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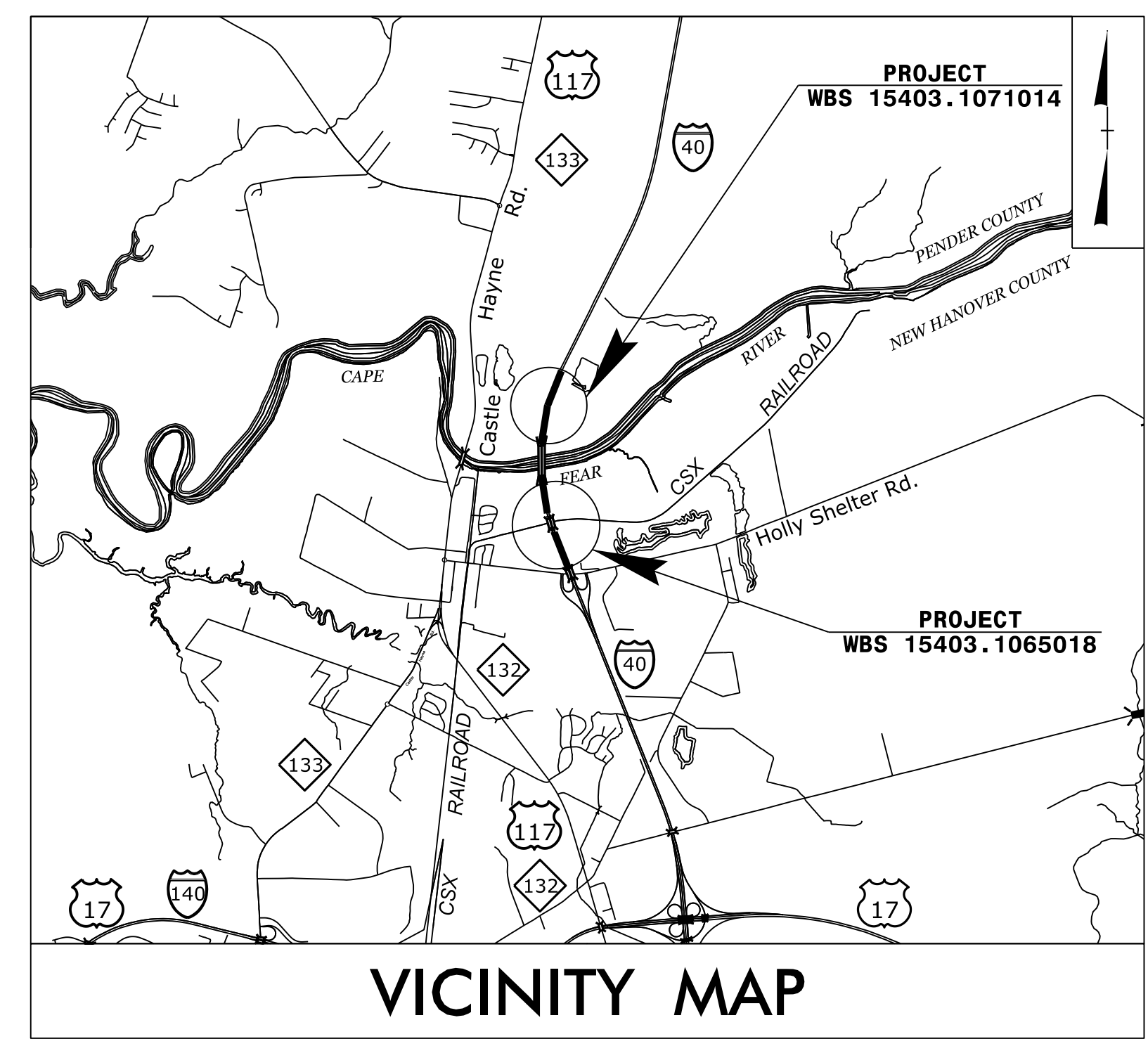
09/08/99

See Sheet 1A For Index of Sheets  
 See Sheet 1B For Conventional Symbols  
 See Sheet 1C For Survey Control Sheet

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

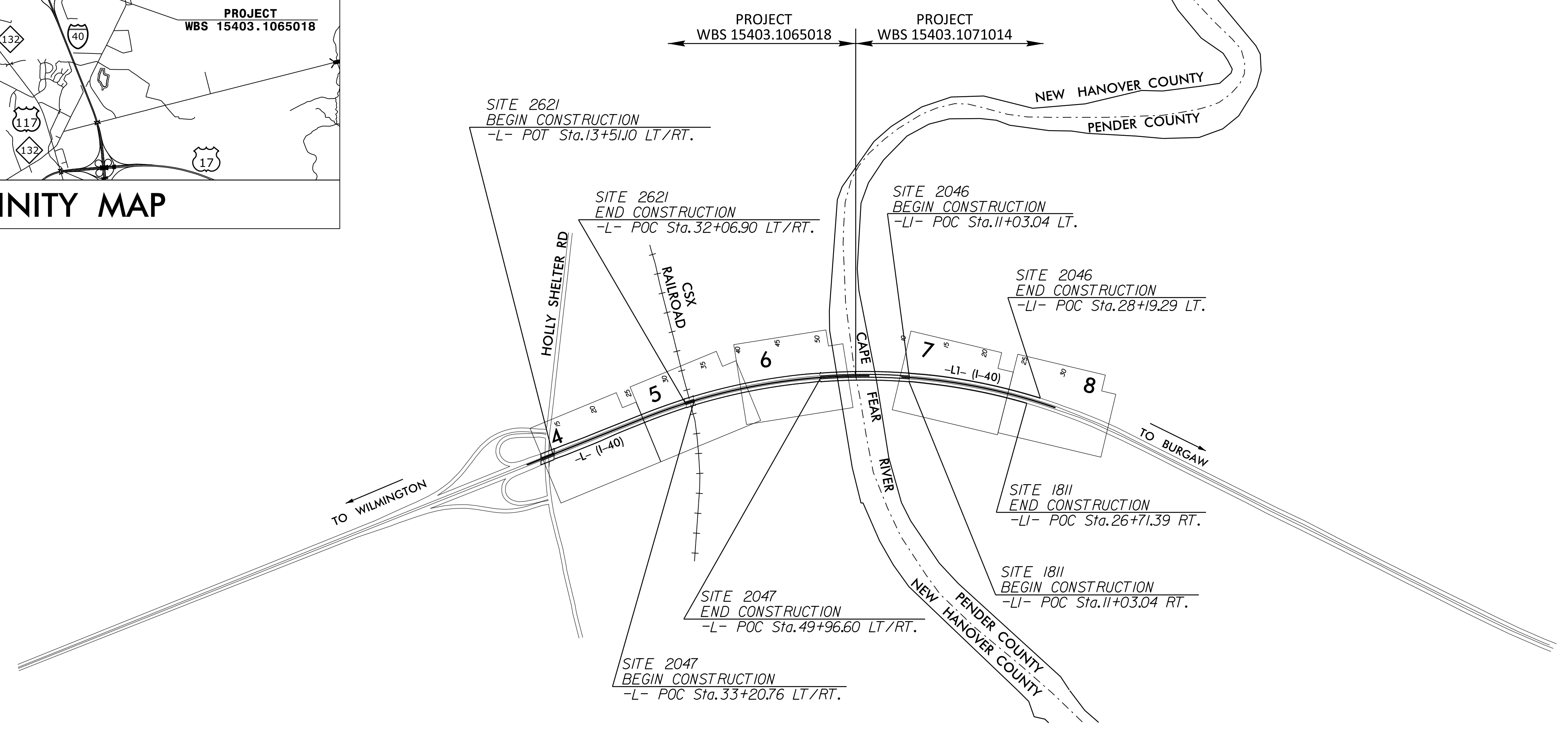
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15403.1065018 / 15403.1071014	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15403.1065018 / 15403.1071014	ER18002	CONST.	

**PROJECT: 15403.1065018 / 15403.1071014**  
**CONTRACT: C204557**



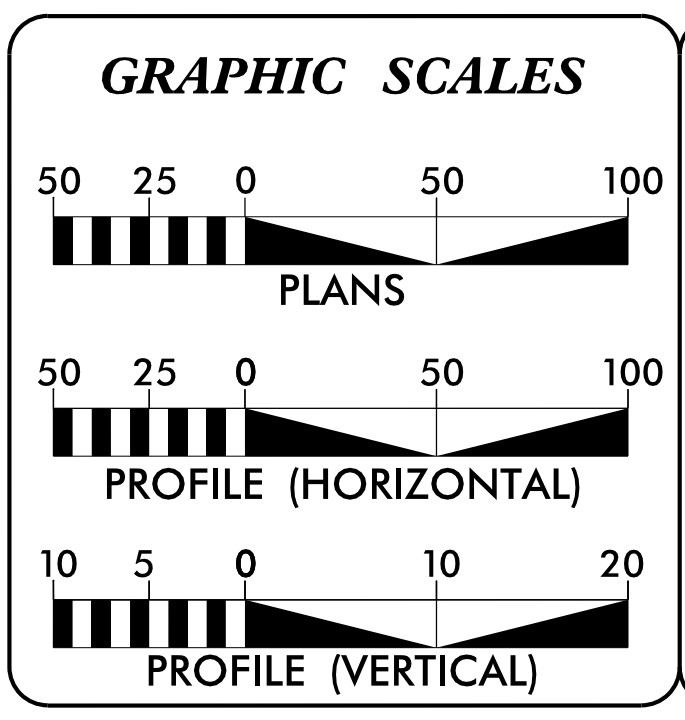
# NEW HANOVER & PENDER COUNTIES

**LOCATION: I-40 FROM MILE MARKER 413 TO 415**  
**TYPE OF WORK: GRADING, DRAINAGE, AND PAVING**



NCDOT CONTACT: KRISTA KIMMEL, PE

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2018 =	30,500
ADT =	
K =	%
D =	%
T =	% *
V =	MPH
* TTST =	DUAL
FUNC CLASS =	
INTERSTATE	
TIER	

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT I-40 (SITE 2621) =	0.352 MI.
LENGTH OF ROADWAY PROJECT I-40 (SITE 2047) =	0.317 MI.
TOTAL LENGTH OF PROJECT WBS 15403.1065018 =	0.669 MI.

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**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT I-40 (SITE 1811) =	0.297 MI.
LENGTH OF ROADWAY PROJECT I-40 (SITE 2046) =	0.325 MI.
TOTAL LENGTH OF PROJECT WBS 15403.1071014 =	0.622 MI.

