

7/15/2026 10:30:13 AM
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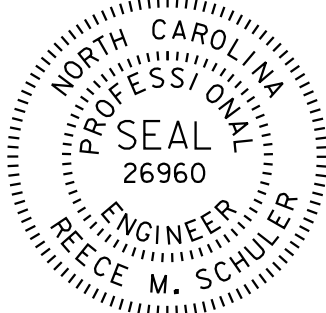
CONTRACT:

T.I.P.: U-4700CB

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
CALDWELL COUNTY

LOCATION: US 321 (HICKORY BLVD.) AT SR 1809/1952
(PINE MOUNTAIN ROAD)

PROJECT REFERENCE NO. U-4700CB	SHEET NO. SIGN-1
APPROVED: _____	
DATE: _____	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE
CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
901.10	TYPE 'A' SIGNS
901.50	ARROWS AND SHIELDS
901.70	SIGN STRINGERS AND SUPPORT SPACING
901.80	SIGN MOUNTING DETAILS
902.10	FOUNDATIONS FOR GROUND MOUNTED SIGNS
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL SUPPORTS
910.30	REDUCED CONFLICT INTERSECTION

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.
- ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4054000000	902	PLAIN CONCRETE SIGN FOUNDATIONS	1	C.Y.
4060000000	903	SUPPORTS, BREAKAWAY STEEL BEAM	210	L.B.
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	534	L.F.
4102000000	904	SIGN ERECTION, TYPE E	26	EA.
4108000000	904	SIGN ERECTION, TYPE F	6	EA.
4110000000	904	SIGN ERECTION, TYPE A (GROUND MOUNTED)	1	EA.
4116100000	904	SIGN ERECTION, RELOCATED TYPE 'D' (GROUND MOUNTED)	4	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	30	EA.

INDEX

SHEET NO.	DESCRIPTION
SIGN-1-1B	TITLE AND SPECIAL DETAIL SHEETS
SIGN-2	SUPPORT INFORMATION
SIGN-2A	SPECIAL SIGN DESIGN
SIGN-2B	E AND F SIGN SHEET
SIGN-3-5	SIGN PLAN SHEETS

PLAN PREPARED BY: Johnson, Mirmiran, & Thompson Inc.

REECE SCHULER, PE

PROJECT ENGINEER

DANE FREDDE

PROJECT DESIGN ENGINEER



Johnson, Mirmiran, & Thompson Inc.
4700 Falls of Neuse Rd, Suite 100,
Raleigh, NC, 27609
License No: C-3097

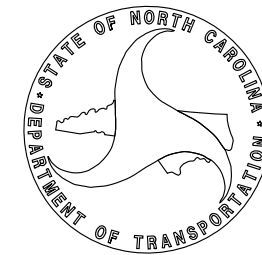
PLAN SUBMITTED TO: NCDOT SIGNING AND DELINEATION UNIT

KELVIN L. JORDAN

STATE SIGNING & DELINEATION ENGINEER

WALTER JOHNSON

SIGNING & DELINEATION PROJECT DESIGN ENGINEER



PROJECT REFERENCE NO.
U-4700CB

SHEET NO.
SIGN-1A

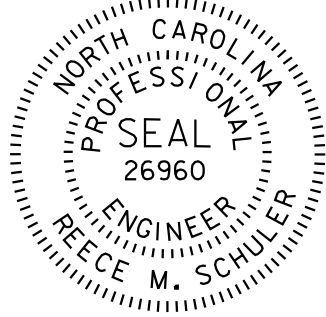
DESIGNED BY
Rene Schuler

APPROVED:

10634024C7824FC...

DATE:
6/2/2026 | 2:47:47 PM PDT

SEAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SIGN NUMR:
TYPE: F Ground
QUANTITY: 1

BACKG. COLOR: White
COPY COLOR: Black

DESIGN BY:
PROJECT ID:

CHK BY:
DIV:

STD #:
DATE:

N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY & SAFETY
SIGNING & DELINEATION UNIT



SIGN WIDTH: 1'-9"
HEIGHT: 1'-9"
TOTAL AREA: 3.1 Sq.Ft.

