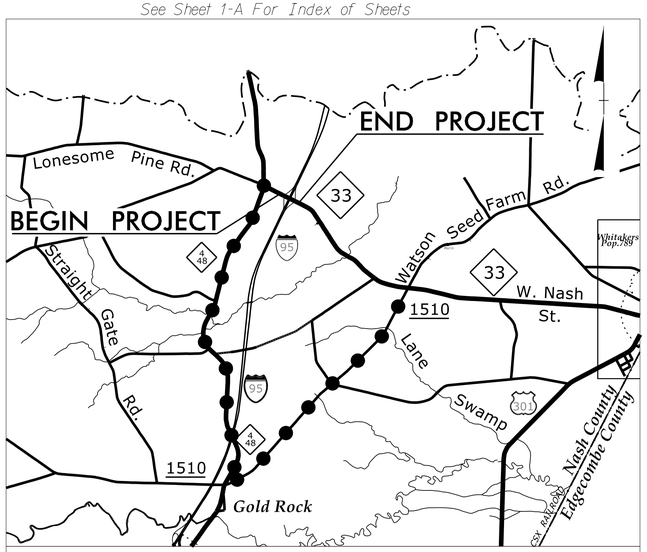
09/08/99

TIP PROJECT:BR-0036

CONTRACT:C204350

See Sheet 1-A For Index of Sheets



VICINITY MAP

OFF-SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0036	1	

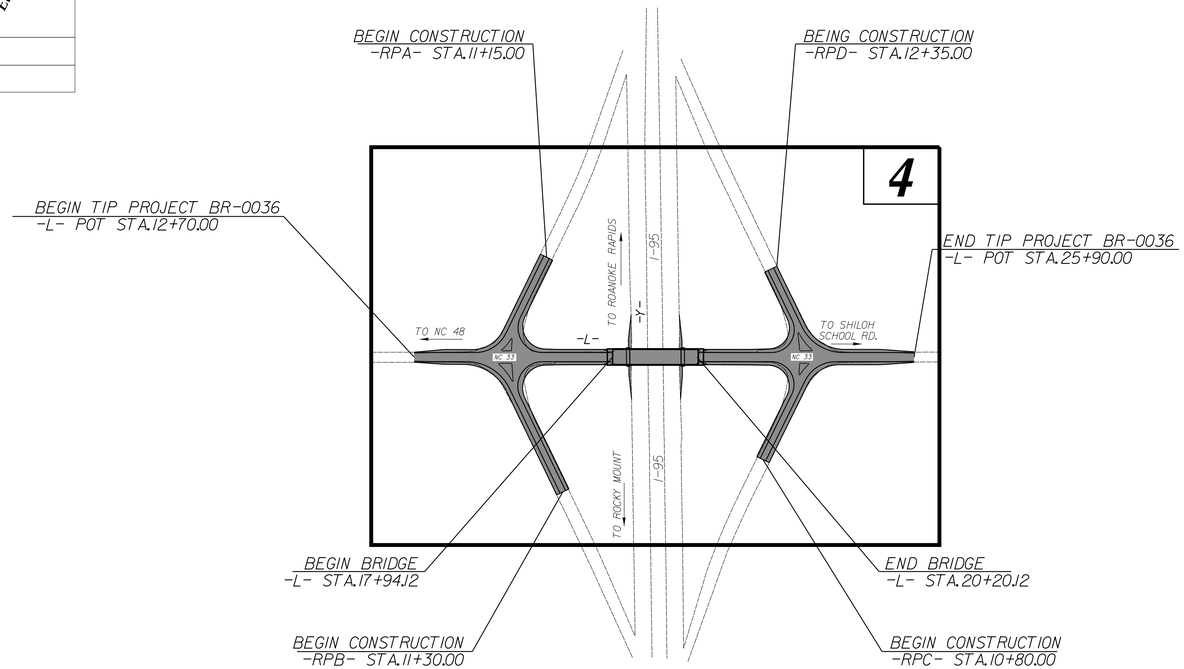
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
49074.1.1		P.E.
49074.2.1		R/W UTIL
49074.3.2		CONST

LOCATION: BRIDGE NO. 630041 ON NC 33 OVER I-95.

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.

PART III

NAD 83/2011



THERE IS FULL CONTROL OF ACCESS ON THIS PROJECT.

Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828·253·2796

Boone, NC 828·355·9933
Tri-Cities, TN 423·467·8401
Knoxville, TN 865·546·5800
Spartanburg, SC 864·574·4775
Charleston, SC 843·974·5650
Middlesboro, KY 606·248·6600
Raleigh, NC 919·977·9455
Charlotte, NC 704·357·0488
Atlanta, GA 770·627·3509

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 5 2.5 0 5 10

DESIGN DATA

ADT 2020 = 3,100
ADT 2040 = 3,600
T = 14 % *
V = 55 MPH
K = 8 %
D = 60 %
* TTST = 10% DUAL 4%

FUNC CLASS = RURAL MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.207 MI
LENGTH STRUCTURE PROJECT = 0.043 MI
TOTAL LENGTH OF PROJECT = 0.250 MI

NCDOT CONTACT: DAVID STUTTS, P.E.
PROJECT ENGINEER, PEF/PROGRAM MANAGEMENT

Prepared In the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 28, 2019

LETTING DATE:
JUNE 15, 2021

JOHN LANSFORD, PE
PROJECT ENGINEER

KEITH BRIDGERS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 047435 ENGINEER JON C. FORD

DocuSigned by: AB90F2E27A6043C...

SIGNATURE: *P.E.* 4/21/2021

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 15435 ENGINEER JOHN C. LANSFORD

DocuSigned by: John Lansford F5B70E2FBA554D4...

SIGNATURE: *P.E.* 4/21/2021

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

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User:tpgarrett

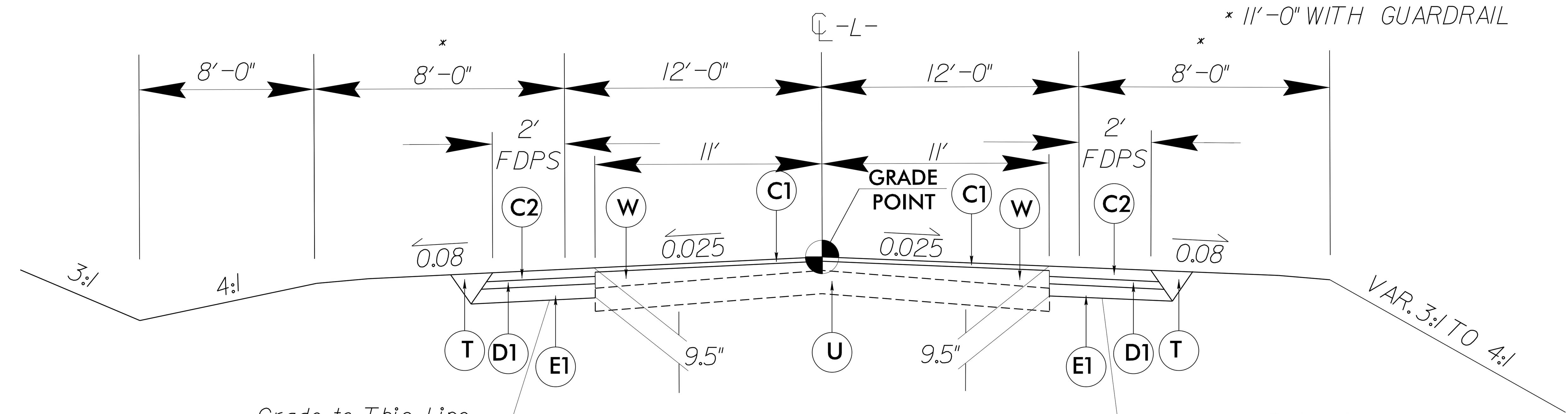
PROJECT REFERENCE NO.	SHEET NO.
BR-0036	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE NO. 630041

