---|----|---|
| 1 | INSTALL 3-WIRE COPPER CONDUCTOR, 10 AWG | 17 | DIRECTIONAL DRILL CONDUIT | 33 | INSTALL POLE MOUNTED CABINET (TYPE 336) | 49 | INSTALL NEW ELECTRICAL SERVICE | 60 | STORE 50 FEET PER FIBER OPTIC CABLE IN EACH DIRECTION |
| 2 | INSTALL 3-WIRE COPPER CONDUCTOR, 8 AWG | 18 | INSTALL CABLE(S) IN EXISTING CONDUIT | 34 | INSTALL HUB CABINET | 50 | MODIFY EXISTING ELECTRICAL SERVICE | 61 | INSTALL TECHNICIAN PAD |
| 3 | INSTALL 3-WIRE COPPER CONDUCTOR, 6 AWG | 19 | INSTALL CABLE(S) IN NEW CONDUIT | 35 | INSTALL STANDARD JUNCTION BOX | 51 | INSTALL 480-120/240V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 62 | INSTALL GROUNDING SYSTEM |
| 4 | INSTALL 3-WIRE COPPER CONDUCTOR, 4 AWG | 20 | INSTALL CABLE(S) IN EXISTING RISER | 36 | INSTALL OVERSIZED JUNCTION BOX | 52 | INSTALL 240-120V STEPDOWN TRANSFORMER WITH EQUIPMENT DISCONNECT | 63 | INSTALL POLE MOUNTED SLAVE MVD CABINET |
| 5 | INSTALL 3-WIRE COPPER CONDUCTOR, 1 AWG | 21 | INSTALL CABLE(S) IN NEW RISER | 37 | INSTALL SPECIAL-SIZED JUNCTION BOX | 53 | INSTALL UPS IN HUB CABINET | | |
| 6 | INSTALL 4-WIRE COPPER CONDUCTOR, 1 AWG | 22 | INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS | 38 | REMOVE EXISTING JUNCTION BOX | 54 | NOT USED | | |
| 7 | INSTALL SMFO CABLE | 23 | INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET | 39 | MODIFY EXISTING JUNCTION BOX | 55 | INSTALL METER WITH DISCONNECT IN COMBINATION PEDESTAL | | |
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PLANS PREPARED BY:
 Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
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 (919) 420-7660
 NC Lic. No. F-0270

Prepared in the Offices of:

NORTH CAROLINA Turnpike Authority

ITS AND TOLLING CABLE & CONDUIT PLANS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

REVISIONS: _____ INIT. DATE

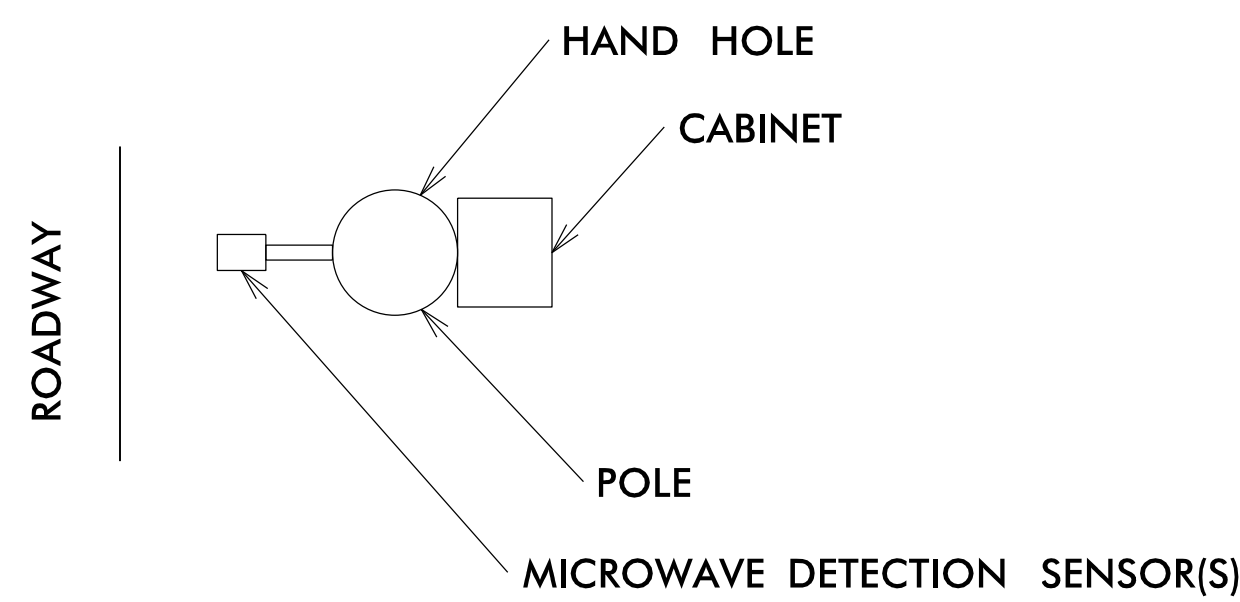
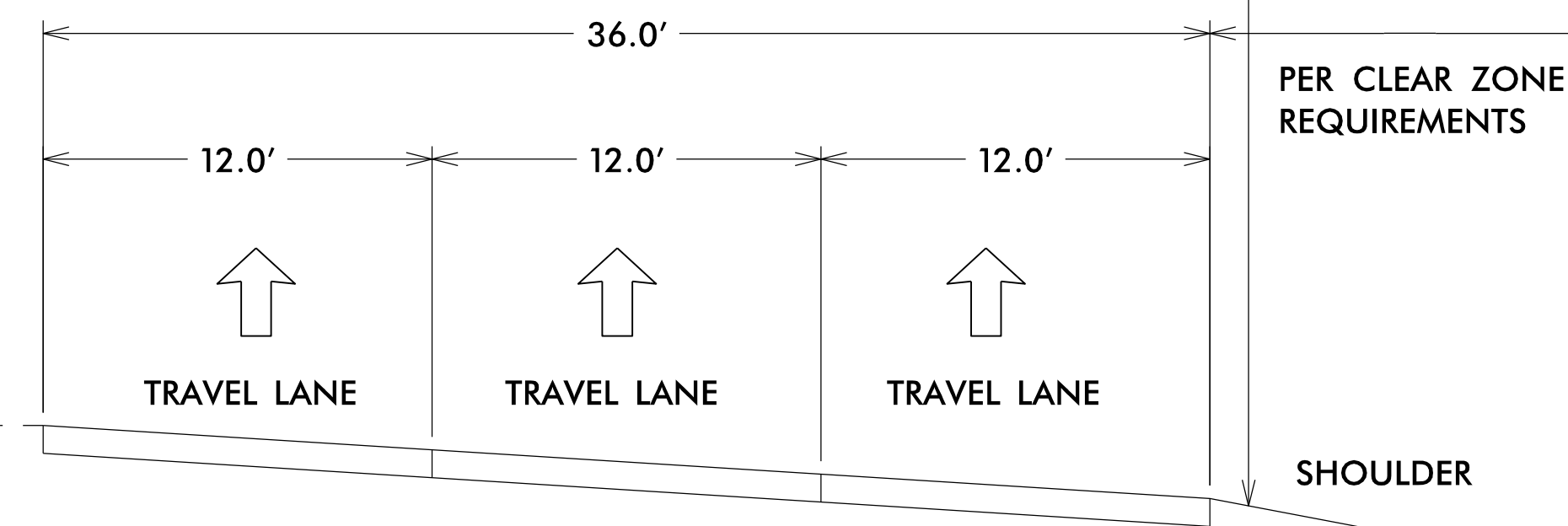
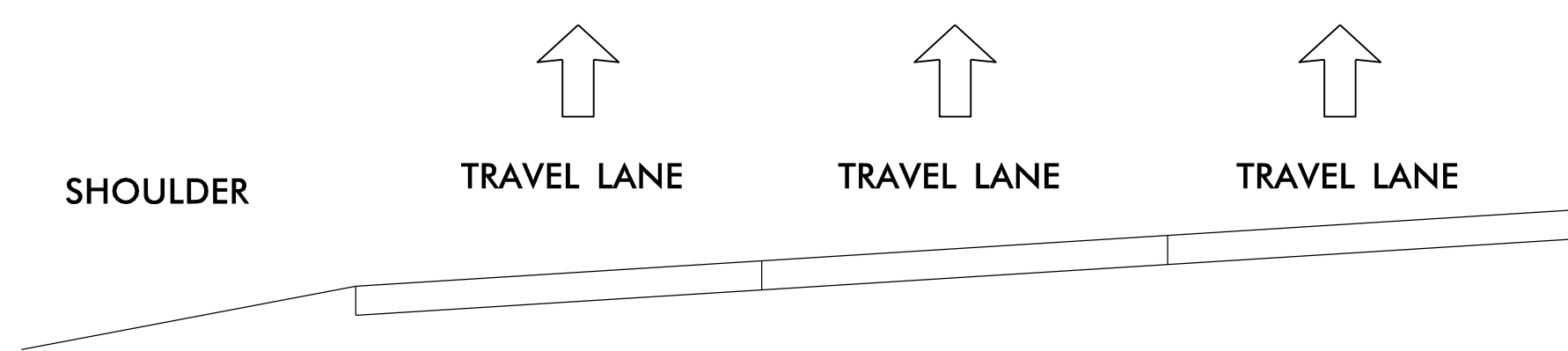
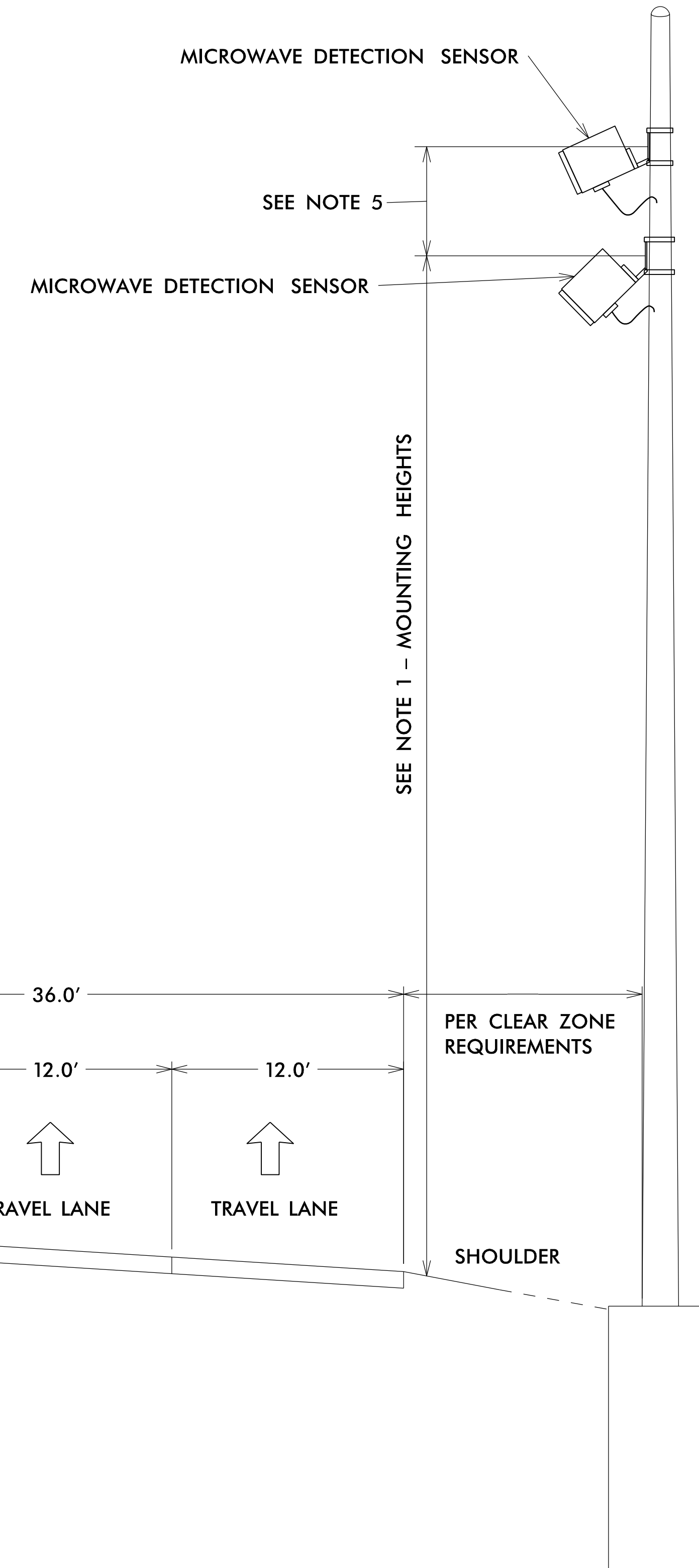
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SEAL
 ANTHONY M. BARRETTO
 ENGINEER
 01/20/2021
 SIGNATURE DATE

DUAL MVD SENSOR DETAIL

NOTE:

1. LOCATE DETECTOR MOUNTING HEIGHTS PER THE MANUFACTURER'S MOUNTING CHART FOR HORIZONTAL SETBACK AND NUMBER OF LANES TO BE DETECTED.
2. ALIGN SENSOR MOUNTING ANGLES PER MANUFACTURER'S INSTALLATION GUIDE WITH RESPECT TO HEIGHT, HORIZONTAL SETBACK AND NUMBER OF LANES.
3. 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.
4. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
5. ALL MVD SENSORS MUST BE INSTALLED TO HAVE A MIN. DISTANCE OF 5' BETWEEN SENSORS. THIS DISTANCE CAN BE HORIZONTAL, VERTICAL, OR A COMBINATION OF BOTH. USE STANDARD MOUNTING BRACKET UNLESS SENSOR CONFIGURATION REQUIRES AN EXTENSION ARM TO MEET REQUIRED SPACING.



TOP VIEW OF DEVICES ON POLE

POLE PLACEMENT
SCALE: NOT TO SCALE

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UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

One Glenwood Avenue
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Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

DUAL MVD SENSOR DETAIL

DIVISION 05 WAKE COUNTY RALEIGH

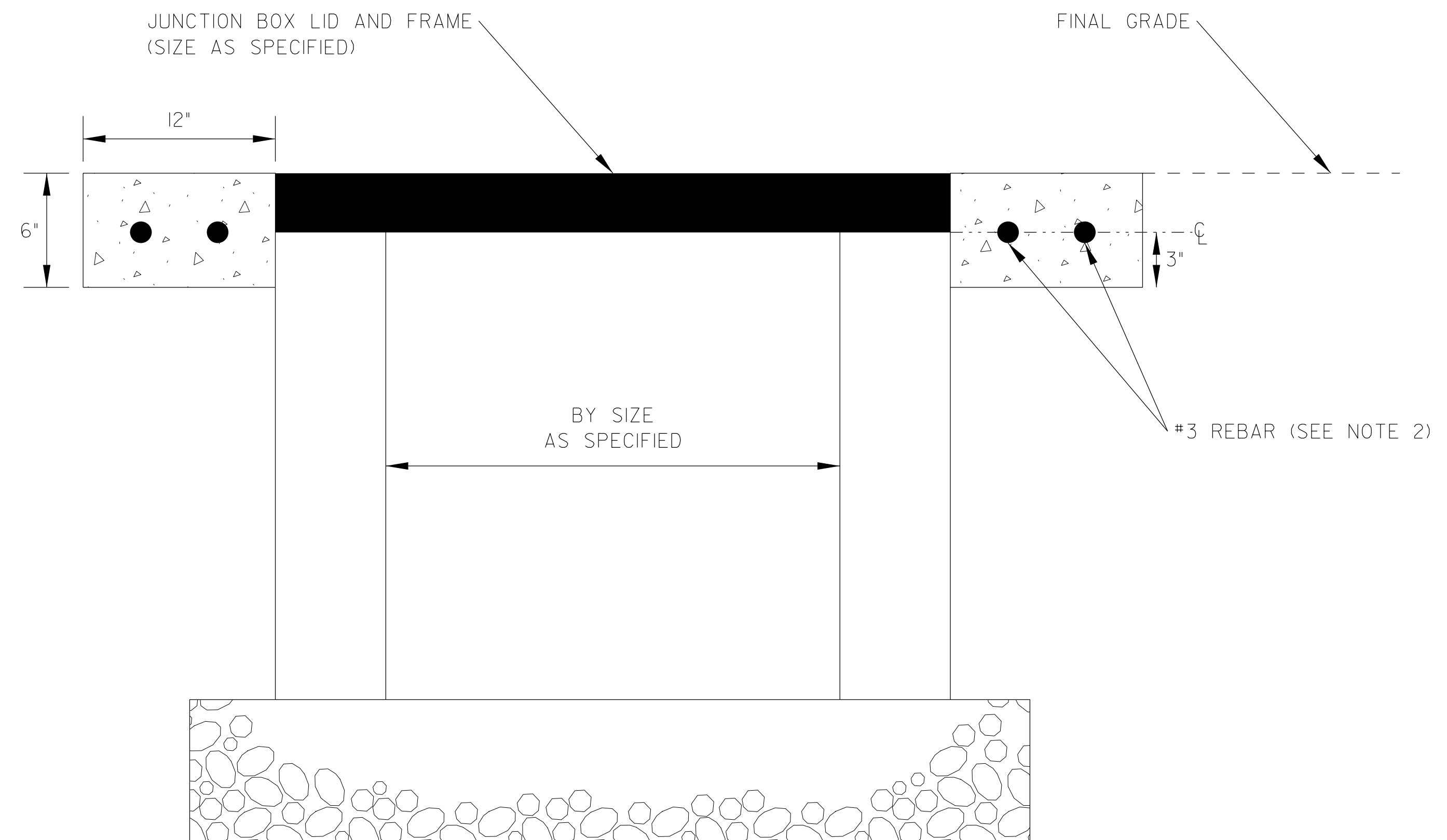
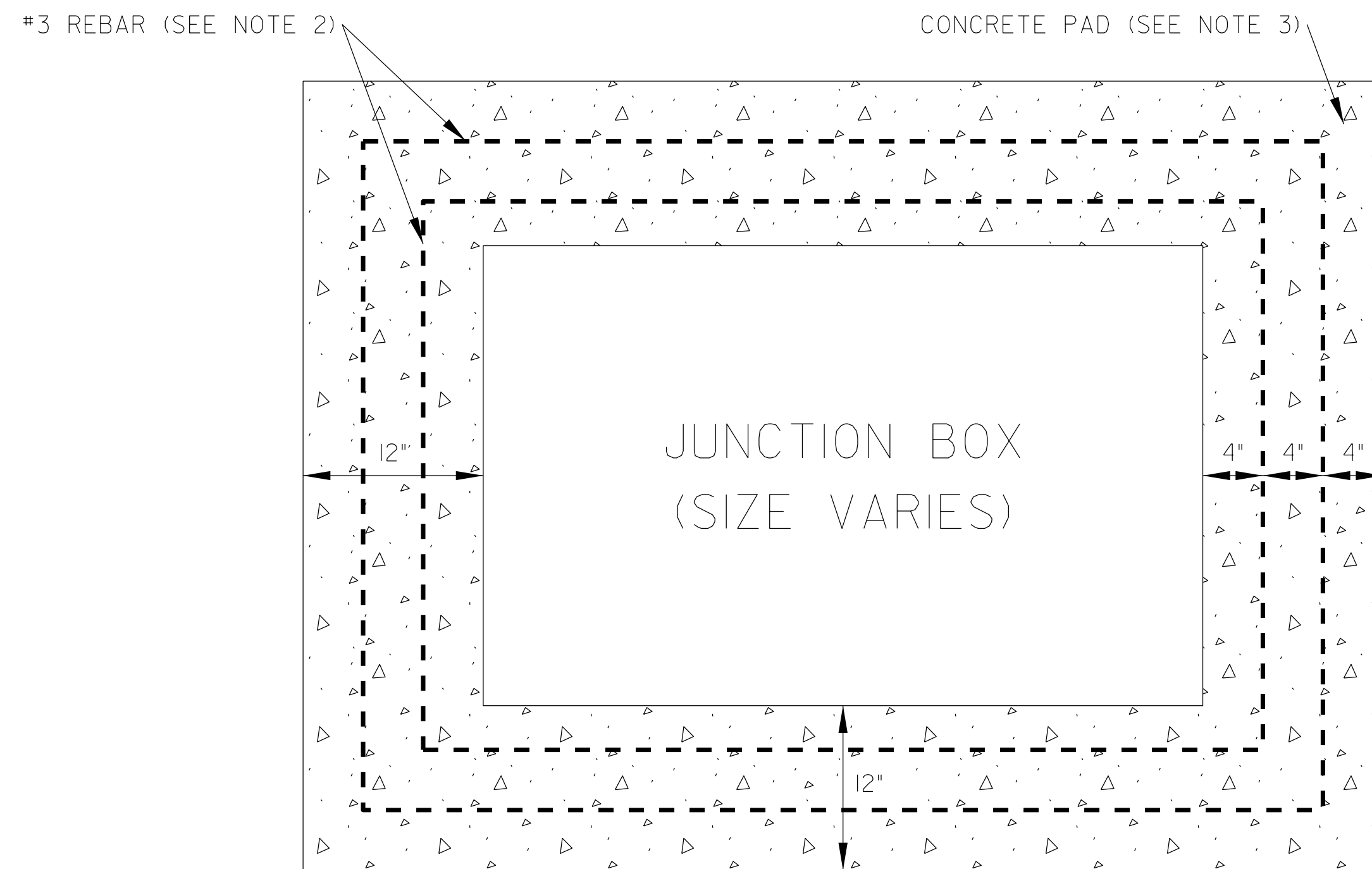
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE	REVISIONS	INIT.	DATE
N.T.S.			

SEAL

Anthony M. Barretto
SIGNATURE DATE 01/20/2021



NOTES:

1. PROVIDE A 12" REINFORCED CONCRETE COLLAR ON ALL JUNCTION BOXES, UNLESS BOXES ARE ON SLOPES OF 3:1 OR WORSE. AVOID PLACING JUNCTION BOXES ON SUCH SLOPES WHEREVER POSSIBLE.
2. INSTALL TWO (2) RECTANGULAR HOOPS OF #3 REBAR. HOOPS SHALL BE SET 3 INCHES FROM THE BOTTOM OF CONCRETE VERTICALLY AND SPACED 4 INCHES HORIZONTALLY FROM THE INSIDE AND OUTSIDE OF THE CONCRETE COLLAR.
3. CONCRETE PAD SHALL HAVE A BRUSHED FINISH.

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UNLESS ALL SIGNATURES COMPLETED**


1/18/2021
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PLANS PREPARED BY:

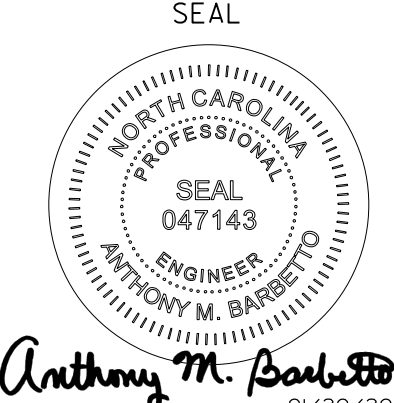
 One Glenwood Avenue
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 Raleigh, NC 27603
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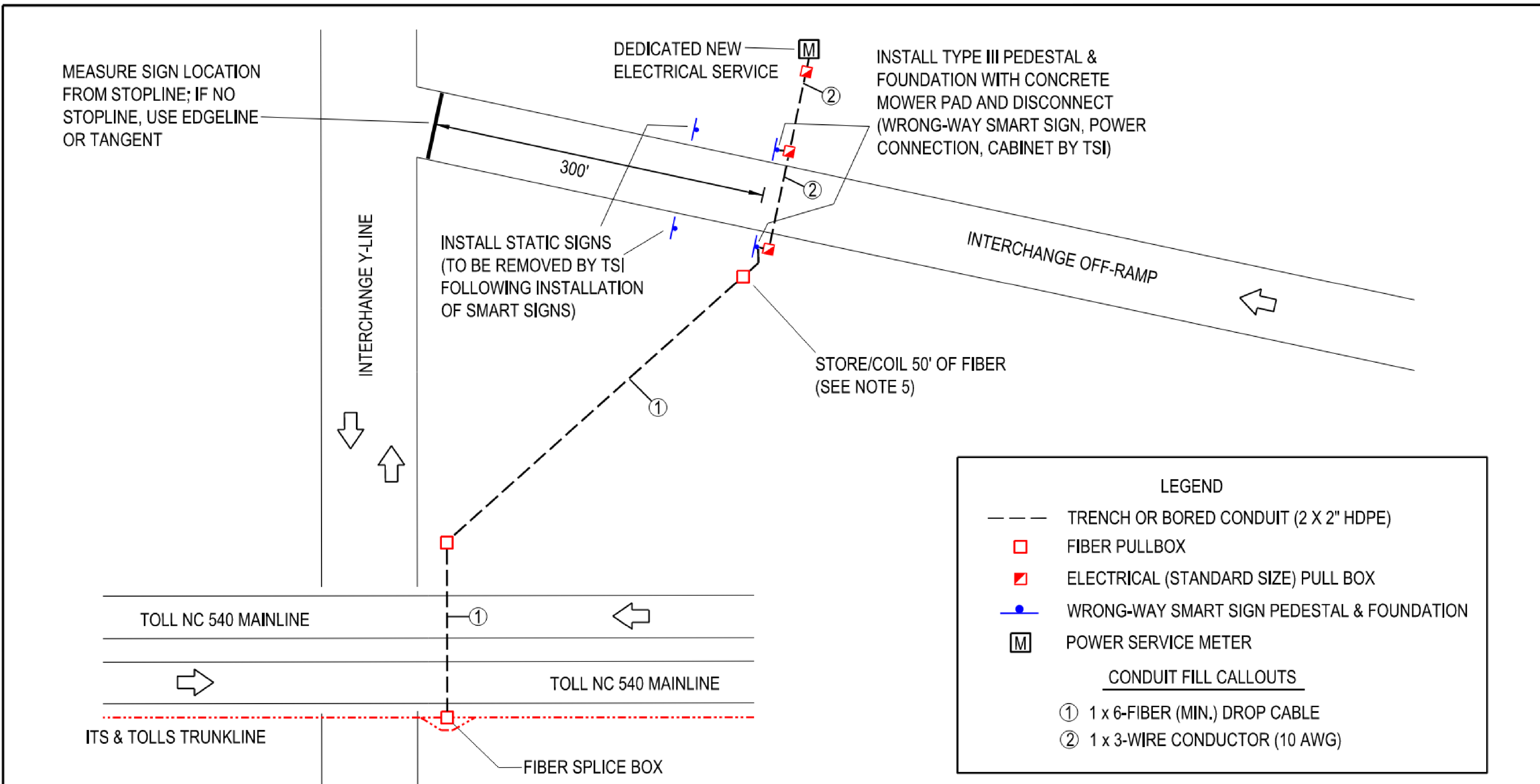
Prepared in the Offices of:



**JUNCTION BOX
CONCRETE APRON DETAIL**

DIVISION 05	WAKE COUNTY	RALEIGH
PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARBETTO	
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY	
SCALE	REVISIONS	INIT. DATE
N.T.S.		