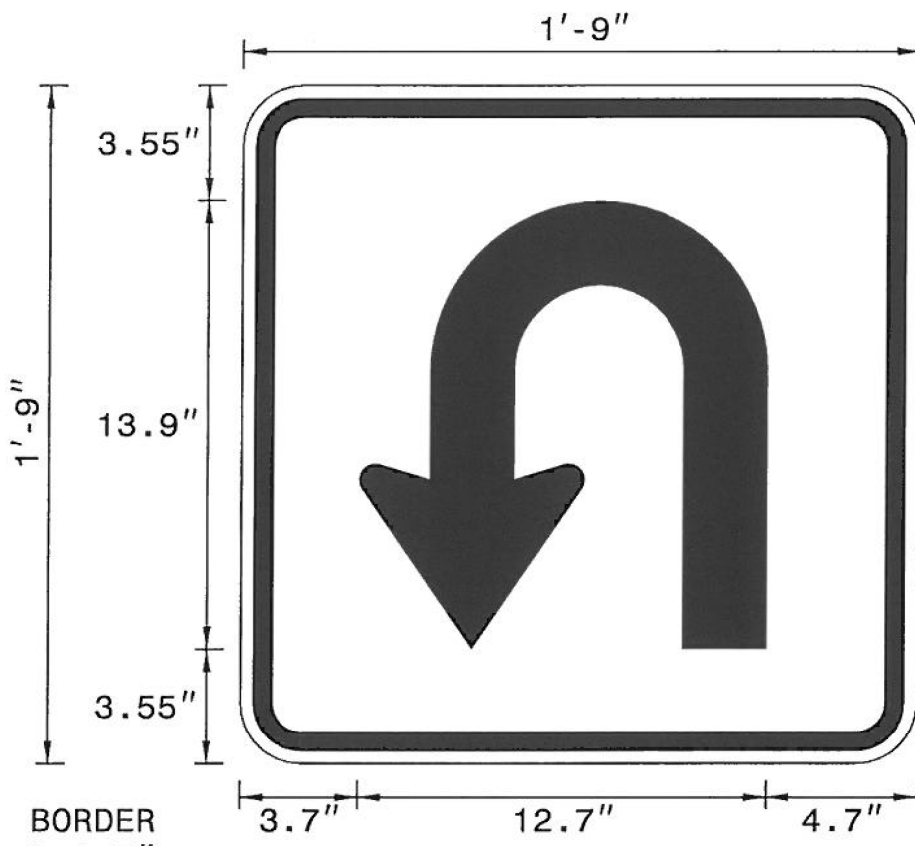
MAT'L: 0.063 " ALUMINUM

BORDER TYPE: RECESSED
RECESS: 0.38"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS:
LENGTH:

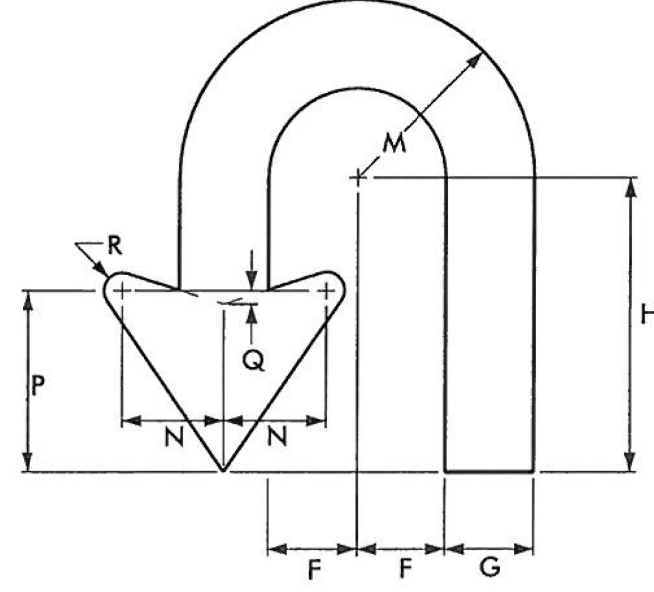
SYMBOL	X	Y	WID	HT
u arrow	3.7	3.5	12.7	13.9

NOTES:
1. Legend and border shall be direct applied
Non-reflective sheeting.
2. Background shall be Grade C reflective sheeting.



BORDER
R=1.5"
TH=0.63"
IN=0.38"

Arrow Details



ARROW DIMENSIONS (INCHES)	F	G	H	M	N	P	Q	R
	2.625	2.625	8.659	5.25	3	5.25	0.375	0.5

Spacing Factor is 1 unless specified otherwise

FILENAME: GSENG

PROJECT REFERENCE NO.	SHEET NO.
U-4700CB	SIGN-1B

NOTES:

- DESIGN CONFORMS WITH THE SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS - AASHTO.
- USE MATERIALS, FABRICATE AND ERECT SIGNS AND SUPPORTS THAT CONFORM TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- USE HIGH STRENGTH BOLTS, NUTS AND WASHERS THAT CONFORM TO ASTM A-325 AND THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM F2329 OR B695 CLASS 55.
- USE BACKING PLATES, SLIP BASE PLATES, FRICTION PLATES, AND HINGE PLATES THAT CONFORM TO ASTM A-36 AND THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM A-123 PRIOR TO GALVANIZING, GRIND SMOOTH ANY METAL PROJECTION BEYOND THE PLATE FACE.
KEEPER PLATES SHALL BE MANUFACTURED FROM 28 GAUGE SHEET STEEL THAT CONFORMS TO ASTM A-36 AND IS GALVANIZED IN ACCORDANCE WITH ASTM A-123
- ASSEMBLE HINGE CONNECTIONS IN THE SHOP. THE SHOP SHALL TIGHTEN BOLTS BY USE OF EITHER A CALIBRATED POWER WRENCH OR A MANUAL TORQUE WRENCH. TIGHTEN EACH HINGE CONNECTION BOLT TO 1/3 PAST SNUG.
- BASE PLATES DETAILS ARE FOR INSTALLATIONS ON THE RIGHT SHOULDER AND IN GORE AREAS.
- ASSEMBLE UPPER SUPPORT TO STUB AS SHOWN IN DETAIL. SLIP BASE PLATES SHALL BE FILLET WELDED ONTO SUPPORTS ALL AROUND THE STRUCTURAL SHAPE SO AS TO INSURE NO LOSS OF STRENGTH. ASSEMBLE IN EITHER SHOP OR FIELD. 28 GAUGE KEEPER PLATE IS PLACED BETWEEN SLIP BASE PLATES TO PREVENT BOLT SLIPPING. TIGHTEN BOLTS TO THE FOLLOWING PRESCRIBED TORQUE:

BOLT DIAMETER	TORQUE (LB. FT.)
1/2"	9
5/8"	22
3/4"	37
1"	48

COMPLETELY ASSEMBLE BREAKAWAY SUPPORTS PRIOR TO ERECTION. BREAKAWAY SUPPORT TO BE SET IN ONE PIECE. AFTER SUPPORT HAS BEEN ERECTED AND THE CONCRETE FOOTINGS HAS CURED AT LEAST 48 HOURS, CLEAN CONCRETE FROM BASE CONNECTION BOLTS THEN LOOSEN AND RE TIGHTEN EACH BOLT IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE.DO NOT OVER TIGHTEN. BURR ALL BOLT THREADS OF BASE CONNECTIONS TO PREVENT LOOSENING.

- ELIMINATE HINGE CONNECTION FOR ALL SINGLE SUPPORT SIGNS.
- DETAIL IS FOR ONE DIRECTION BREAKAWAY. WHEN PLANS REQUIRE A TWO DIRECTION BREAKAWAY, TWO FRICTION PLATES SHALL BE USED IN LIEU OF ONE FRICTION PLATE AND ONE HINGE PLATE.

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

ROADWAY DETAIL DRAWING FOR
GROUND MOUNTED SIGN SUPPORTS

SHEET 3 OF 3
903D1003

6/4/2026 | 10:06:23 AM PDT



Signed by:
Matthew V. Springer, PE
BC60FEE8B584403

CONTRACTS STANDARDS AND DEVELOPMENT UNIT Office 919-707-8950 FAX 919-250-4119	
SEE TITLE BLOCK	
ORIGINAL BY: R.S. GALLO	DATE: 05-22-2025
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

PROJECT REFERENCE NO.
U-4700CB

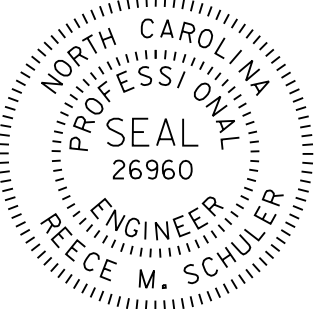
SHEET NO.
SIGN-2

DocuSigned by:
Reece Schuler
18634024C7624FC...

APPROVED:

DATE: 6/2/2026 | 2:47:47 PM PDT

SEAL



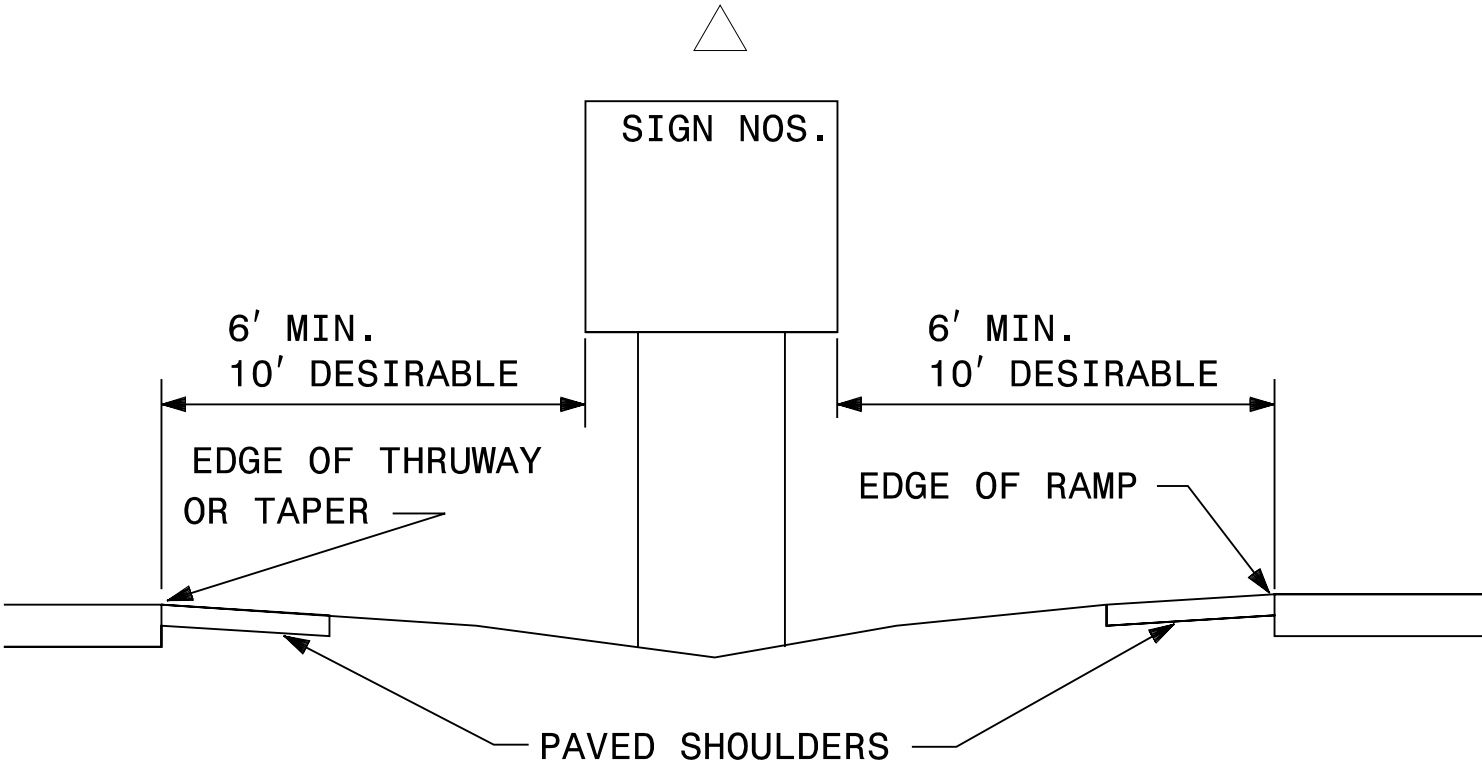
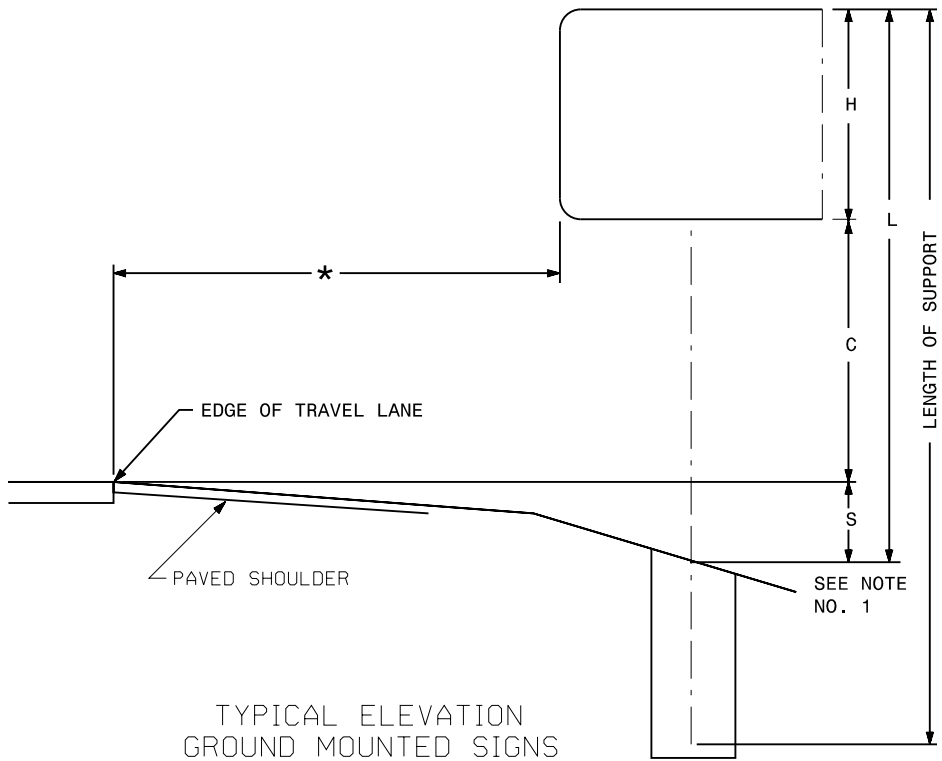
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UNLESS ALL SIGNATURES COMPLETED**

