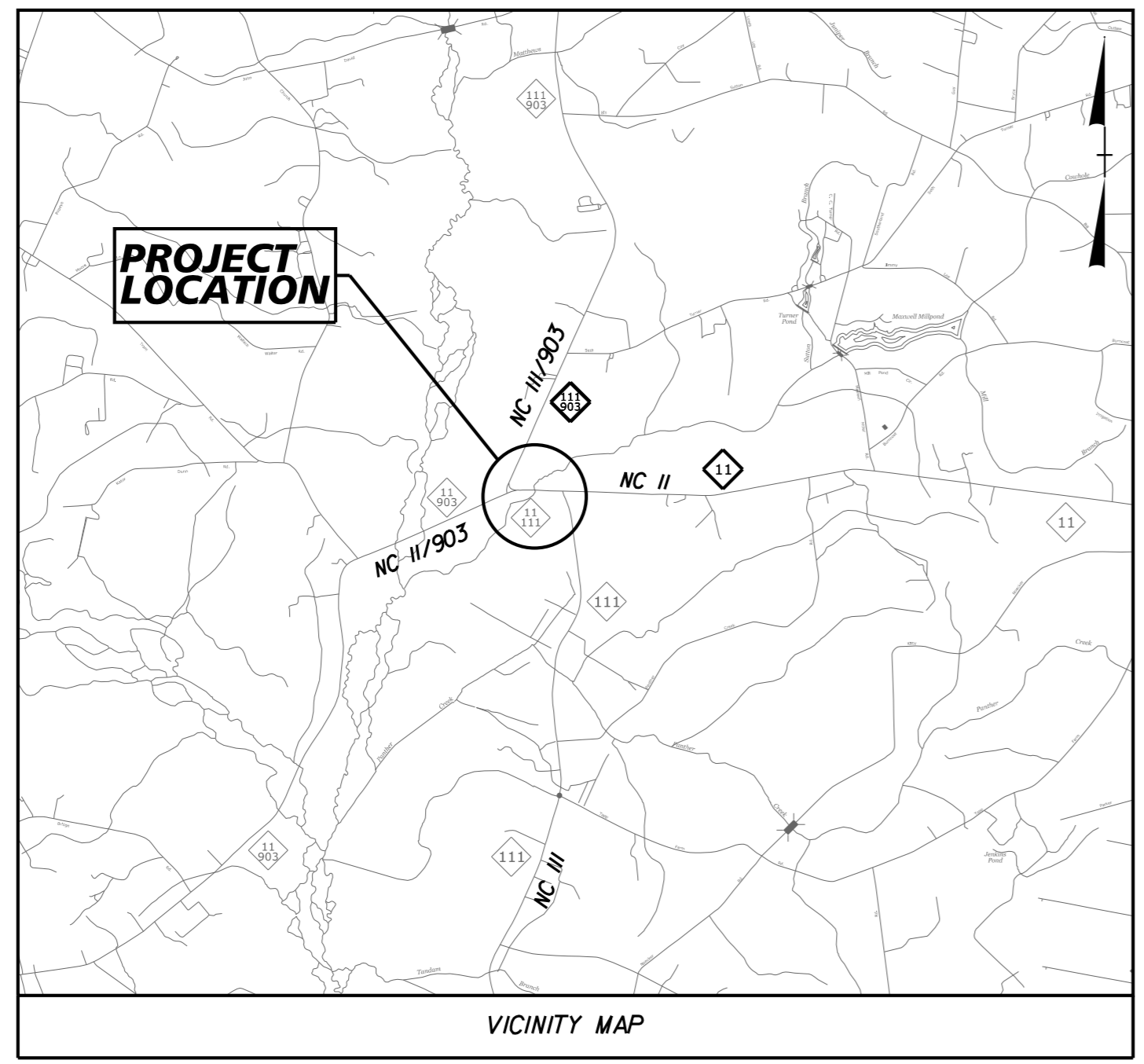


TIP PROJECT: B-5534

CONTRACT: C204534

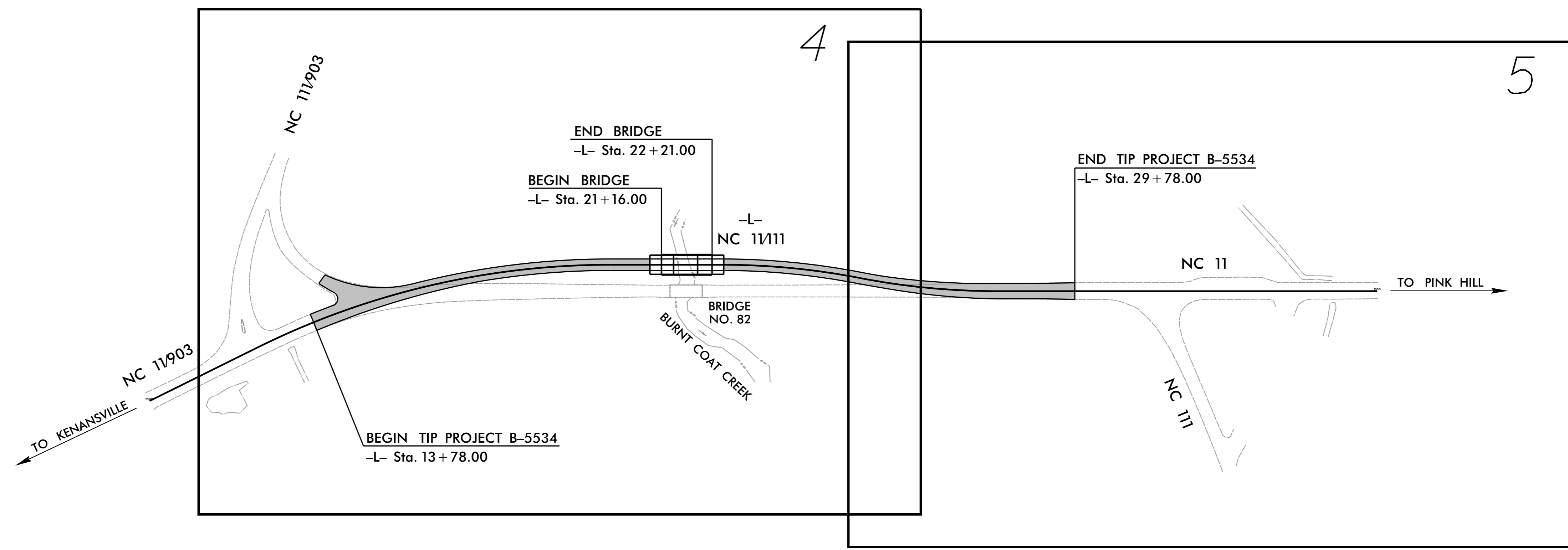
See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



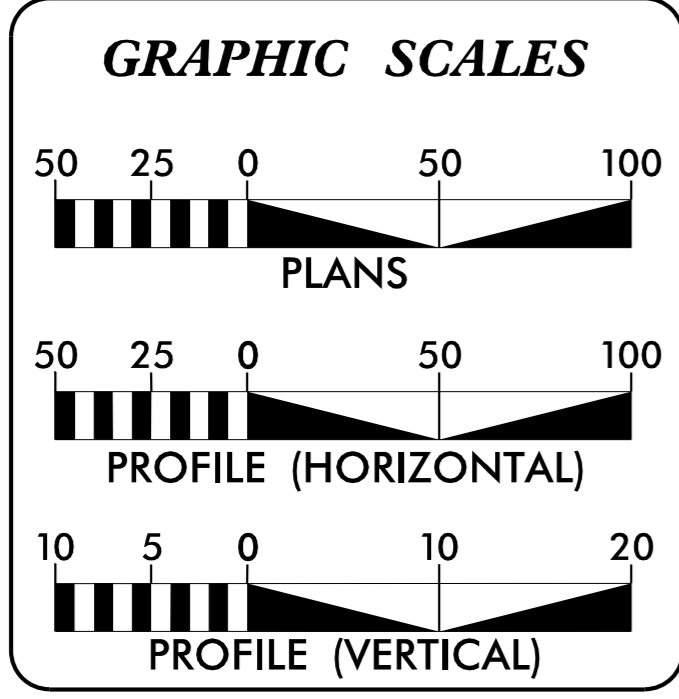
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS DUPLIN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5534	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
55034.1.1		P.E.	
55034.2.1		RAW & UTILITIES	
55034.3.1		CONSTRUCTION	

LOCATION: BRIDGE 82 OVER BURN COAT CREEK ON NC 11/111
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

AADT 2020 =	6,100
AADT 2040 =	7,600
K =	9%
D =	55%
T =	11%*
V =	60 MPH

* (TTST 8% + DUAL 3%)
FUNCTIONAL RURAL MAJOR
CLASSIFICATION: COLLECTOR
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5534	=	0.283 MILES
LENGTH STRUCTURES TIP PROJECT B-5534	=	0.020 MILES
TOTAL LENGTH TIP PROJECT B-5534	=	0.303 MILES

PLANS PREPARED FOR THE NCDOT BY:

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 8, 2019

LETTING DATE: FEBRUARY 16, 2021

Kimley Horn

JEFFREY W. MOORE, P.E. PROJECT ENGINEER

SETH DENNEY, P.E. PROJECT DESIGN ENGINEER

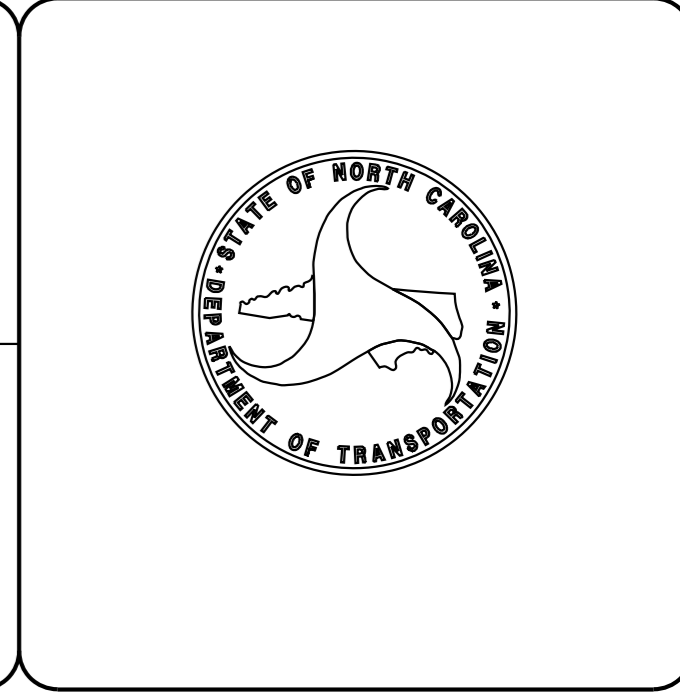
DAVID STUTTS, P.E. STRUCTURES MANAGEMENT UNIT PROJECT ENGINEER PCFPROGRAM MANAGEMENT

HYDRAULICS ENGINEER

DocuSigned by: Vance W. Blanton
1/13/2021

ROADWAY DESIGN ENGINEER

DocuSigned by: Jeff Meier
1/14/2021



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

Kimley»Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, N.C. 27601

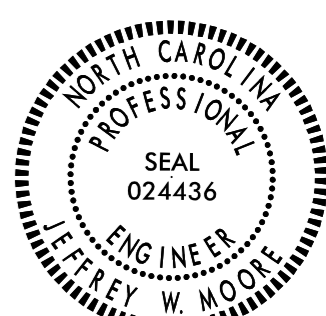
RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO. SHEET NO.

B-5534 /A

ROADWAY DESIGN
ENGINEER



DocuSigned by:
Jeff Moore
22086CEA55A8476

1/14/2021

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

GENERAL NOTES

2018 SPECIFICATIONS

EFFECTIVE: 01-16-2018
REVISED:

GRADE LINE:
GRADING AND SURFACING OR RESURFACING AND WIDENING:

EFFECTIVE: 01-16-18
REVISED:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III. SEE SHEET 2C-1.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

POWER: DUKE ENERGY - RANDY MILLER - 910-625-1340 - RAMILLER@PIKE.COM
TELEPHONE: CHARTER - STAN RAMSAY - 252-725-1141 - STAN.RAMSAY@PINTTECHCORP.COM
FIBER: CENTURYLINK - KEVIN GODWIN - 910-366-2142 - KEVIN.GODWIN@CENTURYLINK.COM
WATER: DUPLIN COUNTY - JEFF WILLIAMS - 910-289-7167
DONNA BROWN - 910-296-2123 - DONNAB@DUPLINCOUNTYNC.COM
SEWER: DUPLIN COUNTY - JEFF WILLIAMS - 910-289-7167
DONNA BROWN - 910-296-2123 - DONNAB@DUPLINCOUNTYNC.COM

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

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
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
275.01	Rock Plating
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
422.01	Bridge Approach Fills - Type I Standard Approach Fill
422.03	Reinforced Bridge Approach Fills - Type A Alternate Approach Fill for Integral Abutment
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
654.01	Pavement Repairs
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
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
876.04	Drainage Ditches with Class 'B' Rip Rap

INDEX OF SHEETS

SHEET NUMBER	SHEET
I	TITLE SHEET
IA	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARDS
IB	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND MISCELLANEOUS DETAILS
2C-1	METHOD OF CLEARING MODIFIED METHOD III DETAIL
2C-2	GUARDRAIL INSTALLATION DETAIL
3B-1 THRU 3B-2	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARIES
4 THRU 5	PLAN SHEETS
6	PROFILE SHEET
RW-1 THRU RW-4	RIGHT-OF-WAY SHEETS
TMP-1 THRU TMP-7	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-5	SIGNING PLANS
UC-1 THRU UC-6	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-9	CROSS-SECTIONS
S-1 THRU S-34	STRUCTURE PLANS
SN	STANDARD NOTES

REVISIONS

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	----->
Property Monument	□ EPM
Parcel/Sequence Number	②③
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	-----
Potential Contamination Area: Soil	-----
Known Contamination Area: Water	-----
Potential Contamination Area: Water	-----
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 RW 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	⊕
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.	⊕
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.

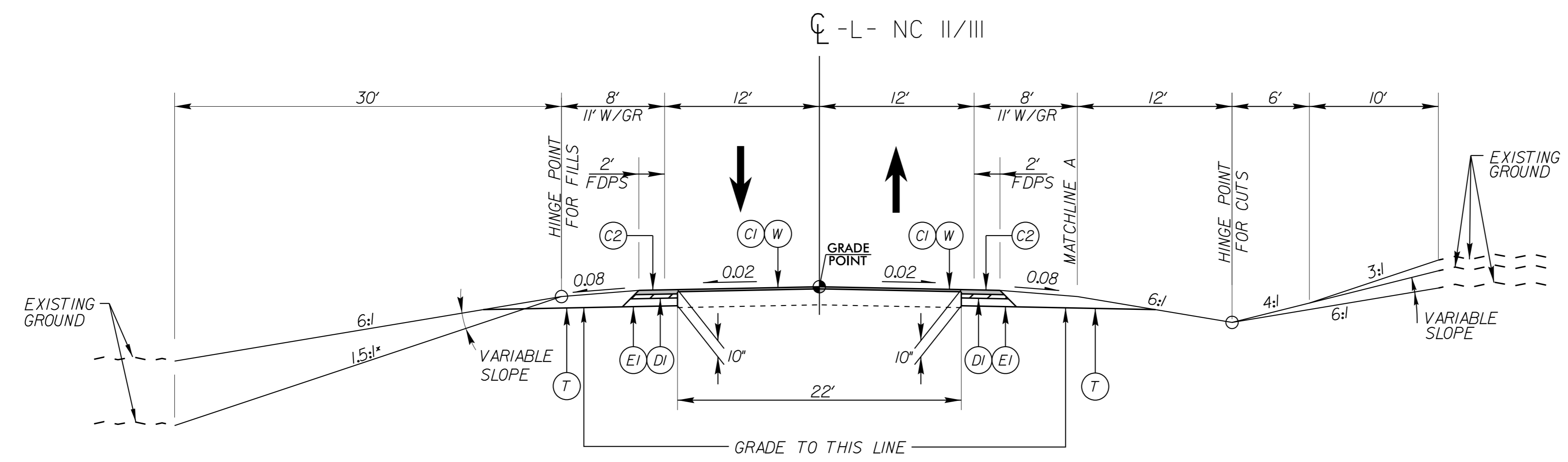
REVISIONS

3/16/2020

5/14/99

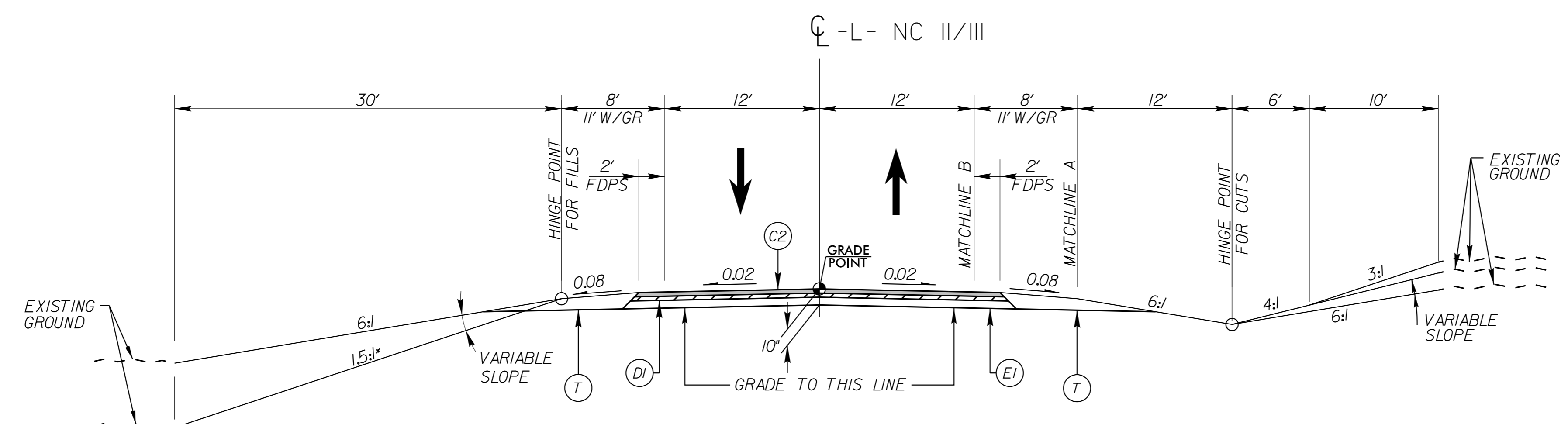
<p>421 FAYETTEVILLE STREET, SUITE 600 RALEIGH, N.C. 27601</p> <p>RIGHT-OF-WAY REV. CONST. REV.</p>	PROJECT REFERENCE NO. B-5534	SHEET NO. 2A-1
	ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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



