

2018 AND 2019 ITD WBS: 33879.2.97 & 33879.2.98

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY - DRUM
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL AND DELINEATION
1700.01	ELECTRICAL SERVICE OPTIONS
1715.01	UNDERGROUND CONDUIT
1716.01	JUNCTION BOXES
1725.01	INDUCTIVE DETECTIVE LOOPS
1740.01	METAL POLES
1742.01	METAL POLE FOUNDATIONS
1751.01	CONTROLLERS AND CABINETS - ELECTRICAL SERVICE GROUNDING
1751.02	CONTROLLERS AND CABINETS - ELECTRICAL SERVICE DETAILS
1752.01	CONTROLLERS AND CABINETS - POWER, GROUND AND AUXILIARY POWER SYSTEMS

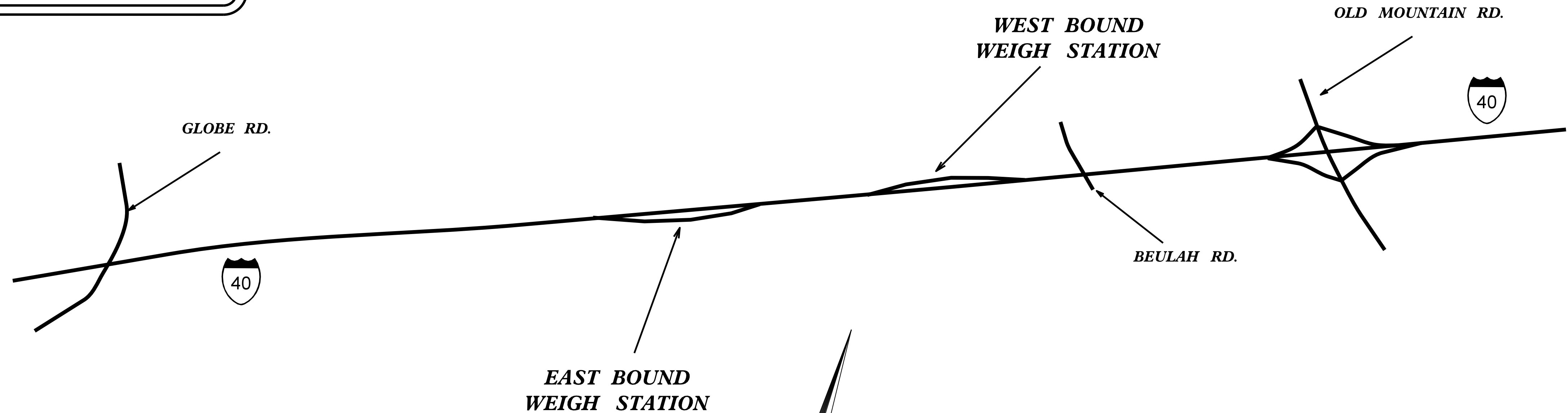
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

**PLANS FOR PROPOSED
I-40 EASTBOUND AND WESTBOUND
WEIGH STATION UPGRADES**

THIS PROJECT CONSISTS OF FURNISHING AND INSTALLING EQUIPMENT AND MATERIALS FOR THE INSTALLATION OF A WEIGH IN MOTION SYSTEM, TRUCK BYPASS SYSTEM, TIRE MONITORING SYSTEM, AUTOMATED LICENSE PLATE READER, AND IMAGE CAPTURE CAMERA NEAR STATESVILLE, NORTH CAROLINA. RELATED MATERIALS CONSIST OF LOCAL CABINETS AND CONTROLLERS, WEIGH IN MOTION SENSORS, ALPR CAMERAS, SOFTWARE, INFRARED ILLUMINATORS, CMS, TMS SENSORS, DATABASE INTERFACE, METAL POLES, METAL POLES WITH MAST ARMS, METAL POLE FOUNDATION, IMAGE CAPTURE CAMERA ASSEMBLY, AND GUARDRAIL.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.	ITD 2018/2019	ITS-1
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



INDEX OF PLANS

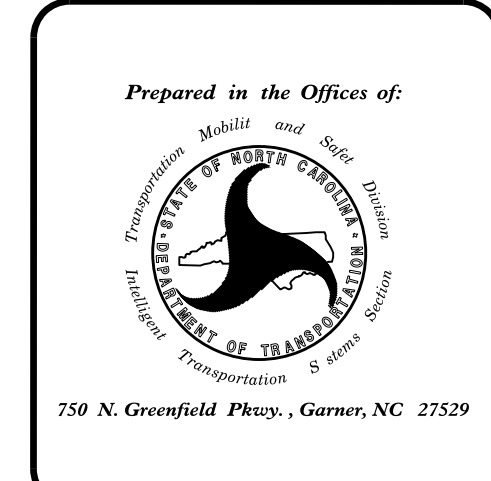
SHEET NUMBER	LOCATION / DESCRIPTION
ITS 1	TITLE SHEET
ITS 2A	LEGEND, GENERAL NOTES, AND ABBREVIATIONS
ITS 2B	CONSTRUCTION NOTES
ITS 3A-3B	PROJECT AREA OVERVIEW
ITS 4-15	COMMUNICATIONS CABLE AND CONDUIT ROUTING
ITS 16	ADVANCE LOCATION AND WIM DETAIL
ITS 17	IMAGE CAPTURE CCTV, TRANSPONDER READER, ALPR SYSTEM, AND GUARDRAIL
ITS 18	CLASSIFICATION LOCATION DETAIL
ITS 19	NOTIFICATION LOCATION, AVI READER, AND CHANGEABLE MESSAGE SIGNS
ITS 20	COMPLIANCE LOCATION DETAIL
ITS 21	METAL POLE WITH MAST ARM
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ITS 25	SYSTEM SORT DECISION DATA FLOW
ITS 26	TRANSFORMER DETAILS
SIGN 1-9	SIGNING PLANS

2018 STANDARD SPECIFICATIONS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NCDOT CONTACTS:
TRANSPORTATION MOBILITY AND SAFETY

MEREDITH MCDIARMID, P.E.
STATE TRANSPORTATION SYSTEMS MANAGEMENT
& OPERATIONS ENGINEER



ENGLISH

ALL DIMENSIONS IN THESE
PLANS ARE IN FEET
UNLESS OTHERWISE NOTED

SEAL

DocuSigned by:
Andrew J. Skuce
0262888C8B5C464

8/13/2021

GENERAL NOTES

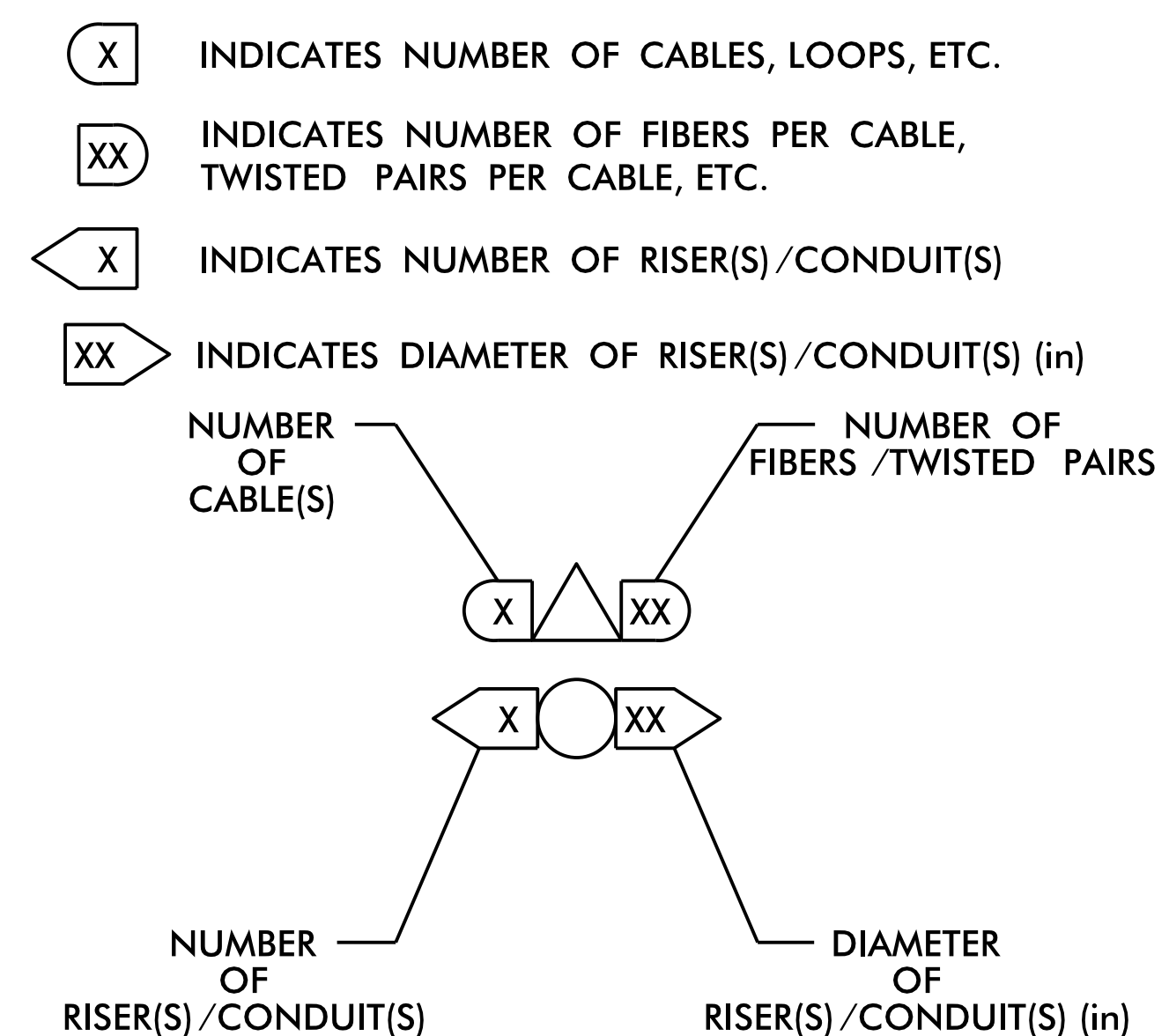
- OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO INSTALLATION FOR ITEMS TO BE INSTALLED AS PART OF THIS PROJECT.
- BURIED UTILITIES AND STRUCTURES: PIPELINES, STORM SEWERS, POWER CABLES, UTILITY CABLES, AND OTHER PUBLICLY AND PRIVATELY OWNED UNDERGROUND OBSTRUCTIONS MAY EXIST ADJACENT TO AND WITHIN THE ROADWAY RIGHT-OF-WAY WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT. INVESTIGATE THE LOCATION OF SUCH BURIED UTILITIES AND STRUCTURES WITH PUBLIC AND PRIVATE UTILITIES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER OF ALL AFFECTED UTILITIES FOR WORK THAT MAY IMPACT ANY UTILITY FACILITY.
- ALL WORK SHOWN ON THESE PLANS IS TO BE PERFORMED BY THE CONTRACTOR UNLESS IT IS SPECIFICALLY NOTED THAT THE WORK WILL BE PERFORMED BY OTHERS.

LEGEND		
PROPOSED		EXISTING
	TRENCHED CONDUIT	
	DIRECTIONAL DRILLED CONDUIT	
	ELECTRICAL SERVICE/ EQUIPMENT CABINET DISCONNECT	
	CAMERA POLE	N/A
	JUNCTION BOX	
	STANDARD INDUCTIVE LOOP DETECTOR	N/A
	CAMERA ASSEMBLY	N/A
	EQUIPMENT CABINET	N/A
	PIEZOELECTRIC QUARTZ SENSOR	N/A
	DRILL THROUGH SHOULDER FOR CONDUIT	N/A
	TIRE MONITORING SENSOR	N/A
	GUARDRAIL	
	METAL POLE WITH MAST ARM	
	CHANGEABLE MESSAGE SIGN	
	TRANSPONDER/AVI READER	
	TRANSFORMER ON WOOD PEDESTAL	N/A

ABBREVIATIONS

AVI	AUTOMATIC VEHICLE IDENTIFICATION
ALPR	AUTOMATED LICENSE PLATE READER
HDPE	HIGH DENSITY POLYETHYLENE
L	LOOP DETECTOR
N.T.S.	NOT TO SCALE
WIM	WEIGH IN MOTION
PQS	PIEZOELECTRIC QUARTZ SENSOR
S	SENSOR
NCSHP	NORTH CAROLINA STATE HIGHWAY PATROL
TMS	TIRE MONITORING SENSOR

CONSTRUCTION NOTE SYMBOLOGY KEY



**DOCUMENT NOT CONSIDERED FINAL
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Prepared in the Offices of: 750 N. Greenfield Place, Garner, NC 27529	LEGEND, GENERAL NOTES AND ABBREVIATIONS		 Andrew J. Skuce ENGINEER SEAL 050152
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY:	PREPARED BY: A. J. SKUCE P.E.	
SCALE NOT TO SCALE	REVISIONS INIT. DATE	REVISIONS INIT. DATE	DocuSigned by: Andrew J. Skuce 026788C85C464 SIGNATURE
			DATE 8/13/2021

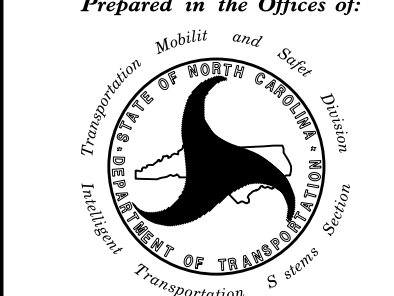
- 1 INSTALL THREE-WIRE COPPER FEEDER CONDUCTORS
- 2 INSTALL FOUR-WIRE COPPER FEEDER CONDUCTORS
- 3 NOT USED
- 3A INSTALL ALPR CABLE(S) *
- 3B INSTALL AVI CABLE(S) *
- 3C INSTALL WIMSORT SIGNAL CABLE(S) *
- 3D INSTALL PIEZOELECTRIC QUARTZ SENSOR CABLES *
- 3E INSTALL LOOP WIRE
- 3F INSTALL LEAD-IN CABLE
- 3G INSTALL CCTV VIDEO AND POWER CABLES *
- 3H INSTALL FOUR #8 COPPER FEEDER CONDUCTORS
- 3I INSTALL DMS CONTROL AND POWER CABLES
- 3J INSTALL TIRE MONITORING SENSOR CABLES
- 3K INSTALL COAXIAL CABLE
- 3L INSTALL CAT5 CABLE
- 4 INSTALL SMFO CABLE
- 5 INSTALL MMFO CABLE
- 6 INSTALL FIBER OPTIC DROP CABLE
- 7 INSTALL TRACER WIRE
- 8 TRENCH
- 8A SAW CUT PAVEMENT
- 9 INSTALL PVC CONDUIT
- 10 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 12 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 13 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 14 INSTALL POLYETHYLENE CONDUIT
- 15 DIRECTIONAL DRILL CONDUIT
- 16 BORE AND JACK CONDUIT
- 17 INSTALL CABLE(S) IN EXISTING CONDUIT
- 18 INSTALL CABLE(S) IN NEW CONDUIT
- 19 INSTALL CABLE(S) IN EXISTING RISER
- 20 INSTALL CABLE(S) IN NEW RISER
- 21 INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS

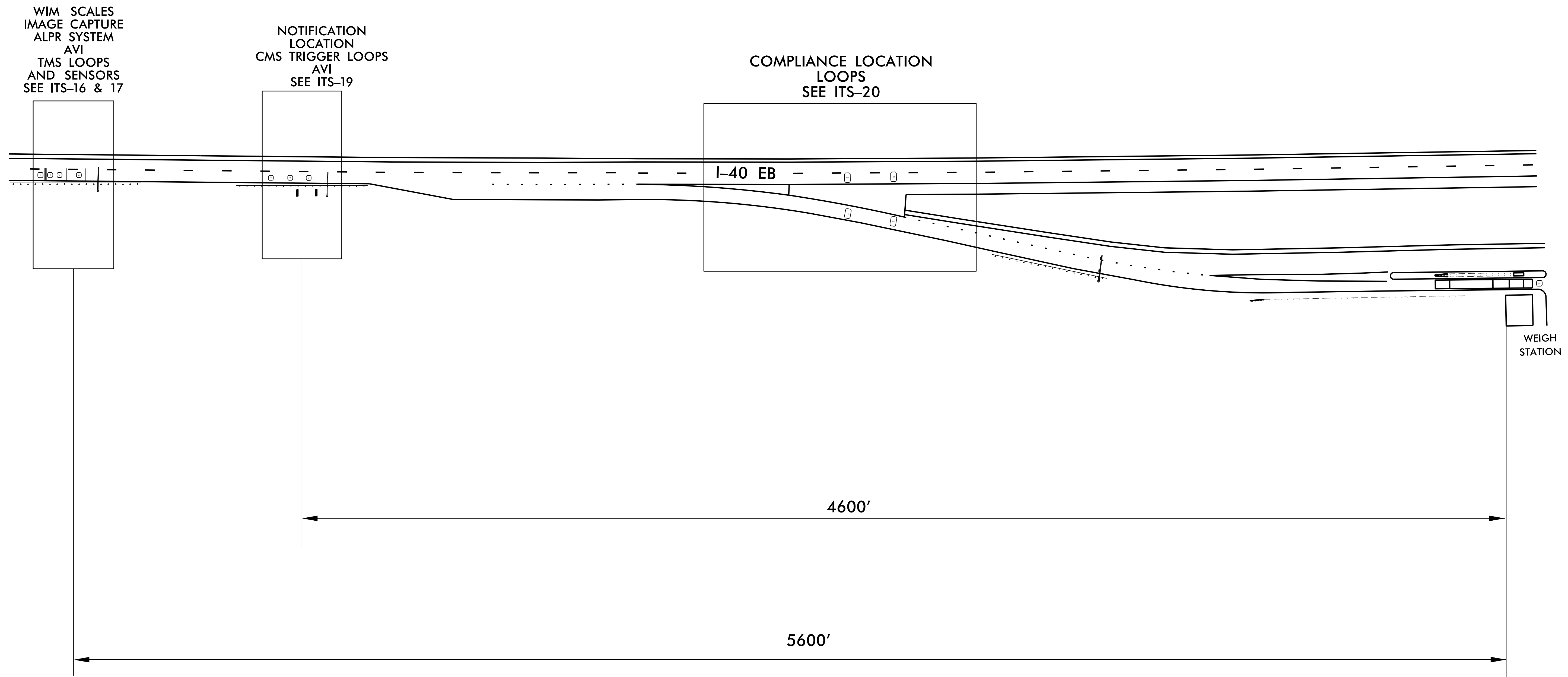
- 21A INSTALL CABLE(S) IN NEW CONDUIT STUB-OUTS
- 22 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 23 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 24 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 25 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 26 TERMINATE COMMUNICATIONS CABLE ON EXISTING TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 27 INSTALL NEW TELEMETRY INTERFACE PANEL IN TRAFFIC SIGNAL CONTROLLER CABINET
- 28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
- 29 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 30 MODIFY EXISTING SPLICE CENTER
- 31 INSTALL POLE MOUNTED CABINET
- 32 INSTALL BASE MOUNTED CABINET WITH EXTENDER
- 33 REMOVE EXISTING SPLICE CABINET
- 34 INSTALL CABINET FOUNDATION
- 35 REMOVE EXISTING CABINET FOUNDATION
- 36 INSTALL CCTV CAMERA ASSEMBLY
- 37 INSTALL CCTV CAMERA WOOD POLE
- 38 INSTALL CAMERA METAL POLE AND FOUNDATION
- 39 INSTALL JUNCTION BOX
- 40 INSTALL OVERSIZED JUNCTION BOX
- 41 INSTALL SPECIAL OVERSIZED JUNCTION BOX
- 42 INSTALL WOOD POLE
- 43 REMOVE EXISTING WOOD POLE
- 44 INSTALL AERIAL GUY ASSEMBLY
- 45 INSTALL STANDARD GUY ASSEMBLY
- 46 INSTALL SIDEWALK GUY ASSEMBLY
- 47 INSTALL MESSENGER CABLE
- 48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
- 49 REMOVE EXISTING COMMUNICATIONS CABLE
- 50 INSTALL TELEPHONE SERVICE
- 51 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 52 INSTALL DELINEATOR MARKER
- 53 STORE 50 FEET OF COMMUNICATIONS CABLE
- 54 INSTALL ISOLATION TRANSFORMER
- 55 INSTALL INDUSTRIAL ETHERNET SWITCH

- 56 INSTALL VIDEO ENCODER
- 56A INSTALL VIDEO DECODER
- 57 MODIFY EXISTING ELECTRICAL SERVICE
- 58 INSTALL NEW ELECTRICAL SERVICE
- 58A INSTALL EQUIPMENT CABINET DISCONNECT
- 59 INSTALL PIEZOELECTRIC QUARTZ SENSORS
- 60 INSTALL AUTOMATED LICENSE PLATE RECOGNITION SYSTEM
- 61 INSTALL AUTOMATED USDOT RECOGNITION SYSTEM
- 62 INSTALL IMAGE CAPTURE CCTV CAMERA ASSEMBLY
- 63 INSTALL STANDARD INDUCTIVE LOOP
- 64 INSTALL OVERHEIGHT DETECTOR ASSEMBLY WITH METAL POLE AND FOUNDATION
- 65 INSTALL STEEL POLE, MASTARM AND FOUNDATION
- 66 INSTALL LED LANE CONTROL SIGN
- 67 INSTALL TRANSPONDER/AVI READER
- 68 INSTALL CHANGABLE MESSAGE SIGN, STRUCTURE, AND FOUNDATION
- 69 INSTALL STEEL POLE FOUNDATION
- 70 INSTALL TIRE MONITORING SENSORS
- 71 INSTALL TIRE MONITORING ELECTRONICS

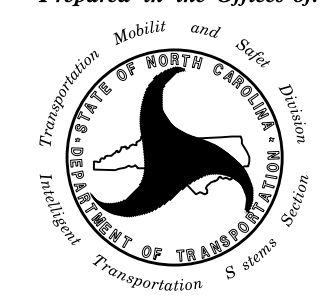
* CABLES SHALL BE PER EQUIPMENT MANUFACTURER'S SPECIFICATIONS AND RATED FOR WET LOCATIONS.

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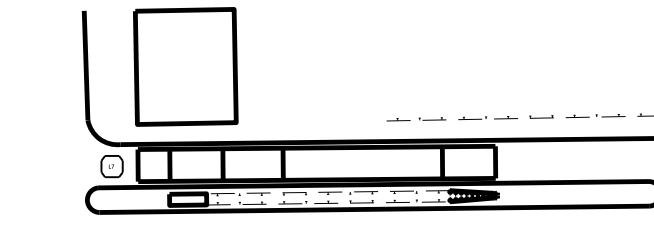
 Prepared in the Offices of: Transportation, Mobile and Social Planning ENGINEERING OF NORTH CAROLINA 750 N. Greenfield Place, Garner, NC 27529	CONSTRUCTION NOTES		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050152 ANDREW J. SKUCE
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.	REVISIONS INIT. DATE	
SCALE NOT TO SCALE			DATE 8/13/2021



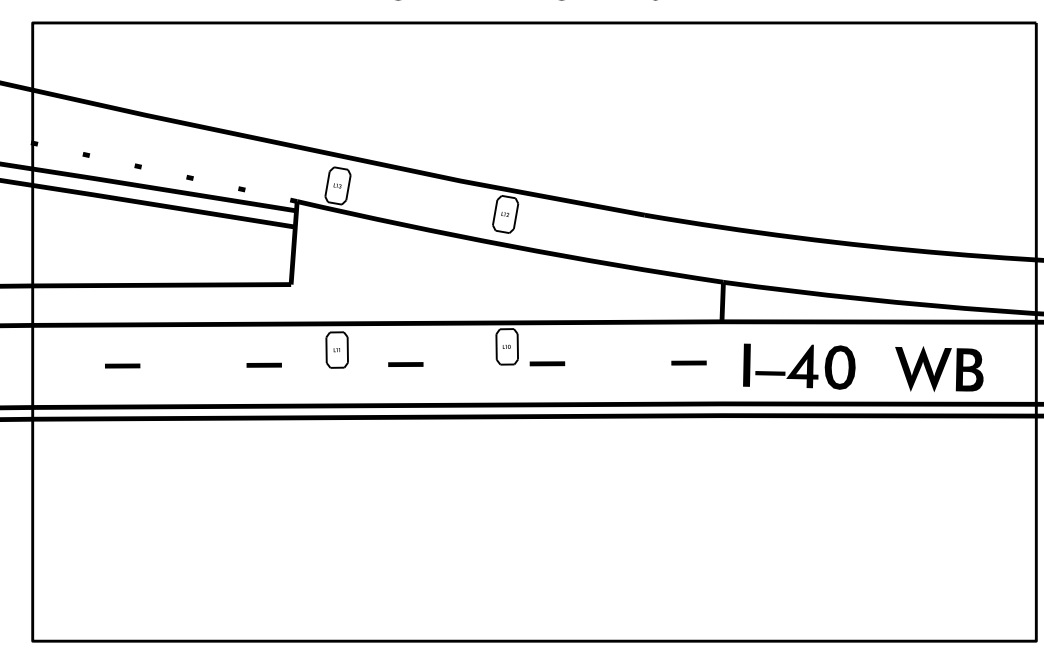
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 Prepared in the Offices of: TRANSPORTATION, MOBILITY AND SAFETY DIVISION STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 750 N. Greenfield Pkwy., Garner, NC 27529	EASTBOUND PROJECT AREA OVERVIEW		SEAL NORTH CAROLINA PROFESSIONAL SEAL 050152 ENGINEER ANDREW J. SKUCE
	DIVISION 12 IREDELL COUNTY STATESVILLE	PLAN DATE: AUGUST 2021 REVIEWED BY:	
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WEIGH
STATION

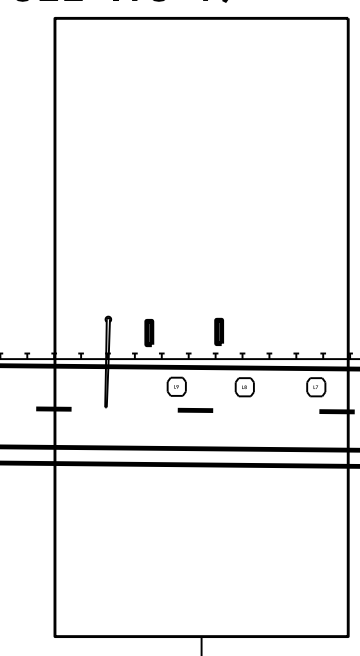


COMPLIANCE LOCATION
LOOPS
SEE ITS-20

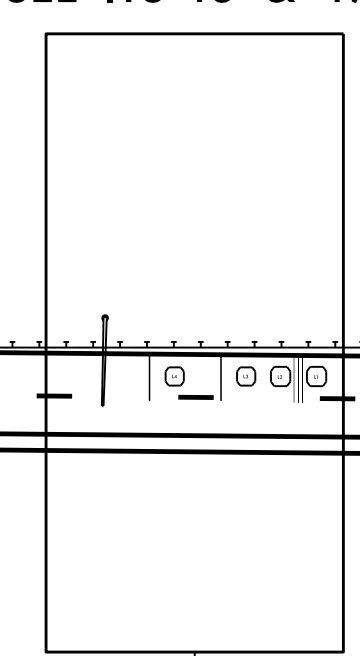


I-40 WB

NOTIFICATION
LOCATION
CMS TRIGGER LOOPS
AVI
SEE ITS-19



WIM SCALES
IMAGE CAPTURE
ALPR SYSTEM
AVI
TMS LOOPS
AND SENSORS
SEE ITS-16 & 17



2500'

4700'

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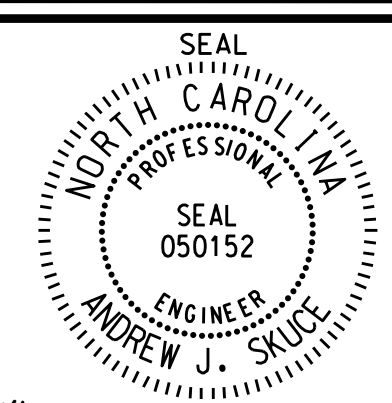
WESTBOUND
PROJECT AREA
OVERVIEW

DIVISION 12 IREDELL COUNTY STATESVILLE

PLAN DATE: AUGUST 2021 REVIEWED BY:

PREPARED BY: A. J. SKUCE P.E.