SEAL

 ANTHONY M. BARBETTO
 ENGINEER
 047143
 01/20/2021
 SIGNATURE DATE



MEASURE SIGN LOCATION FROM STOPLINE; IF NO STOPLINE, USE EDGELINE OR TANGENT

DEDICATED NEW ELECTRICAL SERVICE

INSTALL TYPE III PEDESTAL & FOUNDATION WITH CONCRETE MOWER PAD AND DISCONNECT (WRONG-WAY SMART SIGN, POWER CONNECTION, CABINET BY TSI)

INSTALL STATIC SIGNS (TO BE REMOVED BY TSI FOLLOWING INSTALLATION OF SMART SIGNS)

STORE/COIL 50' OF FIBER (SEE NOTE 5)

INTERCHANGE OFF-RAMP

TOLL NC 540 MAINLINE

TOLL NC 540 MAINLINE

ITS & TOLLS TRUNKLINE

FIBER SPLICE BOX

LEGEND

- TRENCH OR BORED CONDUIT (2 X 2" HDPE)
- FIBER PULLBOX
- ELECTRICAL (STANDARD SIZE) PULL BOX
- WRONG-WAY SMART SIGN PEDESTAL & FOUNDATION
- M POWER SERVICE METER

CONDUIT FILL CALLOUTS

- ① 1 x 6-FIBER (MIN.) DROP CABLE
- ② 1 x 3-WIRE CONDUCTOR (10 AWG)

NOTES:

1. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
2. INSTALL 12" WIDE, 8" DEEP CONCRETE COLLAR (FLUSH WITH GRADE) FOR ALL PEDESTALS.
3. LOCATE SIGN PEDESTALS ACCORDING TO SECTION 2A.19 OF THE MUTCD.
4. INSTALL 12" WIDE, 8" DEEP CONCRETE COLLAR FOR ALL JUNCTION BOXES
5. COIL/STORE FIBER-OPTIC CABLE IN JUNCTION BOX FOR CONNECTION BY TSI.
6. POWER SERVICE CAN BE SHARED WITH MVD OR CCTV BUT NOT A TRAFFIC SIGNAL.
7. SPLICE WWDD FIBER DROP INTO THE TOLLS CABLE AS DIRECTED BY NCTA.
8. FOR OFF-RAMP LOOPS, INSTALL SIGNS 250' FROM STOPLINE, OR USE ENGINEERING JUDGEMENT.
9. RUN A SINGLE 3-WIRE CONDUCTOR FROM METER TO FURTHEST DEVICE BOX. STORE 25' OF WIRE IN EACH JUNCTION BOX, FOR CONNECTION BY TSI. AWG SIZE TO BE CONFIRMED WITH TSI/NCTA.



WRONG-WAY DRIVER DETECTION RAMP SIGN INFRASTRUCTURE POWER SERVICE FROM OUTSIDE OF RAMP

SCALE: N.T.S. DATE: JUNE 2020

NORTH CAROLINA TURNPIKE AUTHORITY

W-2a

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PLANS PREPARED BY: **FLATIRON** **BRANCH CIVIL**

Gannett Fleming One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

Prepared in the Offices of: **NORTH CAROLINA Turnpike Authority**

W-2A RAMP WWDDN DETAIL

DIVISION 05 WAKE COUNTY RALEIGH

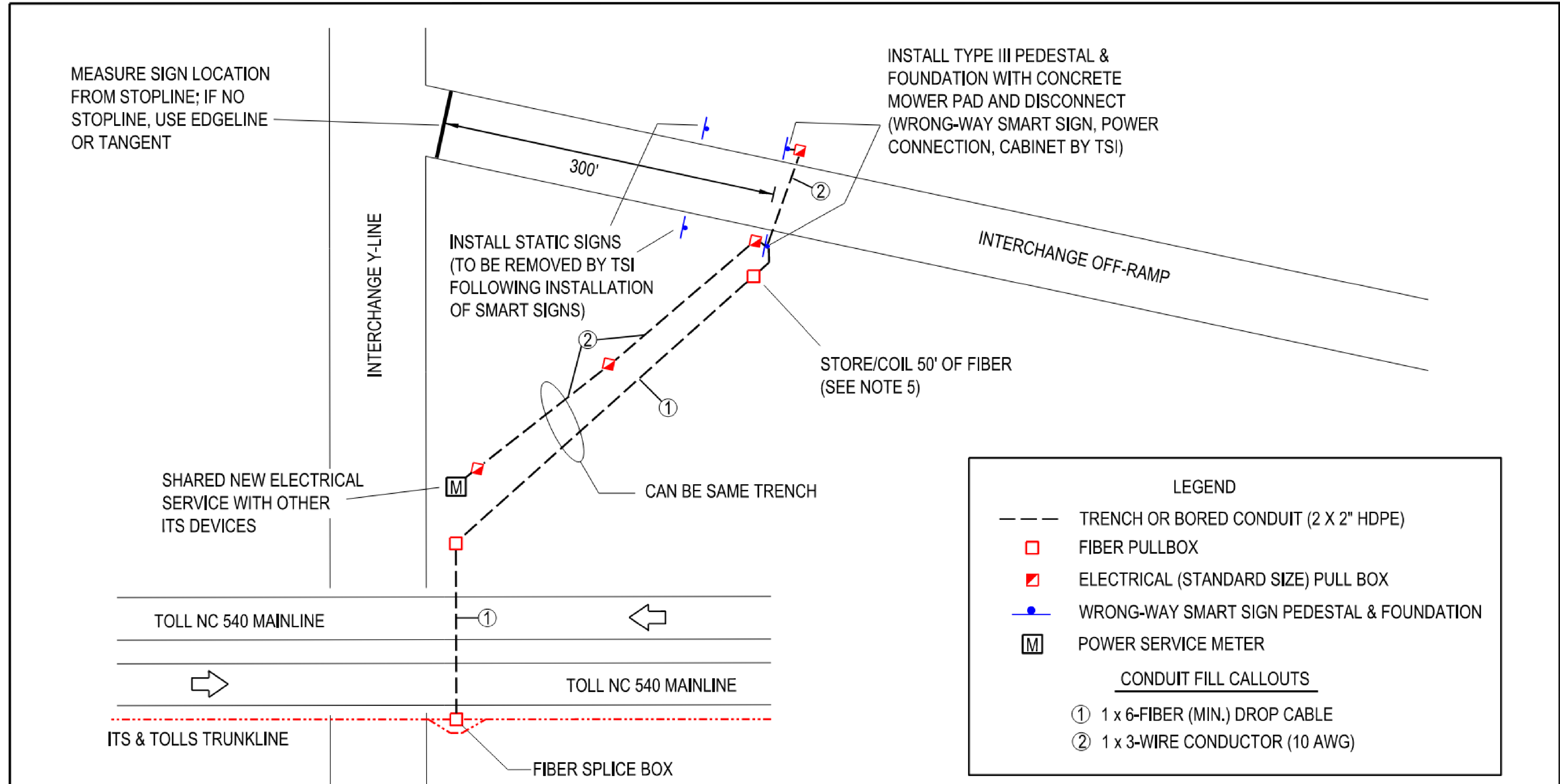
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: N.T.S.

SEAL: ANTHONY M. BARBETTO, ENGINEER, NORTH CAROLINA PROFESSIONAL SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



MEASURE SIGN LOCATION FROM STOPLINE; IF NO STOPLINE, USE EDGELINE OR TANGENT

INSTALL TYPE III PEDESTAL & FOUNDATION WITH CONCRETE MOWER PAD AND DISCONNECT (WRONG-WAY SMART SIGN, POWER CONNECTION, CABINET BY TSI)

INSTALL STATIC SIGNS (TO BE REMOVED BY TSI FOLLOWING INSTALLATION OF SMART SIGNS)

STORE/COIL 50' OF FIBER (SEE NOTE 5)

SHARED NEW ELECTRICAL SERVICE WITH OTHER ITS DEVICES

CAN BE SAME TRENCH

TOLL NC 540 MAINLINE

TOLL NC 540 MAINLINE

ITS & TOLLS TRUNKLINE

FIBER SPLICE BOX

LEGEND

- TRENCH OR BORED CONDUIT (2 X 2" HDPE)
- FIBER PULLBOX
- ▣ ELECTRICAL (STANDARD SIZE) PULL BOX
- WRONG-WAY SMART SIGN PEDESTAL & FOUNDATION
- M POWER SERVICE METER

CONDUIT FILL CALLOUTS

- ① 1 x 6-FIBER (MIN.) DROP CABLE
- ② 1 x 3-WIRE CONDUCTOR (10 AWG)

NOTES:

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8. FOR OFF-RAMP LOOPS, INSTALL SIGNS 250' FROM STOPLINE, OR USE ENGINEERING JUDGEMENT.
9. RUN A SINGLE 3-WIRE CONDUCTOR FROM METER TO FURTHEST DEVICE BOX. STORE 25' OF WIRE IN EACH JUNCTION BOX, FOR CONNECTION BY TSI. AWG SIZE TO BE CONFIRMED WITH TSI/NCTA.



WRONG-WAY DRIVER DETECTION RAMP SIGN INFRASTRUCTURE POWER SERVICE FROM INSIDE OF RAMP

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	W-2b
DATE: JUNE 2020		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

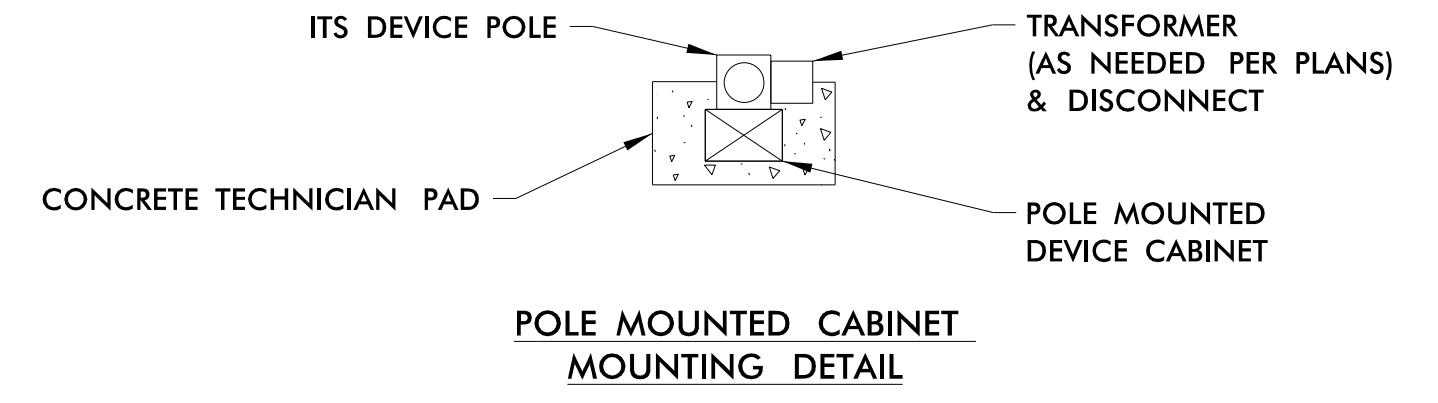
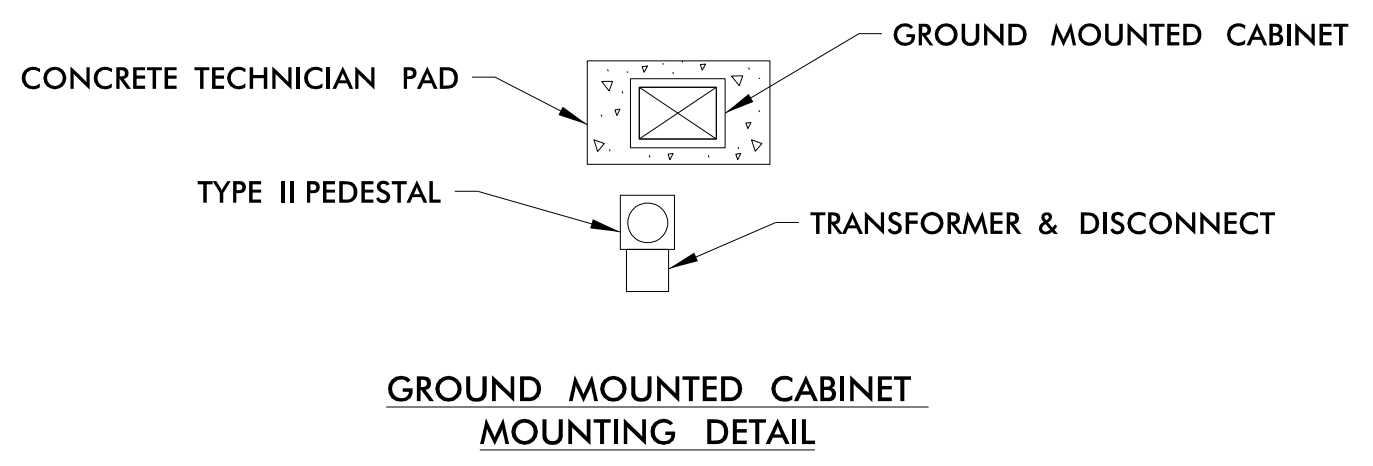
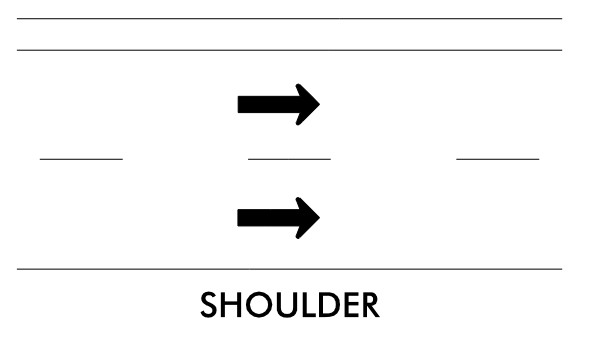
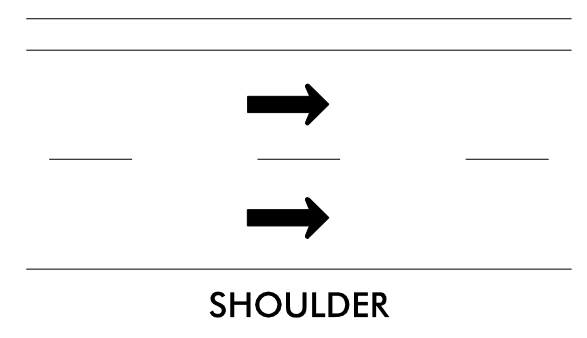
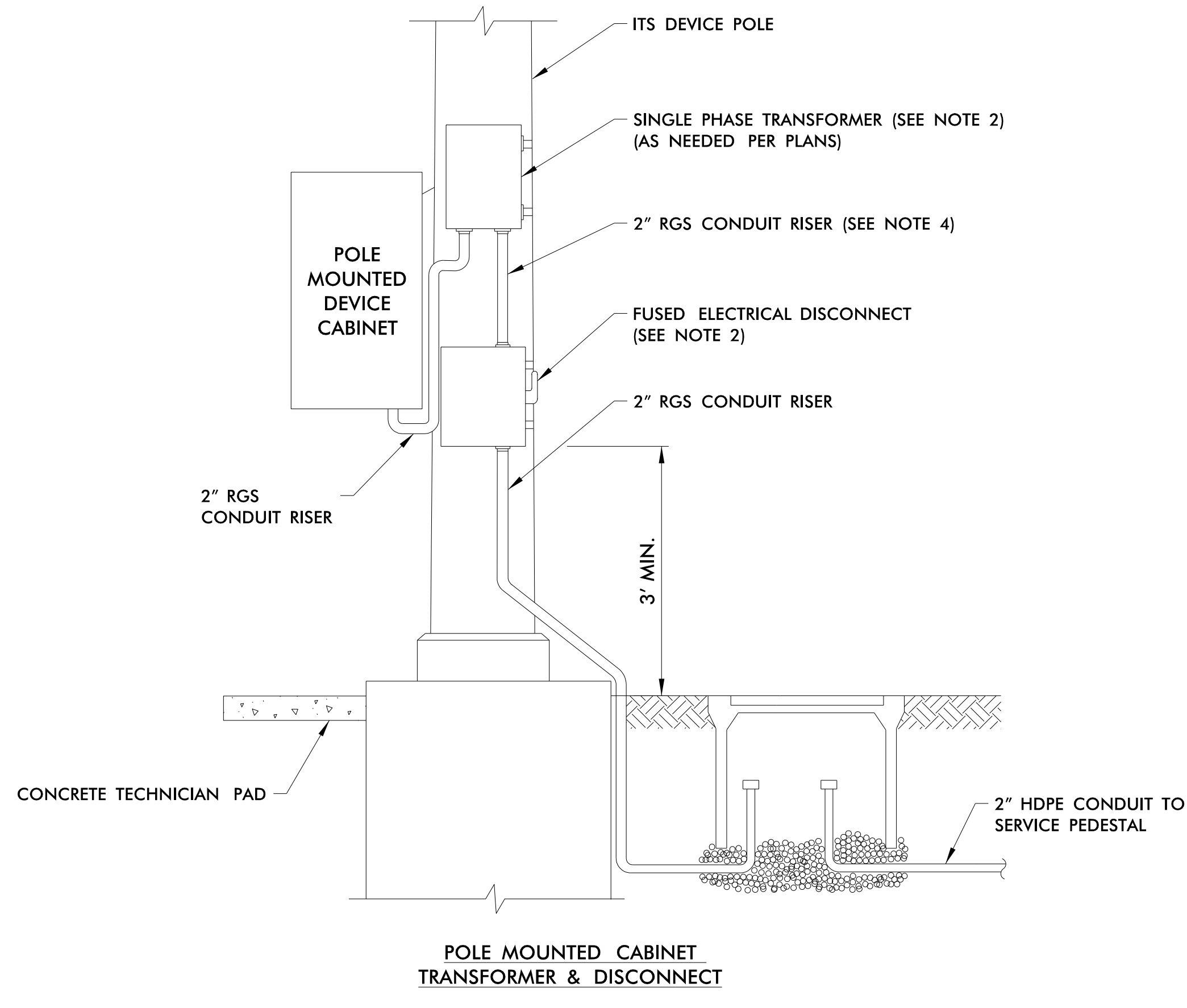
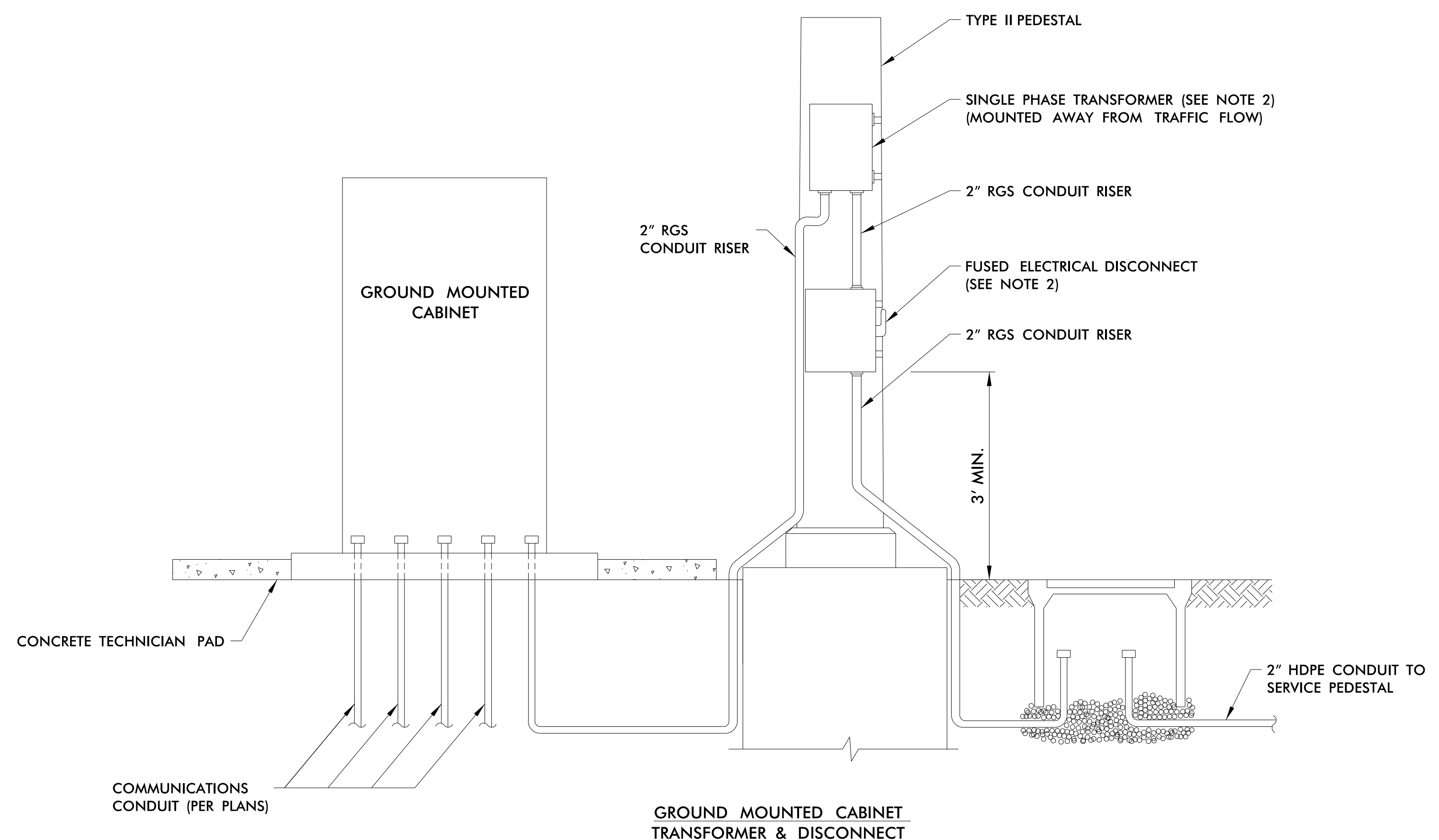
Prepared in the Offices of:

W-2B RAMP WWDDN DETAIL

DIVISION 05	WAKE COUNTY	RALEIGH
PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARBETTO	
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY	
SCALE: N.T.S.	REVISIONS	INIT. DATE

SEAL

Anthony M. Barbetto
SIGNATURE DATE 01/20/2021



NOTES:

1. INSTALLATION MUST MEET OR EXCEED ALL NATIONAL ELECTRIC CODE (NEC) AND LOCAL ELECTRIC STANDARDS.
2. REFER TO ITS POWER BLOCK DIAGRAMS FOR TRANSFORMER SIZES AND FUSE SIZES.
3. NOT ALL COMMUNICATION INFRASTRUCTURE INCLUDING CONDUIT AND JUNCTION BOXES ARE SHOWN FOR CLARITY.
4. IF TRANSFORMER IS NOT NEEDED PER PLANS 2" RGS CONDUIT SHALL BE RUN DIRECTLY FROM THE DISCONNECT TO THE POLE MOUNTED CABINET.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

1/18/2021 c:\pwworking\gfm\1\mtransue_d0958946\2721A ITS_DET_30.dgn mtransue

Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

Prepared in the Offices of:		TRANSFORMER DETAIL	
NORTH CAROLINA Turnpike Authority		DIVISION 05 WAKE COUNTY RALEIGH	
PLAN DATE: 7/9/2020	REVIEWED BY: ANTHONY BARBETTO		
PREPARED BY: MARK TRANSUE	REVIEWED BY: JASON MCCARTNEY		
SCALE	NO SCALE	REVISIONS	INIT. DATE

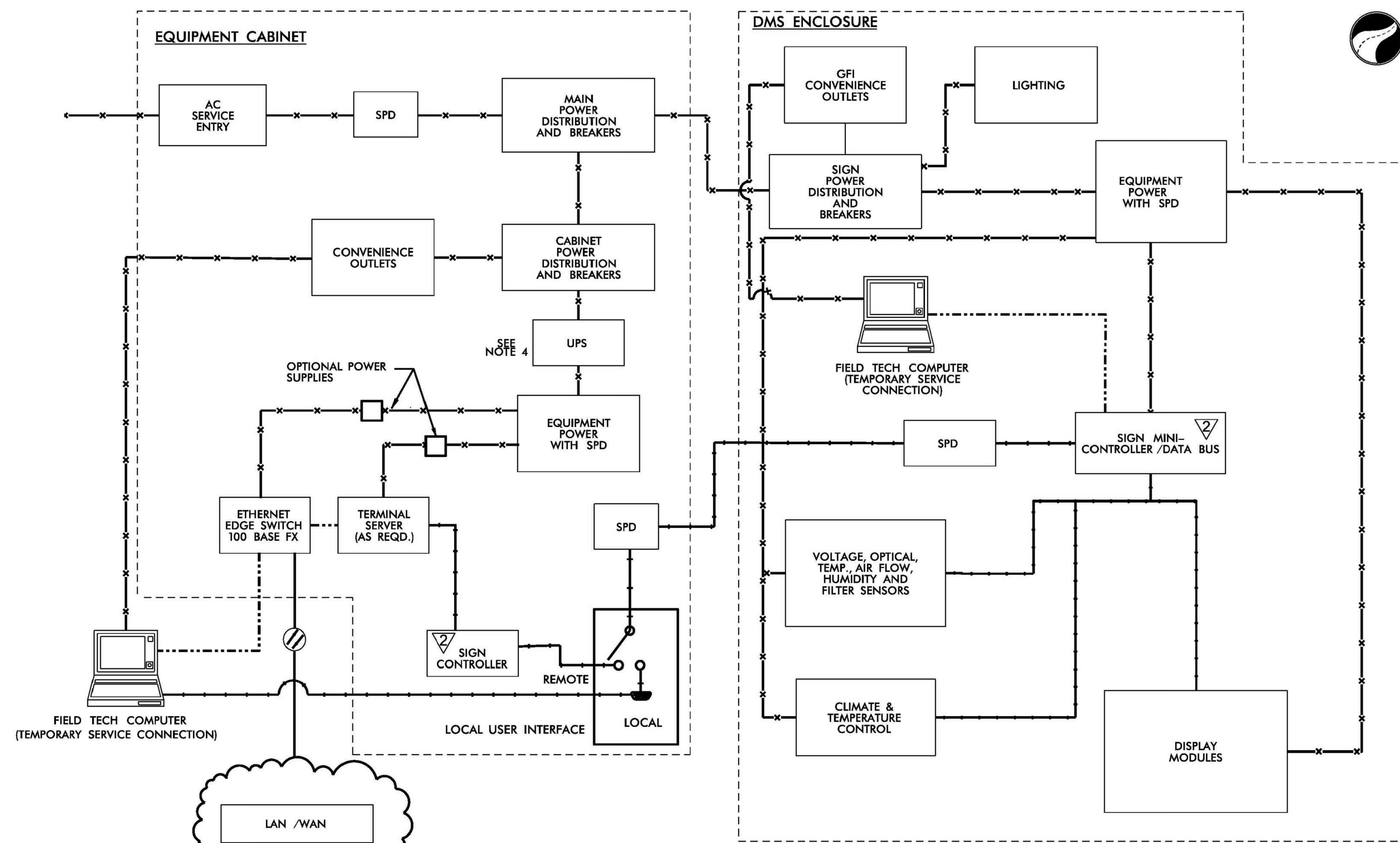
SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 047143

ANTHONY M. BARBETTO

Signature: *Anthony M. Barbetto* DATE: 01/20/2021



GENERAL NOTES:

- AC WIRED CABINET SHALL BE EQUIPPED WITH A SURGE PROTECTOR WITH AN ALARM FEATURE.
- (NOTE DELETED)
- ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN RFP.
- SIGNS AT AET VAULT LOCATIONS SHALL USE UPS FOR AET VAULT.