Prepared for the North Carolina Department of Transportation in the office of:

PLANS PREPARED BY  
**PARSONS**

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:** EDWARD S. ROBBINS, PE  
 PROJECT ENGINEER

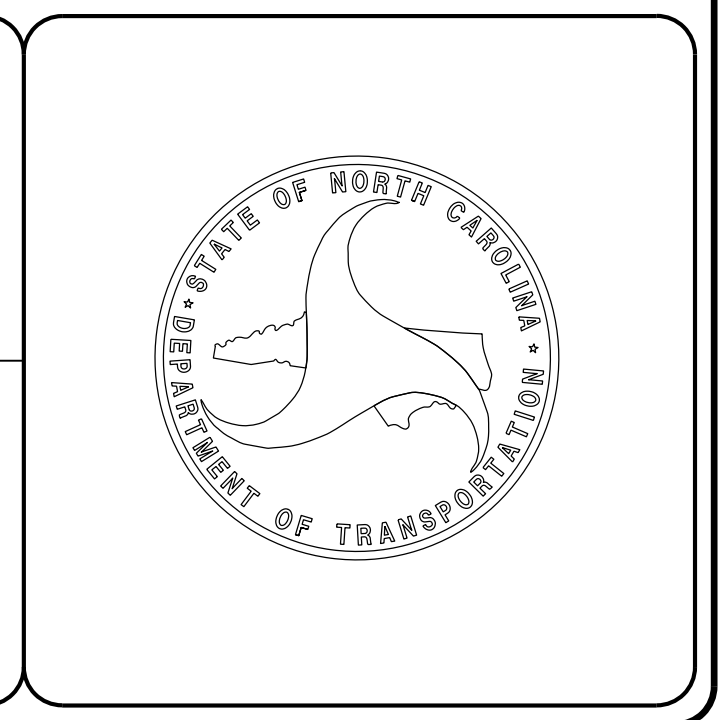
**LETTING DATE:** DAVID B. GARRETT  
 PROJECT DESIGN ENGINEER  
 SEPTEMBER 15, 2020

**HYDRAULICS ENGINEER**

EDWARD S. ROBBINS, PE  
 PROFESSIONAL ENGINEER  
 SEAL 040843  
 9/23/2020

**ROADWAY DESIGN ENGINEER**

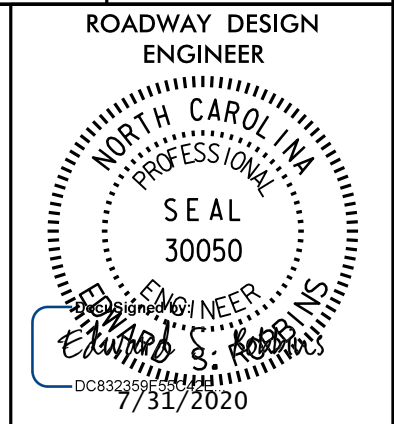
DAVID B. GARRETT, PE  
 PROFESSIONAL ENGINEER  
 SEAL 30050  
 9/23/2020



31-JUL-2020 08:25  
 J:\I-40 Storm Repair\Roadway\Proj\I-40-RDY\_TSH\_01.dgn  
 \$\$\$\$USERNAME\$\$\$\$

PLANS PREPARED BY :  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. I-40	SHEET NO. 1A
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**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	MODIFIED METHOD III DETAIL
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-4	DRAINAGE SUMMARIES
3G-1 & 3G-2	GEOTECHNICAL SUMMARIES
4 THRU 8	PLAN SHEETS
9 THRU 11	PROFILE SHEETS
TMP-1 THRU TMP-5	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-13	EROSION CONTROL PLANS
X-1A THRU X-1B	CROSS-SECTION TITLE & SUMMARY SHEETS
X-1 THRU X-64	CROSS-SECTIONS

**GENERAL NOTES:**

2018 SPECIFICATIONS  
 EFFECTIVE: 01-16-2018  
 REVISED:

**GRADE LINE:  
 GRADING AND SURFACING:**

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

**CLEARING:**

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III MOD.

**SHOULDER CONSTRUCTION:**

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.02

**GUARDRAIL:**

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

**TEMPORARY SHORING:**

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - 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
<b>DIVISION 2 - EARTHWORK</b>	
200.03	Method of Clearing - Modified Method III (See Detail in Lieu of Standard)
225.01	Guide for Grading Subgrade - Interstate and Freeway
275.01	Rock Plating
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.25	Anchorage for Frames - Brick, Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

EFF. 01-16-2018  
 REV.

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB
Known Contamination Area: Soil	☠-S-☠
Potential Contamination Area: Soil	☠-S-☠
Known Contamination Area: Water	☠-W-☠
Potential Contamination Area: Water	☠-W-☠
Contaminated Site: Known or Potential	☠?

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	▬

## HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	----- JS
Buffer Zone 1	----- BZ 1
Buffer Zone 2	----- BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	----- R/W
New Right of Way Line with Pin and Cap	----- R/W
New Right of Way Line with Concrete or Granite R/W Marker	----- R/W
New Control of Access Line with Concrete C/A Marker	----- C/A
Existing Control of Access	----- C/A
New Control of Access	----- C/A
Existing Easement Line	----- E
New Temporary Construction Easement	----- E
New Temporary Drainage Easement	----- TDE
New Permanent Drainage Easement	----- PDE
New Permanent Drainage / Utility Easement	----- DUE
New Permanent Utility Easement	----- PUE
New Temporary Utility Easement	----- TUE
New Aerial Utility Easement	----- AUE

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊠

## VEGETATION:

Single Tree	☼
Single Shrub	☼

Note: Not to Scale \*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	☼
Vineyard	----- Vineyard

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	----- S

## UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	----- T
U/G Telephone Cable LOS C (S.U.E.*)	----- T
U/G Telephone Cable LOS D (S.U.E.*)	----- T
U/G Telephone Conduit LOS B (S.U.E.*)	----- TC
U/G Telephone Conduit LOS C (S.U.E.*)	----- TC
U/G Telephone Conduit LOS D (S.U.E.*)	----- TC
U/G Fiber Optics Cable LOS B (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS C (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS D (S.U.E.*)	----- T FO

## WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	----- A/G Water

## TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	----- TV
U/G TV Cable LOS C (S.U.E.*)	----- TV
U/G TV Cable LOS D (S.U.E.*)	----- TV
U/G Fiber Optic Cable LOS B (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS C (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS D (S.U.E.*)	----- TV FO

## GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (S.U.E.*)	----- G
Above Ground Gas Line	----- A/G Gas

## SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

## MISCELLANEOUS:

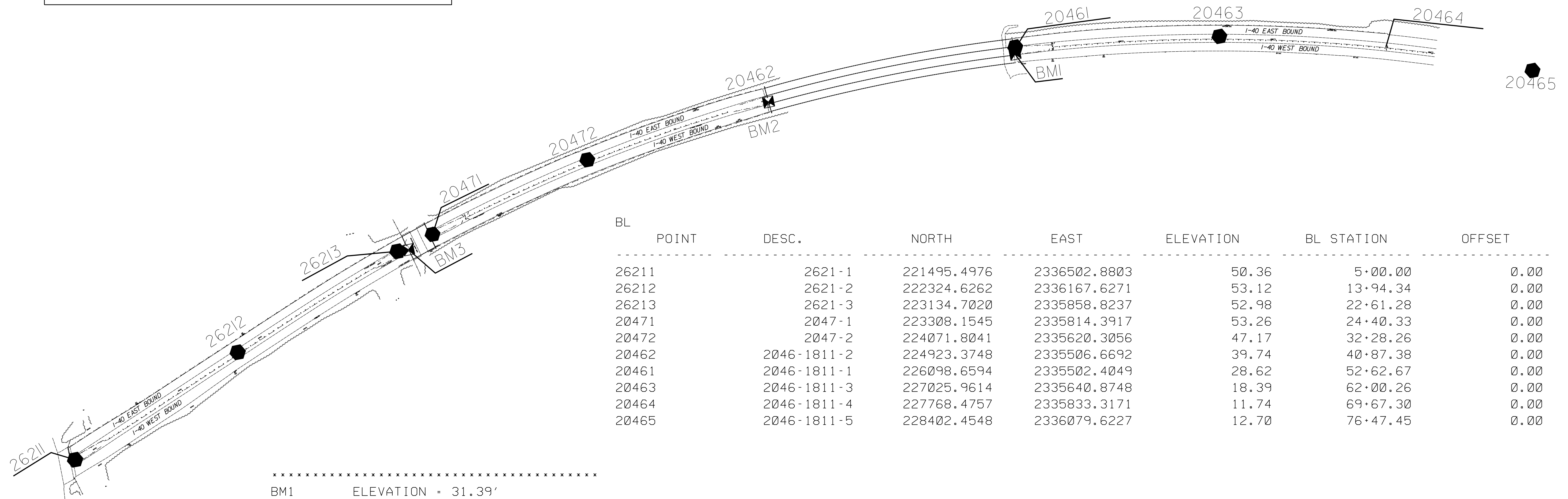
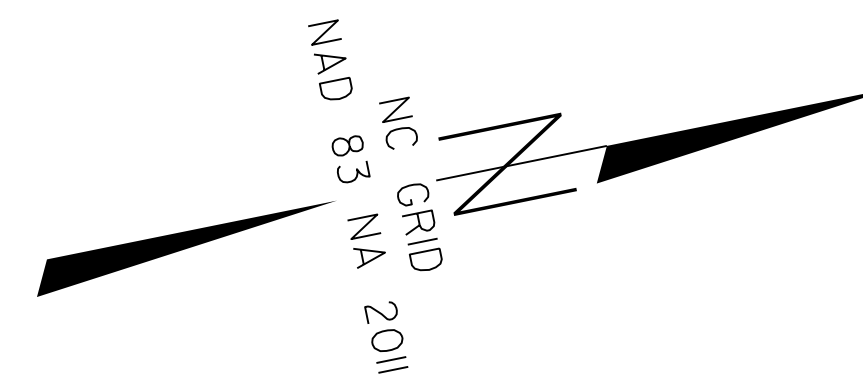
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CAPE" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF  
 NORTHING: 225782.86(±) EASTING: 2332770.81(±)  
 ELEVATION: 32.46(±)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999550

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

### SURVEY CONTROL SHEET



BL POINT	DESC.	NORTH	EAST	ELEVATION	BL STATION	OFFSET
26211	2621-1	221495.4976	2336502.8803	50.36	5+00.00	0.00
26212	2621-2	222324.6262	2336167.6271	53.12	13+94.34	0.00
26213	2621-3	223134.7020	2335858.8237	52.98	22+61.28	0.00
20471	2047-1	223308.1545	2335814.3917	53.26	24+40.33	0.00
20472	2047-2	224071.8041	2335620.3056	47.17	32+28.26	0.00
20461	2046-1811-2	224923.3748	2335506.6692	39.74	40+87.38	0.00
20461	2046-1811-1	226098.6594	2335502.4049	28.62	52+62.67	0.00
20463	2046-1811-3	227025.9614	2335640.8748	18.39	62+00.26	0.00
20464	2046-1811-4	227768.4757	2335833.3171	11.74	69+67.30	0.00
20465	2046-1811-5	228402.4548	2336079.6227	12.70	76+47.45	0.00

\*\*\*\*\*  
 BM1        ELEVATION = 31.39'  
 N 226091        E 2335535  
 BL STATION 52+55.00 32' RIGHT  
 SQUARE CUT IN CONC  
 \*\*\*\*\*

\*\*\*\*\*  
 BM2        ELEVATION = 40.10'  
 N 224939        E 2335525  
 BL STATION 41+03.00 19' RIGHT  
 SQUARE CUT IN CONC  
 \*\*\*\*\*

\*\*\*\*\*  
 BM3        ELEVATION = 54.08'  
 N 223186        E 2335862  
 BL STATION 23+10.00 16' RIGHT  
 SQUARE CUT IN CONC  
 \*\*\*\*\*

**NOTES:**

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

6/2/99

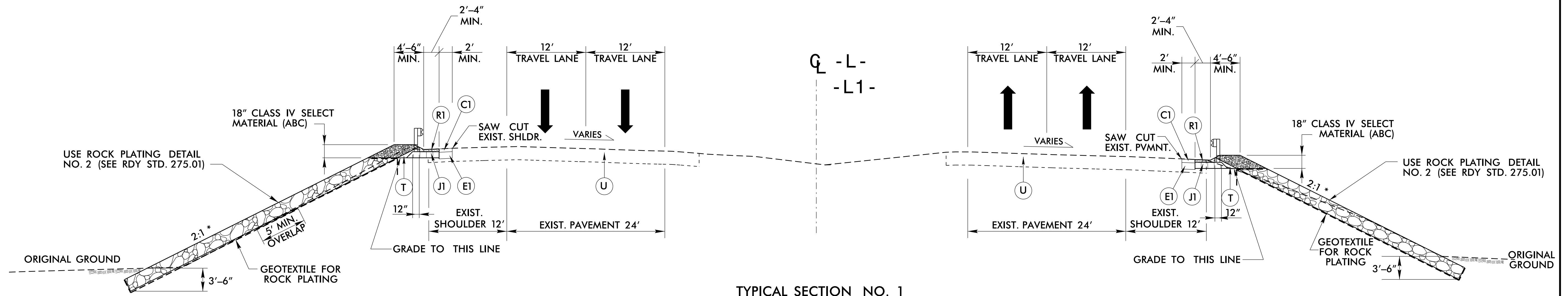
# FINAL PAVEMENT SCHEDULE

CODE	DESCRIPTION
C1	PROP. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E1	PROP. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
J1	PROP. 8" AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PLANS PREPARED BY:  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