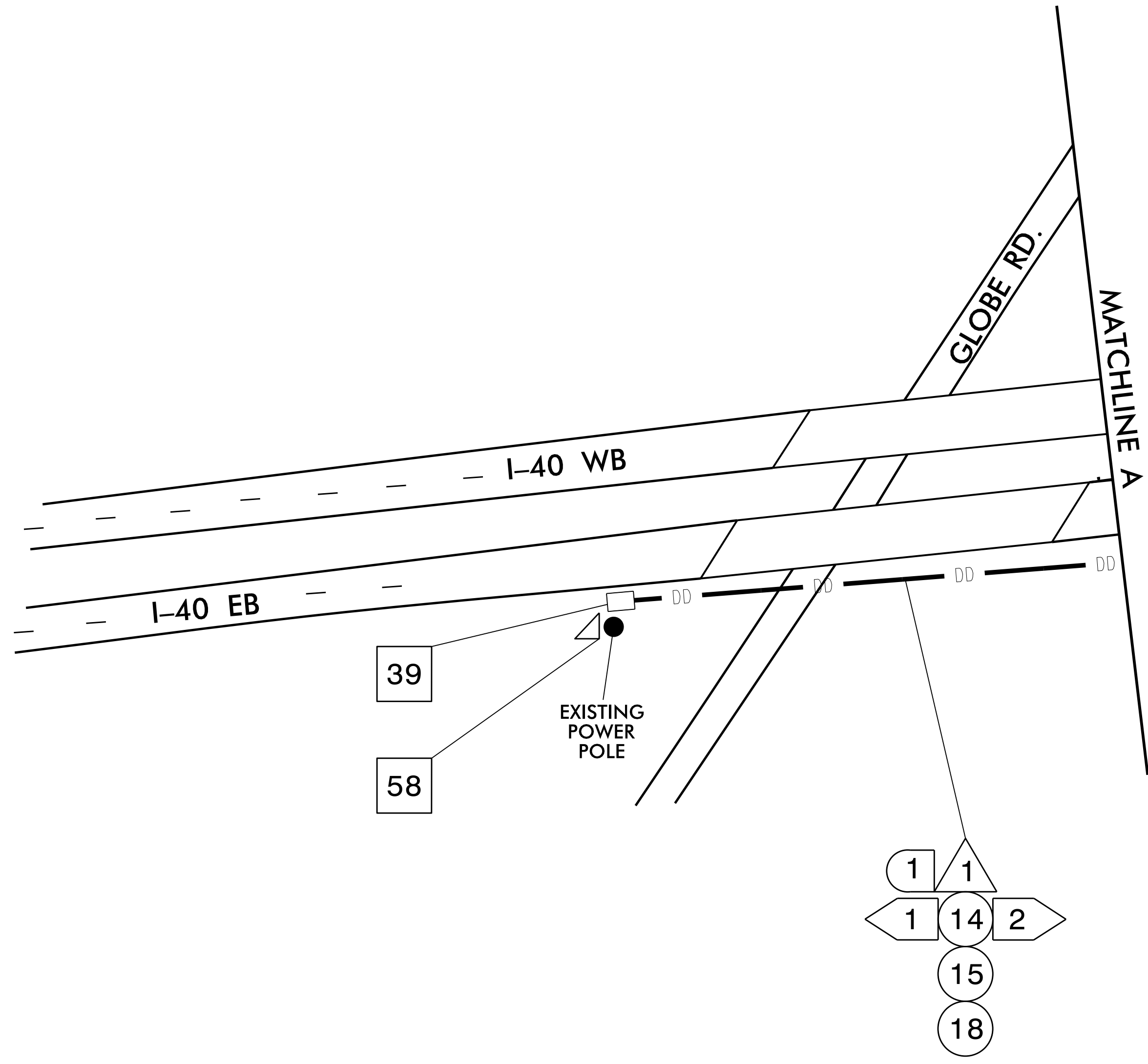
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Andrew J. Skuce
0202888C885C404

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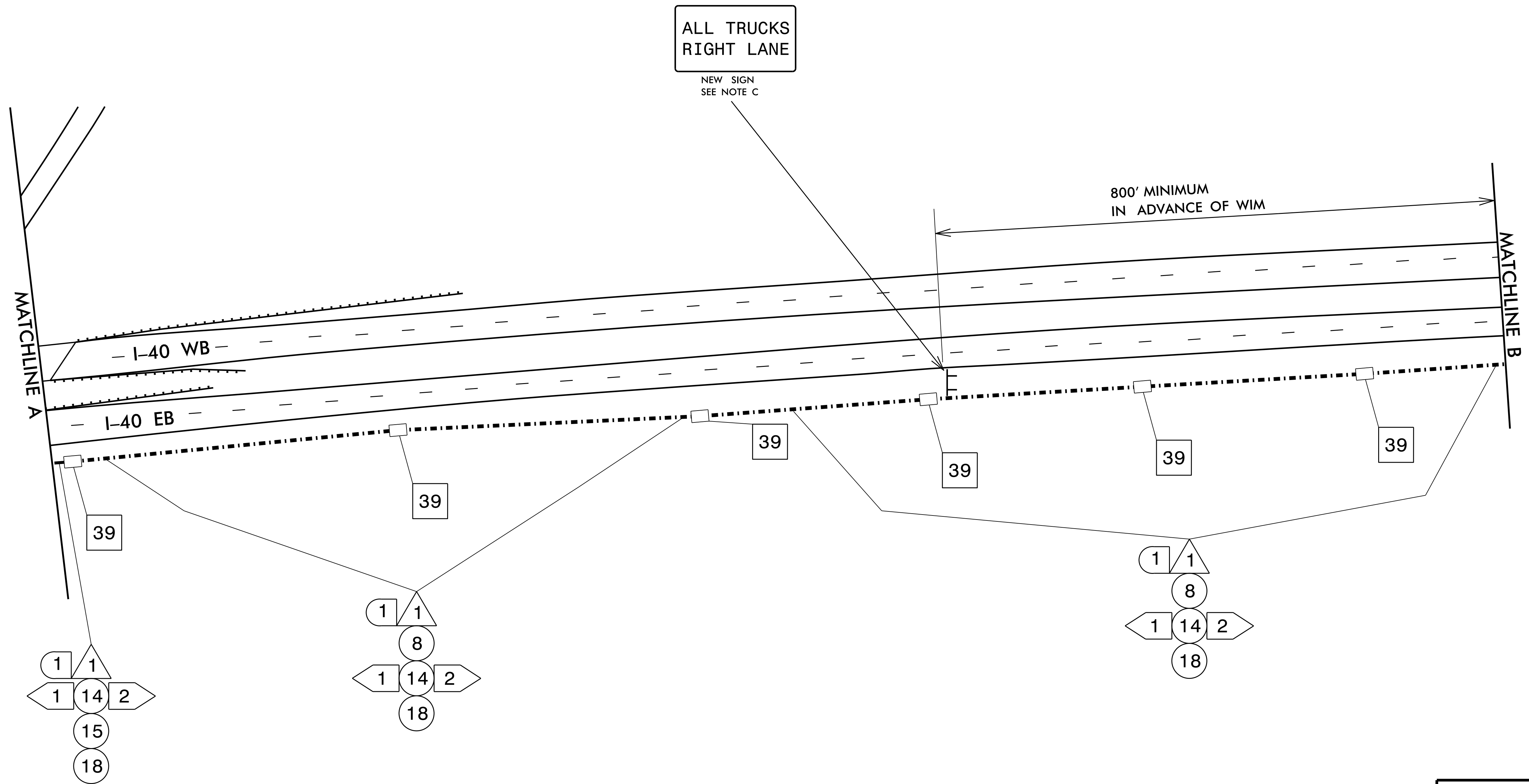
8/13/2021
DATE



- NOTES:
- A. THE FIBER OPTIC CABLE(S) SHALL BE ISOLATED FROM ALL OTHER CABLES USING ONE 2 INCH CONDUIT AND SEPERATE JUNCTION BOXES.
 - C. SEE SIGNING PLANS FOR DETAILS ON INSTALATION, MODIFICATION, RELOCATION OR REMOVAL OF SIGNING.
 - D. GUARDRAIL LOCATION IS CONCEPTUAL. DIVISION TO HANDLE GUARDRAIL DESIGN AND INSTALLATION.

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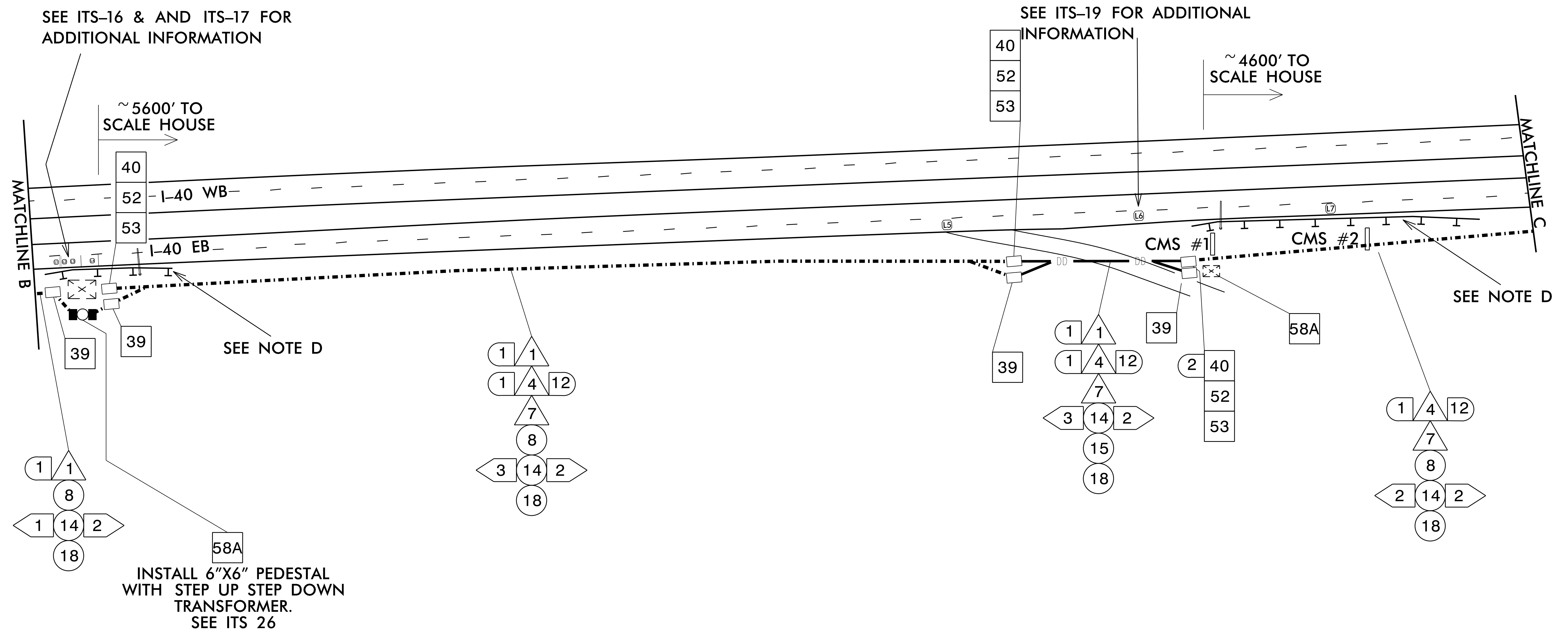
	COMMUNICATION CABLE AND CONDUIT ROUTING		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE 0 50' 1" = 50'	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:	DocuSigned by: Andrew J. Skuce 8/13/2021 DATE



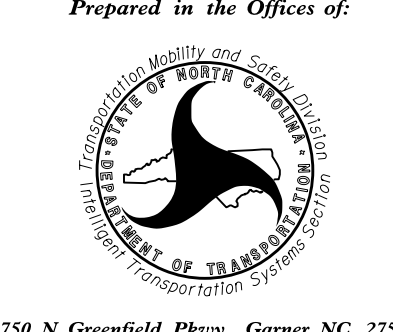

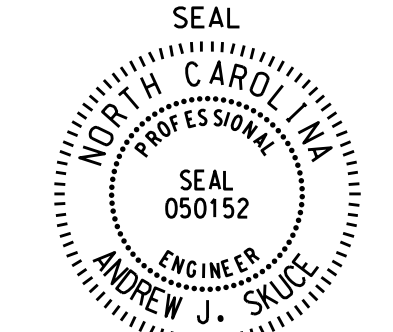
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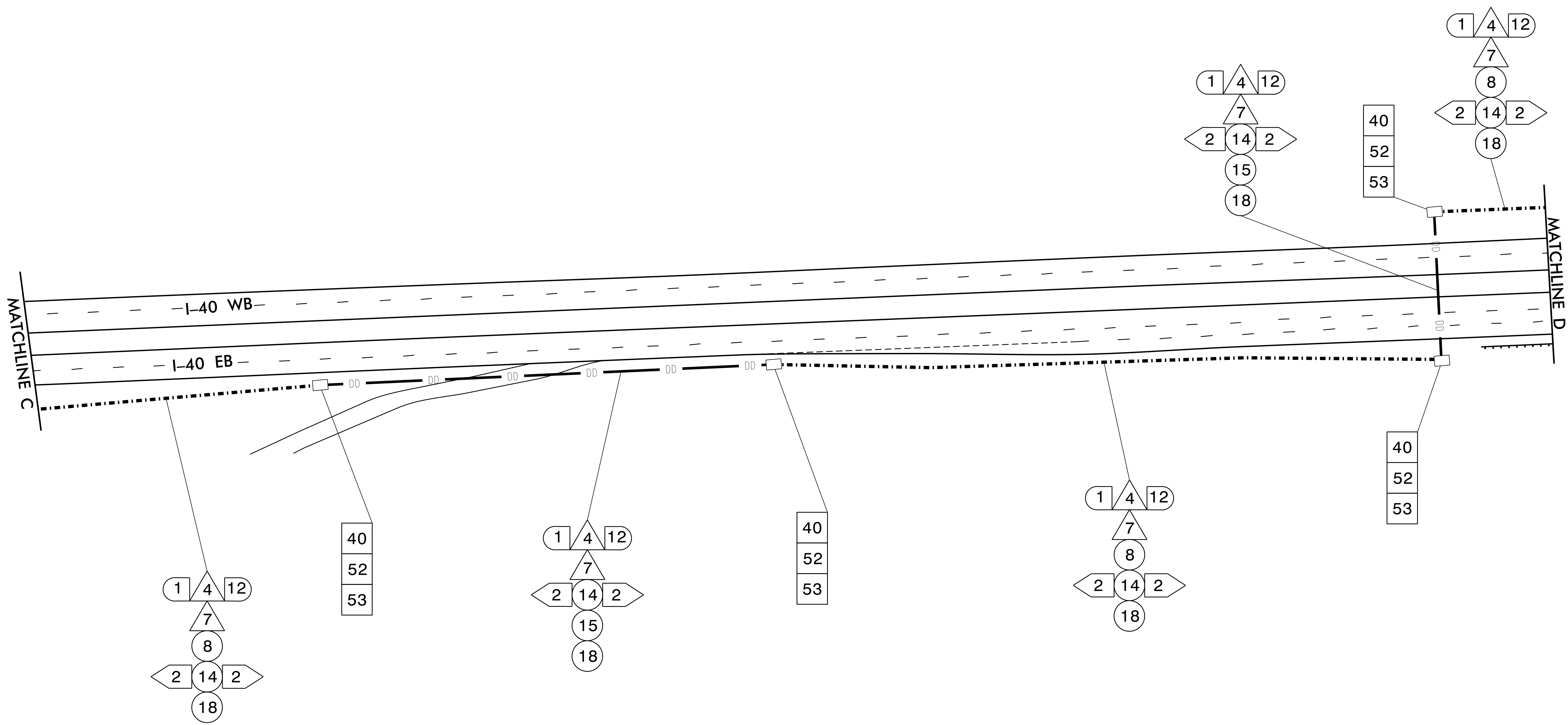
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	COMMUNICATION CABLE AND CONDUIT ROUTING	
	DIVISION 12 IREDELL COUNTY STATESVILLE	
Prepared in the Offices of: 	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE 0 50' 1" = 50'	REVISIONS	INIT. DATE
DocuSigned by: Andrew J. Skuce 8/13/2021		DATE



- NOTES:
- A. INSTALL METAL POLE WITH MAST ARM SIX (6) FEET BEHIND EXISTING GUARDRAIL.
 - B. THE FIBER OPTIC CABLE(S) SHALL BE ISOLATED FROM ALL OTHER CABLES USING ONE 2 INCH CONDUIT AND SEPERATE JUNCTION BOXES.
 - C. SEE SIGNING PLANS FOR DETAILS ON INSTALATION, MODIFICATION, RELOCATION OR REMOVAL OF SIGNING.
 - D. GUARDRAIL LOCATION IS CONCEPTUAL. DIVISION TO HANDLE GUARDRAIL DESIGN AND INSTALLATION.

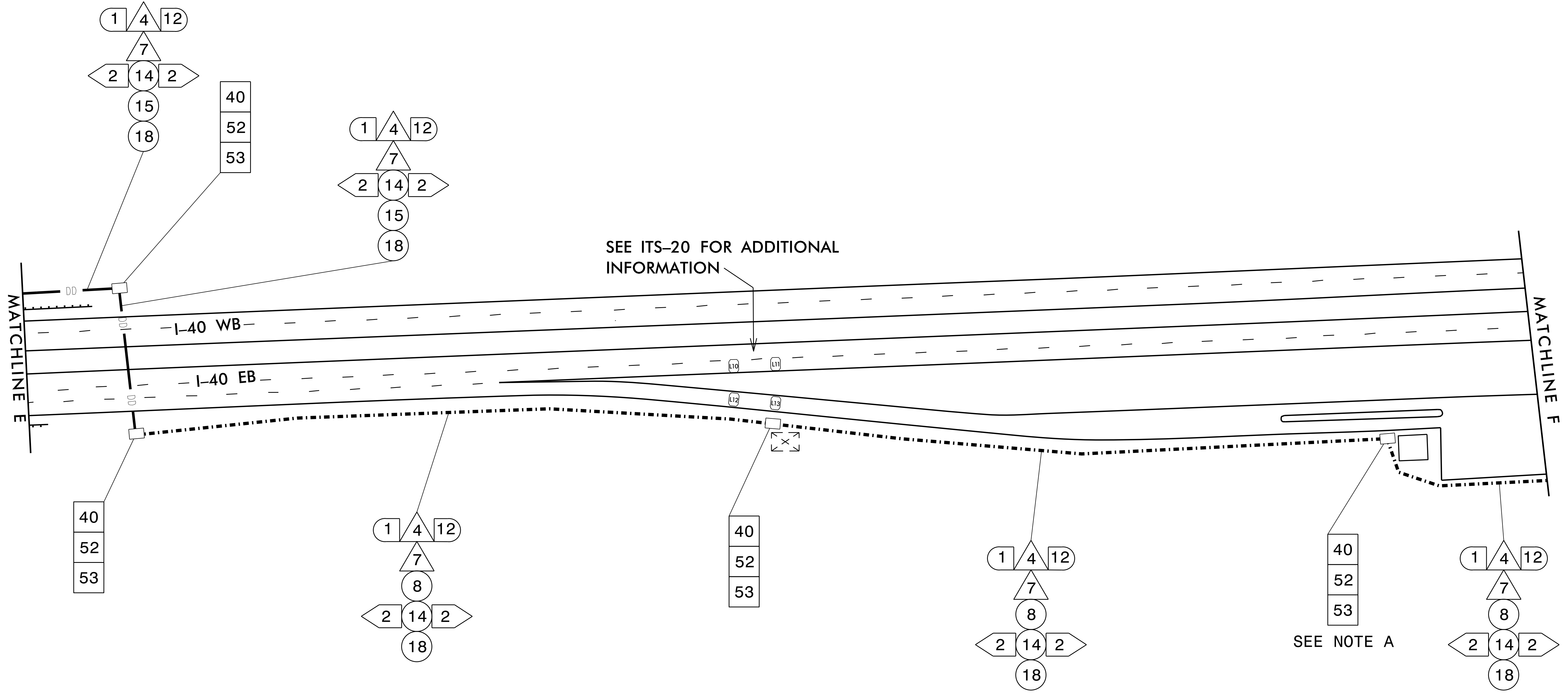
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 Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	COMMUNICATION CABLE AND CONDUIT ROUTING DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.
 SCALE 0 50' 1" = 50'	 Andrew J. Skuce 8/13/2021 DATE



- NOTES:**
- A. THE FIBER OPTIC CABLE(S) SHALL BE ISOLATED FROM ALL OTHER CABLES USING ONE 2 INCH CONDUIT AND SEPERATE JUNCTION BOXES.
 - B. SEE SIGNING PLANS FOR DETAILS ON INSTALATION, MODIFICATION, RELOCATION OR REMOVAL OF SIGNING.
 - C. GUARDRAIL LOCATION IS CONCEPTUAL. DIVISION TO HANDLE GUARDRAIL DESIGN AND INSTALLATION

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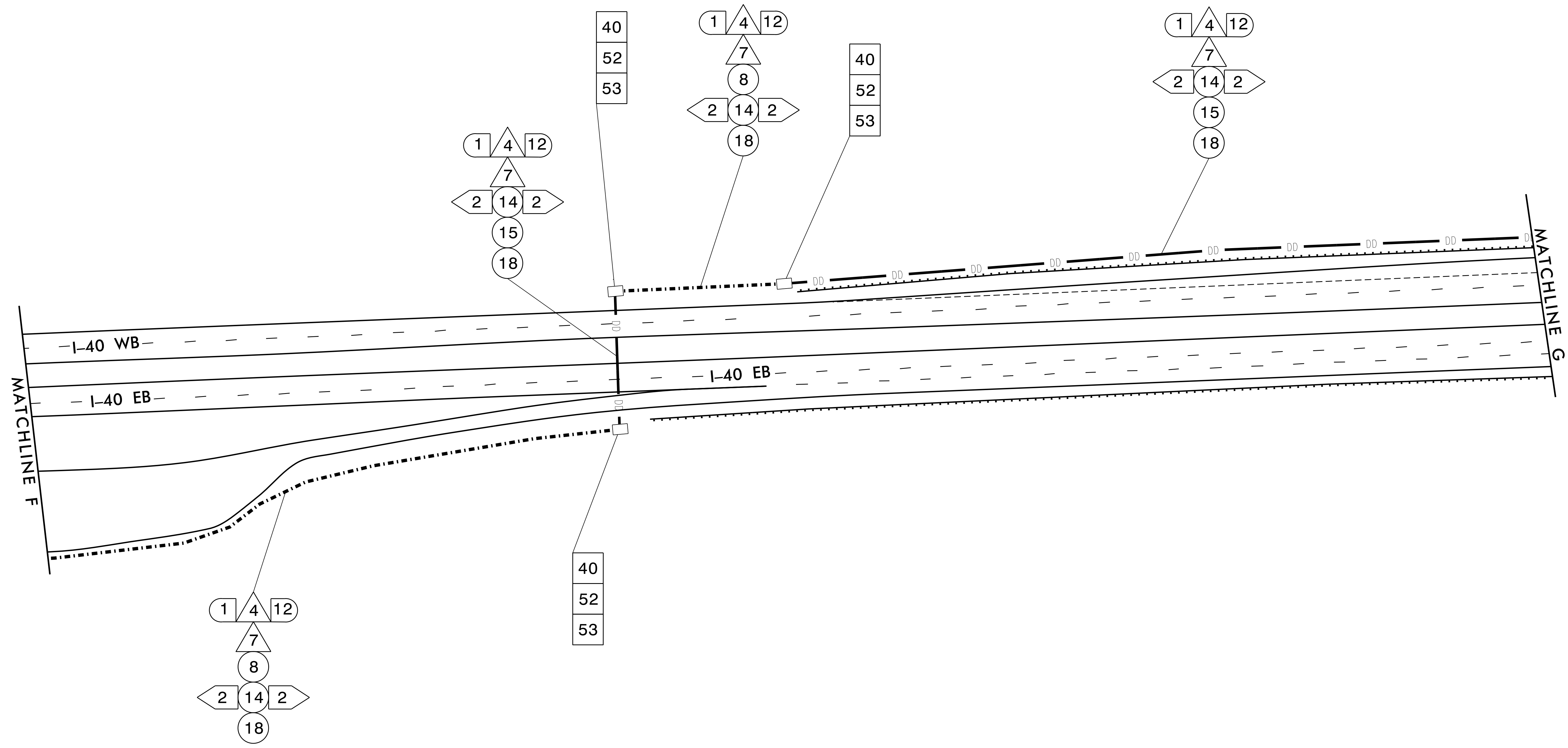
	COMMUNICATION CABLE AND CONDUIT ROUTING		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
750 N. Greenfield Pkwy., Garner, NC 27529	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:	SEAL 050152 ENGINEER ANDREW J. SKUCE
	REVISIONS	INIT. DATE	Andrew J. Skuce 8/13/2021 DATE



NOTES:
 A. ALL EQUIPMENT INSTALLED EAST OF THIS JUNCTION BOX IS CONSIDERED PART OF THE WESTBOUND WEIGH STATION UPGRADE AND SHALL BE INVOICED SEPARATE FROM THE EASTBOUND WEIGH STATION UPGRADE PER THE CONTRACT.