LEGEND

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

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

REVISED 10 /21 /2011

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

ITS STANDARD DETAILS
DMS
BLOCK DIAGRAM

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** Excellence Delivered As Promised

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

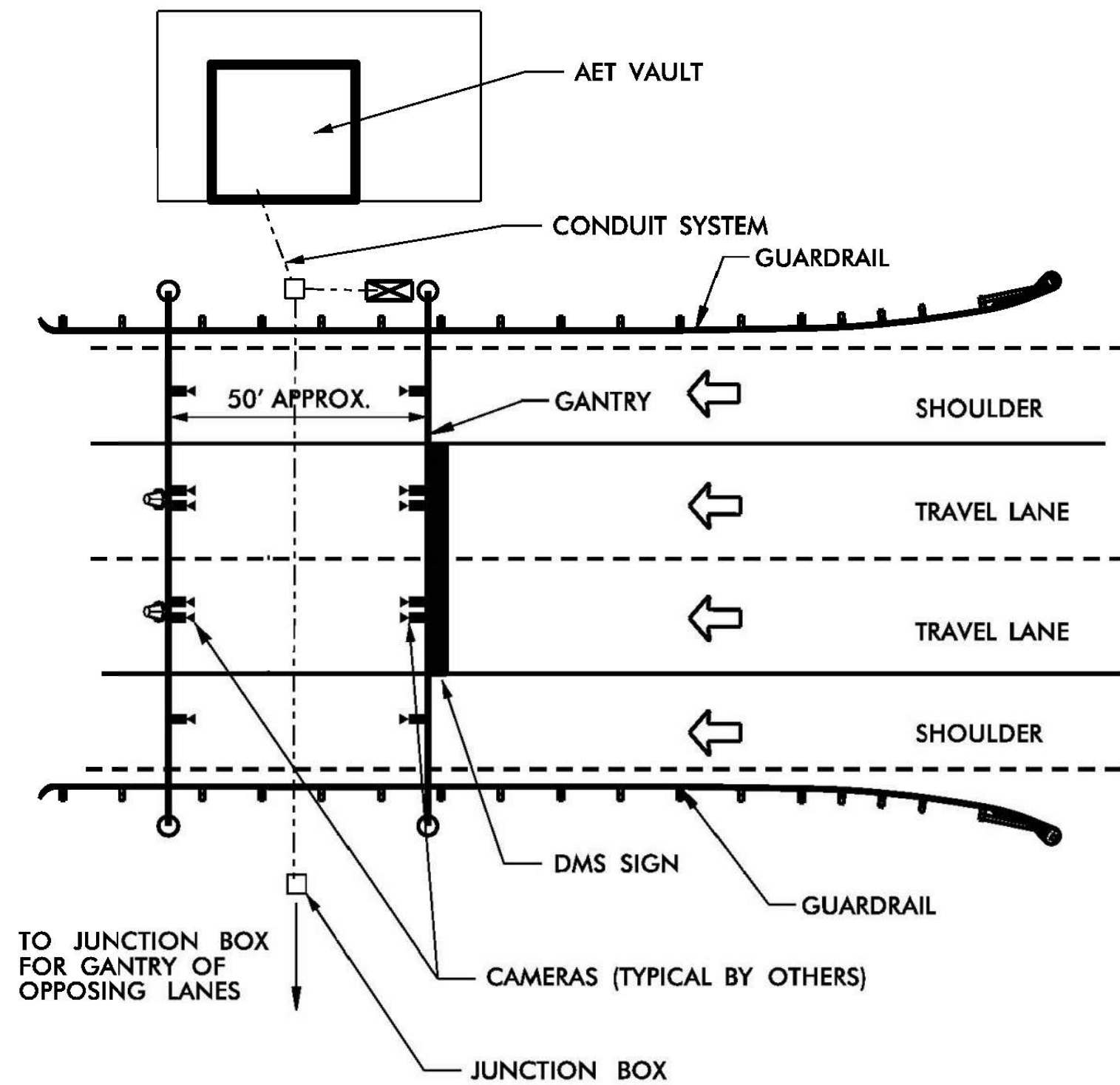
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

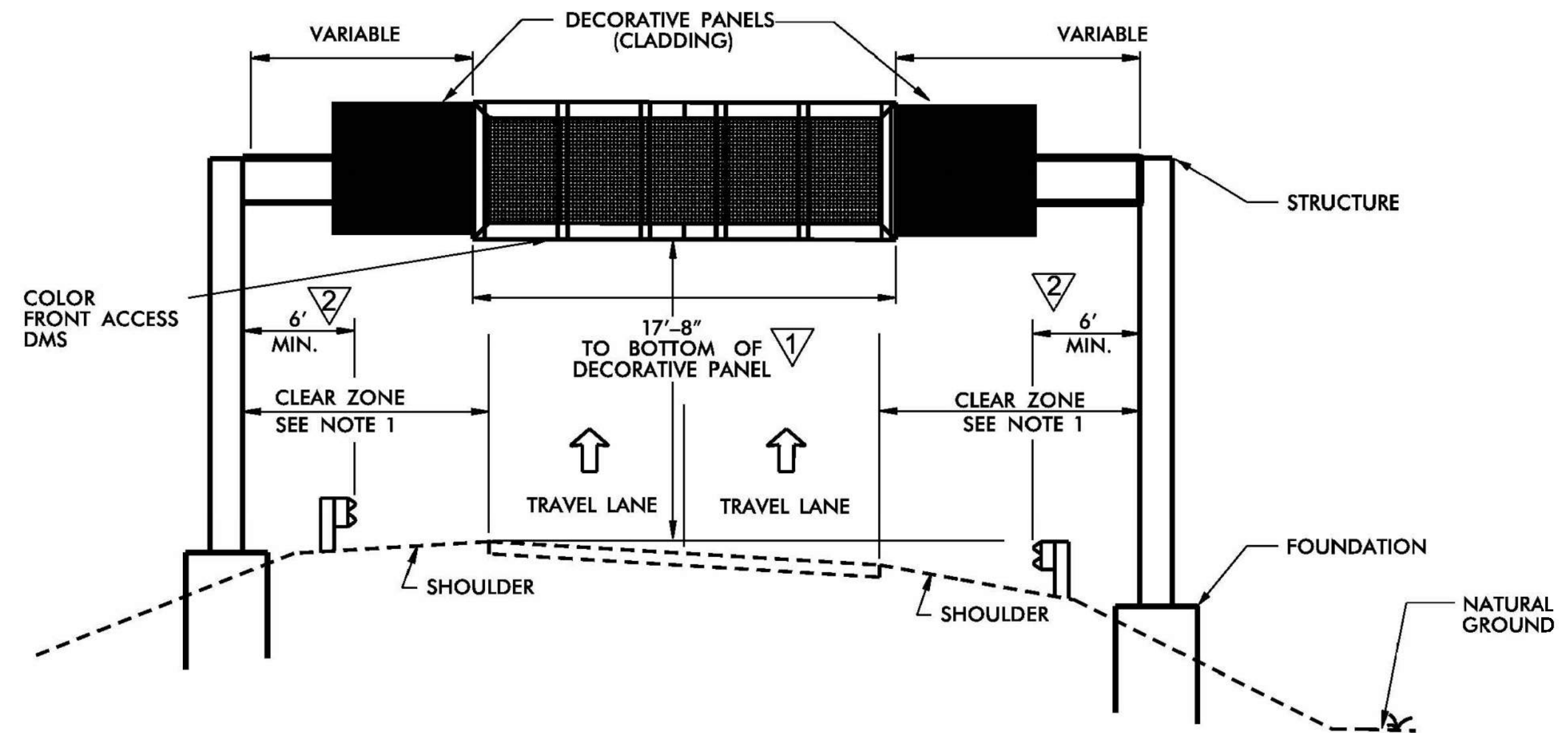
SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



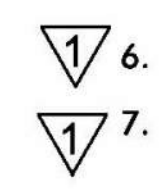
**TYPICAL PLAN VIEW
ON-SITE DMS AT AET GANTRY STRUCTURE**



**TYPICAL ELEVATION VIEW
ON-SITE DMS AT AET GANTRY STRUCTURE**

GENERAL NOTES:

- DESIGN COLUMNS IN ACCORDANCE WITH NCTA AESTHETIC DESIGN GUIDELINES AS REQUIRED BY RFP.
- ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
- CONDUCTORS SHALL BE CONNECTED TO STEEL FRAMEWORK THAT HAVE BEEN CLEANED TO BASE METAL, BY USE OF BONDING PLATES HAVING CONTACT AREA OF NOT LESS THAN 8 SQUARE INCHES OR BY WELDING OR BRAZING, DRILLING AND TAPPING THE STEEL STRUCTURE TO ACCEPT A THREADED CONNECTOR IS ALSO AN ACCEPTABLE METHOD.
- IF STEEL FRAMEWORK IS TO BE DRILLED AND TAPPED TO ACCEPT THREADED CONNECTOR, THE THREADED CONNECTOR SHALL HAVE AT LEAST 5 THREADS FULLY ENGAGED AND SECURED WITH A JAM NUT TO THE STEEL FRAMEWORK.
- BENDS IN THE CONDUIT WITH DMS COMMUNICATIONS CABLE (6-COUNT SINGLE MODE FIBER-OPTIC CABLE) SHALL NOT EXCEED THE MANUFACTURER'S MINIMUM RADIUS FOR THE FIBER-OPTIC CABLE.
- CONDUITS ON STRUCTURE OR COLUMNS SHALL BE HIDDEN FROM VIEW OF APPROACHING TRAFFIC BY PLACING THEM ON DOWNSTREAM SIDE OR WITHIN STRUCTURAL MEMBERS OR COLUMNS.
- (NOTE DELETED)
- ALL DATA AND POWER CABLES FOR THE DMS SHALL BE COMPLETELY CONCEALED FROM ONCOMING TRAFFIC.



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

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ITS STANDARD DETAILS
DMS - TYPICAL MOUNTING
AET GANTRY STRUCTURE

SCALE: N.T.S. NORTH CAROLINA TURNPIKE AUTHORITY SHEET NO. D-2A

DATE: August, 2011
DWG. BY: B. Stocum
DESIGN BY: A. Badgett / D. Jones
APPROVED: A. Lelowski

DOCUMENT NOT CONSIDERED FINAL
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PLANS PREPARED BY:
Gannett Fleming
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

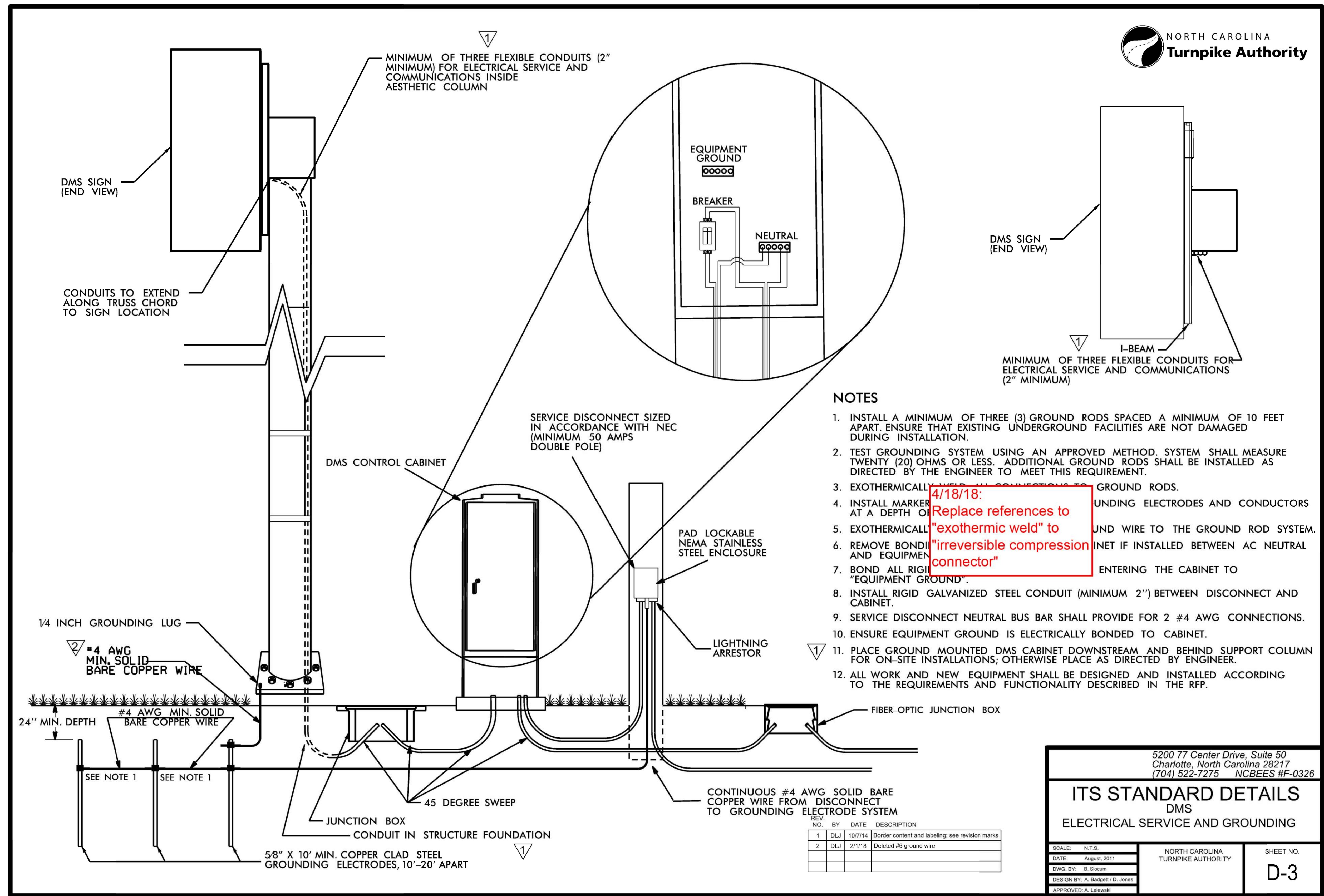
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



NOTES

1. INSTALL A MINIMUM OF THREE (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 AT A DEPTH OF 24" MIN. **4/18/18: Replace references to "exothermic weld" to "irreversible compression connector"**
5. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND WIRE TO THE GROUND ROD SYSTEM.
6. REMOVE BONDING CONNECTOR FROM DISCONNECT AND EQUIPMENT GROUNDING SYSTEM IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUNDING SYSTEM.
7. BOND ALL RIGID GALVANIZED STEEL CONDUIT ENTERING THE CABINET TO "EQUIPMENT GROUND".
8. INSTALL RIGID GALVANIZED STEEL CONDUIT (MINIMUM 2") BETWEEN DISCONNECT AND CABINET.
9. SERVICE DISCONNECT NEUTRAL BUS BAR SHALL PROVIDE FOR 2 #4 AWG CONNECTIONS.
10. ENSURE EQUIPMENT GROUND IS ELECTRICALLY BONDED TO CABINET.
11. PLACE GROUND MOUNTED DMS CABINET DOWNSTREAM AND BEHIND SUPPORT COLUMN FOR ON-SITE INSTALLATIONS; OTHERWISE PLACE AS DIRECTED BY ENGINEER.
12. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.

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(704) 522-7275 NCBES #F-0326

ITS STANDARD DETAILS
DMS
ELECTRICAL SERVICE AND GROUNDING

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. D-3
DATE: August, 2011		
DWG. BY: B. Stocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling; see revision marks
2	DLJ	2/1/18	Deleted #6 ground wire

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue, Suite 900, Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

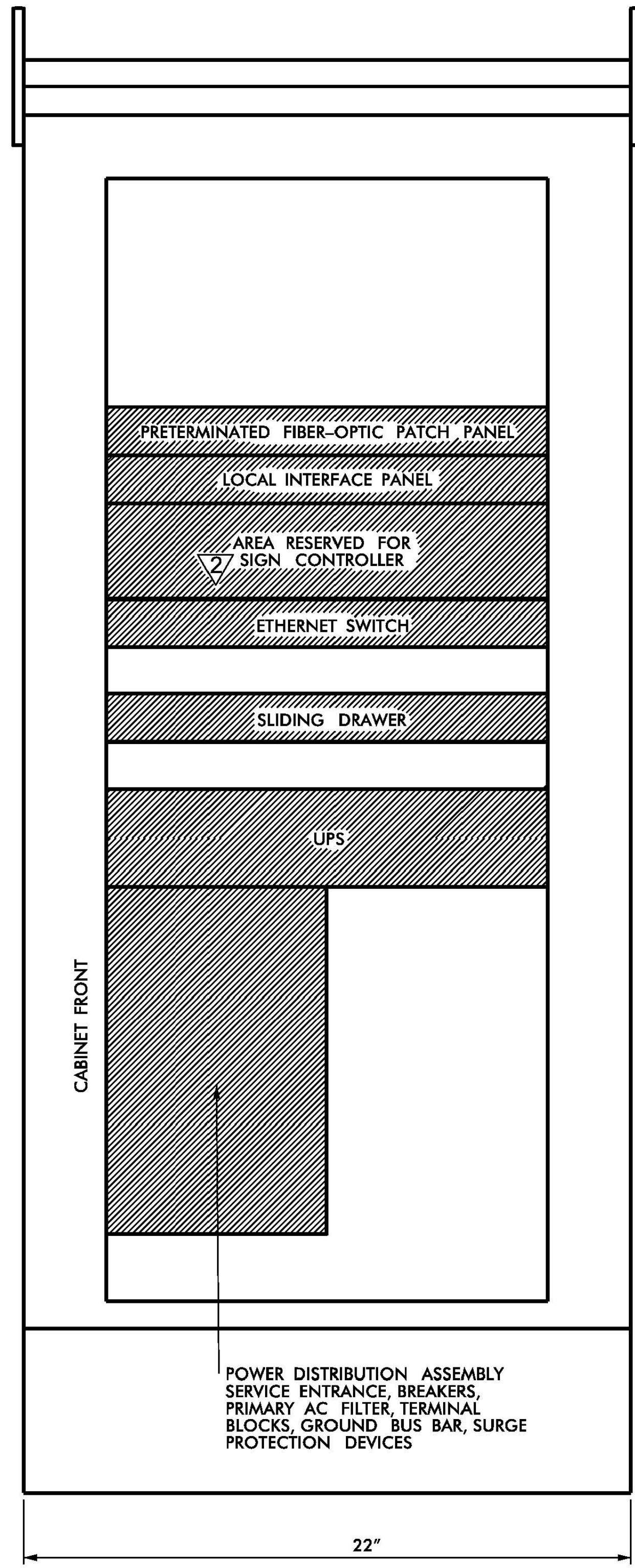
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

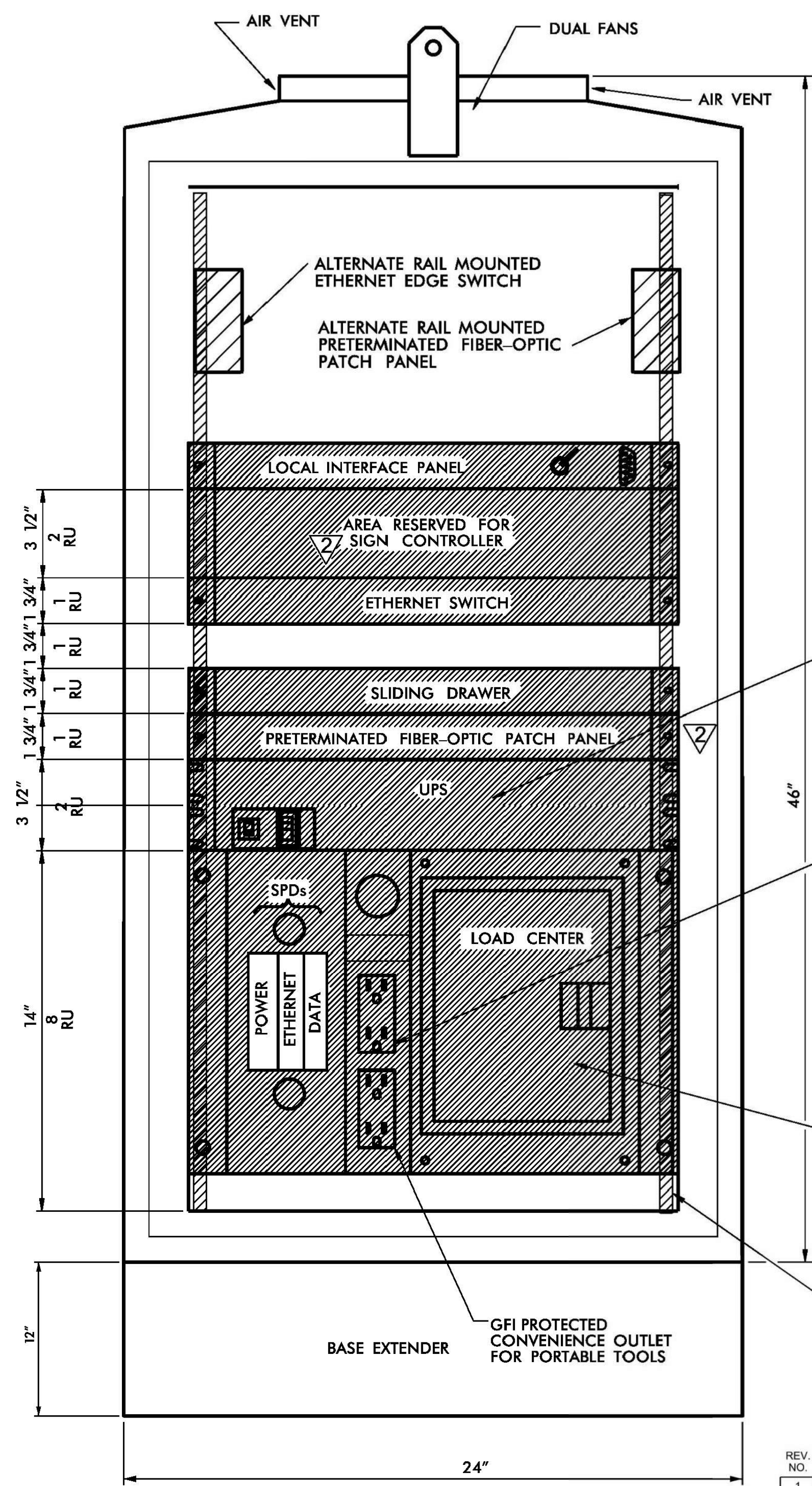
SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



SIDE VIEW



FRONT VIEW

GENERAL NOTES:

1. CABINET LAYOUT IS FOR BASE-MOUNTED INSTALLATIONS.
2. ALL DIMENSIONS ARE APPROXIMATE.
3. SEE RFP REQUIREMENTS FOR CABINET TYPE AND SIZE.
4. THE MINIMUM DMS CABINET DIMENSIONS SHALL BE 46"H X 24"W X 22"D.
5. CONDUIT ENTRANCES ARE AT BOTTOM OF CABINET.
6. MINIMUM NUMBER OF DUPLEX OUTLETS IS TWO, (1) SPD AND (1) GFI PROTECTED.
7. PROVIDE SIGN CONTROLLER IN GROUND CABINET TO PROVIDE FULL ACCESS TO DMS SIGN FOR CONTROL, PROGRAMMING AND TROUBLESHOOTING.
8. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
9. PROVIDE UPS FOR ALL DMS NOT LOCATED AT AET GANTRY STRUCTURES.
10. UTILIZE UPS IN AET VAULT FOR ALL DMS LOCATED AT AET GANTRY STRUCTURE LOCATIONS.
11. MOUNT PATCH PANEL AS LOW AS POSSIBLE FOR EASY ACCESS AND MAINTENANCE.