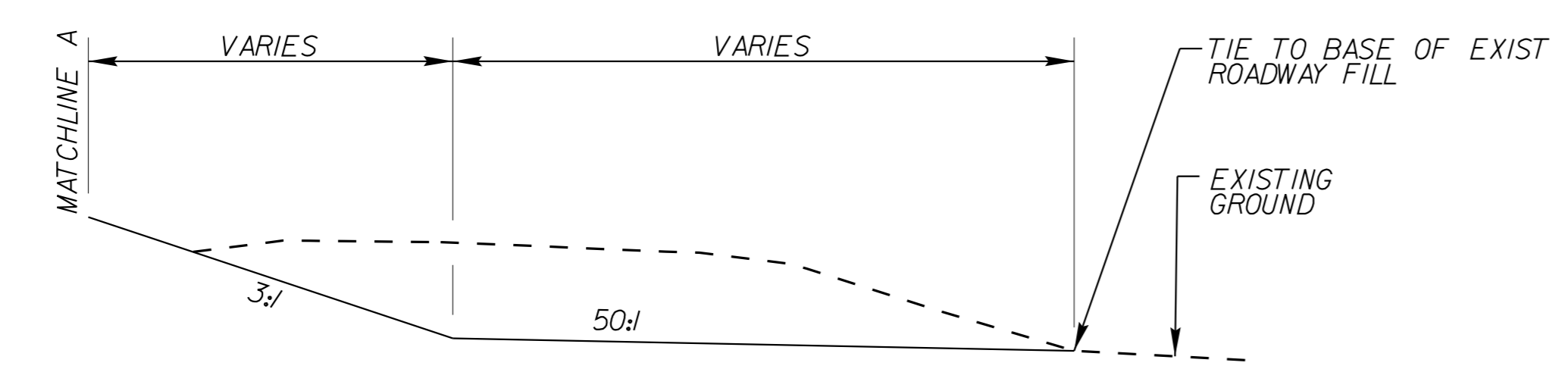
* USE 1.5:1 SLOPES IN WETLANDS
(SEE CROSS-SECTIONS)

TYPICAL SECTION NO. 1
 -L- STA 13+78.00 TO 17+50.00
 -L- STA 26+00.00 TO 29+78.00



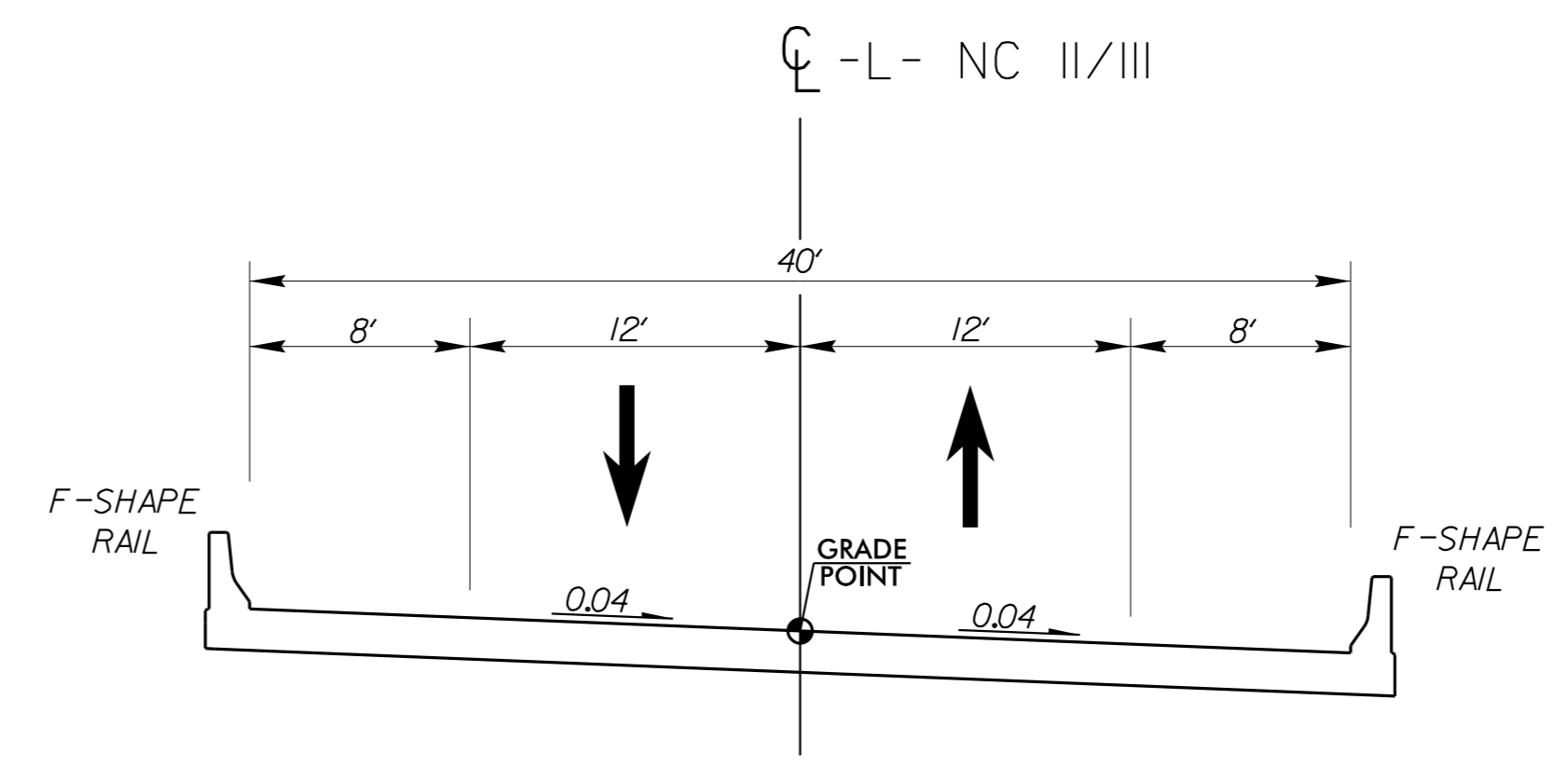
* USE 1.5:1 SLOPES IN WETLANDS
(SEE CROSS-SECTIONS)

TYPICAL SECTION NO. 2
 -L- STA 17+50.00 TO 21+16.00 (BEGIN BRIDGE)
 -L- STA 22+21.00 (END BRIDGE) TO 26+00.00



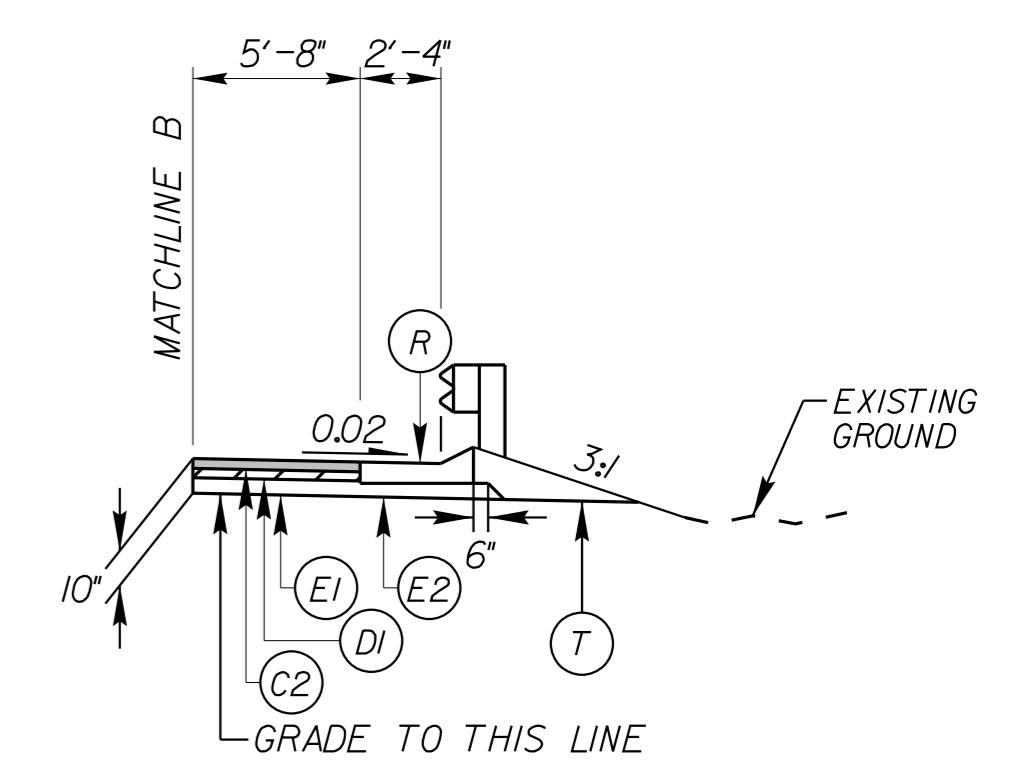
TYPICAL SECTION NO. 2A
 -L- STA 16+00.00 TO 21+37.00 RT
 -L- STA 21+97.00 TO 25+50.00 RT