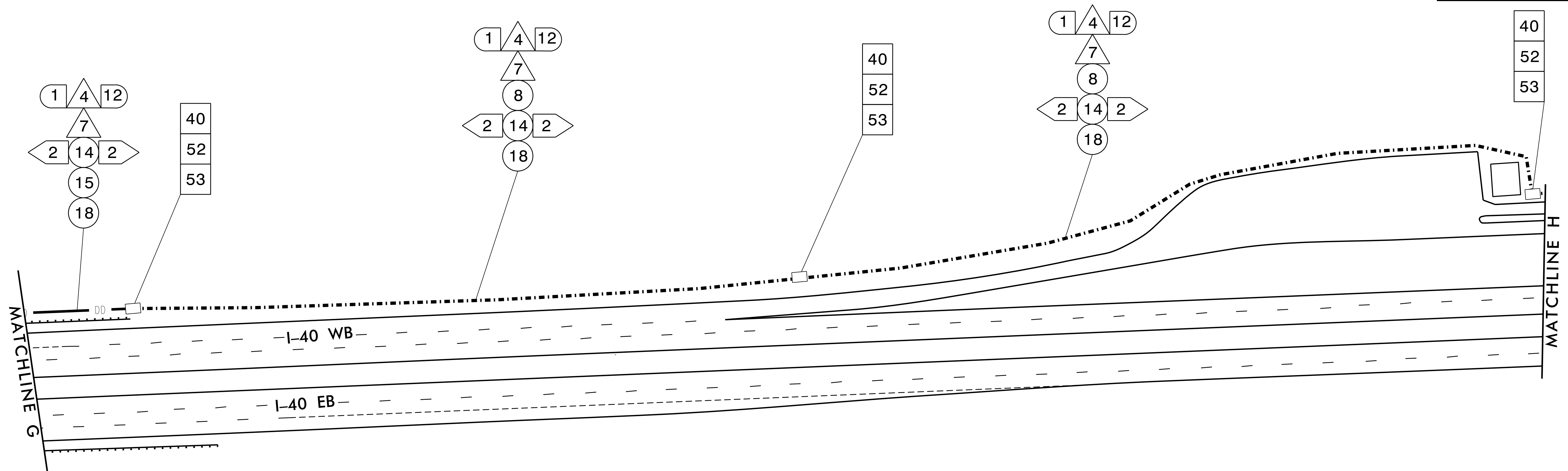
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	COMMUNICATION CABLE AND CONDUIT ROUTING		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
750 N. Greenfield Pkwy., Garner, NC 27529	PLAN DATE: AUGUST 2021	REVIEWED BY:	PREPARED BY: A. J. SKUCE P.E.
SCALE 0 50' 1" = 50'	REVISIONS	INIT.	DATE
DocuSigned by: Andrew J. Skuce 8/13/2021			DATE



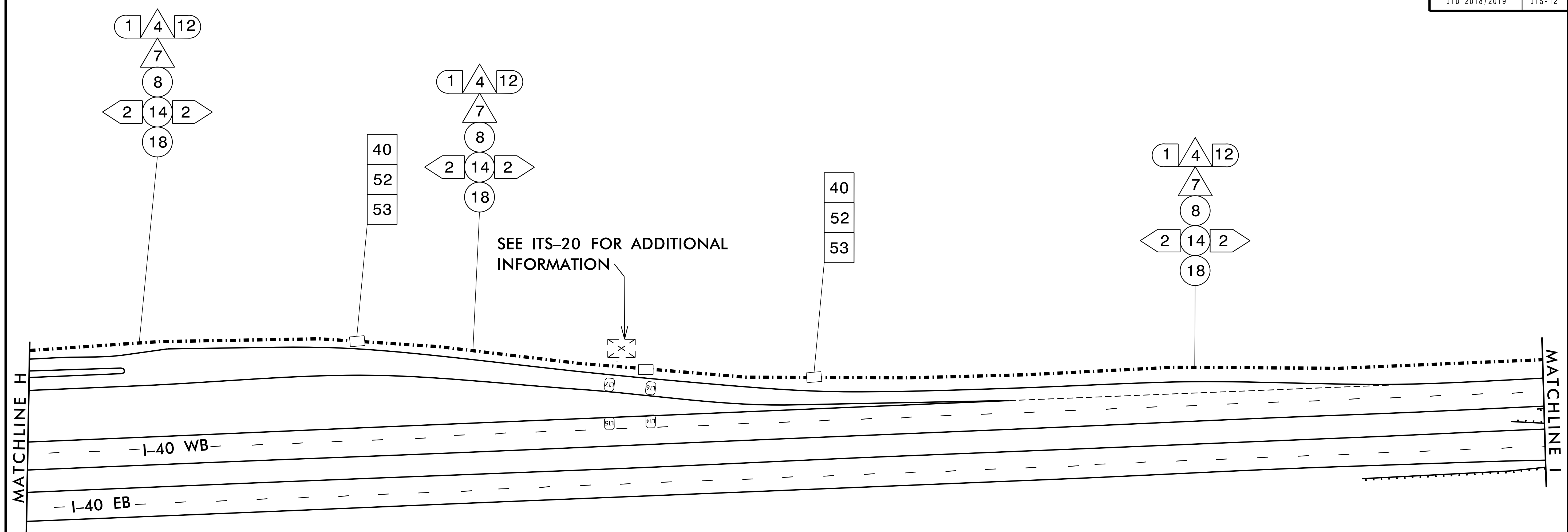
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	DIVISION 12 IREDELL COUNTY STATESVILLE	
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE 1" = 50' 	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY: REVISIONS INIT. DATE Andrew J. Skuce 8/13/2021 DATE



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	COMMUNICATION CABLE AND CONDUIT ROUTING		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ANDREW J. SKUCE 050152
	DIVISION 12 IREDELL COUNTY STATESVILLE		
Prepared in the Offices of: 	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:	REVISIONS INIT. DATE
750 N. Greenfield Pkwy., Garner, NC 27529 	SCALE: 1" = 50' 0 50'	Andrew J. Skuce 8/13/2021	DATE



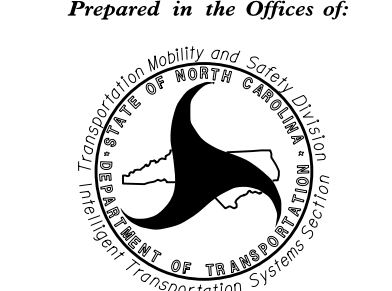
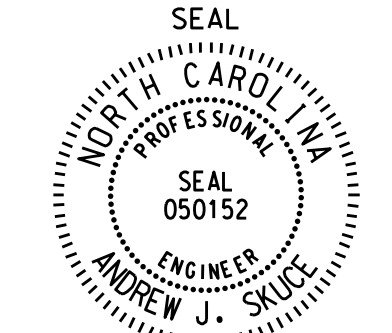
MATCHLINE H

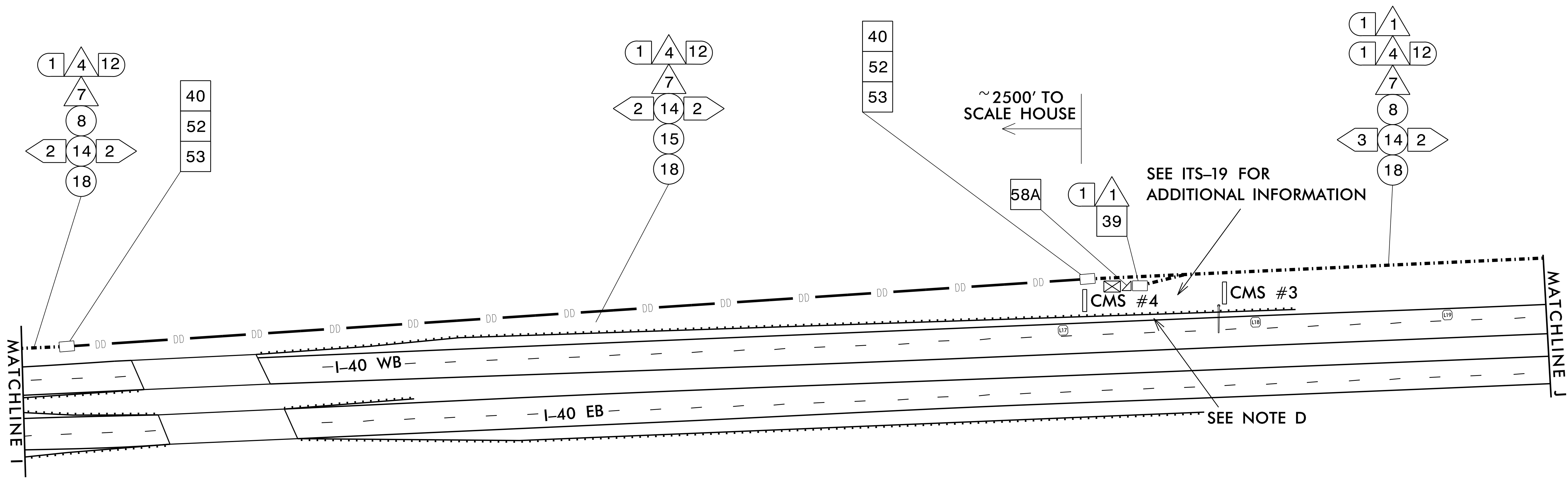
MATCHLINE I

- I-40 WB -

- I-40 EB -

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UNLESS ALL SIGNATURES COMPLETED**

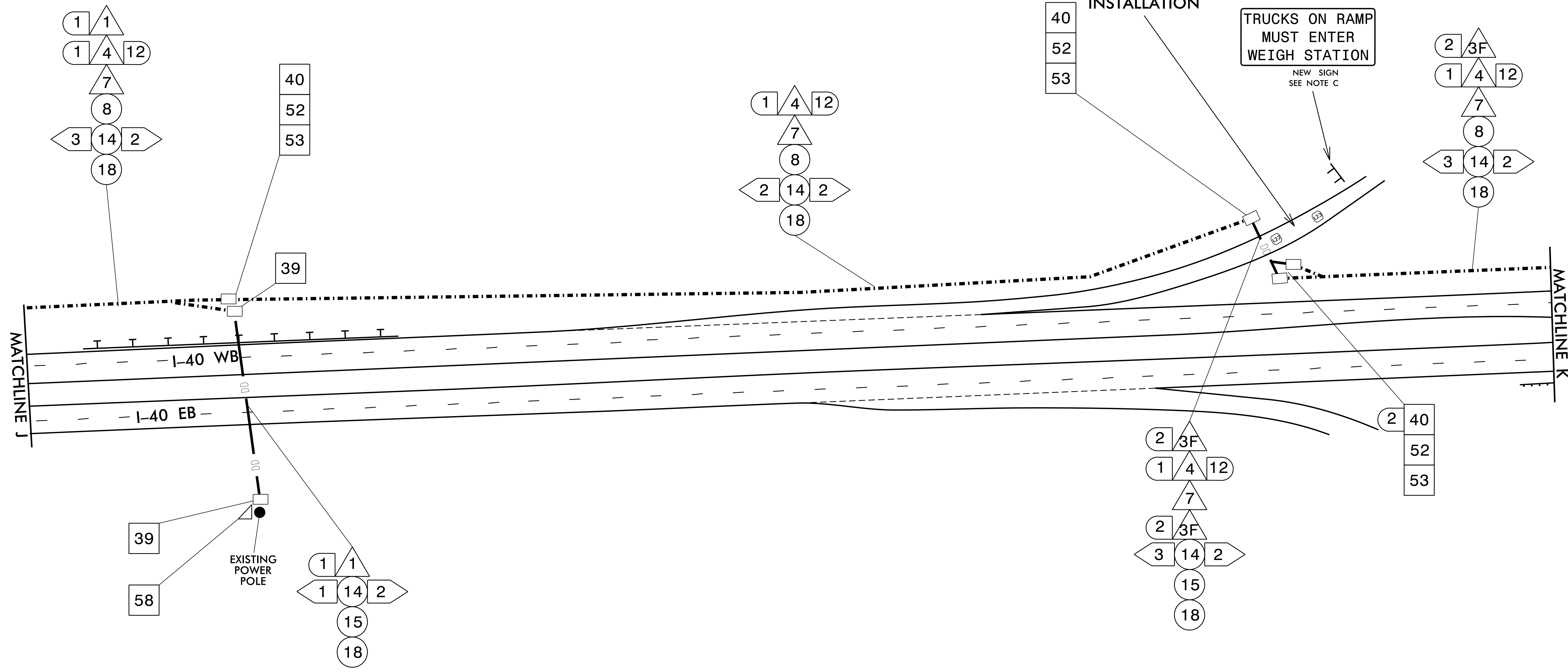
 Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529	COMMUNICATION CABLE AND CONDUIT ROUTING		 SEAL 050152 ENGINEER ANDREW J. SKUCE
	DIVISION 12 IREDELL COUNTY STATESVILLE		
PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:		DocuSigned by: <i>Andrew J. Skuce</i> 8/13/2021 <small>D26288BC885C464</small>
SCALE 0 50' 1" = 50'	REVISIONS	INIT.	DATE



- NOTES:**
- A. INSTALL METAL POLE WITH MAST ARM SIX (6) FEET BEHIND EXISTING GUARDRAIL.
 - B. THE FIBER OPTIC CABLE(S) SHALL BE ISOLATED FROM ALL OTHER CABLES USING ONE 2 INCH CONDUIT AND SEPERATE JUNCTION BOXES.
 - C. SEE SIGNING PLANS FOR DETAILS ON INSTALATION, MODIFICATION, RELOCATION OR REMOVAL OF SIGNING.
 - D. GUARDRAIL LOCATION IS CONCEPTUAL. DIVISION TO HANDLE GUARDRAIL DESIGN AND INSTALLATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

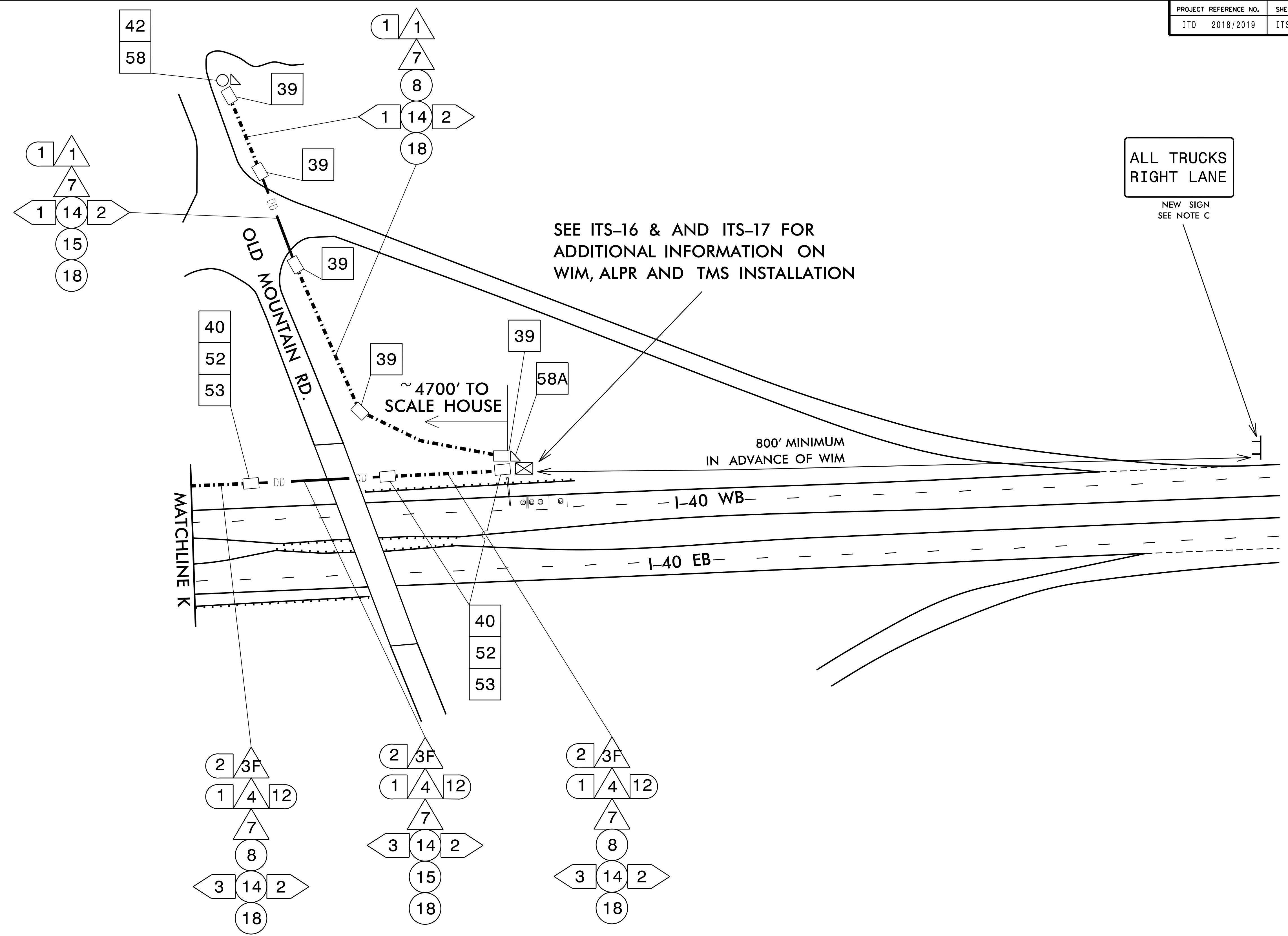
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	DIVISION 12 IREDELL COUNTY STATESVILLE	
750 N. Greenfield Pkwy., Garner, NC 27529	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:
SCALE 0 50' 1" = 50'	REVISIONS	INIT. DATE
DocuSigned by: Andrew J. Skuce 8/13/2021		SEAL ANDREW J. SKUCE ENGINEER 050152



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	COMMUNICATION CABLE AND CONDUIT ROUTING		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE 0 50' 1" = 50'	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:	DocuSigned by: Andrew J. Skuce 8/13/2021 DATE

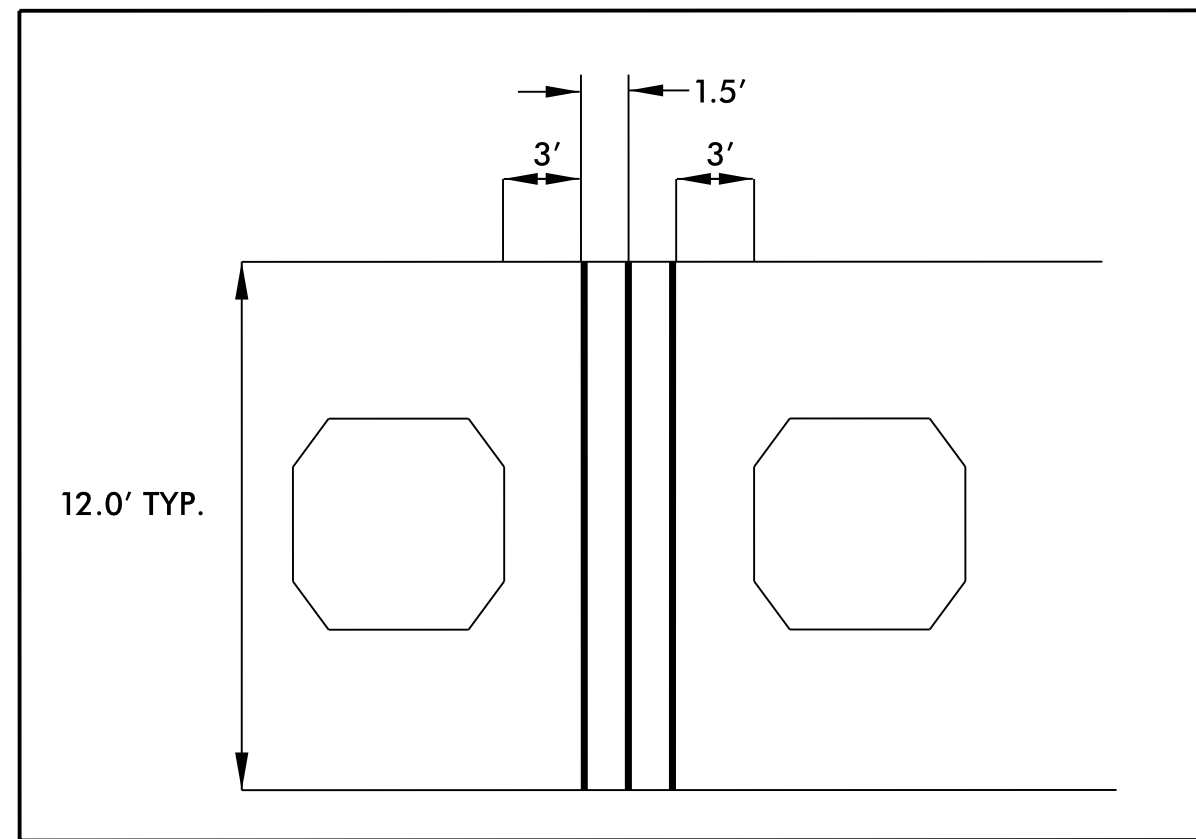


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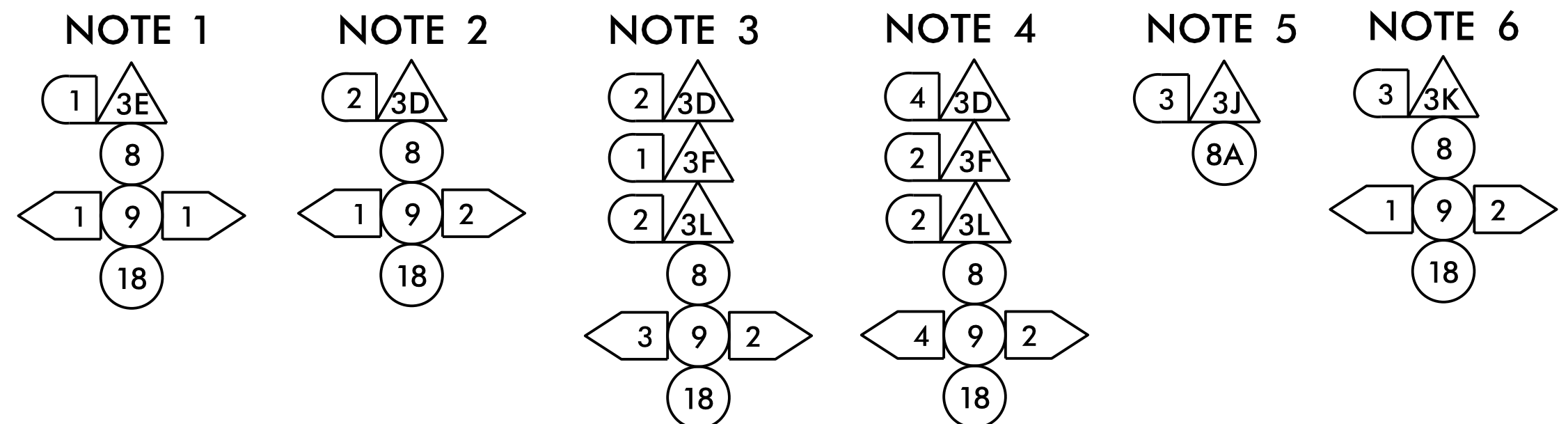
**DOCUMENT NOT CONSIDERED FINAL
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	COMMUNICATION CABLE AND CONDUIT ROUTING		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
750 N. Greenfield Pkwy., Garner, NC 27529 SCALE 1" = 50' 	PLAN DATE: AUGUST 2021 PREPARED BY: A. J. SKUCE P.E.	REVIEWED BY:	DocuSigned by: Andrew J. Skuce 8/13/2021 DATE

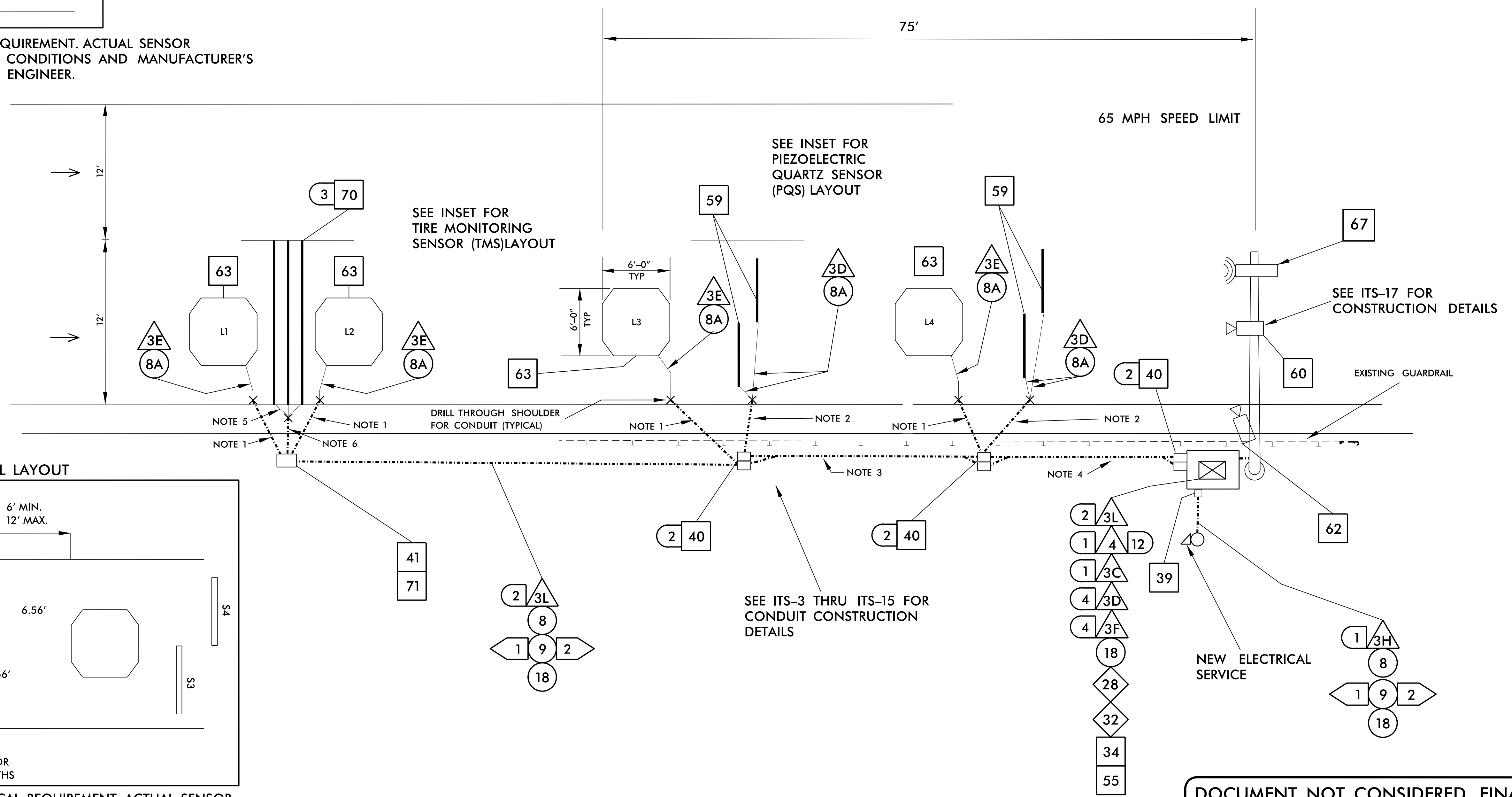
TMS DETAIL LAYOUT



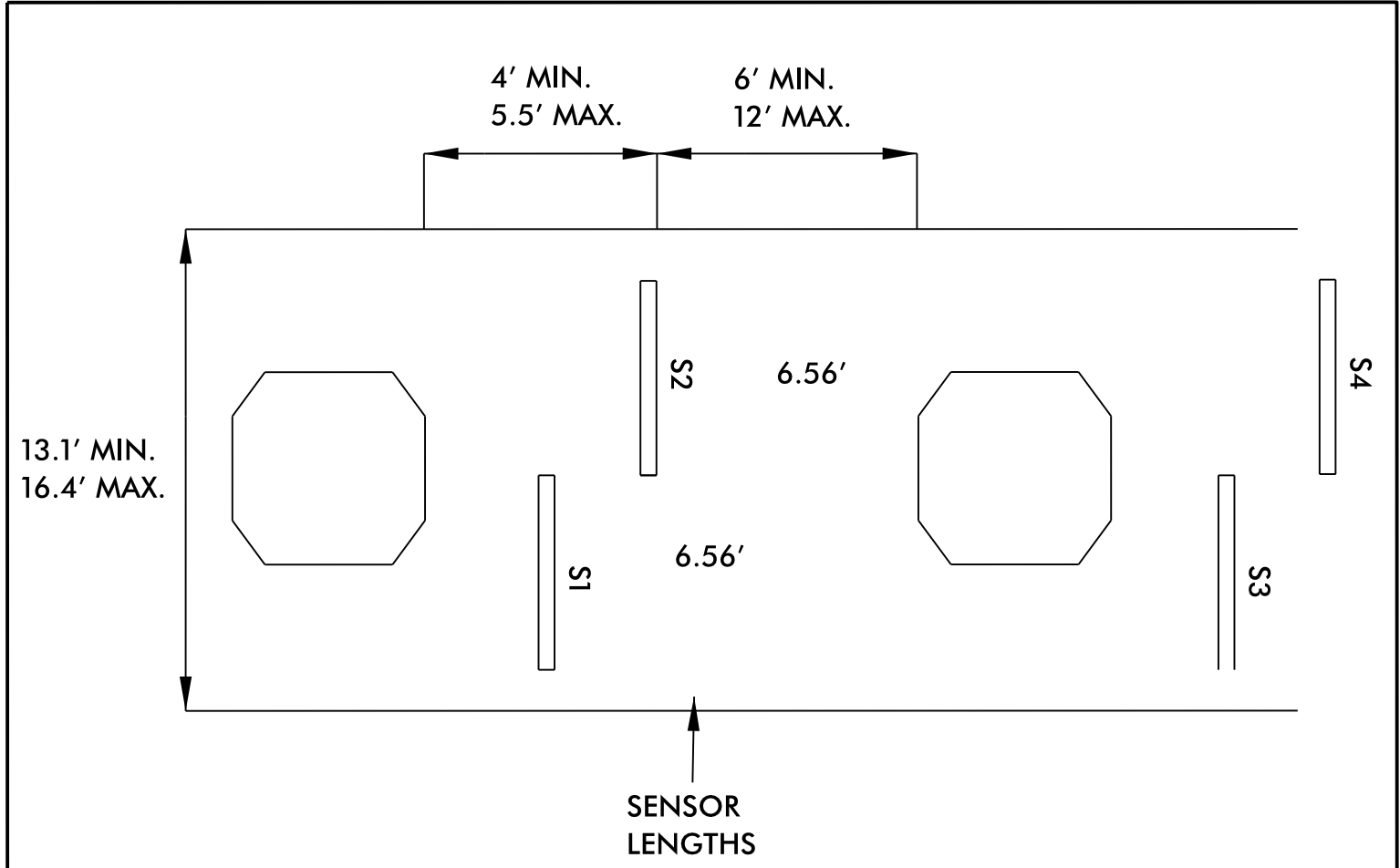
SENSOR SPACING SHOWN IS TYPICAL REQUIREMENT. ACTUAL SENSOR SPACING MAY BE ALTERED TO SUIT SITE CONDITIONS AND MANUFACTURER'S SPECIFICATIONS UPON APPROVAL BY THE ENGINEER.