SEE NOTES 9 & 10

SPD OUTLETS FOR COMMUNICATIONS HARDWARE

LOAD CENTER MUST INCLUDE POWER DISTRIBUTION ASSEMBLY SERVICE ENTRANCE, POWER FILTER, MAIN BREAKER, SEPARATE CIRCUIT BREAKERS FOR EQUIPMENT POWER AND CONVENIENCE OUTLETS, GROUND BLOCKS, GROUND BUS BAR AND TERMINAL BLOCKS FOR DIRECT CONNECTION TO PROTECTED POWER OUTLETS

19" EIA RACK WITH TAPPED 10-32 THREADED HOLES

REVISED 10 /21 /2011

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(704) 522-7275 NCBEEES #F-0326

ITS STANDARD DETAILS
DMS
CABINET LAYOUT

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue, Suite 900, Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

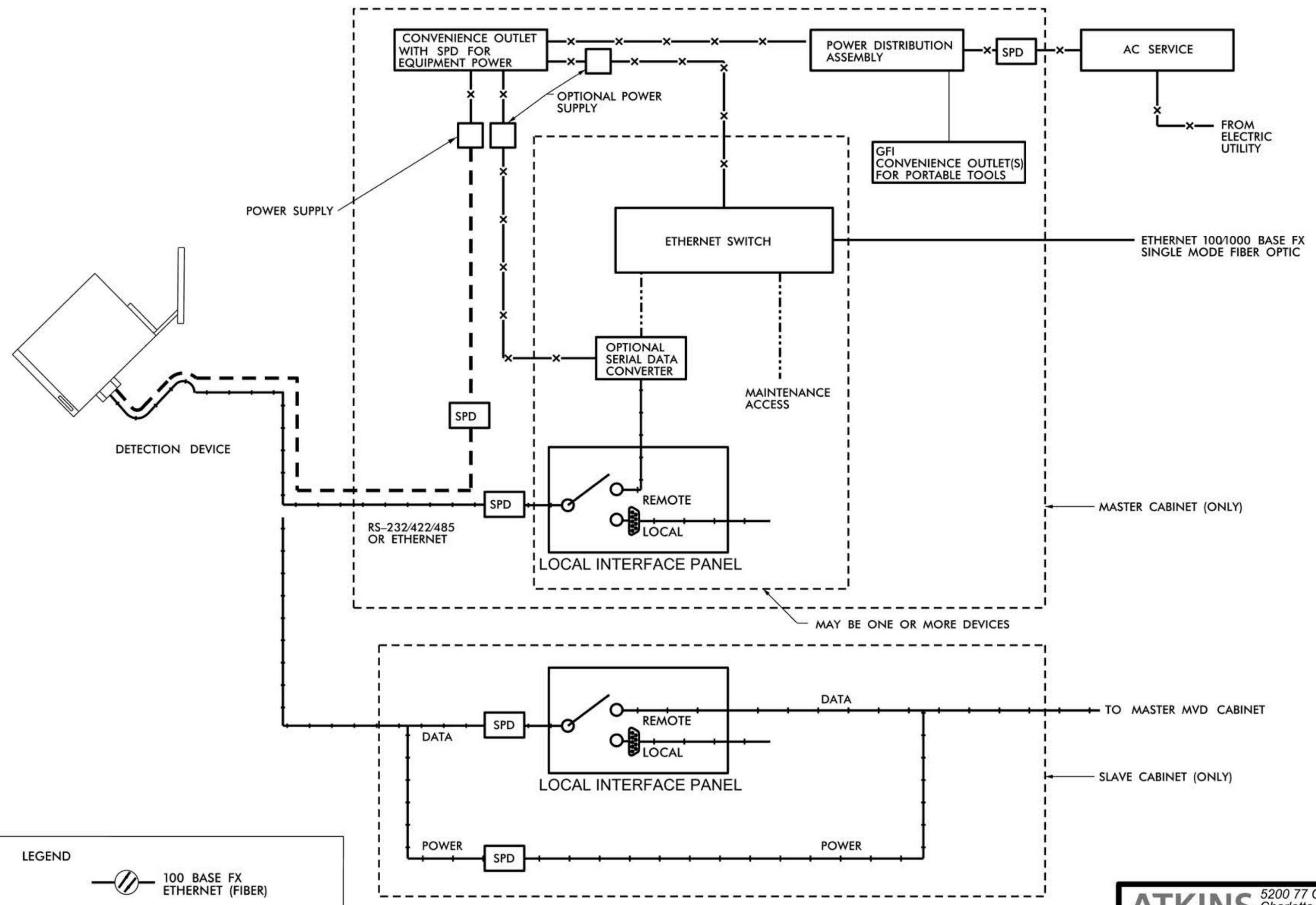
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



LEGEND

1000 BASE TX ETHERNET	100 BASE FX ETHERNET (FIBER)
100 BASE TX ETHERNET	1000 BASE FX ETHERNET (FIBER)
ANALOG VIDEO	RS-232/422/485
120 VAC POWER	EXISTING DEVICE
LOW VOLTAGE POWER	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
2	DLJ	8/7/17	Added separate detail for slave cabinet

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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

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Prepared in the Offices of:

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PLANS PREPARED BY: **Gannett Fleming** Excellence Delivered As Promised

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

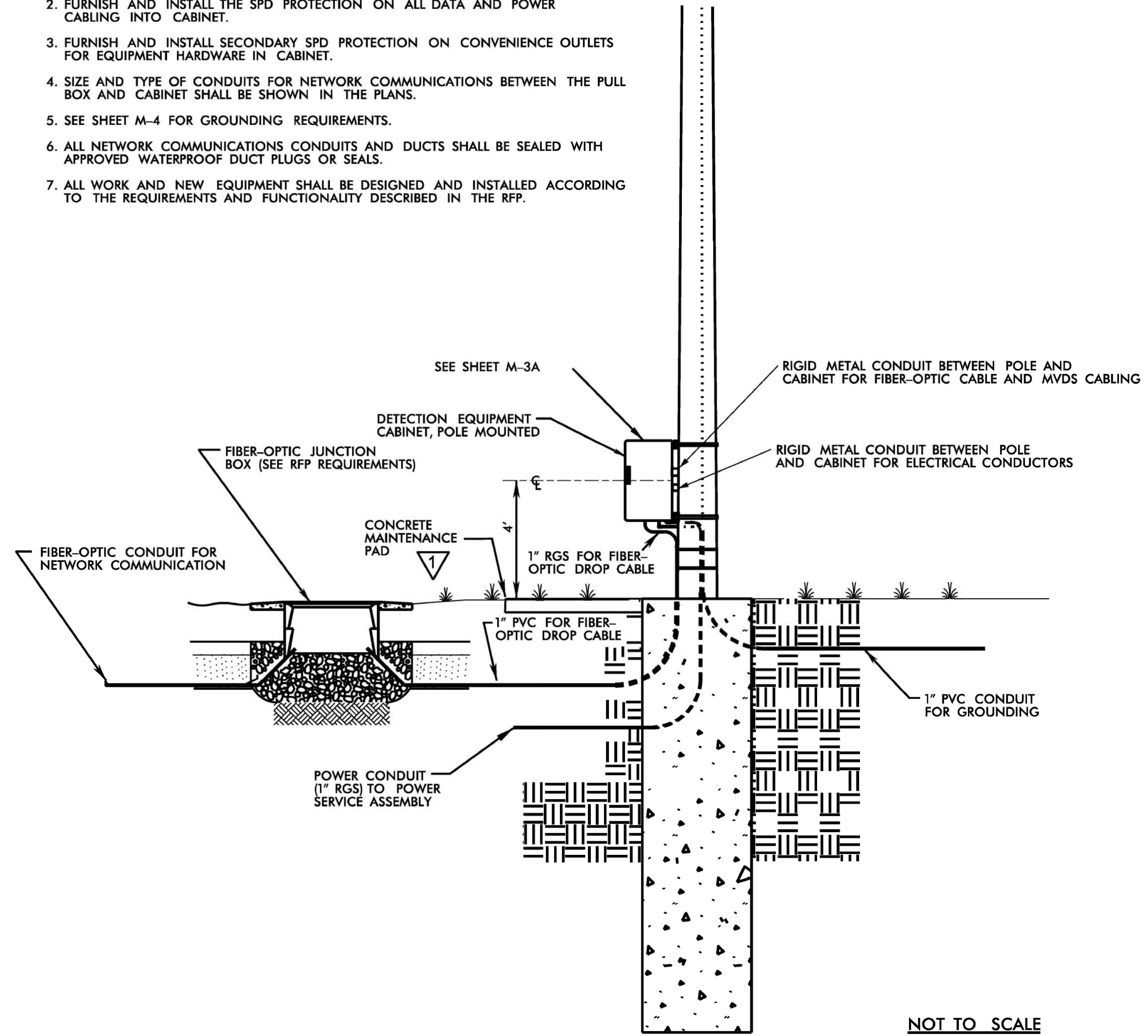
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: *Anthony M. Barbetta* DATE: 01/20/2021



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.



NOT TO SCALE

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

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(704) 522-7275 NCBES #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. Stocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:
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(919) 420-7660
NC Lic. No. F-0270

Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

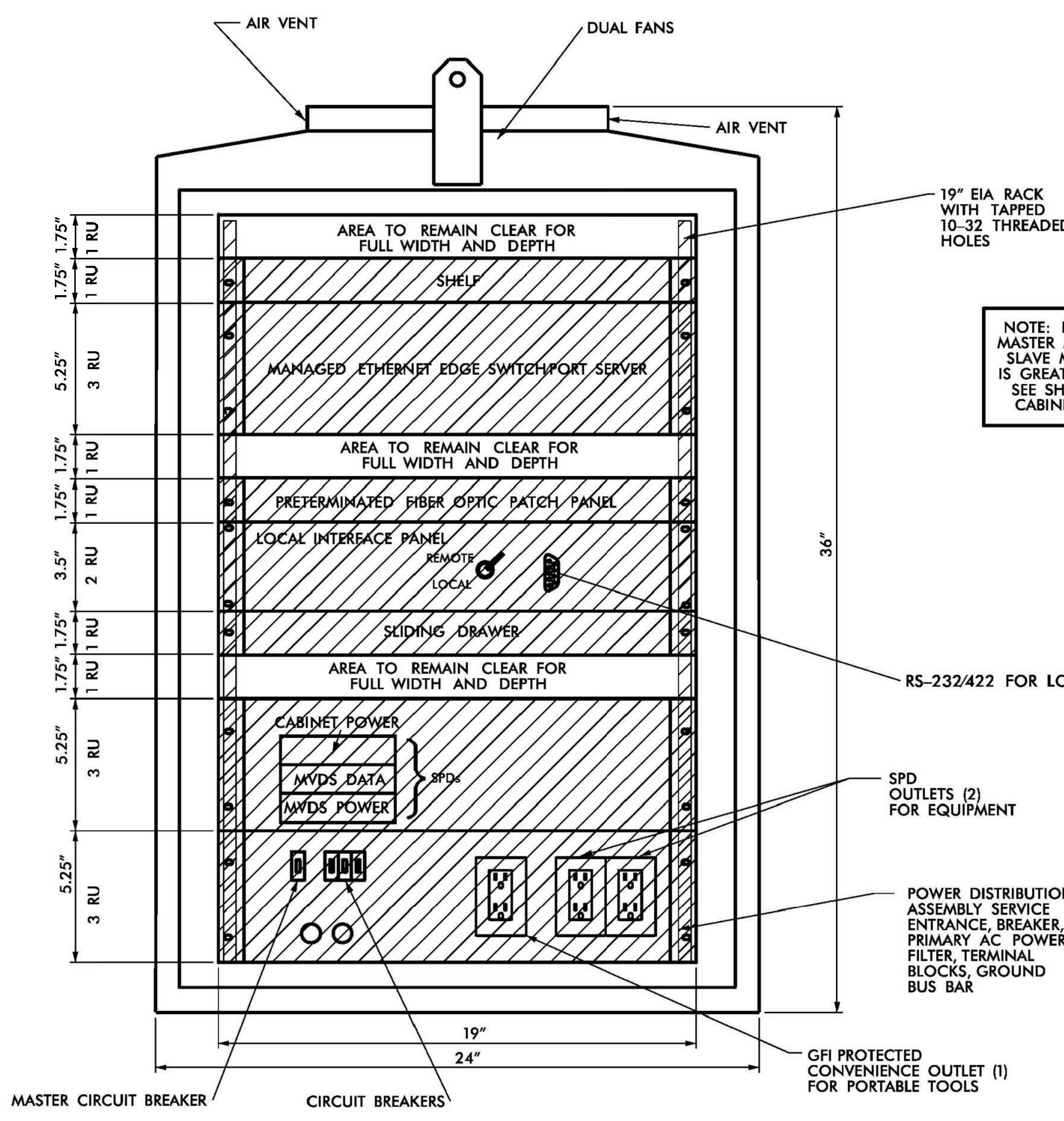
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

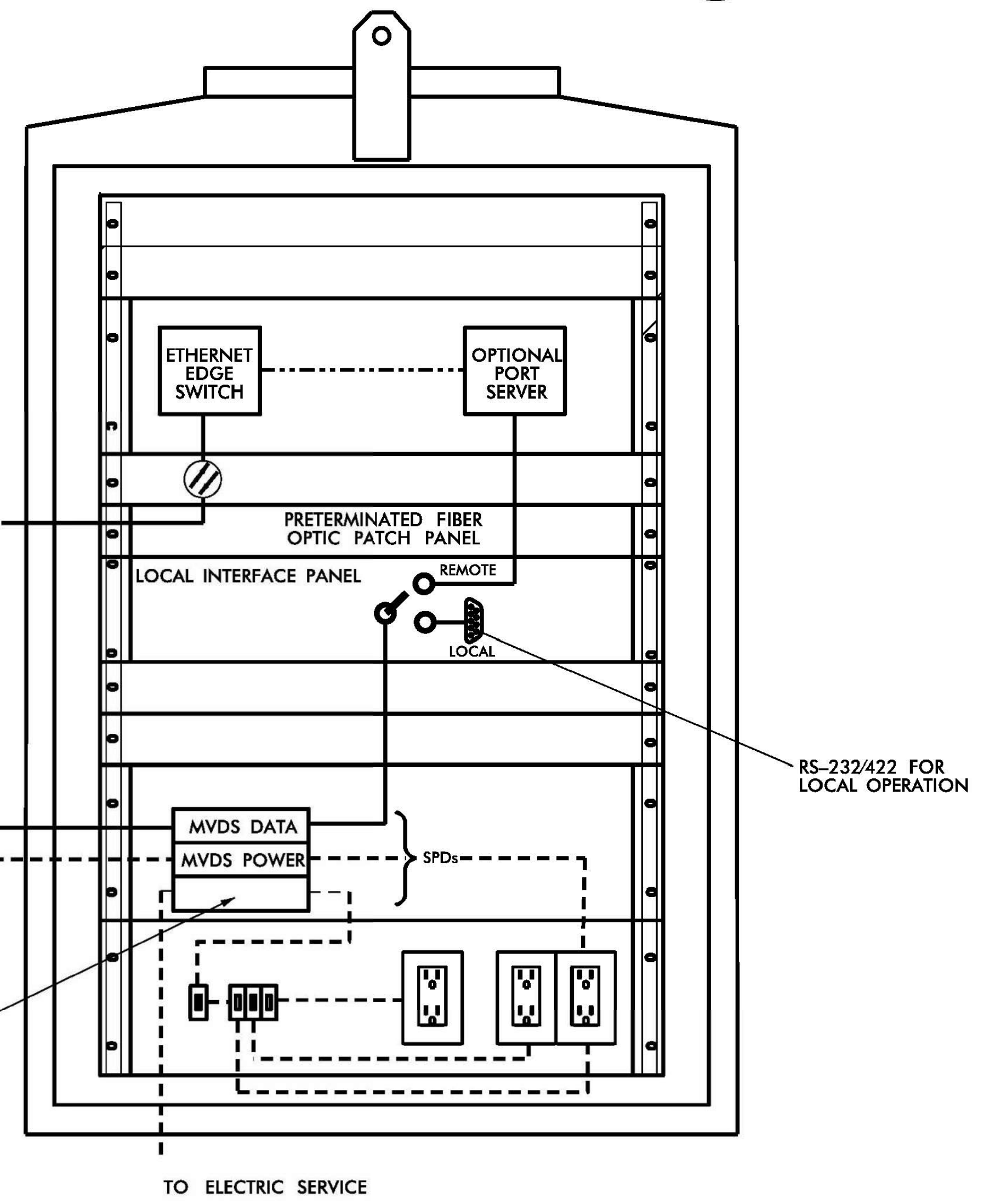
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barretto DATE: 01/20/2021



FRONT VIEW

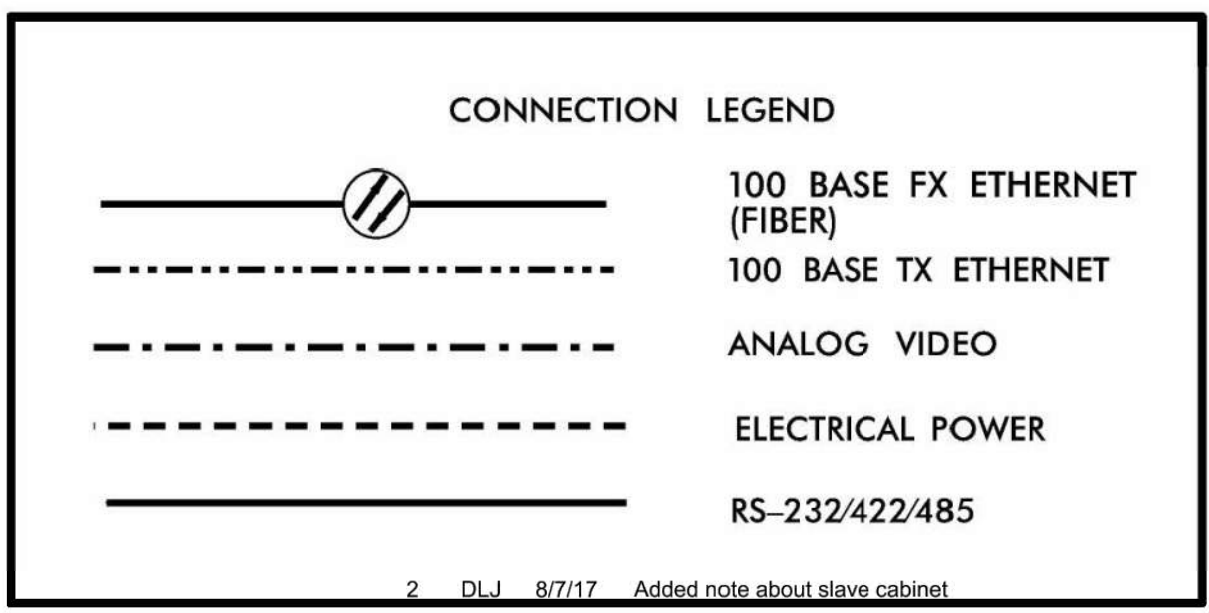
NOTE: DETAIL IS FOR MASTER MVD CABINET; SLAVE MVD CABINET IS GREATLY SIMPLIFIED. SEE SHEET M-1 FOR CABINET CONTENT



CABINET WIRING VIEW

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.



REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only
2	DLJ	8/7/17	Added note about slave cabinet

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

ITS STANDARD DETAILS
MICROWAVE DETECTION
CABINET LAYOUT

SCALE: N.T.S. NORTH CAROLINA TURNPIKE AUTHORITY SHEET NO. M-3A

DATE: August, 2011
DWG. BY: B. Stoum
DESIGN BY: A. Badgett / D. Jones
APPROVED: A. Lelowski

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Prepared in the Offices of:

FLATIRON **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

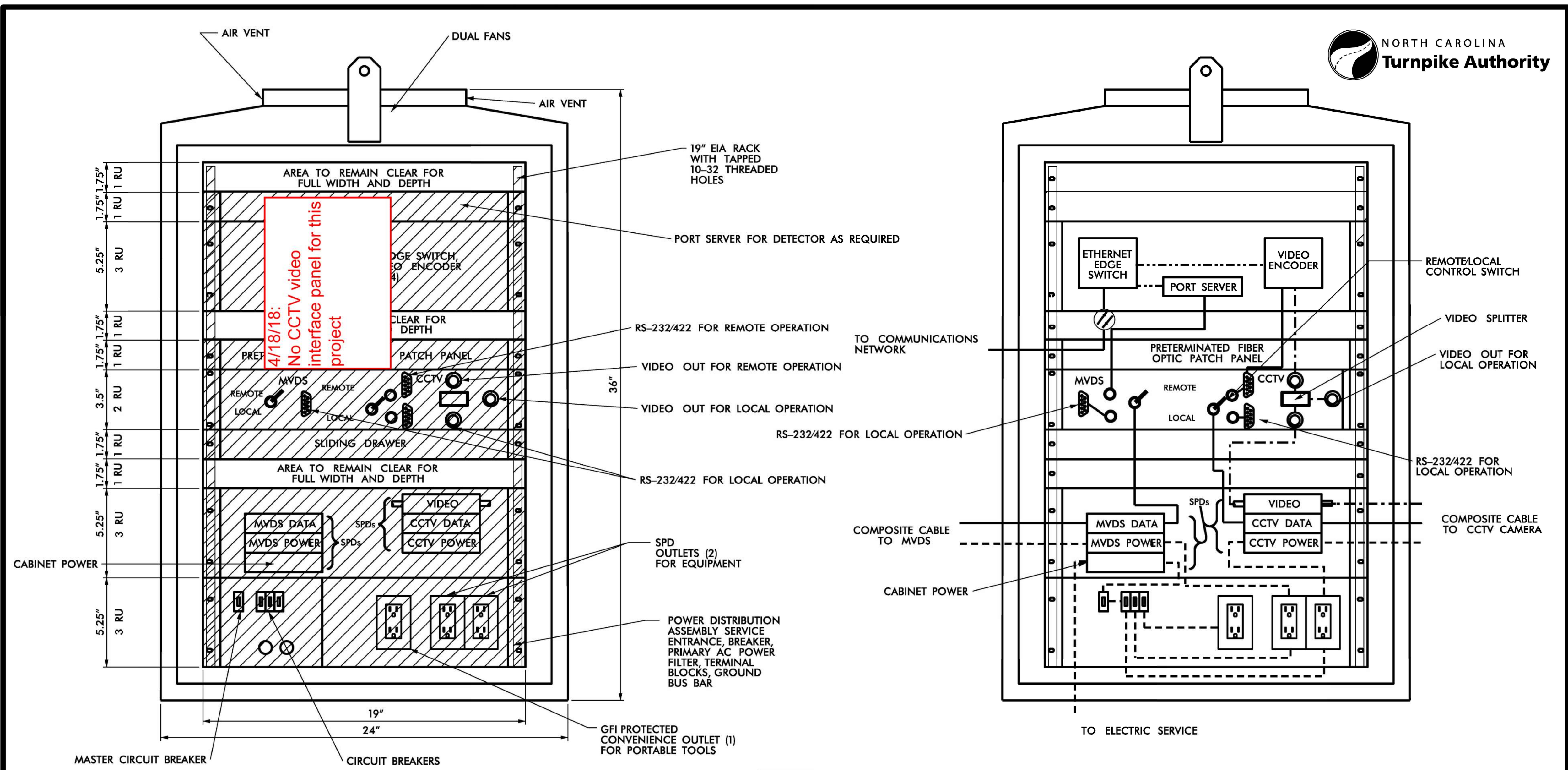
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVISIONS INIT. DATE

SCALE: NO SCALE

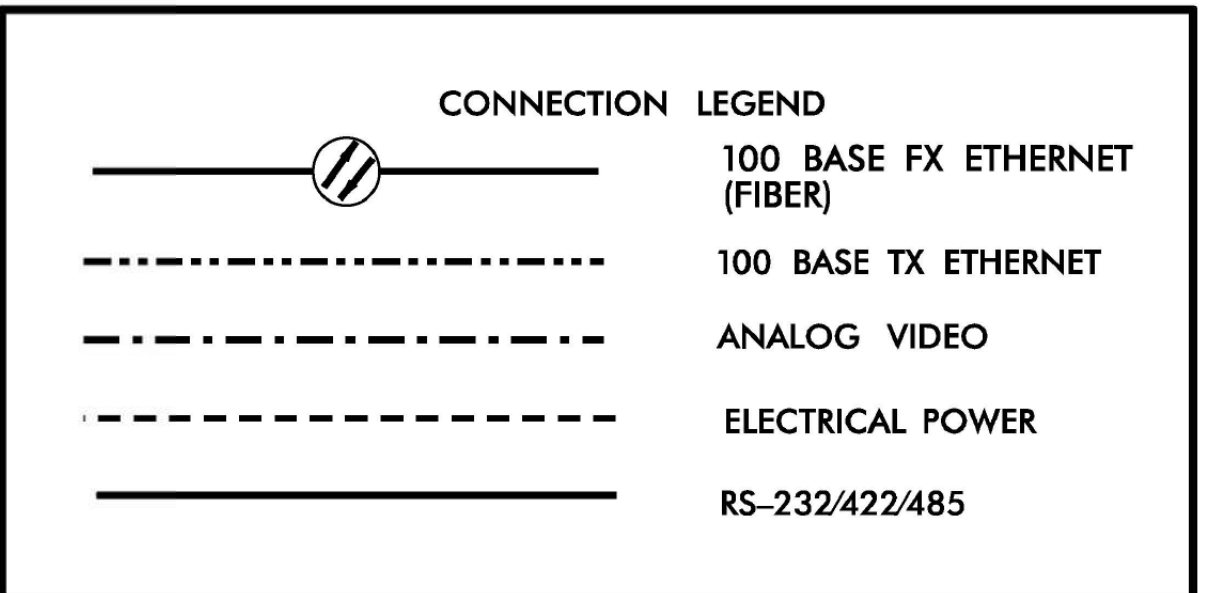
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



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. THERE SHALL BE FRONT AND REAR DOORS. BOTH DOORS SHALL HAVE THE HINGE SIDE NEXT TO THE POLE WHEN POLE MOUNTED.
8. 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

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(704) 522-7275 NCBES #F-0326

ITS STANDARD DETAILS
MICROWAVE DETECTION
CABINET LAYOUT WITH CCTV EQUIPMENT

SCALE: N.T.S. NORTH CAROLINA TURNPIKE AUTHORITY SHEET NO. M-3B

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:

FLATIRON **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

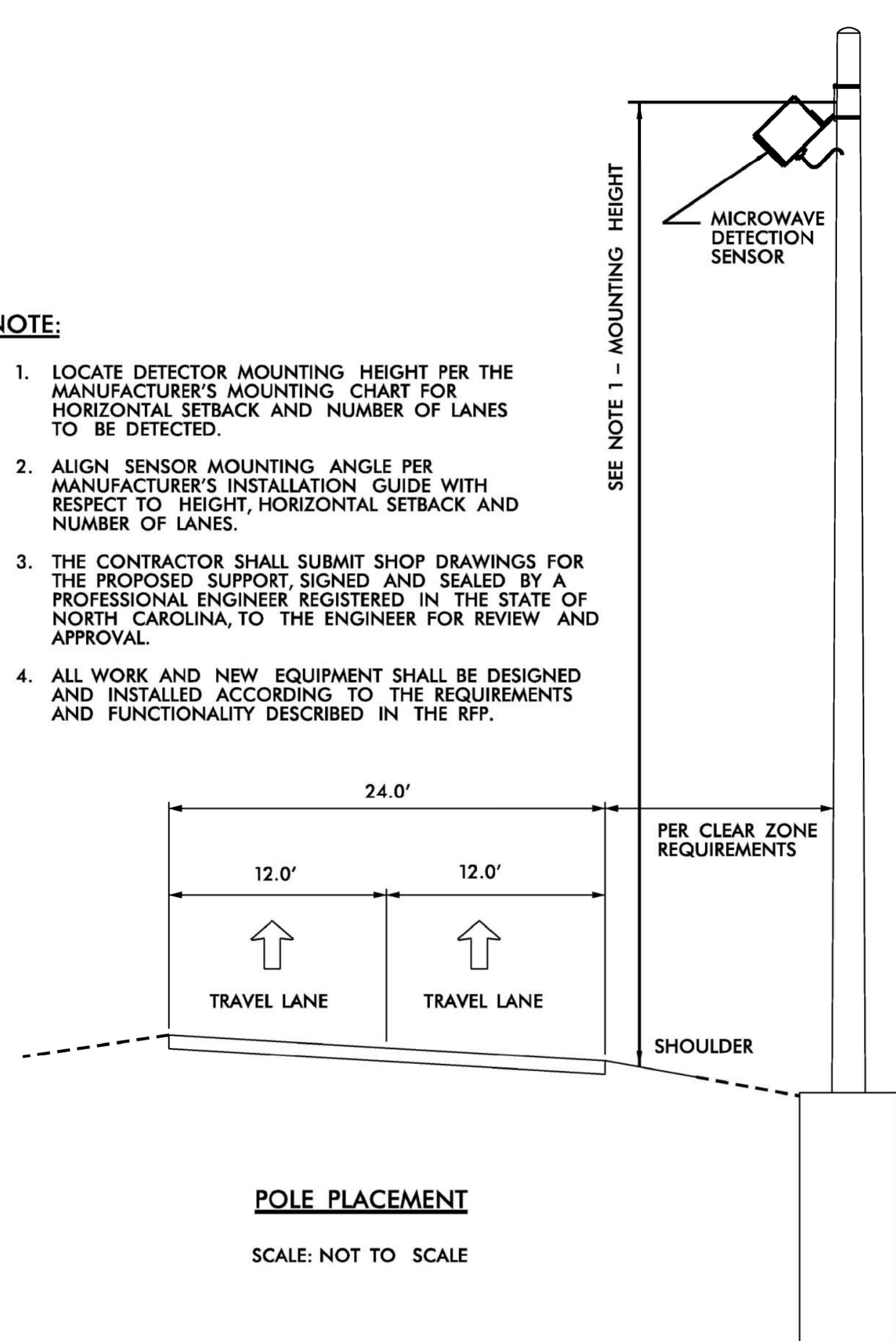
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



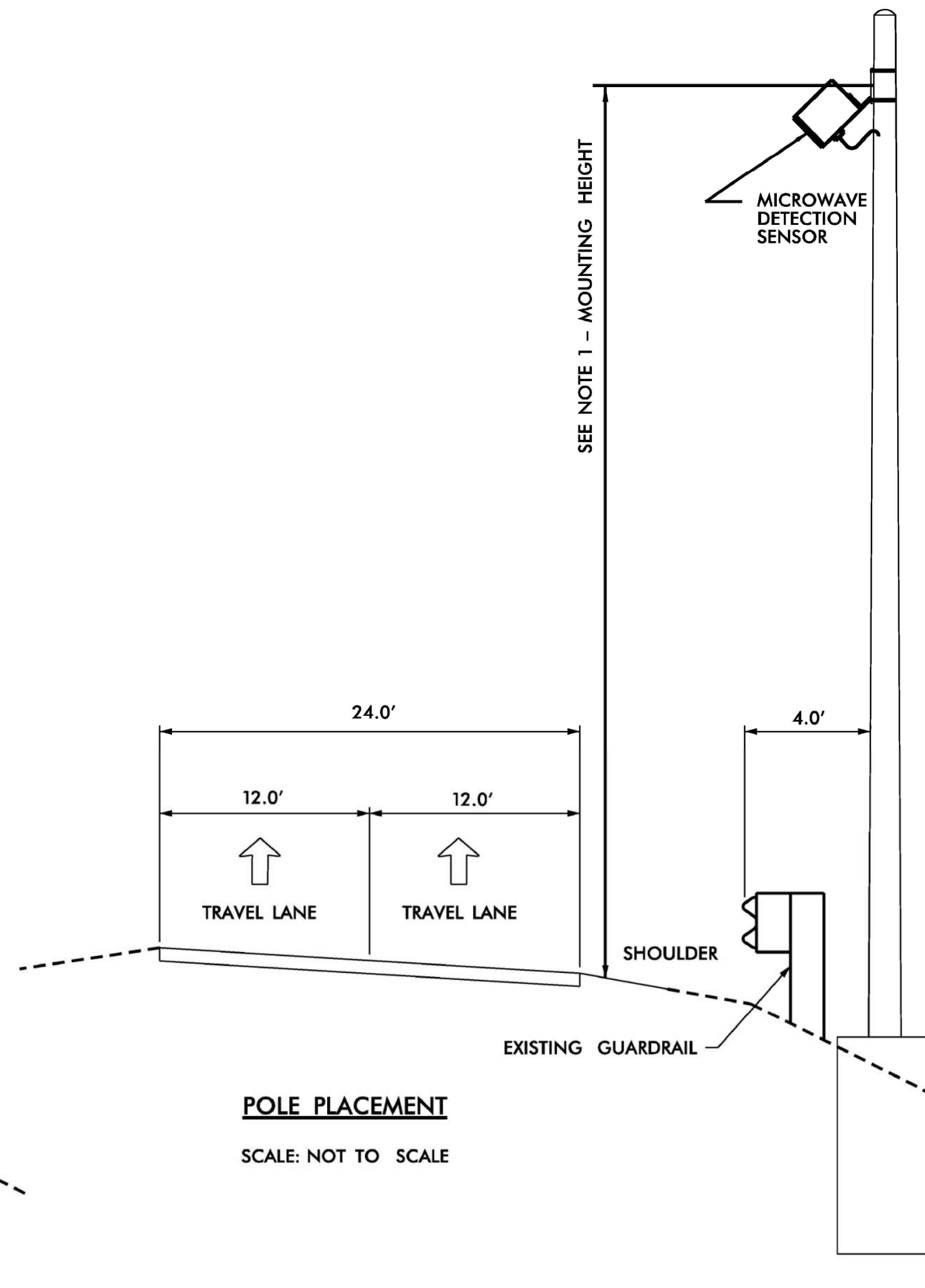
NOTE:

1. LOCATE DETECTOR MOUNTING HEIGHT PER THE MANUFACTURER'S MOUNTING CHART FOR HORIZONTAL SETBACK AND NUMBER OF LANES TO BE DETECTED.
2. ALIGN SENSOR MOUNTING ANGLE PER MANUFACTURER'S INSTALLATION GUIDE WITH RESPECT TO HEIGHT, HORIZONTAL SETBACK AND NUMBER OF LANES.
3. 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.
4. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.