Version: 3.2 Posted: 7/5/2023

SIGN					ROADWAY STATION	NUMBER OF SUPPORTS	BEAM SECTION	SUPPORT TYPE BA or S	OMNI COUPLER	ATTACHMENT METHOD	MOUNTING METHOD	HORIZONTAL CLEARANCE* (ft.)	SUPPORT SPACING	LENGTH (ft)			LEFT SUPPORT (ft)			CENTER SUPPORT (ft)			RIGHT SUPPORT (ft)			SUPPORT WEIGHTS		FOOTINGS				FIELD VERIFIED SEE NOTE 2 (mm/dd/yy)
NUMBER	TYPE	SIZE (in.)												SNS HT	MTG HT	EMBED- MENT												DIAMETER (ft.)	DEPTH (ft.)	REINFORCED (c.y.)	PLAIN (c.y.)	
		w	x	h																												
		S	L	LENGTH													S	L	LENGTH	S	L	LENGTH	B/A (lbs.)	SIMPLE (lbs.)								
201	A	72	x	60	RPA 7+45	2	S3x5.7	BA	N/A	N/A	N/A	18.00	3.52	5.00	7.00	2.5	0.70	12.70	15.20	0.00	0.00	0.00	0.70	12.70	15.20	209.28	0	1.0	3	0.00	0.17	
																										TOTAL 209.28	TOTAL 0.00		TOTAL 0.00	TOTAL 0.17		
USE:																										210.00	0.00		0.00	1.00		

NOTES

- DIMENSION "S" REPRESENTS AN INCREASE (+), OR A DECREASE (-) IN POLE LENGTH, RELATIVE TO THE ELEVATION OF THE EDGE OF TRAVEL LANE.
- FIELD VERIFICATIONS SHALL BE REQUIRED FOR ALL SUPPORTS, SEE (*) ARTICLE 903-3. FABRICATORS SHALL BE AISC CERTIFIED IN CATEGORY 1, SEE (*) ARTICLE 1072-1. (*) = N.C.D.O.T. STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES
- PLAN LOCATIONS FOR EXISTING UTILITIES ARE BASED ON THE BEST AVAILABLE INFORMATION AND, THEREFORE MAY NOT BE PRECISELY ACCURATE. THEREFORE, IT IS INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF UTILITIES BEFORE BEGINNING WORK IN A LOCATION.



TYPE "A" AND TYPE "B"
GROUND MOUNTED SIGNS

PROJECT REFERENCE NO.
U-4700CB

SHEET NO.
SIGN 2A

DESIGNED BY
Reece M. Schuler

APPROVED:

DATE: 6/2/2026 | 2:47:47 PM PDT

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SIGN NUMBER: 201

TYPE: A

QUANTITY: 1

SIGN WIDTH: 6'-0"

HEIGHT: 5'-0"

TOTAL AREA: 30 sq. ft.

BORDER TYPE: FLUSH

RECESS: 0.15"

WIDTH: 1.35"

RADII: 7.85"

NO. Z BARS:

LENGTH:

BACKG COLOR: Green

COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type A			18	28.4

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: DAF

CHECKED BY: JQR

MaY 7, 2026

PROJECT ID: U-4700CB

DIV: 11

BORDER
R=7.85"
TH=1.35"
IN=0.15"

Panel Style: guide_exp_gore.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																				Series/Size Text Length	
		E	X	I	T															EM 2000	
	20.6	8.8	10.8	3.8	7.4	20.6														30.8	

NORTH CAROLINA D.O.T. SIGN DETAIL

SPECIAL SIGN DESIGN

5/11/2026 4:32:56 PM
U-4700CB-SIGNING-2A.dgn
User:rfredde

PROJECT REFERENCE NO. U-4700CB		SHEET NO. SIGN-2B	
APPROVED: DESIGNED BY: Rene Schuler 10034024C7024FC			
DATE: 6/2/2026 2:47:47 PM PDT			
SEAL		NORTH CAROLINA PROFESSIONAL ENGINEER RENE M. SCHULER 26960	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