I-40 MAIN LINE



PQS DETAIL LAYOUT

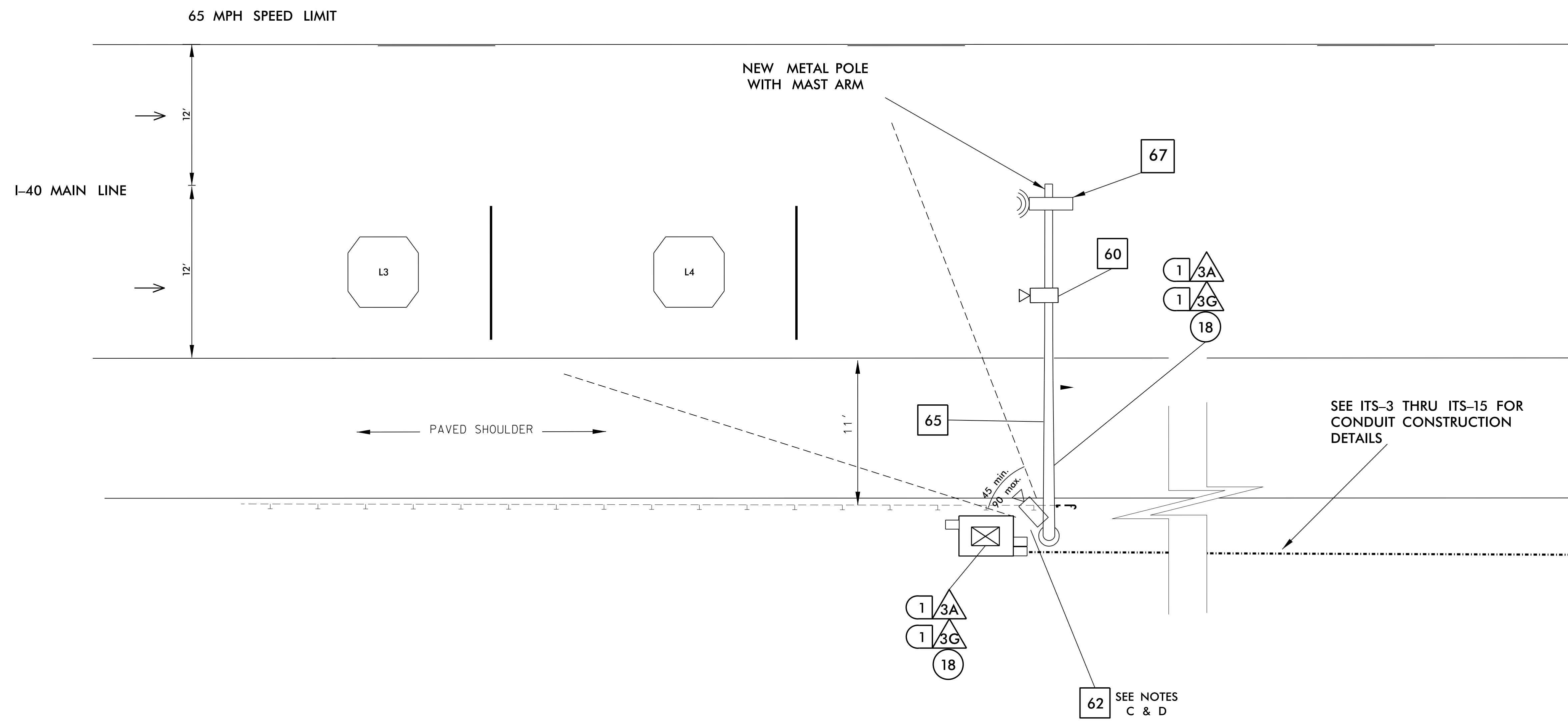


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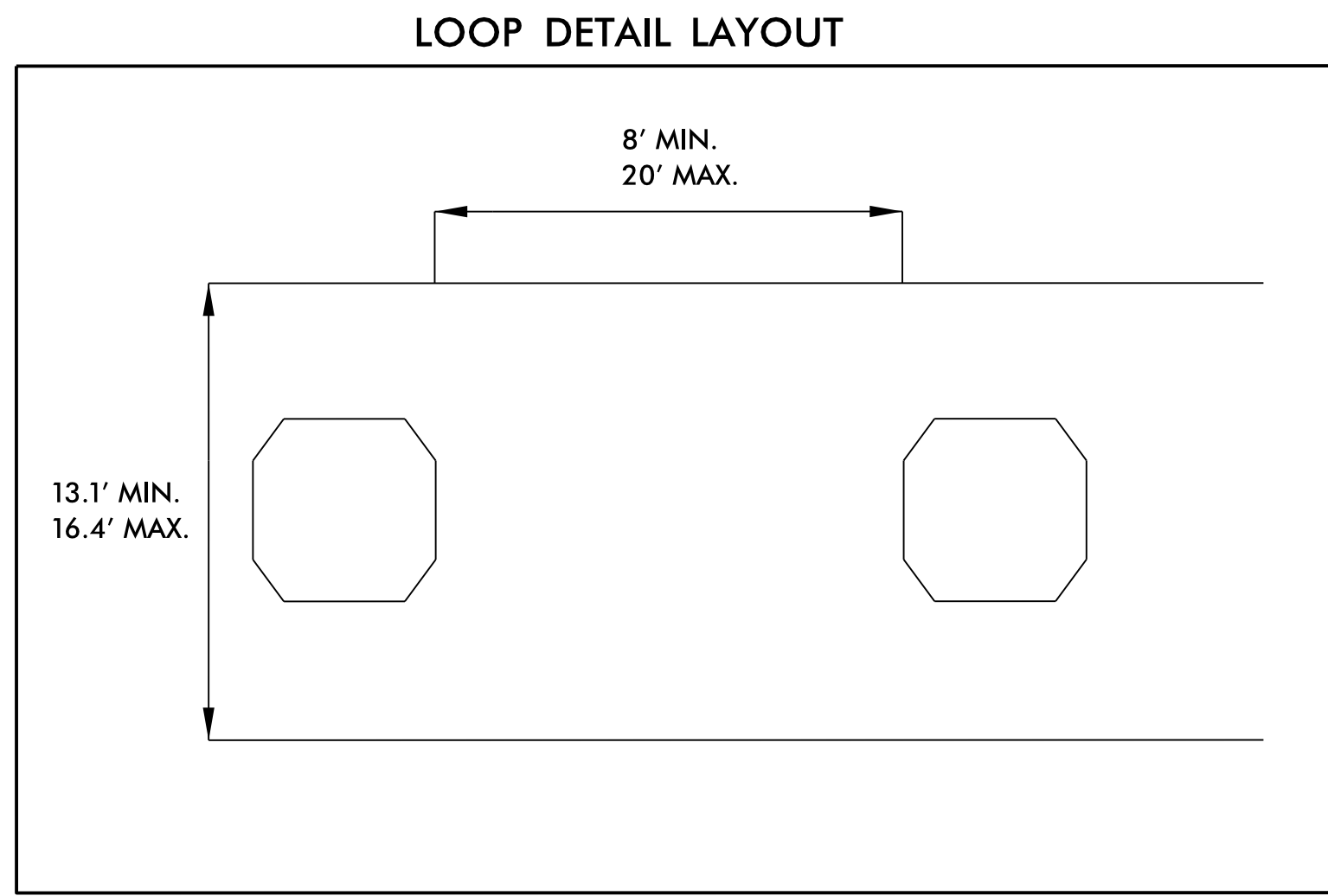
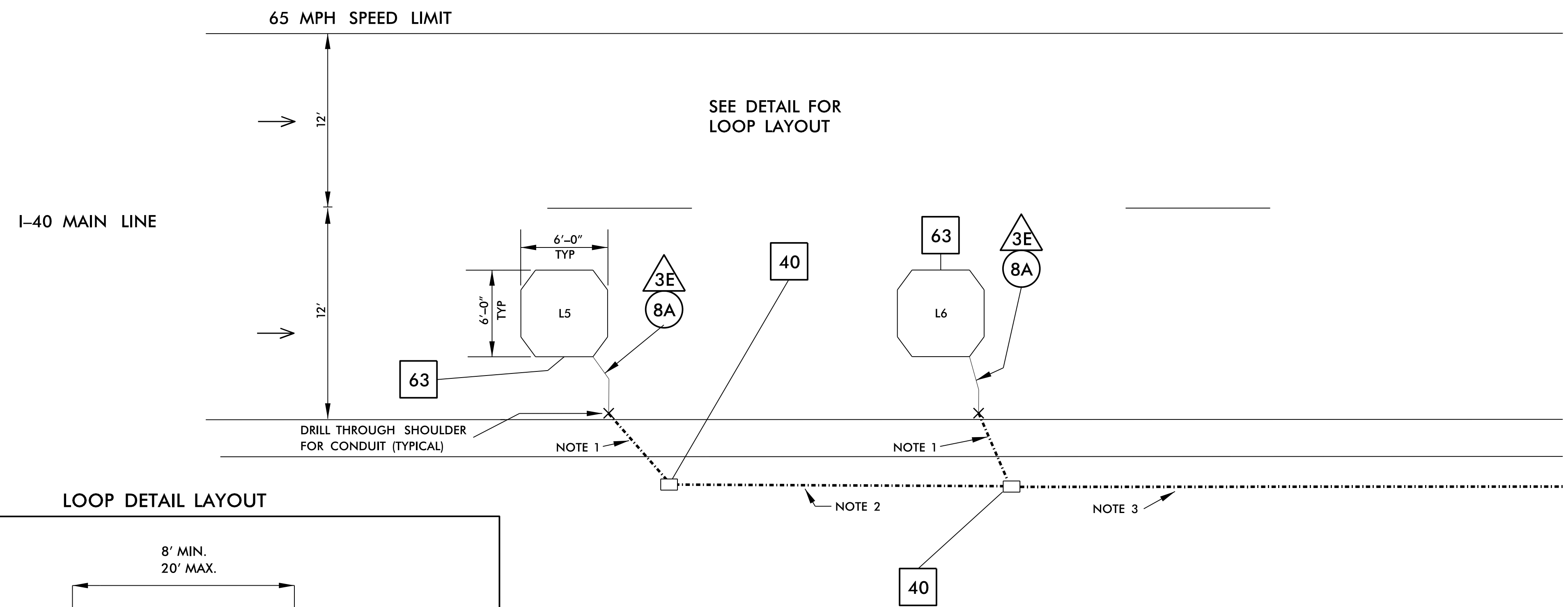
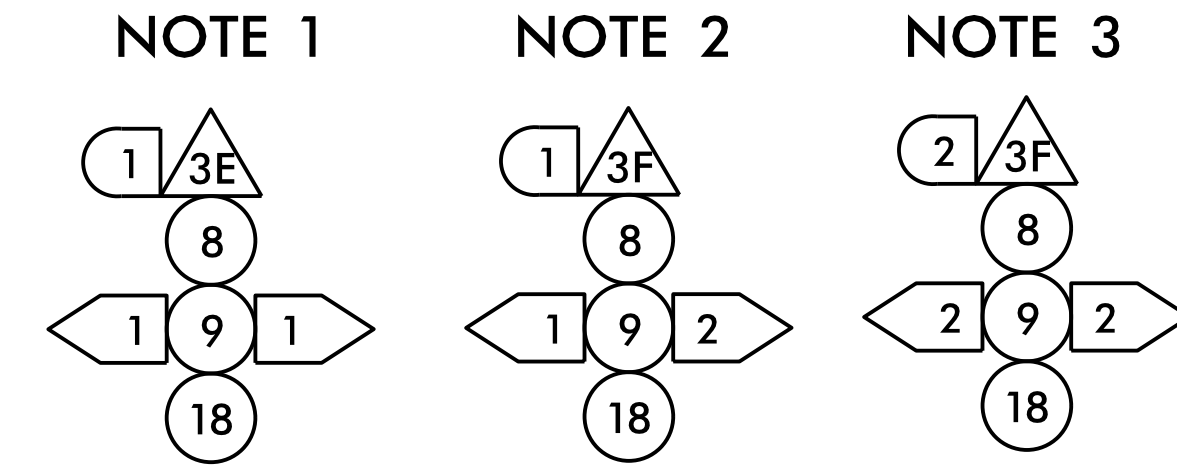
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	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.		
Prepared in the Offices of: 	SCALE	REVISIONS	INIT. DATE DocuSigned by: Andrew J. Skuce 026288C8B8C484



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 - B. IMAGE CAPTURE TO BE TRIGGERED BY THE LEADING EDGE OF THE LOOP.
 - C. THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS ARE CONCEPTUAL AND MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. CONSULT THE DIVISION AND THE ENGINEER TO COORDINATE GUARDRAIL INSTALLATION.

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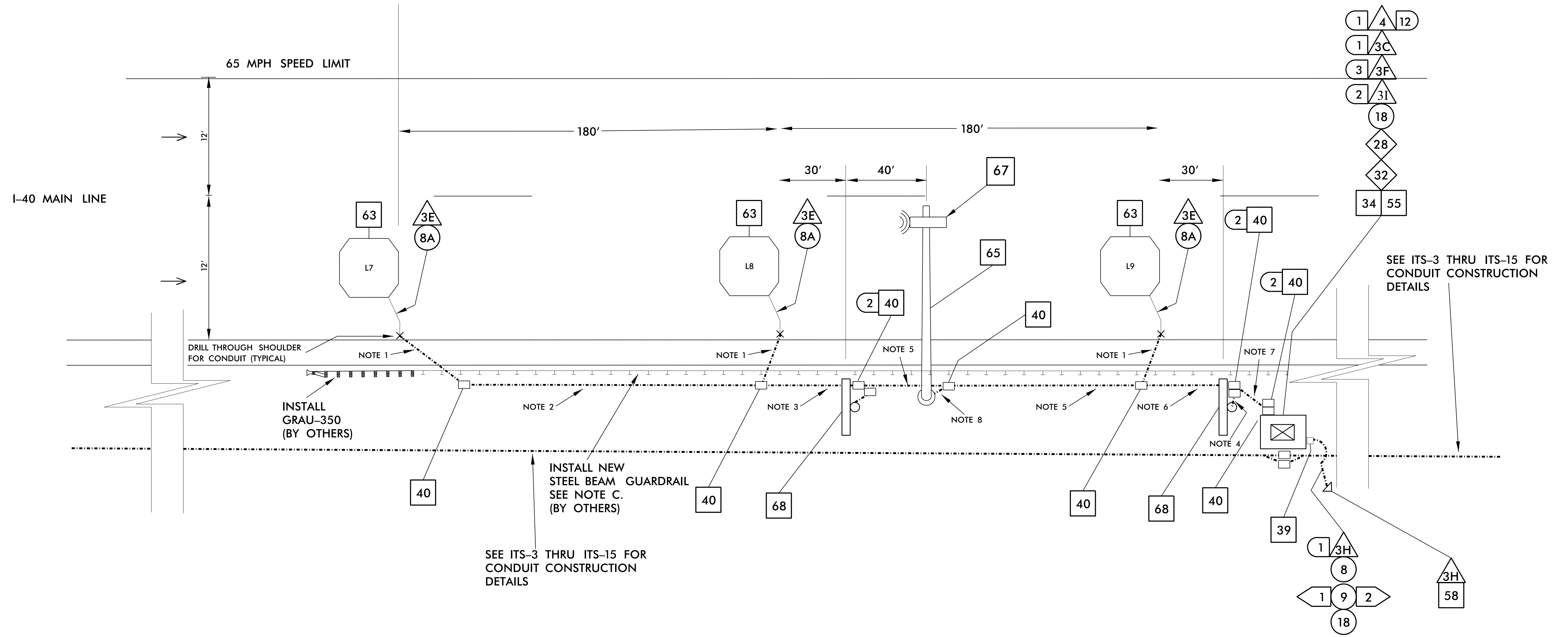
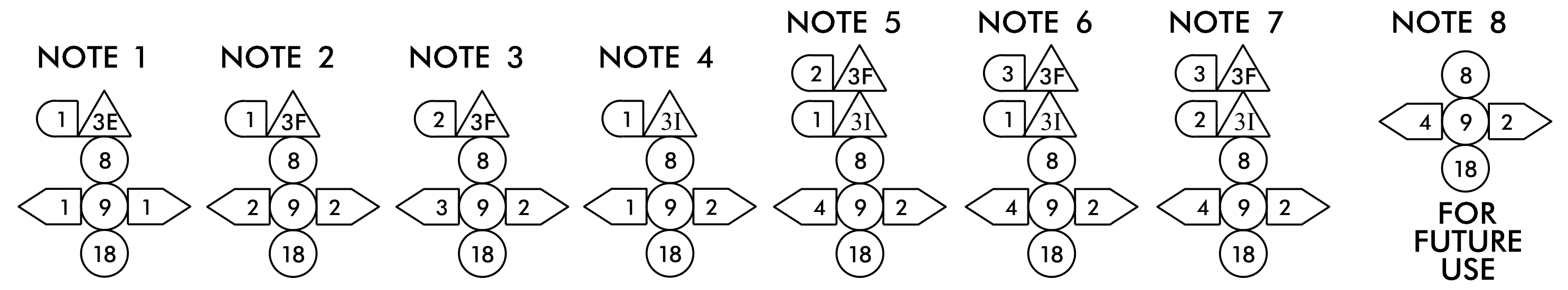
	IMAGE CAPTURE CCTV, TRANSPONDER READER, ALPR SYSTEM, AND GUARDRAIL		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
PLAN DATE: AUGUST 2021		REVIEWED BY:	
PREPARED BY: A. J. SKUCE P.E.		SCALE	
REVISIONS		INIT. DATE	
DocuSigned by: Andrew J. Skuce 0262886C8B8C464		8/13/2021 DATE	



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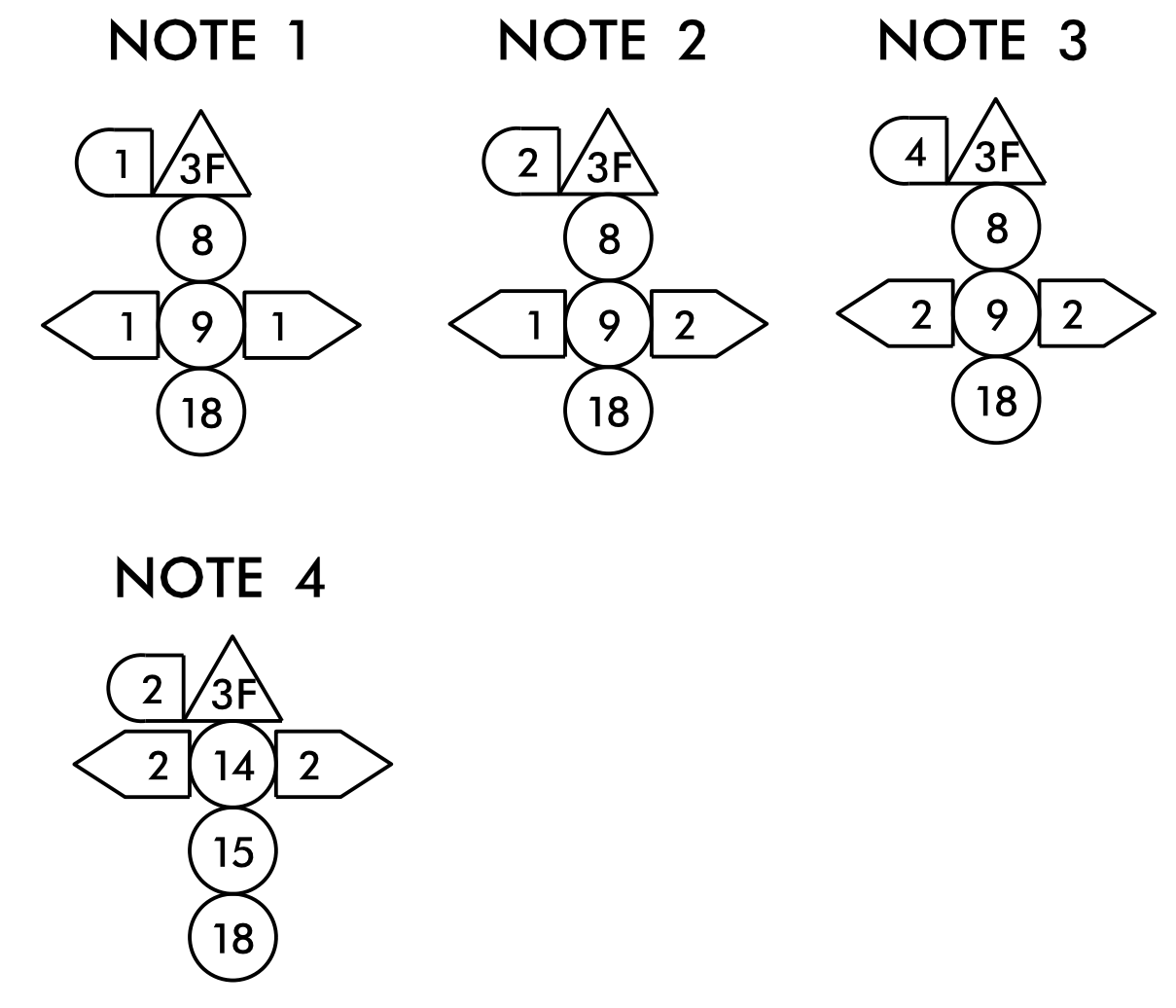
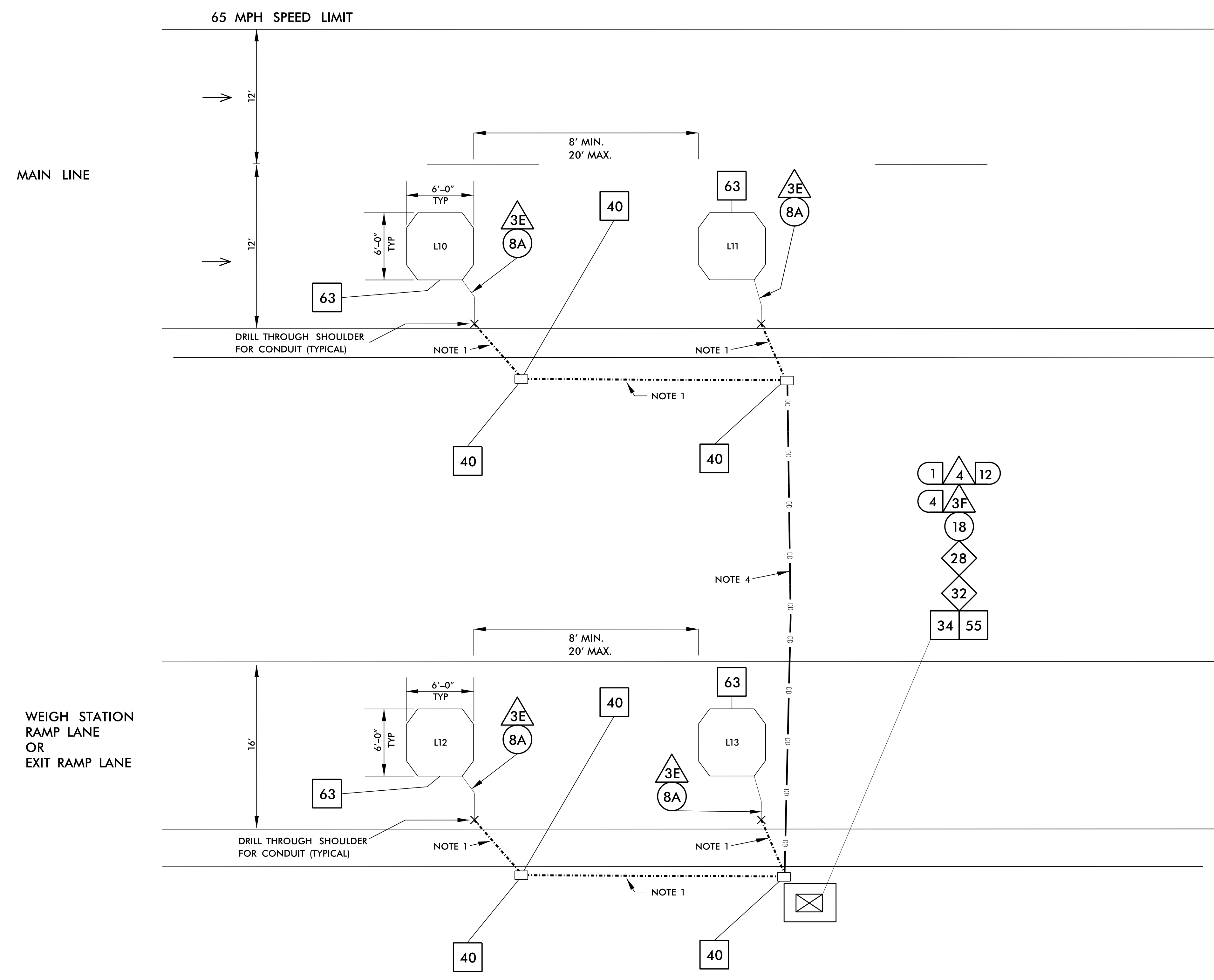
	CLASSIFICATION LOCATION LOOPS		
	DIVISION 12 IREDELL COUNTY STATESVILLE	PLAN DATE: AUGUST 2021 REVIEWED BY:	
750 N. Greenfield Pkwy., Garner, NC 27529	PREPARED BY: A. J. SKUCE P.E.	DocuSigned by: Andrew J. Skuce D007898C8B0C464	
SCALE	REVISIONS	INIT.	DATE
8/13/2021	DATE	DATE	