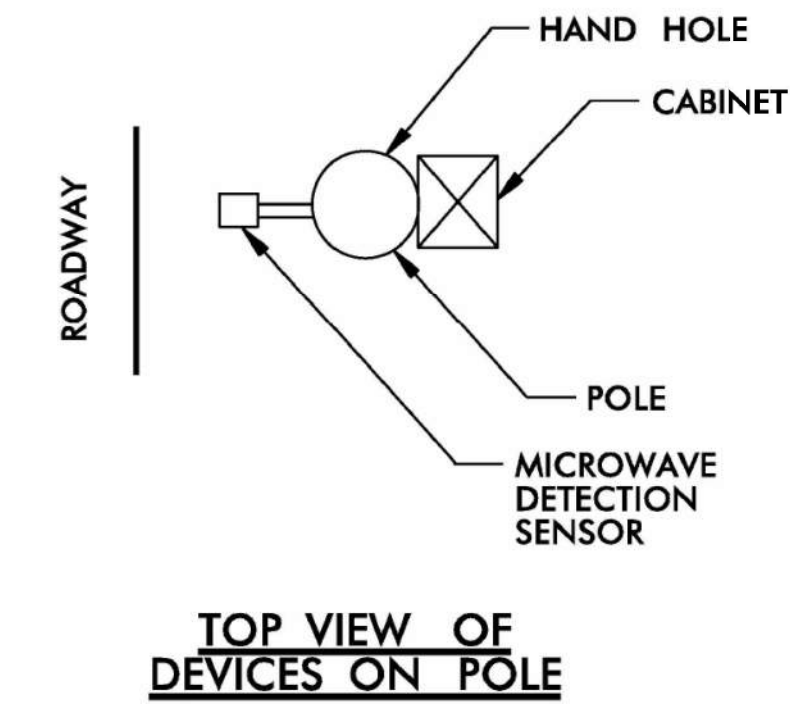
POLE PLACEMENT

SCALE: NOT TO SCALE



POLE PLACEMENT

SCALE: NOT TO SCALE



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 NCBES #F-0326

ITS STANDARD DETAILS
MICROWAVE DETECTION
POLE PLACEMENT

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. M-5A
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

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

1/18/2021 c:\pwworking\atkins\00958946\R2721A_ITS_STD_10.dgn mtransue

PLANS PREPARED BY:

FLATIRON **BRANCH CIVIL**

Gannett Fleming One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

Prepared in the Offices of:

NORTH CAROLINA Turnpike Authority

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

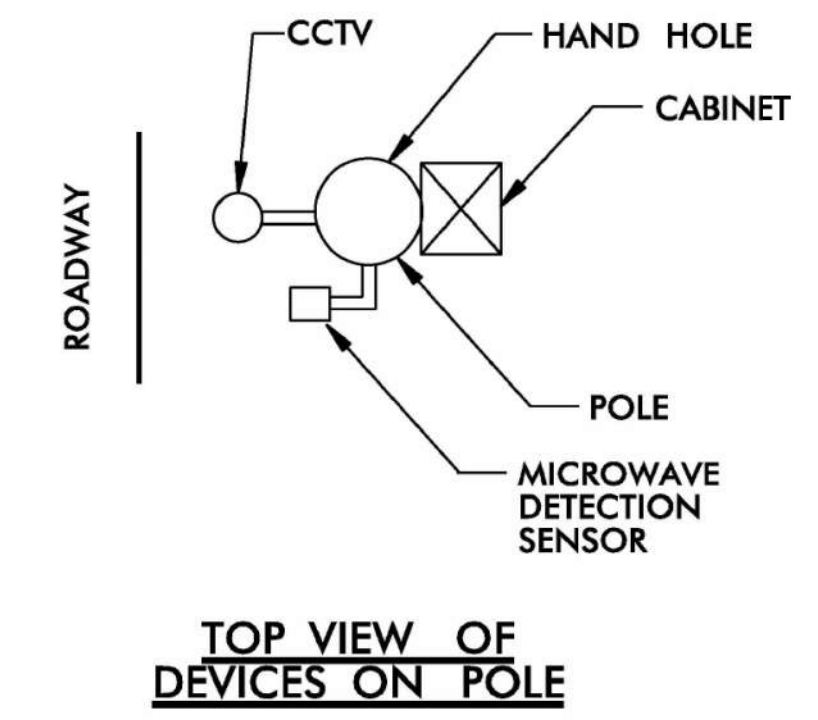
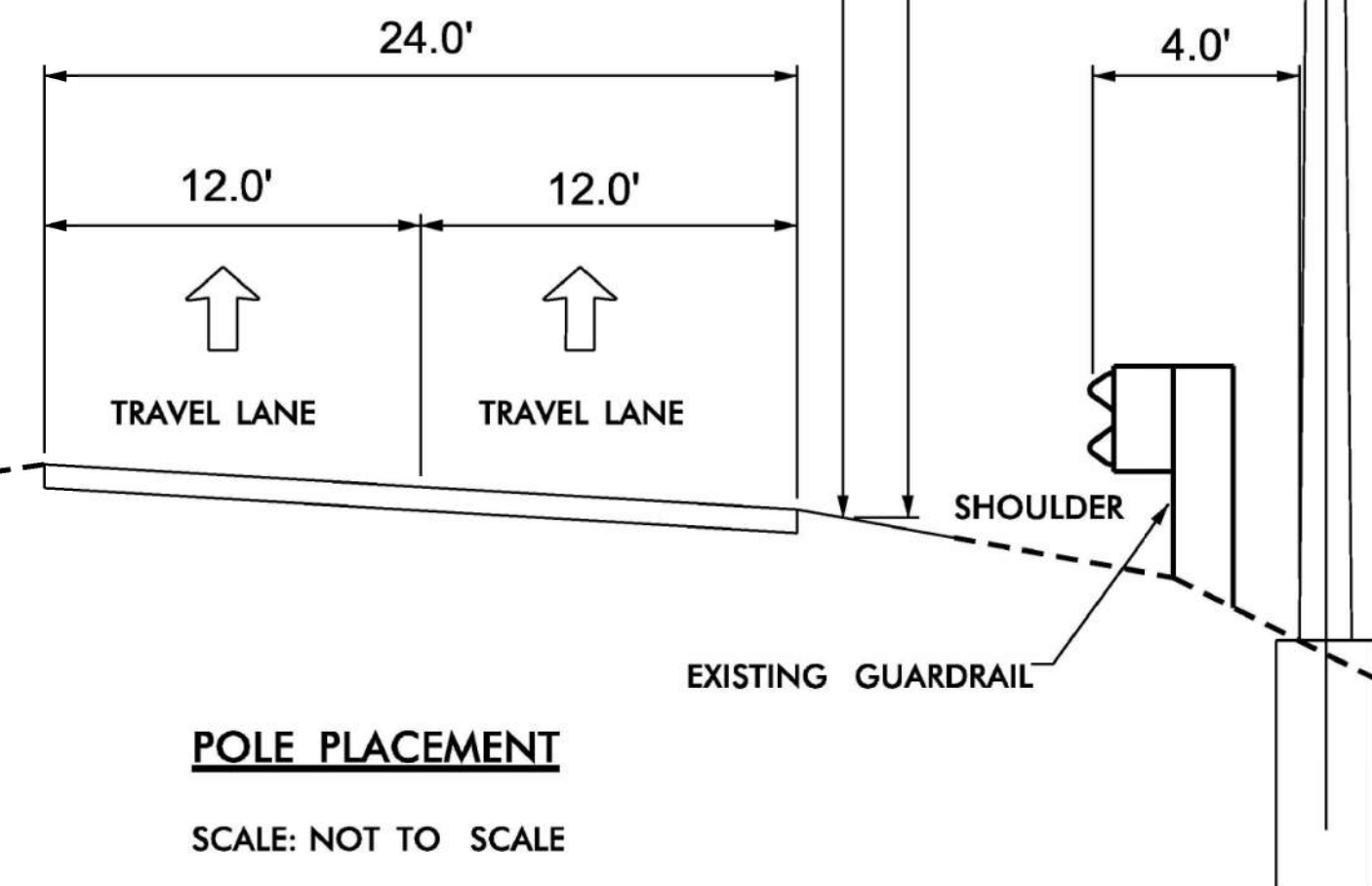
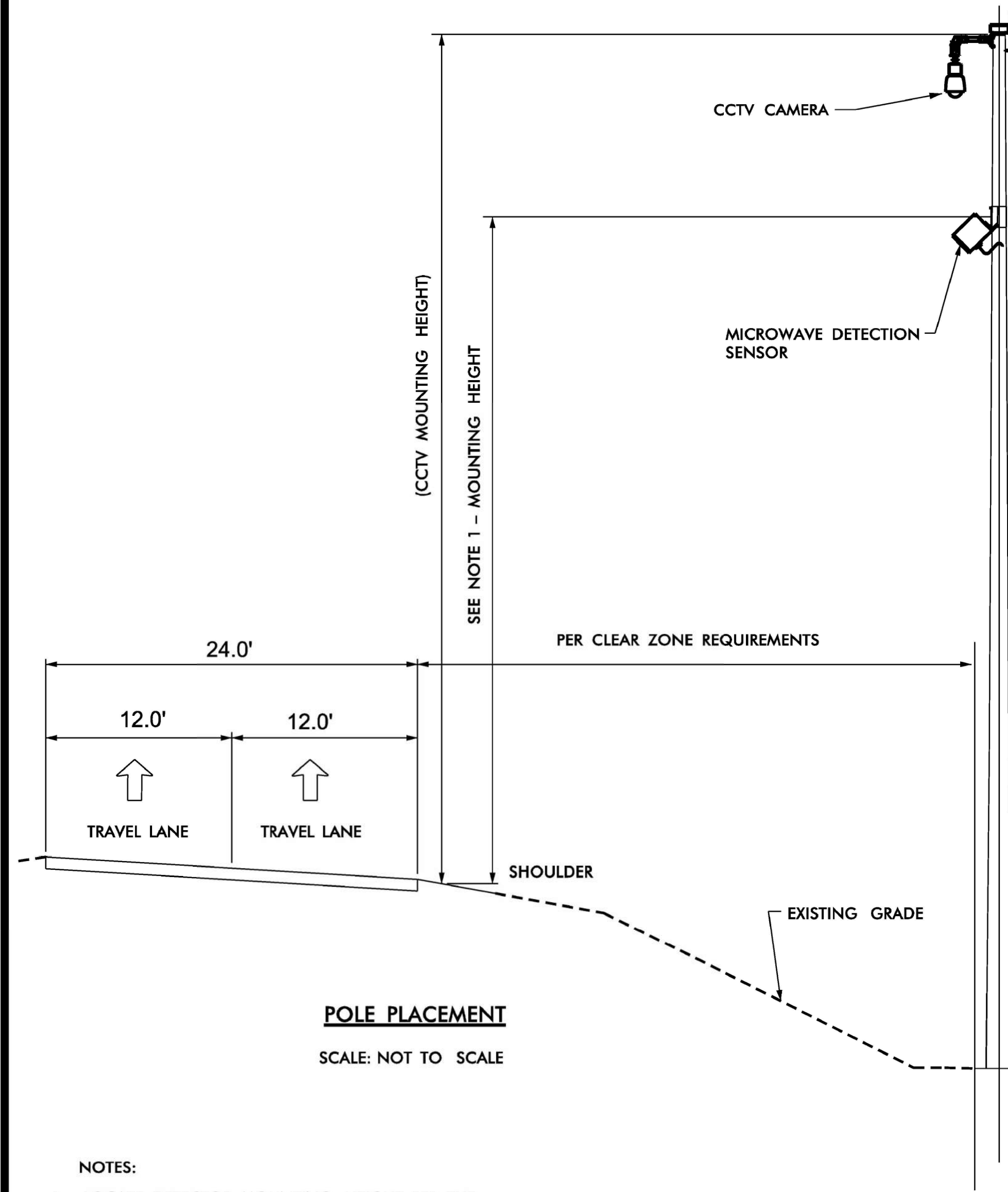
REVISIONS	INIT.	DATE

SCALE: NO SCALE

SEAL

ANTHONY M. BARBETTO
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 047143
01/20/2021

SIGNATURE DATE



POLE PLACEMENT
SCALE: NOT TO SCALE

POLE PLACEMENT
SCALE: NOT TO SCALE

- NOTES:
1. LOCATE DETECTOR MOUNTING HEIGHT PER THE MANUFACTURER'S MOUNTING CHART FOR HORIZONTAL SETBACK AND NUMBER OF LANES TO BE DETECTED.
 2. ALIGN SENSOR MOUNTING ANGLE PER MANUFACTURER'S INSTALLATION GUIDE WITH RESPECT TO HEIGHT, HORIZONTAL SETBACK AND NUMBER OF LANES.
 3. MOUNT DETECTOR ON SIDE OF POLE, 90 DEGREES TO CAMERA ARM SO THE DETECTOR DOESN'T INTERFERE WITH CAMERA LOWERING DEVICE.
 4. 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 NCBES #F-0326

ITS STANDARD DETAILS
MICROWAVE DETECTION
POLE PLACEMENT WITH CCTV EQUIPMENT

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. M-5B
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelawski		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

FLATIRON **BRANCH CIVIL**

Gannett Fleming One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

Prepared in the Offices of:

NORTH CAROLINA Turnpike Authority

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

REVISIONS: _____

INIT. DATE

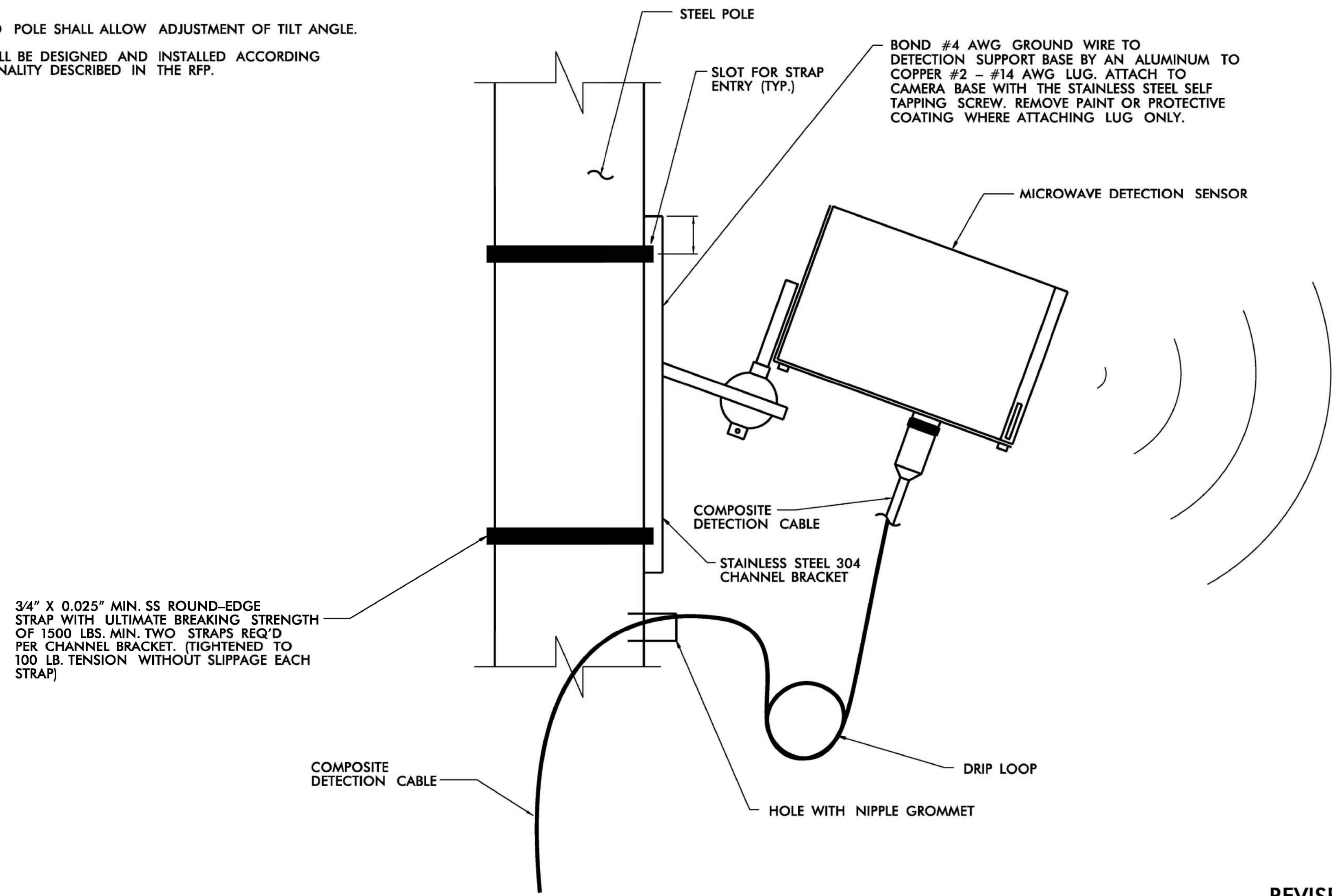
SEAL

ANTHONY M. BARBETTO
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 047143
SIGNATURE DATE 01/20/2021



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.



REVISED 10 /21 /2011

MICROWAVE DETECTION SENSOR ELEVATION VIEW

NOT TO SCALE

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

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ITS STANDARD DETAILS
MICROWAVE DETECTION
SENSOR MOUNTING

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

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

1/18/2021 c:\pwworking\atkins\00958946\R2721A_ITS_STD_12.dgn mtransue

Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY:
Gannett Fleming Excellence Delivered *As Promised*

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

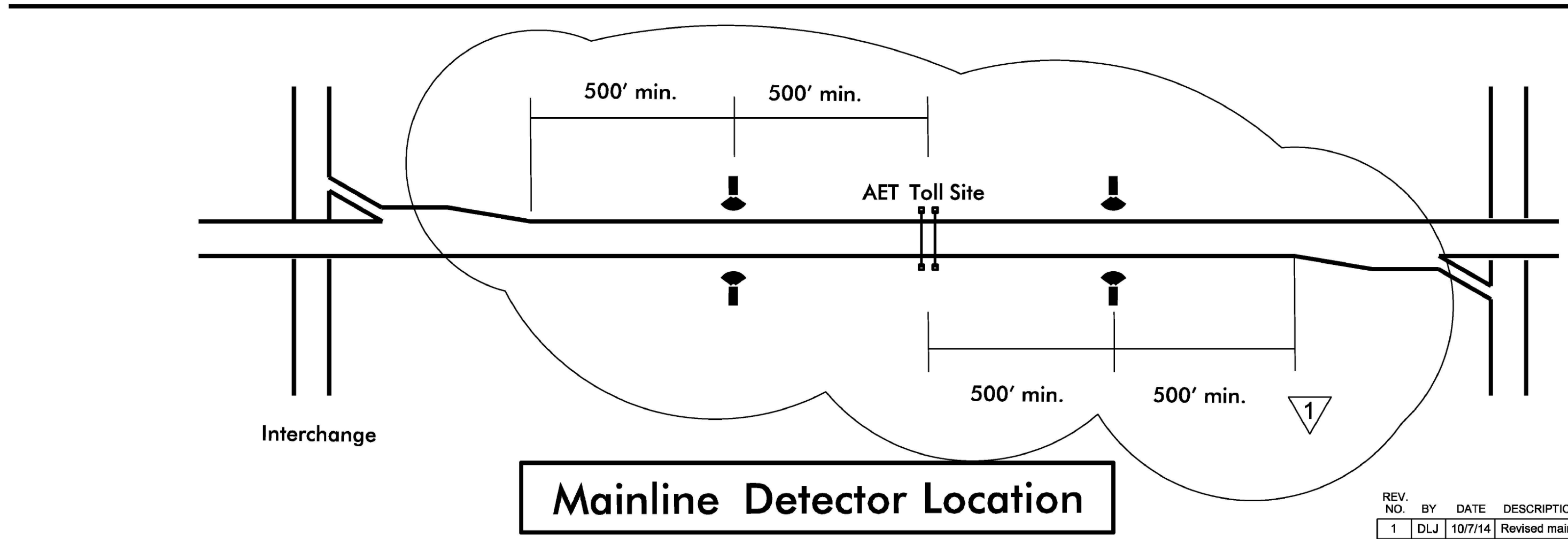
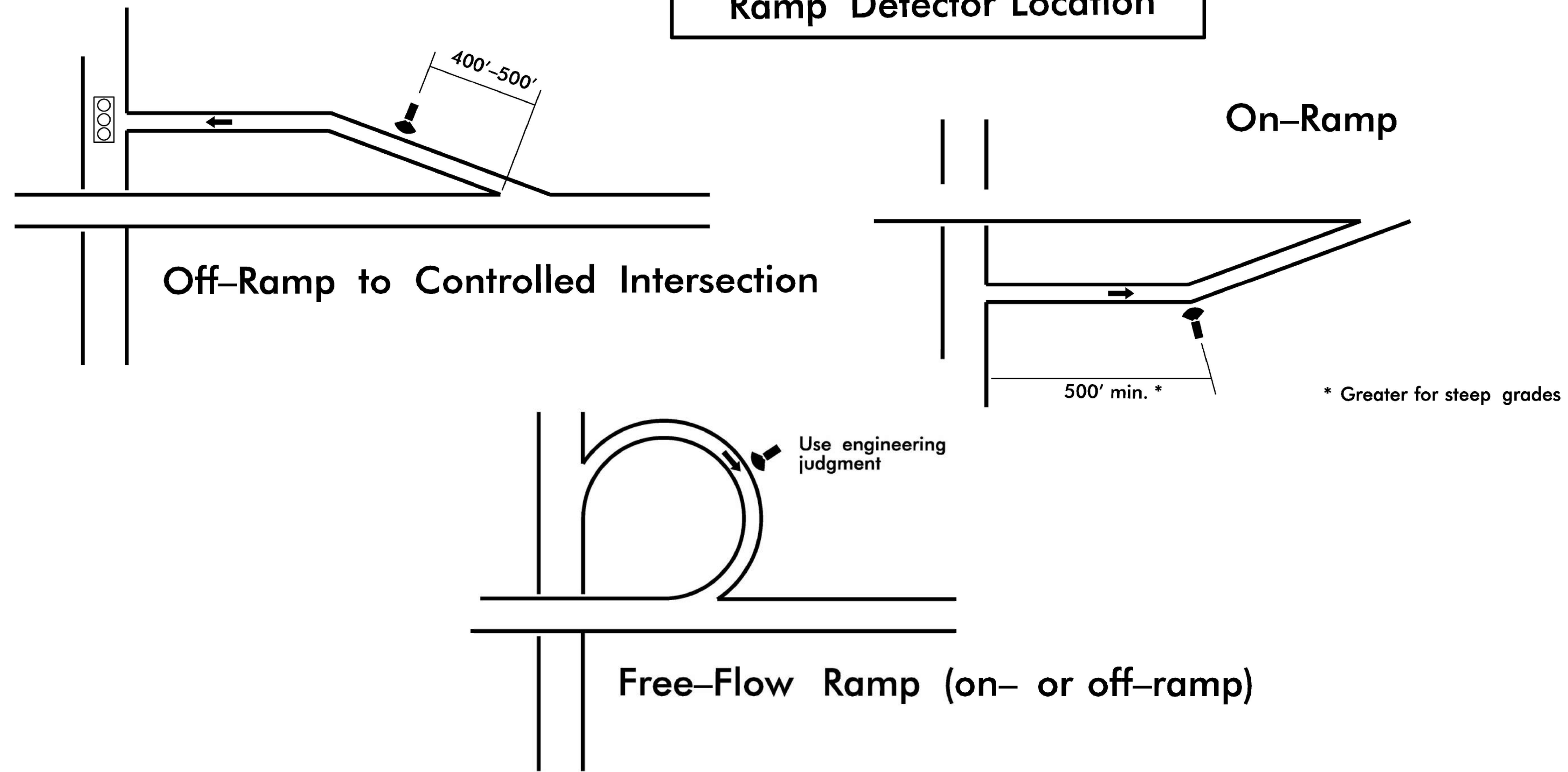
REVISIONS	INIT.	DATE

SCALE: NO SCALE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
ANTHONY M. BARBETTO
SEAL 047143
SIGNATURE: *Anthony M. Barretto* DATE: 01/20/2021



Ramp Detector Location



- NOTES:
- One or 2 detectors per site may be required; see Scope of Work.
 - Locate detector sites roughly half way between toll site and on/off ramp, if possible.

