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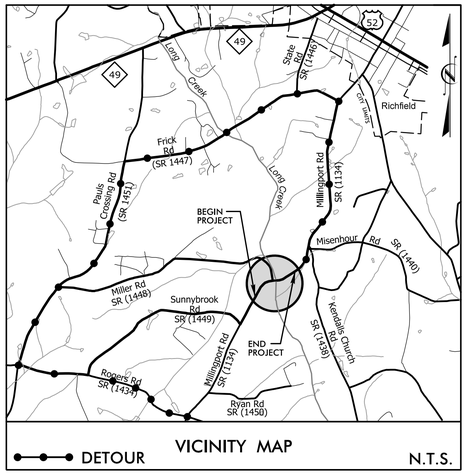
PROJECT WBS: 17BP.10.R.147

CONTRACT:

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



VICINITY MAP

FINAL PLANS

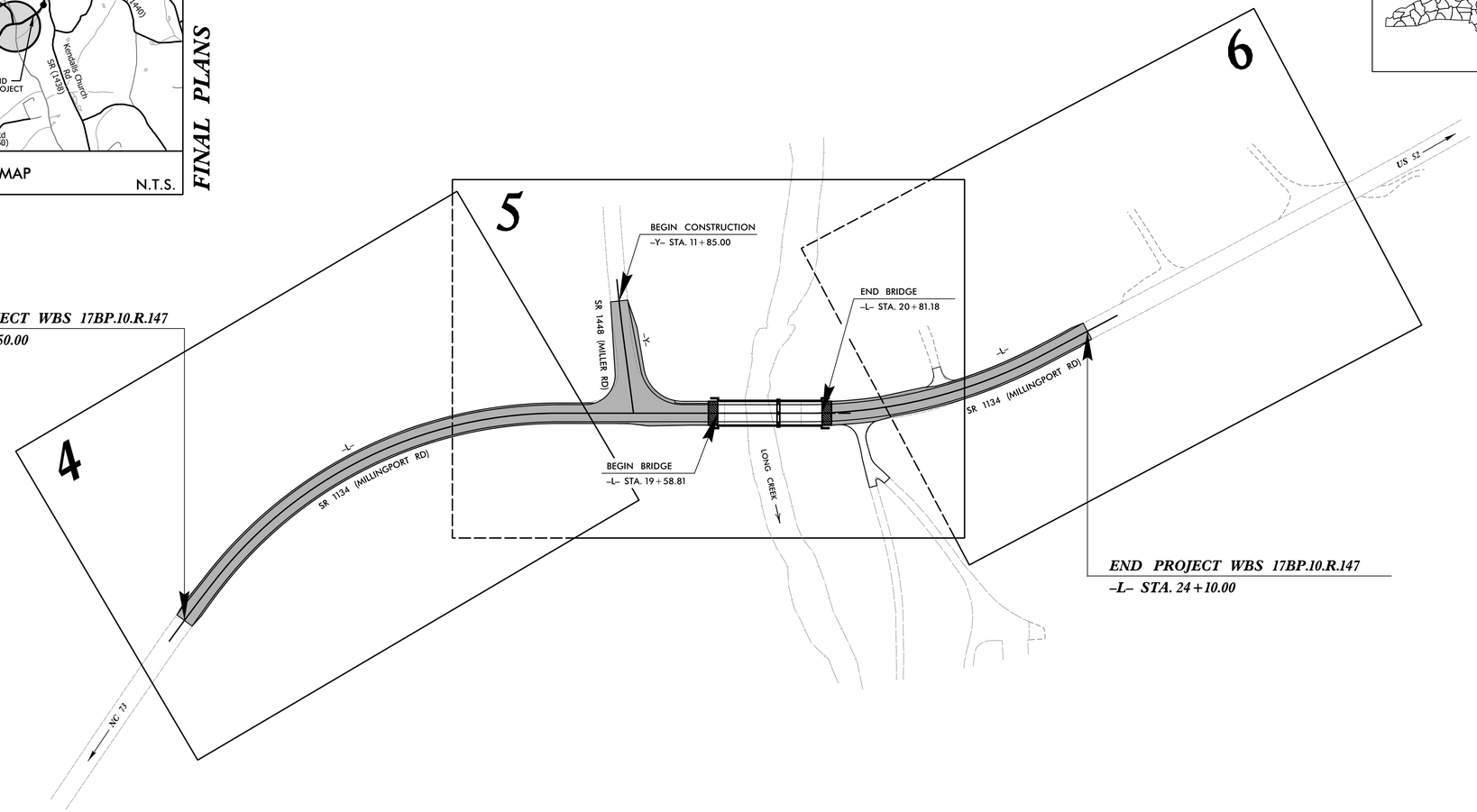
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANLY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.147	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.10.PE.147		P.E.
17BP.10.ROW.147		R/W & UTILITY
17BP.10.R.147		CONSTRUCTION

LOCATION: BRIDGE #35 LONG CREEK ON SR 1134 (MILLINGPORT RD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



DESIGN EXCEPTION FOR VERTICAL CURVE K VALUE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2014 = 1300
ADT 2025 = 2600
K = N/A
D = N/A
T = 7%
V = 35 MPH
FUNC. CLASSIFICATION: MAJOR COLLECTOR REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT WBS 17BP.10.R.147 = 0.197 MILES
LENGTH OF STRUCTURE PROJECT WBS 17BP.10.R.147 = 0.023 MILES
TOTAL LENGTH OF PROJECT WBS 17BP.10.R.147 = 0.220 MILES

NCDOT CONTACT: GARLAND HAYWOOD, PE
Division Bridge Manager

PLANS PREPARED FOR THE NCDOT BY:
STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 5, 2021

LETTING DATE: SEPTEMBER 21, 2022

NIKKI T. HONEYCUTT, PE
PROJECT ENGINEER

CLARK E. GROVES
PROJECT DESIGNER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD J. VANDIE, P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKKI T. HONEYCUTT
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

7/28/2022
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STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKKI T. HONEYCUTT
7/29/2022

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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2C-1 THRU 2C-2	ROADWAY DETAILS
3	SUMMARIES AND TYPICAL SECTION SHEET
3P-1	PARCEL DATA SHEET
4-10	PLAN AND PROFILE SHEETS
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
UC-5 THRU UC-6	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-6	UTILITIES BY OTHERS PLANS
X-1 THRU X-15	CROSS-SECTIONS
S-1 THRU S-19	STRUCTURE PLANS
SN	STRUCTURE NOTES

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-01-2018

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 II.

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.

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.

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.

RIGHT-OF-WAY MARKERS:

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

STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2018

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
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 4 - MAJOR STRUCTURES	
422.02	Type II - Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.02	Concrete Catch Basin
840.03	Frame, Grates, and Hood
840.29	Frame and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.03	Temporary Road Closures
1110.01	Stationary Work Zone Signs - Mounting Height & Lateral Clearance
1145.01	Barricades - Type III

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9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	1-B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP) — EIP
- Computed Property Corner
- Existing Concrete Monument (ECM) — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed 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
- 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:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* — P
- U/G Power Line (SUE – LOS C)* — P
- U/G Power Line (SUE – LOS D)* — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)* — T
- U/G Telephone Cable (SUE – LOS C)* — T
- U/G Telephone Cable (SUE – LOS D)* — T
- U/G Telephone Conduit (SUE – LOS B)* — TC
- U/G Telephone Conduit (SUE – LOS C)* — TC
- U/G Telephone Conduit (SUE – LOS D)* — TC
- U/G Fiber Optics Cable (SUE – LOS B)* — T FO
- U/G Fiber Optics Cable (SUE – LOS C)* — T FO
- U/G Fiber Optics Cable (SUE – LOS D)* — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)* — W
- U/G Water Line (SUE – LOS C)* — W
- U/G Water Line (SUE – LOS D)* — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)* — TV
- U/G TV Cable (SUE – LOS C)* — TV
- U/G TV Cable (SUE – LOS D)* — TV
- U/G Fiber Optic Cable (SUE – LOS B)* — TV FO
- U/G Fiber Optic Cable (SUE – LOS C)* — TV FO
- U/G Fiber Optic Cable (SUE – LOS D)* — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)* — G
- U/G Gas Line (SUE – LOS C)* — G
- U/G Gas Line (SUE – LOS D)* — 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 Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)* — FSS
- SS Force Main Line (SUE – LOS C)* — FSS
- SS Force Main Line (SUE – LOS D)* — FSS

MISCELLANEOUS:

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

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17BP.10.R.147	2C-1

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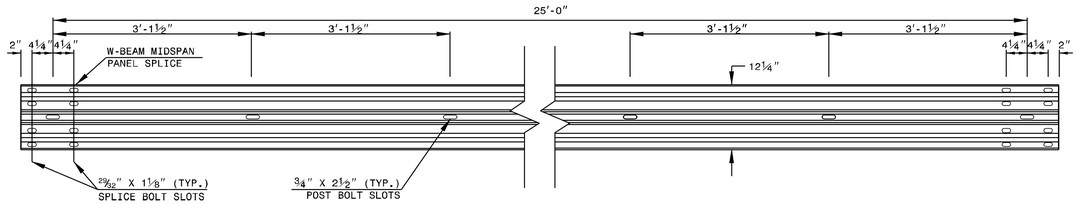
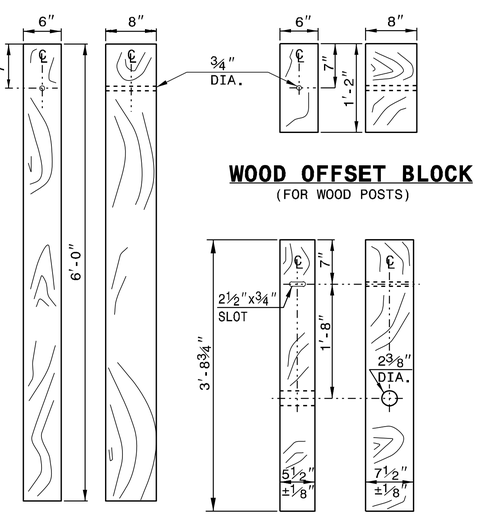
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



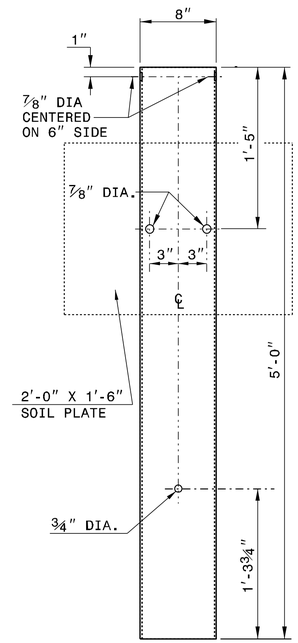
STANDARD W-BEAM GUARDRAIL



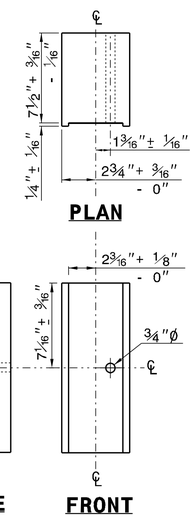
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST

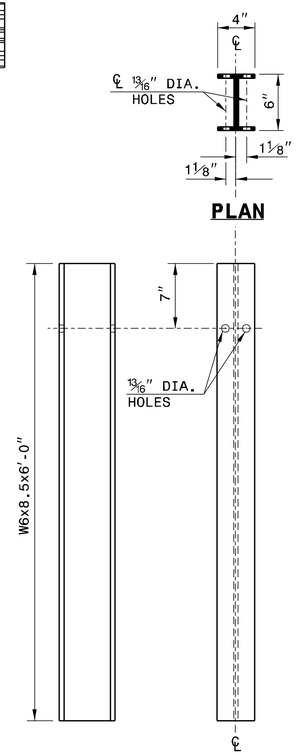


STEEL TUBE
TS 6"x8"x0.1875"



SIDE **FRONT**

ROUTED OFFSET BLOCK



SIDE **FRONT**

"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

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

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ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
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CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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12/06/07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 1/29/2022 ENGINEER MICHAEL T. HONEYCUTT

DocuSigned by: 4AE9F44D23...

PAVEMENT DESIGN PROVIDED BY NCDOT

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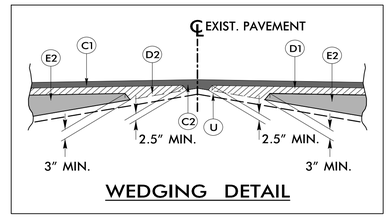
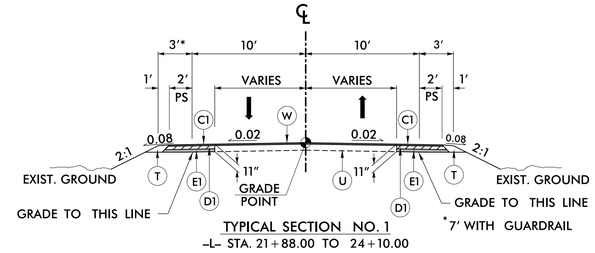
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	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" IN DEPTH 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. 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 3.0" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R	CONCRETE SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PAVEMENT WEDGING

ALL PAVEMENT SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



WEDGING DETAIL

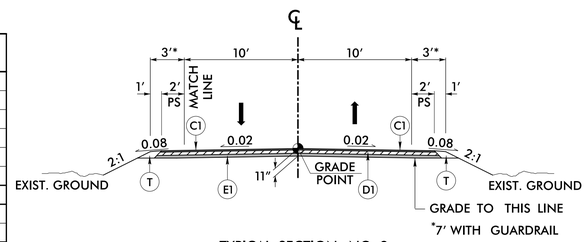


TYPICAL SECTION NO. 1
-L- STA. 21+88.00 TO 24+10.00

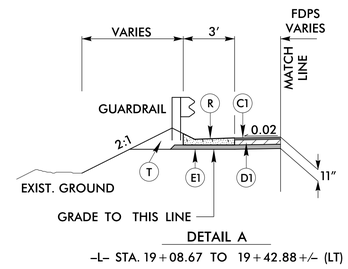
SUMMARY OF EARTHWORK
(IN CUBIC YDS.)

STATION	STATION	SIDE	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
	(BEGIN BRIDGE)					
-L- 12+50.00	19+58.81	LT & RT	6585	270		6315
(END BRIDGE)						
-L- 20+81.18	24+10.00	LT & RT	54	701	647	
-Y- 11+85.00	13+07.56	LT & RT	398	74		324
PROJECT TOTAL:			7037	1045	-647	5993
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						
GRAND TOTAL			7037	1045		5993
SAY:			7100	1100		6000

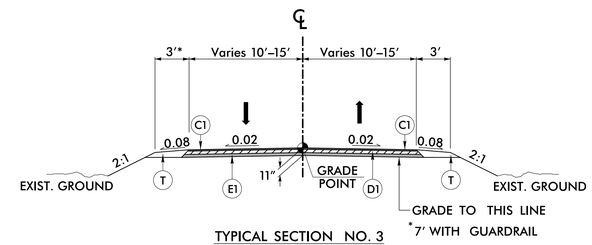
DDE= 50 CY



TYPICAL SECTION NO. 2
-L- STA. 12+50.00 TO 19+58.81 (BEGIN BRIDGE)
-L- STA. 20+81.18 (END BRIDGE) TO 21+88.00



DETAIL A
-L- STA. 19+08.67 TO 19+42.88 +/- (LT)



TYPICAL SECTION NO. 3
-Y- STA. 11+85.00 TO 13+07.56

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	ALTERNATE PIPE 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	CLASS IV R.C. PIPE OR ALUMINIZED C.S. PIPE, TYPE IR OR HDPE PIPE, TYPE S OR D 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.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. FT. PER EACH (0' THRU 5.0')	A 5.0' THRU 10.0'	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 AND 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	TRAFFIC BEARING G.D.I. STD. 840.35	G.D.I. (W.S. FLAT) FRAME W/2 GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	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	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
-L- STA. 19+25	LT	0504	0502	530.3	527.0	526.5																		20											1											1			1									
-L- STA. 19+15	LT	0502	0501	530.2	526.5	523.7																		44											1										1			1									
-Y- STA. 12+58	CL	0503			526.7	523.3																					64																														
-L- STA. 21+21	RT	0505			531.0	522.2																		44																																		
TOTAL																								108			64								2											1	1		2									

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS TYPE III	GREU TL-3	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-Y-	12+18.21	(-L-) 19+58.81	LT	93.75	62.5			19+58.81		6.9 - 7.9		50		1'	1	1						164.19		46' RADIUS
-L-	18+77.50	19+58.81	RT	81.25			19+58.81		3.9 - 4.9	6.9 - 7.9	50		1'		1	1						101.81		
-L-	20+81.60	22+03.09	LT	125			20+81.60		3.7 - 4.1	6.7 - 7.1	50		1'		1	1						139		
-L-	20+80.79	21+14.85	RT	25.00	50.00			20+80.79	4.0 - 6.0	7.0 - 9.0					1		1					51.5		28' RADIUS
			TOTAL:	325	112.5																	456.5		
			TOTAL ANCHOR LENGTH:	231.25																				
			TOTAL GUARDRAIL LENGTH:	93.75											4 EA	3 EA	1 EA							
			SAY:	93.75 LF	112.5 LF																	456.5 LF		
							ADDITIONAL GUARDRAIL POSTS = 10 EACH																	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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6/2/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	3P-1

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME	AREA TAKEN				
			ROW (SF)	PDE (SF)	TCE (SF)	DUE (SF)	AUE (SF)
1	4 & 5	JED DAVID BROOKS SR AND BONNIE M BROOKS	2118	1150	14380		
2	5 & 6	WARREN A MILLER AND JUANITA B MILLER	1927	797	3270	990	148
3	5 & 6	RICHARD E CLAYTON		18	2065		
4	5	JERRY REECE MILLER AND VICKIE S MILLER REVOCABLE TRUST		2734	807		
5	6	WARREN A MILLER			340		
6	4 & 5	JIM G ALFRED JR AND JUDY BROOKS ALFRED		614	10673		
7	5 & 6	JENCY L MILLER SPEIGHT AND JEFFERY D SPEIGHT	2554	756	592		

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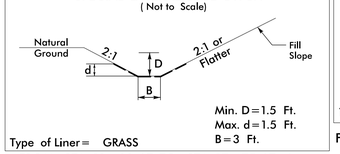
8/17/99

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5537-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 616746.193(ft) EASTING: 1619549.080(ft)
ELEVATION: 607.600(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99985494 (1/X) 1.0001450811
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5537-1" TO -L- STATION 12+50.00 IS NE. 32°27'56.5" 516.00'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

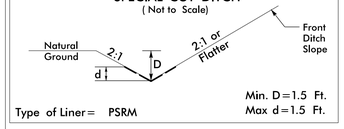
BM-1	N 617427	E 1620426	ELEV 523.44'
BM-2	N 617419	E 1620545	ELEV 519.67'
BL-3	N 617477.1520	E 1620291.0060	ELEV 534.06'
BL-4	N 617474.1219	E 1620649.2970	ELEV 535.16'
BL-5	N 617823.3583	E 1621263.1730	ELEV 589.96'
BL-6	N 617756.3250	E 1620299.8750	ELEV 530.17'
B5537-1	N 616746.1930	E 1619549.0800	ELEV 607.60'
B5537-2	N 617337.6030	E 1619926.9650	ELEV 564.94'

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 13+00 LT TO STA. 17+75 LT -L-

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 14+00 RT TO STA. 17+00 RT -L-