* SEE SHEETS X-2 THRU X-6 FOR MORE INFORMATION

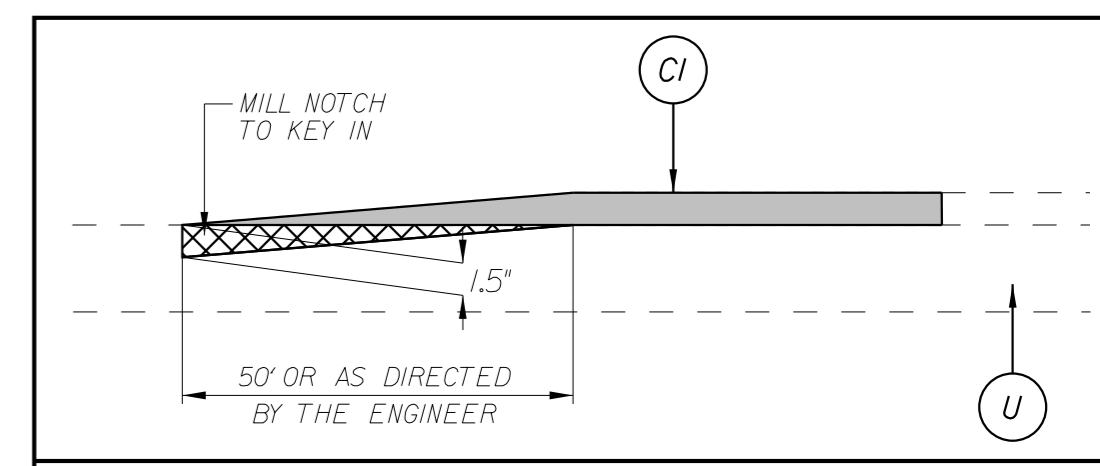


BRIDGE TYPICAL SECTION NO. 1
 -L- STA 21+16.00 TO 22+21.00

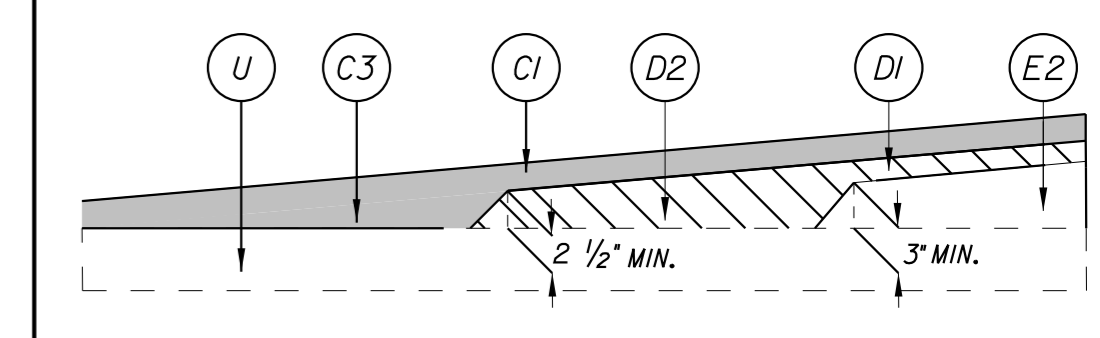
NOTE: PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED



TYPICAL SECTION NO. 2B
 -L- STA 20+66.00 TO 20+91.83 RT



INCIDENTAL MILLING DETAIL



WEDGING DETAIL (W) FOR RESURFACING/MILLING

REVISIONS

3/16/2020

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

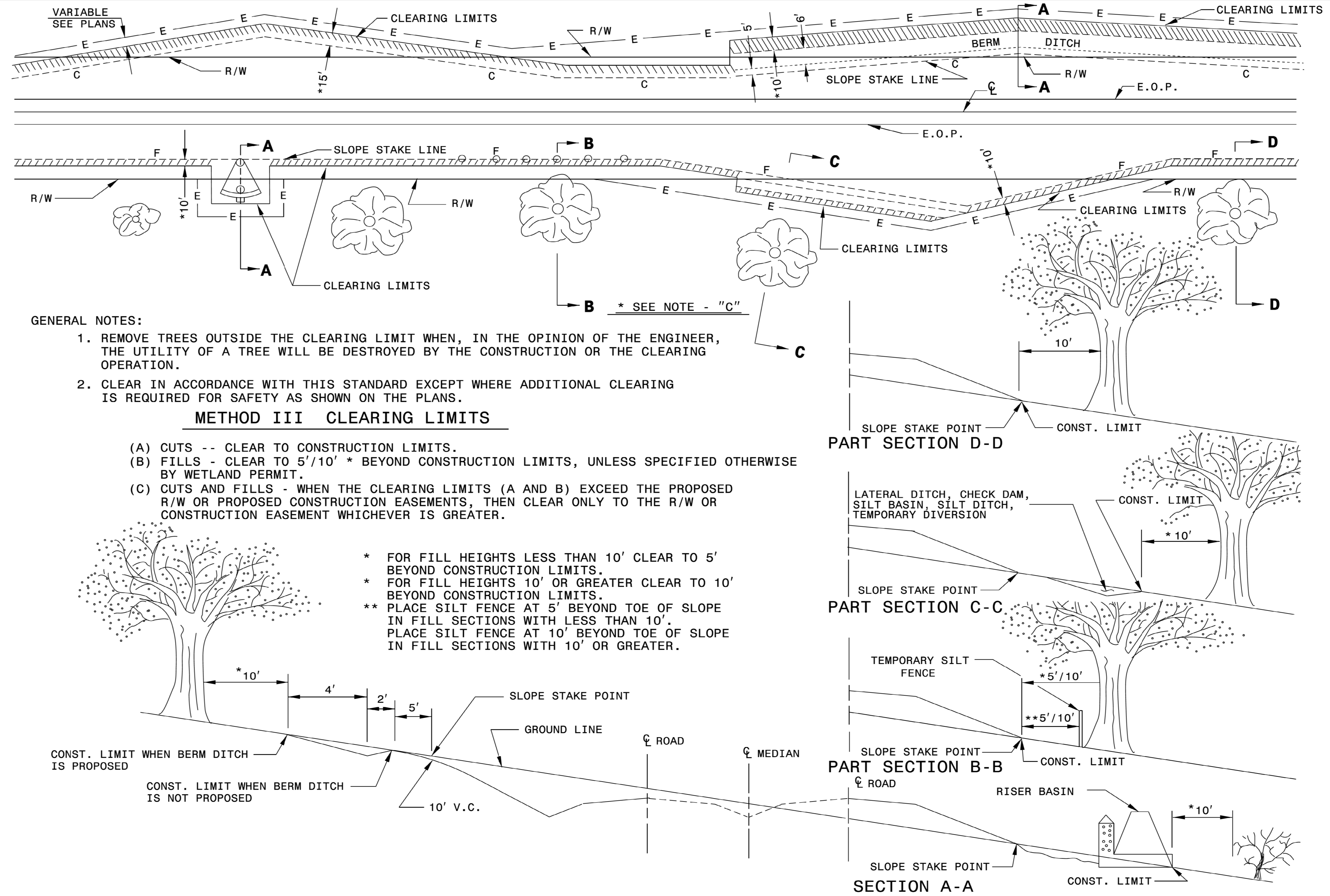
ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
 MODIFIED METHOD - III

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:

- 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.
- CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

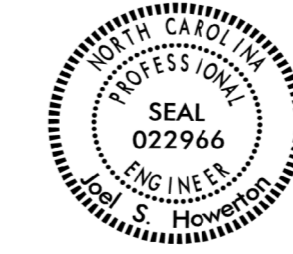
METHOD III CLEARING LIMITS

- (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.

REVISIONS

C:\DEC-2017\0331\enr\ss\Special_Details\kempf\english\0200D0301_modified_method III_Candig.dgn
 jhewerton AT 03022255g



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.: k Kempf/english/0200D0301.dgn	

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

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

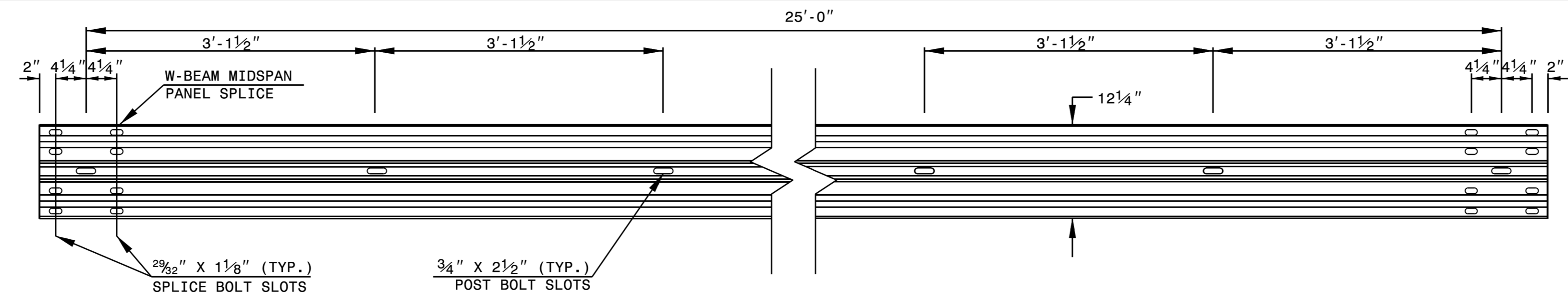
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

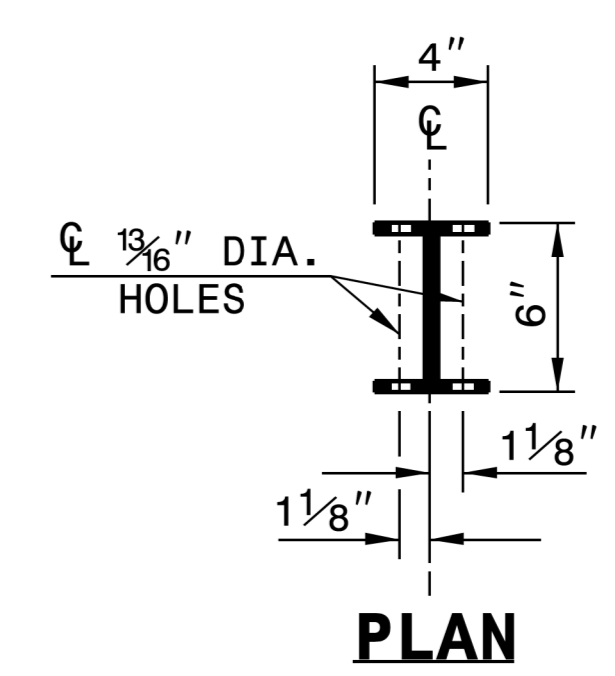
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