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(704) 522-7275 NCBES #F-0326

ITS STANDARD DETAILS
MICROWAVE DETECTION
PLACEMENT SCHEMATIC

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. M-7
DATE: August, 2011		
DWG. BY: B. Slocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelowski		

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Revised mainline spacing, border changes

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

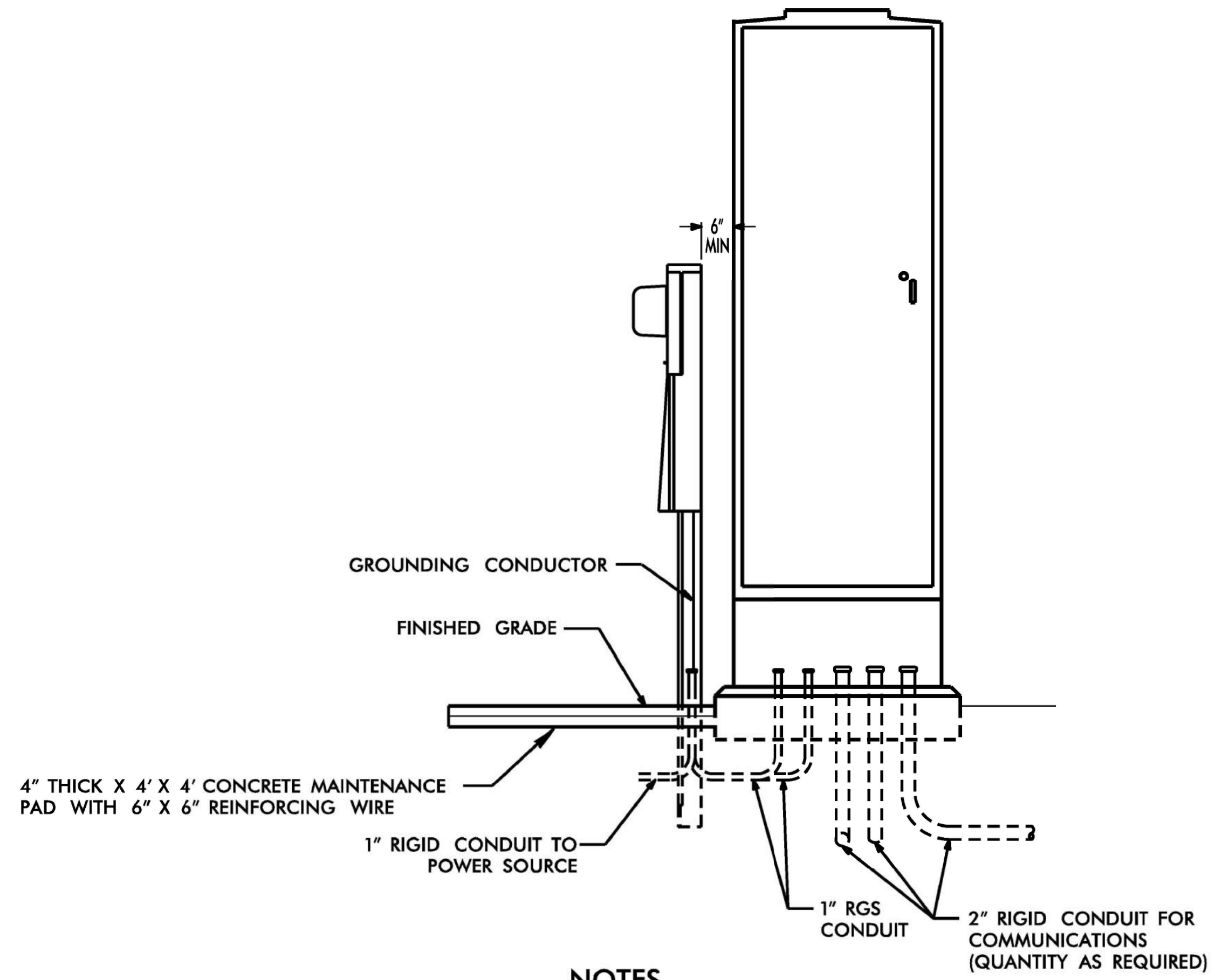
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

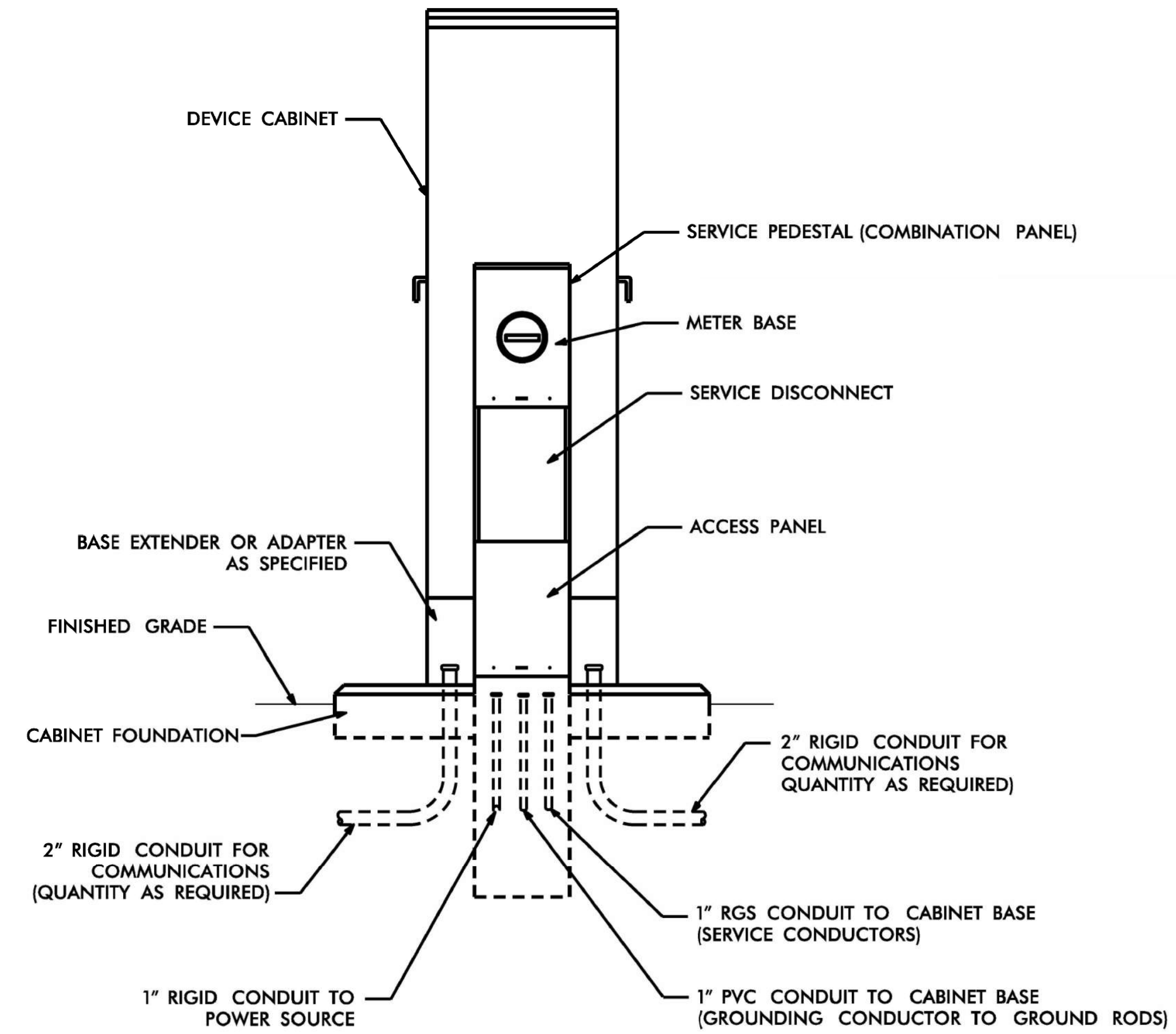
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



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. COMBINATION PANELS NOT ADJACENT TO CABINETS DO NOT REQUIRE MAINTENANCE PADS. ▽



REVISED 08 /24 /2011

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

ITS STANDARD DETAILS
POWER SERVICE DETAIL
GROUND-MOUNTED CABINET

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:



PLANS PREPARED BY:
Gannett Fleming
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

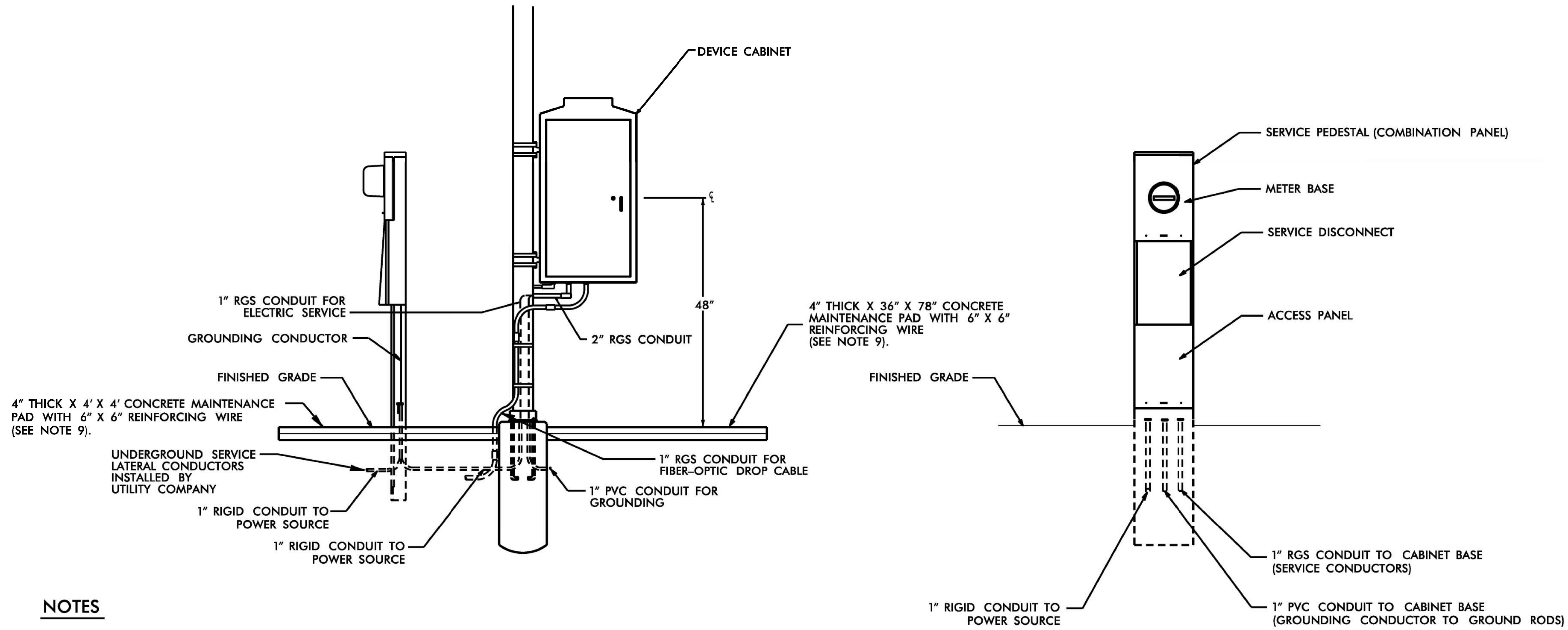
PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
ANTHONY M. BARBETTO
047143
01/20/2021
SIGNATURE DATE



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 NCBES #F-0326

ITS STANDARD DETAILS
POWER SERVICE DETAIL
POLE-MOUNTED CABINET

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		

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

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Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue, Suite 900, Raleigh, NC 27603, (919) 420-7660, NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

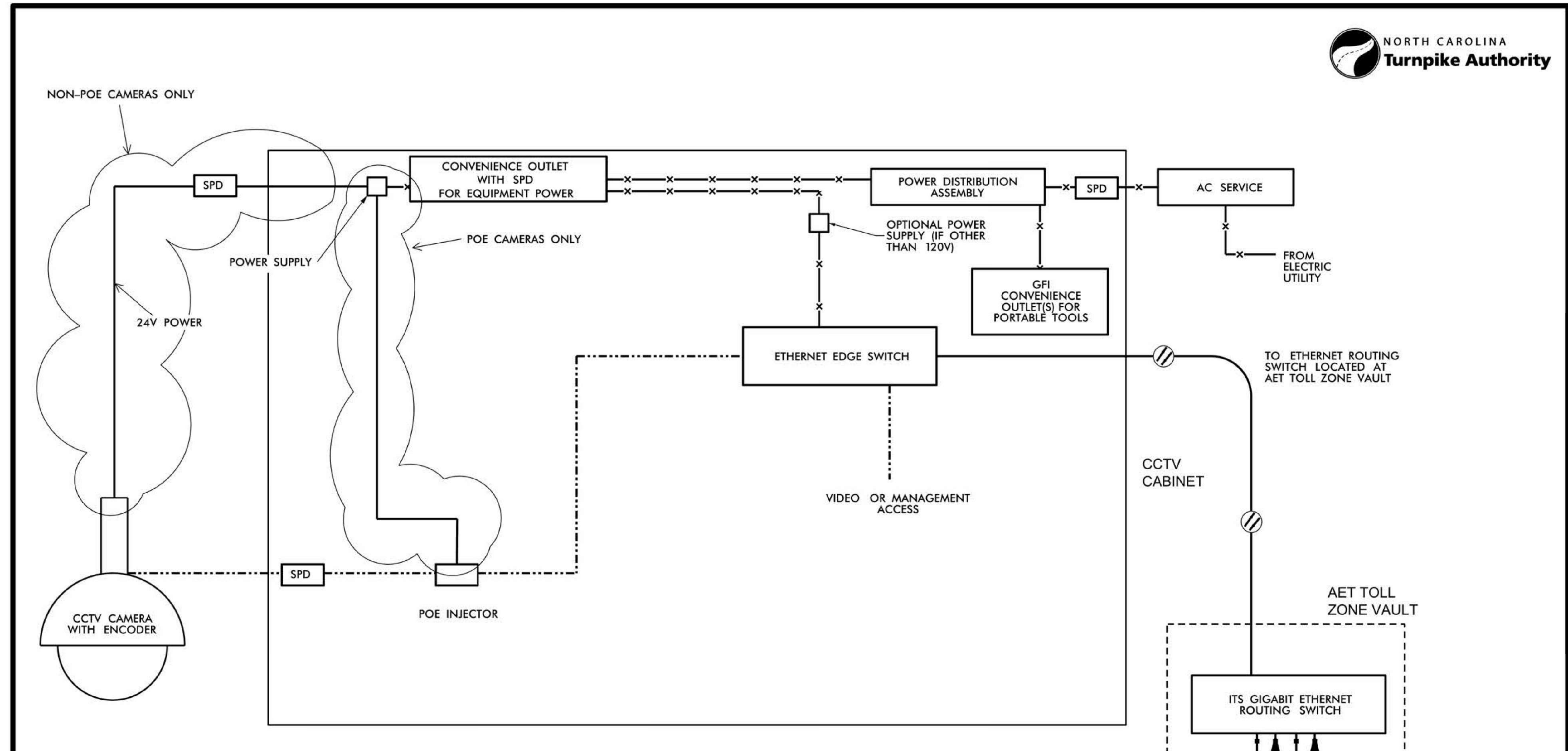
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



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

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

REVISED 10 /21 /2011

REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only
2	DLJ	8/4/17	Changed to all-digital video

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

ITS STANDARD DETAILS
CCTV
BLOCK DIAGRAM

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** Excellence Delivered As Promised

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ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

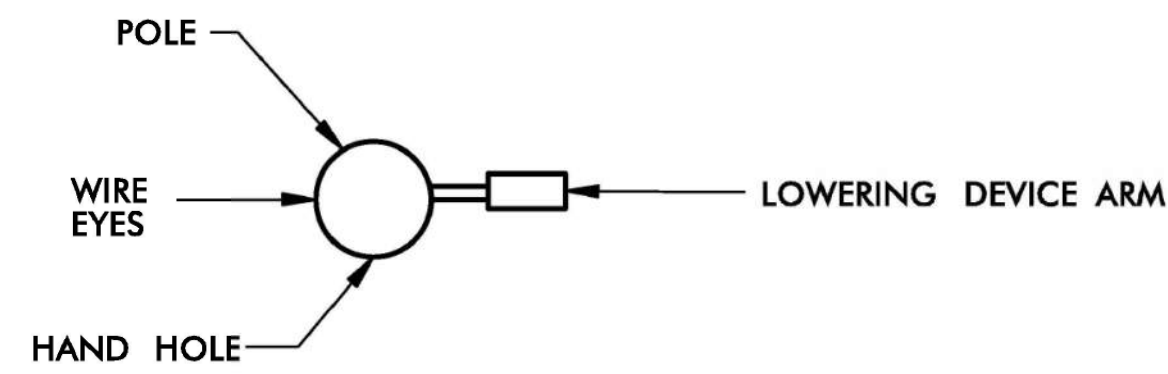
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

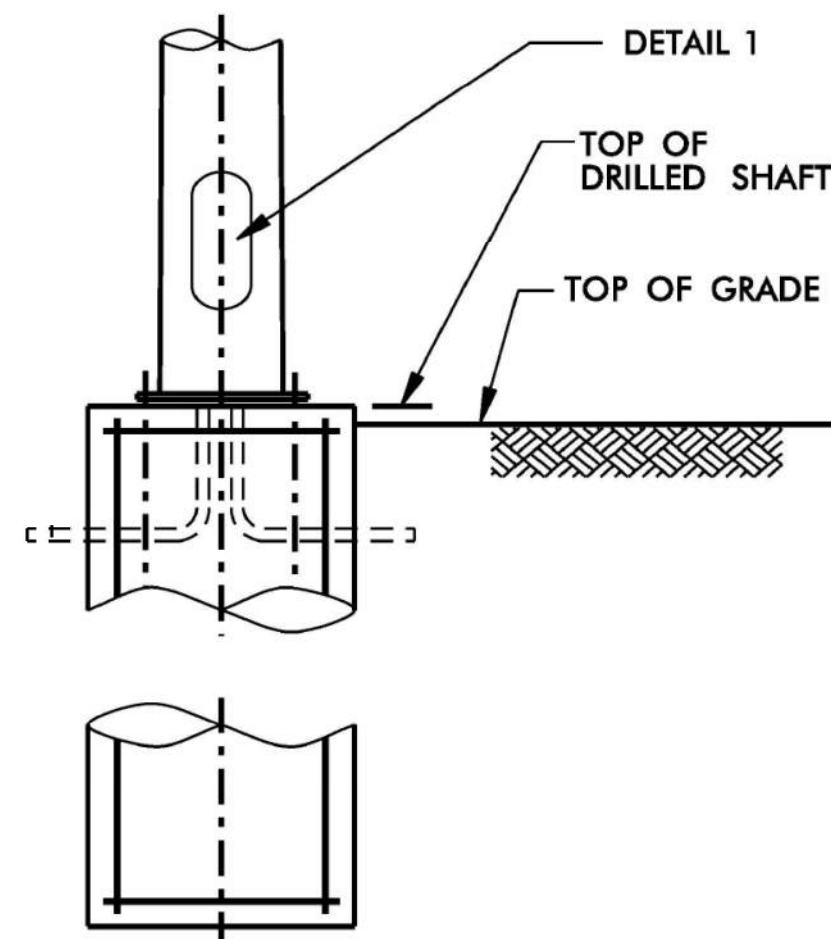
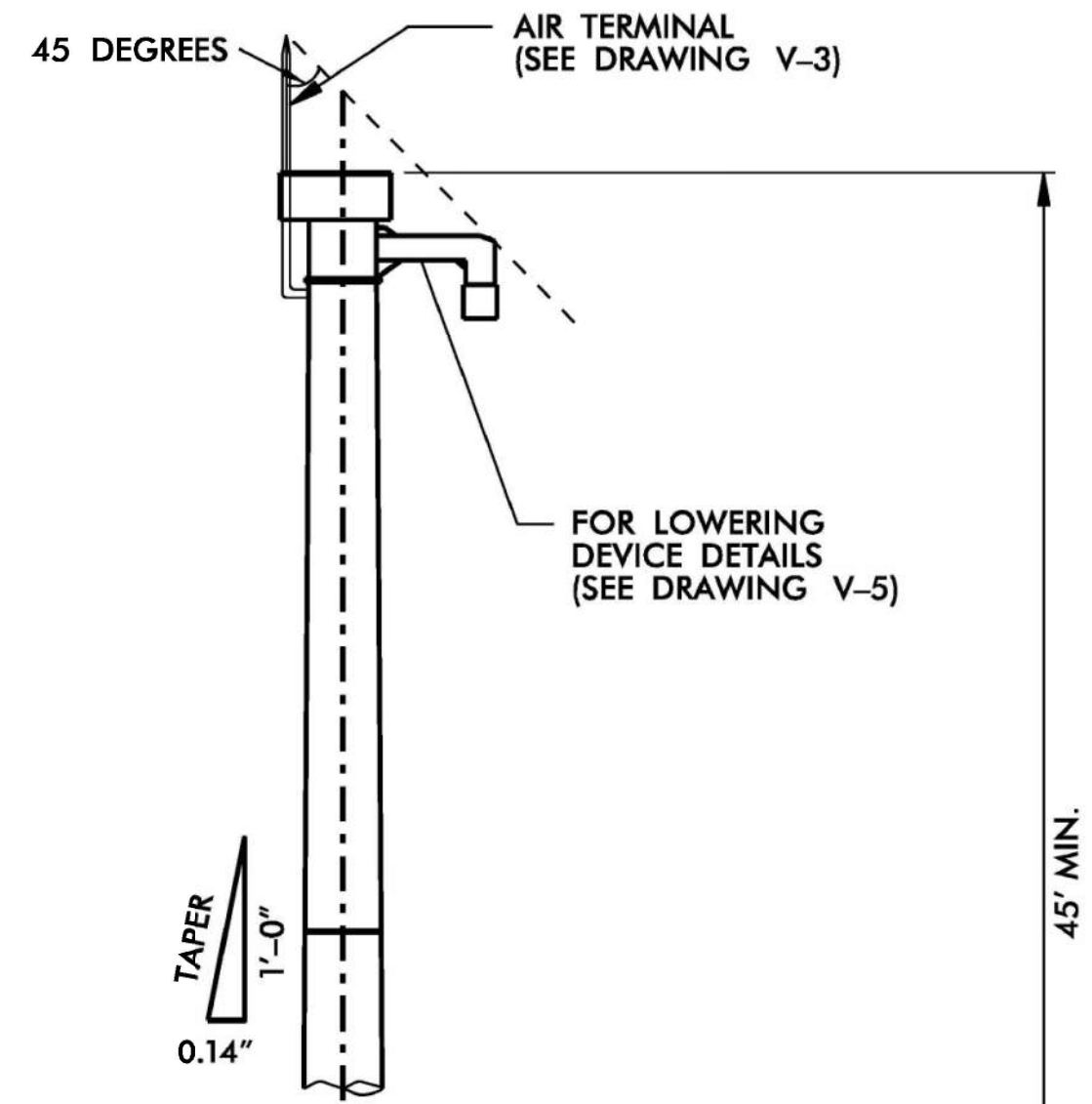
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SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

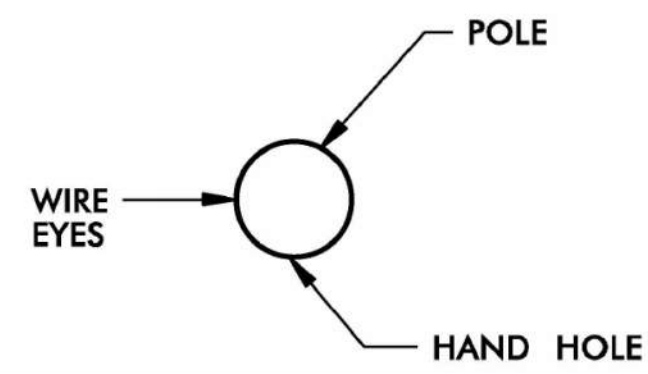
SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