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NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030234 NIKKI T. HONEYCUTT
DocuSigned by: E8E3E4EA8F5443...
12/29/2022
ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029388 EDWARD J. YANITZ
DocuSigned by: 9B1B0DF4...
12/29/2022
ENGINEER

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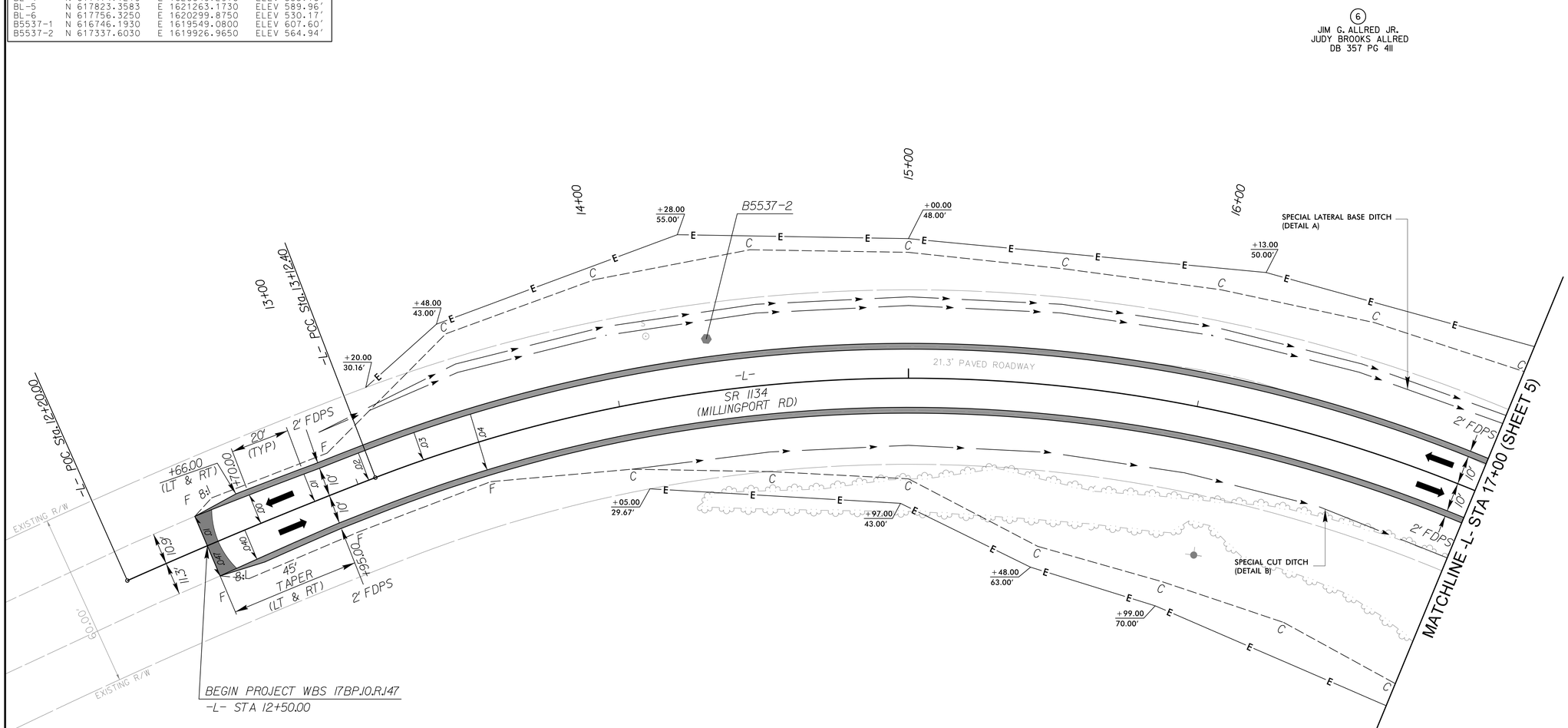

CURVE DATA -L-
PI Sta 12+41.62
△ = 4° 25' 37.0" (RT)
D = 3° 07' 32.9"
L = 141.63'
T = 70.85'
R = 1,833.00'

CURVE DATA -L-
PI Sta 15+58.97
△ = 51° 36' 18.7" (RT)
D = 11° 14' 04.1"
L = 459.35'
T = 246.57'
R = 510.00'

SEE SHEET 7 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029234 ENGINEER NIKKI T. HONEYCUTT — 7/29/2022

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD J. YANKITE — 7/29/2022

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DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, 2:1 or Flatter, Cut Slope

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3 Ft.

Type of Liner= GRASS

FROM STA. 13+00 LT TO STA. 17+75 LT –L–

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, Geotextile, 2:1 or Flatter, Cut Slope

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3 Ft.

Type of Liner= CL–B Rip–Rap

FROM STA. 17+75 LT TO STA. 18+00 LT –L–
FROM STA. 12+59 RT TO STA. 12+85 RT –Y–

DETAIL D
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, Geotextile, 2:1 or Flatter, Fill Slope

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.

Type of Liner= CL–B Rip–Rap

FROM STA. 11+85 RT TO STA. 12+59 RT –Y–
FROM STA. 21+23 LT TO STA. 22+15 LT –L–

DETAIL J
STREAMBANK STABALIZATION
(Not to Scale)

PROPOSED PIER
EXISTING PIERS TO BE REMOVED
EXISTING STREAMBANK
EXISTING STREAMBANK
2' MIN
2' MIN
1.5:1 (MAX)
CL–II RIPRAP
NWSEL
2.5:1 (MAX)
7:1 (MAX)
EXISTING STREAMBED

Type of Liner= 414 TONS CL–II RIPRAP

FROM STA. 19+73 TO STA. 19+92
FROM STA. 20+21 TO STA. 20+55

DETAIL E
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, B, Geotextile, 2:1, Natural Ground

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.

*When B is < 6.0'

Type of Liner= CL–B Rip–Rap

FROM STA. 20+35 LT TO STA. 21+23 LT –L–

DETAIL F
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, Geotextile, 2:1 or Flatter, Front Ditch Slope

Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= CL–B Rip–Rap

FROM STA. 17+00 RT TO STA. 18+50 RT –L–

DETAIL G
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, 2:1, Natural Ground, Geotextile

Min. D=1.5 Ft.
Max. d=1.5 Ft.

Type of Liner= CL–B Rip–Rap

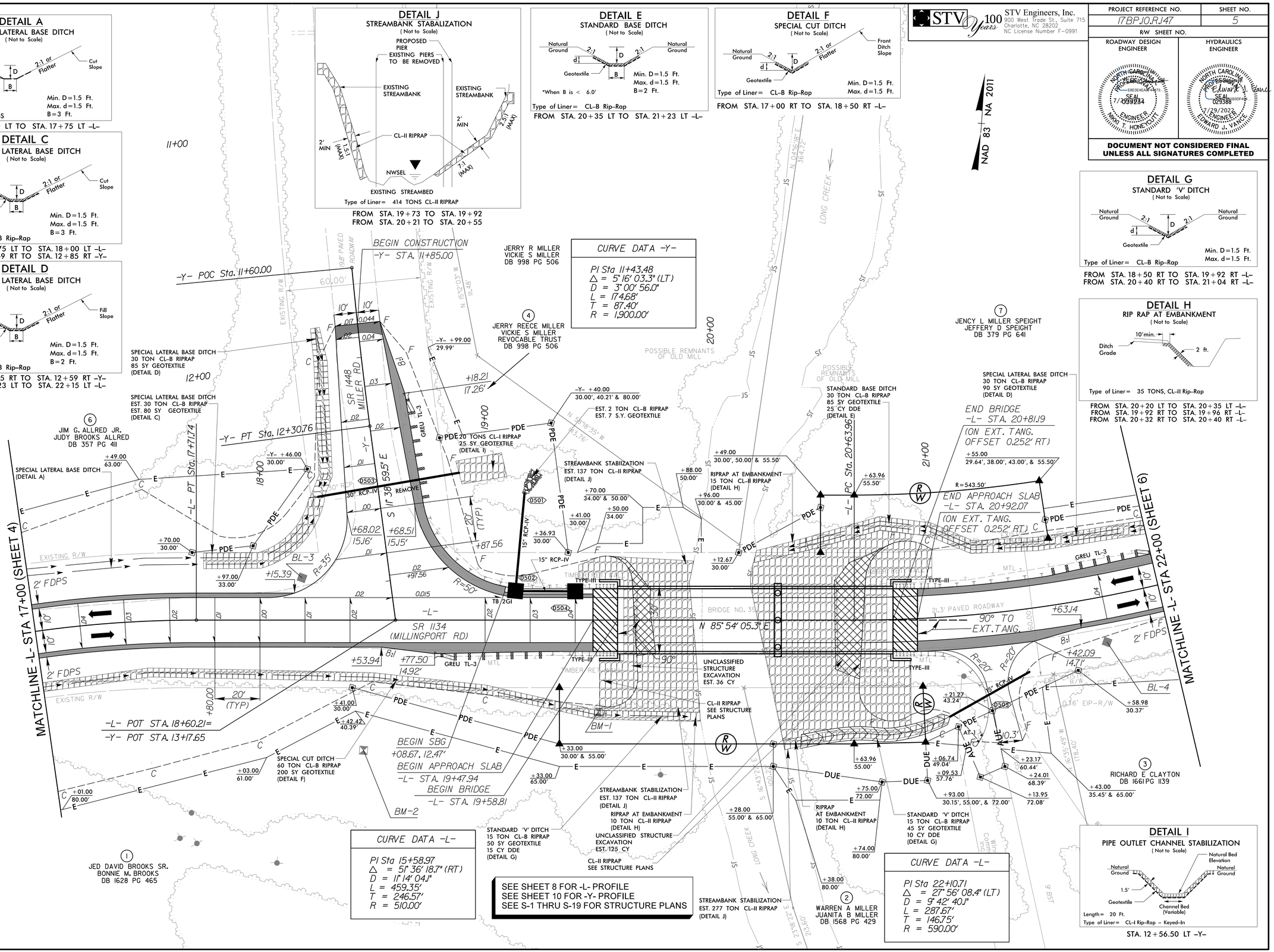
FROM STA. 18+50 RT TO STA. 19+92 RT –L–
FROM STA. 20+40 RT TO STA. 21+04 RT –L–

DETAIL H
RIP RAP AT EMBANKMENT
(Not to Scale)

10' min., Ditch Grade, 2 ft.

Type of Liner= 35 TONS, CL–II Rip–Rap

FROM STA. 20+20 LT TO STA. 20+35 LT –L–
FROM STA. 19+92 RT TO STA. 19+96 RT –L–
FROM STA. 20+32 RT TO STA. 20+40 RT –L–



CURVE DATA –L–

PI Sta 15+58.97
Δ = 51° 36' 18.7" (RT)
D = 11° 14' 04.1"
L = 459.35'
T = 246.57'
R = 510.00'

SEE SHEET 8 FOR -L- PROFILE
SEE SHEET 10 FOR -Y- PROFILE
SEE S-1 THRU S-19 FOR STRUCTURE PLANS

CURVE DATA –L–

PI Sta 22+10.71
Δ = 27° 56' 08.4" (LT)
D = 9° 42' 40.1"
L = 287.67'
T = 146.75'
R = 590.00'

DETAIL I
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)

Natural Ground, Natural Bed Elevation, Natural Ground, 1.5', Geotextile, Channel Bed (Variable)

Length= 20 Ft.
Type of Liner= CL–I Rip–Rap – Keyed–In

STA. 12+56.50 LT –Y–

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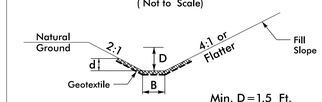
DETAIL D
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2 Ft.

Type of Liner= CL-B Rip-Rap

FROM STA. 21+23 LT TO STA. 22+15 LT -L-

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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKI T. HONEYCUTT
7/29/2022

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD J. VANCUTE
7/29/2022

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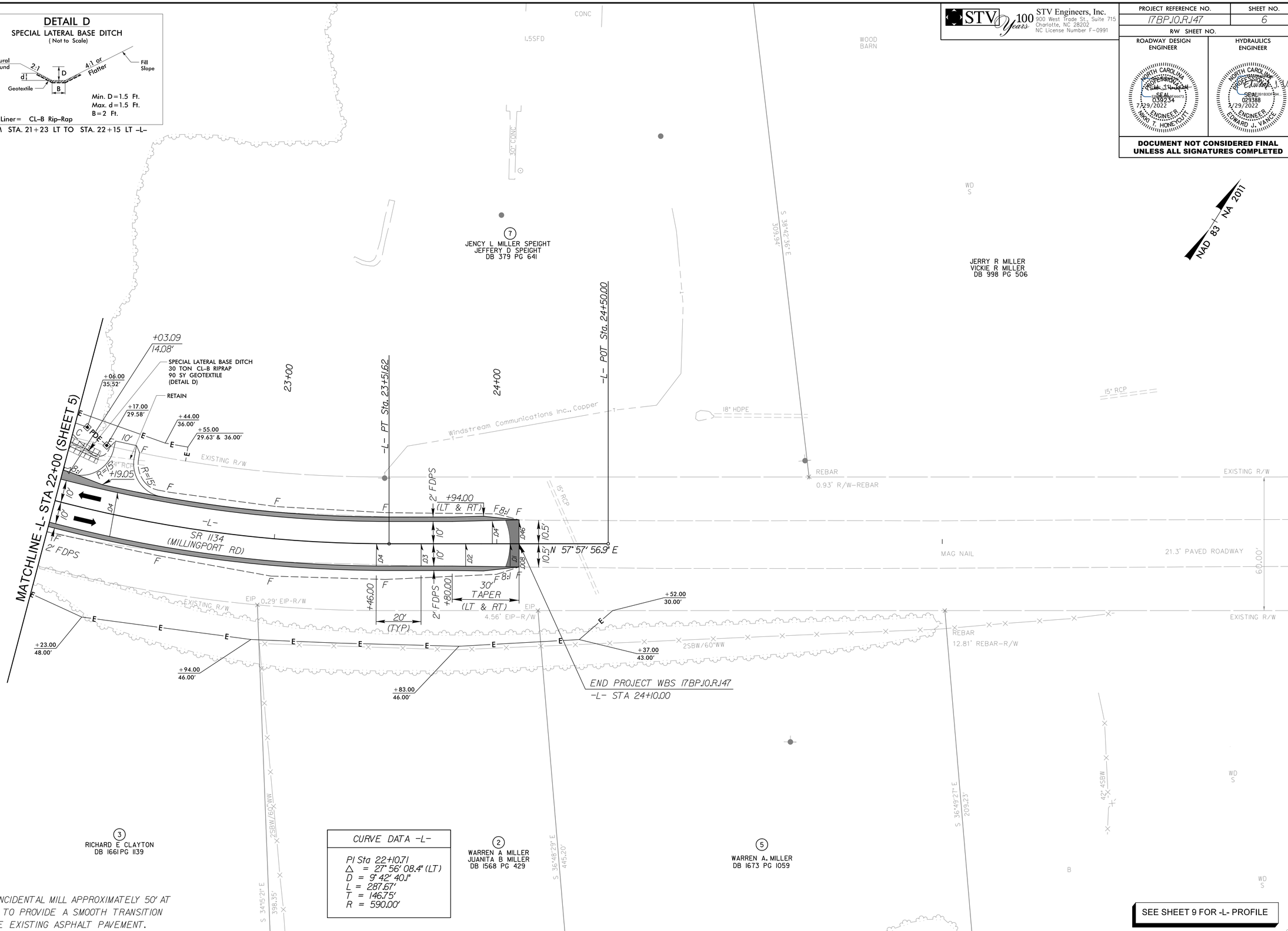

CURVE DATA -L-
PI Sta 22+10.71
Δ = 27° 56' 08.4" (LT)
D = 9° 42' 40.1"
L = 287.67'
T = 146.75'
R = 590.00'

NOTE: INCIDENTAL MILL APPROXIMATELY 50' AT TIE IN TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING ASPHALT PAVEMENT.

SEE SHEET 9 FOR -L- PROFILE

8/30/2021
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SUNGARD

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NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029234 NIKKI T. HONEYCUTT
DocuSigned by: E8E3E4EA9F4247... 7/29/2022 ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029388 EDWARD J. VANCUTE
DocuSigned by: 8B1B3DF4B4... 7/29/2022 ENGINEER

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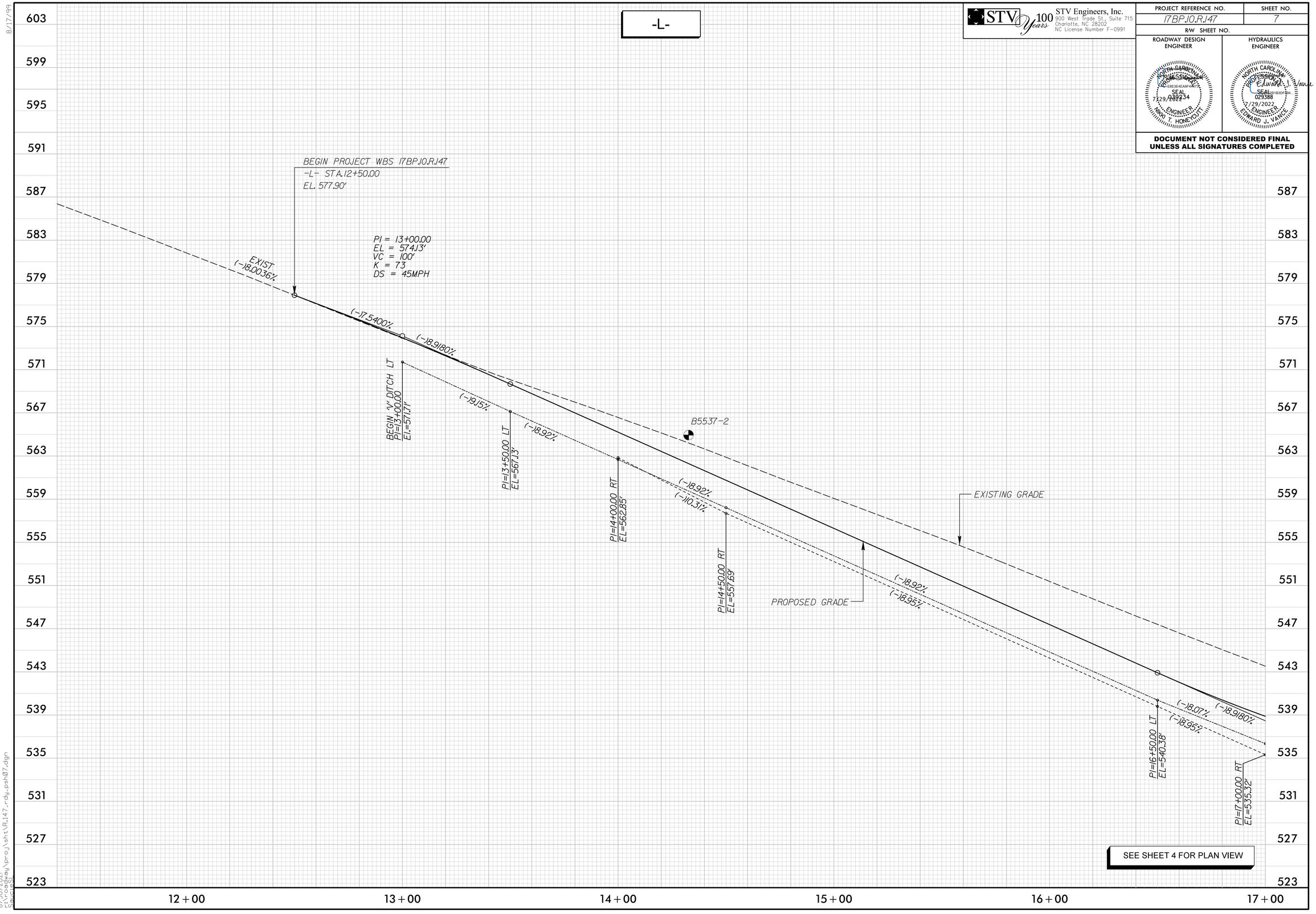