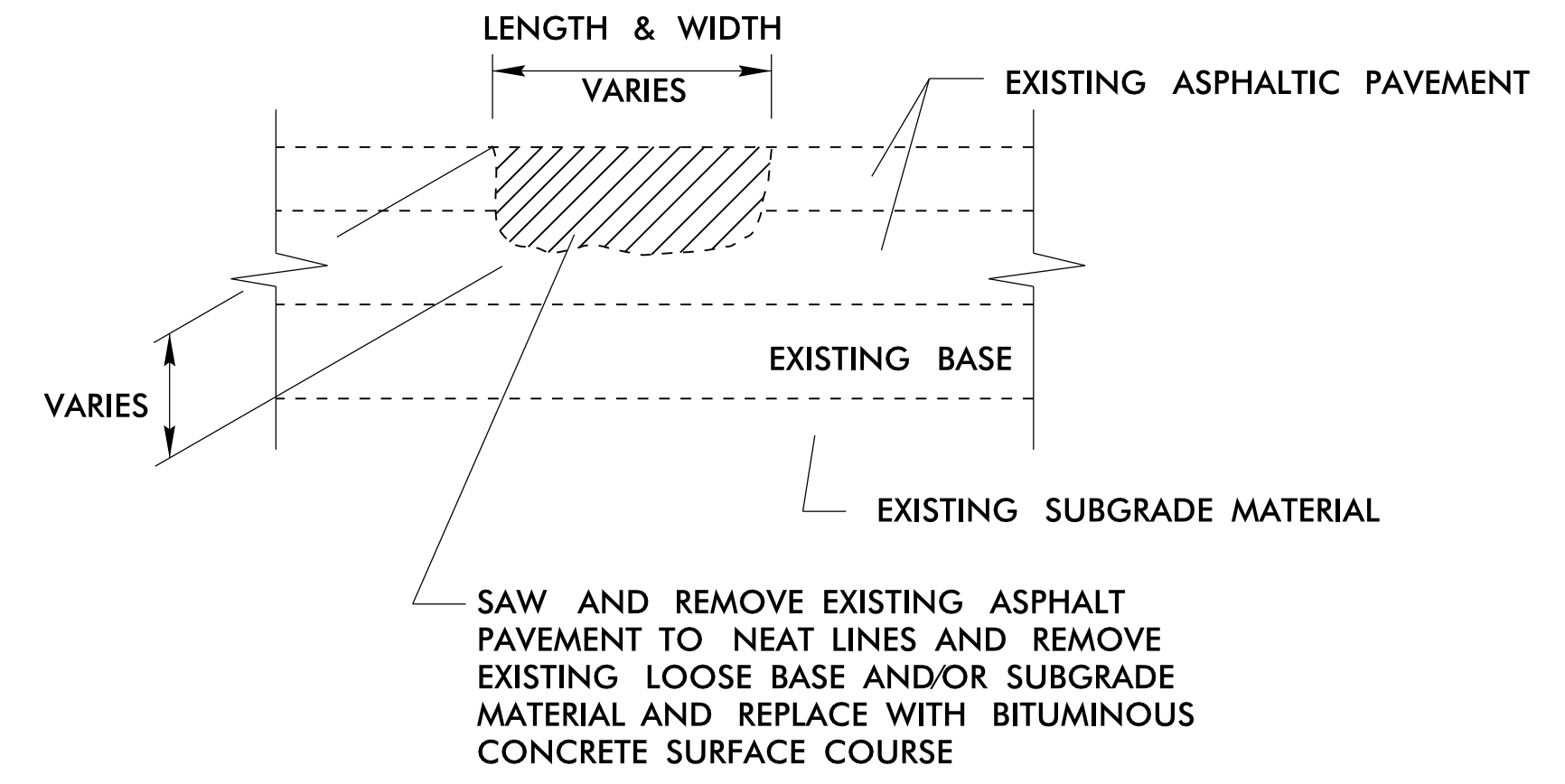
PROJECT REFERENCE NO. 1-40	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER  EDWARD S. HEDGES ENGINEER 7/31/2020	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



### TYPICAL SECTION NO. 1

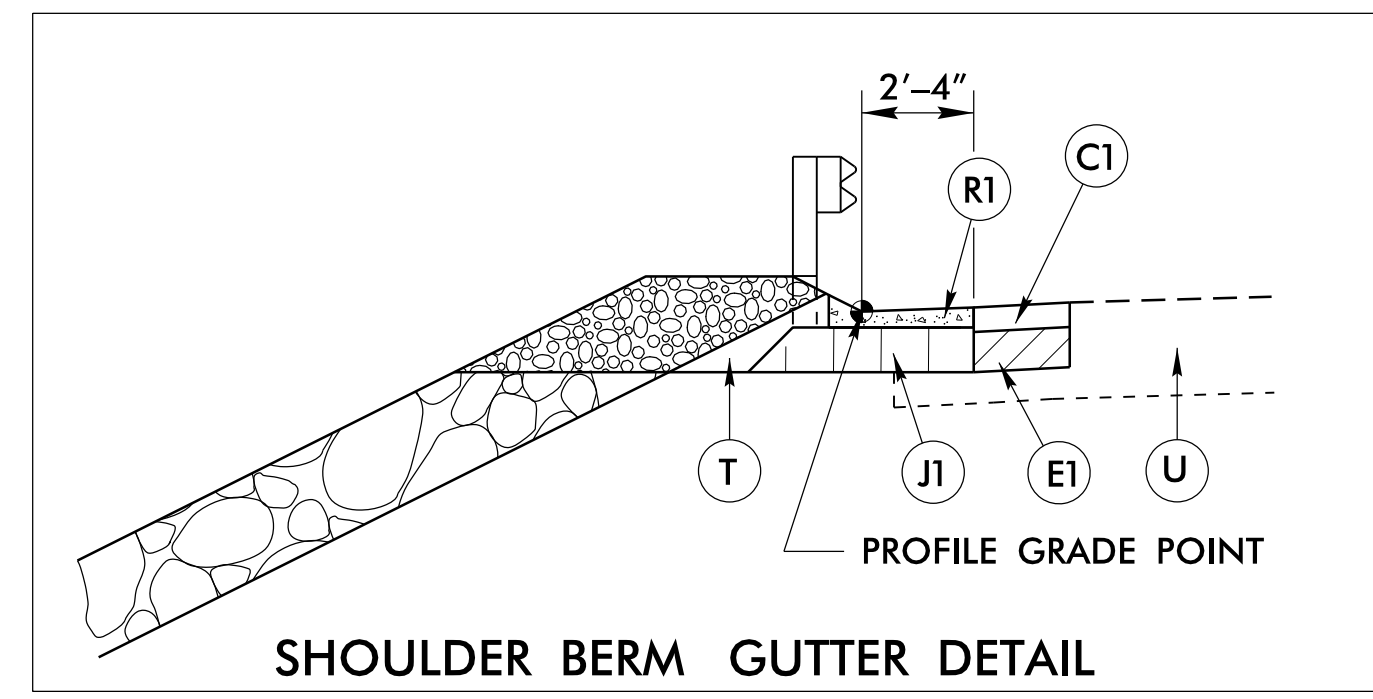
- STA. 13+51.10 -L- RT TO STA. 32+03.00 -L- RT
- STA. 13+98.32 -L- LT TO STA. 32+06.90 -L- LT
- STA. 33+20.76 -L- RT TO STA. 49+96.30 -L- RT
- STA. 33+26.89 -L- LT TO STA. 49+96.30 -L- LT
- STA. 11+03.04 -L1- RT TO STA. 26+71.39 -L1- RT
- STA. 11+03.04 -L1- LT TO STA. 28+19.29 -L1- LT

- \* DENOTES: 2:1 OR AS SHOWN ON X-SECTIONS
  - \* STEEPEN SLOPES ON THE FOLLOWING STATIONS TO AVOID R.O.W. IMPACTS. SEE X-SECTIONS
- |     |                   |      |                   |
|-----|-------------------|------|-------------------|
| -L- | 33+25 RT          | -L1- | 14+25 RT          |
|     | 39+25 TO 40+00 RT |      | 14+75 TO 15+00 LT |
|     | 41+00 TO 45+00 RT |      | 15+50 LT & RT     |
|     | 47+75 TO 49+00 LT |      | 18+00 LT & RT     |



### DETAIL OF REPAIRING EXISTING PAVEMENT

STA. 28+00.00 -L1 TO STA. 28+19.29 -L1- LT.



### SHOULDER BERM GUTTER DETAIL

3:11:11 2020 08:56  
 C:\Users\jw20\OneDrive\Documents\Roadway\Projects\40-Rdy-typ.dgn  
 \$\$\$\$ USER NAME \$\$\$

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

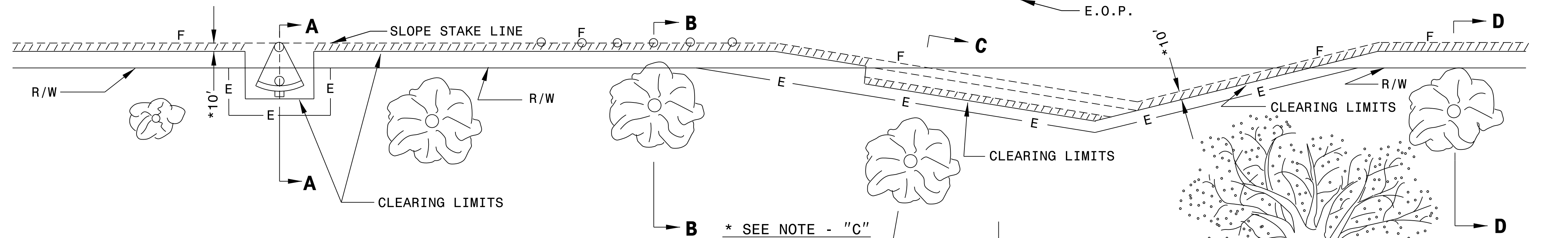
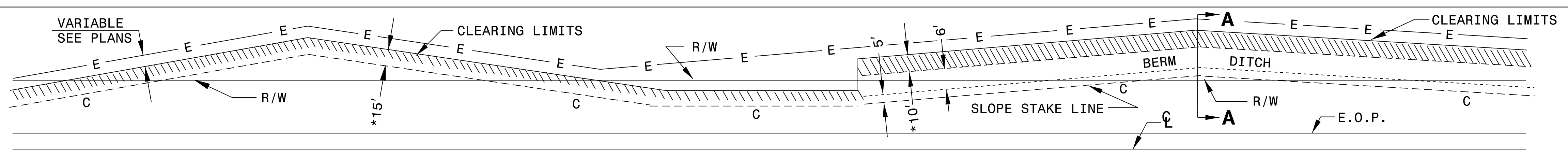
ENGLISH DETAIL DRAWING FOR  
**METHOD OF CLEARING**  
MODIFIED METHOD - III