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	NOTIFICATION LOCATION, AVI READER, & CHANGEABLE MESSAGE SIGNS		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
PLAN DATE: AUGUST 2021		REVIEWED BY:	
PREPARED BY: A. J. SKUCE P.E.		DATE:	
SCALE:		REVISIONS:	
INIT.:		DATE:	
DocuSigned by: Andrew J. Skuce		8/13/2021	

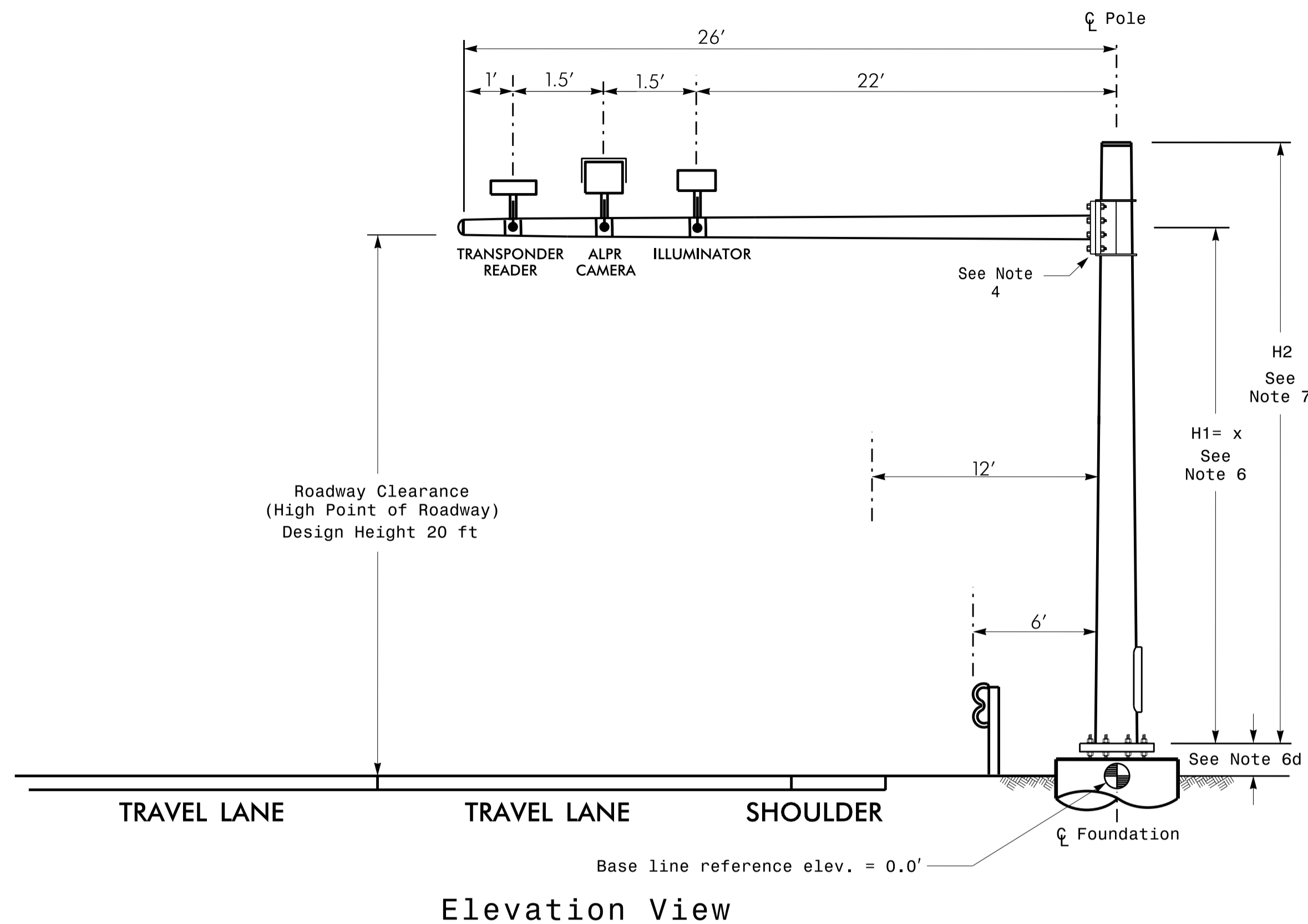


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<p>Prepared in the Offices of: Transportation, Mobility and Safe Driving DEPARTMENT OF TRANSPORTATION 750 N. Greenfield Pkwy., Garner, NC 27529</p>	COMPLIANCE LOCATION		
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.		
SCALE	REVISIONS	INIT.	DATE

Design Loading for Metal Pole #1 & #3 with Folding Mast Arm



SPECIAL NOTES

- The contractor is responsible for determining the mast arm attachment height (H1). Ensure that the mast arm attachment height will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval.
- ALPRs and Infrared Illuminators are shown on top of the mast arm for illustration purposes. If the contractor elects to install these devices under the mast arm then, the 20 Ft. roadway clearance applies to the lowest device.

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	SIZE	WEIGHT
□	TRANSPONDER READER	6.5" W x 4.5" L x 4.0" D	7 LBS
□	LICENSE PLATE READER CAMERA	13.0" W x 6.0" L x 5.5" D	6 LBS
□	INFRARED ILLUMINATOR	3.0" W x 3.0" L x 3.0" D	5 LBS

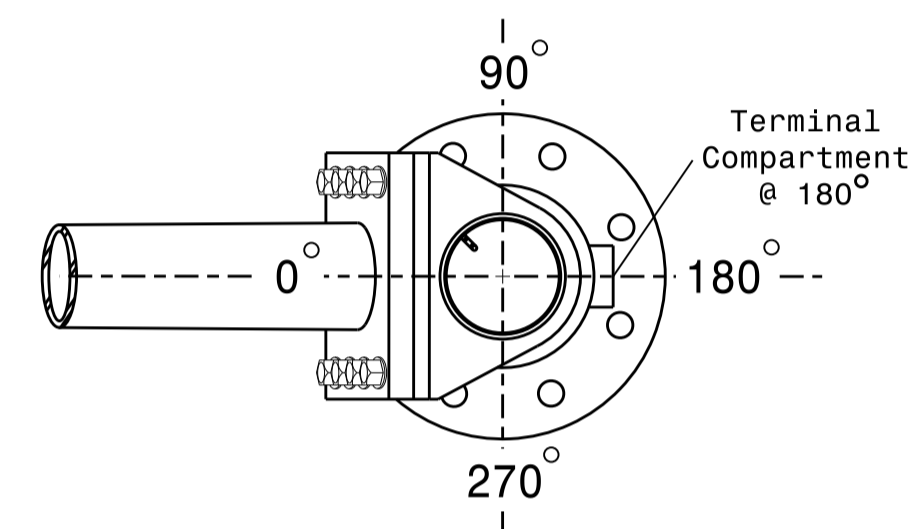
NOTES

Design Reference Material

- Design the metal pole structure and foundation in accordance with:
 - The 6th Edition, 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2018 NCDOT "Standard Specifications for Roads and Structures". The latest addenda to these specifications can be found in the ITS and Signals project special provisions.
 - The 2018 NCDOT Roadway Standard Drawings.
 - The project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

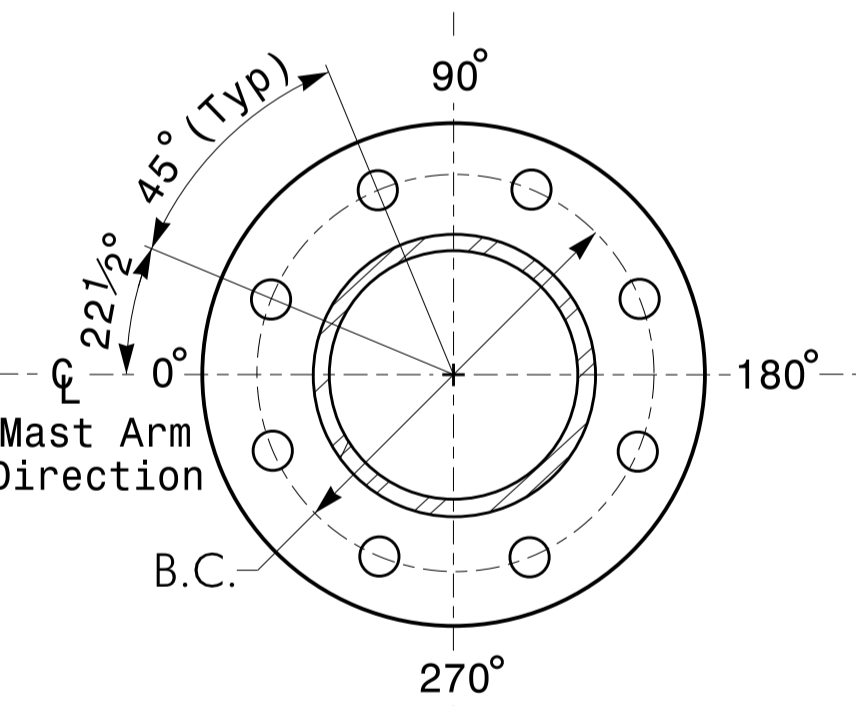
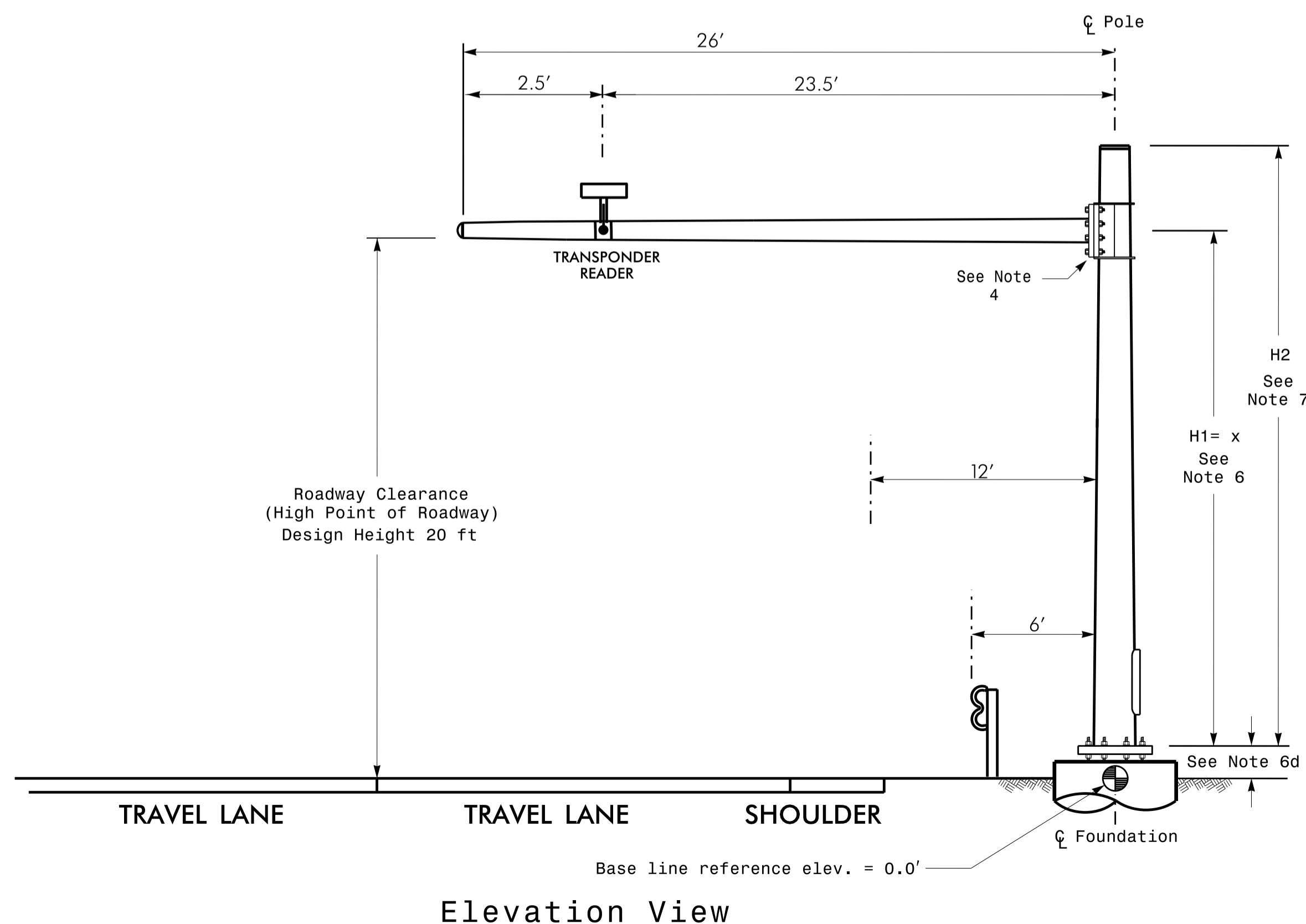
Design Requirements

- Design the metal pole structure using the loading conditions shown in the elevation views. These are anticipated worst case "Design loads".
- Design all metal pole supports using stress ratios that do not exceed 0.9.
- The camber design for mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded or any other load condition.
- Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Attachments to the mast arm are rigid mounted and vertically centered on the arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is .75 feet above the ground elevation.
- The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- If pole location adjustments are required, the contractor must gain approval from the engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the ITS & Signals Structural Engineer for assistance at (919) 814-5000.
- The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the attached equipment over the roadway.
- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

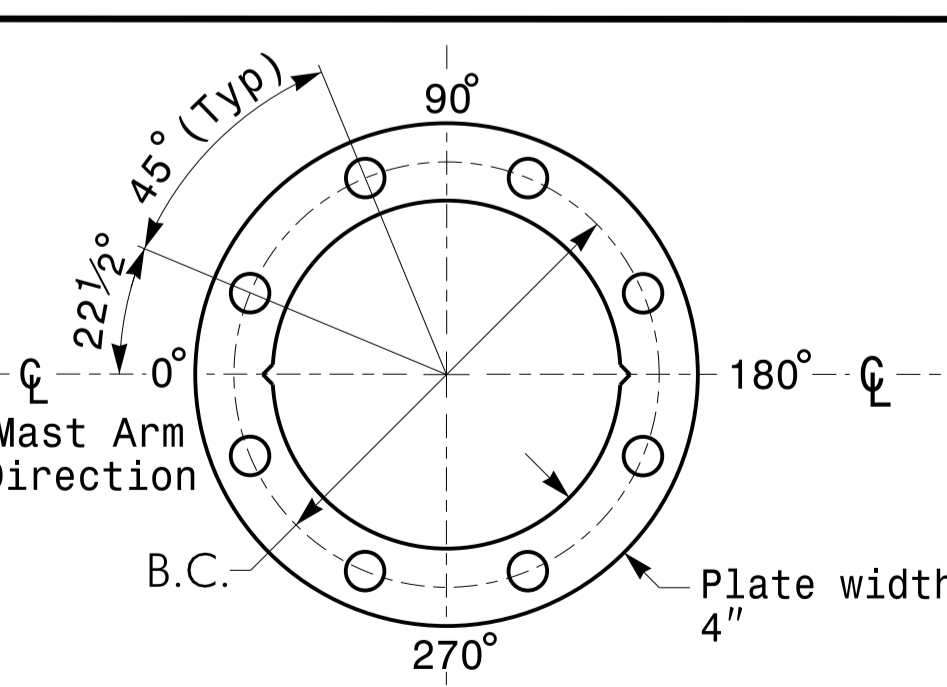


POLE RADIAL ORIENTATION

Design Loading for Metal Pole #2 & #4 with Folding Mast Arm



8 BOLT BASE PLATE DETAIL
See Note 5



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL
For 8 Bolt Base Plate

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NCDOT Wind Zone 4 (90 mph)

Prepared in the Offices of:

METAL POLE WITH MAST ARM

DIVISION 12 IREDELL COUNTY STATESVILLE

PLAN DATE: AUGUST 2021 REVIEWED BY:

PREPARED BY: A. J. SKUCE P.E.