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SHEET 7

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900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKKI T. HONEYCUTT
SEAL A3BF4A1B 2/28/2022

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD J. VANDYKE
SEAL 1B30F405 2/28/2022

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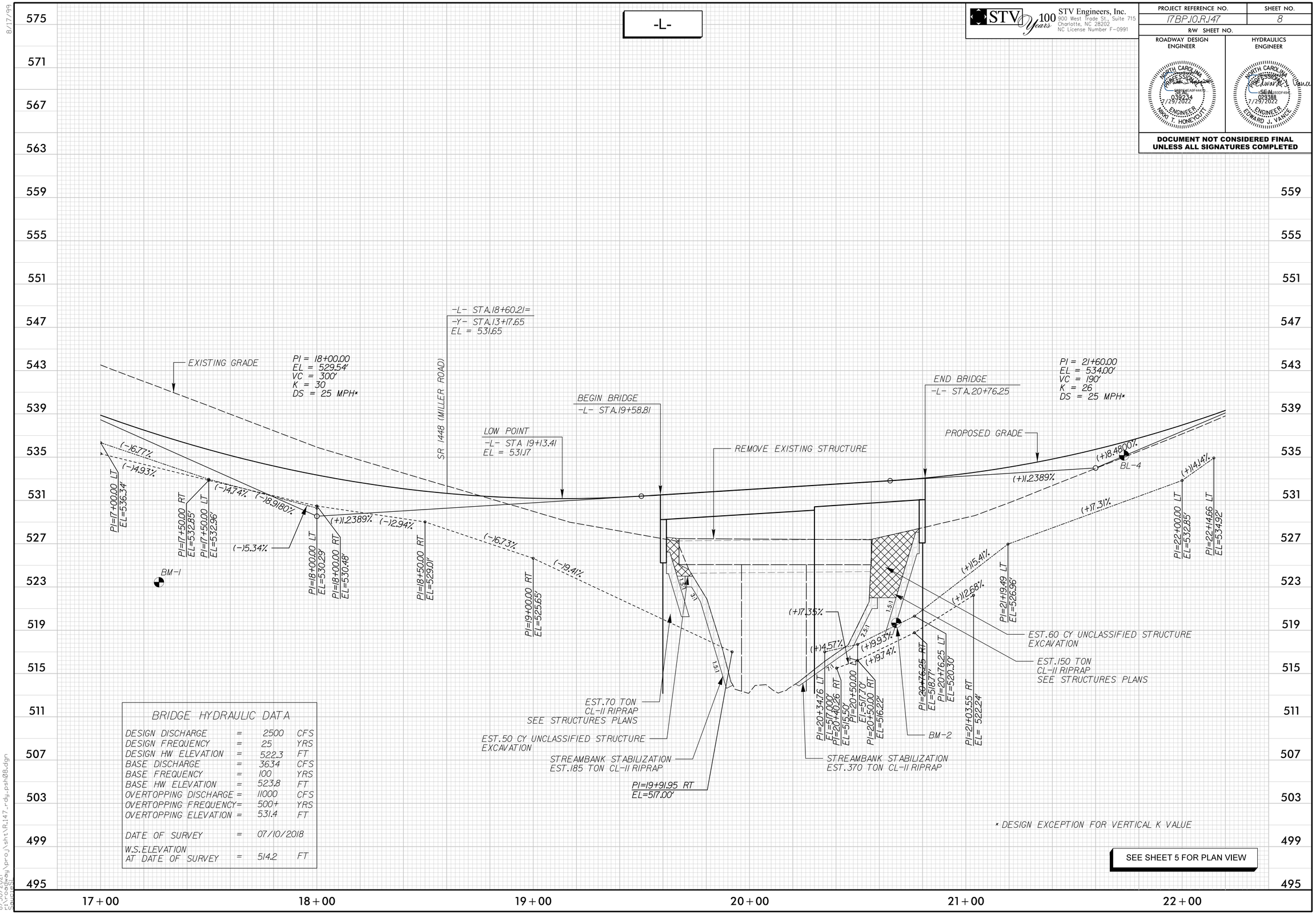

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	2500	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	522.3	FT
BASE DISCHARGE	=	3634	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	523.8	FT
OVERTOPPING DISCHARGE	=	11000	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	531.4	FT
DATE OF SURVEY	=	07/10/2018	
W.S. ELEVATION AT DATE OF SURVEY	=	514.2	FT

8/17/99

8/30/2021
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STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKKI T. HONEYCUTT
DocuSigned by: Nikki Honeycutt
F8E9E4EA8F4A7B...
7/29/2022

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD L. VANCUTE
DocuSigned by: Edward Vancute
C8A9EB51B0C8484...
7/29/2022

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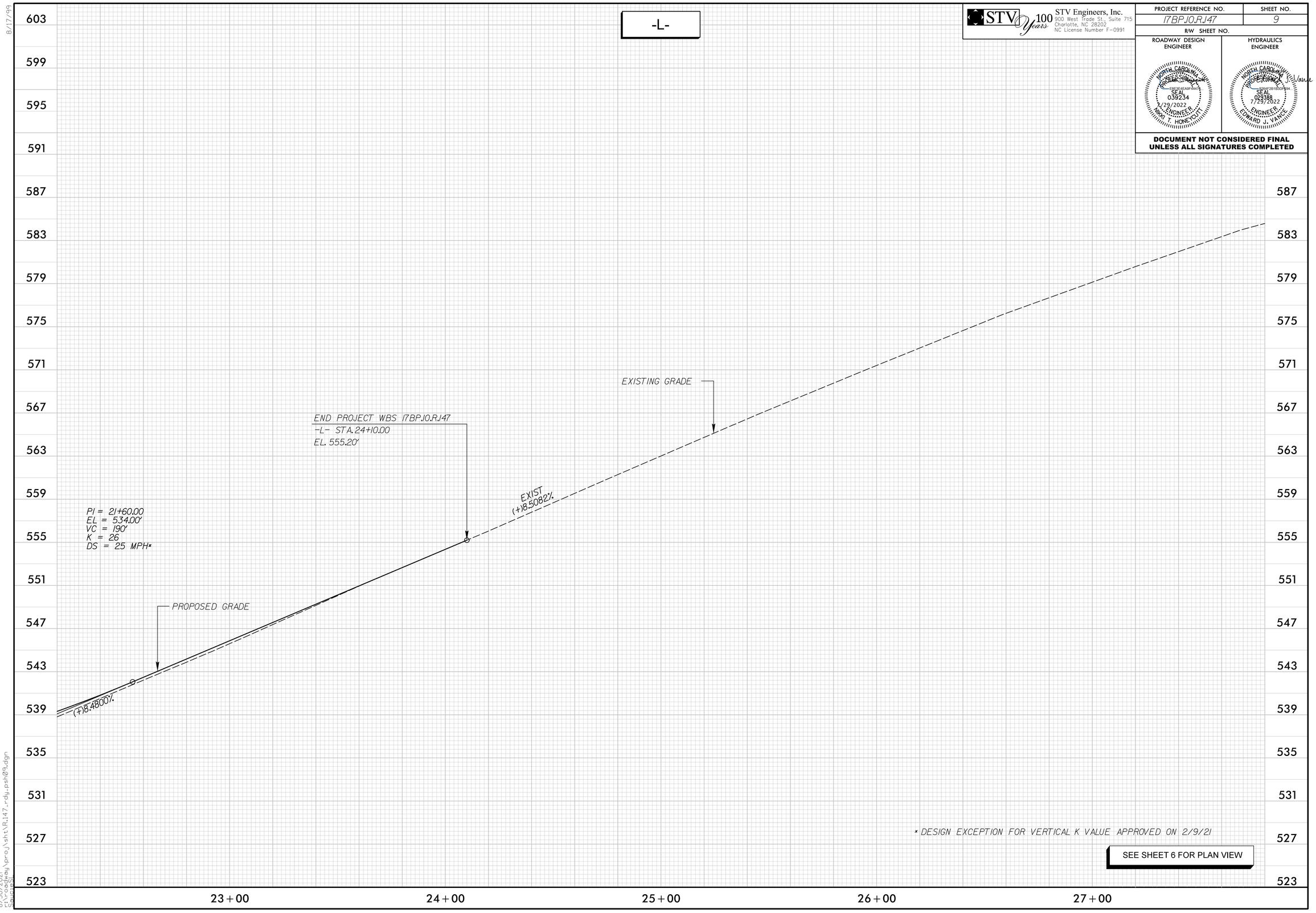

* DESIGN EXCEPTION FOR VERTICAL K VALUE APPROVED ON 2/9/21

SEE SHEET 6 FOR PLAN VIEW

8/30/2021
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SHEET

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STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	10
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKI T. HONEYCUTT
DocuSigned by: E8E3E4EA8F4473...
7/29/2022

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD L. VANETTE
DocuSigned by: 33DF4B...
7/29/2022

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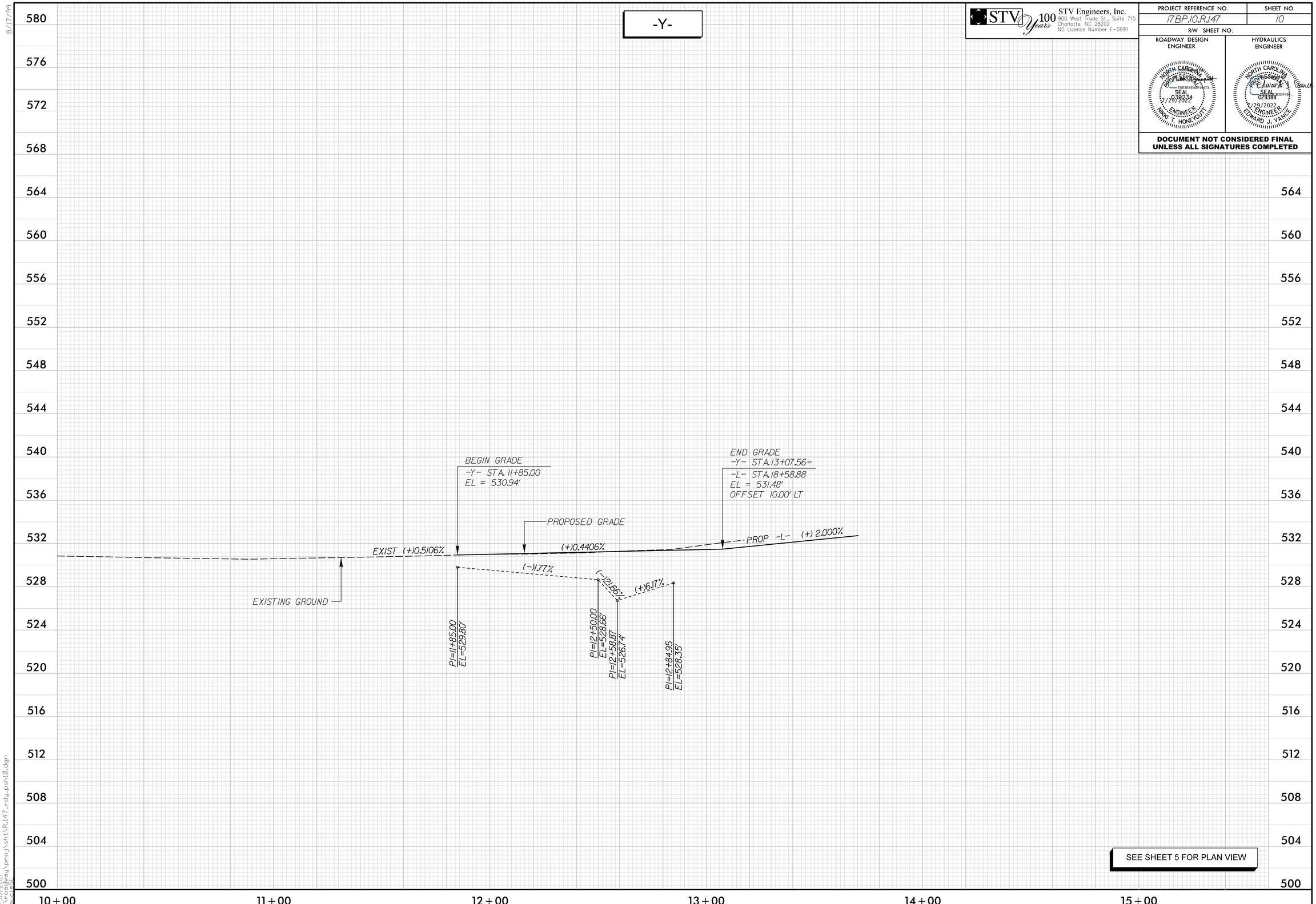

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5:12:26 PM
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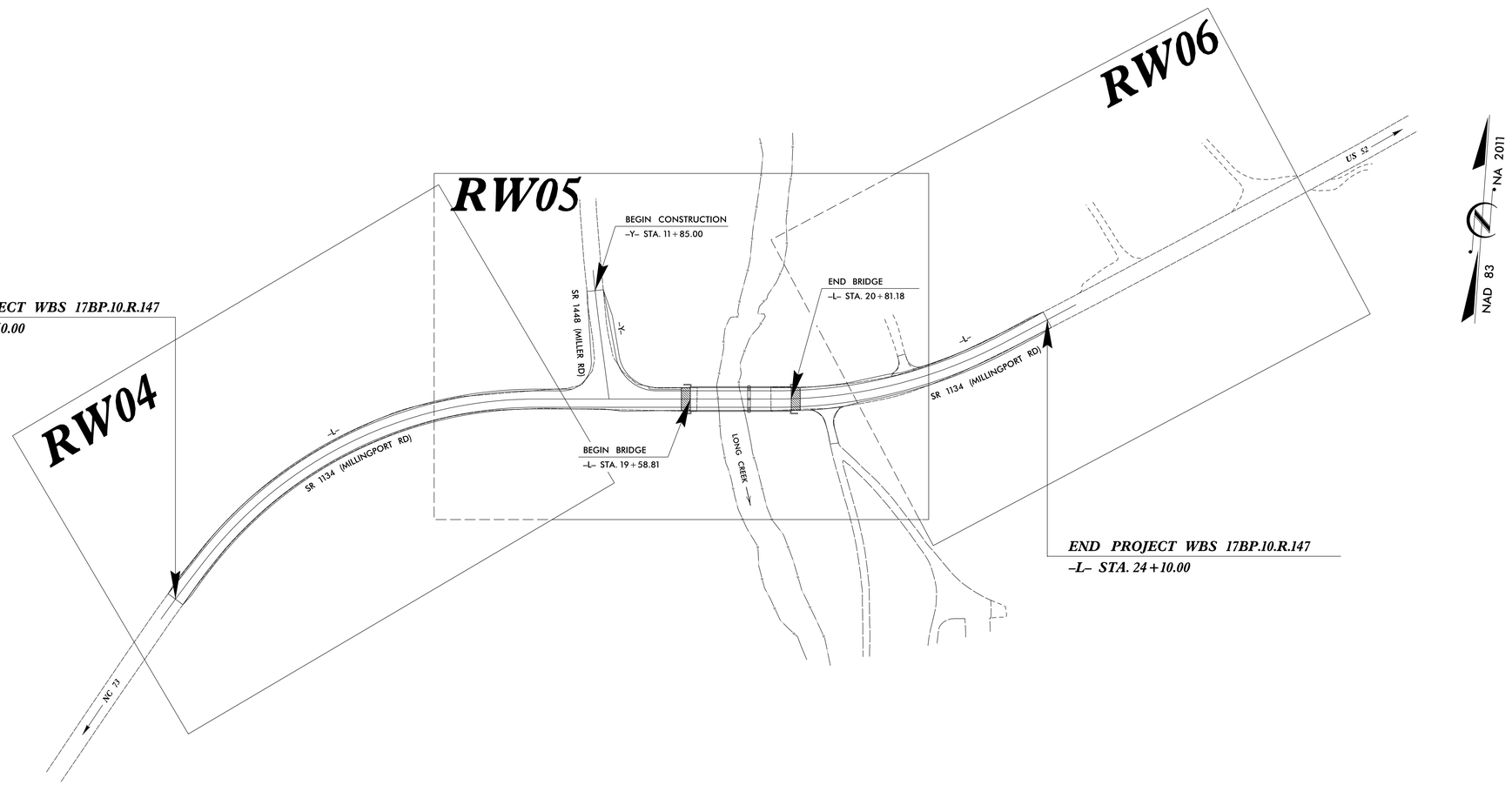
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B5537	RW01	4

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

STANLY COUNTY

TIP PROJECT: B5537



GRAPHIC SCALE

50 25 0 50 100

PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "B5537-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 616,746.193(ft) EASTING: 1,619,549.080(ft)
ELEVATION: 607.600(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99985494
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"B5537-1" TO -L- STATION 12+50.00 IS
N 32^27''56.5" E 516.00(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

GEL SOLUTIONS

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	LETTING DATE:
01/05/2021	10/20/2021

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR, JR.