SHEET 1 OF 1  
**200D03**

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

ENGLISH DETAIL DRAWING FOR  
**METHOD OF CLEARING**  
MODIFIED METHOD - III

SHEET 1 OF 1  
**200D03**



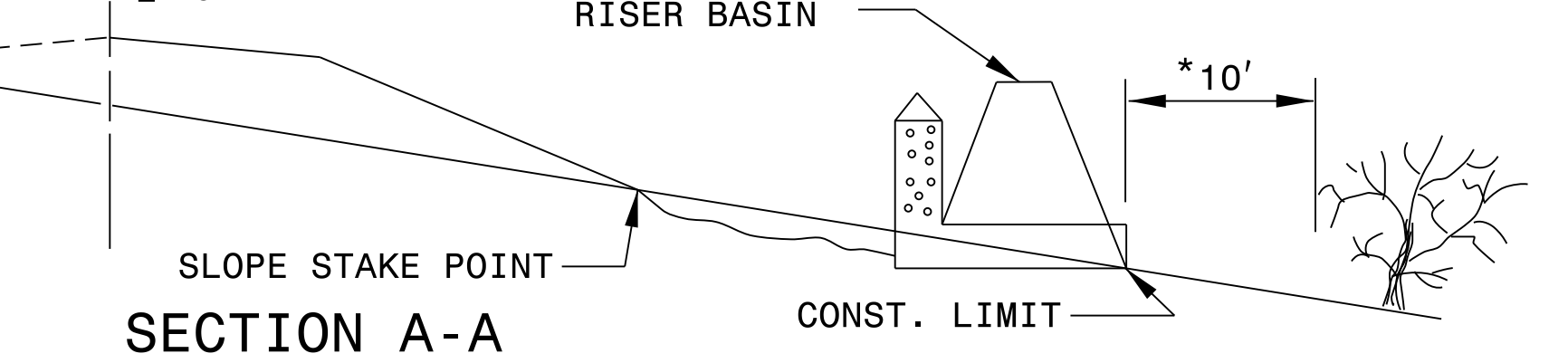
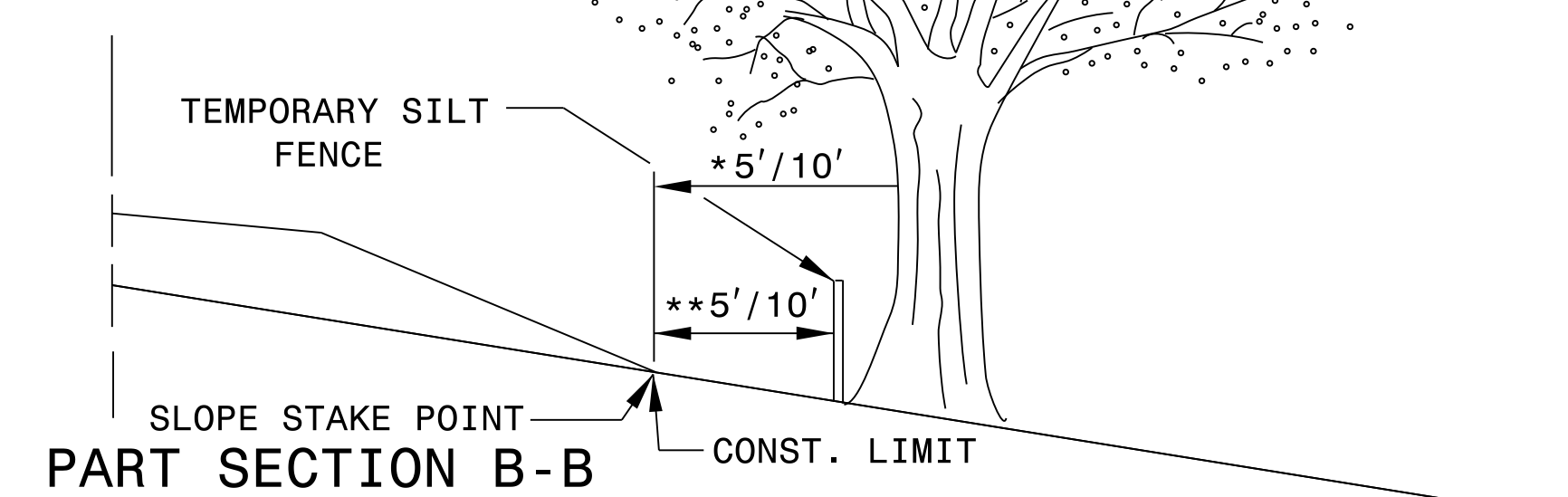
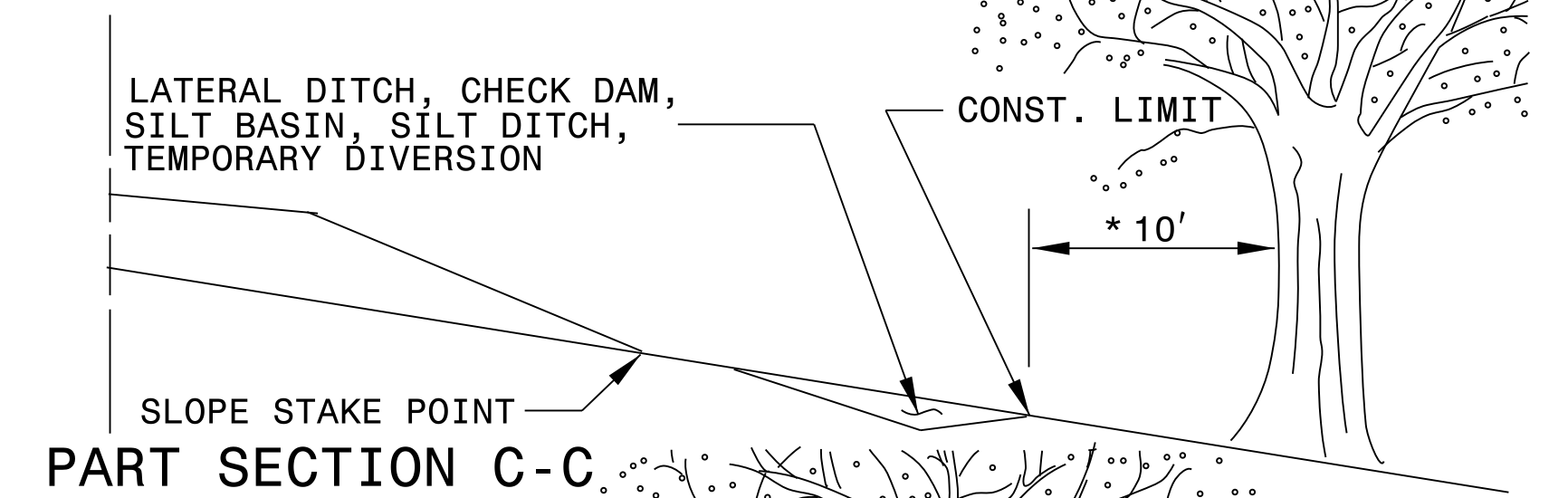
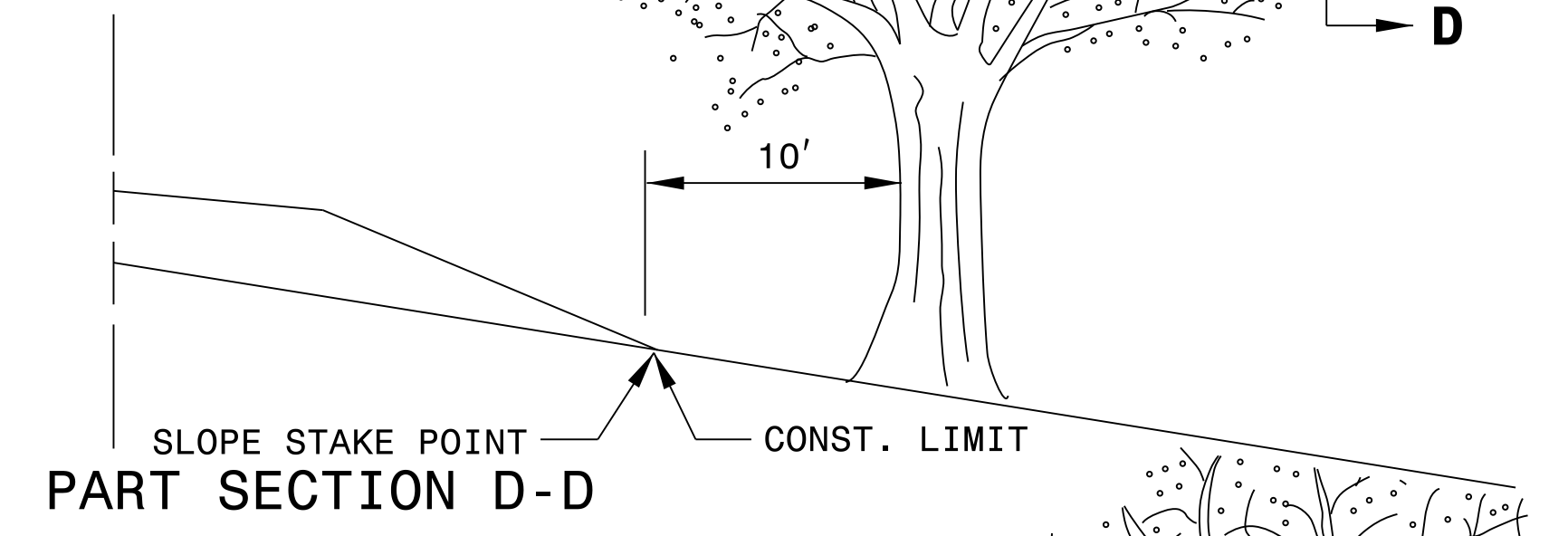
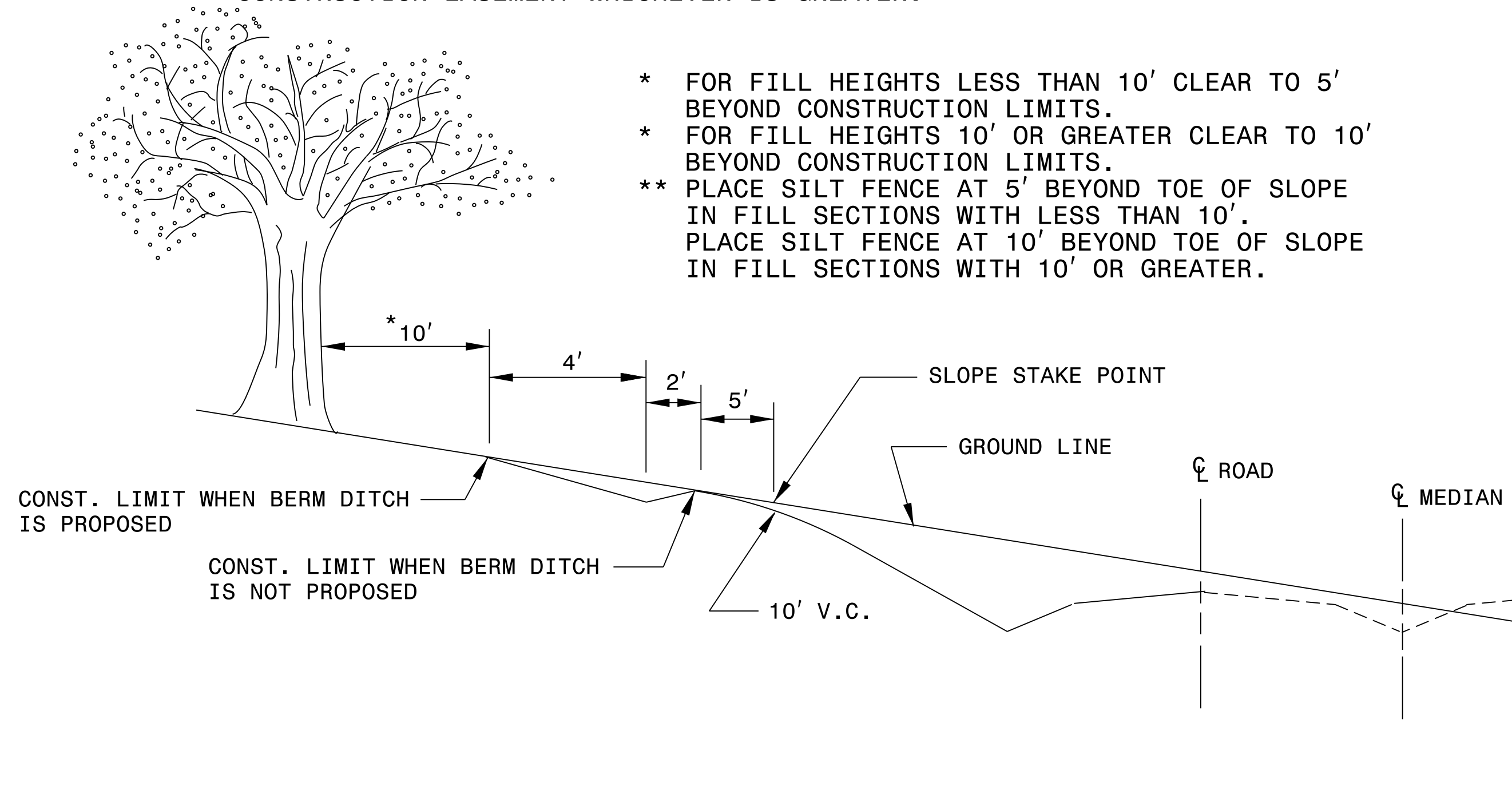
**GENERAL NOTES:**

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

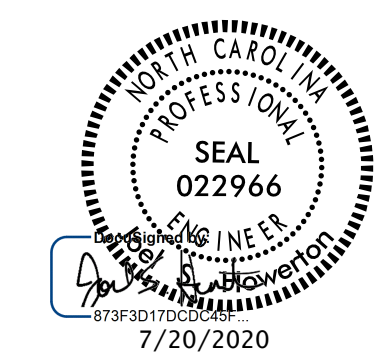
**METHOD III CLEARING LIMITS**

- (A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 5'/10' \* BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

- \* FOR FILL HEIGHTS LESS THAN 10' CLEAR TO 5' BEYOND CONSTRUCTION LIMITS.
- \* FOR FILL HEIGHTS 10' OR GREATER CLEAR TO 10' BEYOND CONSTRUCTION LIMITS.
- \*\* PLACE SILT FENCE AT 5' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10'. PLACE SILT FENCE AT 10' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10' OR GREATER.