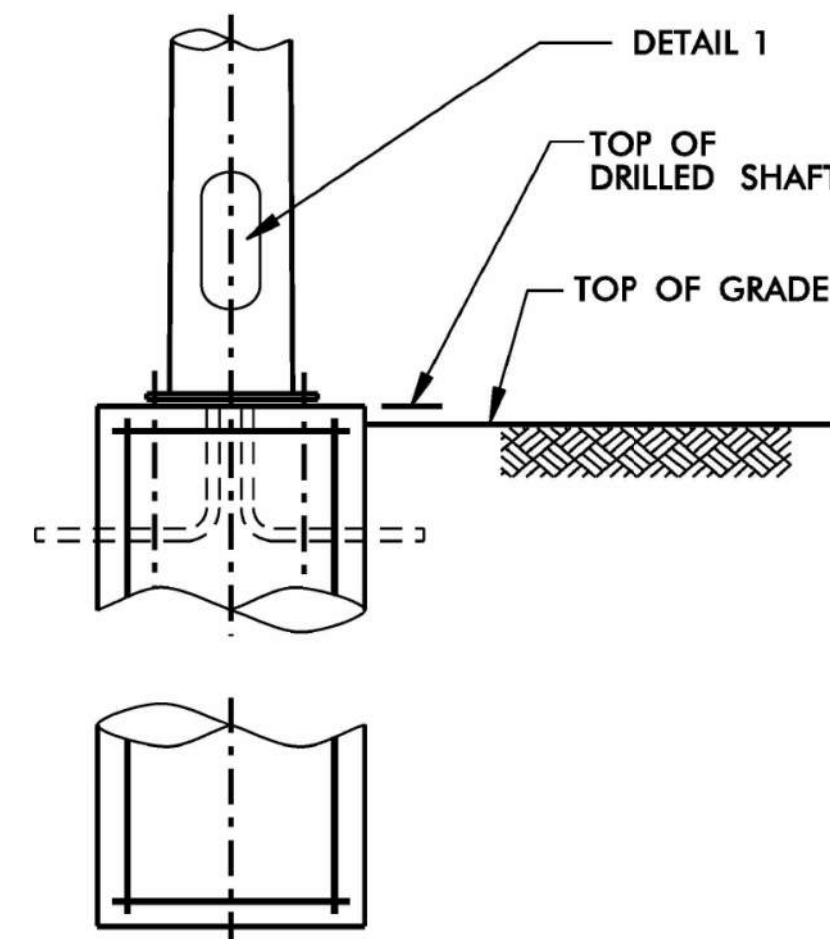
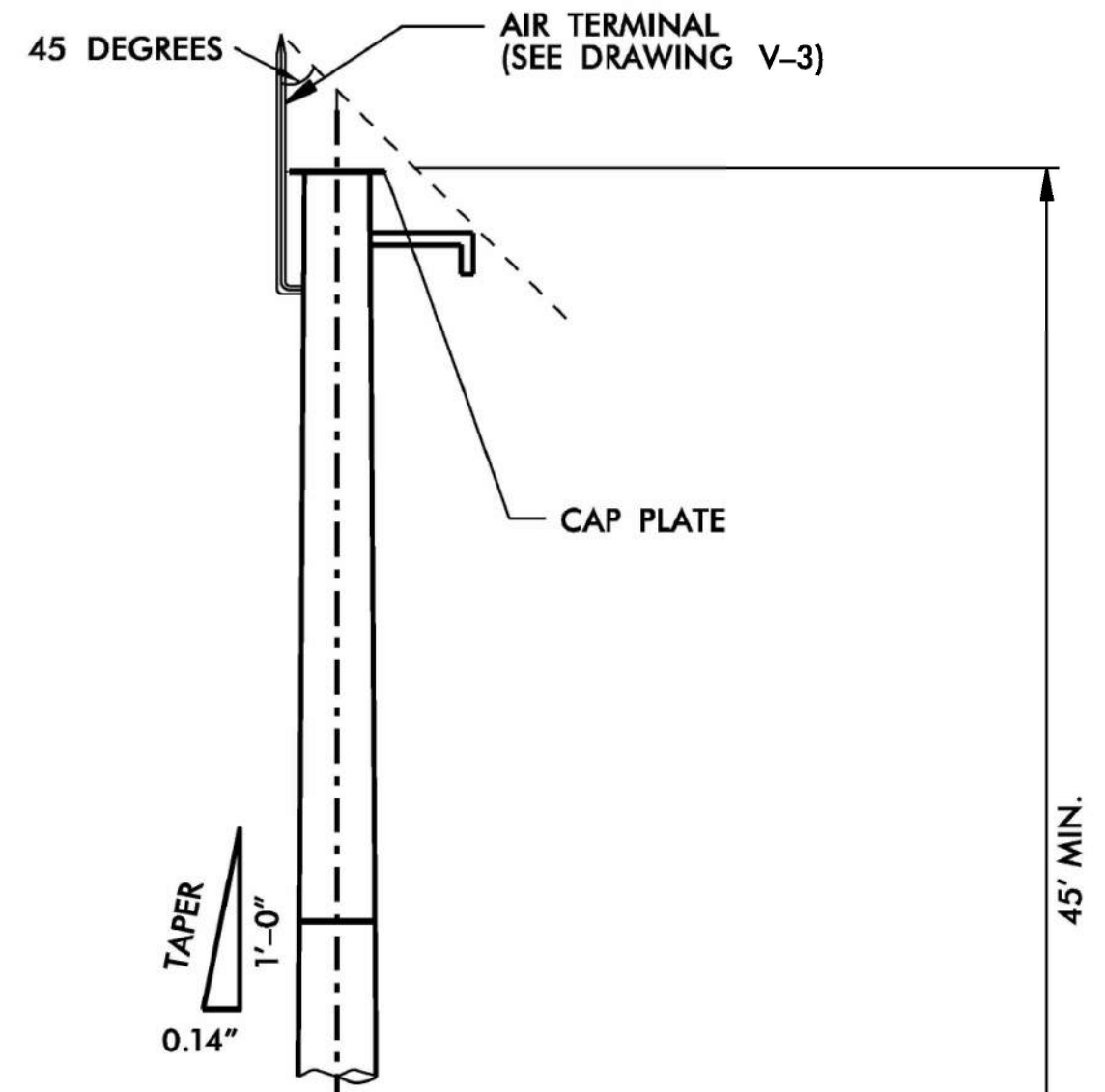
ORIENTATION VIEW



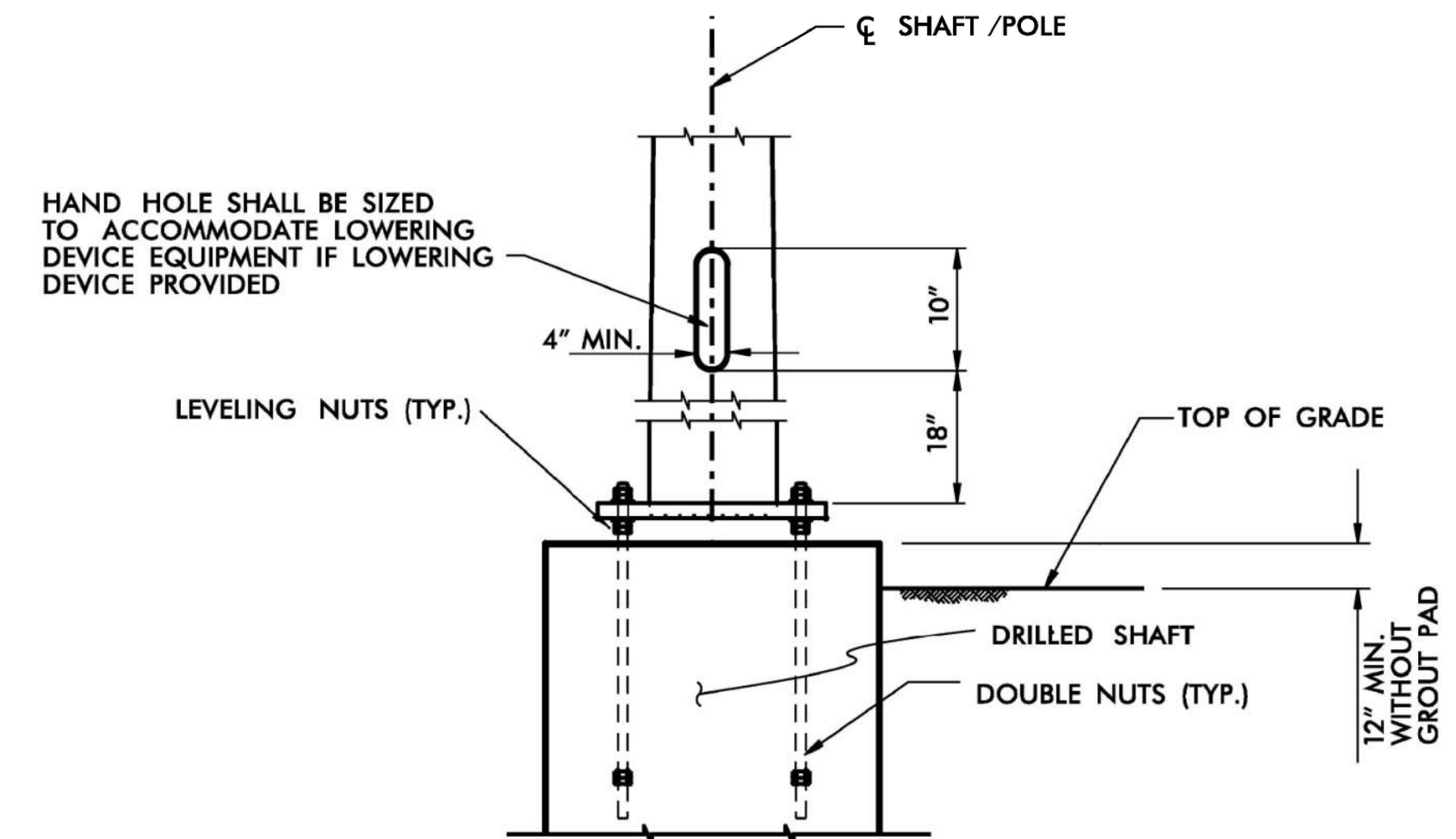
WITH LOWERING DEVICE ELEVATION



ORIENTATION VIEW



WITHOUT LOWERING DEVICE ELEVATION



DETAIL 1

- 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.

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 NCBES #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. Stocum		
DESIGN BY: A. Badgett / D. Jones		
APPROVED: A. Lelewski		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PLANS PREPARED BY:

FLATIRON **BRANCH CIVIL**

Gannett Fleming Excellence Delivered As Promised

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

Prepared in the Offices of:

NORTH CAROLINA Turnpike Authority

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

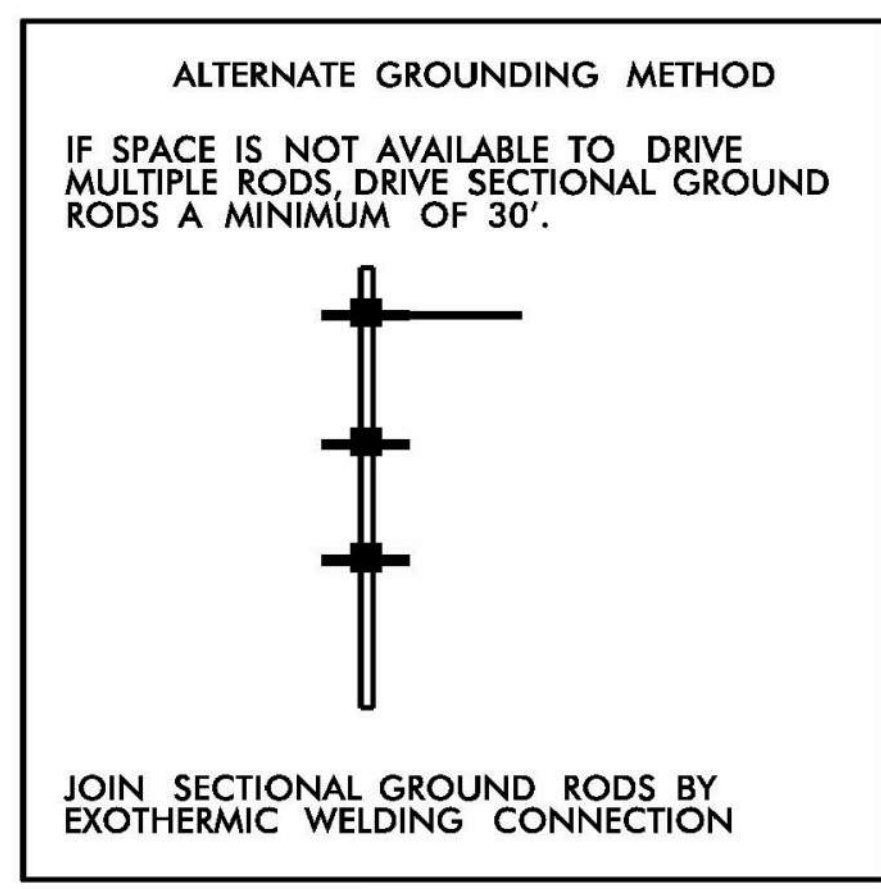
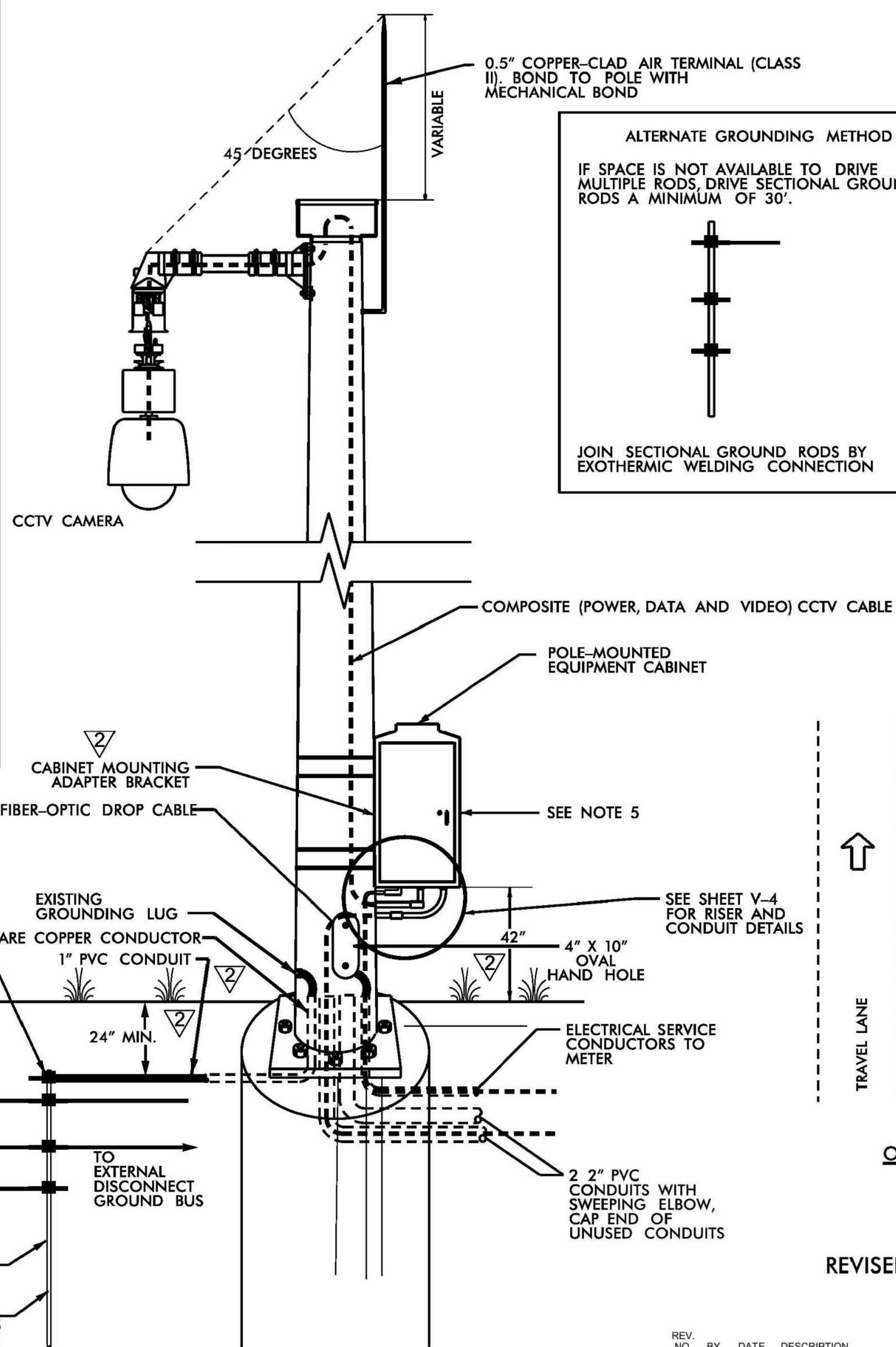
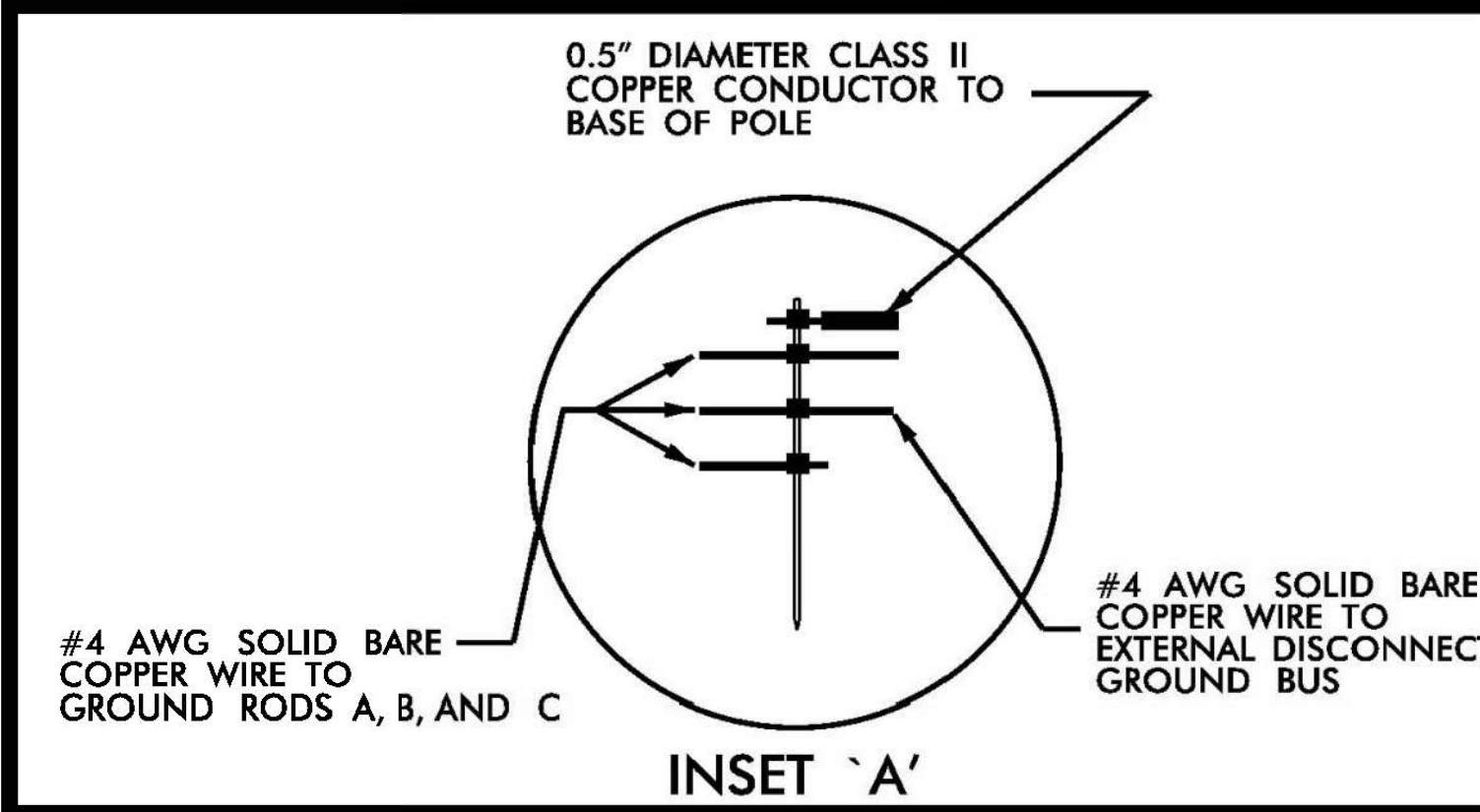
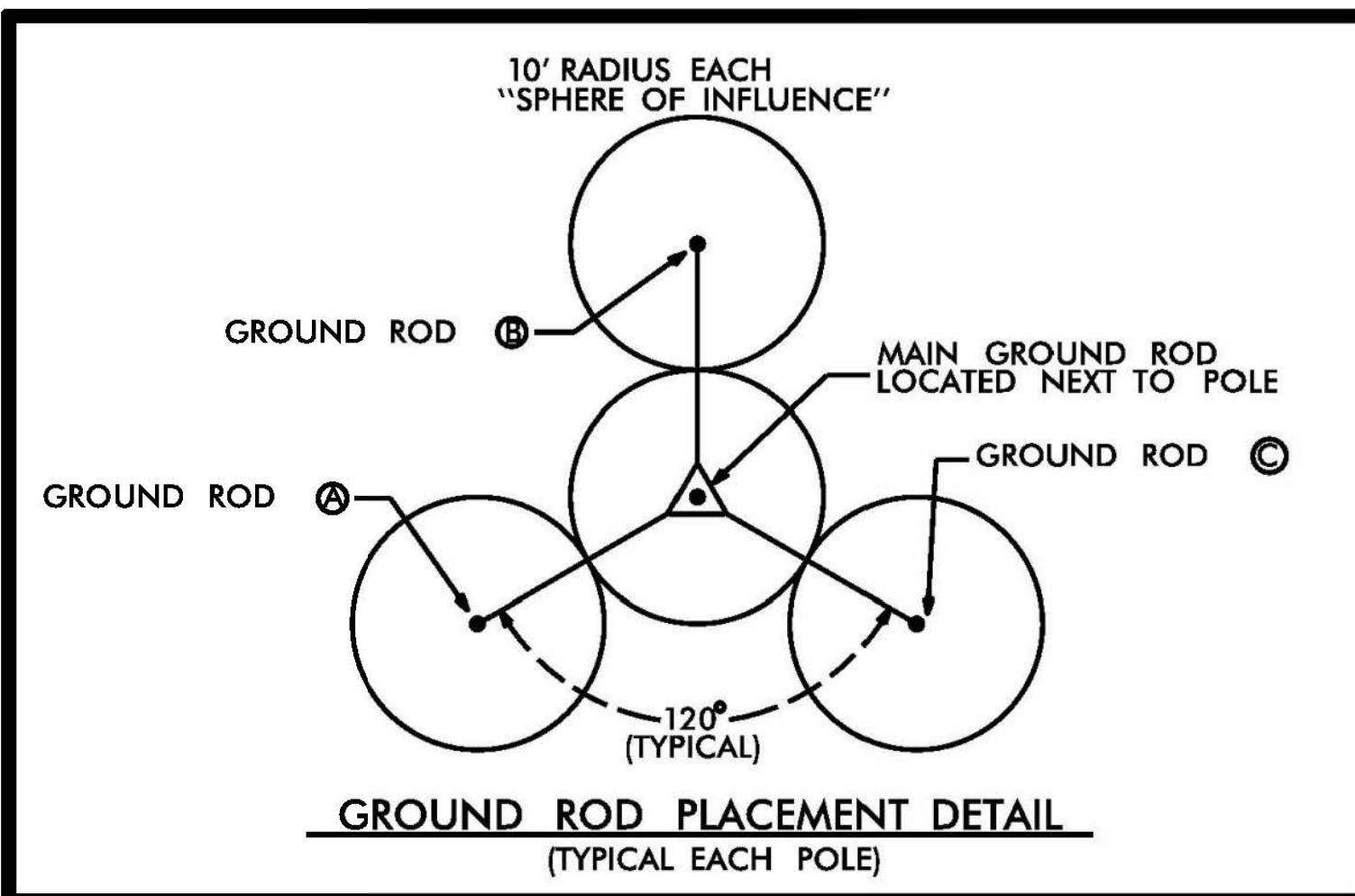
REVISIONS: _____

INIT. DATE

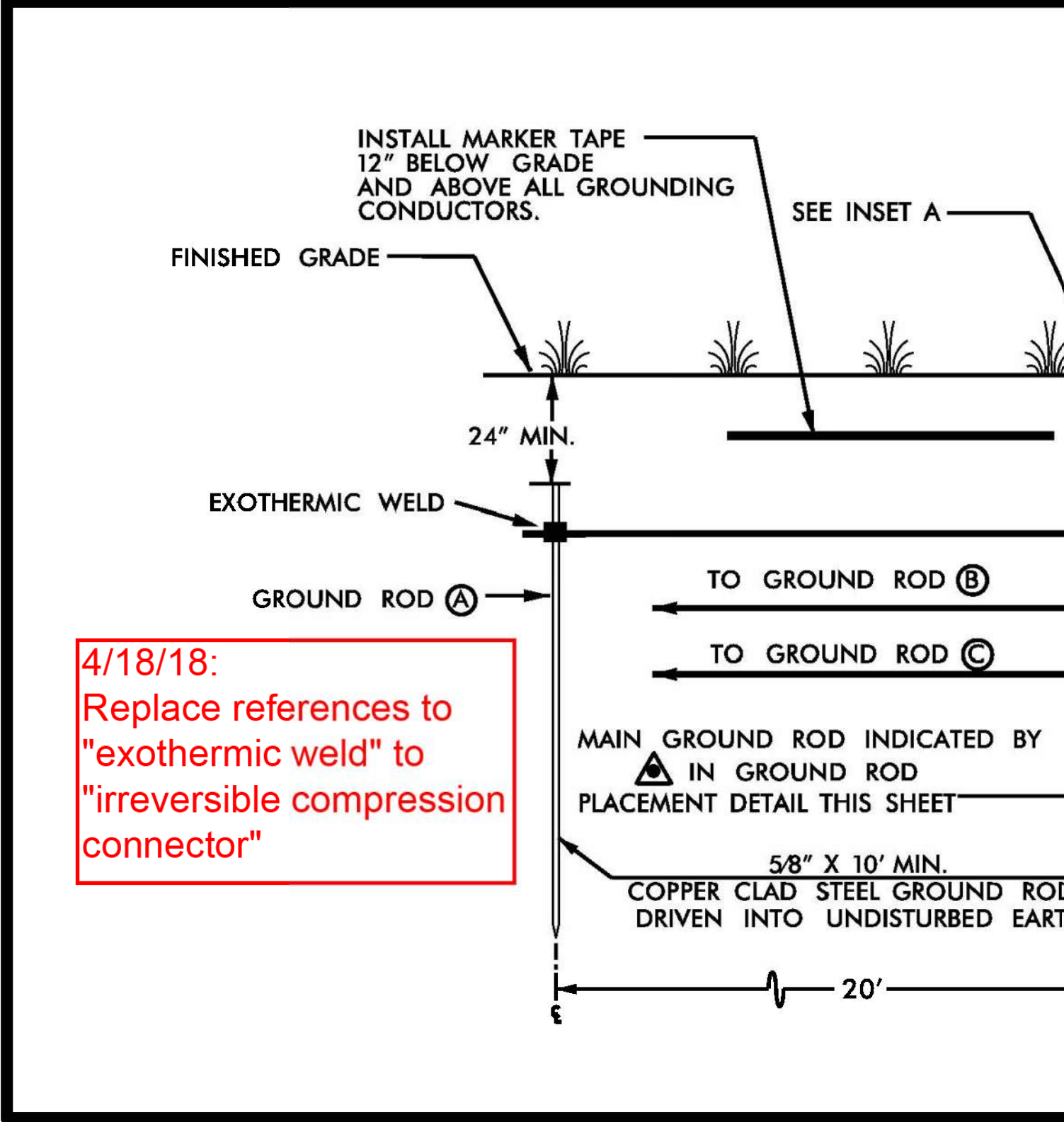
SEAL

ANTHONY M. BARBETTO
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 047143
DATE 01/20/2021

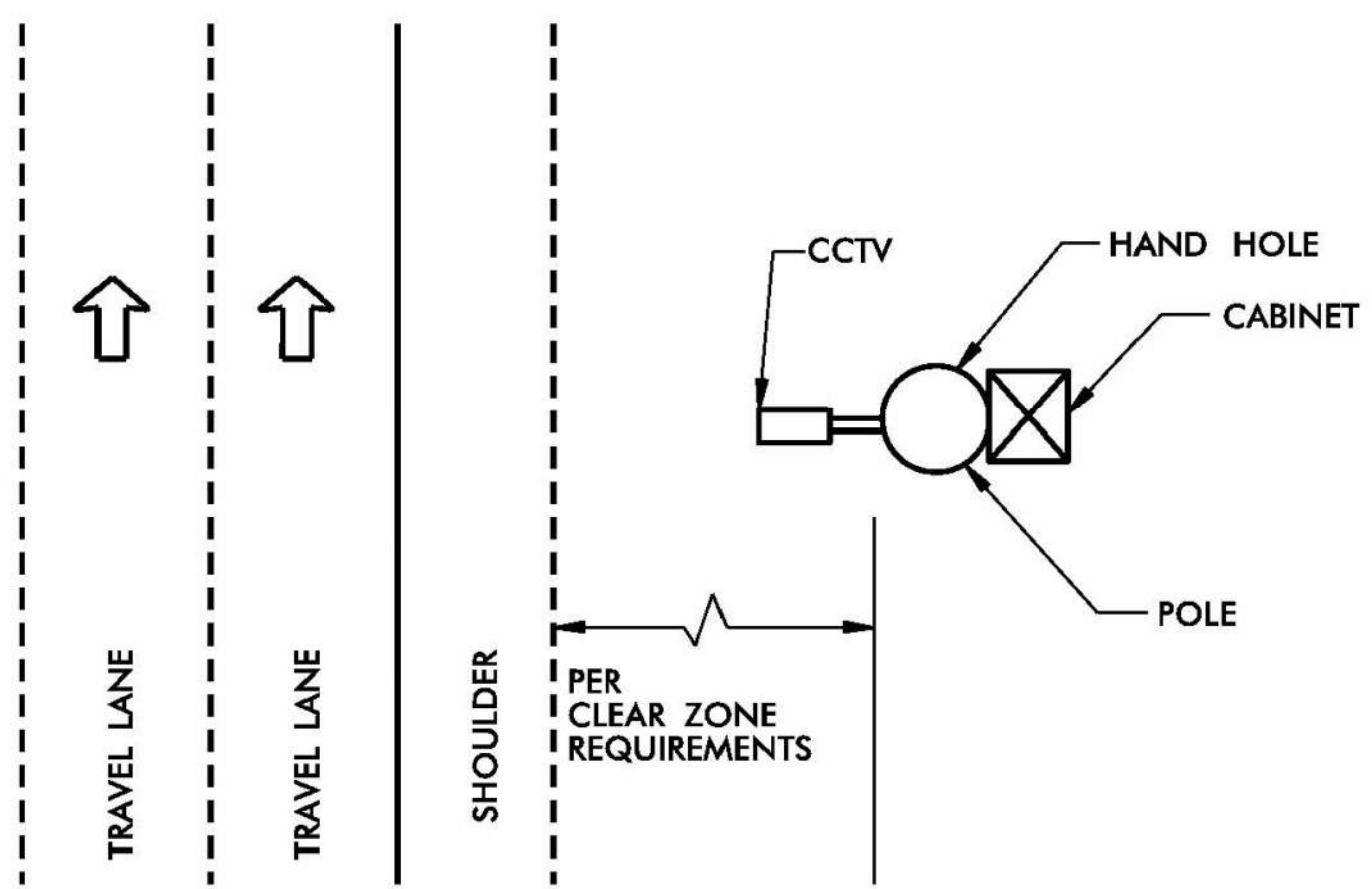
SIGNATURE: *Anthony M. Barbetto* DATE: _____



- 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 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 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. AIR TERMINAL LENGTH DEPENDS ON LENGTH OF LOWERING DEVICE ARM.
 9. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.