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

SIGNATURE: Date: 2021.10.19 12:58:53 -04'00'

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99

14-OCT-2021 14:53
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Andy Smith AT ANDYSMITH-GEG

6/2/99

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

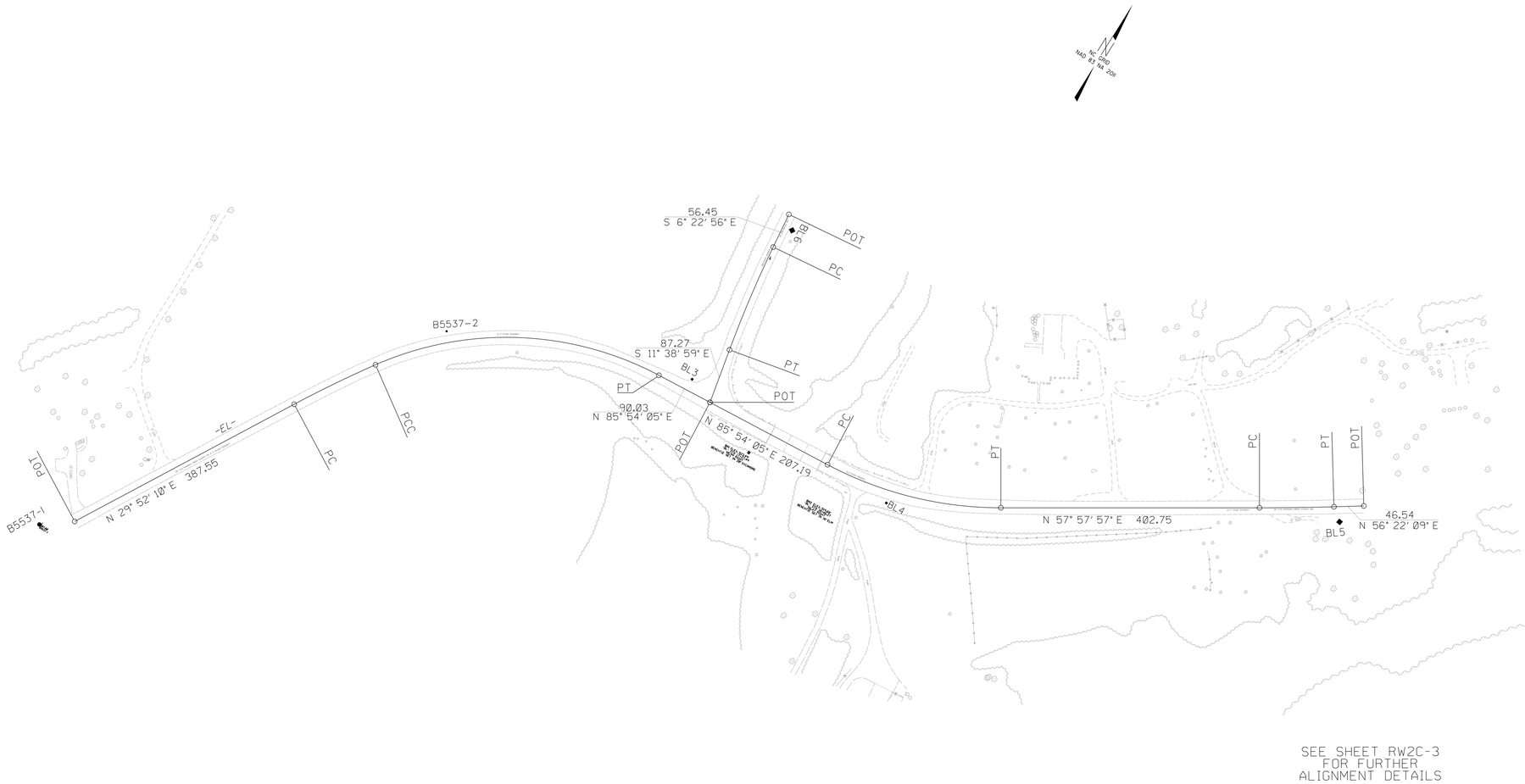
CONTROL SHEET PRODUCED BY GEL SOLUTIONS
NO SURVEY CONTROL PERFORMED BY GEL SOLUTIONS

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW02C-1

Location and Surveys

GEL SOLUTIONS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

12-OCT-2021 10:47
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Andy Smith AT ANDYSMITH-GEG

6/2/99

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

CONTROL SHEET PRODUCED BY GEL SOLUTIONS
NO SURVEY CONTROL PERFORMED BY GEL SOLUTIONS

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW02C-2

Location and Surveys

GEL SOLUTIONS

PROJECT SURVEYOR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BL

POINT	DESC.	NORTH	EAST	ELEVATION
1	B5537-1	616746.1930	1619549.0800	607.60
2	B5537-2	617337.6030	1619926.9650	564.94
BL3	B5537-BL3	617477.1520	1620291.0060	534.06
BL4	B5537-BL4	617474.1219	1620649.2970	535.16
BL5	B5537-BL5	617823.3583	1621263.1730	589.96

BY

POINT	DESC.	NORTH	EAST	ELEVATION
BL6	B5537-BL6	617756.3250	1620299.8750	530.17
ABL3	B5537-BL3	617477.1520	1620291.0060	534.06

.....
BM1 ELEVATION = 523.44
N 617427 E 1620426
BL STATION 17+27.00 49 RIGHT
BENCHTIE SET IN 20 INCH SYCAMORE
.....

.....
BM2 ELEVATION = 519.67
N 617419 E 1620545
BL STATION 18+46.00 56 RIGHT
BENCHTIE SET IN 16 INCH ELM
.....

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

12-OCT-2021 14:57
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Andy Smith AT ANDYSMITH-GEG

6/2/99

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

CONTROL SHEET PRODUCED BY GEL SOLUTIONS
NO SURVEY CONTROL PERFORMED BY GEL SOLUTIONS

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW02C-3

Location and Surveys

GEL SOLUTIONS

PROJECT SURVEYOR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	616779.310	1619593.081							
LINE			N 29°52'09.5" E	387.55					
PC	617115.379	1619786.090							
CURVE			N 32°04'08.2" E	140.71	04°23'57.3"(RT)	03°07'32.8"	140.74	70.41	1833.01
PCC	617234.615	1619860.797							
CURVE			N 60°05'06.1" E	441.71	51°37'58.4"(RT)	11°17'51.6"	457.02	245.34	507.15
PT	617454.905	1620243.660							
LINE			N 85°54'05.3" E	90.03					
POT	617461.340	1620333.463							
LINE			N 85°54'05.3" E	207.19					
PC	617476.148	1620540.123							
CURVE			N 71°56'01.1" E	278.15	27°56'08.4"(LT)	09°56'39.6"	280.92	143.31	576.16
PT	617562.406	1620804.555							
LINE			N 57°57'56.9" E	402.75					
PC	617776.033	1621145.977							
CURVE			N 57°10'02.9" E	115.92	01°35'47.9"(LT)	01°22'38.5"	115.92	57.96	4159.81
PT	617838.881	1621243.377							
LINE			N 56°22'09.0" E	46.54					
POT	617864.657	1621282.127							

EY

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	617774.633	1620282.319							
LINE			S 06°22'56.2" E	56.45					
PC	617718.530	1620288.594							
CURVE			S 09°00'57.8" E	173.87	05°16'03.3"(LT)	03°01'42.8"	173.93	87.03	1891.85
PT	617546.809	1620315.841							
LINE			S 11°38'59.5" E	87.27					
POT	617461.340	1620333.463							

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

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Andy Smith AT ANDYSMITH-GEG

PROPOSED ALIGNMENT CONTROL SHEET

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	616965.6385	1619700.0918
PC	11+70.77	617113.7243	1619785.1394
PCC	13+12.40	617233.6919	1619860.3448
PT	17+71.74	617455.0168	1620245.2229
PC	20+63.96	617475.9019	1620536.6901
PT	23+51.62	617564.2314	1620807.4726
POT	28+52.52	617829.9171	1621232.0945

Y

TYPE	STATION	NORTH	EAST
POT	10+00.00	617774.6330	1620282.3188
PC	10+56.08	617718.9026	1620288.5525
PT	12+30.76	617546.4421	1620315.9171
POT	13+17.65	617461.3397	1620333.4633

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW02D-1

Location and Surveys

GEL SOLUTIONS

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR JR.

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Parks H Icenhour Jr., PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 19th day of October, 2021.

2021.10.19 12:57:54 -04'00'

Professional Land Surveyor L-3996

REVISIONS

6/2/99

13-OCT-2021 14:55
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Andy.Smith@AT ANDYSMITH-GEG

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW03E-1

Location and Surveys

GEL SOLUTIONS

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR JR.

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Parks H Icenhour Jr , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 10/12/2021 to 10/19/2021, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 19th day of October, 2021.

2021.10.19 13:02:49 -04'00'

Professional Land Surveyor L-3996

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST	
L	20+63.96	55.00	617421.0426	1620540.6211	
L	20+93.00	55.00	617424.0901	1620572.2201	
L	20+93.00	30.15	617448.7628	1620569.2262	PAINT MARK ON ROCK
L	20+49.00	-55.50	617530.1909	1620517.8033	
L	20+63.96	-55.50	617531.2600	1620532.7234	
L	20+49.00	-30.00	617504.7561	1620519.6258	
L	21+55.00	-55.50	617543.4655	1620614.2101	
L	21+55.00	-29.64	617518.2598	1620620.0014	
L	19+33.00	55.00	617411.6827	1620409.9976	
L	19+33.00	30.00	617436.6188	1620408.2108	

PERMANENT EASEMENT IRON PIN AND CAP

ALIGN	STATION	OFFSET	NORTH	EAST	
L	18+41.00	30.00	617430.0434	1620316.4461	
L	17+97.00	-33.00	617489.7375	1620268.0559	
L	19+36.93	-30.00	617496.7465	1620407.8459	
L	20+12.67	-30.00	617502.1592	1620483.3844	NOT SET (IN CREEK)
L	20+49.00	-50.00	617524.7050	1620518.1964	
L	20+28.00	55.00	617418.4726	1620504.7546	NOT SET (IN CREEK)
L	20+28.00	65.00	617408.4981	1620505.4694	NOT SET (IN CREEK)
L	20+75.00	72.00	617405.0871	1620554.1845	
L	20+93.00	72.00	617407.2139	1620574.2680	
L	21+58.98	30.37	617460.7257	1620637.5136	
L	17+70.00	-30.00	617484.8080	1620241.2370	
L	21+55.00	-38.00	617526.4103	1620618.1288	12" SPIKE IN TREE ROOT
L	22+06.00	-35.52	617536.7323	1620664.8742	
L	22+17.00	-29.58	617534.3805	1620676.6124	
L	21+06.74	49.04	617431.9670	1620586.2588	
L	21+13.95	72.08	617410.3753	1620597.5561	
L	21+24.01	68.39	617415.8706	1620608.0589	MAG NAIL SET IN PAVED DRIVE
L	21+21.27	43.24	617440.1402	1620600.8252	

PERMANENT EASEMENT IRON PIN AND CAP

ALIGN	STATION	OFFSET	NORTH	EAST	
Y	12+46.00	30.00	617525.4557	1620289.6131	
Y	12+40.00	-30.00	617543.4479	1620347.1655	
Y	12+40.00	-80.00	617553.5444	1620396.1355	NOT SET (IN TREE)

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.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 10/12/2021 TO 10/19/2021 .

REVISIONS

6/2/99

19-OCT-2021 09:52
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Andy Smith AT ANDYSMITH-GEO

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW04

Location and Surveys

GEL SOLUTIONS

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR JR.

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

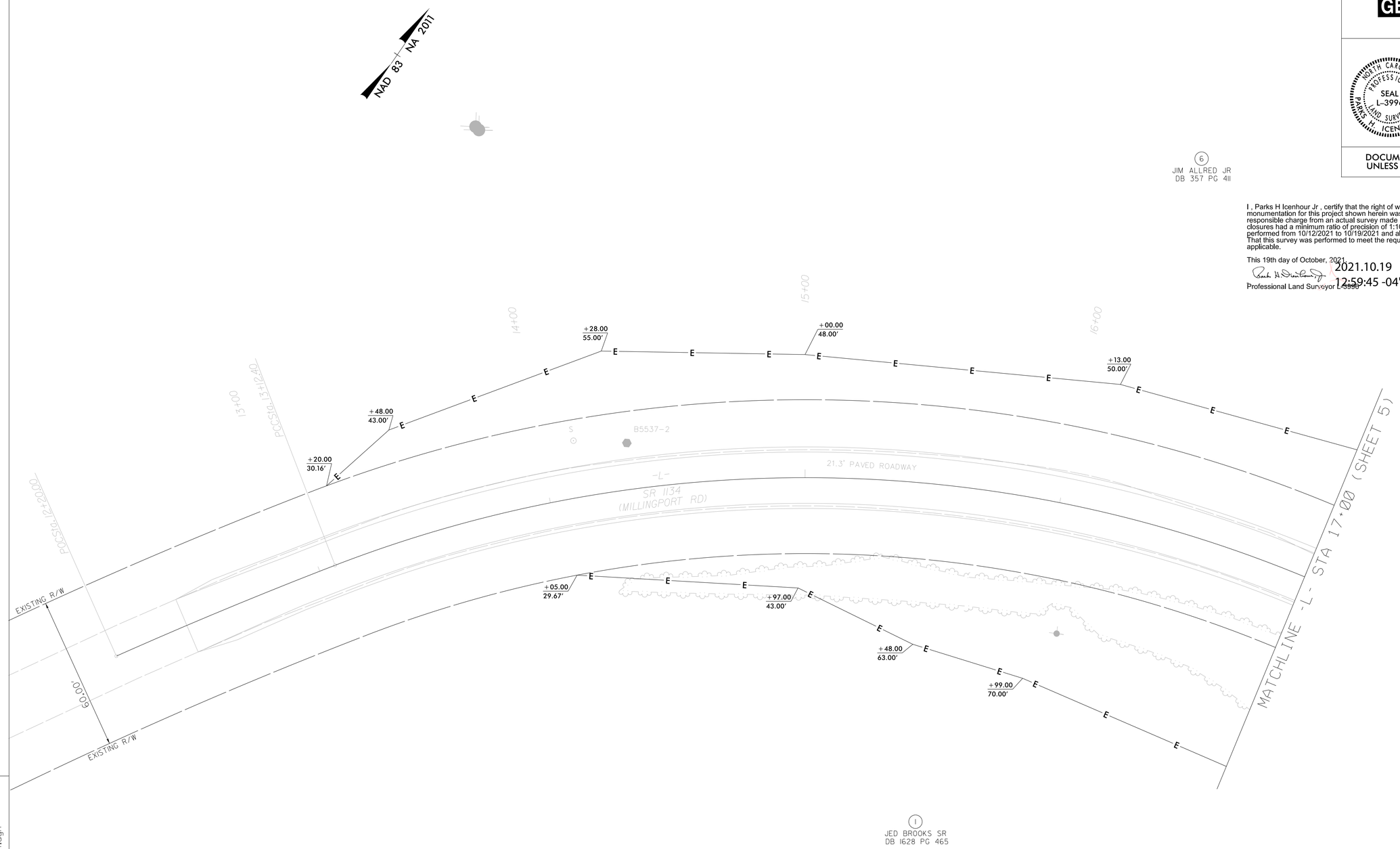
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Parks H Icenhour Jr , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 10/12/2021 to 10/19/2021 and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 19th day of October, 2021.

Parks H Icenhour Jr 2021.10.19 12:59:45 -04'00'

Professional Land Surveyor L-3996



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3. RIGHT OF WAY MONUMENTATION ESTABLISHED 10/12/2021 TO 10/19/2021.

REVISIONS

6/2/99

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Andy.Smith AT ANDYSMITH-GEO

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW05

Location and Surveys

SOLUTIONS

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR JR.

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

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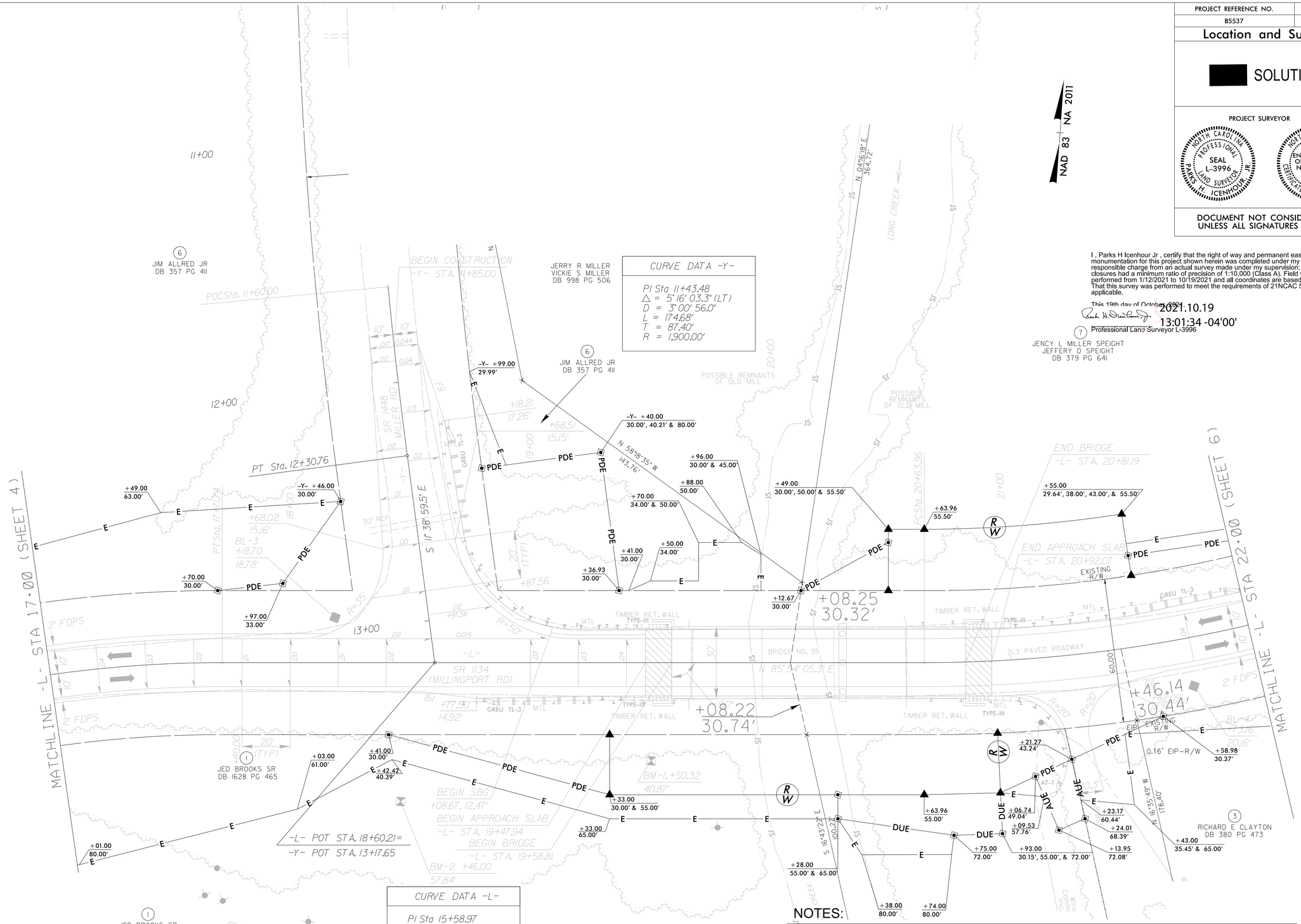
I , Parks H Icenhour Jr , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 1/12/2021 to 10/19/2021 and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 19th day of October, 2021

2021.10.19 13:01:34 -04'00'

Professional Land Surveyor L-3996



CURVE DATA -Y-
PI Sta 11+43.48
Δ = 5° 16' 03.3" (LT)
D = 3° 00' 56.0"
L = 174.68'
T = 87.40'
R = 1,900.00'

CURVE DATA -L-
PI Sta 15+58.97
Δ = 51° 36' 18.7" (RT)
D = 11° 14' 04.1"
L = 459.35'
T = 246.57'
R = 510.00'

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.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 10/12/2021 TO 10/19/2021.

REVISIONS

6/2/99

18-OCT-2021 15:19
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Andy Smith AT ANDYSMITH-GEC

PROJECT REFERENCE NO.	SHEET NO.
B5537	RW06

Location and Surveys

SOLUTIONS

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR, JR.