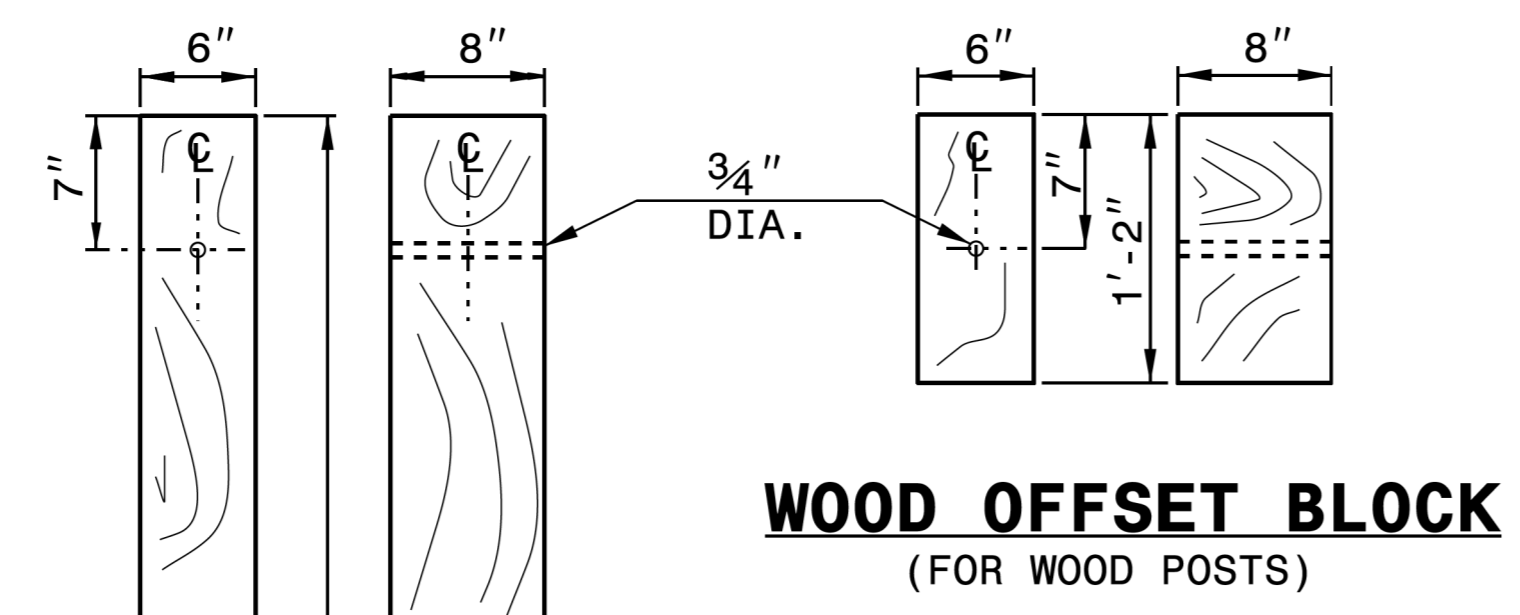
SHEET 6 OF 8
862D02



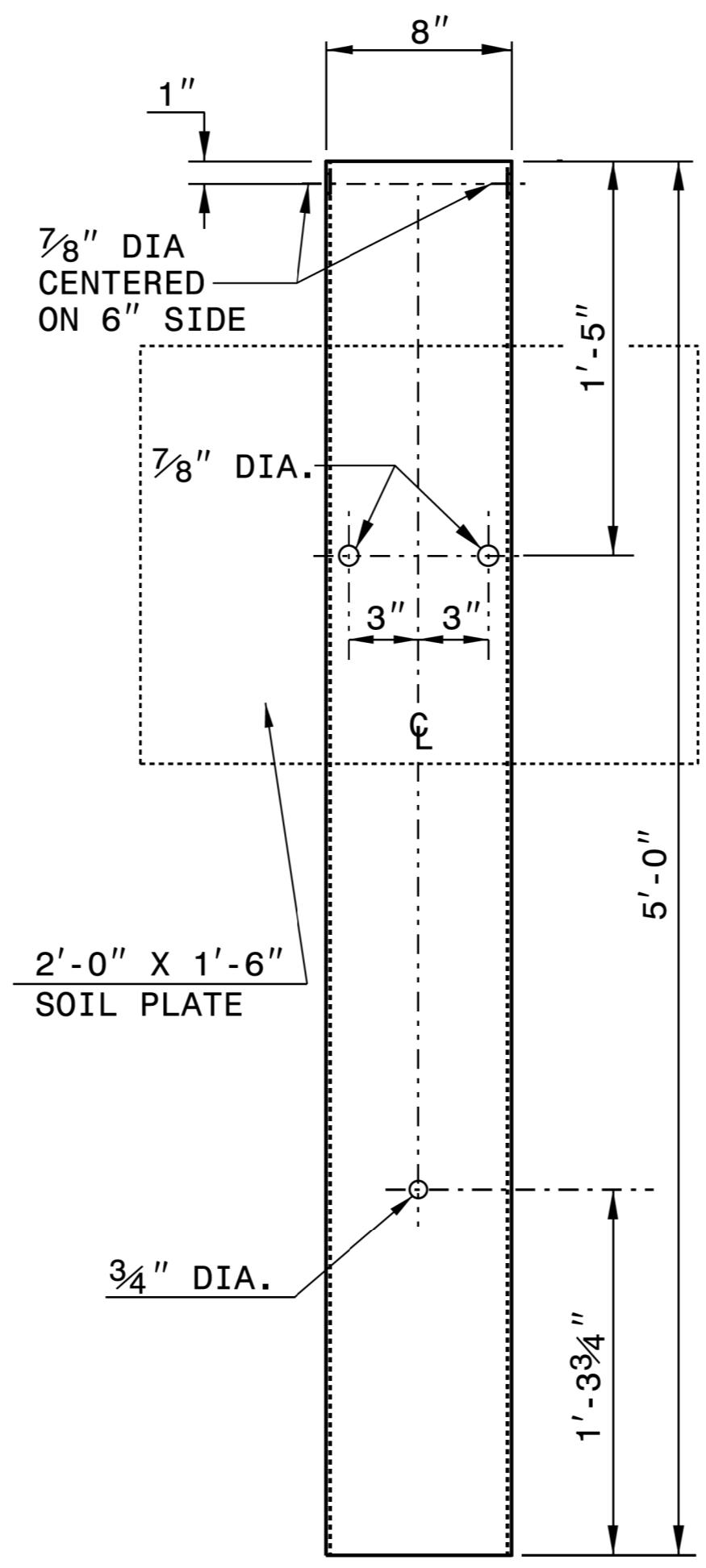
STANDARD W-BEAM GUARDRAIL



PLAN

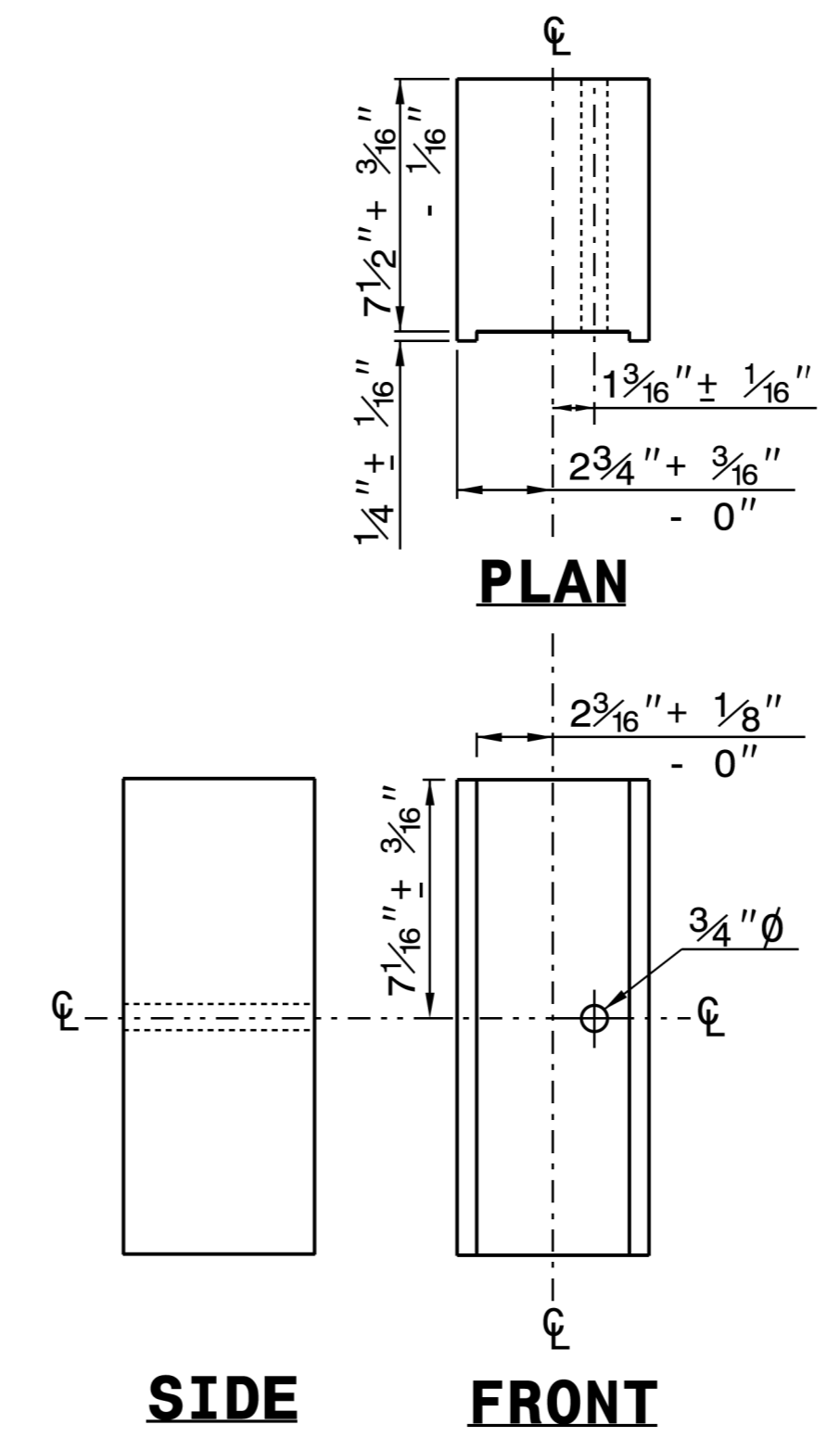


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

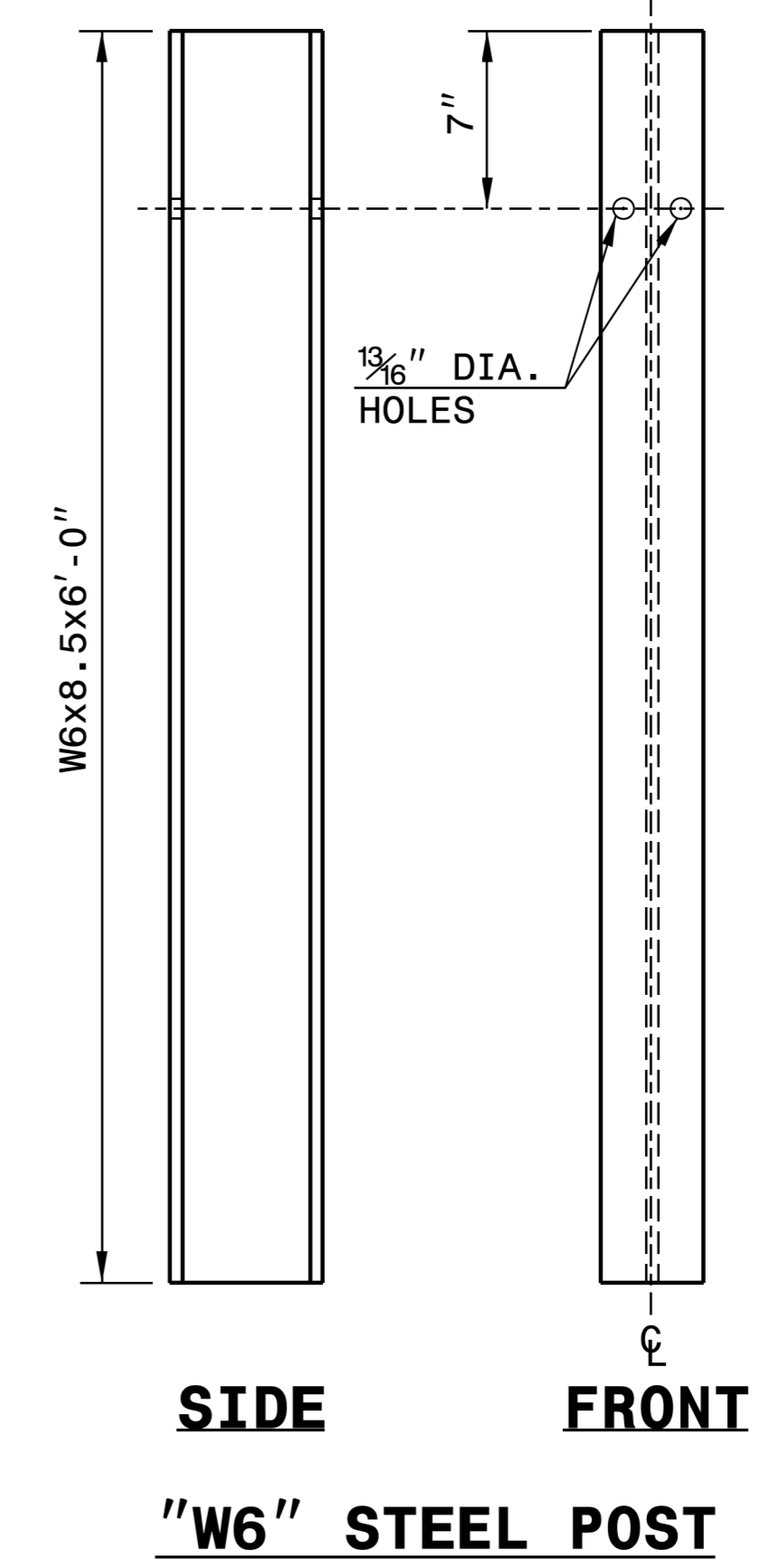


**STEEL TUBE
TS 6"x8"x0.1875"**

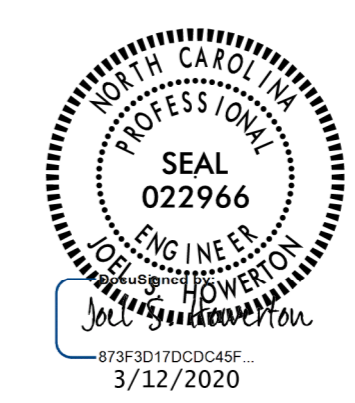
SYSTEM PARTS



**ROUTED
OFFSET BLOCK**



W6" STEEL POST



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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
SUMMARY OF EARTHWORK
 IN CUBIC YARDS

REVISIONS

STATION	STATION	TOTAL UNCLASSIFIED	EMBANKMENT + %	BORROW	TOTAL WASTE
PHASE I (NEW LOCATION)					
SUMMARY NO. 1					
-L- 15 + 00.00	-L- 21 + 16.00	39	7960	7921	
-L- 22 + 21.00	-L- 28 + 00.00	15	8745	8730	
TOTAL SUMMARY NO. 1					
	SUBTOTAL	54	16705	16651	0
PHASE II (REMOVE EXISTING)					
SUMMARY NO. 2					
-L- 13 + 78.00	-L- 21 + 34.00	3345	21		3324
-L- 22 + 00.00	-L- 29 + 78.00	2639	448		2191
TOTAL SUMMARY NO. 2					
	SUBTOTAL	5984	469	0	5515
TOTAL		6038	17174	16651	5515
-L- ESTIMATED SHOULDER MATERIAL			680	680	
PROJECT TOTAL		6038	17854	17331	5515
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				867	
GRAND TOTAL		6038	17854	18198	5515
SAY		6100		18200	
EST UNDERCUT EXCAVATION		300 CY			
EST SELECT GRANULAR MATERIAL		300 CY			
EST GEOTEXTILE FOR SOIL STABILIZATION		300 SY			
PAVEMENT STRUCTURE VOLUME		980 CY			

NOTE: APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, FINE GRADING, BORROW EXCAVATION, AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."
 THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

"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.