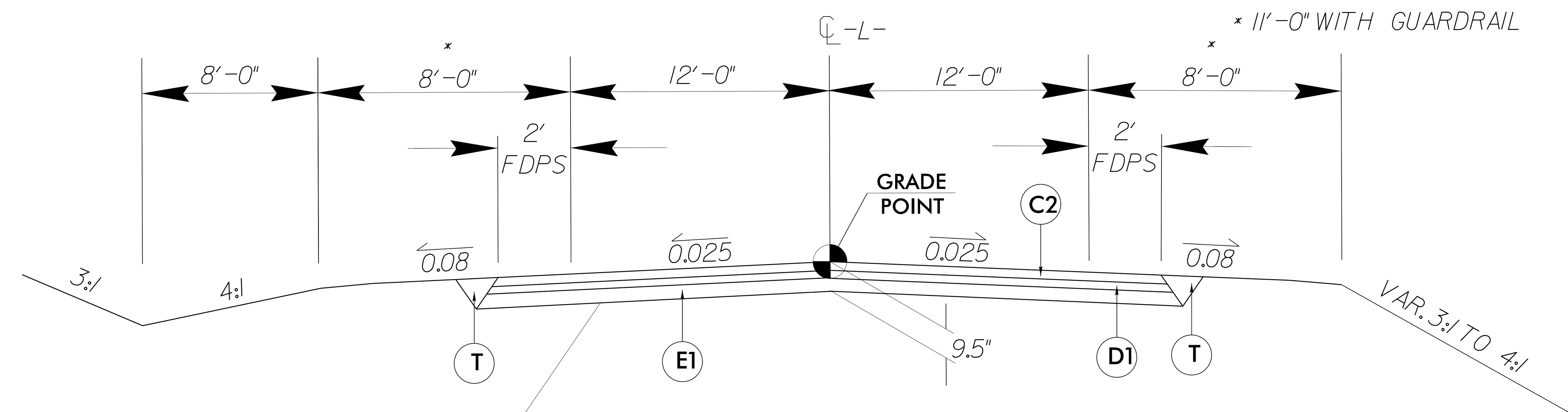
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 10.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 598.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH
J1	PROPOSED 4" AGGREGATE BASE COURSE
R	CONCRETE SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	VARIABLE DEPTH MILLING 0" TO 1.5" (SEE DETAIL)
V2	VARIABLE DEPTH MILLING 0" TO 3.0" (SEE DETAIL)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)