401 QUANTITY REQ'D 2 ONE WAY R6-1 (L) 36" X 12" TWO "U" POSTS PER SIGN	402 QUANTITY REQ'D 4 W12-1 48" X 48" ONE "U" POSTS PER SIGN	403 QUANTITY REQ'D 5 W3-3 48" X 48" ONE "U" POST PER SIGN	404 QUANTITY REQ'D 2 ONE WAY R6-1 (R) 36" X 12" TWO "U" POSTS PER SIGN	405 QUANTITY REQ'D 4 R3-4 24" X 24" ONE "U" POSTS PER SIGN	406 QUANTITY REQ'D 1 SPEED LIMIT 35 R2-1 24" X 30" ONE "U" POST PER SIGN	
407 QUANTITY REQ'D 2 DO NOT ENTER R5-1 30" X 30" ONE "U" POST PER SIGN	408 QUANTITY REQ'D 2 WRONG WAY R5-1 A 36" X 24" ONE "U" POST PER SIGN	409 QUANTITY REQ'D 3 STOP R1-1 36" X 36" ONE "U" POST PER SIGN	410 QUANTITY REQ'D 1 RIGHT LANE ENDS 500 FT W19-10 R 48" X 48" ONE "U" POSTS PER SIGN			
501 QUANTITY REQ'D 1 SOUTH 321 M3-3 24" X 12" M1-4 30" X 24" SEE SHEET SIGN-1A 21" X 21" ONE "U" POSTS PER SIGN	502 QUANTITY REQ'D 1 NORTH 321 M3-1 24" X 12" M1-4 30" X 24" SEE SHEET SIGN-1A 21" X 21" ONE "U" POSTS PER SIGN	503 QUANTITY REQ'D 1 NORTH 321 TO SOUTH 321 M4-5 24" X 12" M3-1 24" X 12" M1-4 30" X 24" M6-1 21" X 15" TWO "U" POSTS PER SIGN	504 QUANTITY REQ'D 1 TO NORTH 321 TO SOUTH 321 M4-5 24" X 12" M3-1 24" X 12" M1-4 30" X 24" M6-1 21" X 15" TWO "U" POSTS PER SIGN	505 QUANTITY REQ'D 1 NORTH 321 M3-1 24" X 12" M1-4 30" X 24" ONE "U" POSTS PER SIGN	506 QUANTITY REQ'D 1 SOUTH 321 M3-3 24" X 12" M1-4 30" X 24" ONE "U" POSTS PER SIGN	
						TYPE 'E' & 'F' SIGNS

PROJECT REFERENCE NO.
U-4700CB

SHEET NO.
SIGN-3

APPROVED:

DocuSigned by:
Rece M. Schuler
16634024C7B24EC

DATE:

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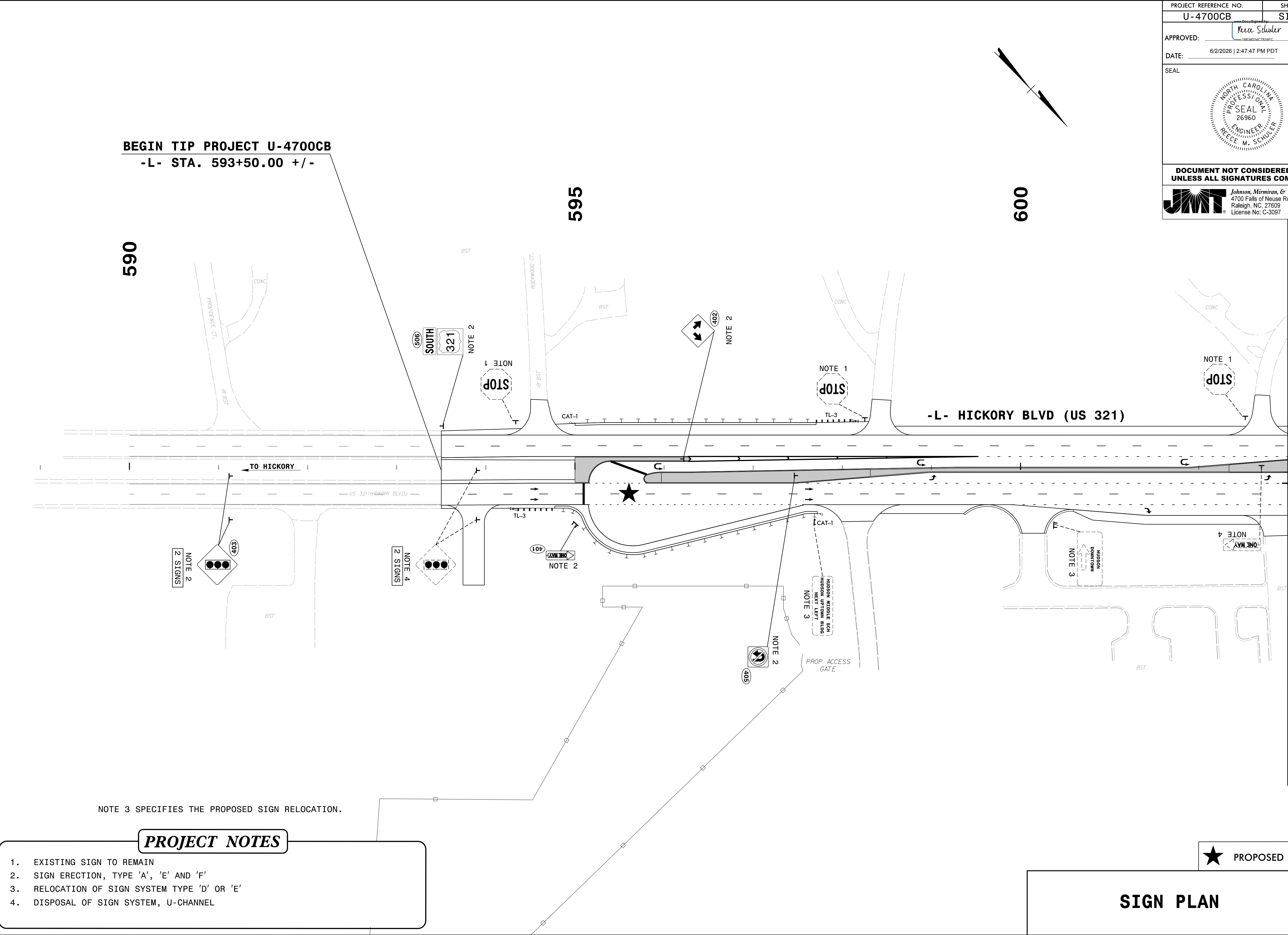
SEAL

NORTH CAROLINA
PROFESSIONAL
SEAL
26960
ENGINEER
RECE M. SCHULER

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JMT

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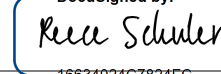
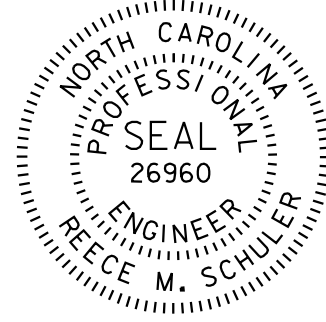
NOTE 3 SPECIFIES THE PROPOSED SIGN RELOCATION.

PROJECT NOTES

- EXISTING SIGN TO REMAIN
- SIGN ERECTION, TYPE 'A', 'E' AND 'F'
- RELOCATION OF SIGN SYSTEM TYPE 'D' OR 'E'
- DISPOSAL OF SIGN SYSTEM, U-CHANNEL

★ PROPOSED SIGNAL

SIGN PLAN

PROJECT REFERENCE NO.	SHEET NO.
U-4700CB	SIGN-4
APPROVED: 	
DATE: 6/2/2026 2:47:47 PM PDT	
SEAL	
	
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MATCH LINE -L- STA. 603+00 SEE SIGN 3

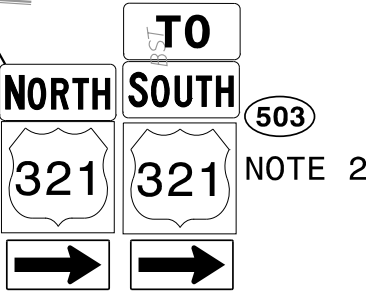
MATCH LINE -L- STA. 612+00 SEE SIGN 5

NOTE 3 SPECIFIES THE PROPOSED SIGN RELOCATION.

PROJECT NOTES

- EXISTING SIGN TO REMAIN
- SIGN ERECTION, TYPE 'A', 'E' AND 'F'
- RELOCATION OF SIGN SYSTEM TYPE 'D' OR 'E'
- DISPOSAL OF SIGN SYSTEM, U-CHANNEL