 G = GATING GUARDRAIL END UNIT, TYPE TL-3
 NG = NON-GATING GUARDRAIL END UNIT, TYPE TL-3

GUARDRAIL SUMMARY

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			TERMINAL SECTIONS	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	TEMP GREU TL-3	TYPE B-77	TEMP TYPE B-77	EA	G	NG					
-L-	15+80.63	21+16.00	LT	535.375				21+16.00	8'	11'	50		1		1											
-L-	18+05.63	21+16.00	RT	310.375			21+16.00		8'	11'	50		1		1											
-L-	22+21.00	25+93.88	LT	372.875			22+21.00		8'	11'	50		1		1											
-L-	22+21.00	23+68.88	RT	147.875				22+21.00	8'	11'	50			1	1											
-L-	18+88.00	21+32.00	RT																					242		
-L-	18+86.00	21+33.00	RT																					242		
-L-	22+02.00	24+46.00	RT																					241		
-L-	22+02.00	24+51.00	RT																					241		
			SUBTOTAL	1366.50											4		4							966		
			LESS ANCHOR DEDUCTIONS																							
			GREU TL-3	4 @ 50'	=		200.00																			
			TYPE B-77	4 @ 22.875'	=		91.50																			
			TOTAL				1075.00								4		4							966		
			SAY				1100								4		4							970		

ADDITIONAL GUARDRAIL POSTS = 5 EA

SHOULDER BERM GUTTER SUMMARY

LINE	STATION TO STATION	LOCATION	LENGTH (LF)
-L-	20+66.00 TO 20+91.83	RT	25.83
TOTAL			25.83
SAY			26

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SY
-L-	15+50	21+33	RT	1259.81
-L-	22+00	24+96	RT	499.42
			TOTAL	1759.23
			SAY	1800

REVISIONS

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF ROCK PLATING

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-	2.75:1	15+65 +/-	1.5:1	21+16 +/-	LT	1	*	910
-L-	1.5:1	22+21 +/-	1.5:1	25+00 +/-	LT	2	*	870
-L-	1.5:1	25+00 +/-	2.75:1	25+85 +/-	LT	1	*	170
							TOTAL SY:	1950