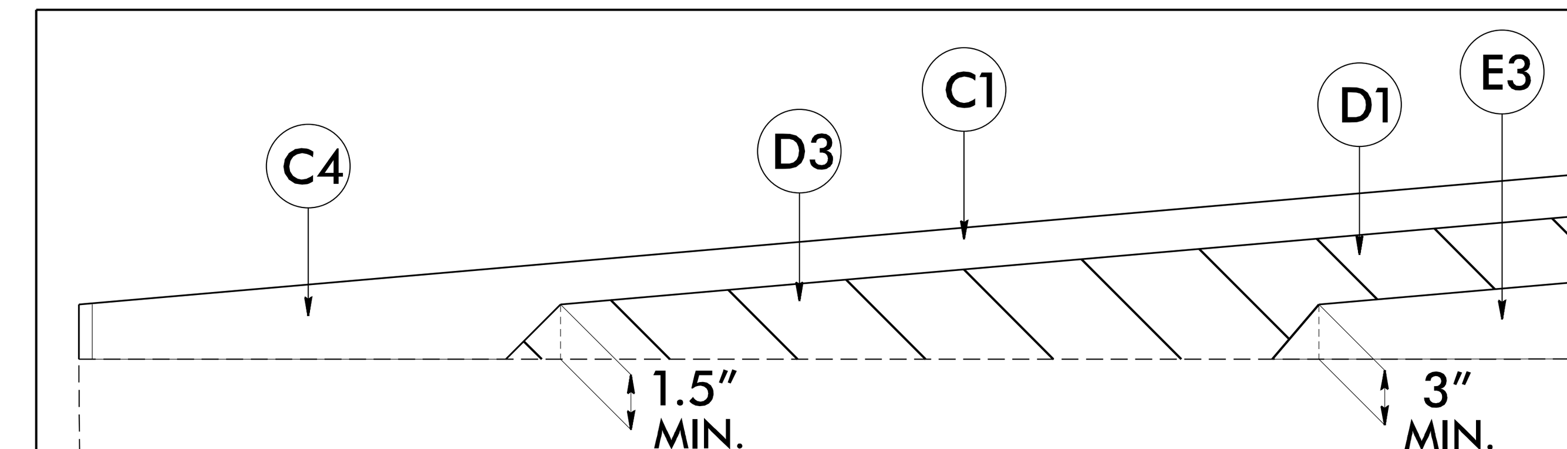
TYPICAL SECTION NO. 1

-L- STA. 12+70.00 TO STA. 14+75.00
-L- STA. 24+25.00 TO STA. 25+90.00



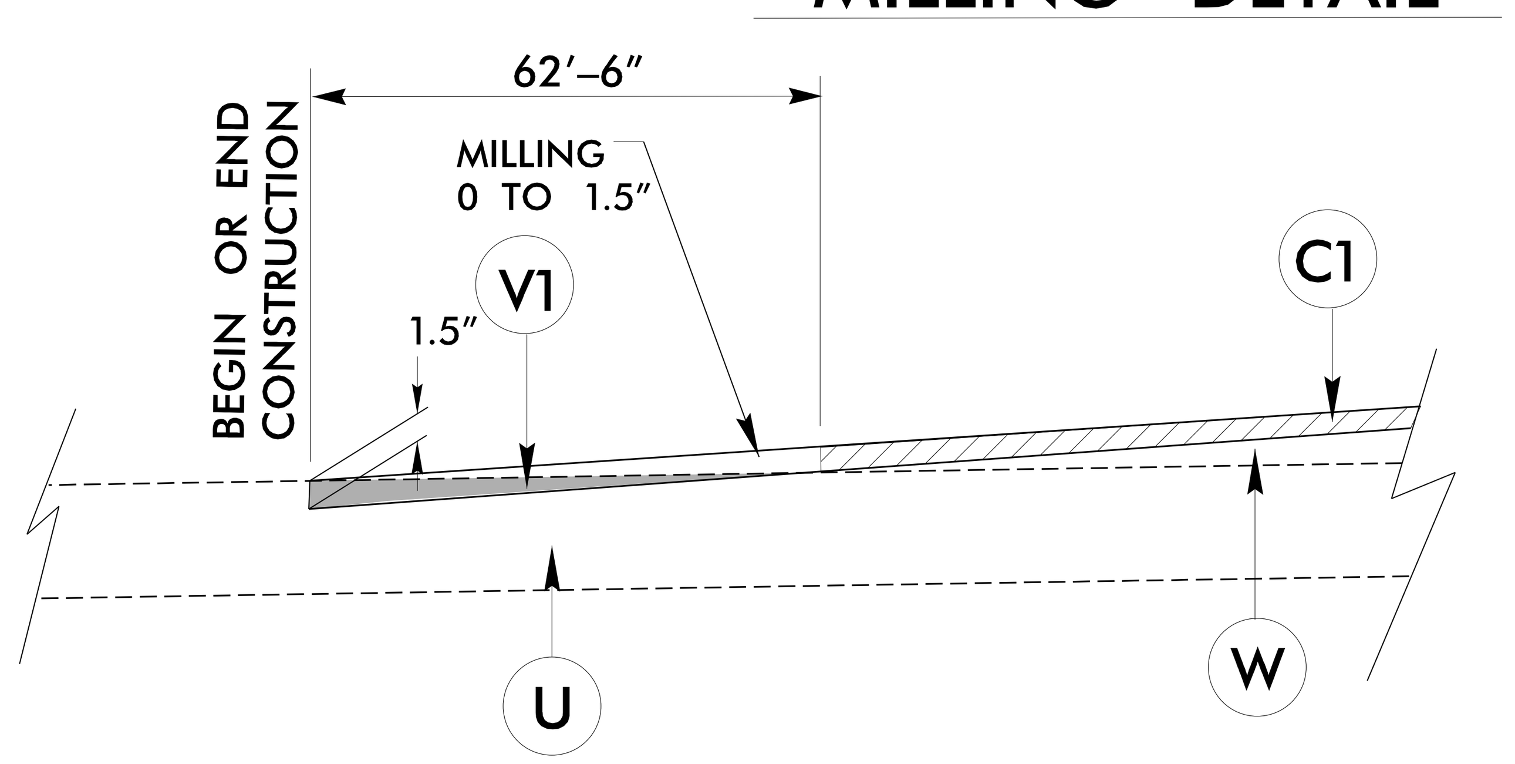
TYPICAL SECTION NO. 2

-L- STA. 14+75.00 TO BEGIN BRIDGE STA. 17+94.12
END BRIDGE STA. 20+20.12 TO -L- STA. 24+25.00



Wedging Detail For Resurfacing

MILLING DETAIL

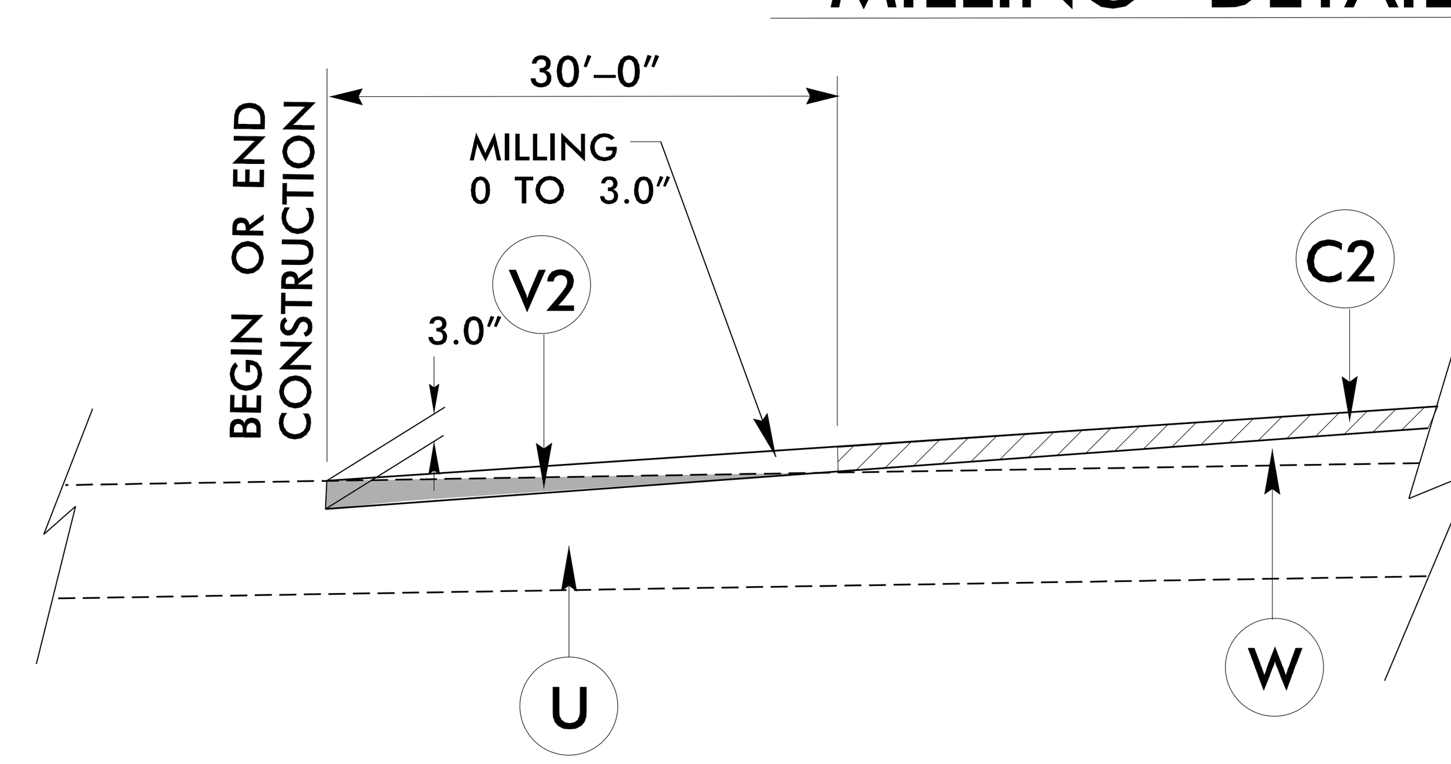


NOTE: MIRROR FOR END OF CONSTRUCTION

USE MILLING DETAIL AS FOLLOWS:

-L- STA. 12+70.00 TO 13+32.50
-L- STA. 25+27.50 TO 25+90.00

MILLING DETAIL

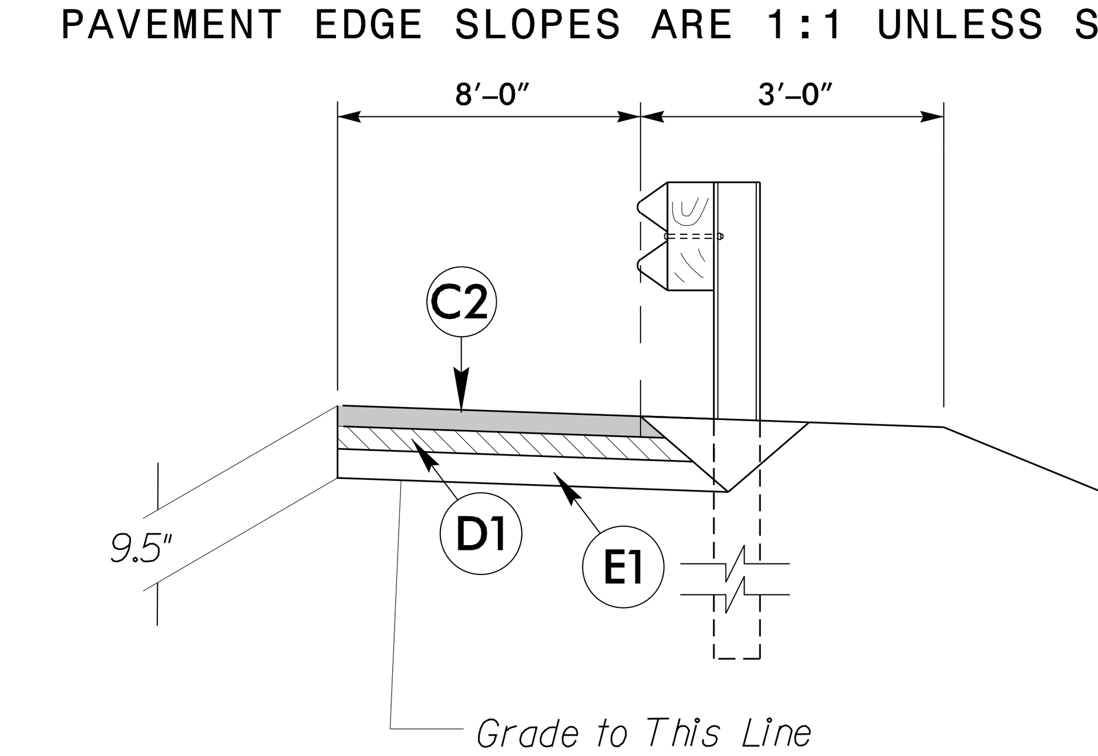


USE MILLING DETAIL AS FOLLOWS:

-RPA- STA. 10+85.00 TO 11+15.00
-RPB- STA. 11+00.00 TO 11+30.00
-RPC- STA. 10+50.00 TO 10+80.00
-RPD- STA. 12+05.00 TO 12+35.00

INSET A

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



INSET A

EXCLUDING TRANSITION TO RAMPS, APPLIES TO
-L- STA. 12+70 TO BEGIN APPROACH SLAB LT & RT
END APPROACH SLAB LT & RT TO -L- STA. 25+90.
FOR RAMPS, USE 12'-0" TO GUARDRAIL AND 3'-0" UNPAVED

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PROJECT REFERENCE NO.	SHEET NO.
BR-0036	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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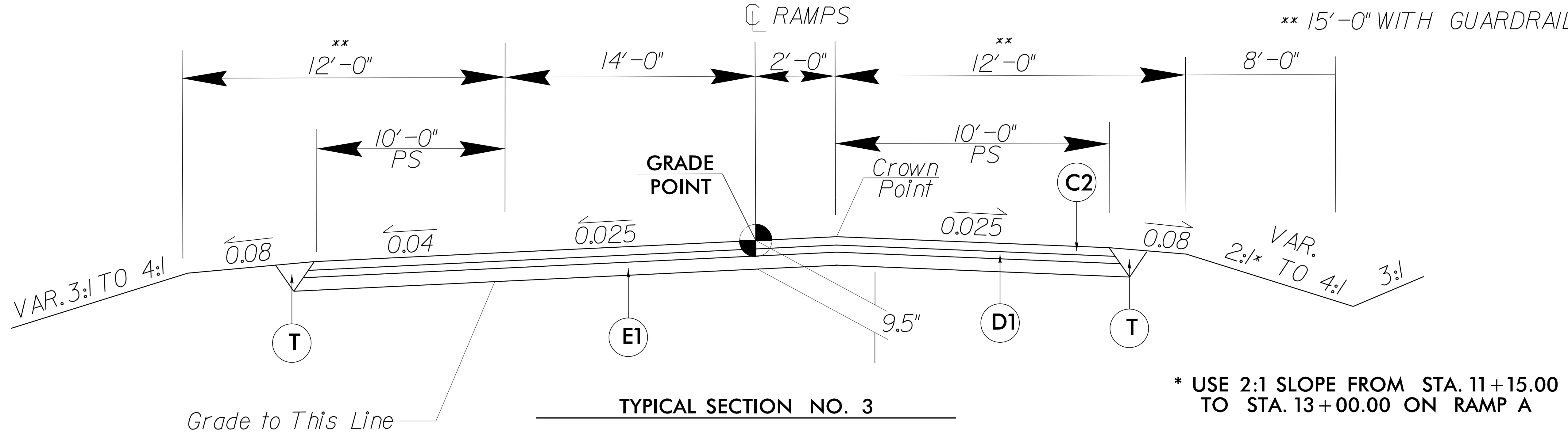
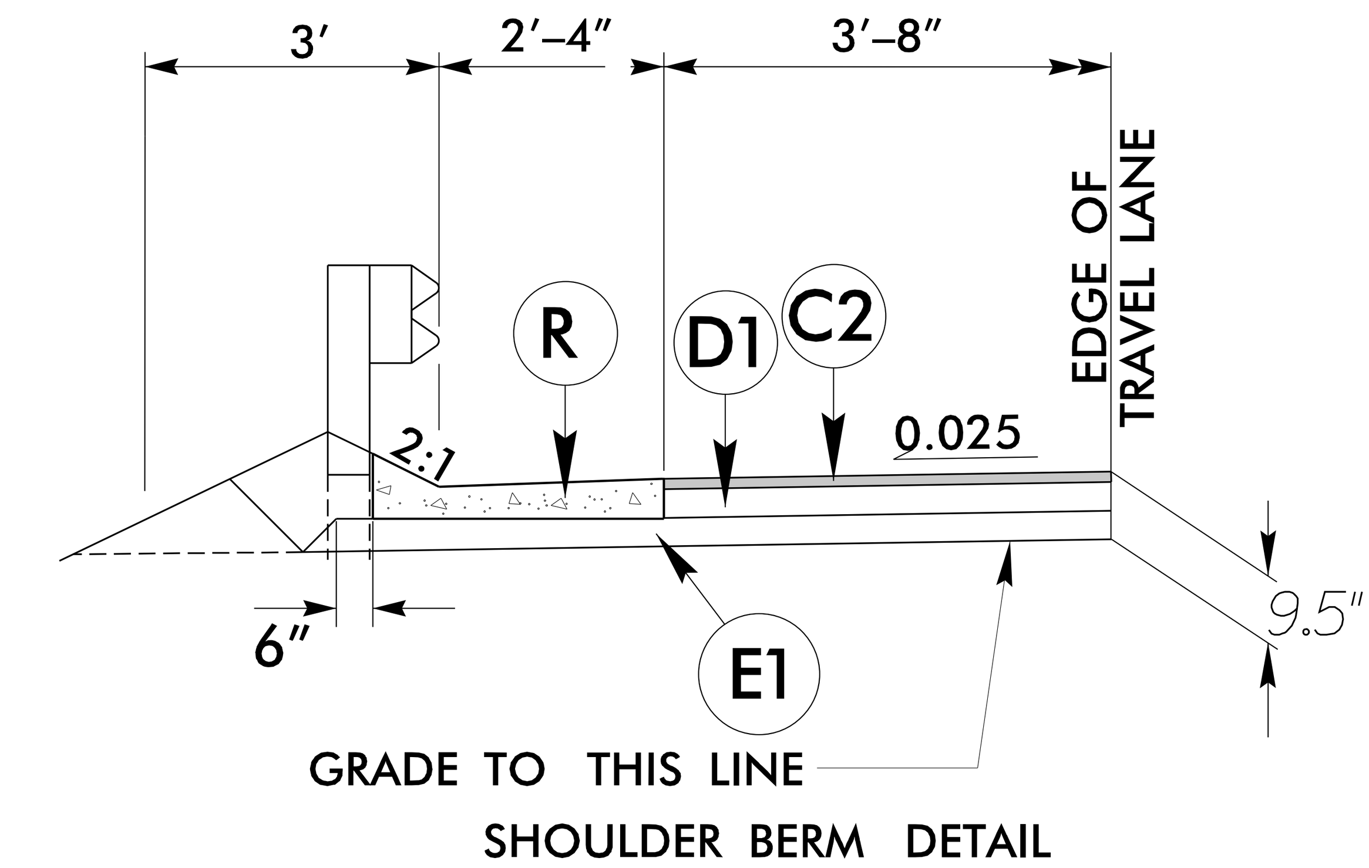