SCALE: NOT TO SCALE

REVISIONS: INIT. DATE

DocuSigned by: Kevin Davison 8/13/2021

SEAL: KEVIN C. DURIGSON ENGINEER SEAL 036626

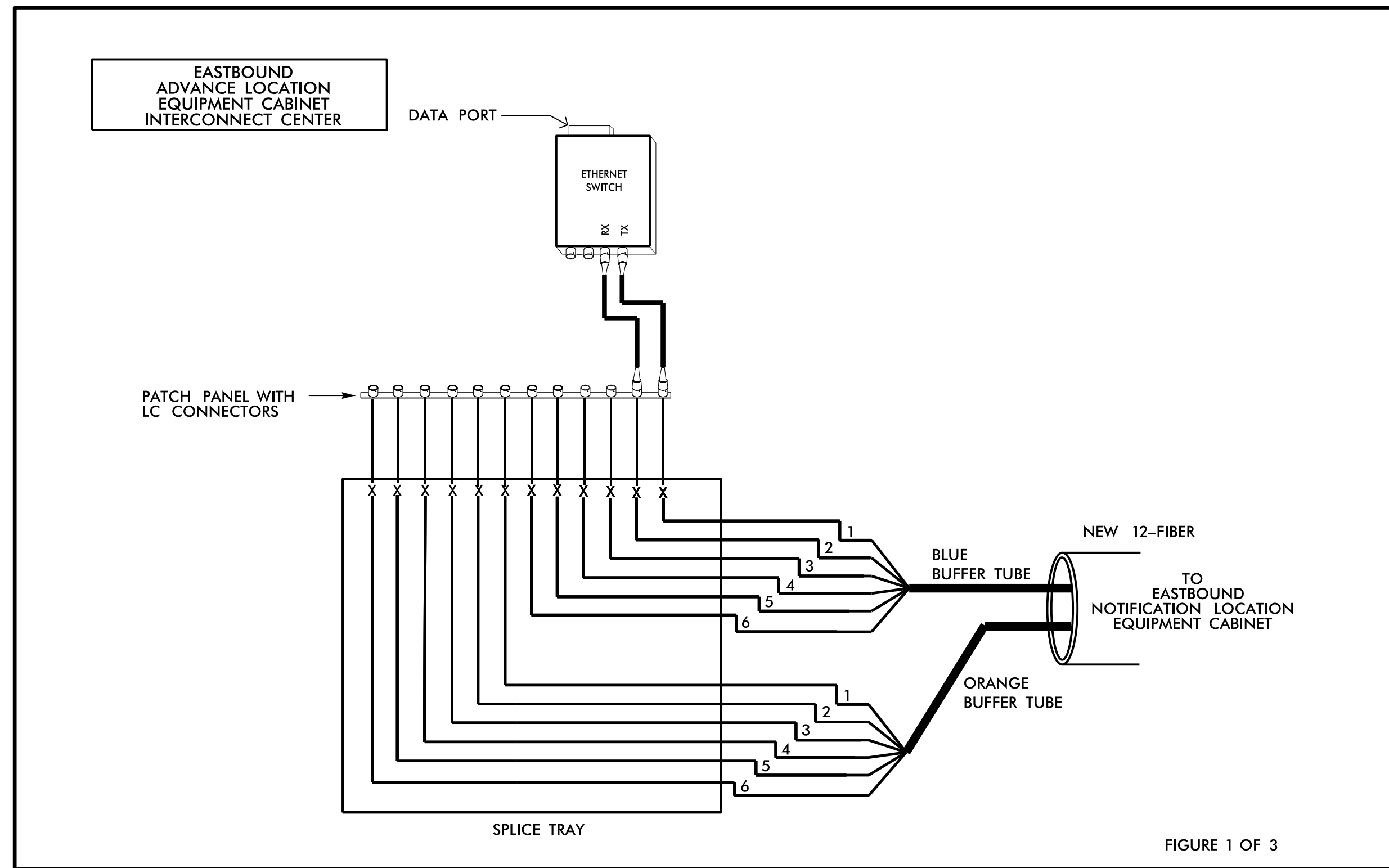


FIGURE 1 OF 3

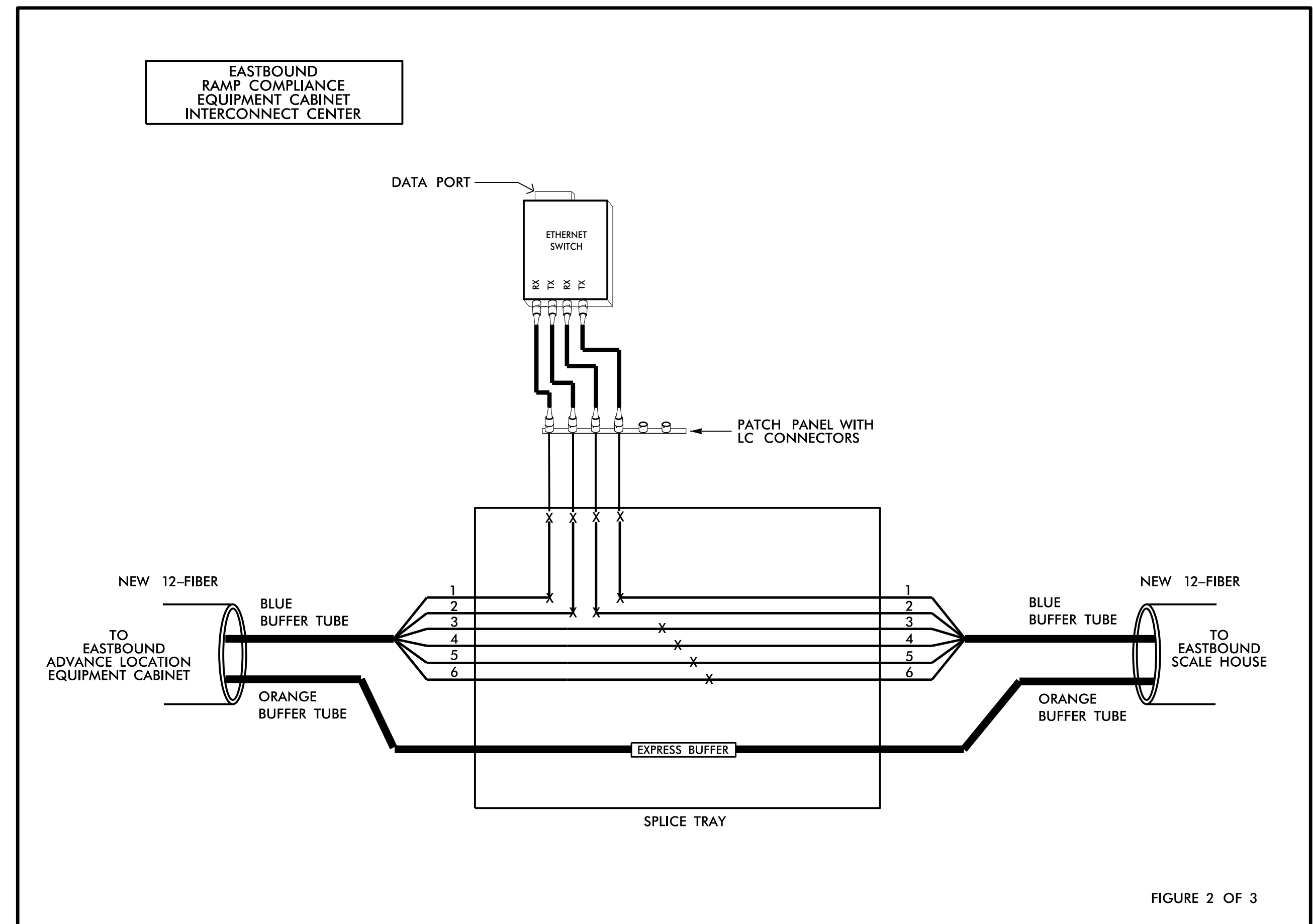


FIGURE 2 OF 3

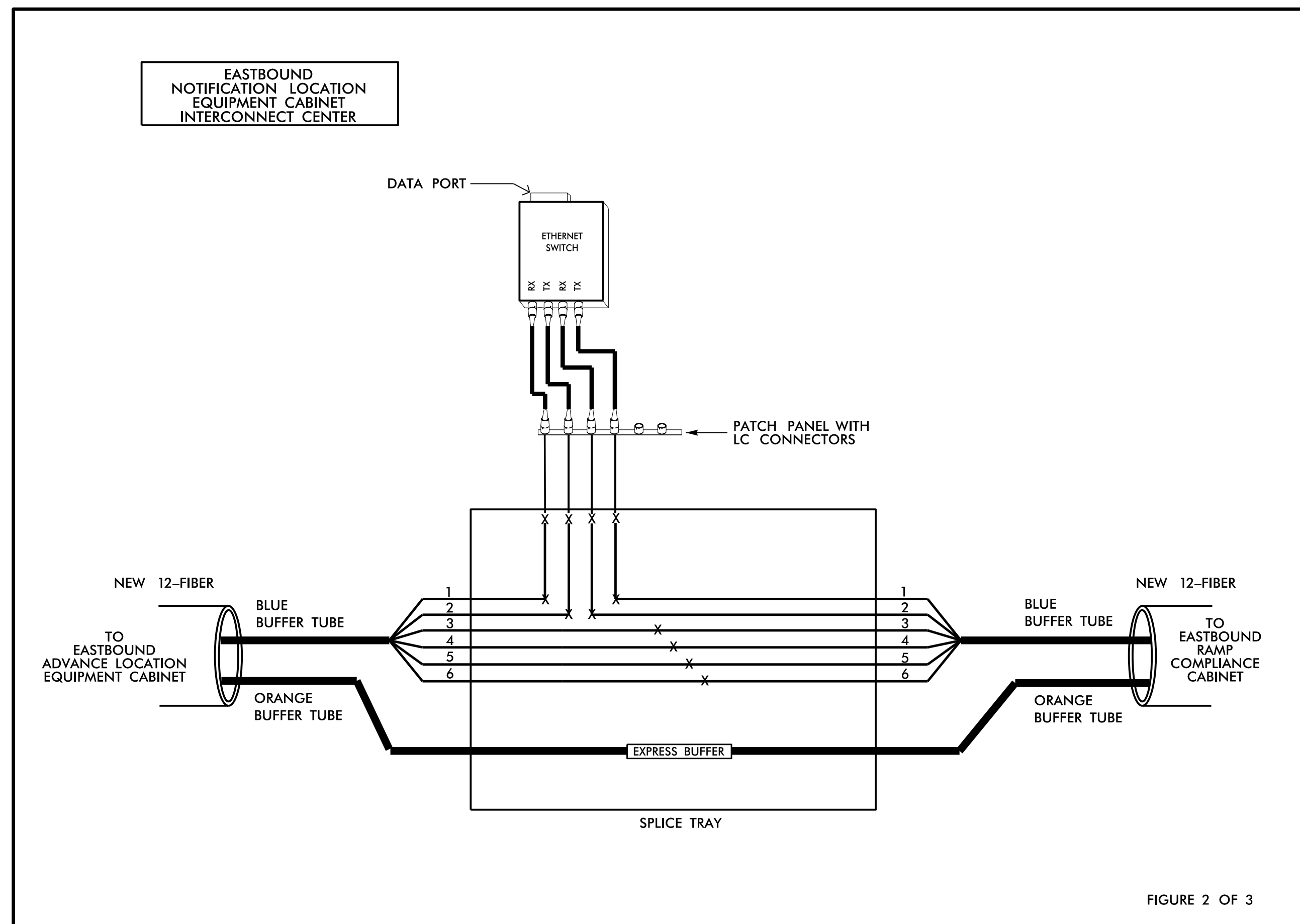


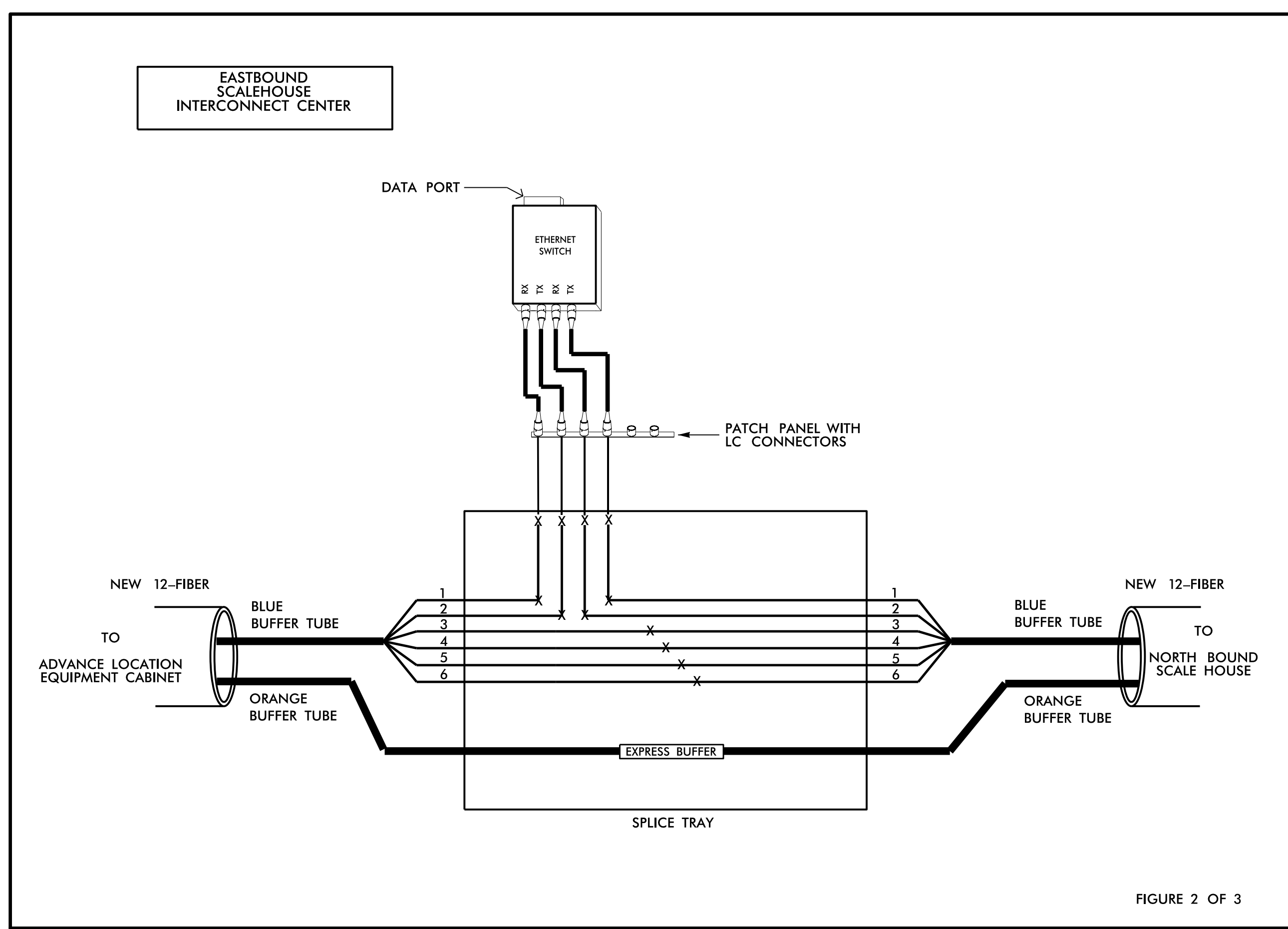
FIGURE 2 OF 3

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

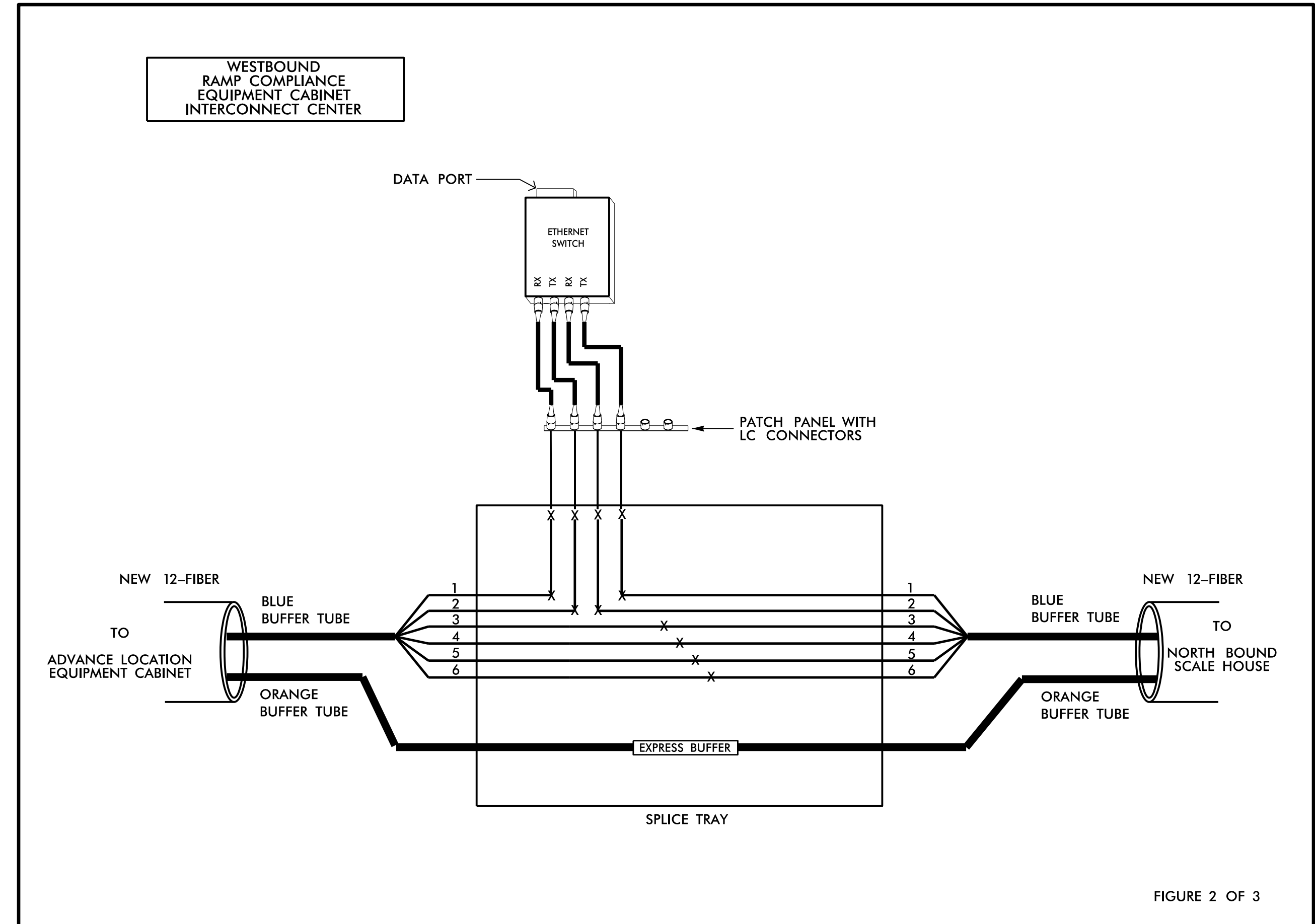
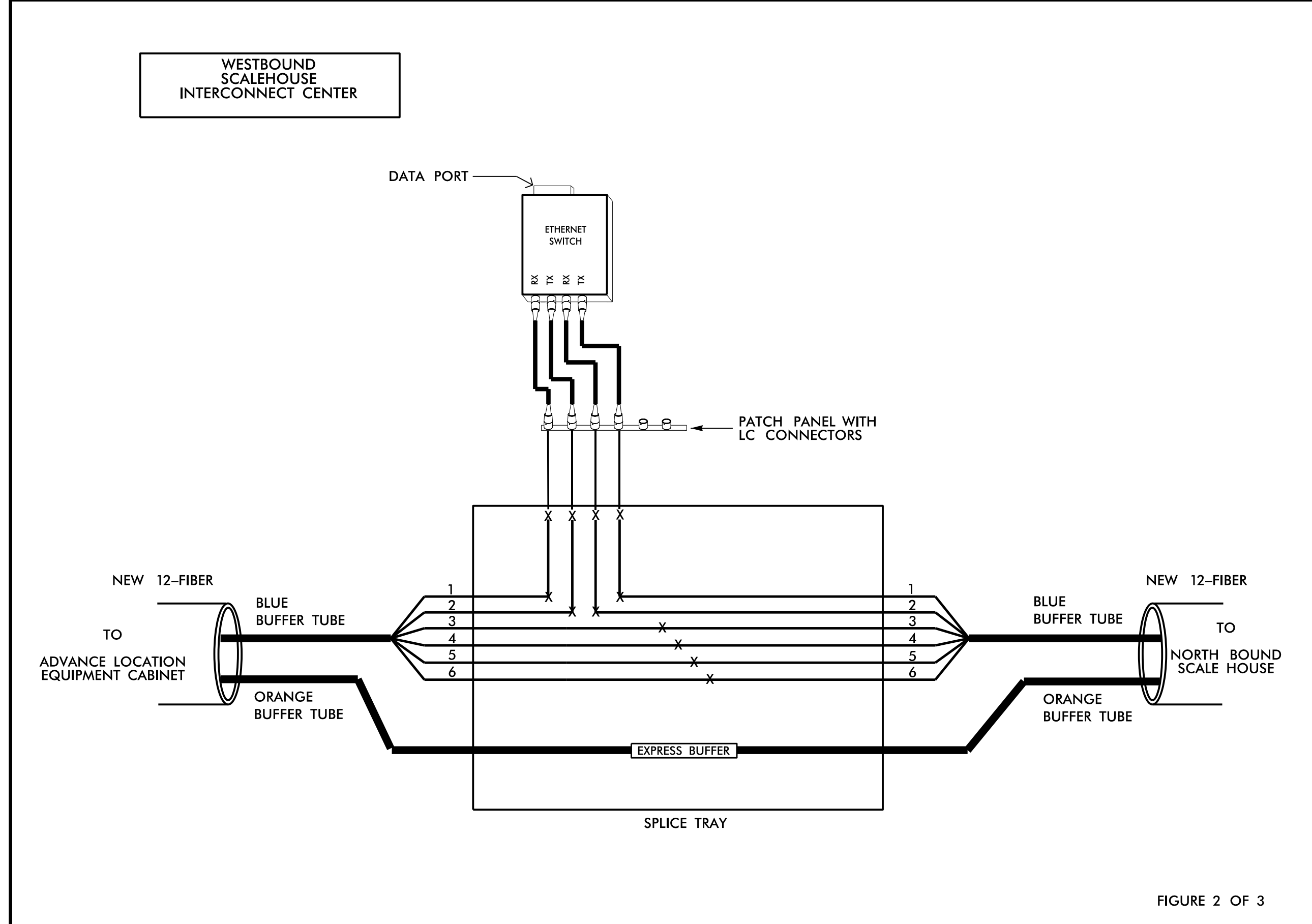
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 - COIL AND STORE ALL UNUSED FIBERS IN SPLICE TRAY.
 - COIL AND STORE ALL UNUSED BUFFER TUBES IN SPLICE TRAY.

	SPLICE DETAIL		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050152 ANDREW J. SKUCE
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.		
Prepared in the Offices of: 750 N. Greenfield Pkwy., Garner, NC 27529		DocuSigned by: Andrew J. Skuce D26288BC88C484	
		8/13/2021 DATE	



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<p>Prepared in the Offices of: Transportation, Mobility and Safety Division DEPARTMENT OF TRANSPORTATION & INFRASTRUCTURE 750 N. Greenfield Pkwy., Garner, NC 27529</p>	SPLICE DETAIL		<p>DocuSigned by: Andrew J. Skuce D02988C8B9C464</p>
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.		
SCALE	REVISIONS	INIT.	DATE
NOT TO SCALE			

8/13/2021
DATE

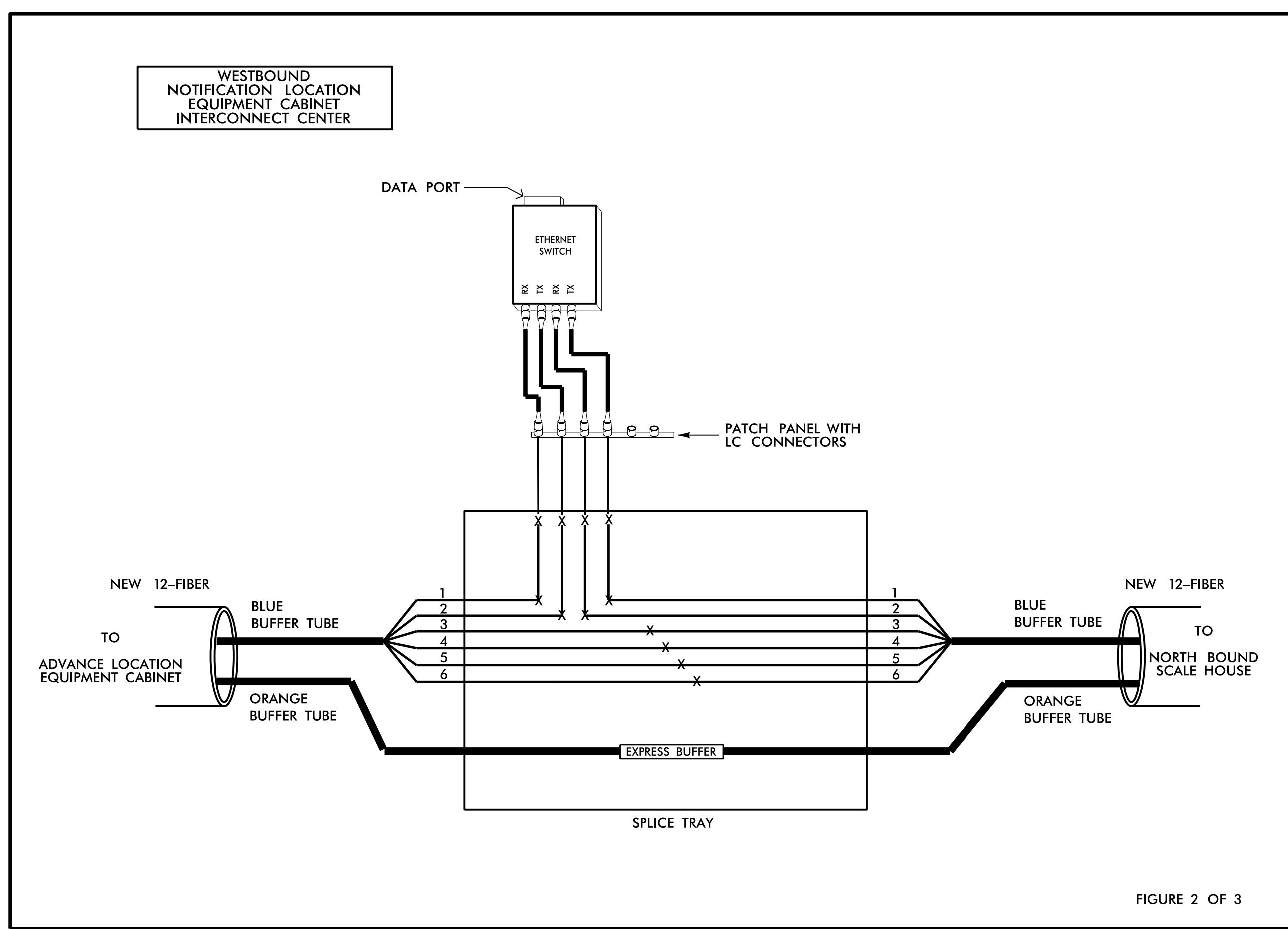


FIGURE 2 OF 3

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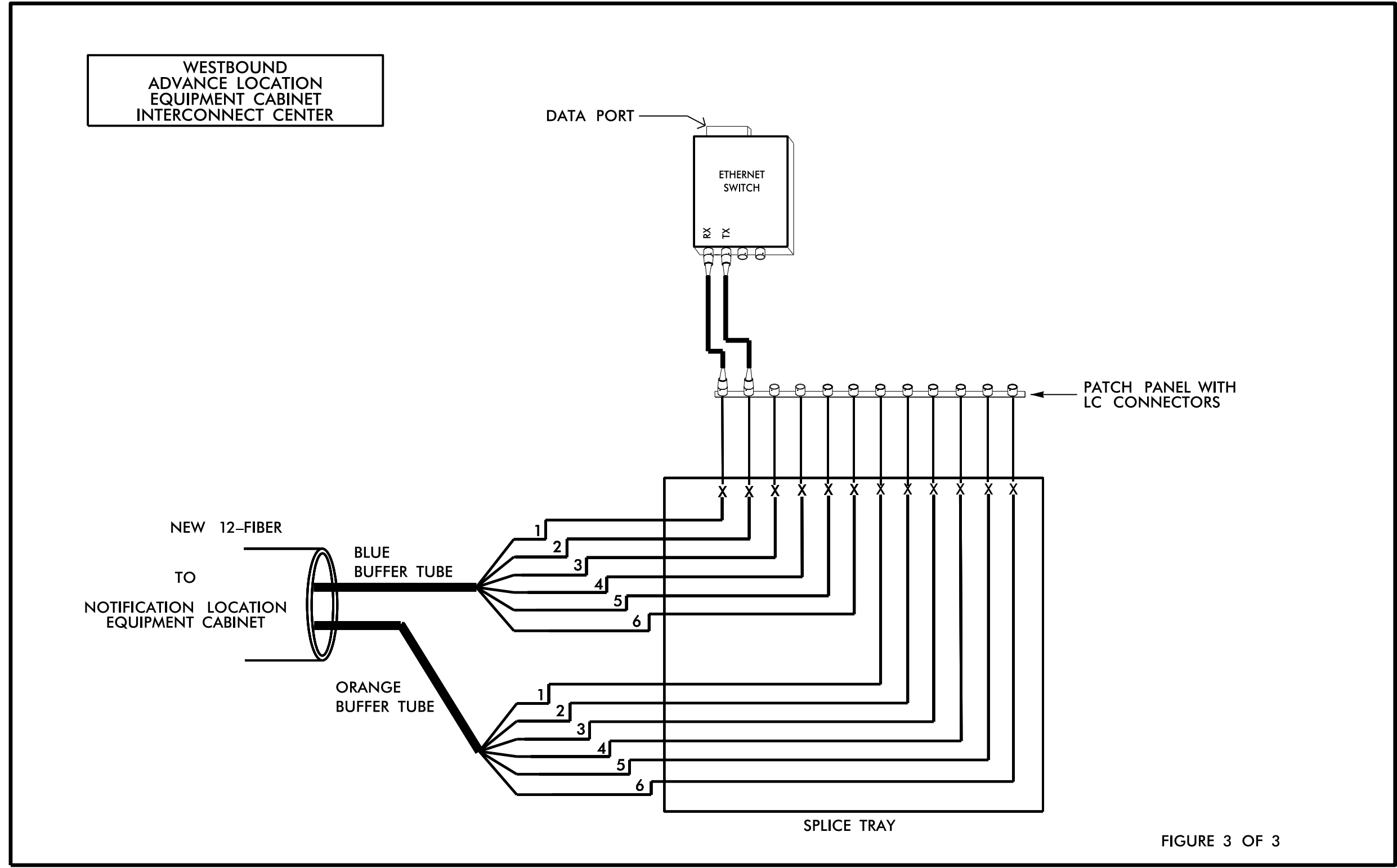
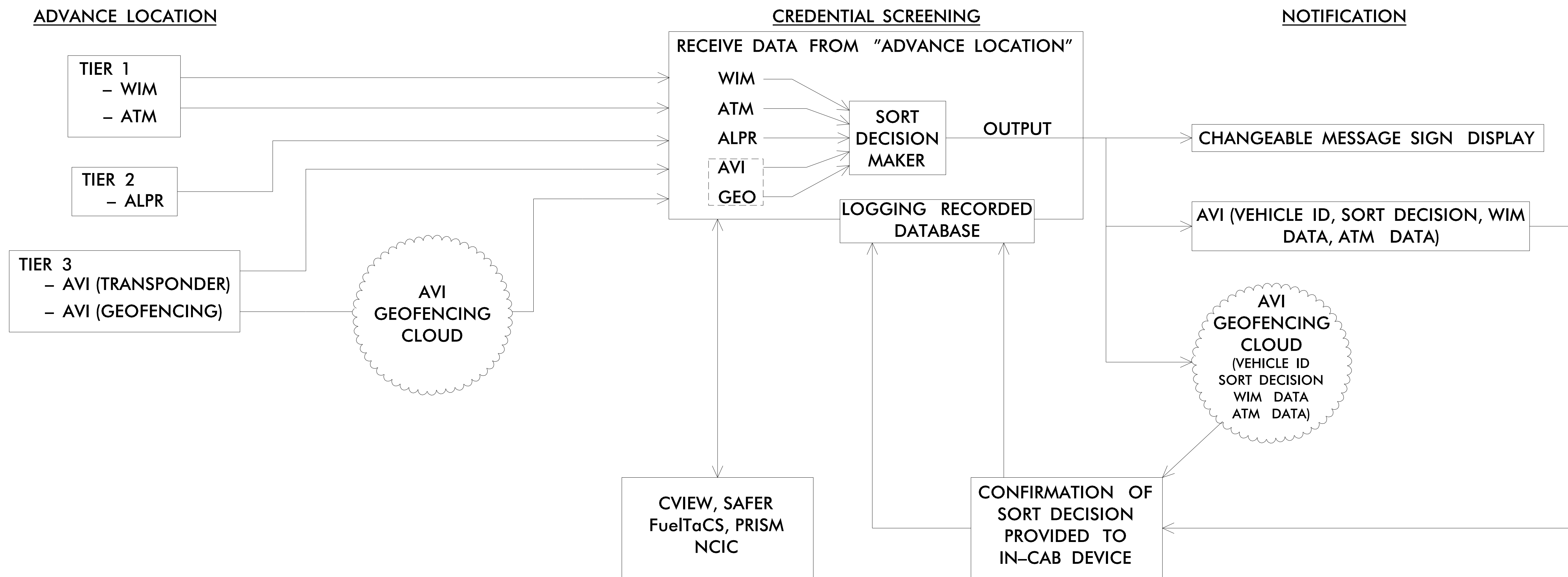