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

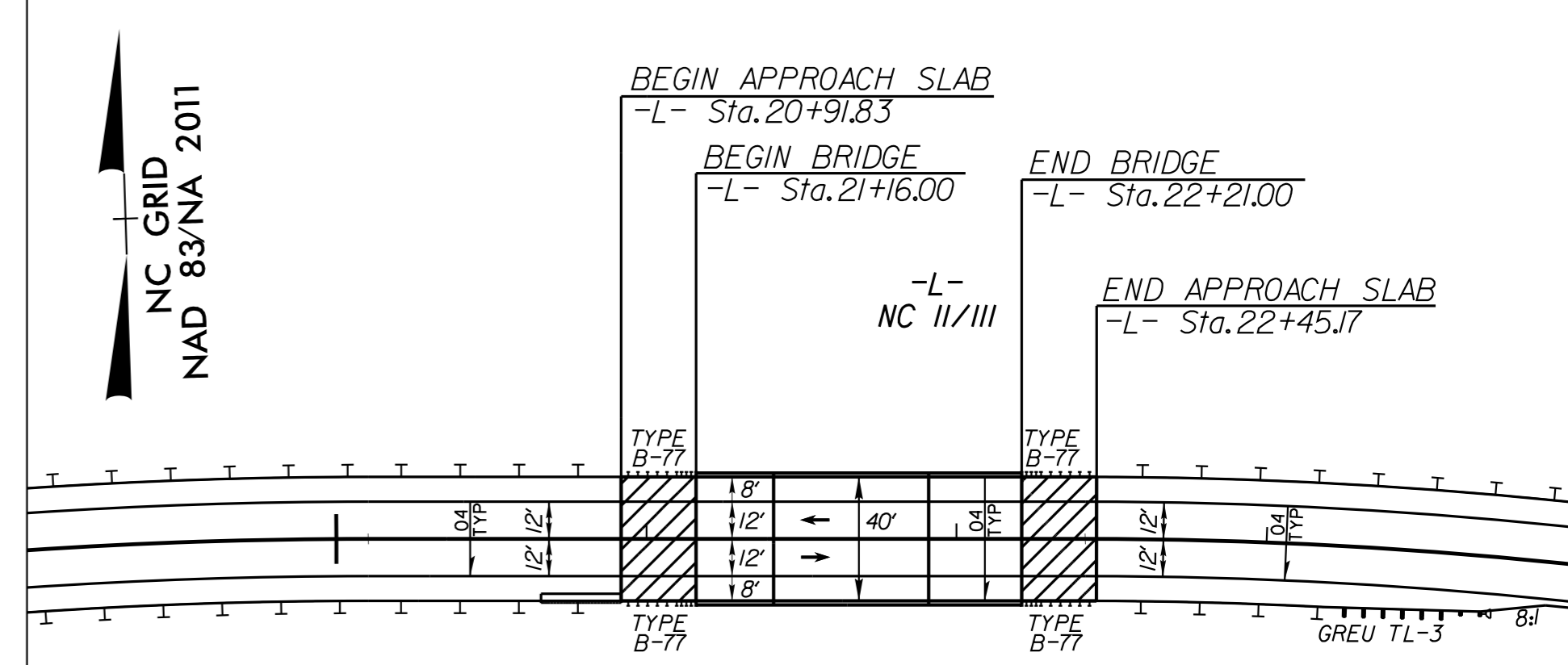
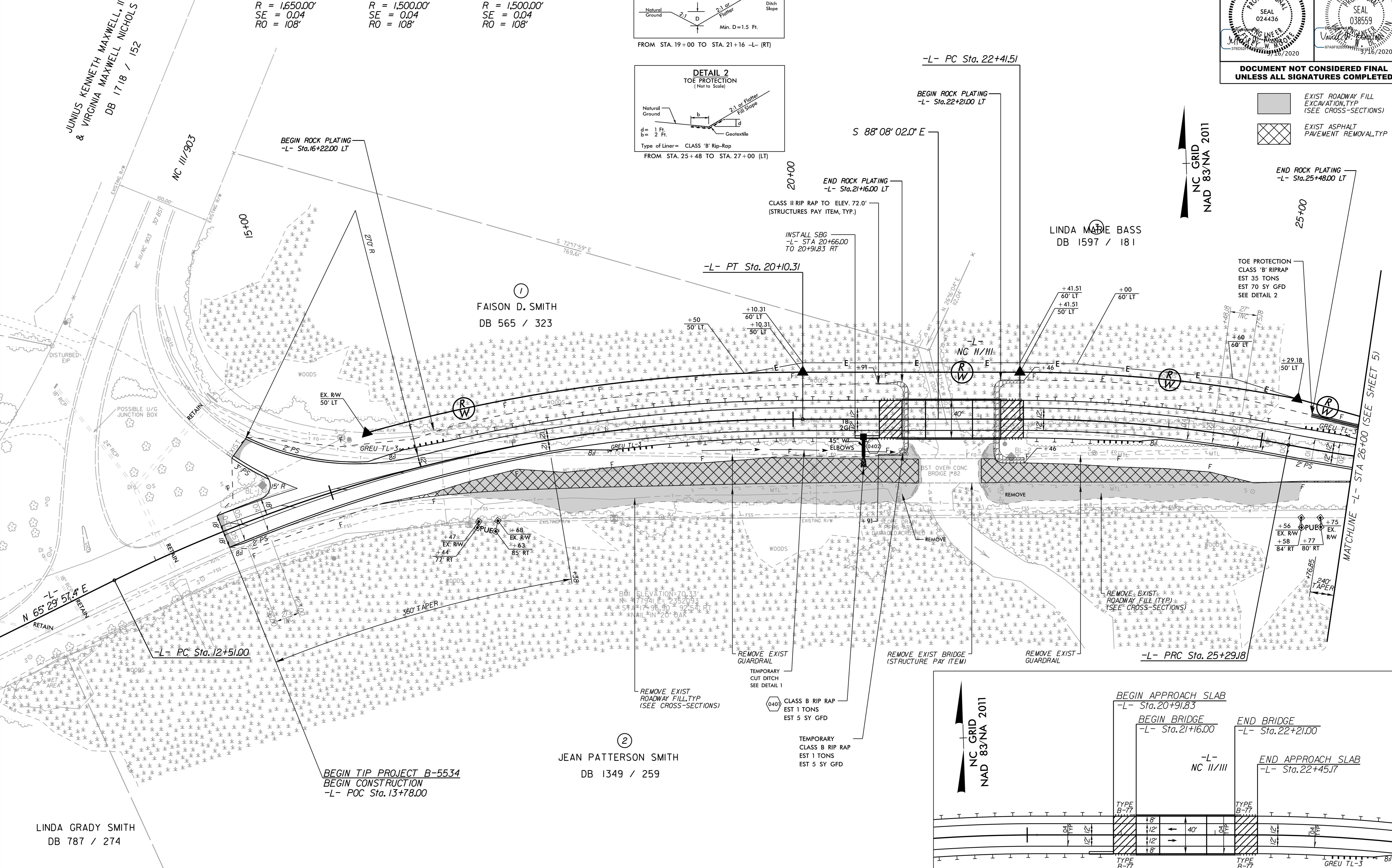
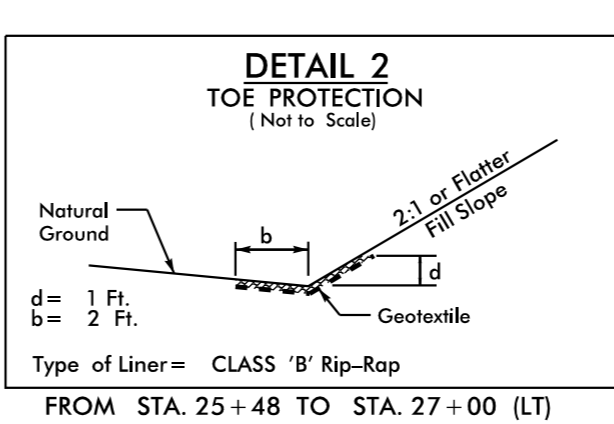
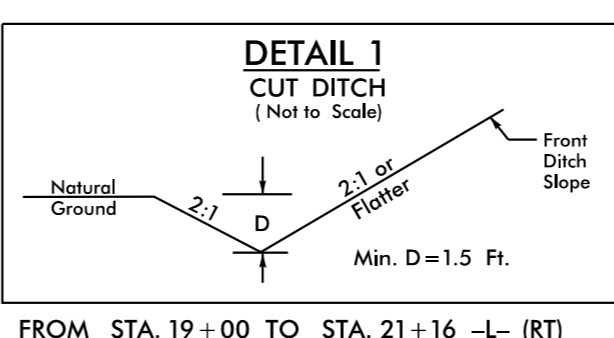
5/14/19

Kimley Horn

421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, N.C. 27601

PROJECT REFERENCE NO. B-5534		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-L-		
PI Sta 16+37.50 Δ = 26° 22' 00.6" (RT) D = 3' 28' 20.9" L = 759.31' T = 386.50' R = 1,650.00' SE = 0.04 RO = 108'	PI Sta 23+85.79 Δ = 10° 59' 17.3" (RT) D = 3' 49' 11.0" L = 287.67' T = 144.28' R = 1,500.00' SE = 0.04 RO = 108'	PI Sta 26+73.45 Δ = 10° 59' 17.3" (LT) D = 3' 49' 11.0" L = 287.67' T = 144.28' R = 1,500.00' SE = 0.04 RO = 108'



SEE SHEET 6 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-34 FOR STRUCTURE PLANS