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

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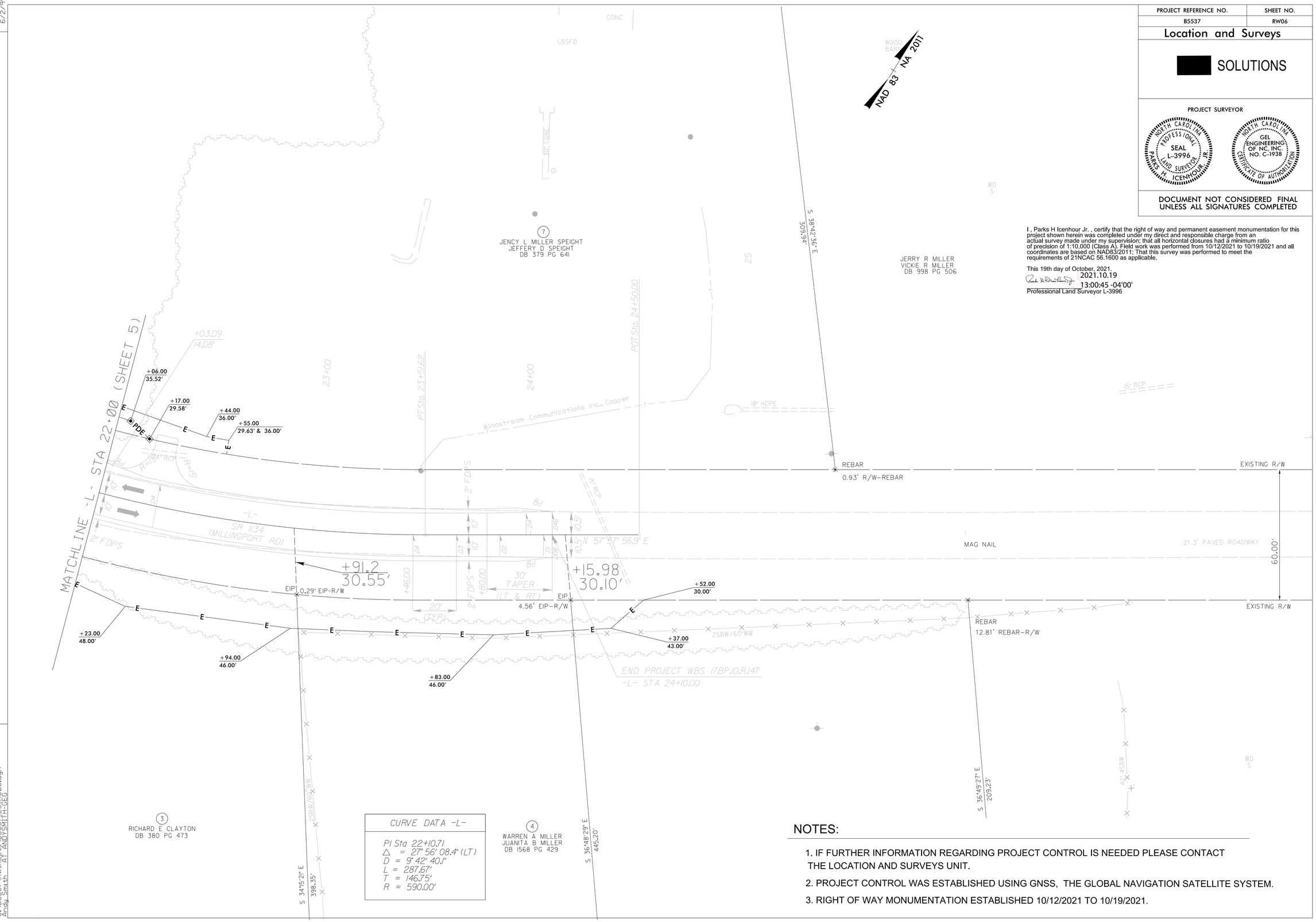
I , Parks H Icenhour Jr. , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 10/12/2021 to 10/19/2021 and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 19th day of October, 2021.

2021.10.19 13:00:45 -04'00'

Professional Land Surveyor L-3996



CURVE DATA -L-

PI Sta 22+10.71
△ = 27° 56' 08.4" (LT)
D = 9° 42' 40.1"
L = 287.67'
T = 146.75'
R = 590.00'

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.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 10/12/2021 TO 10/19/2021.

REVISIONS

6/2/99

18-OCT-2021 16:22
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Andy Smith AT ANDYSMITH-GEO

DocuSign Envelope ID: BD7E3FA6-077A-46C1-B980-1C89EDAE5A58

8/17/99

OFF-SITE DETOUR SIGNING AND ROAD CLOSURE SIGNING

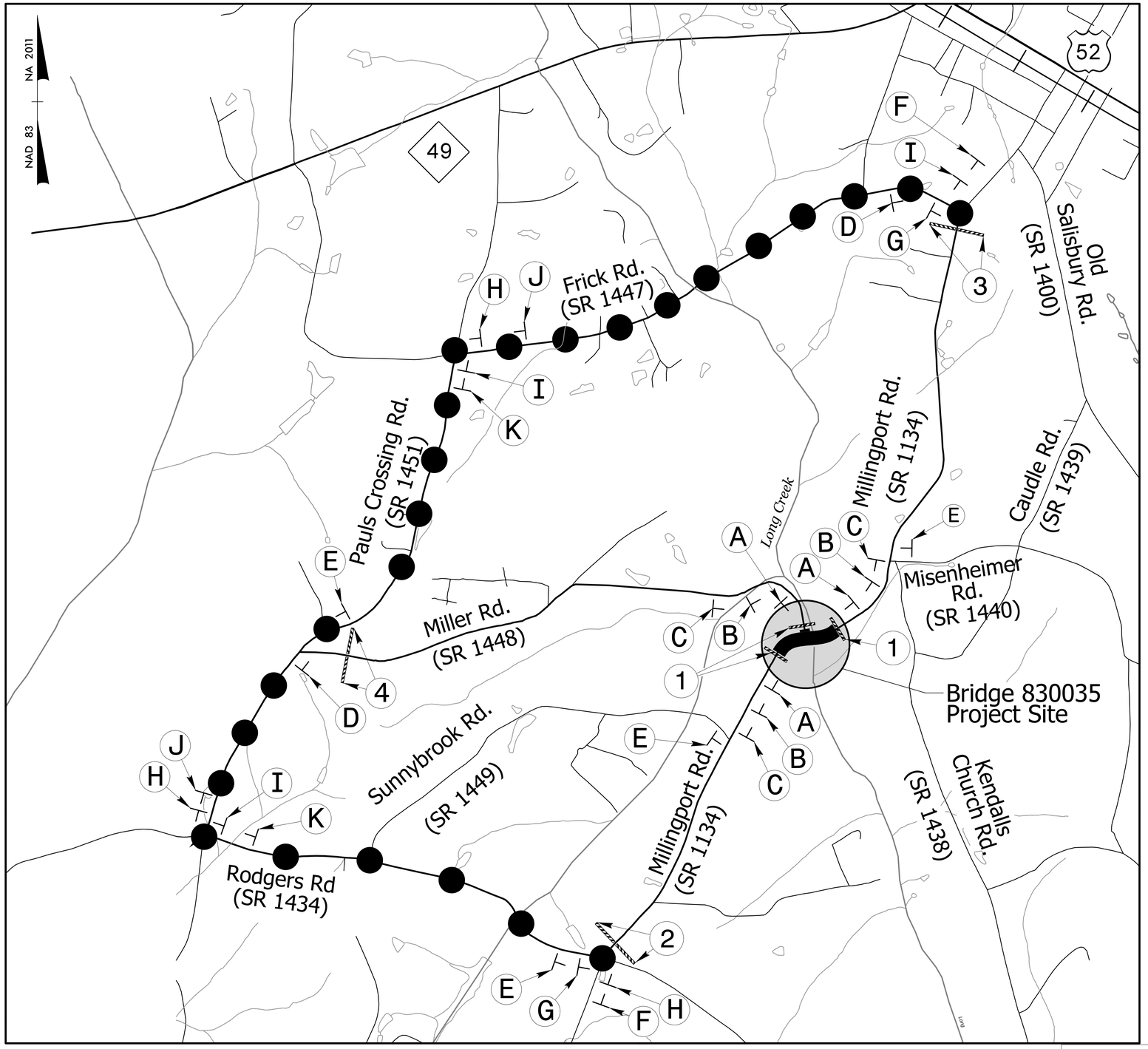
PROJECT REFERENCE NO.	SHEET NO.
17BPJO.R.147	TMP-1
R/W SHEET NO.	

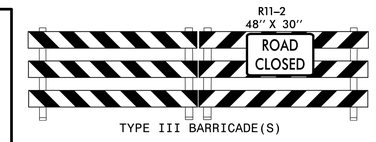
STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 7/29/2022 ENGINEER NIKKI T. HONEYCUTT





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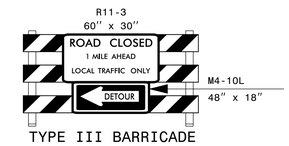

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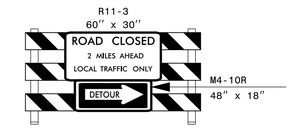

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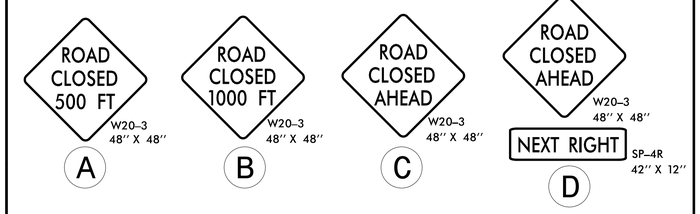

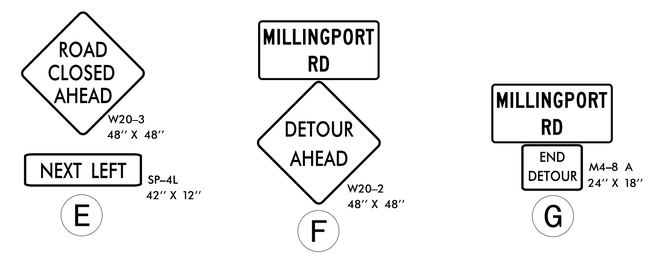

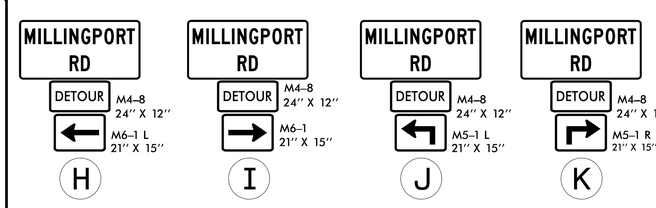

SEE ROADWAY STD DWG 1101.03, SHEET 1 OF 9 AND SHEET 2 OF 9 FOR ADVANCE WARNING AND BARRICADE PLACEMENT.

1000 500 0 1000 2000

Scale: 1"=1000'

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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	TMP-2
R/W SHEET NO.	

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STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

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ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER MARK T. HONEYCUTT 7/29/2022

BRIDGE #830035

SIGN NUMBER: I-1
TYPE: D
QUANTITY: See Plans

SIGN WIDTH: 48″
HEIGHT: 24″
TOTAL AREA: 8.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.47″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

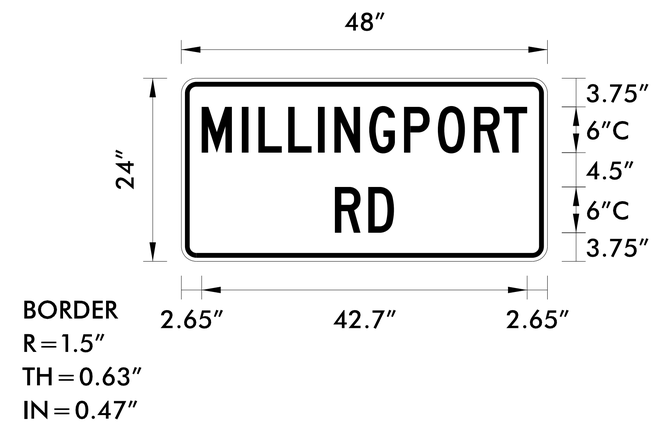
BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080″ (2.0 mm) ALUMINUM

USE NOTES: 1,2
1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Background shall be NC Grade B fluorescent.

DESIGN BY: JCT
CHECKED BY: GHM
PROJECT ID: 17BP.10.R.147
DIV: 10
DATE: Dec 29, 2018



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter positions are to the lower left corners

	M	I	L	L	I	N	G	P	O	R	T	Series/Size Text Length
	2.7	8	10.1	14	17.9	20.1	24.6	29.2	33.6	38.4	42.3	C 2000 / 6 42.7
	R	D										
	20.1	24.5										C 2000 / 6 7.7

NORTH CAROLINA D.O.T. SIGN DETAIL

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PAVEMENT MARKING PLAN

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17BP.10.R.147	PMP-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 7/29/2022 ENGINEER MARK T. HONEYCUTT

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ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1261.01	GUARDRAIL & BARRIER DELINEATORS
1261.02	GUARDRAIL & BARRIER DELINEATORS
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE.

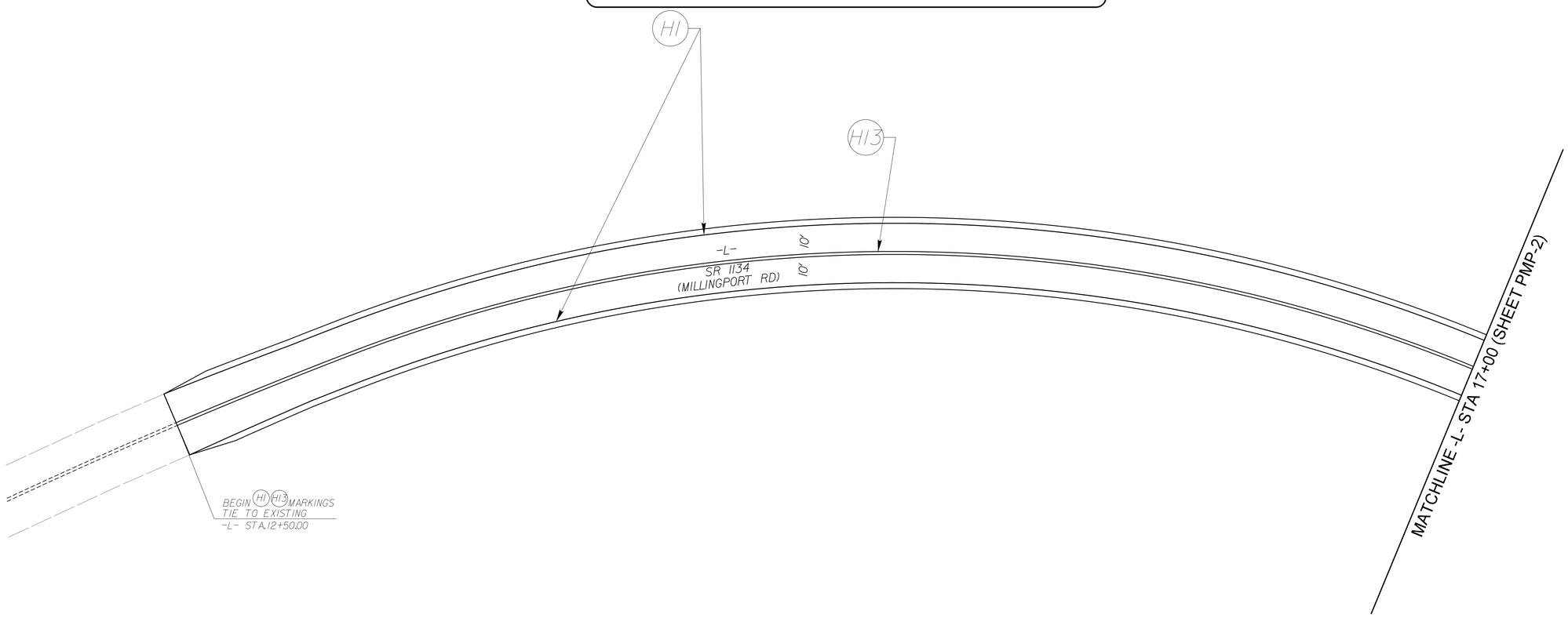
ROAD NAME	MARKING
SR 1134 (MILLINGPORT RD)	HIGHLY REFLECTIVE THERMOPLASTIC

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
E) REPLACE ANY PAVEMENT MARKINGS BEYOND THE PROJECT LIMITS DAMAGED BY THE CONTRACTORS' OPERATIONS DURING CONSTRUCTION.

NAD 83 NA 2011

PAVEMENT MARKING SCHEDULE

H1 - HIGHLY REFLECTIVE THERMOPLASTIC	WHITE EDGELINE (4", 90MIL)
H13- HIGHLY REFLECTIVE THERMOPLASTIC	YELLOW DOUBLE CENTER LINE (4", 90MIL)
H5- HIGHLY REFLECTIVE THERMOPLASTIC	2FT.-6FT./SP WHITE MINISKIP (4", 90MIL)



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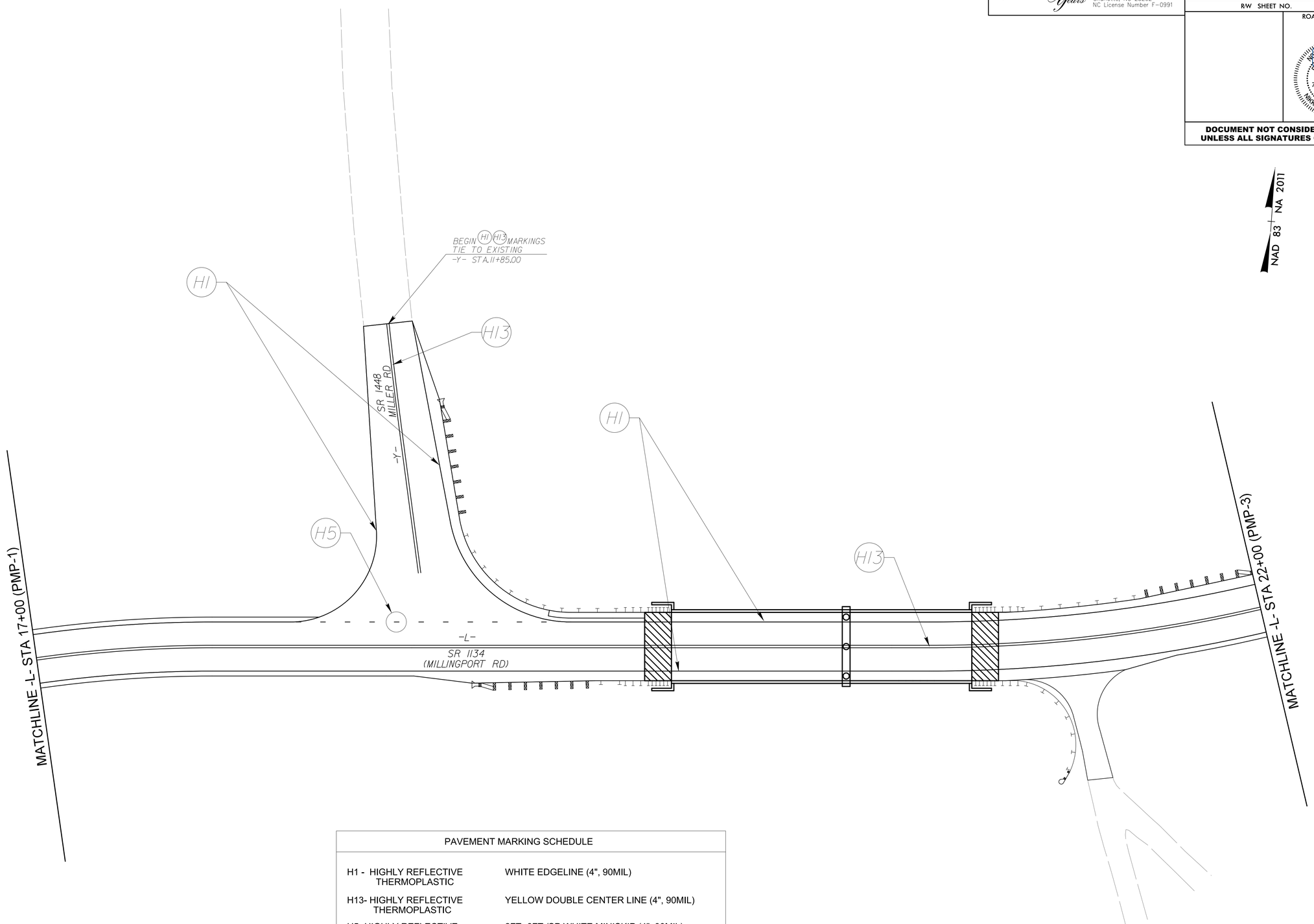
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	PMP-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 7/29/2022 ENGINEER NIKKI T. HONEYCUTT
DocuSigned by: E8E3E4EA3F2F43...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PAVEMENT MARKING SCHEDULE	
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H13- HIGHLY REFLECTIVE THERMOPLASTIC	YELLOW DOUBLE CENTER LINE (4", 90MIL)
H5- HIGHLY REFLECTIVE THERMOPLASTIC	2FT.-6FT./SP WHITE MINISKIP (4", 90MIL)