4/18/18: Replace references to "exothermic weld" to "irreversible compression connector"



ORIENTATION OF DEVICES ON POLE

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

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

ITS STANDARD DETAILS
CCTV
POLE GROUNDING

SCALE: N.T.S. NORTH CAROLINA TURNPIKE AUTHORITY SHEET NO. V-3
DATE: August, 2011
DWG. BY: B. Slocum
DESIGN BY: A. Badgett / D. Jones
APPROVED: A. Lelowski

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:

FLATIRON **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARRETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

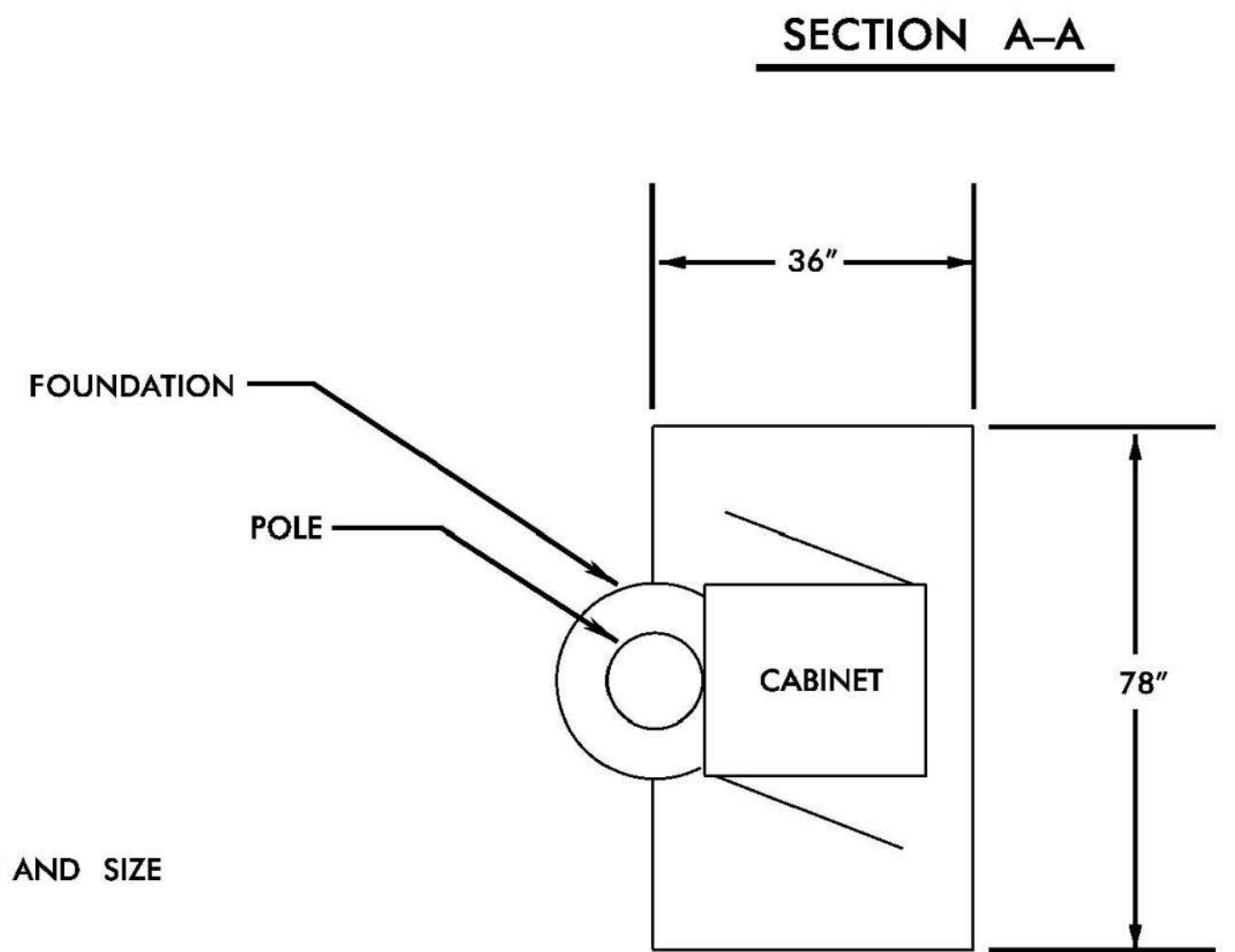
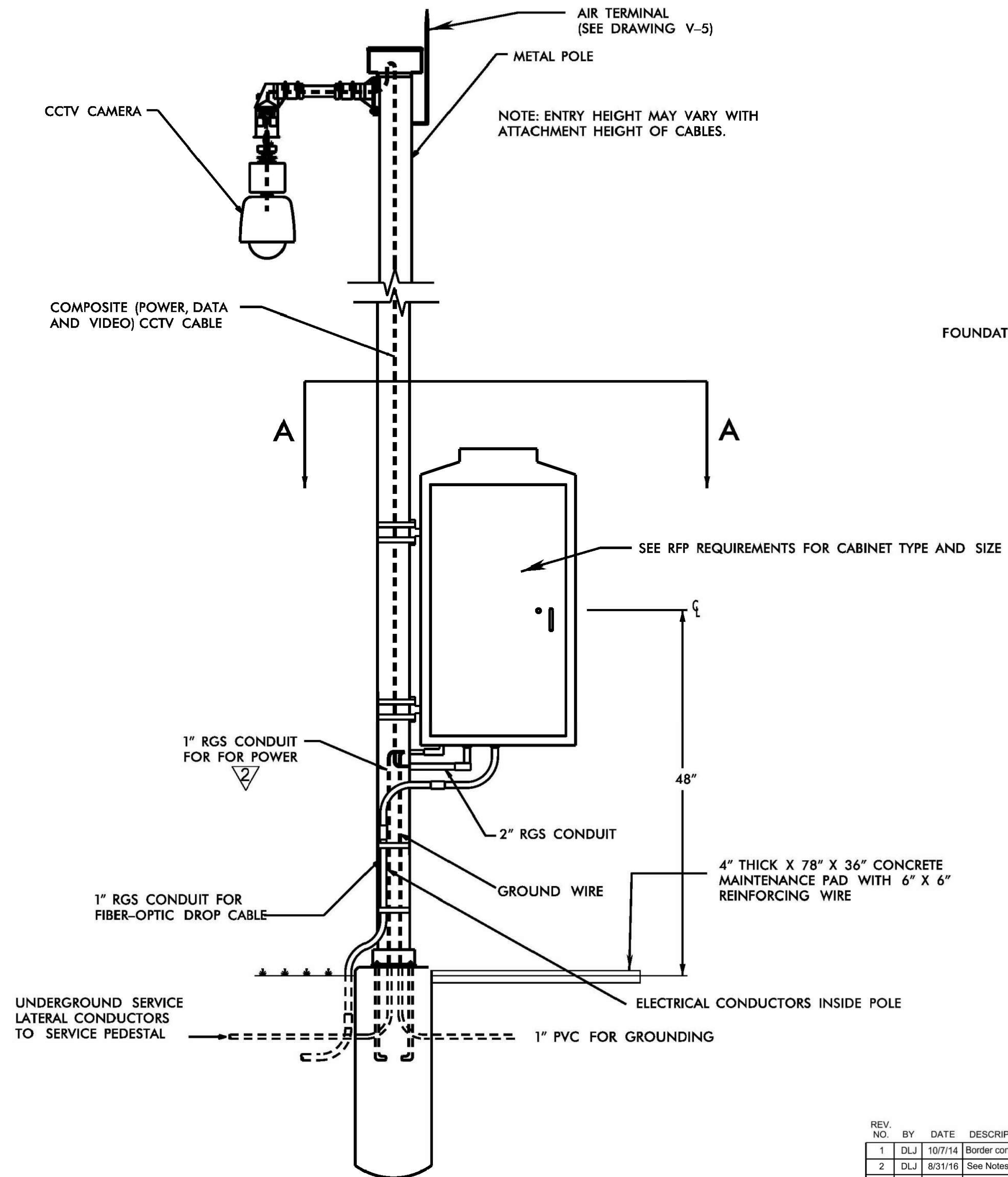
SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARRETTO 047143

SIGNATURE: Anthony M. Barretto DATE: 01/20/2021



POLE-MOUNTED CCTV CABINET DETAIL



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

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

5200 77 Center Drive, Suite 50
Charlotte, North Carolina 28217
(704) 522-7275 NCBES #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. Lelewski		

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Prepared in the Offices of:

PLANS PREPARED BY: **Gannett Fleming**
One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

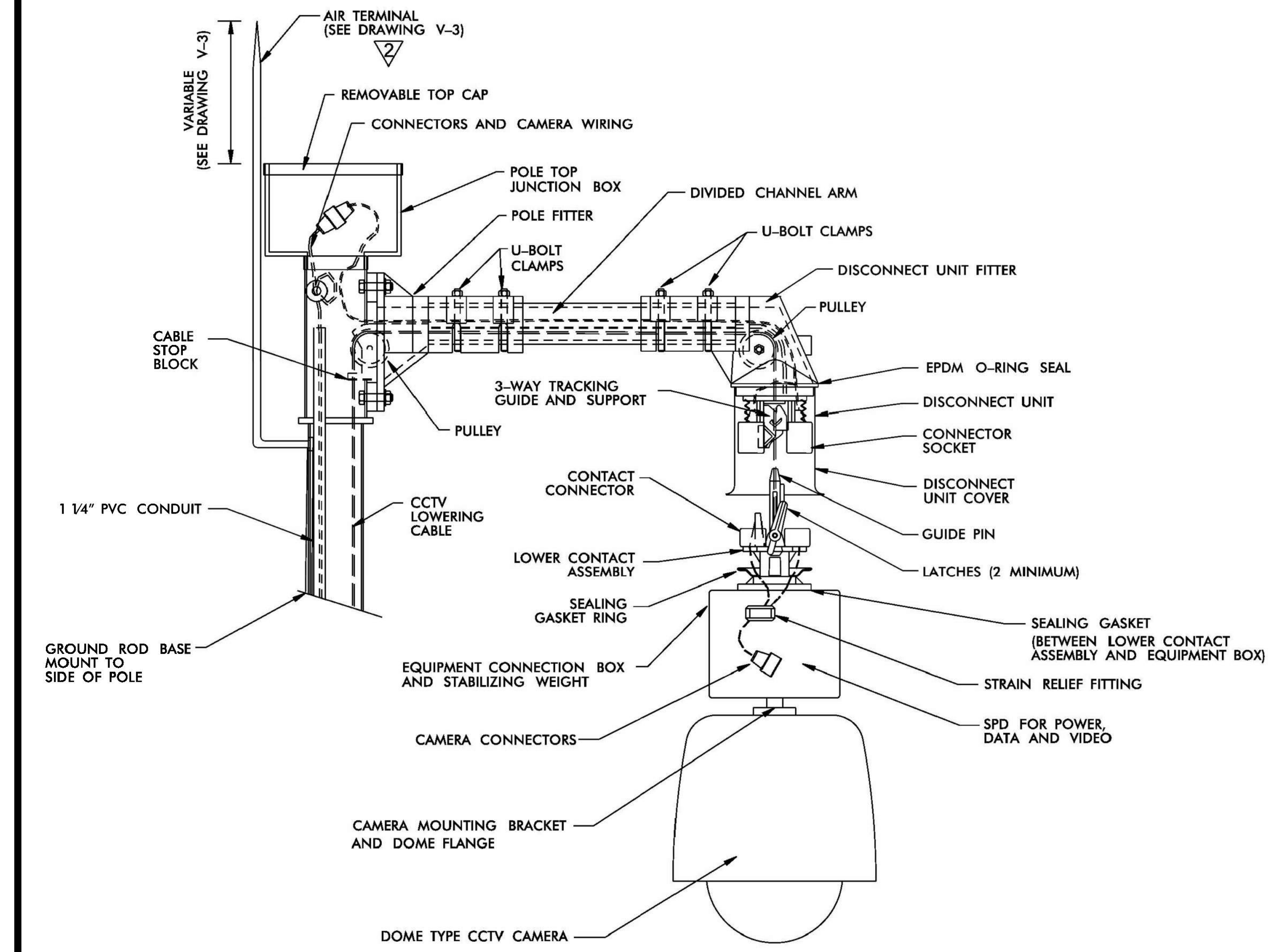
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL

Anthony M. Barbetto
SIGNATURE DATE: 01/20/2021



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 NCBES #F-0326

ITS STANDARD DETAILS
CCTV
CAMERA LOWERING DEVICE

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO. V-5
DATE: August, 2011		
DWG. BY: B. Slocum		
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

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** Excellence Delivered As Promised

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

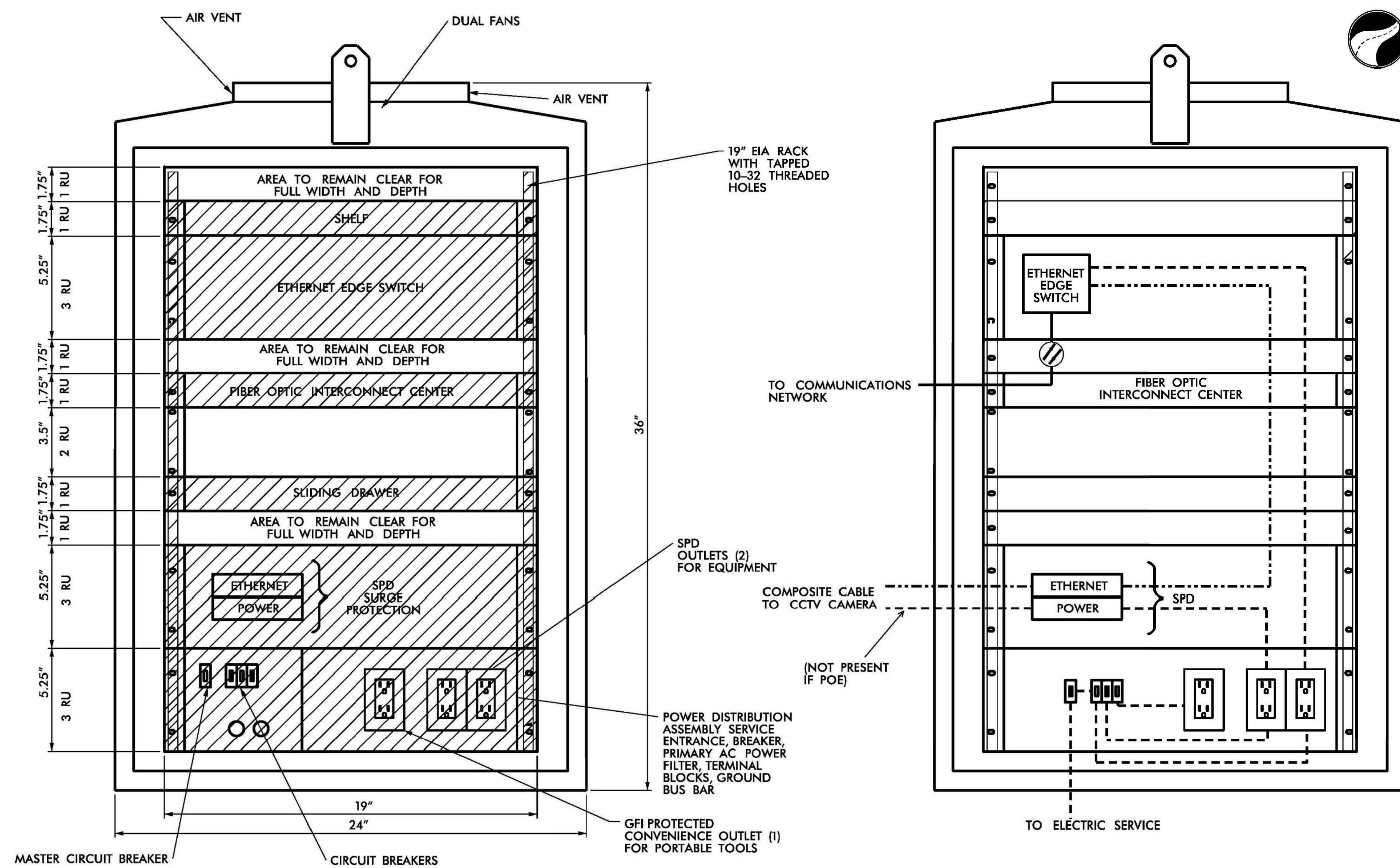
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021

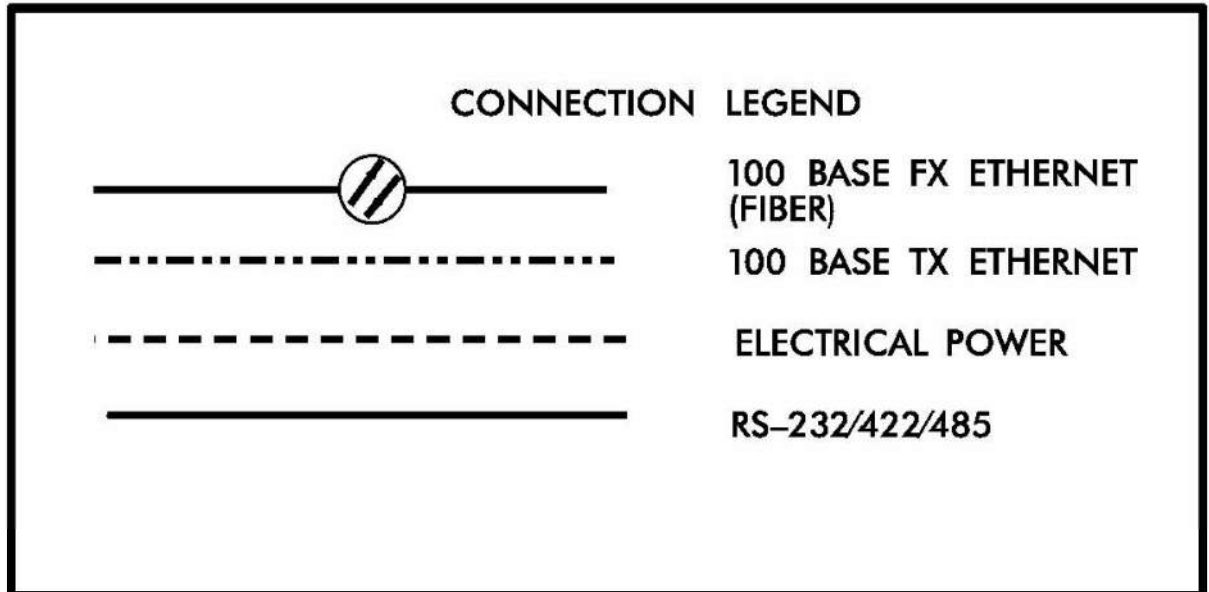


NOTES

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.

FRONT VIEW

CABINET WIRING VIEW



REV. NO.	BY	DATE	DESCRIPTION
1	DLJ	10/7/14	Border content and labeling only
2	DLJ	8/4/17	Changed to all-digital video

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

ITS STANDARD DETAILS
CCTV
CABINET LAYOUT

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Prepared in the Offices of:

FLATIRON **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 Excellence Delivered As Promised NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

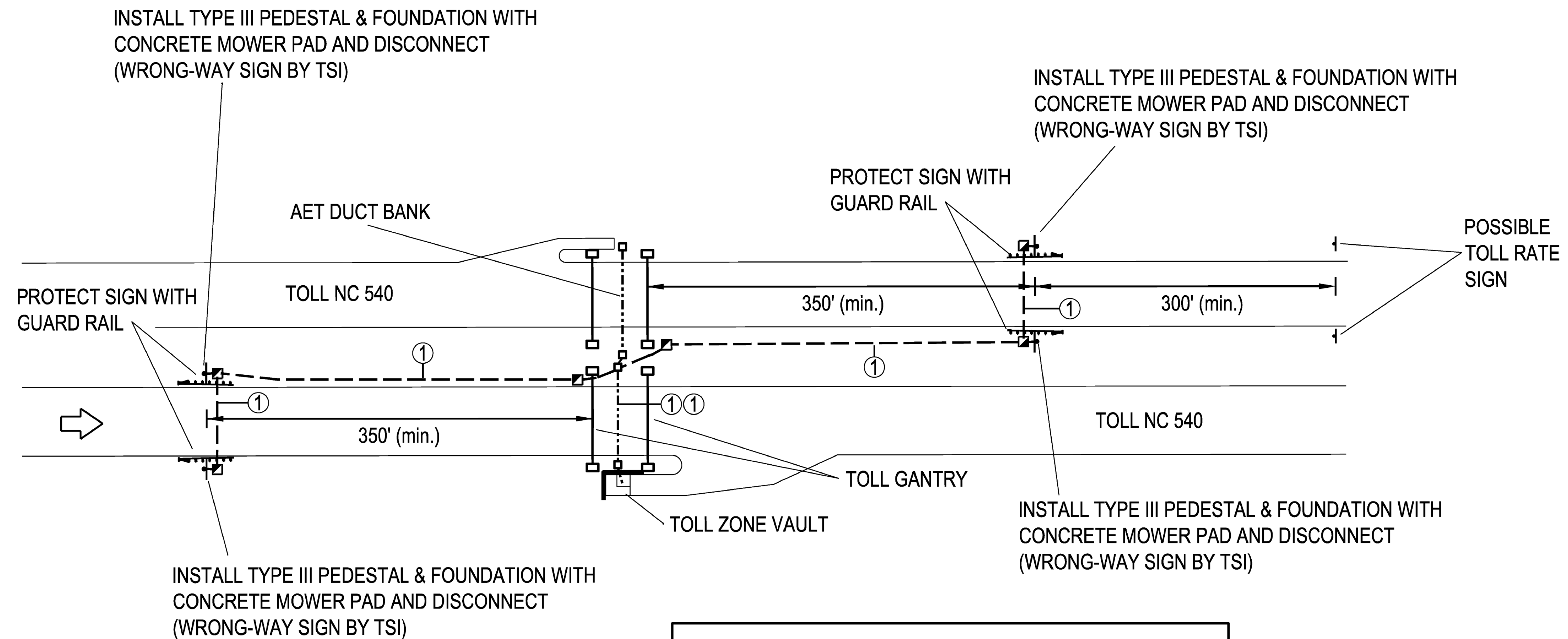
PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021



NOTES:

1. ALL WORK AND NEW EQUIPMENT SHALL BE DESIGNED AND INSTALLED ACCORDING TO THE REQUIREMENTS AND FUNCTIONALITY DESCRIBED IN THE RFP.
2. USE SPARE CONDUITS IN AET DUCT BANK.
3. INSTALL 18" (MIN.) CONCRETE MOWER PAD FOR ALL PEDESTALS.
4. INSTALL SIGN PEDESTALS AT LEAST 12' FROM THE EDGE OF TRAVEL.
5. INSTALL 18" (MIN.) CONCRETE MOWER PAD FOR ALL JUNCTION BOXES
6. CONDUIT ROUTE FROM TOLL ZONE TO SIGNS MAY USE EITHER SHOULDER.
7. CONDUIT ROUTE MAY BE TRENCHED IN TANDEM WITH FIBER TRUNKLINE, BUT MAY NOT USE CONDUIT DEDICATED TO FIBER.
8. RUN A SINGLE 3-WIRE CONDUCTOR FROM SIGNS TO VAULT. STORE CABLE AT JUNCTION BOXES AND VAULT FOR CONNECTION BY TSI.

LEGEND

- TRENCH OR BORED CONDUIT (2 X 2" HDPE)
- TOLL SITE ELECTRICAL PULLBOX
- ▣ ELECTRICAL PULL BOX FOR WRONG-WAY SIGN
- WRONG-WAY SIGN, PEDESTAL & FOUNDATION

CONDUIT FILL CALLOUTS

- ① 1 x 3-WIRE CONDUCTOR (10 AWG)

ATKINS 5200 77 Center Drive, Suite 50
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ITS STANDARD DETAILS
WRONG-WAY DRIVER DETECTION
MAINLINE SIGN INFRASTRUCTURE

SCALE: N.T.S.	NORTH CAROLINA TURNPIKE AUTHORITY	SHEET NO.
DATE: May 2018		W-1
DWG. BY: D. Jones		
DESIGN BY: D. Jones		
APPROVED: A. Lelowski		

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Prepared in the Offices of:

FLATIRON | **BRANCH CIVIL**

PLANS PREPARED BY: **Gannett Fleming** Excellence Delivered As Promised

One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

ITS STANDARD DETAILS

DIVISION 05 WAKE COUNTY RALEIGH

PLAN DATE: 7/9/2020 REVIEWED BY: ANTHONY BARBETTO

PREPARED BY: MARK TRANSUE REVIEWED BY: JASON MCCARTNEY

SCALE: NO SCALE

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER ANTHONY M. BARBETTO SEAL 047143

SIGNATURE: Anthony M. Barbetto DATE: 01/20/2021