05-DEC-2017 10:31 S:\Contracts\Special\Details\kkempf\english\0200d301.modified.method III Cond.dgn Jhower-ton AT CSD-292595



**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**SEE TITLE BLOCK**

ORIGINAL BY: T.S.S. DATE: FEB. 2000  
 MODIFIED BY: K.A.K. DATE: AUG. 2016  
 CHECKED BY: DATE:  
 FILE SPEC.: kkempf/english/0200d301.dgn

DOCUMENT NOT CONSIDERED FINAL  
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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF EARTHWORK**  
 IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT	EMBANK.	BORROW	WASTE
SITE 2621						
-L- 13+75.00	32+00.00	359		15		344
SITE 2047						
-L- 33+25.00	49+75.00	330		40		290
NEW HANOVER SUBTOTAL		689		55		634
NEW HANOVER GRAND TOTAL		689		55		634
SAY		690				
SITE 1811						
-L- 11+25.00 RT.	26+50.00 RT.	126		2,238	2,112	
SITE 2046						
-L- 11+25.00 LT.	28+00.00 LT.	105		34		71
PENDER SUBTOTAL		231		2,272		71
WASTE IN LIEU OF BORROW					-71	-71
EST. SHOULDER MATERIAL				138	138	
PENDER TOTAL		231		2,410	2,179	0
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					109	
PENDER GRAND TOTAL		231		2,410	2,288	0
SAY		235		2,290		

EST. SHOULDER BORROW (NEW HANOVER): 260 CY

Note: Approximate quantities only. Unclassified Excavation, Shoulder Borrow, Fine Grading, Removal of Existing Asphalt Pavement, and Clearing and Grubbing will be paid for at the contract lump sum price for "Grading."

**PAVEMENT REMOVAL SUMMARY**

SURVEY LINE	STATION	STATION	LOCATION LT/RT	YD'
-L1-	11+03.04	28+19.29	LT	825.71
-L1-	11+03.04	26+71.39	RT	754.55
PENDER				TOTAL: 1,580.26
WBS: 15403.1071014				SAY: 1,590
-L-	13+51.10	32+03.00	RT	890.97
-L-	13+98.32	32+06.90	LT	870.13
-L-	33+20.76	49+96.60	RT	806.27
-L-	33+26.89	49+96.60	LT	803.32
NEW HANOVER				TOTAL: 3,370.69
WBS: 15403.1065018				SAY: 3,380

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL

**GUARDRAIL SUMMARY**

G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE TL-3		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMOVE & RESET EXISTING GUARDRAIL	REMARKS			
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TES	XI	GREU, TL-3	M-350	XIII	CAT-1	VI MOD	B-77	III	G	NG									
-L1-	11+03.04	28+19.29	LT	1718.75					14	17	50		1															1716.25			2046			
-L1-	11+03.04	26+71.39	RT	1575.00					14	17																	1568.35			1811				
-L-	13+98.35	32+06.87	LT	1812.50					14	17																					1808.52	2621		
-L-	13+50.99	32+03.08	RT	1862.50					14	17																					1852.09	2621		
-L-	33+26.91	49+96.74	LT	1675.00					14	17																					1669.83	2047		
-L-	33+20.71	49+96.59	RT	1687.50					14	17																					1675.88	2047		
TOTAL				10331.25		0.00																												
LESS ANCHOR DEDUCTIONS																																		
GREU, TL-3 1 @ 50.00'				=	50																													
CAT-1 1 @ 6.25'				=	6.25																													
B-77 10 @ 18.75'				=	187.5																													
TOTAL DEDUCTIONS				243.75																														
TOTAL				10087.50		0.00																						0	0	10290.92		0		
SAY				10100		0																					0	0	10300		0			

Additional Guardrail Posts: 30 EA

Q:\July 2020 10:56  
 \$\$\$\$ USE FOR NAME \$\$\$\$  
 Q:\July 2020 10:56  
 \$\$\$\$ USE FOR NAME \$\$\$\$



6/16/2022

COMPUTED BY: JL DATE: 01/13/2020
CHECKED BY: DG DATE: 01/27/2020

PROJECT NO. I-40 Storm Repairs - Pender SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Top Elevation, Invert Elevation, Minimum Required Slope, Side Drain Pipe, C.A.A. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Quantities for Drainage Structures, Frame, Grates, and Hood, Grate Type, Concrete Transitional Section, Abbreviations, and Remarks. Includes SHEET TOTALS and PROJECT TOTALS at the bottom.



06/28/20

COMPUTED BY: JL DATE: 01/22/2020
CHECKED BY: DG DATE: 01/27/2020

PROJECT NO. SHEET NO.
I-40 Storm Repairs - New Hanover 3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, C.A.A. PIPE, R.C. PIPE CLASS III, R.C. PIPE CLASS IV, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE TYPE, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a 'SHEET TOTALS' row at the bottom.

ABBREVIATIONS
C.A.A. CORRUGATED ALUMINUM ALLOY
C.B. CATCH BASIN
C.S. CORRUGATED STEEL
D.I. DROP INLET
G.D.I. GRATED DROP INLET
H.D.P.E. HIGH DENSITY POLYETHYLENE
J.B. JUNCTION BOX
M.H. MANHOLE
N.S. NARROW SLOT
P.V.C. POLYVINYL CHLORIDE
R.C. REINFORCED CONCRETE
T.B.D.I. TRAFFIC BEARING DROP INLET
T.B.J.B. TRAFFIC BEARING JUNCTION BOX
W.S. WIDE SLOT

6/16/2022

COMPUTED BY: JL DATE: 01/22/2020
CHECKED BY: DG DATE: 01/27/2020

PROJECT NO. SHEET NO.
I-40 Storm Repairs - New Hanover 3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Main data table with columns for LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, C. A. A. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, BERMS, MODIFIED CONC. FLUME, PREFORMED SCOUR HOLE, ENERGY DISSIPATION BASIN, PIPE CLEAN OUT, FLOWABLE FILL, CONCRETE COLLARS, CONCRETE AND BRICK PIPE PLUG, and REMARKS. Includes SHEET TOTALS and PROJECT TOTALS rows at the bottom.

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF ROCK PLATING (PENDER)**

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L1-	2:1	10+70	2:1	15+75	RT	2		3229
-L1-	2:1	17+50	2:1	18+75	RT	2		584
-L1-	2:1	10+70	2:1	11+03	MED	2		413
-L1-	2:1	10+70	2:1	26+25	LT	2		8568
							<b>TOTAL SY:</b>	12793
							<b>SAY:</b>	12800

\*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF ROCK PLATING (NEW HANOVER)**

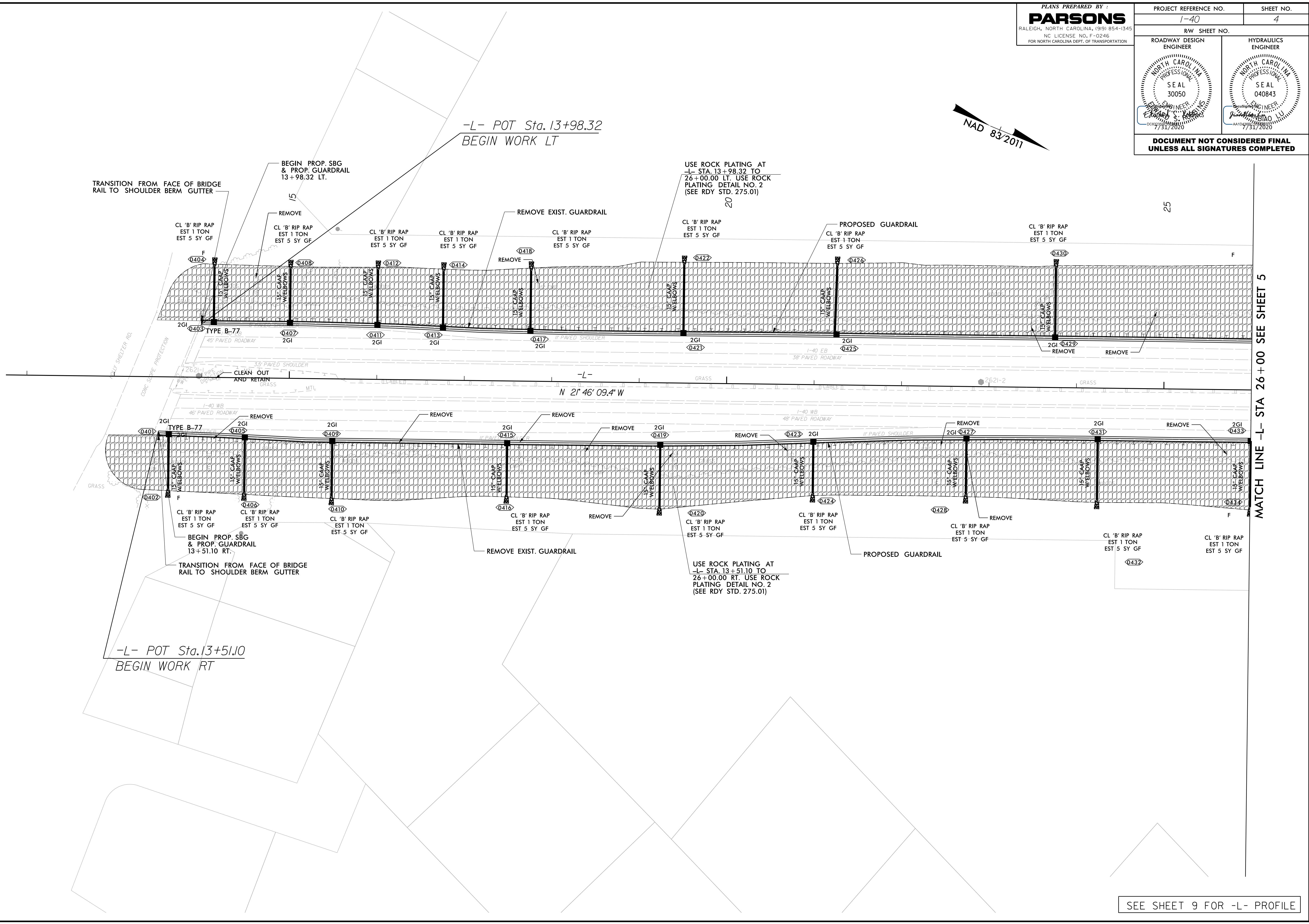
LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	2:1	32+85	2:1	50+30	LT	2		14772
-L-	2:1	32+83	2:1	50+30	RT	2		12325
-L-	2:1	33+14	2:1	33+25	MED.	2		30
-L-	2:1	49+97	2:1	50+30	MED.	2		425
-L-	2:1	13+48	2:1	32+46	LT	2		16009
-L-	2:1	12+94	2:1	32+43	RT	2		14442
-L-	2:1	13+62	2:1	13+80	MED.	2		24
-L-	2:1	32+05	2:1	32+11	MED.	2		19
							<b>TOTAL SY:</b>	58046
							<b>SAY:</b>	58060

\*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

B.17/99

PLANS PREPARED BY:  
**PARSONS**  
RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			