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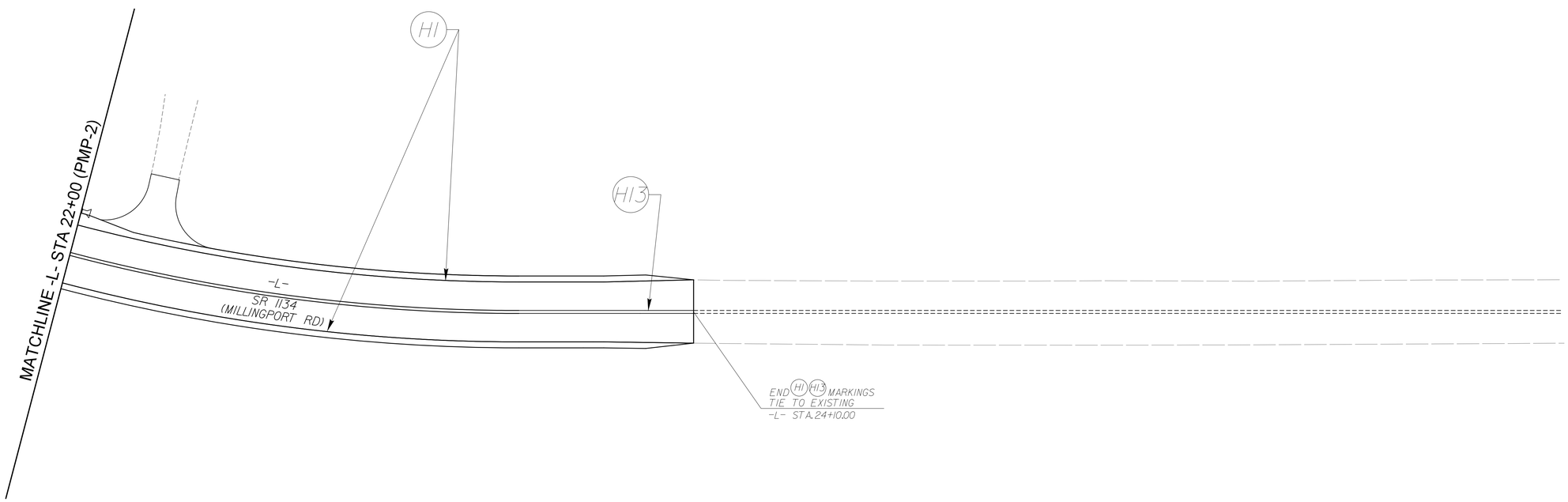
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	PMP-3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKKI T. HONEYCUTT
DocuSigned by: EBE3E4EA8F4473
7/29/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PAVEMENT MARKING SCHEDULE	
H1 - HIGHLY REFLECTIVE THERMOPLASTIC	WHITE EDGELINE (4", 90MIL)
H13- HIGHLY REFLECTIVE THERMOPLASTIC	YELLOW DOUBLE CENTER LINE (4", 90MIL)
H5- HIGHLY REFLECTIVE THERMOPLASTIC	2FT.-6FT./SP WHITE MINISKIP (4", 90MIL)

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Sources

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PROJECT WBS: 17BP.10.R.147

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.147	EC-1	10

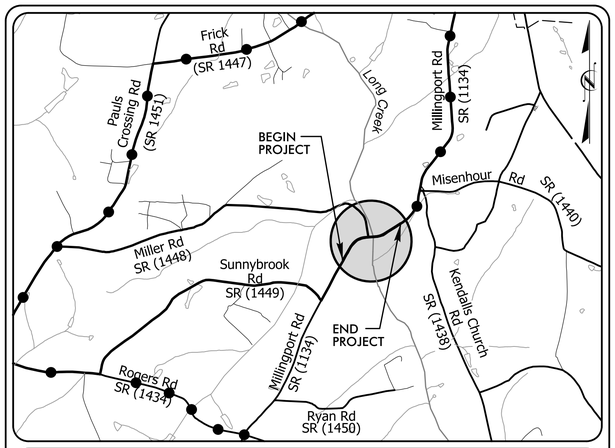
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.10.PE.147		P.E.
17BP.10.ROW.147		R/W & UTILITY
17BP.10.R.147		CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

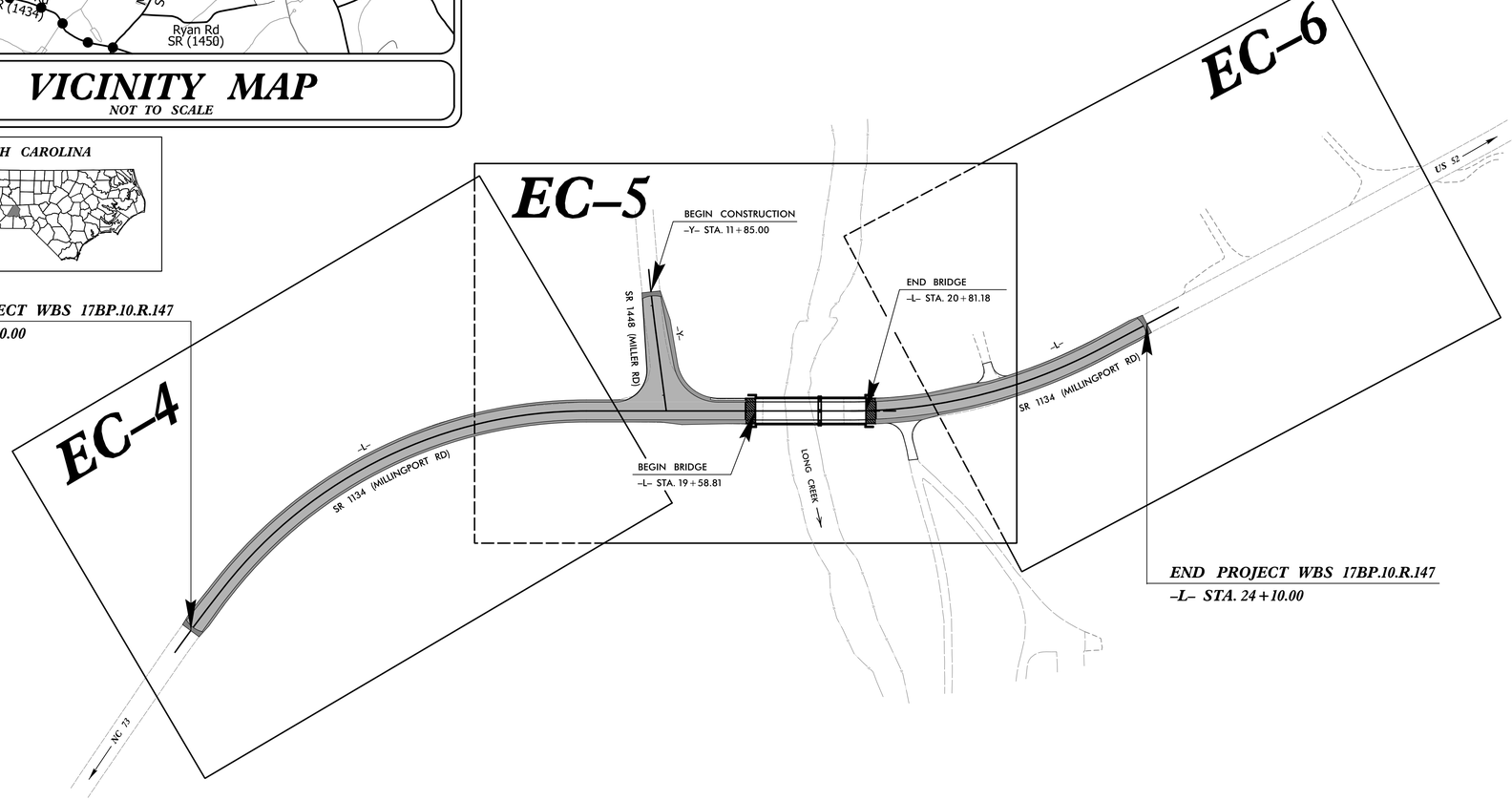
LOCATION: BRIDGE #35 LONG CREEK ON SR 1134 (MILLINGPORT RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



VICINITY MAP
NOT TO SCALE

BEGIN PROJECT WBS 17BP.10.R.147
–L– STA. 12+50.00



END PROJECT WBS 17BP.10.R.147
–L– STA. 24+10.00

NAD 83 / NA 2011

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle/Coir Fiber Wattle	EW / CFW
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

20 10 0 20 40
PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG–010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

STV 100 Years

Prepared In the Office of:

STV ENGINEERS, INC.
900 WEST TRADE STREET, SUITE 715
CHARLOTTE, NC 28202

Designed by:

PETER WALDRON — *NAME*
4352 — *LEVEL III CERTIFICATION NO.*

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

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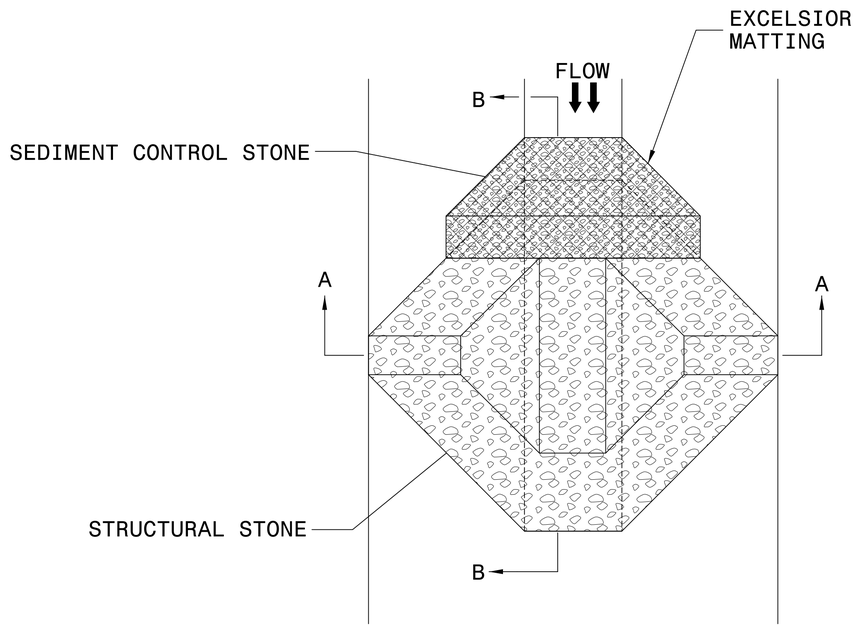
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-2

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

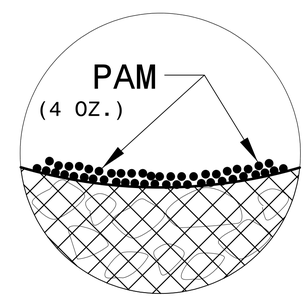
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

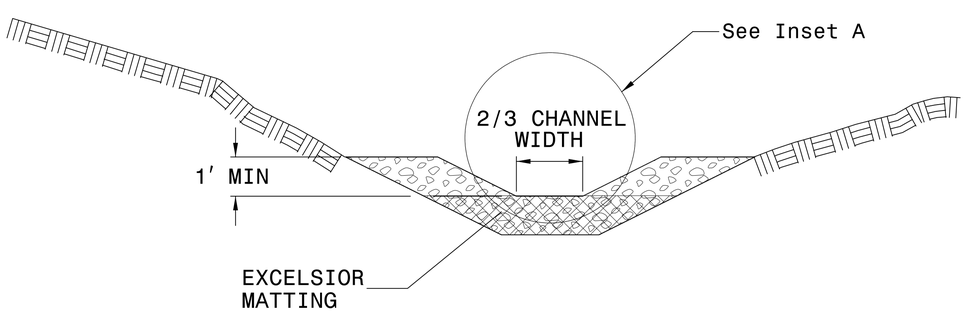
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

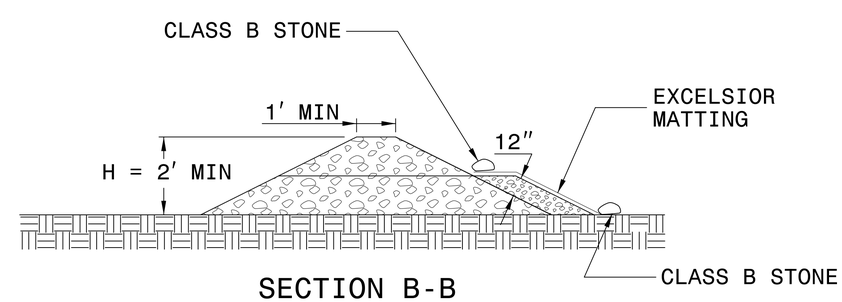
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
				SUBTOTAL	0
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1800
				TOTAL	1800
				SAY	1800

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	13+00	17+50	LT	485
4	-L-	14+00	17+00	RT	210
4	-L-	20+40	21+04	RT	40
				SUBTOTAL	735
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					0
				TOTAL	735
				SAY	1000

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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

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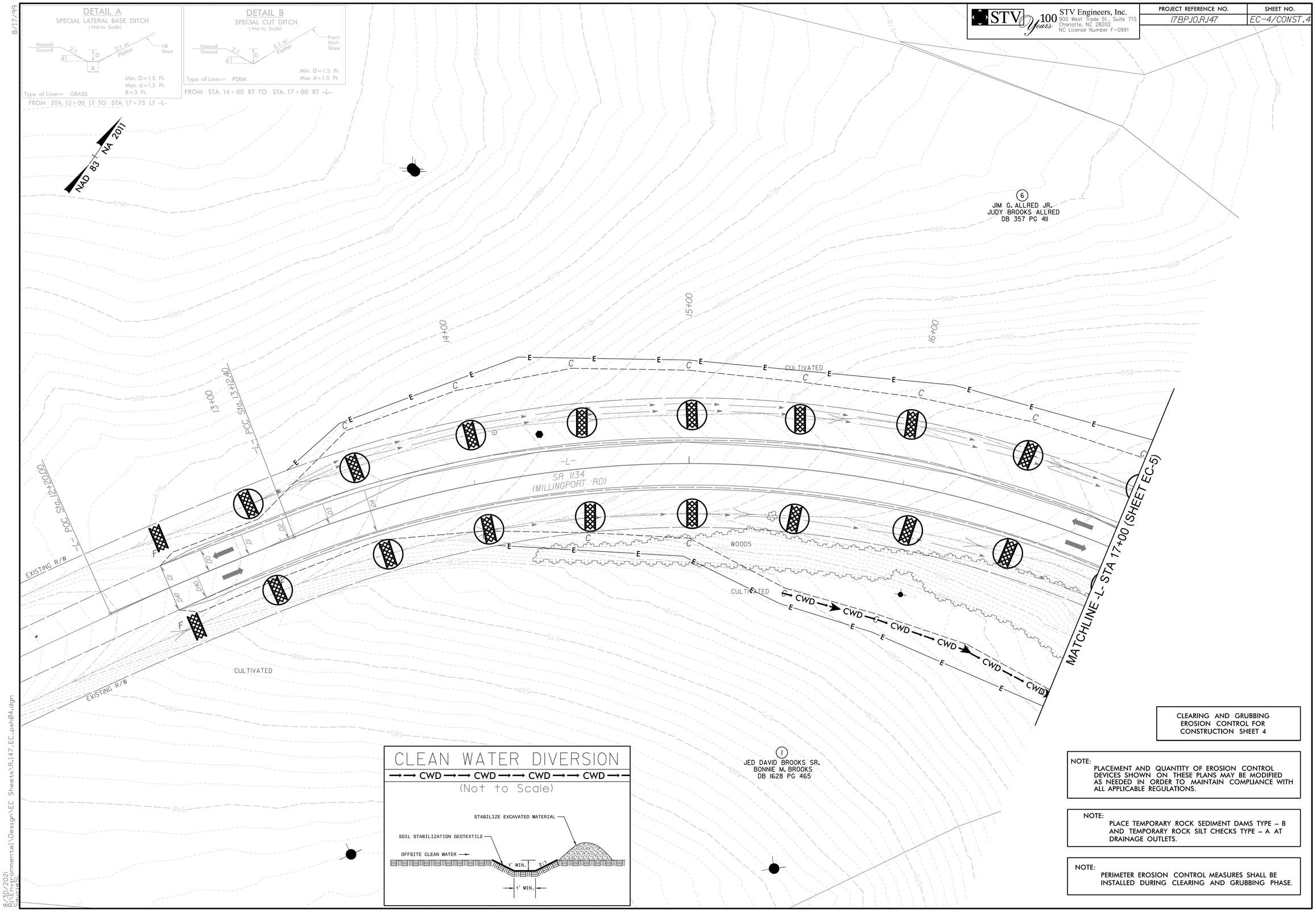
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-4/CONST.4

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3 Ft.
Type of Liner= GRASS
FROM STA. 13+00 LT TO STA. 17+75 LT -L-

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max d=1.5 Ft.
Type of Liner= PSRM
FROM STA. 14+00 RT TO STA. 17+00 RT -L-



CLEAN WATER DIVERSION
CWD CWD CWD CWD
(Not to Scale)

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

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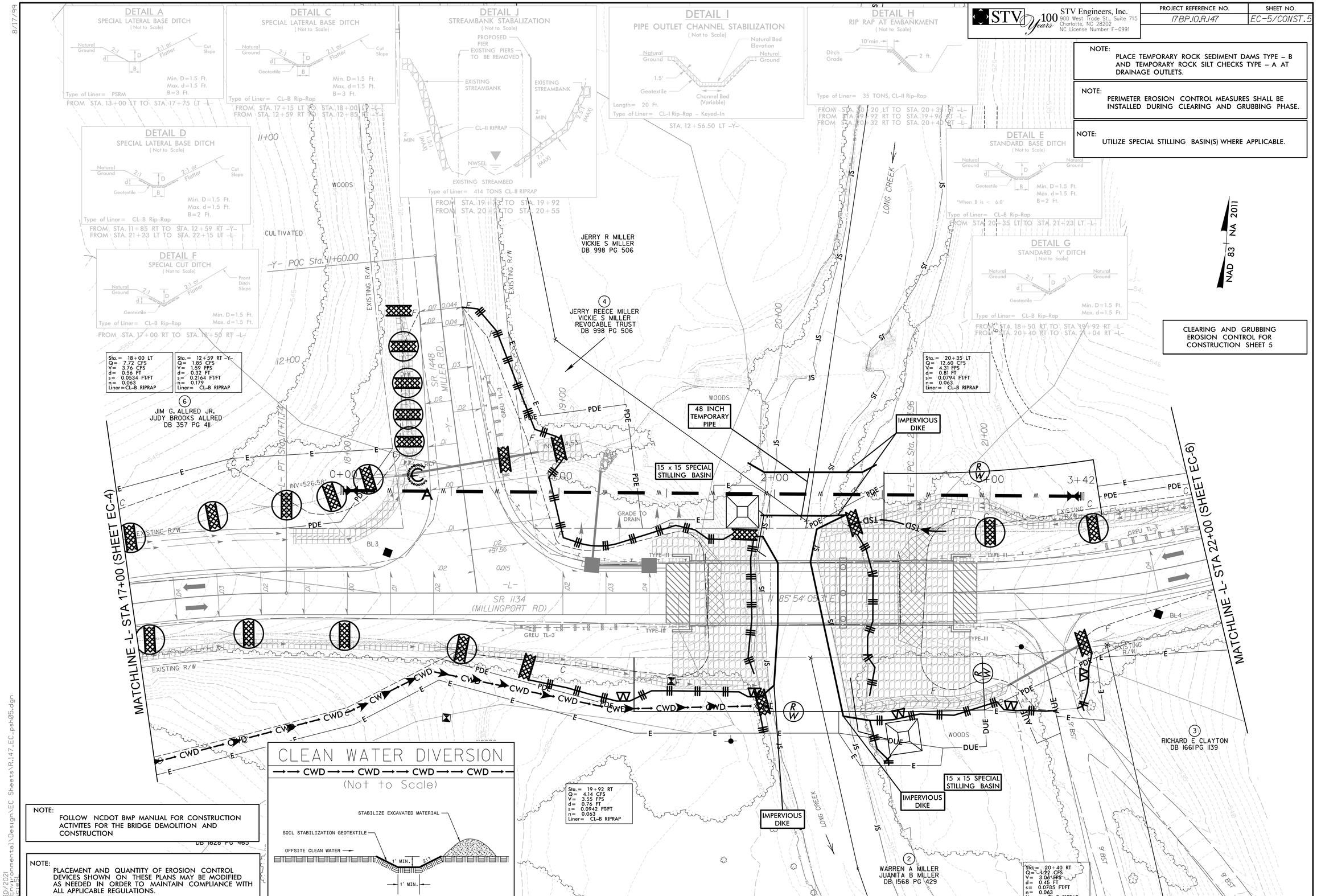
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-5/CONST.5

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE.