DETAIL SHOWING BRIDGE /PAVEMENT RELATIONSHIP

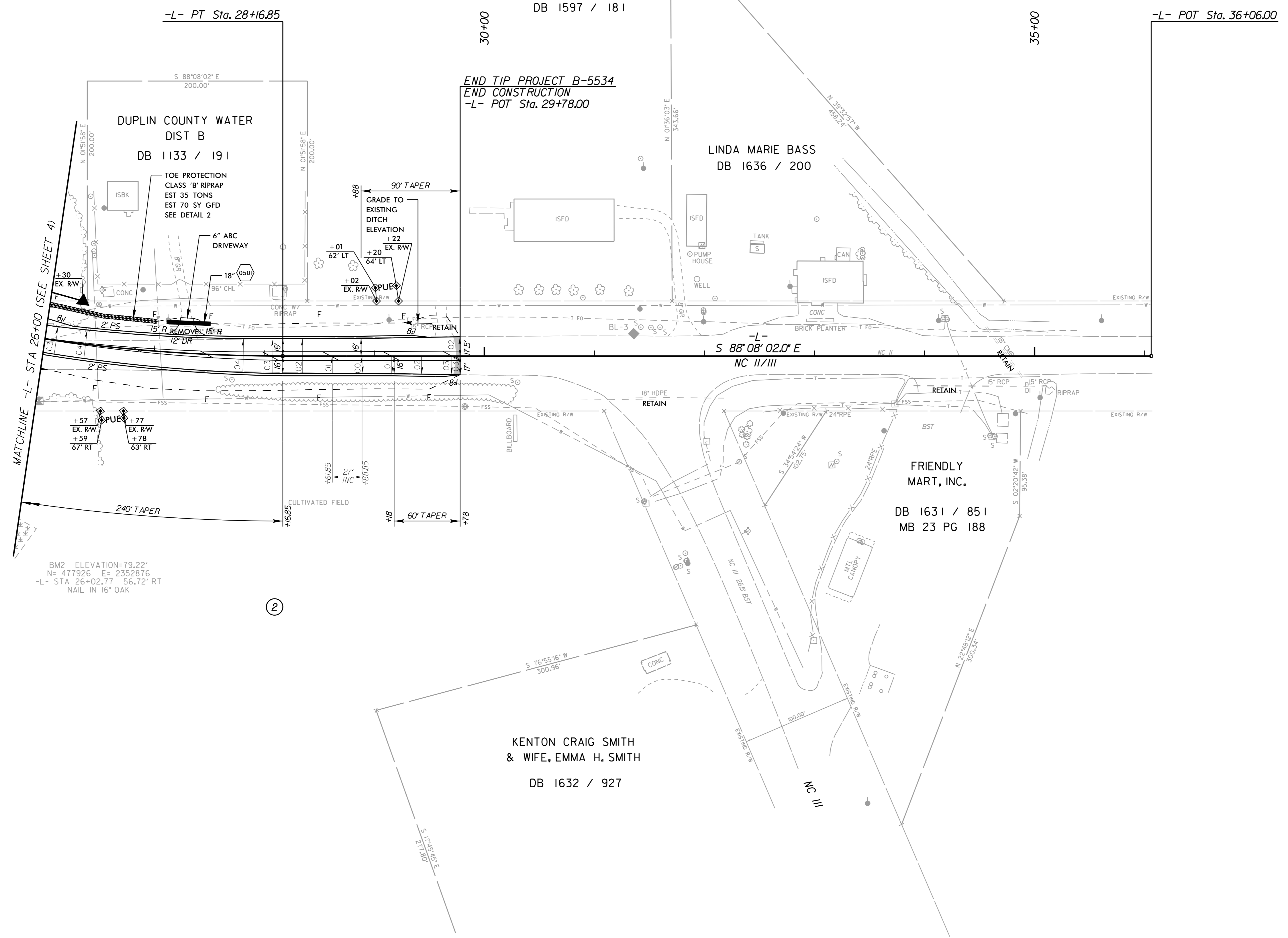
LINDA GRADY SMITH
DB 787 / 274

3/16/2020

5/14/1999

PROJECT REFERENCE NO. B-5534	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-
 PI Sta 26+73.45
 $\Delta = 10^{\circ} 59' 17.3''$ (LT)
 $D = 3^{\circ} 49' 11.0''$
 $L = 287.67'$
 $T = 144.28'$
 $R = 1,500.00'$
 $SE = 0.04$
 $RO = 108'$



SEE SHEET 6 FOR -L- PROFILE

3/16/2020

5/14/99

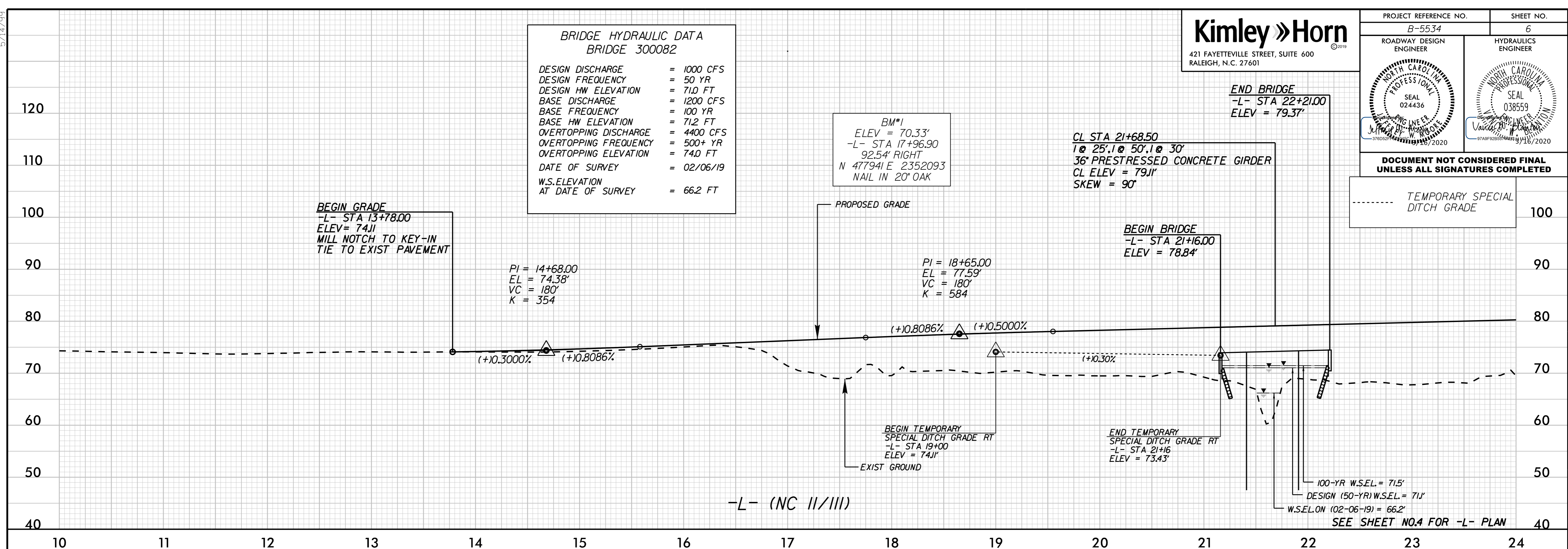
BRIDGE HYDRAULIC DATA
BRIDGE 300082

DESIGN DISCHARGE = 1000 CFS
 DESIGN FREQUENCY = 50 YR
 DESIGN HW ELEVATION = 71.0 FT
 BASE DISCHARGE = 1200 CFS
 BASE FREQUENCY = 100 YR
 BASE HW ELEVATION = 71.2 FT
 OVERTOPPING DISCHARGE = 4400 CFS
 OVERTOPPING FREQUENCY = 500+ YR
 OVERTOPPING ELEVATION = 74.0 FT
 DATE OF SURVEY = 02/06/19
 W.S.ELEVATION AT DATE OF SURVEY = 66.2 FT

Kimley Horn
 421 FAYETTEVILLE STREET, SUITE 600
 RALEIGH, N.C. 27601

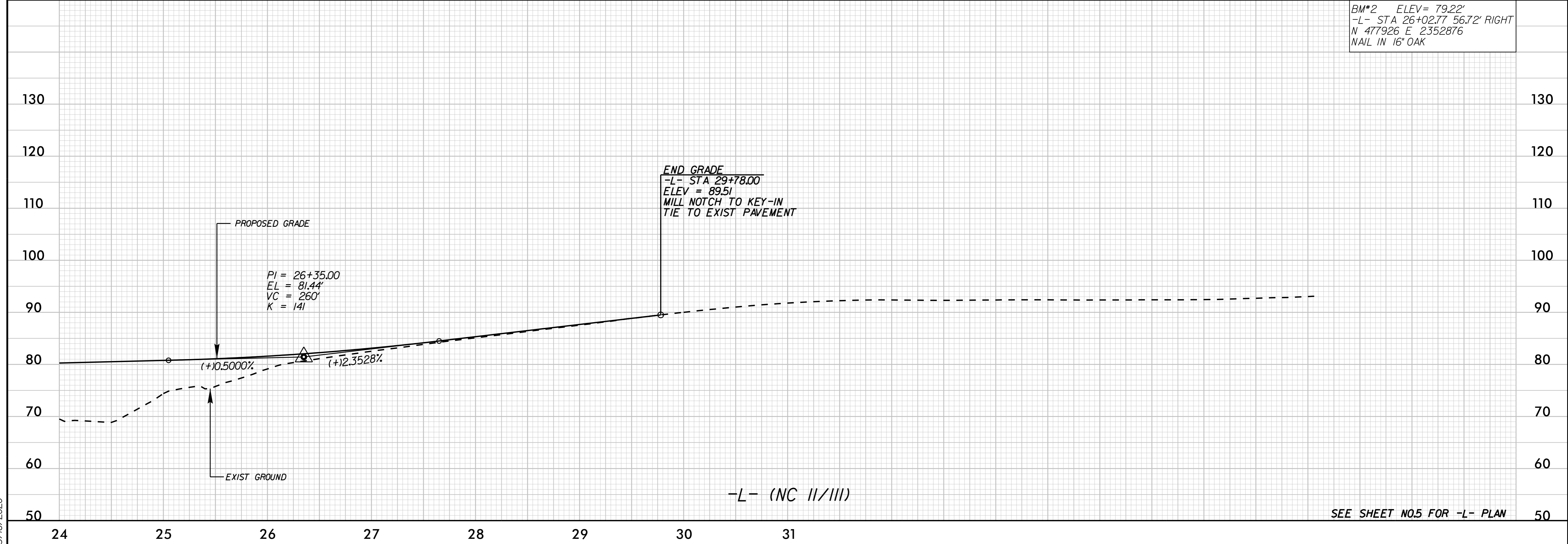
PROJECT REFERENCE NO. B-5534	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



TEMPORARY SPECIAL DITCH GRADE

BM*2 ELEV = 79.22'
 -L- STA 26+02.77 56.72' RIGHT
 N 477926 E 2352876
 NAIL IN 16" OAK



SEE SHEET NO.5 FOR -L- PLAN

3/16/2020