SEE SHEET 9 FOR -L- PROFILE

31 JUL 2020 08:28  
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8/17/99

PLANS PREPARED BY:  
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RALEIGH, NORTH CAROLINA, (919) 854-1345  
NC LICENSE NO. F-0246  
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 30050 7/31/2020	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 040843 7/31/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



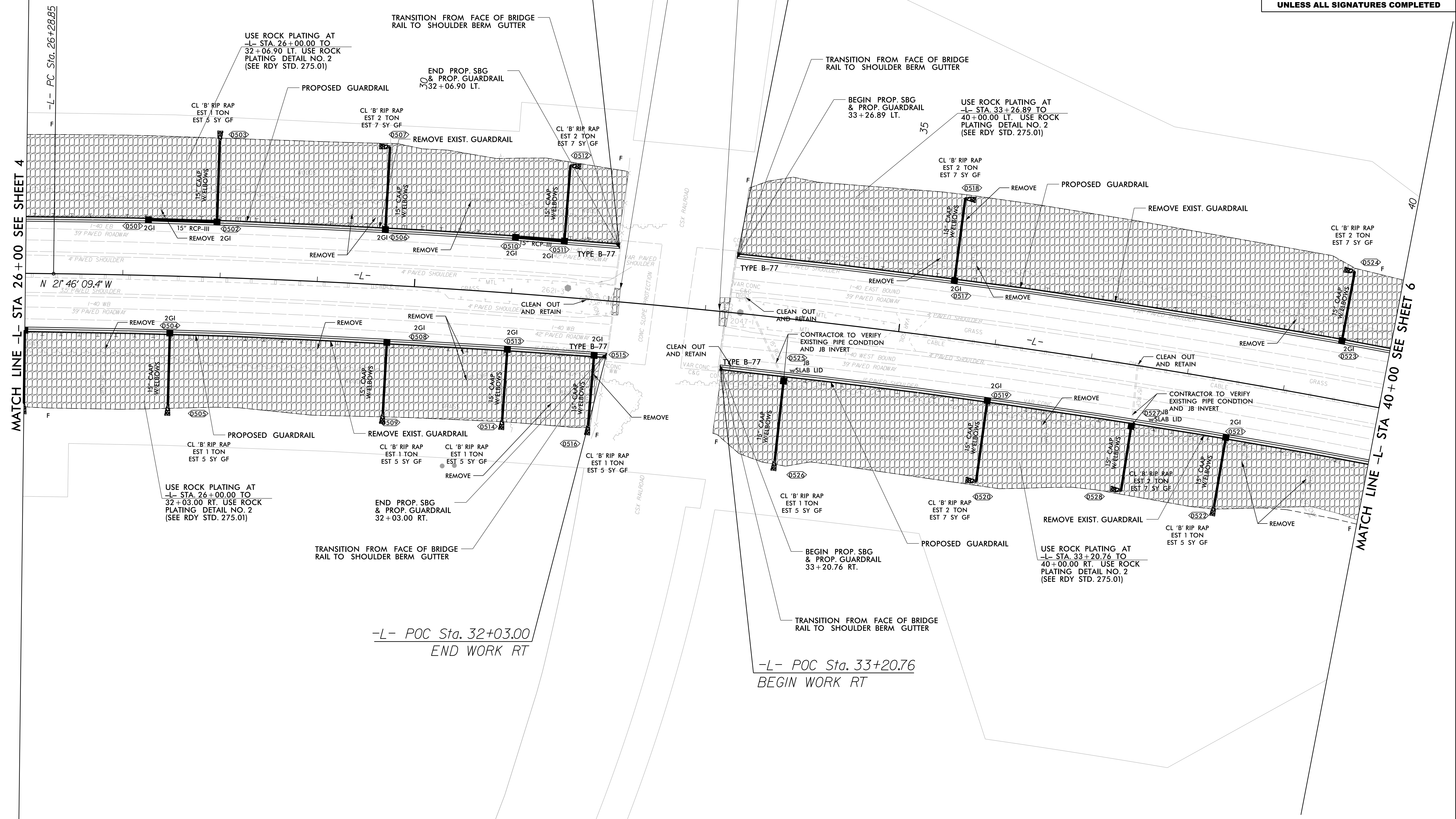
-L-  
PI Sta 41+47.78  
 $\Delta = 22^\circ 14' 52.0''$  (RT)  
D = 0' 44' 30.1"  
L = 2999.59'  
T = 1518.93'  
R = 7,725.00'

USE ROCK PLATING AT  
-L- STA. 32+05 TO  
32+11 LT. RT. USE ROCK  
PLATING DETAIL NO. 2  
(SEE RDY STD. 275.01)

USE ROCK PLATING AT  
-L- STA. 33+14 TO  
33+25 LT. RT. USE ROCK  
PLATING DETAIL NO. 2  
(SEE RDY STD. 275.01)

-L- POC Sta. 32+06.90  
END WORK LT

-L- POC Sta. 33+26.89  
BEGIN WORK LT



MATCH LINE -L- STA 26+00 SEE SHEET 4

MATCH LINE -L- STA 40+00 SEE SHEET 6

-L- POC Sta. 32+03.00  
END WORK RT

-L- POC Sta. 33+20.76  
BEGIN WORK RT

SEE SHEETS 9 & 10 FOR -L- PROFILE

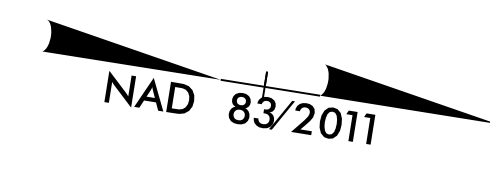
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8/17/99

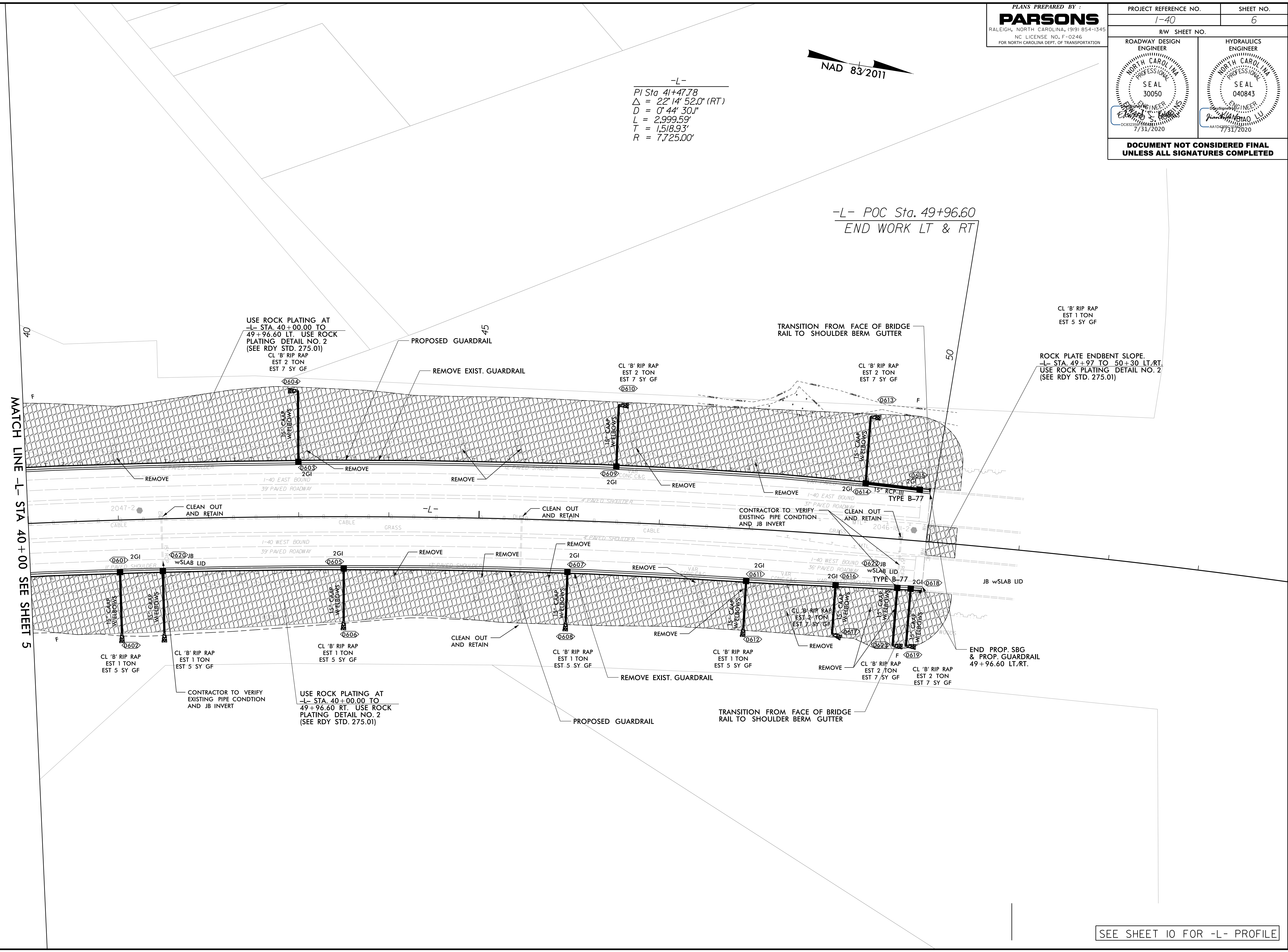
PLANS PREPARED BY:  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40	SHEET NO. 6
ROADWAY DESIGN ENGINEER SEAL 30050 7/31/2020	HYDRAULICS ENGINEER SEAL 040843 7/31/2020
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



-L-  
 PI Sta 41+47.78  
 $\Delta = 22^{\circ}14'52.0''$  (RT)  
 D = 0'44'30.1"  
 L = 2,999.59'  
 T = 1,518.93'  
 R = 7,725.00'

-L- POC Sta. 49+96.60  
 END WORK LT & RT



SEE SHEET 10 FOR -L- PROFILE

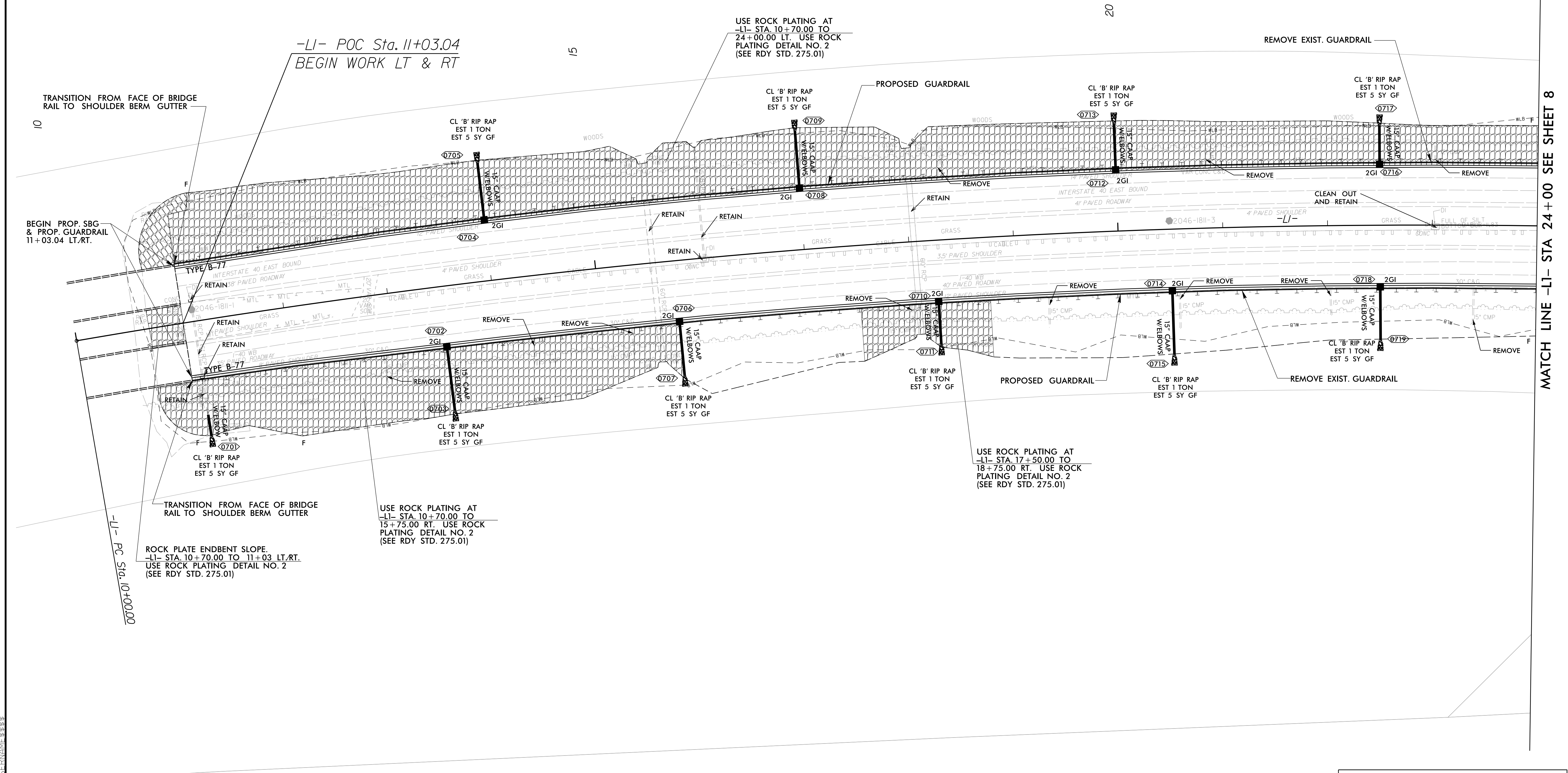
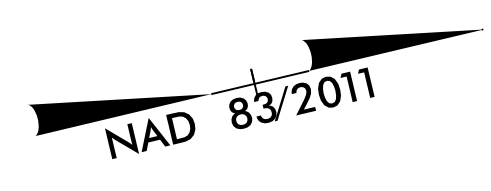
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8/17/99