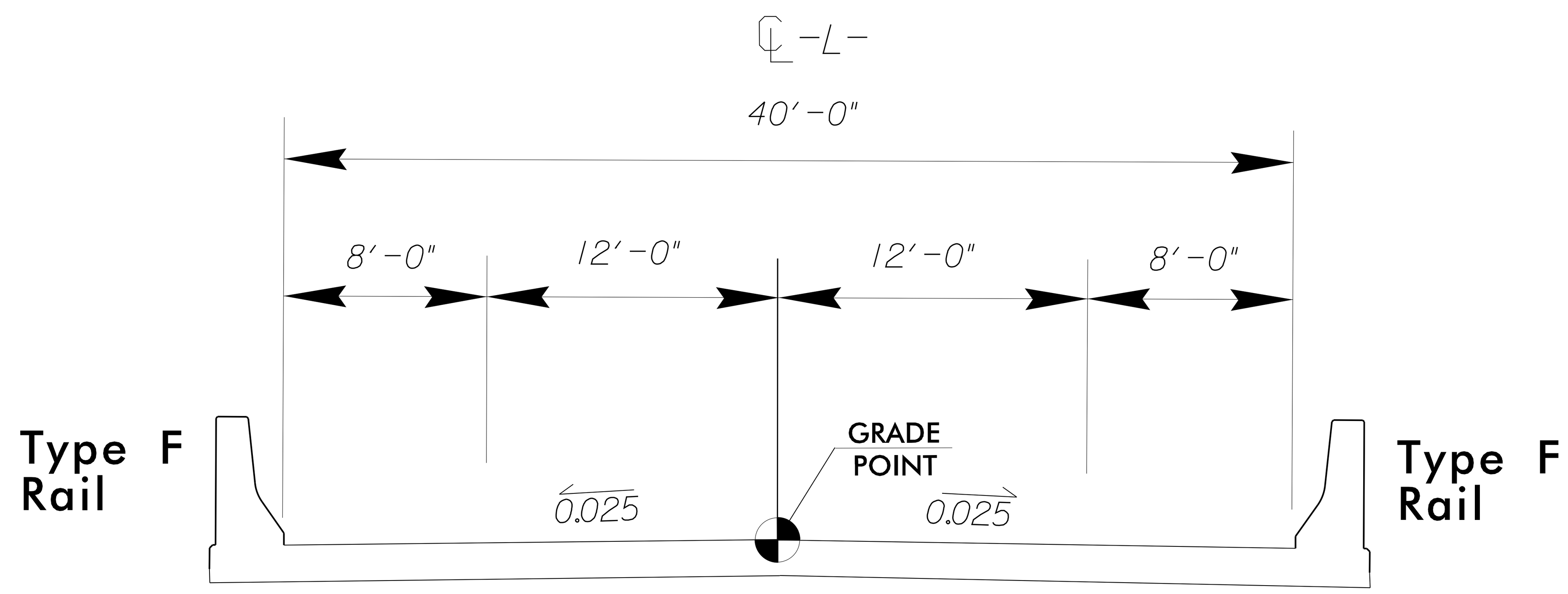
TYPICAL SECTION NO. 3

-RPA- STA 11+15.00 TO STA 13+92.66
-RPB- STA. 11+30.00 TO STA. 15+09.16
-RPC- STA. 10+80.00 TO STA. 13+65.38
-RPD- STA. 12+35.00 TO STA. 14+76.39