FIGURE 3 OF 3

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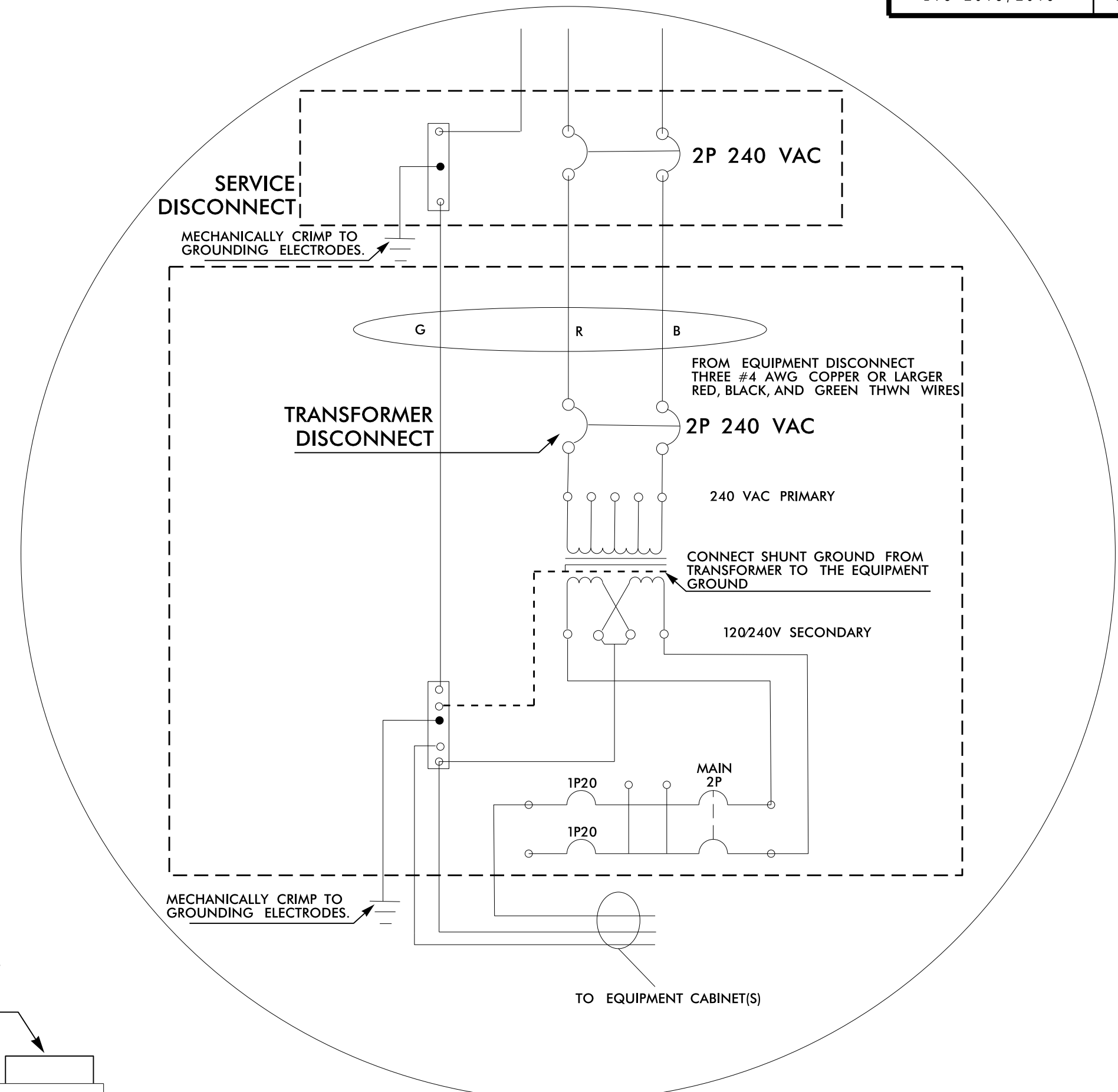
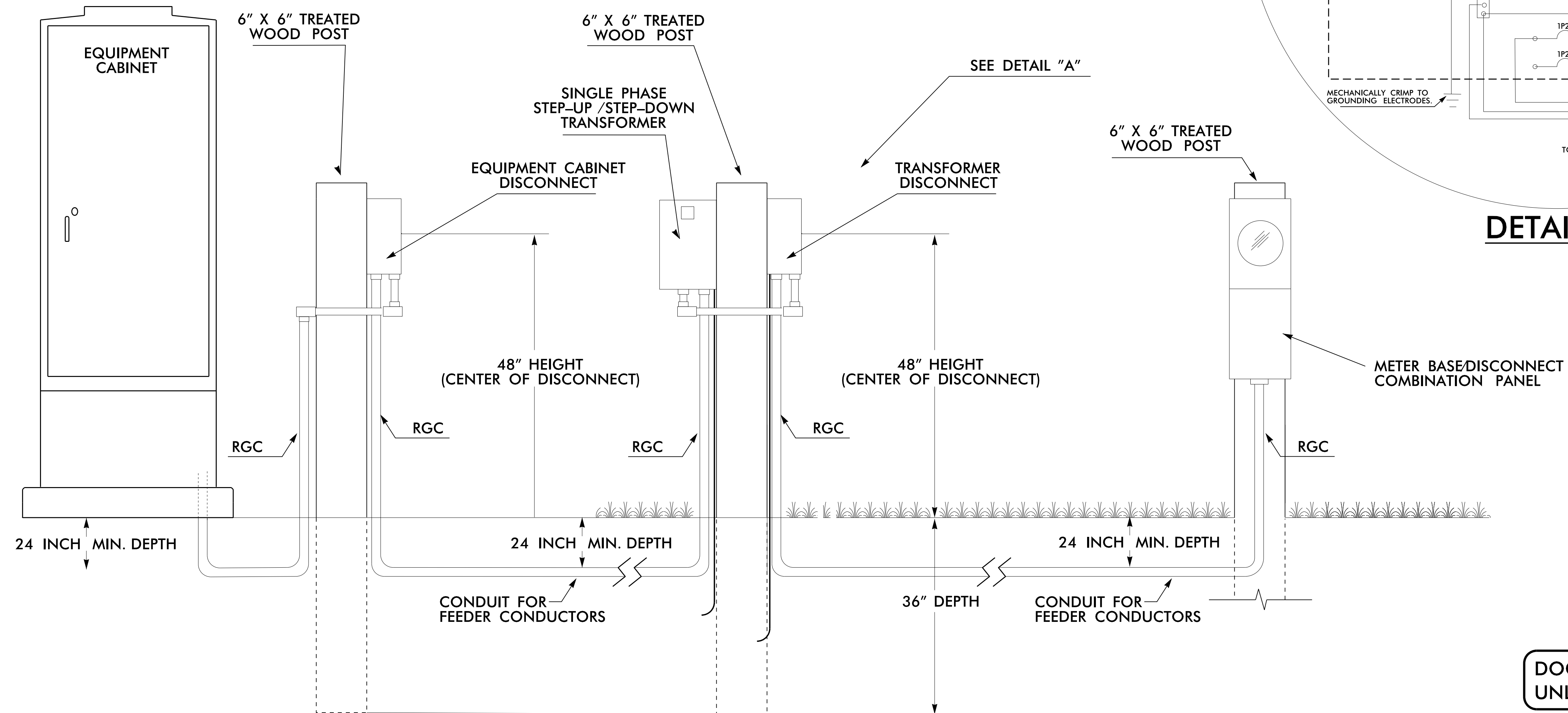
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	SPLICE DETAIL		
	DIVISION 12 IREDELL COUNTY STATESVILLE		
PLAN DATE: AUGUST 2021	REVIEWED BY:		DocuSigned by: 0282888C885C464
PREPARED BY: A. J. SKUCE P.E.	REVISIONS	INIT. DATE	
SCALE: NOT TO SCALE	_____	_____	8/13/2021 DATE



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	SYSTEM SORT DECISION DATA FLOW	
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.	
SCALE 0 N/A	REVISIONS _____ _____ _____	INIT. DATE _____ _____ _____
DocuSigned by: <i>Andrew J. Skuce</i> <small>D262888C8B8C484</small>		SEAL NORTH CAROLINA PROFESSIONAL SEAL 050152 ENGINEER ANDREW J. SKUCE
		8/13/2021 DATE



DETAIL "A"

**DOCUMENT NOT CONSIDERED FINAL
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	STEP-UP / STEP-DOWN TRANSFORMER		
	DIVISION 12 IREDELL COUNTY STATESVILLE PLAN DATE: AUGUST 2021 REVIEWED BY: PREPARED BY: A. J. SKUCE P.E.		
SCALE	REVISIONS	INIT. DATE	Documented by: Andrew J. Skuce D28288DC885C464
			8/13/2021 DATE

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN
IREDELL COUNTY**

**LOCATION: I-40 EASTBOUND AND WESTBOUND
WEIGH STATION UPGRADES**

PROJECT REFERENCE NO.	DocuSign	SHEET NO.
WEIGH STATION		SIGN-1
APPROVED:	<i>Renee B. Roach</i>	
DATE:	7/30/2021	1360BD316431...
SEAL		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

WBS: 33879.2.97 & 33879.2.98

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
901.10	TYPE 'A' SIGNS
901.20	TYPE 'B' SIGNS
901.70	SIGN STRINGERS AND SUPPORT SPACING
901.80	SIGN MOUNTING DETAILS - FOR TYPE A AND TYPE B SIGNS
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.20	SECONDARY SIGN MOUNTING
904.50	ORIENTATION OF GROUND MOUNTED SIGNS

GENERAL NOTES

- . SIGNS FURNISHED BY STATE
- . CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
- . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- . DO NOT BEGIN FABRICATION FOR TYPES A & B SIGNS MOUNTED ON OVERHEAD STRUCTURES OR STEEL SUPPORTS UNTIL "S" DIMENSIONS HAVE BEEN FIELD VERIFIED.
- . SEE ITS PLANS FOR GUARD/GUIDE RAIL DETAILS.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4048000000	902	REINFORCED CONCRETE SIGN FOUNDATION	1	C.Y.
4054000000	902	PLAIN CONCRETE SIGN FOUNDATION	2	C.Y.
4060000000	903	SUPPORTS, BREAKAWAY STEEL BEAM	1708	LB.
4066000000	903	SUPPORTS, SIMPLE STEEL BEAM	299	LB.
4072000000	903	SUPPORTS, 3LB STEEL U-CHANNEL	34	L.F.
4110000000	904	SIGN ERECTION, TYPE A (GROUND MOUNTED)	2	EA.
4110000000	904	SIGN ERECTION, TYPE B (GROUND MOUNTED)	6	EA.
4110000000	904	SIGN ERECTION, TYPE D (GROUND MOUNTED)	1	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE A (GROUND MOUNTED)	1	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE E (GROUND MOUNTED)	1	EA.
4138000000	907	DISPOSAL OF SUPPORT, STEEL BEAM	2	EA.
4152000000	907	DISPOSAL OF SIGN SYSTEM, STEEL BEAM	1	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	3	EA.

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	SUPPORT INFORMATION
SIGN-2A-2D	TYPICAL SHEETS
SIGN-3	SIGN DESIGNS
SIGN-4-9	SIGNING PLAN SHEETS

PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

K. L. JORDAN SIGNING & DELINEATION REGIONAL ENGINEER
J. Navarrete SIGNING & DELINEATION PROJECT DESIGN ENGINEER



TIP NO.	DocuSign	SHEET NO.
WEIGH STATION		SIGN-2A
APPROVED:	<i>Renee B. Roach</i>	360BD316431...
DATE:	7/30/2021	
SEAL		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

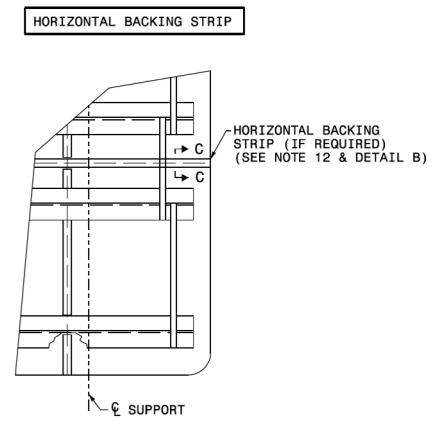
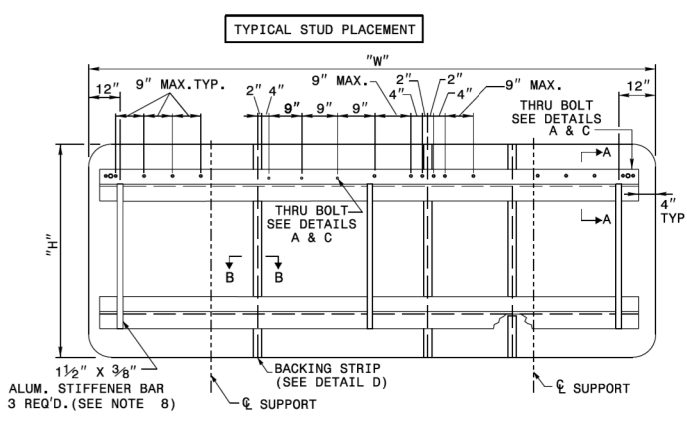
TIP NO.	SHEET NO.
DocuSign	
APPROVED:	<i>Matthew V. Springs</i>
DATE:	3/21/2019
SEAL	

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2-19

ENGLISH DETAIL DRAWING FOR
TYPE 'A' SIGNS
WELDED STUD CONSTRUCTION

SHEET 1 OF 2
901D10



- NOTES:
1. USE THE NUMBER AND SIZE OF SUPPORTS SHOWN ON THE SUPPORT CHART IN PROJECT PLANS.
 2. FABRICATE SIGN PANEL SECTIONS WITH SHEETS 4'-0" WIDE. WHEN FABRICATING SIGNS WHICH ARE NOT MULTIPLES OF 4'-0" IN WIDTH, DO NOT CUT MORE THAN TWO SHEETS TO LESS THAN 4'-0" IN WIDTH. THESE PANELS SHALL NOT BE LESS THAN 1'-0" IN WIDTH.
 3. SEE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, FOR TYPE OF MATERIAL TO BE USED FOR SIGN PANELS, HANGER ASSEMBLIES, AND SUPPORTS.
 4. USE GALVANIZED STEEL FOR BACKING PLATES AND MOUNTING BOLTS.
 5. SEE ROADWAY STANDARD 904.20 WHEN TYPE "B" SECONDARY SIGN MOUNTING IS REQUIRED.
 6. DETAILS FOR TYPE "A" SECONDARY SIGNS SHALL BE THE SAME AS FOR TYPE "A" SIGNS.
 7. THE VERTICAL DIMENSION BETWEEN PRIMARY AND SECONDARY SIGNS IS TWO (2) INCHES.
 8. ADJUST STIFFENERS TO AVOID CONFLICT WITH SUPPORTS.
 9. SEE ROADWAY STANDARD 901.70 FOR SUPPORT AND "Z" BAR SPACING.
 10. FABRICATE SIGNS TALLER THAN 12'-0" AS TWO SEPARATE SIGNS WITH A HORIZONTAL SPLICE. LOCATE STRINGERS ON EACH SECTION OF THE SIGN BY THE SIGN STRINGER CHART. (SEE ROADWAY STANDARD 901.70)
 11. FABRICATE SIGNS TALLER THAN 12'-0" BUT SHORTER THAN 14'-6" WITH A HORIZONTAL SPLICE LOCATED 7'-0" FROM BOTTOM OF SIGN.
 12. FABRICATE SIGNS 14'-6" TALL AND TALLER WITH A HORIZONTAL SPLICE. LOCATE THE SPLICE AT LEAST HALF OF THE SIGN HEIGHT FROM THE BOTTOM AND AT LEAST 7'-0" FROM THE TOP.
 13. THERE SHALL ONLY BE A 1/8" GAP BETWEEN THE VERTICAL BACKING STRIP AND THE "Z" BAR.
 14. SEE ROADWAY STANDARD 901.80 FOR DETAILS SHOWING SIGN MOUNTING TO SUPPORTS.
 15. PLACE NYLON WASHER UNDER HEAD OF 3/8" THRU BOLTS.
 16. FABRICATE EACH SIGN WITH 3/8" DIA. THRU BOLT, 4" FROM EACH END OF EACH "Z" BAR THRU SIGN PANEL AND "Z" BAR. SEE DETAILS A & C.
 17. FABRICATE EACH SIGN WITH 3/8" DIA. THRU BOLT CENTERED IN EACH PANEL THRU THE TOP AND BOTTOM "Z" BAR. CENTERED THRU BOLT REQUIRED IN END PANELS GREATER THAN 2'-0" WIDE. SEE DETAILS A & C.
 18. THRU BOLTS WILL HAVE A MINIMUM 1/16" TO MAXIMUM 1/8" GAP

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2-19

ENGLISH DETAIL DRAWING FOR
TYPE 'A' SIGNS
WELDED STUD CONSTRUCTION

SHEET 1 OF 2
901D10


REVISED SIGNING
ROADWAY STANDARD DRAWING


INCLUDE THIS SHEET WITH SIGNING PLAN WHEN
SPECIFYING "A" SIGNING

TYPICAL SHEET

C:\Users\jinnavarrete\Downloads\2018_Seed Files (4)\Files\2018_PEF Engseed_06-21-21.dgn
 07/29/21
 User: jinnavarrete

03/20/18
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 User: jinnavarrete

TIP NO. _____ SHEET NO. _____
 WEIGH STATION _____ SIGN-2B
 APPROVED: *Renee B. Roach*
 DATE: 7/30/2021
 SEAL

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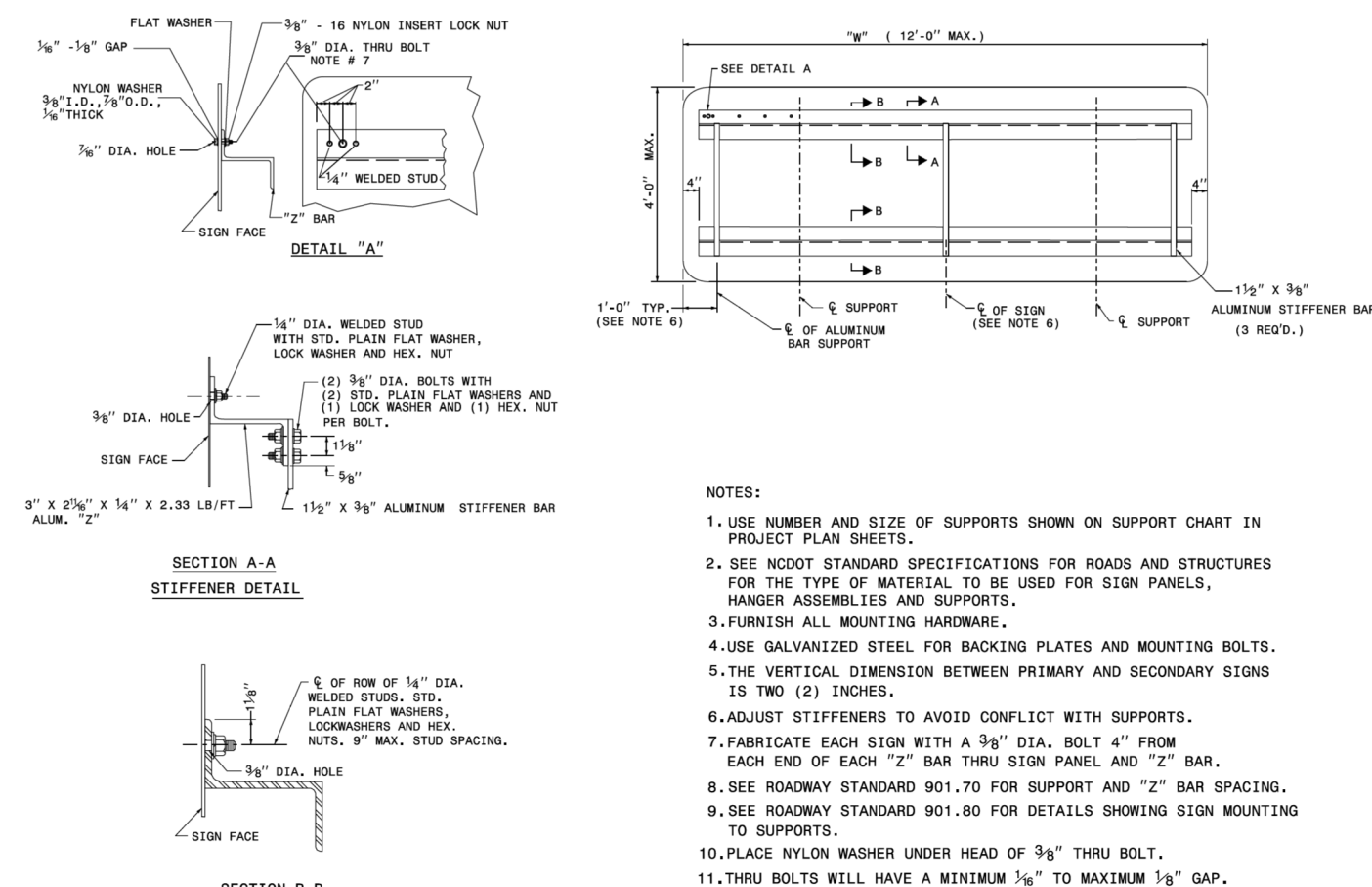
TIP NO. _____ SHEET NO. _____
 DocuSigned by:
 APPROVED: *Matthew V. Springer*
 DATE: 3/21/2019
 SEAL


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 DEPT. OF TRANSPORTATION
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 RALEIGH, N.C.

2-19

ENGLISH DETAIL DRAWING FOR
TYPE 'B' SIGNS
 WELDED STUD CONSTRUCTION

SHEET 1 OF 1
901D20



FLAT WASHER
 1/16" - 3/8" GAP
 NYLON WASHER
 3/8" I.D., 7/8" O.D.,
 1/16" THICK
 7/16" DIA. HOLE
 SIGN FACE
 "Z" BAR
 3/8" - 16 NYLON INSERT LOCK NUT
 3/8" DIA. THRU BOLT
 NOTE # 7
 2"
 1/4" WELDED STUD
 DETAIL "A"

1/4" DIA. WELDED STUD
 WITH STD. PLAIN FLAT WASHER,
 LOCK WASHER AND HEX. NUT
 (2) 3/8" DIA. BOLTS WITH
 (2) STD. PLAIN FLAT WASHERS AND
 (1) LOCK WASHER AND (1) HEX. NUT
 PER BOLT.
 3/8" DIA. HOLE
 SIGN FACE
 1 1/8"
 5/8"
 3" X 2 3/16" X 1/4" X 2.33 LB/FT
 ALUM. "Z"
 1 1/2" X 3/8" ALUMINUM STIFFENER BAR
 SECTION A-A
 STIFFENER DETAIL

1/4" DIA. WELDED STUD
 WITH STD. PLAIN FLAT WASHER,
 LOCK WASHER AND HEX. NUT
 1 1/8"
 3/8" DIA. HOLE
 SIGN FACE
 9" MAX. STUD SPACING.
 SECTION B-B

"W" (12'-0" MAX.)
 SEE DETAIL A
 4'-0" MAX.
 4"
 1'-0" TYP. (SEE NOTE 6)
 4"
 1 1/2" X 3/8"
 ALUMINUM STIFFENER BAR
 (3 REQ'D.)
 1/4" SUPPORT
 1/4" OF ALUMINUM
 BAR SUPPORT
 1/4" OF SIGN
 (SEE NOTE 6)
 1/4" SUPPORT

NOTES:
 1. USE NUMBER AND SIZE OF SUPPORTS SHOWN ON SUPPORT CHART IN PROJECT PLAN SHEETS.
 2. SEE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR THE TYPE OF MATERIAL TO BE USED FOR SIGN PANELS, HANGER ASSEMBLIES AND SUPPORTS.
 3. FURNISH ALL MOUNTING HARDWARE.
 4. USE GALVANIZED STEEL FOR BACKING PLATES AND MOUNTING BOLTS.
 5. THE VERTICAL DIMENSION BETWEEN PRIMARY AND SECONDARY SIGNS IS TWO (2) INCHES.
 6. ADJUST STIFFENERS TO AVOID CONFLICT WITH SUPPORTS.
 7. FABRICATE EACH SIGN WITH A 3/8" DIA. BOLT 4" FROM EACH END OF EACH "Z" BAR THRU SIGN PANEL AND "Z" BAR.
 8. SEE ROADWAY STANDARD 901.70 FOR SUPPORT AND "Z" BAR SPACING.
 9. SEE ROADWAY STANDARD 901.80 FOR DETAILS SHOWING SIGN MOUNTING TO SUPPORTS.
 10. PLACE NYLON WASHER UNDER HEAD OF 3/8" THRU BOLT.
 11. THRU BOLTS WILL HAVE A MINIMUM 1/16" TO MAXIMUM 1/8" GAP.

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2-19

ENGLISH DETAIL DRAWING FOR
TYPE 'B' SIGNS
 WELDED STUD CONSTRUCTION

SHEET 1 OF 1
901D20


**REVISED SIGNING
 ROADWAY STANDARD DRAWING**


**INCLUDE THIS SHEET WITH SIGNING PLAN WHEN
 SPECIFYING "B" SIGNING**

TYPICAL SHEET

07/29/21
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03/20/08
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 User:dstokes

TIP NO. _____ SHEET NO. _____
 WEIGH STATION _____ SIGN-2C
 APPROVED: *Renee B. Roach*
 DATE: 7/30/2021
 SEAL

 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

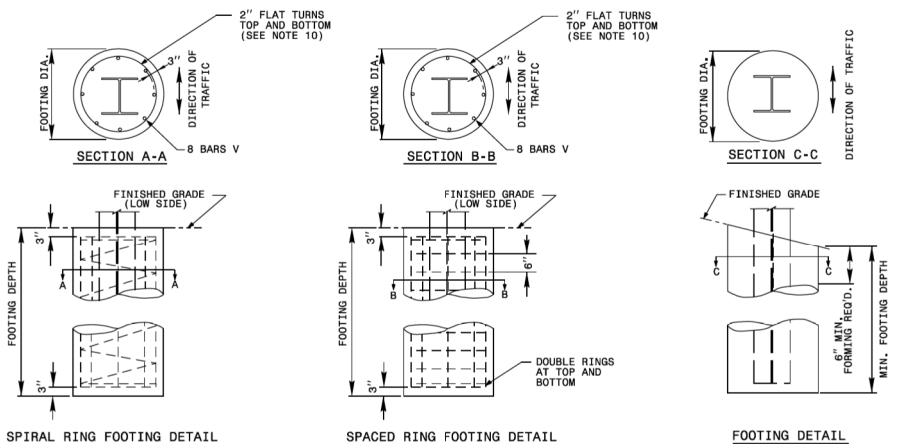
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 DocuSigned by:
 APPROVED: *Matthew V. Sprung*
 DATE: 5/26/2020
 SEAL


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 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
 GROUND MOUNTED SIGN SUPPORTS

SHEET 2 OF 3
 903D10

BEAM SHAPE	BOLT SIZE	SLIP BASE PLATE DATA								KEEPER PLATE DATA								HINGE CONNECTION DATA									BREAK AWAY SUPPORT WEIGHT CONSTANT LBS.
		A ₁	B ₁	C ₁	D ₁	E ₁	T ₁	R ₁	A ₂	B ₂	C ₂	D ₂	E ₂	R ₂	T ₂	BOLT SIZE	F	G	H	I	J	K	L	R ₃	T ₃		
S3X5.7	1/2" DIA. X 3/4"	7"	4"	1"	3/4"	2 1/2"	1"	8/32"	7"	4"	1"	3/4"	2 1/2"	8/32"	28 GAUGE	1/2" DIA. X 1 1/4"	2 1/4"	3 1/2"	4"	1 1/2"	1"	1 1/2"	2"	8/32"	3/8"	18	
S4X7.7	1/2" DIA. X 3/4"	8"	4"	1"	3/4"	2 1/2"	1"	8/32"	8"	4"	1"	3/4"	2 1/2"	8/32"	28 GAUGE	1/2" DIA. X 1 3/4"	2 5/8"	3 1/2"	4"	1 1/2"	1"	1 1/2"	2"	8/32"	3/8"	20	
W6X9	1/2" DIA. X 3/4"	10"	5"	1"	3/4"	3 1/2"	1"	8/32"	10"	5"	1"	3/4"	3 1/2"	8/32"	28 GAUGE	1/2" DIA. X 1 3/4"	4"	3 1/2"	4"	3/4"	1"	1 1/2"	2"	8/32"	3/8"	32	
W6X12	5/8" DIA. X 4"	11"	5"	1 1/4"	7/8"	3 1/4"	1 1/4"	1 1/8"	11"	5"	1 1/4"	7/8"	3 1/4"	1 1/8"	28 GAUGE	5/8" DIA. X 2"	4"	4"	4 1/2"	3/4"	1 1/8"	5/8"	2 1/4"	1 1/2"	3/8"	39	
W6X16	5/8" DIA. X 4 1/2"	12"	6"	1 1/4"	7/8"	4 1/4"	1 1/2"	1 1/8"	12"	6"	1 1/4"	7/8"	4 1/4"	1 1/8"	28 GAUGE	5/8" DIA. X 2 1/4"	4"	4"	4 1/2"	3/4"	1 1/8"	5/8"	2 1/4"	1 1/2"	1/2"	47	
W8X18	5/8" DIA. X 4 1/2"	13 1/2"	6 1/2"	1 1/4"	7/8"	4 3/4"	1 1/2"	1 1/8"	13 1/2"	6 1/2"	1 1/4"	7/8"	4 3/4"	1 1/8"	28 GAUGE	5/8" DIA. X 2 1/4"	5 1/4"	4"	4 1/2"	1"	1 1/8"	5/8"	2 1/4"	1 1/2"	1/2"	70	
W8X21	3/4" DIA. X 4 1/2"	14"	7"	1 1/2"	1"	5"	1 1/2"	1 3/8"	14"	7"	1 1/2"	1"	5"	1 3/8"	28 GAUGE	3/4" DIA. X 2 1/2"	5 1/4"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 1/2"	1/2"	73	
W10X22	3/4" DIA. X 4 1/2"	16"	8"	1 1/2"	1"	6"	1 1/2"	1 3/8"	16"	8"	1 1/2"	1"	6"	1 3/8"	28 GAUGE	3/4" DIA. X 2 1/2"	5 3/4"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 1/2"	1/2"	119	
W10X26	3/4" DIA. X 5 1/2"	16 1/2"	8"	1 1/2"	1"	6 3/4"	1 3/8"	1 3/8"	16 1/2"	8"	1 1/2"	1"	6"	1 3/8"	28 GAUGE	3/4" DIA. X 2 3/4"	5 3/4"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 1/2"	1/2"	140	
W12X26	3/4" DIA. X 5 1/2"	18 1/2"	9"	1 1/2"	1"	7"	1 3/8"	1 3/8"	18 1/2"	9"	1 1/2"	1"	7"	1 3/8"	28 GAUGE	3/4" DIA. X 2 3/4"	6 1/2"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 1/2"	1/2"	176	
W14X30	1" DIA. X 6"	22"	9"	2"	1 1/2"	6"	2"	1 1/2"	22"	9"	2"	1 1/2"	6"	1 1/2"	28 GAUGE	1" DIA. X 3"	6 3/4"	7"	8"	1 1/4"	2"	1"	4"	1 1/2"	5/8"	205	
W16X31	1" DIA. X 6"	24"	9"	2"	1 1/2"	6"	2"	1 1/2"	24"	9"	2"	1 1/2"	6"	1 1/2"	28 GAUGE	1" DIA. X 3"	5 1/2"	7"	8"	1 1/4"	2"	1"	4"	1 1/2"	3/4"	223	
W18X35	1" DIA. X 6"	25"	9"	2"	1 1/2"	6"	2"	1 1/2"	25"	9"	2"	1 1/2"	6"	1 1/2"	28 GAUGE	1" DIA. X 3"	6"	7"	8"	1 1/4"	2"	1"	4"	1 1/2"	3/4"	243	
W18X40	1" DIA. X 6 1/2"	26"	9"	2"	1 1/2"	6"	2"	1 1/2"	26"	9"	2"	1 1/2"	6"	1 1/2"	28 GAUGE	1" DIA. X 3 1/2"	6"	7"	8"	1 1/4"	2"	1"	4"	1 1/2"	3/8"	278	
W21X44	1" DIA. X 7"	29"	9"	2"	1 1/2"	6"	2 1/2"	1 3/8"	29"	9"	2"	1 1/2"	6"	1 1/2"	28 GAUGE	1" DIA. X 3 1/2"	6 1/2"	7"	8"	1 1/4"	2"	1"	4"	1 1/2"	3/8"	310	