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**PARSONS**  
RALEIGH, NORTH CAROLINA, (919) 854-1345  
NC LICENSE NO. F-0246  
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 30050 7/31/2020	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 040843 7/31/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-LI-  
 PI Sta. 20+28.64  
 $\Delta = 15^\circ 29' 47.5" (RT)$   
 $D = 0' 45" 28.4"$   
 $L = 2,044.72'$   
 $T = 1,028.64'$   
 $R = 7,560.00'$



TRANSITION FROM FACE OF BRIDGE RAIL TO SHOULDER BERM GUTTER

-LI- POC Sta. 11+03.04  
BEGIN WORK LT & RT

BEGIN PROP. SBG & PROP. GUARDRAIL 11+03.04 LT./RT.

ROCK PLATE ENDBENT SLOPE.  
-LI- STA. 10+70.00 TO 11+03 LT./RT.  
USE ROCK PLATING DETAIL NO. 2  
(SEE RDY STD. 275.01)

USE ROCK PLATING AT  
-LI- STA. 10+70.00 TO  
15+75.00 RT. USE ROCK  
PLATING DETAIL NO. 2  
(SEE RDY STD. 275.01)

USE ROCK PLATING AT  
-LI- STA. 17+50.00 TO  
18+75.00 RT. USE ROCK  
PLATING DETAIL NO. 2  
(SEE RDY STD. 275.01)

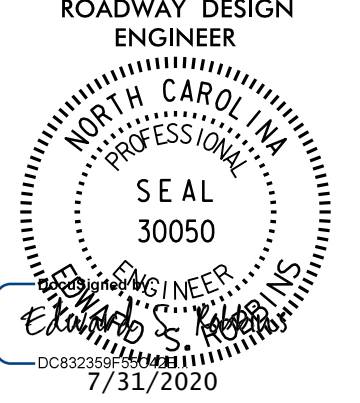
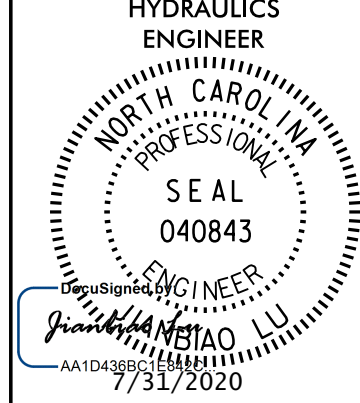
MATCH LINE -LI- STA 24+00 SEE SHEET 8

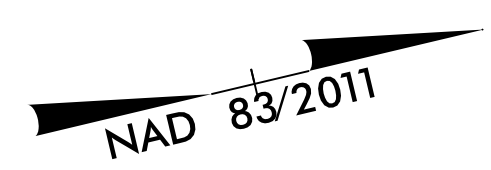
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8/17/99

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 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

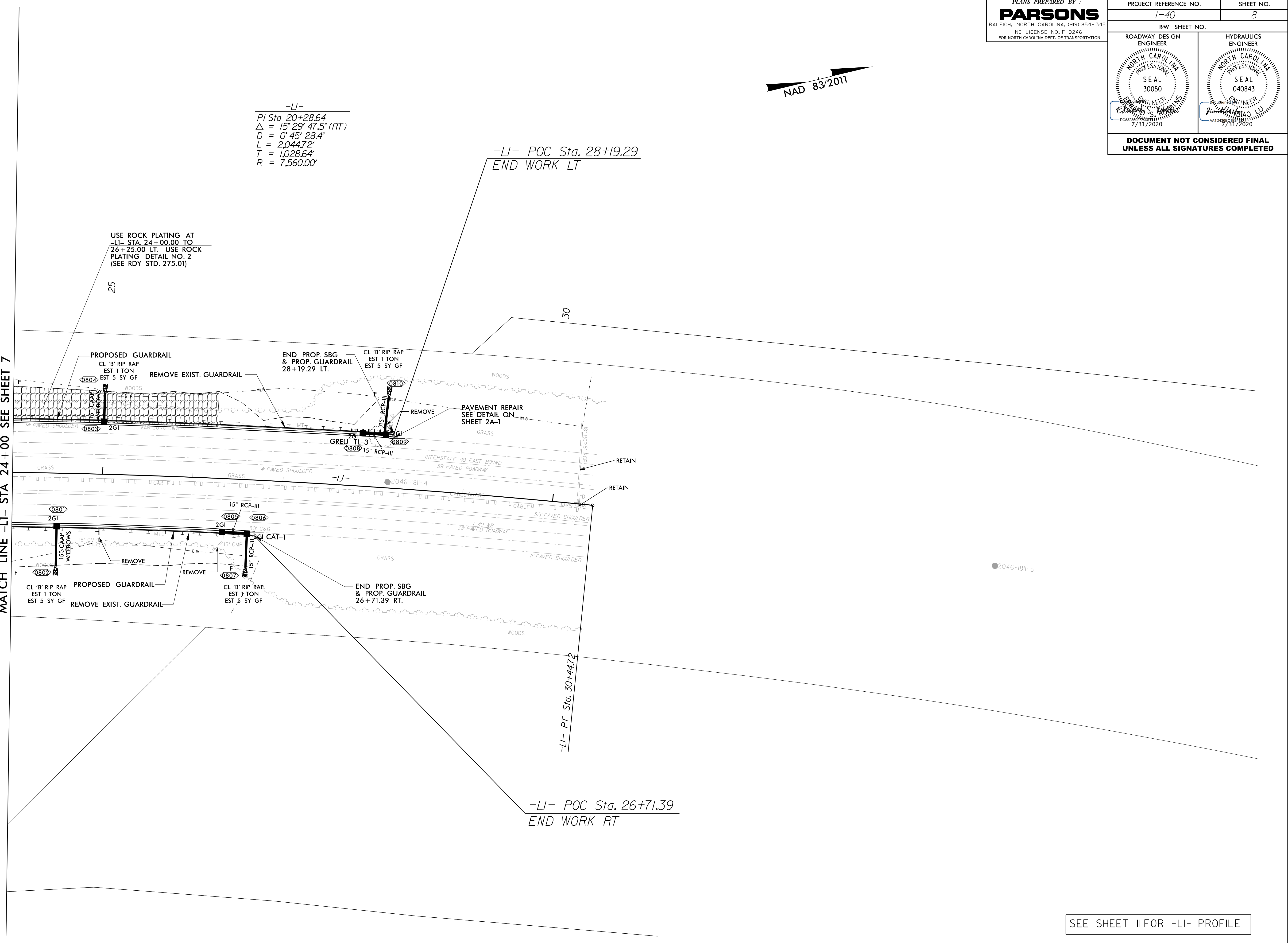


-LI-  
 PI Sta 20+28.64  
 $\Delta = 15^\circ 29' 47.5" (RT)$   
 $D = 0' 45' 28.4"$   
 $L = 2,044.72'$   
 $T = 1,028.64'$   
 $R = 7,560.00'$

-LI- POC Sta. 28+19.29  
 END WORK LT

USE ROCK PLATING AT  
 -LI- STA. 24+00.00 TO  
 26+25.00 LT. USE ROCK  
 PLATING DETAIL NO. 2  
 (SEE RDY STD. 275.01)

MATCH LINE -LI- STA 24+00 SEE SHEET 7



SEE SHEET 11 FOR -LI- PROFILE

3/11/2020 08:51  
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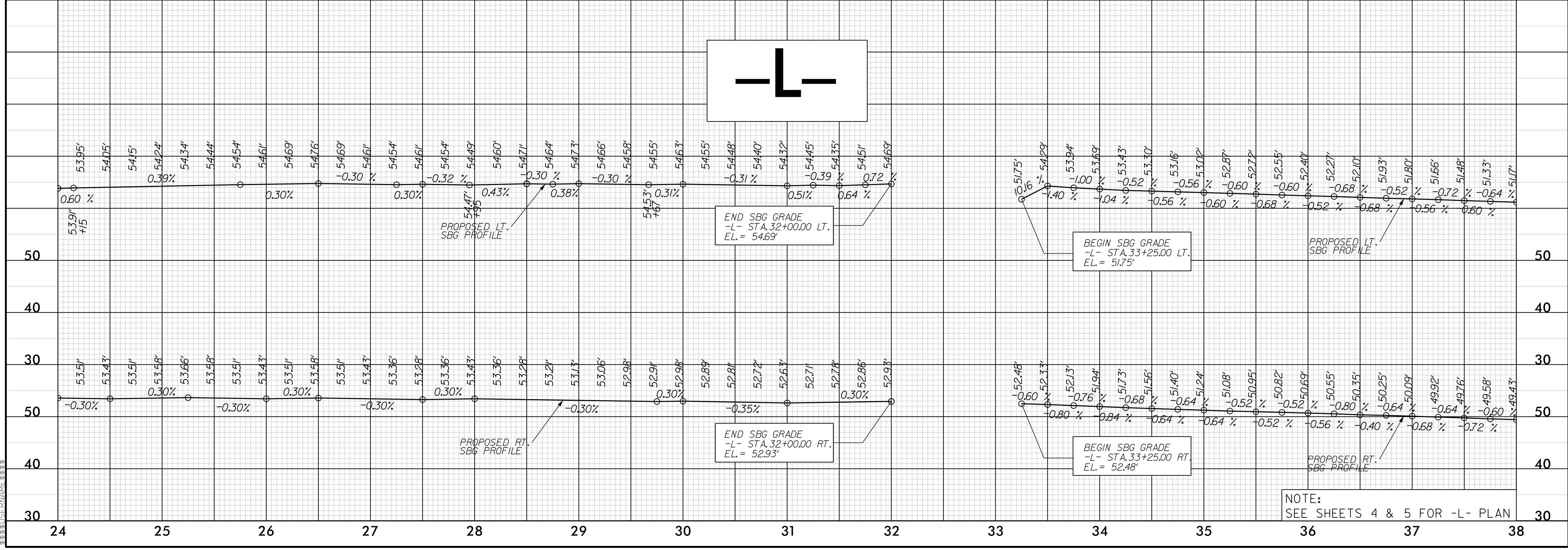
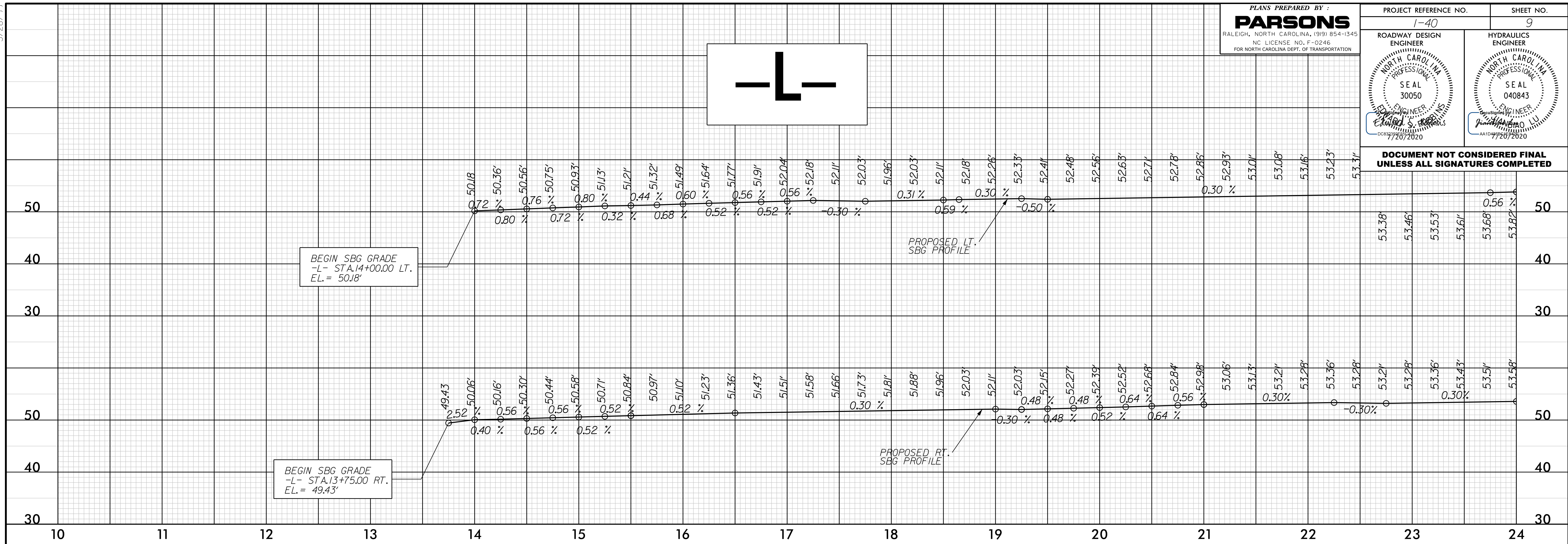
5/28/20