* USE 2:1 SLOPE FROM STA. 11+15.00 TO STA. 13+00.00 ON RAMP A

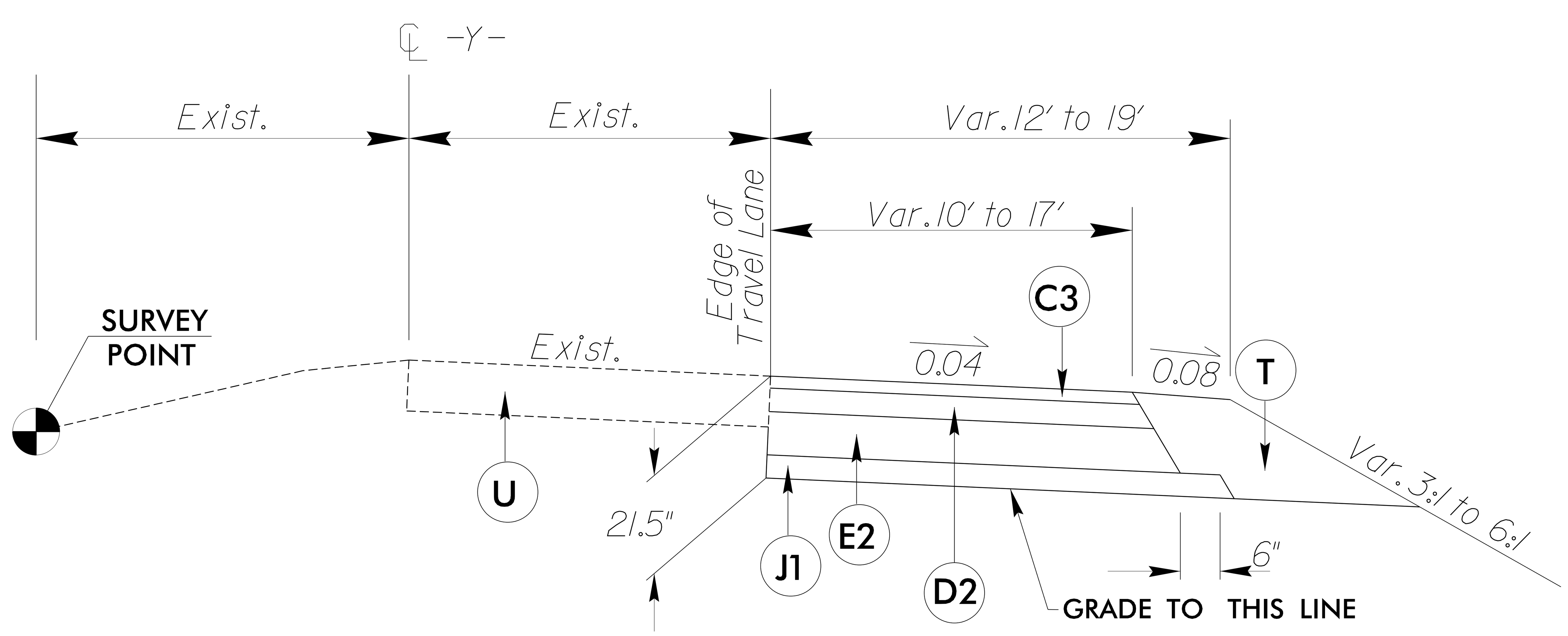


-L- STA. 17+73.00 TO BEG. OF BRIDGE (LT & RT.)
END OF BRIDGE TO -L- STA. 20+42.00 (LT & RT)



TYPICAL SECTION NO. 4
BEGIN BRIDGE STA. 17+94.12 TO END BRIDGE STA. 20+20.12

	PAVEMENT SCHEDULE
C1	1.5" S9.5C
C2	3" S9.5C
C3	3" S9.5D
C4	VAR. DEPTH S9.5C
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	10.5" B25.0C
E3	VAR. DEPTH B25.0C
J1	4" ABC
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	VARIABLE DEPTH MILLING 0" to 1.5" DEPTH
V2	VARIABLE DEPTH MILLING 0" to 3" DEPTH
W	WEDGING ASPHALT PAVEMENT



TYPICAL SECTION NO. 5

-Y- Sta. 20+10.85 to 22+34.09 RT.
-Y- Sta. 20+12.70 to 22+35.97 LT.

6/21/00

COMPUTED BY: JSB DATE: 09-30-19
CHECKED BY: JCI DATE: 02/6/2020

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
BR-0036	3B-1

BRIDGE NO.630041

PARCEL INDEX

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	NEW DIXIE OIL CORPORATION
2	4 & 5	GENE WATSON
3	4	HICKORY MEADOWS INC
4	4	V F FUTURES LLC

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
–L–	STA. 17+73.00 Lt.	STA. 17+83.12 Lt.	7.12′
–L–	STA. 17+73.00 Rt.	STA. 17+83.12 Rt.	7.12′
–L–	STA. 20+31.12 Lt.	STA. 20+42.00 Lt.	7.88′
–L–	STA. 20+31.12 Rt.	STA. 20+42.00 Rt.	7.88′
		TOTAL:	30′
		SAY:	30′

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	ASPHALT REMOVAL YD	ASPHALT BREAKUP YD	CONCRETE REMOVAL YD	CONCRETE BREAKUP YD
–L–	STA. 14+75.00	STA. 15+50.00	CL	252			
–L–	STA. 15+50.00	STA. 17+97.00	CL		793		
–L–	STA. 20+17.00	STA. 23+00.00	CL		814		
–L–	STA. 23+00.00	STA. 24+25.00	CL	403			
–RpA–	STA. 11+15.00	STA. 13+92.66	CL	1433		820	
–RpB–	STA. 11+30.00	STA. 15+09.16	CL	1878		981	
–RpC–	STA. 10+80.00	STA. 13+65.38	CL	1428		792	
–RpD–	STA. 12+35.00	STA. 14+76.39	CL	1333		743	
–Y– (SBL)	STA. 20+11.00	STA. 22+34.00	RT	237			
–Y– (NBL)	STA. 20+13.00	STA. 22+36.00	LT	247			
			TOTAL:	7211	1607	3336	
			SAY:	7220	1610	3340	

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
–L– STA. 12+70.00	–L– STA. 17+97.12	31	4058	4027	
–RpA– STA. 11+15.00	–RpA– STA. 13+92.66	244	295	51	
–RpB– STA. 11+30.00	–RpB– STA. 15+09.16	430	23		408
SUBTOTAL		705	4375	4078	408
–L– STA. 20+17.12	–L– STA. 25+90.00	68	4198	4130	
–RpC– STA. 10+80.00	–RpC– STA. 13+65.38	166	231	65	
–RpD– STA. 12+35.00	–RpD– STA. 14+76.39	131	1780	1649	
SUBTOTAL		365	6209	5944	
–Y– STA. 20+10.85 RT	–Y– STA. 22+34.09 RT	229	19		210
–Y– STA. 20+12.70 LT	–Y– STA. 22+34.97 LT	246	13		234
SUBTOTAL		475	32		444
PROJECT TOTALS:		1545	10616	9921	851
WASTE IN LIEU OF BORROW				–851	–851
MAT. FOR SHOULDER CONSTRUCTION			16	16	
EST. 5% TO REPLACE SOIL IN BORROW PIT				454	
GRAND TOTALS:		1545	10632	9540	0
SAY:		1600		9675	

UNDERCUT EXCAVATION = 400 CY
SELECT GRANULAR MATERIAL CLASS III = 400 CY
GEOTEXTILE FOR SOIL STABILIZATION = 700 SY
12" SHALLOW UNDERCUT = 100 SY
CLASS IV SUBGRADE STABLIZATION = 200 TONS