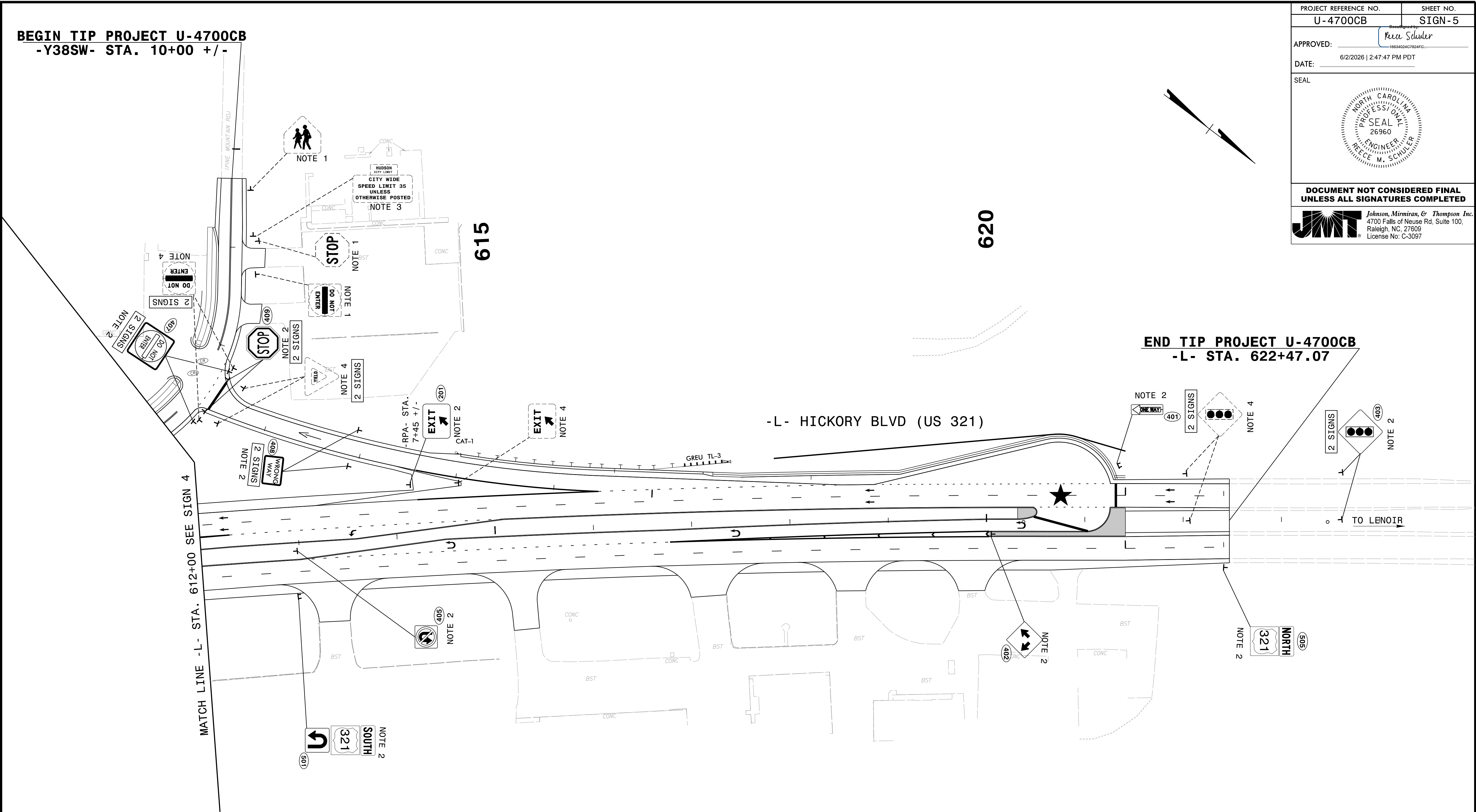
END CONSTRUCTION U-4700CB
-Y38NE- STA. 26+00 +/-



 PROPOSED SIGNAL

SIGN PLAN

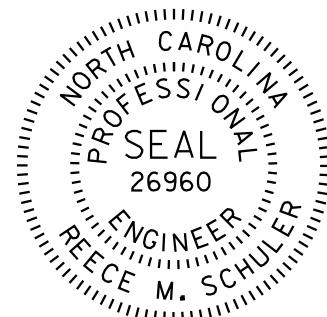
BEGIN TIP PROJECT U-4700CB
-Y38SW- STA. 10+00 +/-



NOTE 3 SPECIFIES THE PROPOSED SIGN RELOCATION.

PROJECT NOTES

1. EXISTING SIGN TO REMAIN
2. SIGN ERECTION, TYPE 'A', 'E' AND 'F'
3. RELOCATION OF SIGN SYSTEM TYPE 'D' OR 'E'
4. DISPOSAL OF SIGN SYSTEM, U-CHANNEL

PROJECT REFERENCE NO. U-4700CB	SHEET NO. SIGN-5
APPROVED: <i>Rece Schulz</i> 18034024C7824FC	
DATE: 6/2/2026 2:47:47 PM PDT	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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SIGN PLAN