PLANS PREPARED BY :

**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40	SHEET NO. 9
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 30050	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 040843

DOCUMENT NOT CONSIDERED FINAL  
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NOTE:  
SEE SHEETS 4 & 5 FOR -L- PLAN

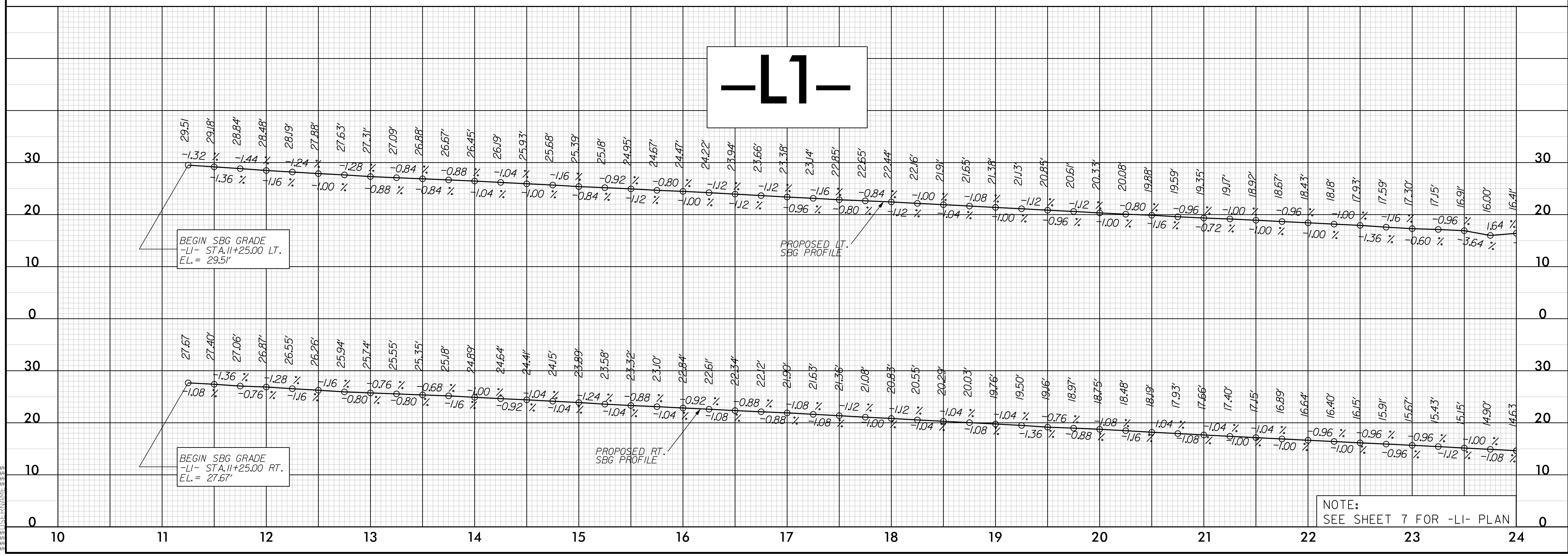
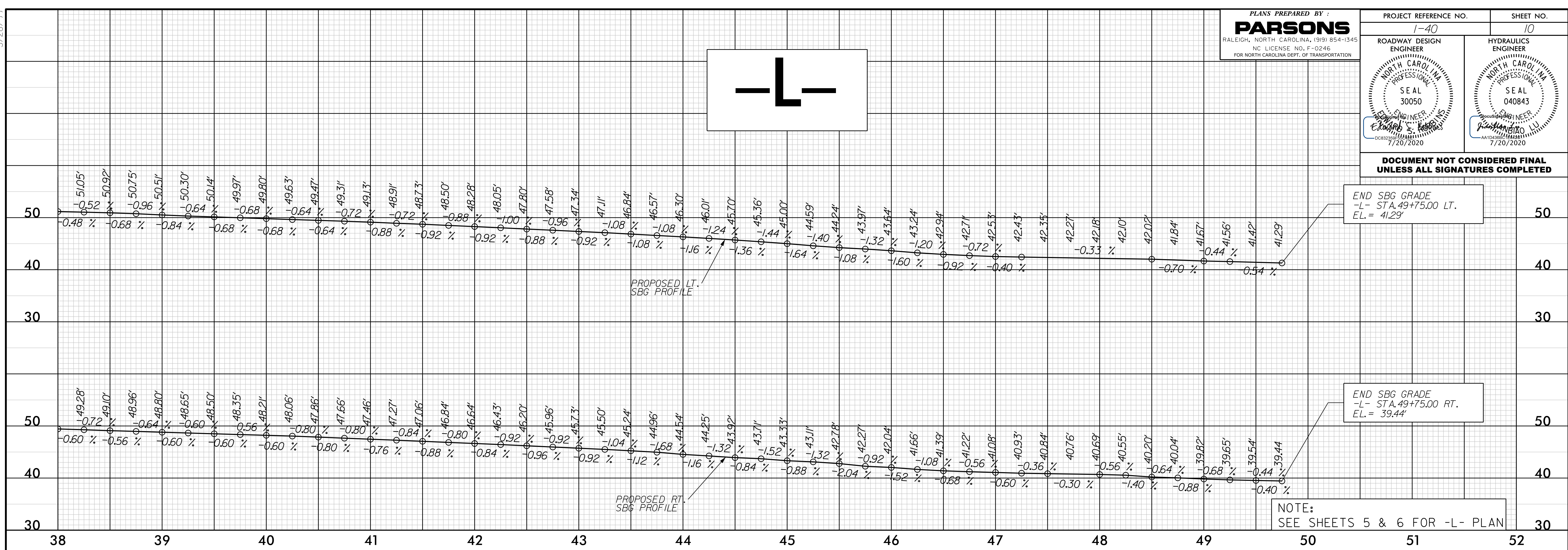
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5/28/20

PLANS PREPARED BY:  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. 1-40	SHEET NO. 10
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 30050 7/20/2020	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 040843 7/20/2020

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


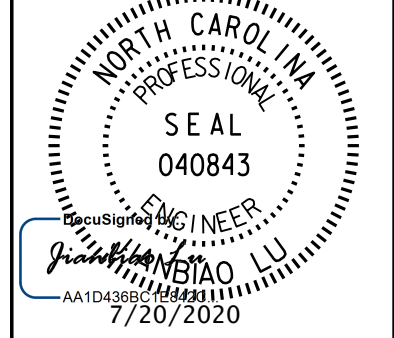


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5/28/20

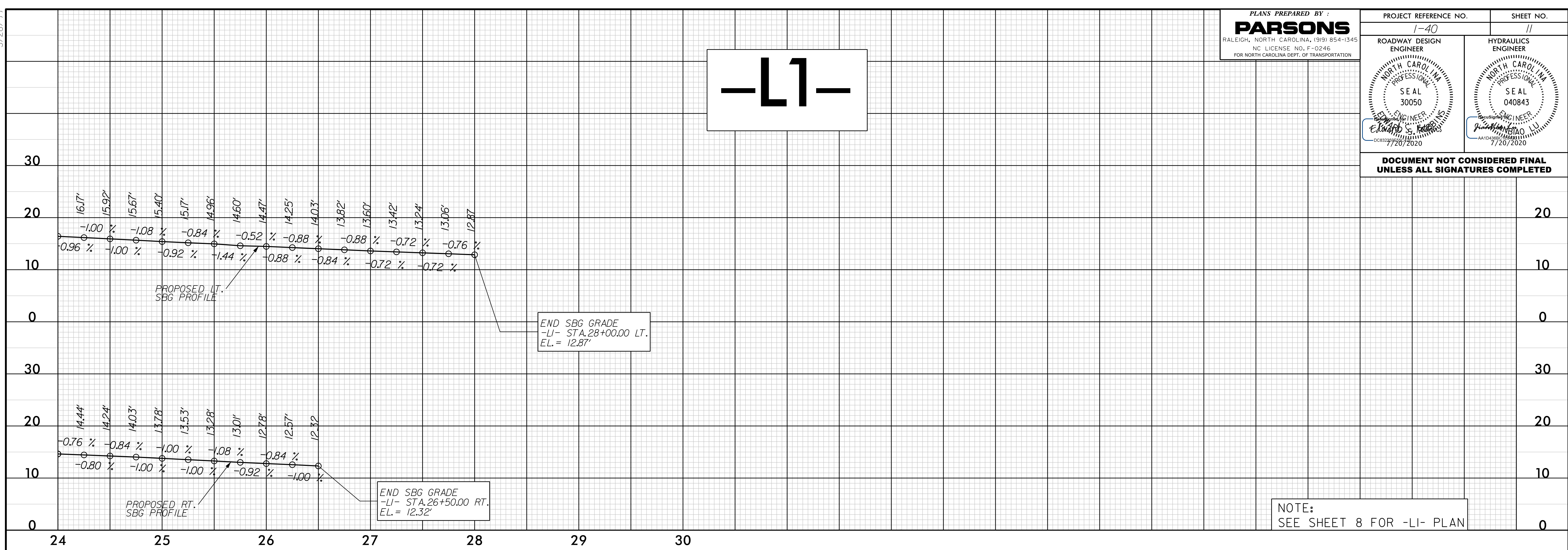
PLANS PREPARED BY :  
**PARSONS**  
 RALEIGH, NORTH CAROLINA, (919) 854-1345  
 NC LICENSE NO. F-0246  
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO.	1-40	SHEET NO.	11
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ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
---	---

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

-LI-



NOTE:  
SEE SHEET 8 FOR -LI- PLAN

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