DDE = 25 CY

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

| STATION | LOCATION (LT,RT, OR CL) | STRUCTURE NO. FROM | STRUCTURE NO. TO | TOP ELEVATION | INVERT ELEVATION | INVERT ELEVATION | SLOPE CRITICAL | DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12″ | 15″ | 18″ | 24″ | 30″ | 36″ | 42″ | 48″ | C.S. PIPE (UNLESS NOTED OTHRWISE) 12″ | 15″ | 18″ | 24″ | 30″ | 36″ | 42″ | 48″ | CLASS IV R.C. PIPE (UNLESS OTHERWISE NOTED) 12″ | 15″ | 18″ | 24″ | 30″ | 36″ | 42″ | 48″ | 15″ SIDE DRAIN PIPE | 18″ SIDE DRAIN PIPE | 24″ SIDE DRAIN PIPE | ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P. | CU. YDS. C.S.P. | QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0′ THRU 5.0′) | LIN. FT. A 5.0′ THRU 10.0′ | LIN. FT. B 10.0′ AND ABOVE | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E | F | G | D.I. STD. 840.14 OR STD. 840.15 | D.I. FRAME & GRATE STD. 840.16 | G.D.I. TYPE "A" STD. 840.17 OR 840.26 | G.D.I. TYPE "B" STD. 840.18 OR 840.27 | G.D.I. TYPE "D" STD. 840.19 OR 840.28 | G.D.I. FRAME WITH GRATE STD. 840.22 | G.D.I. FRAME WITH TWO GRATES STD. 840.22 | G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24 | J.B. STD. 840.31 OR 840.32 | T.B.D.I. STD. 840.35 | G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29 | CORR. STEEL ELBOWS NO. & SIZE | CONC. COLLARS CL. "B" C.Y. STD 840.72 | CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 | PIPE REMOVAL LIN.FT. | REMARKS |
|---|---|---|---|---|---|---|---

COMPUTED BY: Nick Moores DATE: 10/9/19
CHECKED BY: Jinyoung Park DATE: 10/9/19

(5-15-18)

PROJECT NO.	SHEET NO.
BR-0036	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV	Geotextile	Stabilizer	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU (1)		100	200	300		
				TOTAL CY/TONS/SY:	100	200**	300**	0	0

***ASU(1/2) = Aggregate Subgrade (Type 1 or 2)**
***AST = Aggregate Stabilization**
****Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.**

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
RpB	2.5:1	11+50	2.5:1	14+25	Lt	2		800
RpC	2.5:1	11+00	2:1	13+50	Rt	2		850
L	2:1	23+50	2.5:1	25+75	Rt	2		1000
							TOTAL SY:	2650

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

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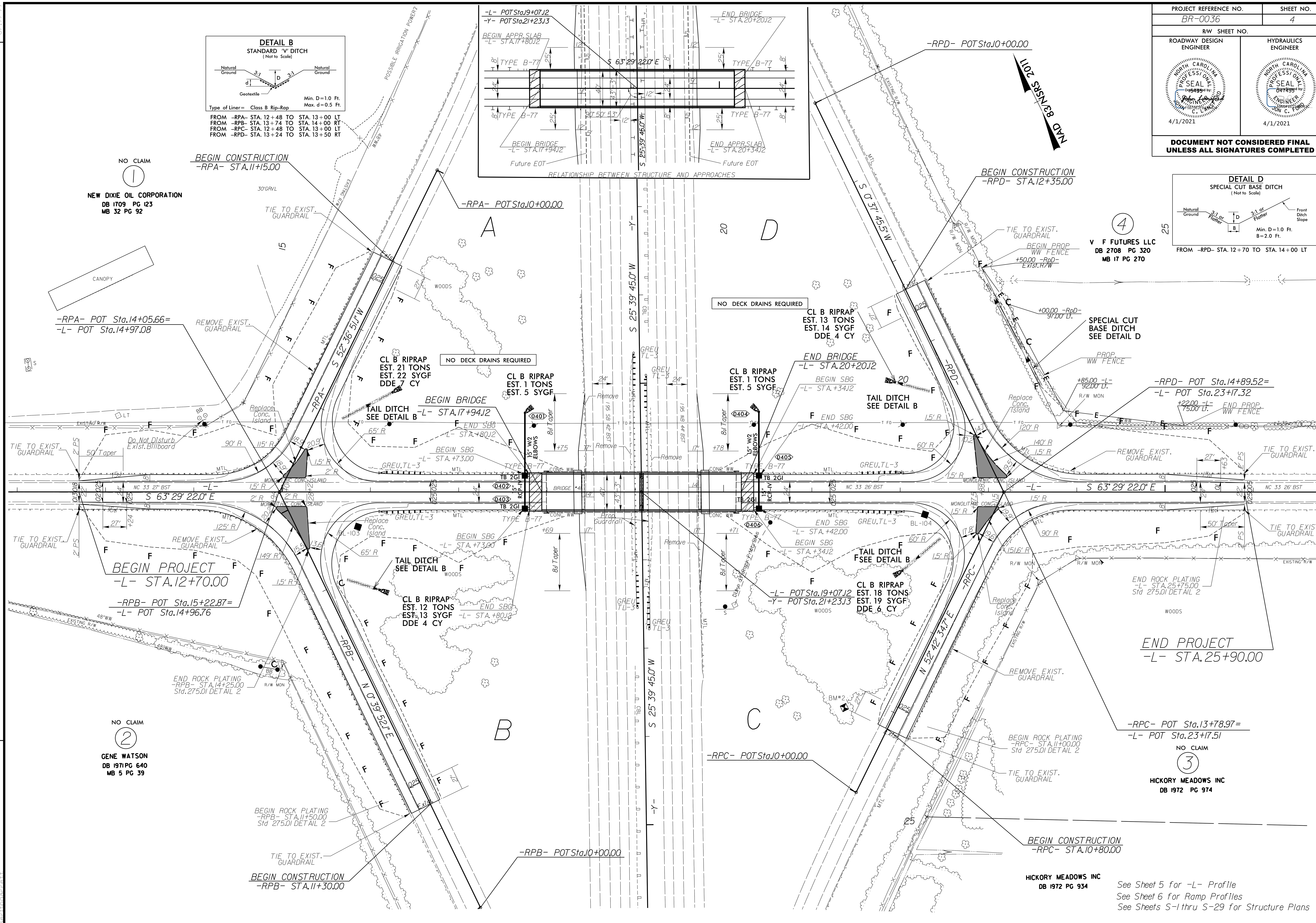
PROJECT REFERENCE NO.	SHEET NO.
BR-0036	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
4/1/2021	4/1/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



See Sheet 5 for -L- Profile
See Sheet 6 for Ramp Profiles
See Sheets S-1 thru S-29 for Structure Plans