NOTE:
FOLLOW NCDOT BMP MANUAL FOR CONSTRUCTION ACTIVITES FOR THE BRIDGE DEMOLITION AND CONSTRUCTION

NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

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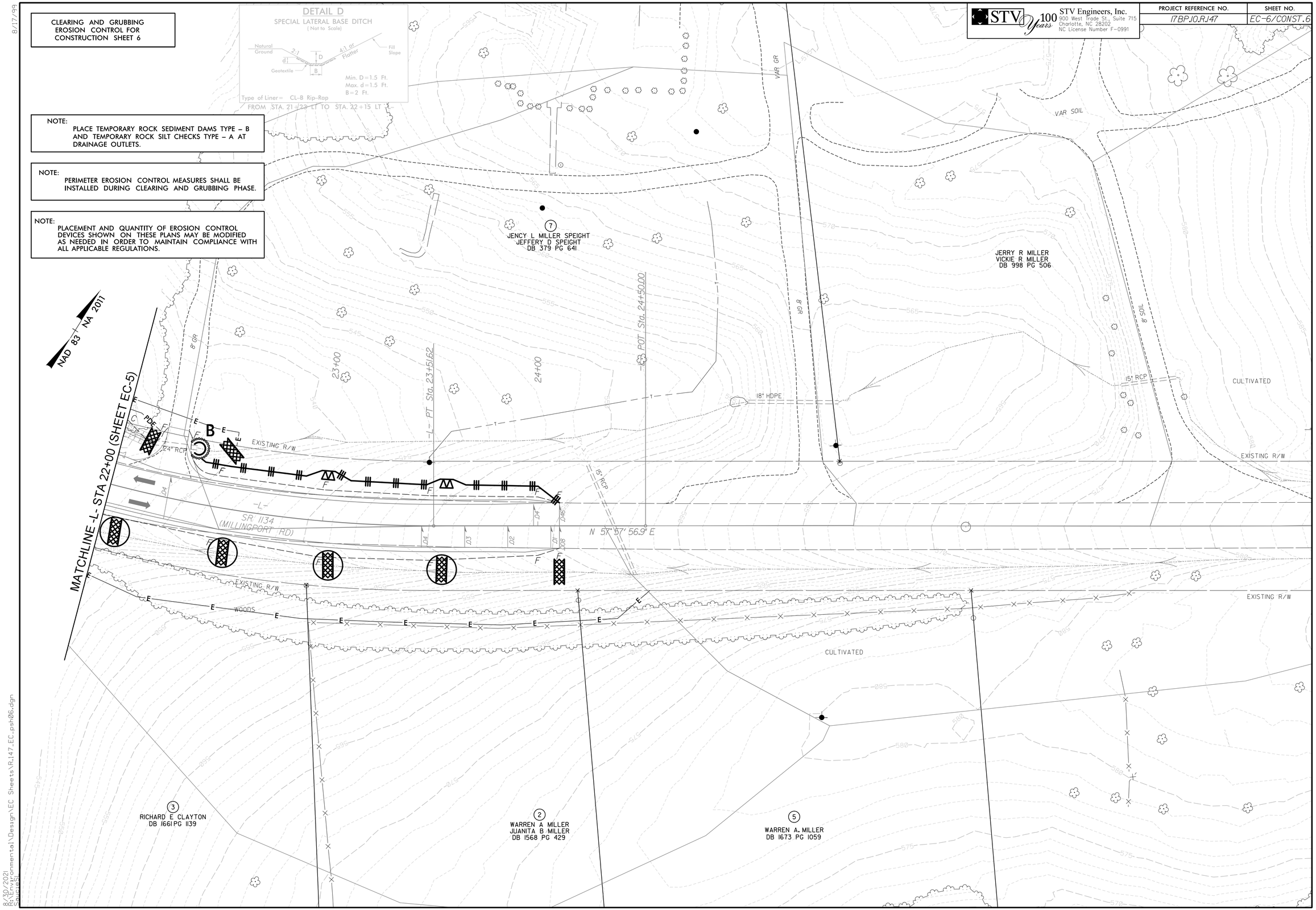
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.



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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-6/CONST.6

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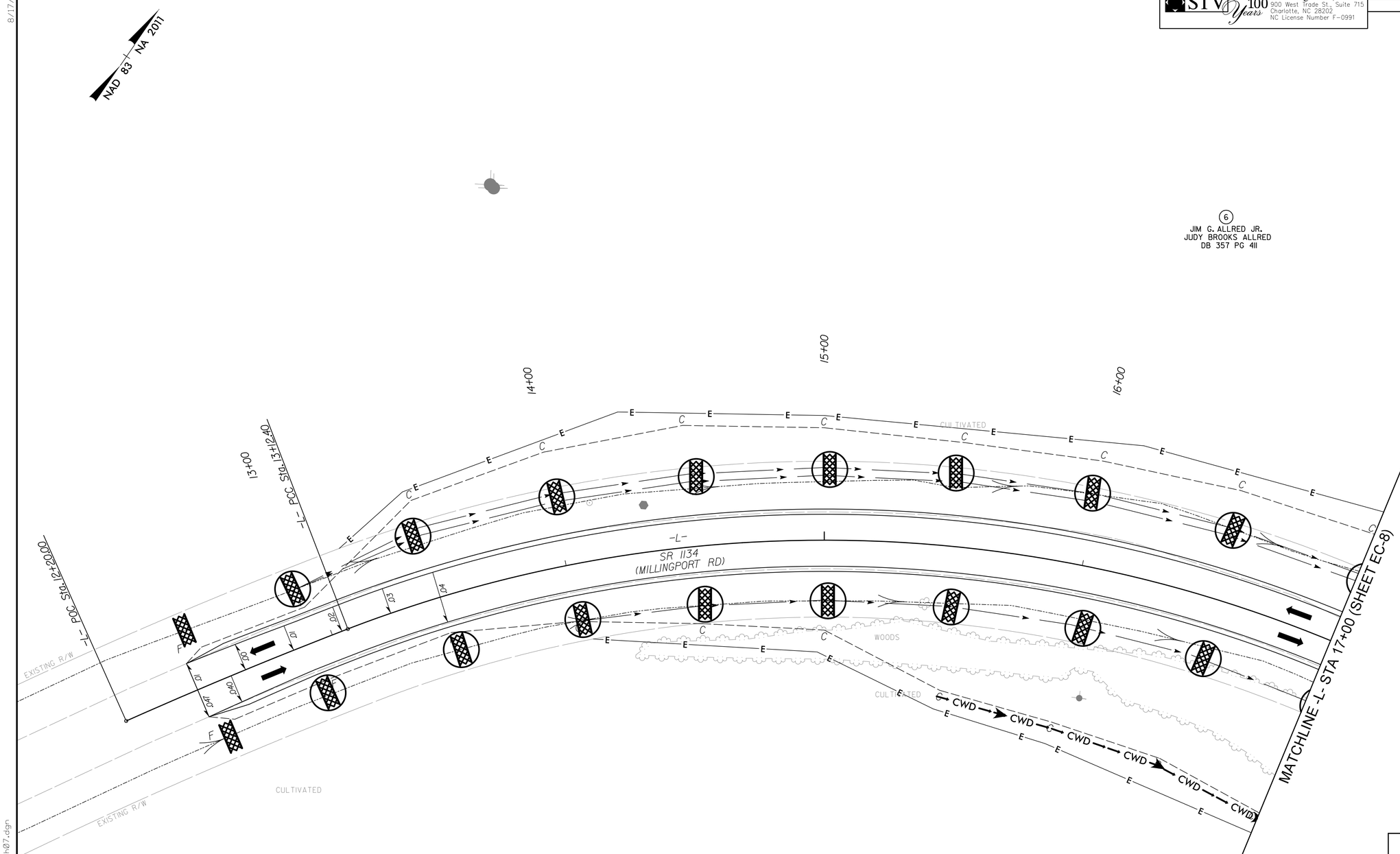
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-7/CONST.4



CLEAN WATER DIVERSION

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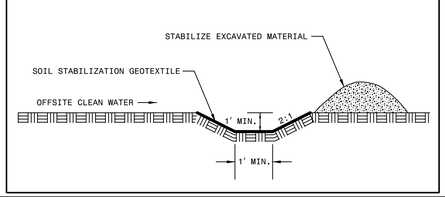

FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

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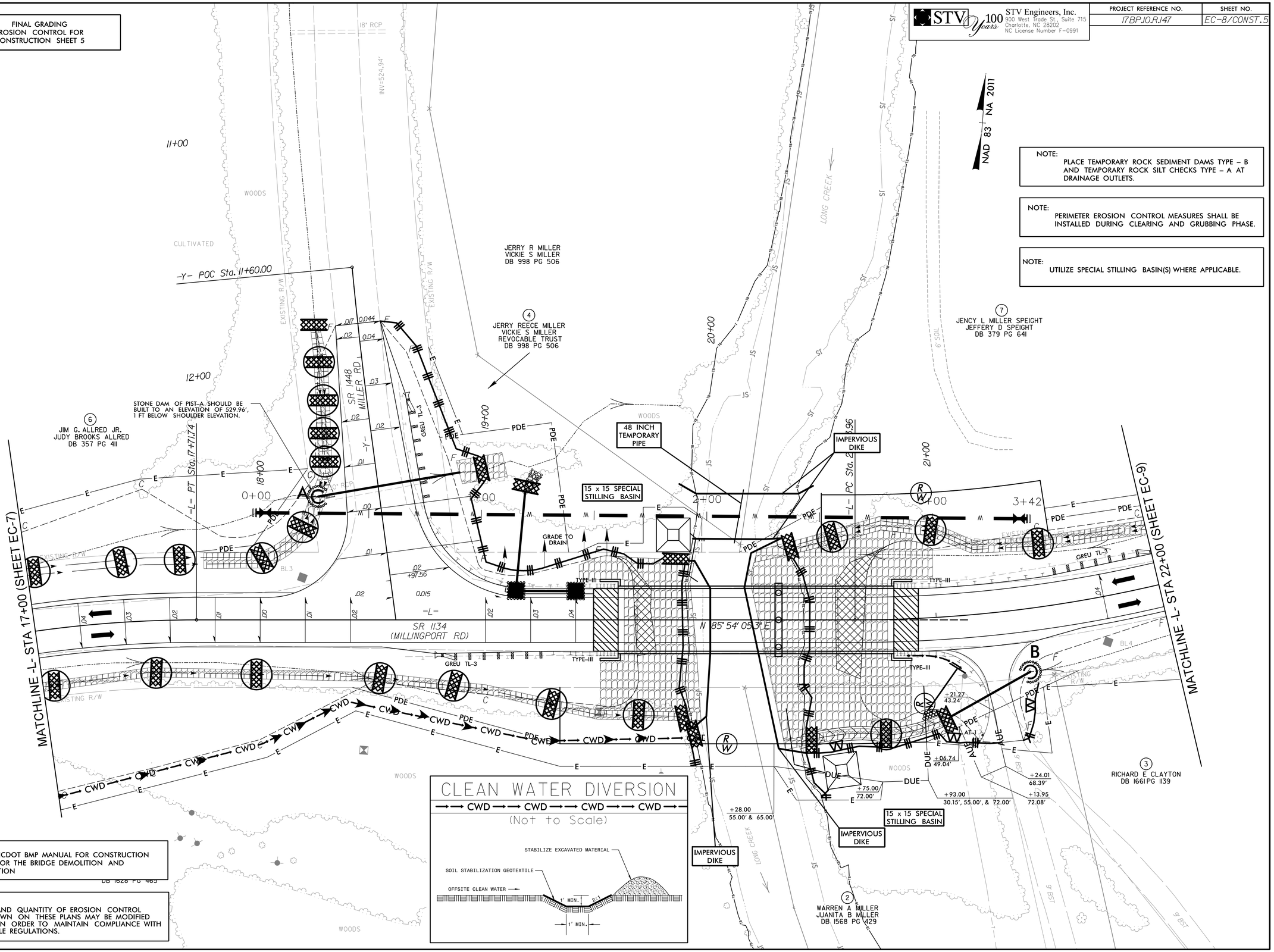
FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-8/CONST.5



NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE.

NOTE:
FOLLOW NCDOT BMP MANUAL FOR CONSTRUCTION ACTIVITES FOR THE BRIDGE DEMOLITION AND CONSTRUCTION

NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

CLEAN WATER DIVERSION

CWD

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FINAL GRADING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

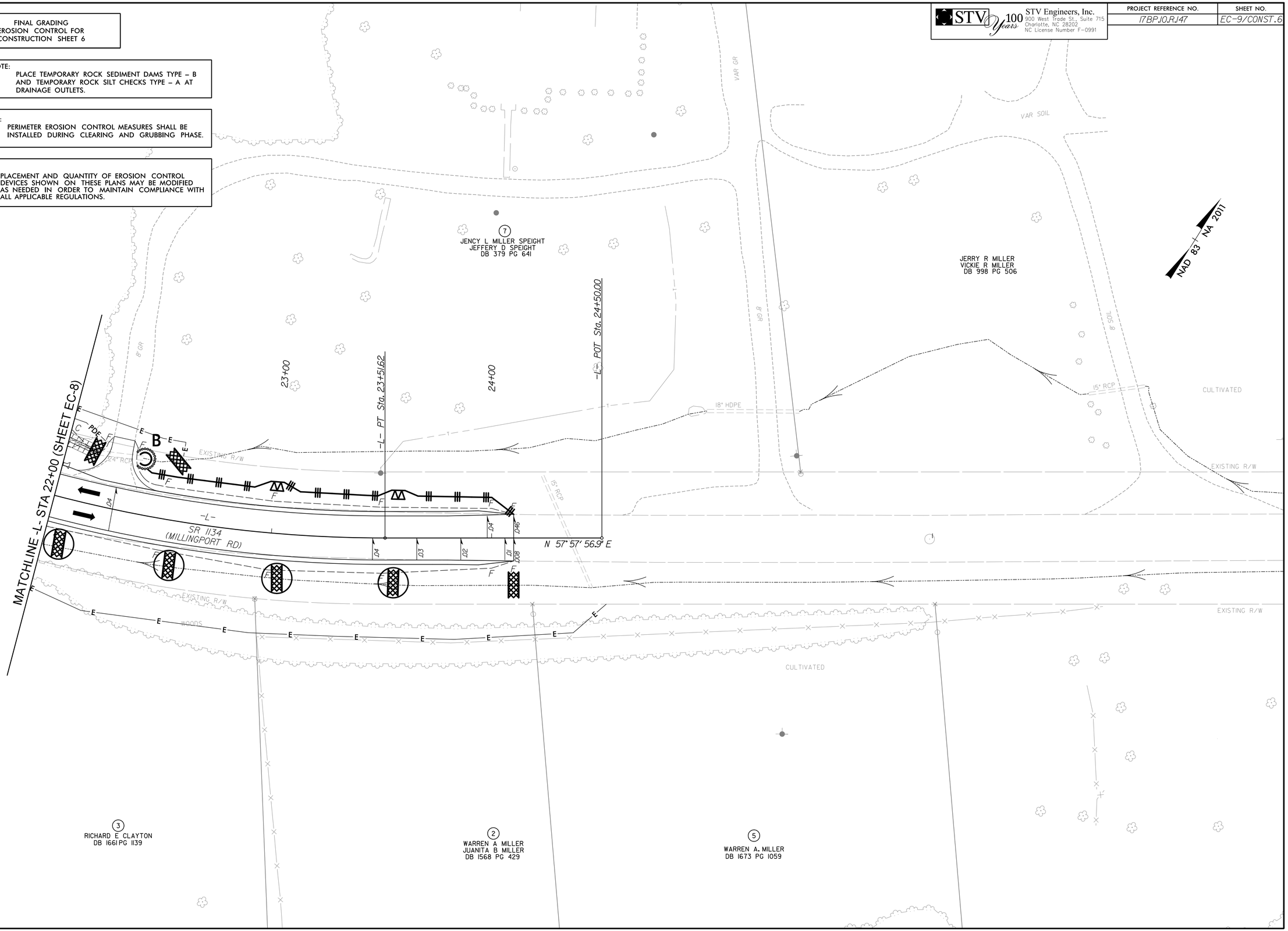
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
PLACEMENT AND QUANTITY OF EROSION CONTROL DEVICES SHOWN ON THESE PLANS MAY BE MODIFIED AS NEEDED IN ORDER TO MAINTAIN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	EC-9/CONST.6