FOUNDATION DATA *			
FOOTING DIAMETER	REINFORCEMENT	SPIRAL BAR	SPACED BAR
1'-6"	8 # 6 BARS	#3 BAR, 6" PITCH	#3 BAR, 6" SPACE
2'	8 # 7 BARS	#3 BAR, 6" PITCH	#3 BAR, 6" SPACE
2'-6"	8 # 9 BARS	#3 BAR, 6" PITCH	#3 BAR, 6" SPACE
3'	8 # 11 BARS	#3 BAR, 6" PITCH	#3 BAR, 6" SPACE
3'-6"	8 # 12 BARS	#3 BAR, 6" PITCH	#3 BAR, 6" SPACE
4'	8 # 14 BARS	#3 BAR, 6" PITCH	#3 BAR, 6" SPACE

* FOUNDATION DIMENSIONS ARE SHOWN IN PLANS

STATE OF
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ENGLISH DETAIL DRAWING FOR
 GROUND MOUNTED SIGN SUPPORTS

SHEET 2 OF 3
 903D10

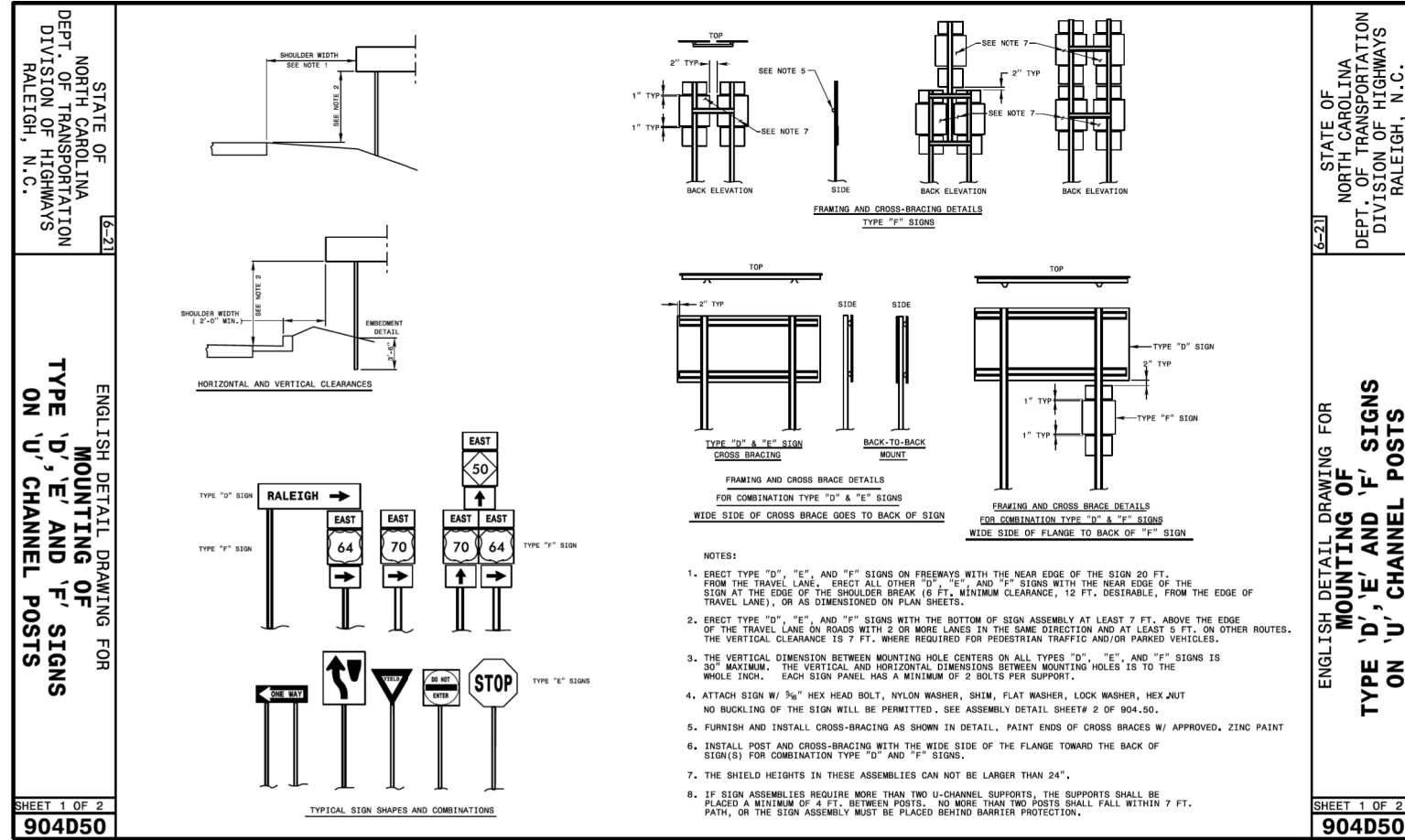
REVISED SIGNING
 ROADWAY STANDARD DRAWING

INCLUDE THIS SHEET WITH SIGNING PLAN WHEN
 SPECIFYING "A" AND "B" SIGNING

TYPICAL SHEET

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 User:jinnavarrete

05/14/20
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SHEET 1 OF 2
904D50

SHEET 1 OF 2
904D50

**REVISED SIGNING
 ROADWAY STANDARD DRAWING**

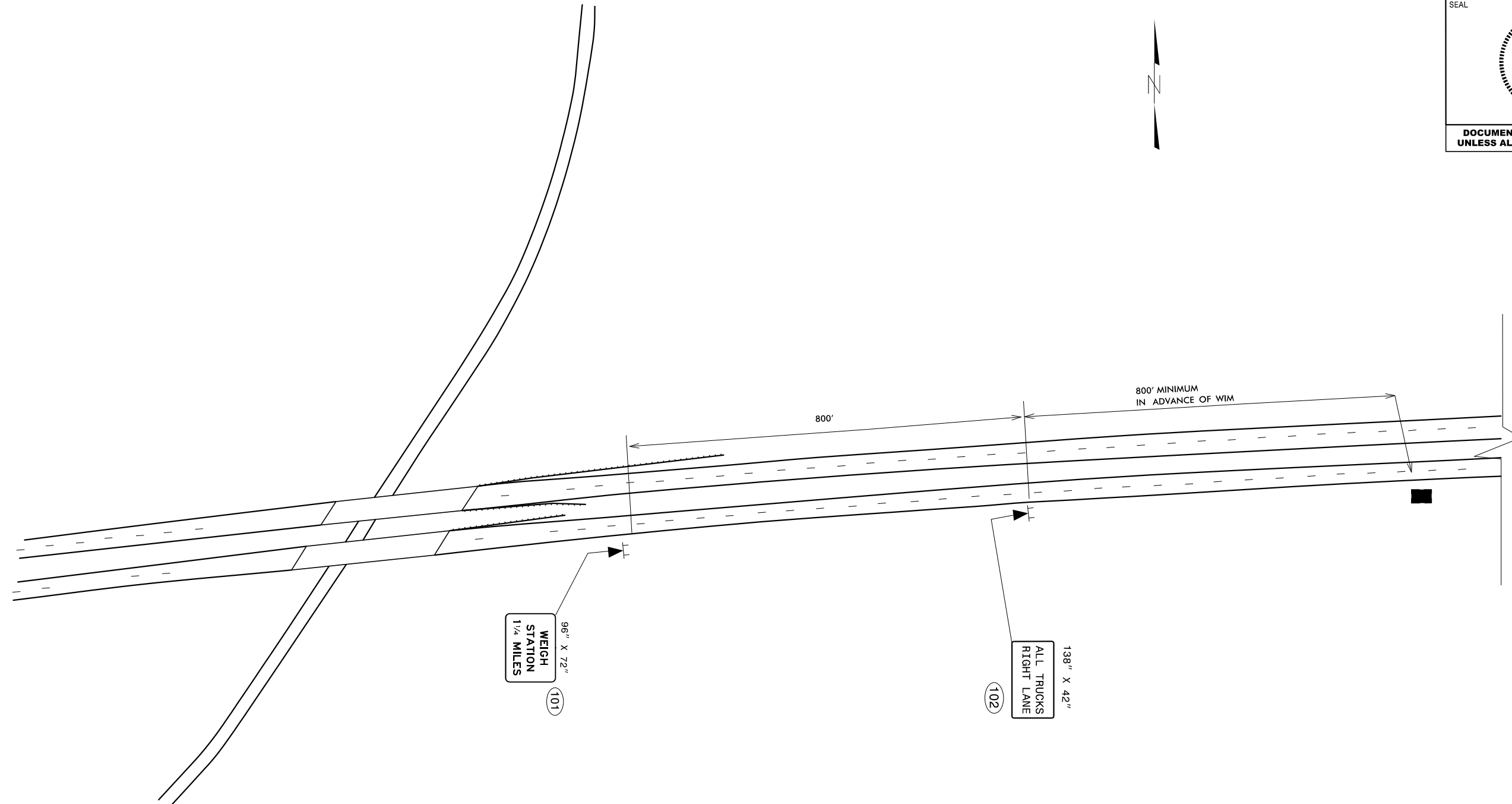
**INCLUDE THIS SHEET WITH SIGNING PLAN WHEN
 SPECIFYING TYPE "D", "E" AND "F" SIGNING
 ON U-CHANNEL POSTS**

TYPICAL SHEET

07/29/21
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 User:jnnavarrete


6/18/2021
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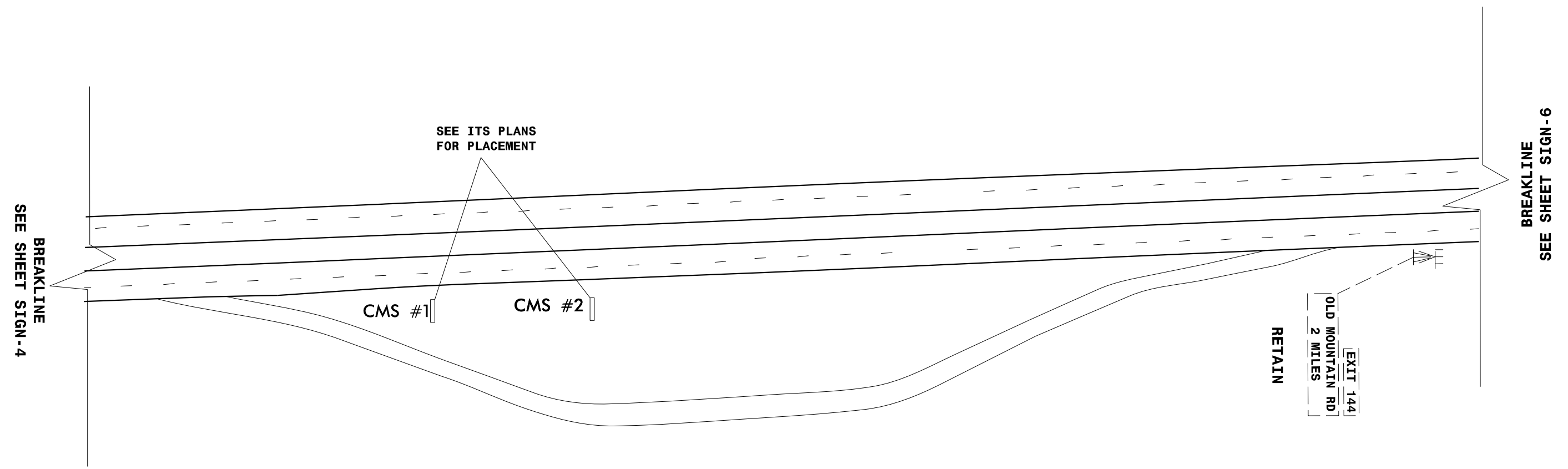
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WEIGH STATION		SIGN-4
APPROVED:	<i>Renee B. Roach</i>	
DATE:	7/30/2021	
SEAL		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



BREAKLINE
SEE SHEET SIGN-5

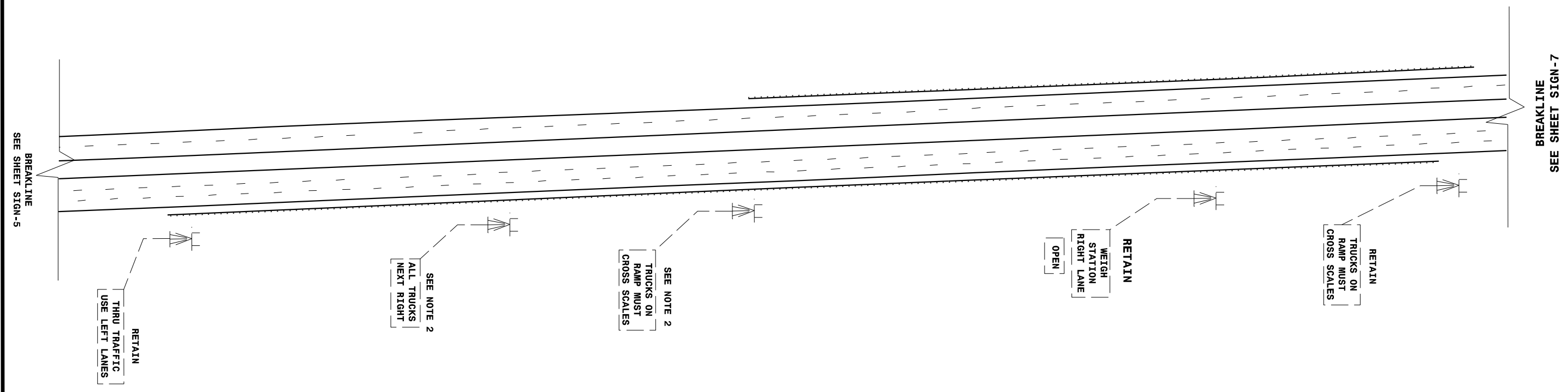
SIGNING PLAN SHEET

TIP NO.	DocuSign	SHEET NO.
WEIGH STATION		SIGN-5
APPROVED:	<i>Renee B. Roach</i>	
DATE:	7/30/2021	
SEAL		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



SIGNING PLAN SHEET

TIP NO.	SHEET NO.
WEIGH STATION	SIGN-6
APPROVED:	<i>Renee B. Roach</i>
DATE:	9/7/2021
SEAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



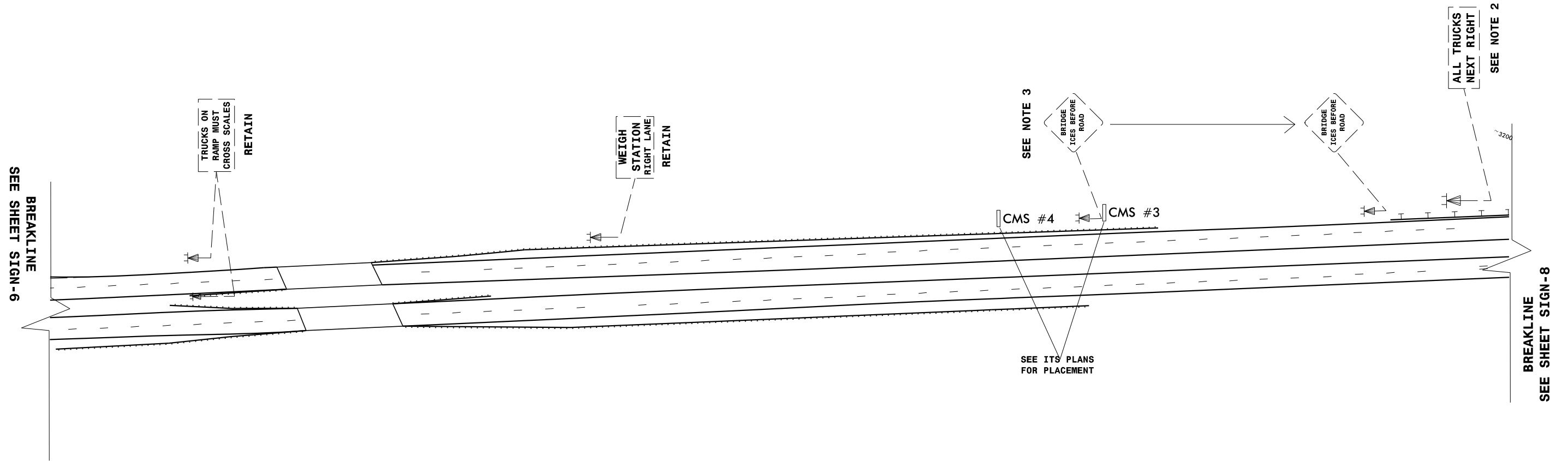
BREAKLINE
SEE SHEET SIGN-5

BREAKLINE
SEE SHEET SIGN-7

PROJECT NOTES
2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

SIGNING PLAN SHEET

TIP NO.	DocuSign	SHEET NO.
WEIGH STATION		SIGN-7
APPROVED:	<i>Renee B. Roach</i>	
DATE:	7/30/2021	
SEAL		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		




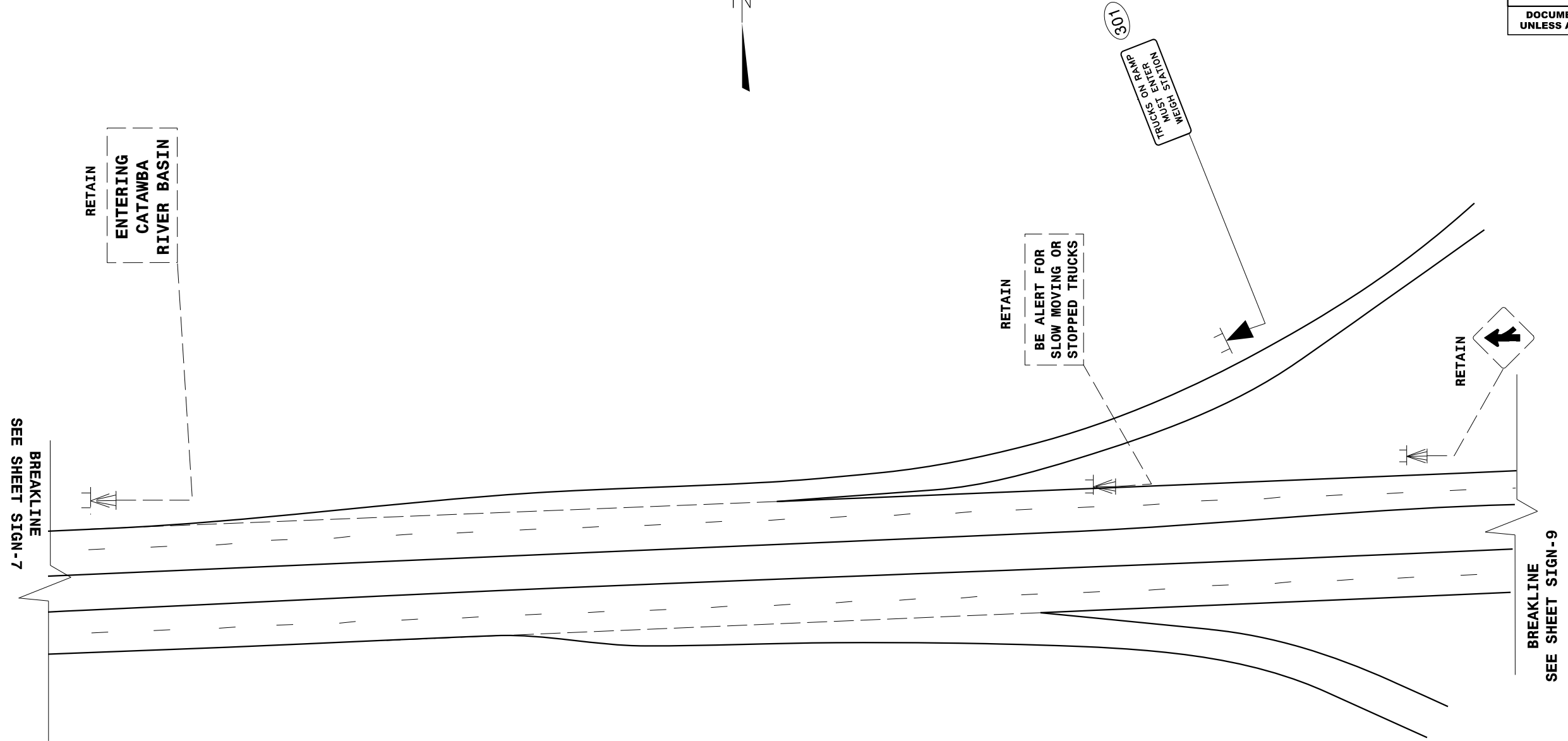
PROJECT NOTES

- 2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
- 3 RELOCATE SIGN TYPE E (GROUND MOUNTED)

SIGNING PLAN SHEET


07/29/21
 S:\S&DU\Western Region\Division 11 NB Weigh Station\Division 12 Weigh Station.dgn
 User: jinnavarrate

TIP NO. _____	SHEET NO. _____
WEIGH STATION _____	SIGN-8
APPROVED: <i>Renee B. Roach</i>	
DATE: 7/30/2021	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



07/29/21
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 User: jinnavarrate

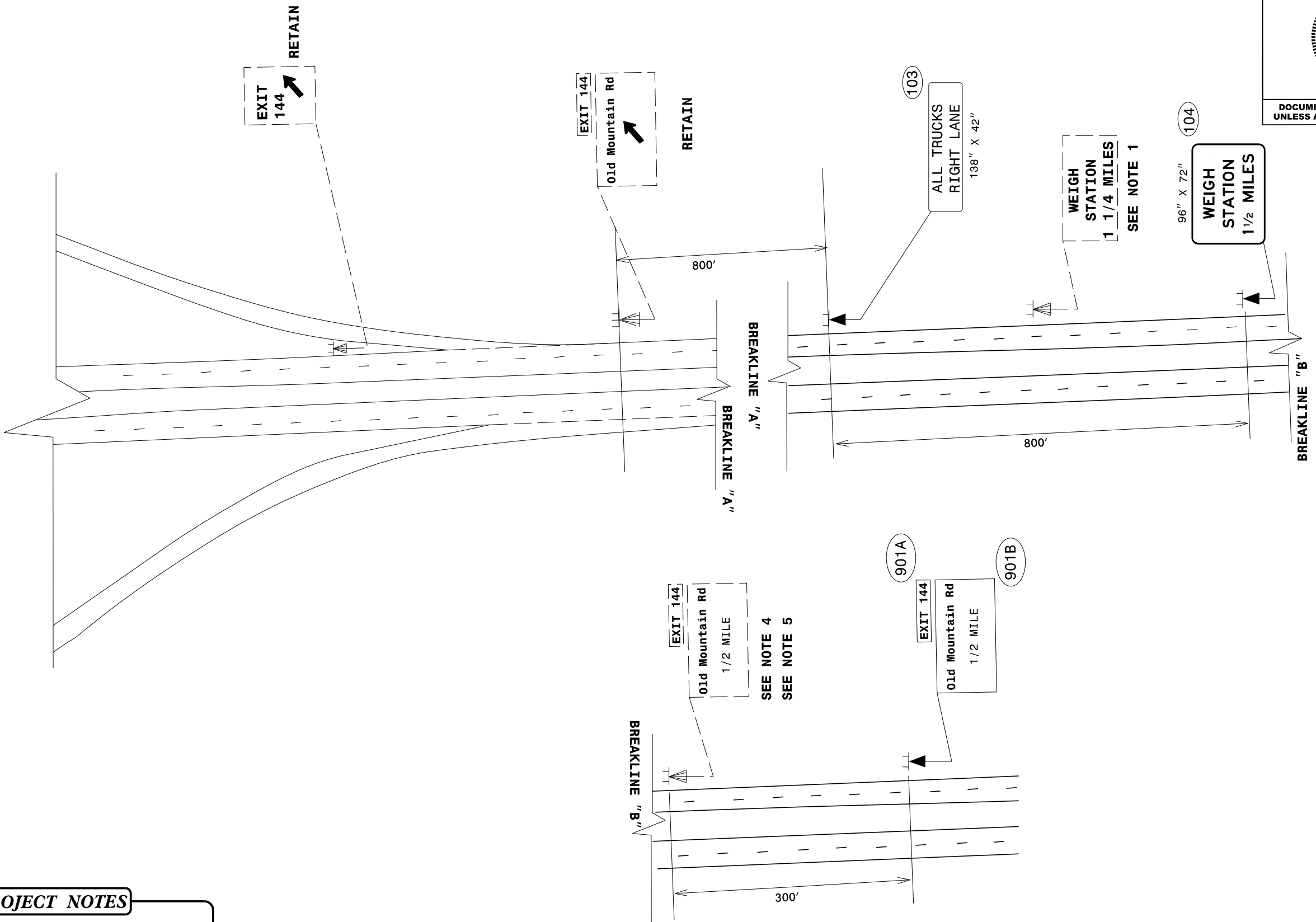
SIGNING PLAN SHEET

TIP NO. _____ SHEET NO. _____
 WEIGH STATION SIGN-9
 APPROVED: *Renee B. Roach*
 DATE: 7/30/2021
 SEAL

 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



SEE SHEET SIGN-8
 BREAKLINE

- PROJECT NOTES**
- 1 DISPOSAL OF SIGN SYSTEM, STEEL BEAM
 - 4 RELOCATE SIGN TYPE A (GROUND MOUNTED)
 - 5 DISPOSAL OF SIGN SUPPORT, STEEL BEAM



07/29/21
 S:\S&DU\Western Region\Division 11 NB Weigh Station\Division 12 Weigh Station.dgn
 User:lnnavarrete

SIGNING PLAN SHEET