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
BR-0036	5

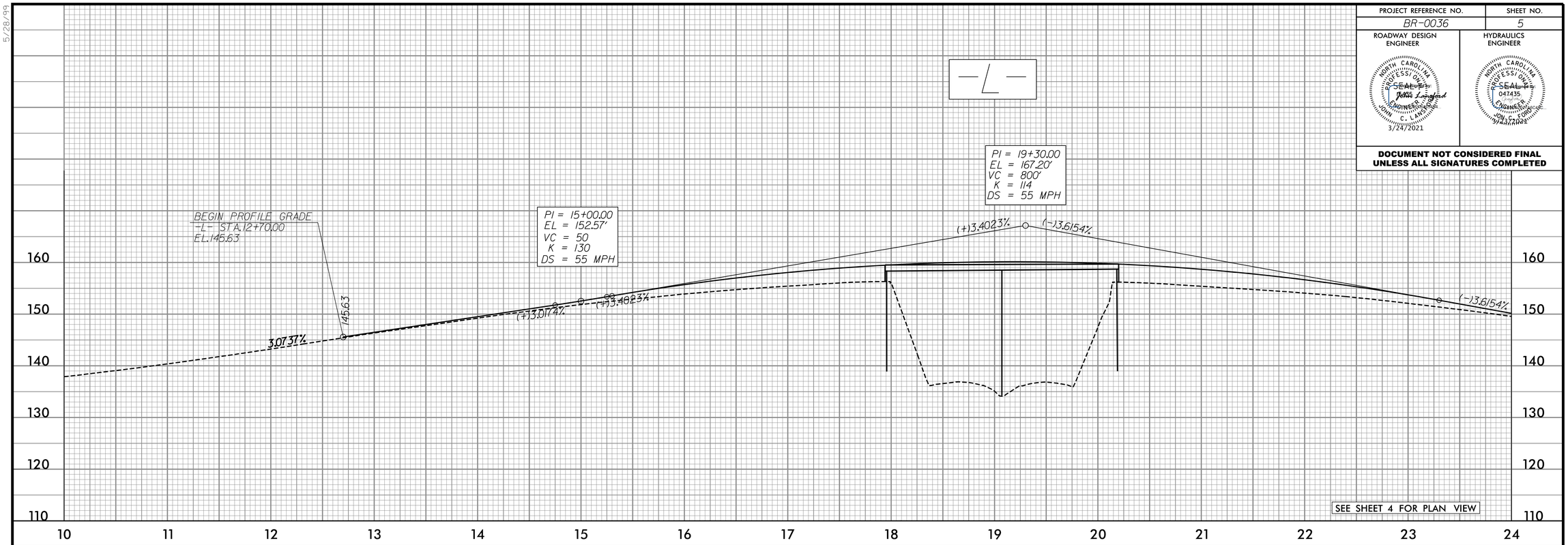
ROADWAY DESIGN ENGINEER

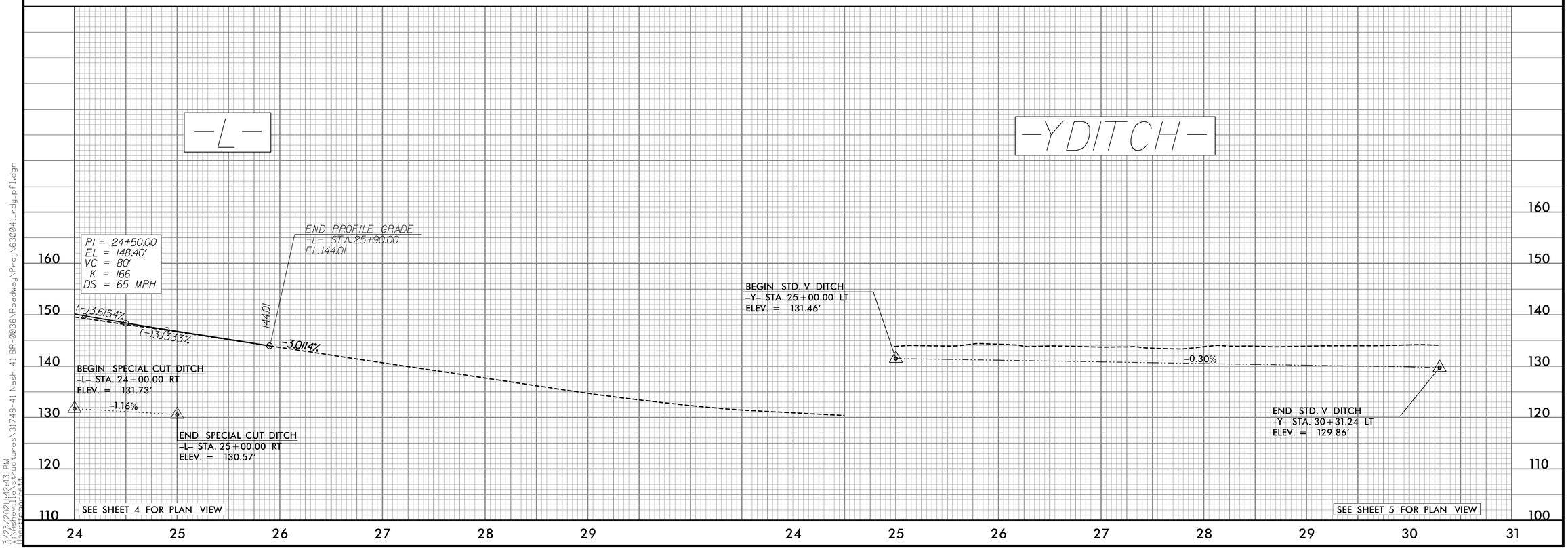
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047435 JOHN C. LANGLEY ENGINEERING GROUP
Signature: John Langley
3/24/2021

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047435 JOHN C. LANGLEY ENGINEERING GROUP
Signature:
3/24/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





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User:mlee1

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
BR-0036	6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047435 JOHN C. LANSFORD
3/24/2021

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047435 JOHN C. LANSFORD
3/25/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-RPA-

BEGIN PROFILE GRADE
-RPA- STA.11+15.00
EL.146.33

PI = 12+10.00
EL = 148.53'
K = 79
VC = 50'
DS = 50 MPH

END PROFILE GRADE
-RPA- STA.13+92.66
EL.152.38

146.33 (+)2.7425% (+)2.1103% 152.38

SEE SHEET 4 FOR PLAN VIEW

-RPB-

BEGIN PROFILE GRADE
-RPB- STA.11+30.00
EL.144.73

PI = 13+20.00
EL = 149.38'
VC = 130'
K = 113
DS = 55 MPH

PI = 14+55.00
EL = 151.13'
VC = 70'
K = 70
DS = 55 MPH

END PROFILE GRADE
-RPB- STA.15+09.16
EL.152.37

144.73 (+)2.4474% (+)1.2942% (+)2.2948% 152.37

SEE SHEET 4 FOR PLAN VIEW

-RPC-

BEGIN PROFILE GRADE
-RPC- STA.10+80.00
EL.145.73

PI = 13+00.00
EL = 151.48'
VC = 50'
K = 331
DS = 55 MPH

END PROFILE GRADE
-RPC- STA.13+65.38
EL.153.09

145.73 (+)2.6136% (+)2.4625% 153.09

BM2 ELEVATION = 143.80
N 866872 E 2355825
BENCHNAIL IN BASE OF 18" PINE

SEE SHEET 4 FOR PLAN VIEW

-RPD-

BEGIN PROFILE GRADE
-RPD- STA.12+35.00
EL.147.88'

PI = 13+45.00
EL = 150.50'
VC = 50'
K = 64
DS = 55 MPH

PI = 14+20.00
EL = 151.70'
VC = 60'
K = 68
DS = 55 MPH

END PROFILE GRADE
-RPD- STA.14+76.39
EL.153.10

147.88 (+)2.3831% (+)1.5979% (+)2.4854% 153.10

-0.54%

BEGIN SPECIAL DITCH
-RPD- STA. 12+70.00 LT
ELEV. = 129.34'

END SPECIAL DITCH
-RPD- STA. 14+00.00 LT
ELEV. = 130.04'

SEE SHEET 4 FOR PLAN VIEW

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User:mlester