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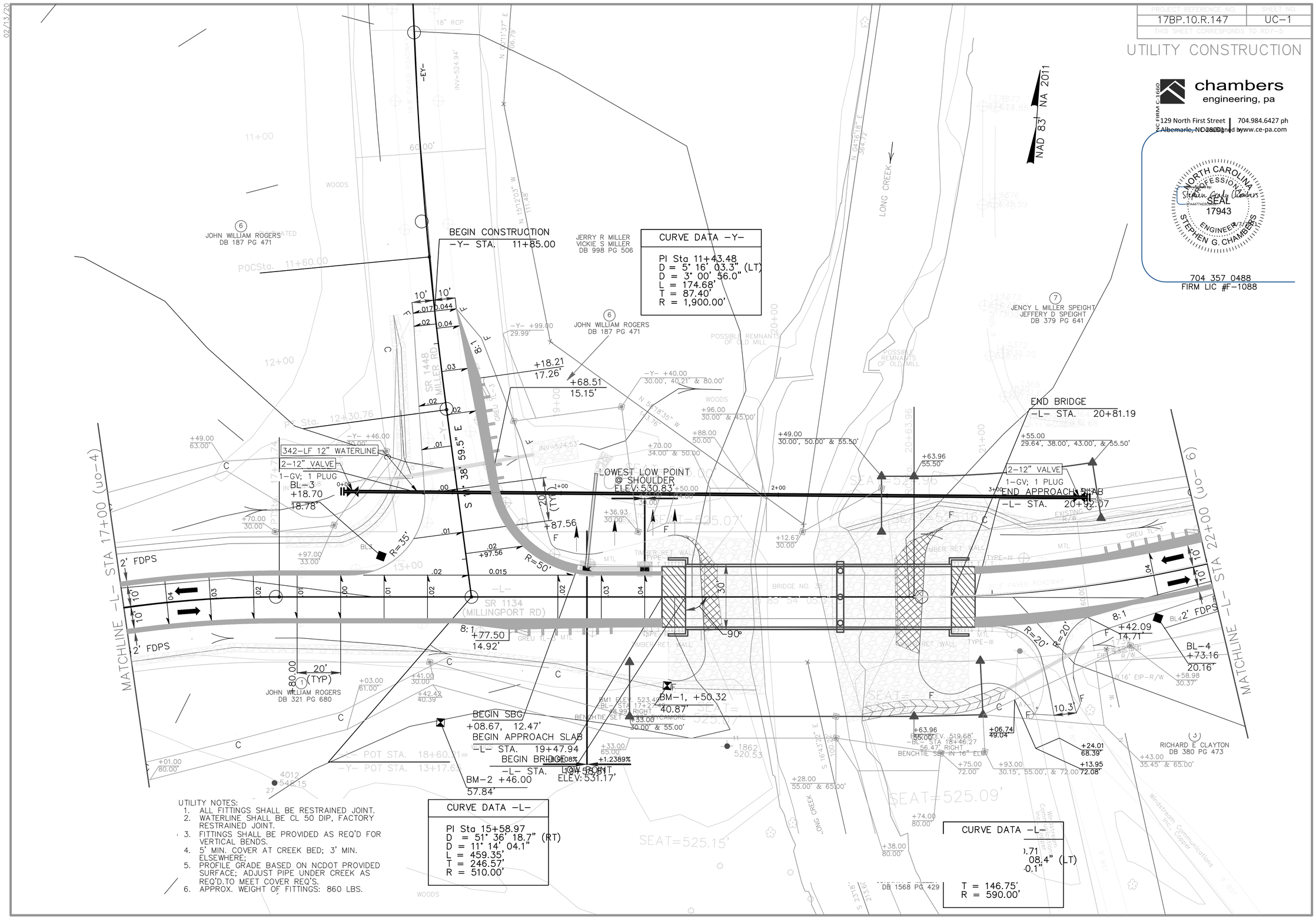
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	UC-1
THIS SHEET CORRESPONDS TO RDY-5	

UTILITY CONSTRUCTION

chambers engineering, pa
NC FIRM C-1660
129 North First Street | 704.984.6427 ph
Albemarle, NC 28001 | www.ce-pa.com

NORTH CAROLINA PROFESSIONAL SEAL 17943 ENGINEER STEPHEN G. CHAMBERS
Stephen Grady Chambers
07A4477AE8... 2/13/2020

704 357 0488
FIRM LIC #F-1088



UTILITY NOTES:
1. ALL FITTINGS SHALL BE RESTRAINED JOINT.
2. WATERLINE SHALL BE CL 50 DIP, FACTORY RESTRAINED JOINT.
3. FITTINGS SHALL BE PROVIDED AS REQ'D FOR VERTICAL BENDS.
4. 5' MIN. COVER AT CREEK BED; 3' MIN. ELSEWHERE;
5. PROFILE GRADE BASED ON NCDOT PROVIDED SURFACE; ADJUST PIPE UNDER CREEK AS REQ'D.TO MEET COVER REQ'S.
6. APPROX. WEIGHT OF FITTINGS: 860 LBS.

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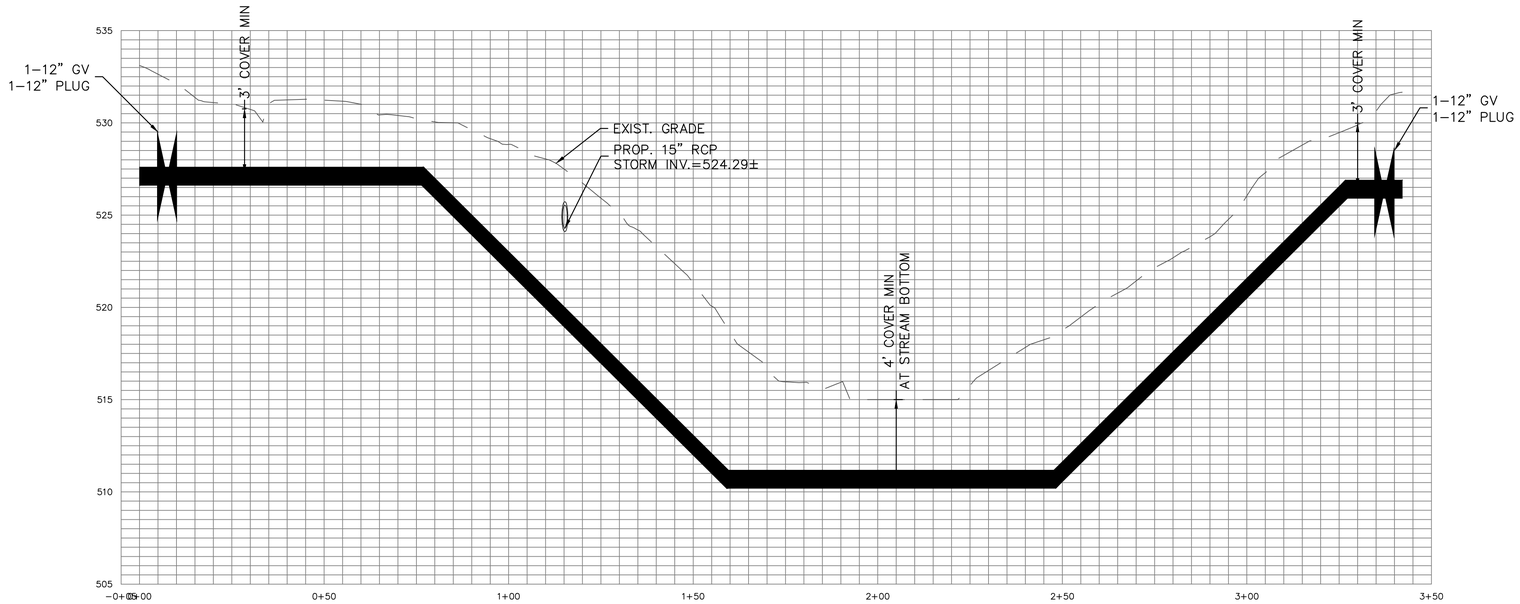
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	UC-2

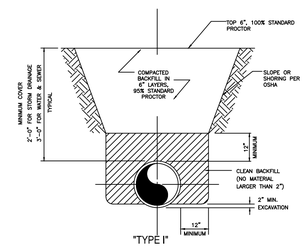
UTILITY CONSTRUCTION

chambers
engineering, pa
NC FIRM C-1660
129 North First Street | 704.984.6427 ph
Albemarle, NC 28001 | www.ce-pa.com

DocuSigned by:

NORTH CAROLINA PROFESSIONAL SEAL 17943 ENGINEER STEPHEN G. CHAMBERS
Stephen Grady Chambers
9/7/2022



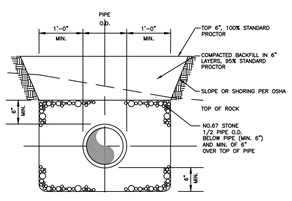


"TYPE I"

NOTES:

1. FOR USE WITH ALL DIP, RCP AND VCP UNLESS CONDITIONS OF POOR OR SATURATED SOIL OR ROCK ARE PRESENT.
2. EXCAVATE AT PIPE BELLS SO BELL DOES NOT SUPPORT PIPE.
3. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. SUPPORT OR SHORE WHEN TRENCH IS MORE THAN 5' DEEP AND 8' LONG. BEGIN SIDE SLOPE, IF USED, APPROX. 18" ABOVE TOP OF PIPE.
4. BACKFILL OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE IN 6" LAYERS AND THOROUGHLY COMPACTED INTO PLACE.
5. UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED.
6. ALL MATERIAL SHALL HAVE AN IN PLACE DENSITY OF 100% TO A DEPTH 6" BELOW THE FINISHED GRADE OF BACKFILL MATERIAL, AND 95% AT GREATER THAN 6" BELOW GRADE.

"TYPE I" BEDDING DETAIL



"TYPE III"

NOTES:

1. FOR USE WITH ALL PVC GRAVITY SEWER AND SEWER FORCE MAIN PIPE AND WHEN CONDITIONS OF POOR OR SATURATED SOIL OR ROCK ARE PRESENT, REGARDLESS OF PIPE MATERIAL.
2. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS. SUPPORT OR SHORE WHEN TRENCH IS MORE THAN 5' DEEP AND 8' LONG. BEGIN SIDE SLOPE, IF USED, APPROX. 18" ABOVE TOP OF PIPE.
3. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE IN 6" LAYERS AND THOROUGHLY COMPACTED INTO PLACE.
4. UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED.
5. ALL MATERIAL SHALL HAVE AN IN PLACE DENSITY OF 100% TO A DEPTH 6" BELOW THE FINISHED GRADE OF THE BACKFILL MATERIAL, AND 95% AT GREATER THAN 6" BELOW GRADE.

"TYPE III" BEDDING DETAIL

TO BE USED FOR CREEK BOTTOM CROSSING AND UP EMBANKMENT, COVER WITH +/–12" NATIVE CREEK BOTTOM MATERIAL

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PROJECT WBS: 17BP.10.R.147

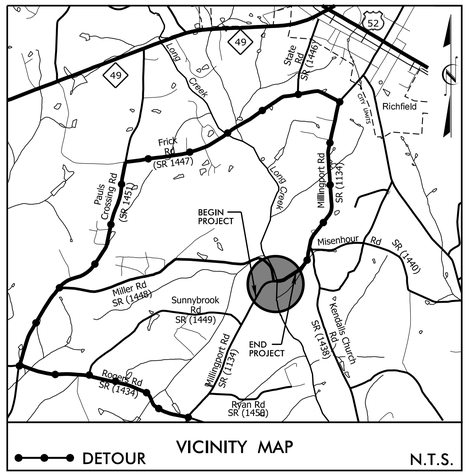
FINAL PLANS

T.I.P. NO.	SHEET NO.
17BP.10.R.147	UO–1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

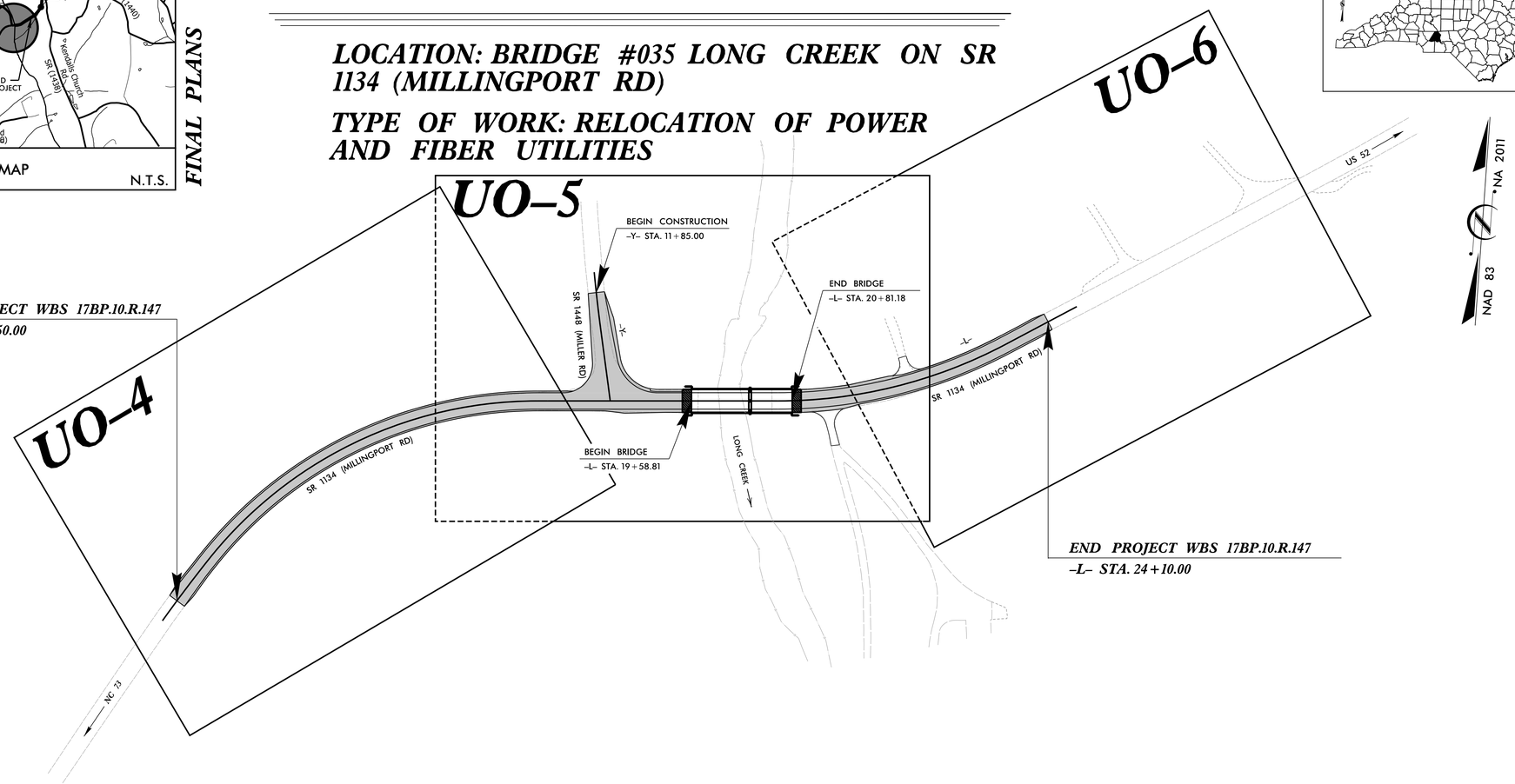
UTILITIES BY OTHERS PLANS
STANLY COUNTY

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.



LOCATION: BRIDGE #035 LONG CREEK ON SR 1134 (MILLINGPORT RD)

TYPE OF WORK: RELOCATION OF POWER AND FIBER UTILITIES



GRAPHIC SCALES

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PLANS

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO–1	TITLE SHEET
UO–2	SYMBOLOGY SHEET
UO–3	OMITTED
UO–4 THRU UO–6	PLAN SHEETS

UTILITY OWNERS WITH CONFLICTS

(A) POWER – UNION POWER
(B) TELEPHONE – WINDSTREAM
(C) FIBER – CHARTER

PREPARED IN THE OFFICE OF:

V&M
Vaughn & Melton
Consulting Engineers
Charlotte, North Carolina
704 357 0488
FIRM LIC #F-1088

Nick Asaro, PLS — UTILITY PROJECT MANAGER
Shane Waidner — PROJECT UTILITY COORDINATOR

DIVISION OF HIGHWAYS
DIVISION 10
716 West Main Street
Albemarle, NC 28001

David Talbert — DIVISION CONTACT #1

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STANLY COUNTY	PROJECT REFERENCE NO.	SHEET NO.
	17BP.10.R.147	U0-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — RFH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP O/H POW LINES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown) — W
- Designated Utility Line (Type as Shown) — W

REV: 2/1/2012

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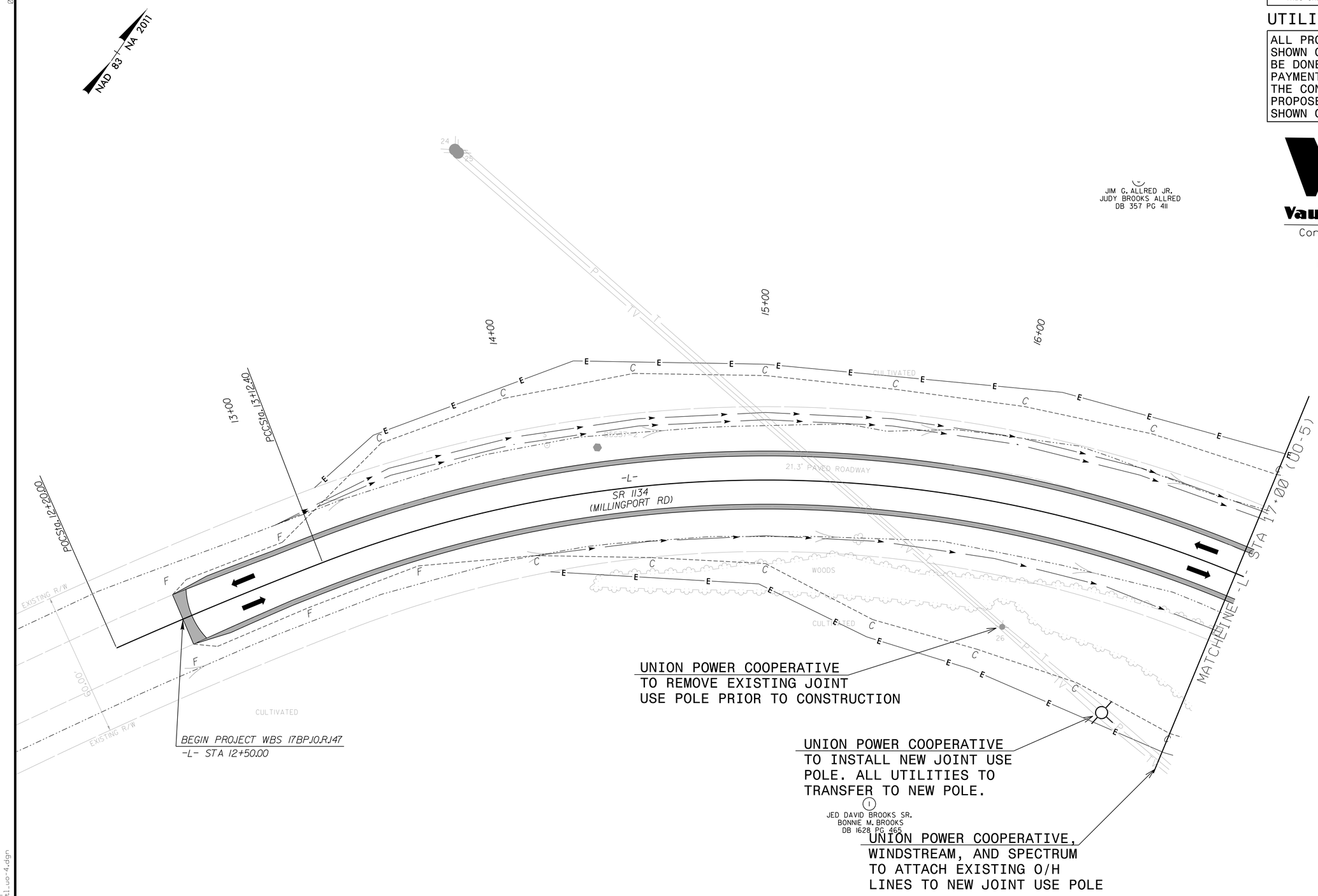
02/13/20

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	U0-4
THIS SHEET CORRESPONDS TO RDY-4	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

Vaughn & Melton
Consulting Engineers
Charlotte,
North Carolina
704 357 0488
FIRM LIC #F-1088



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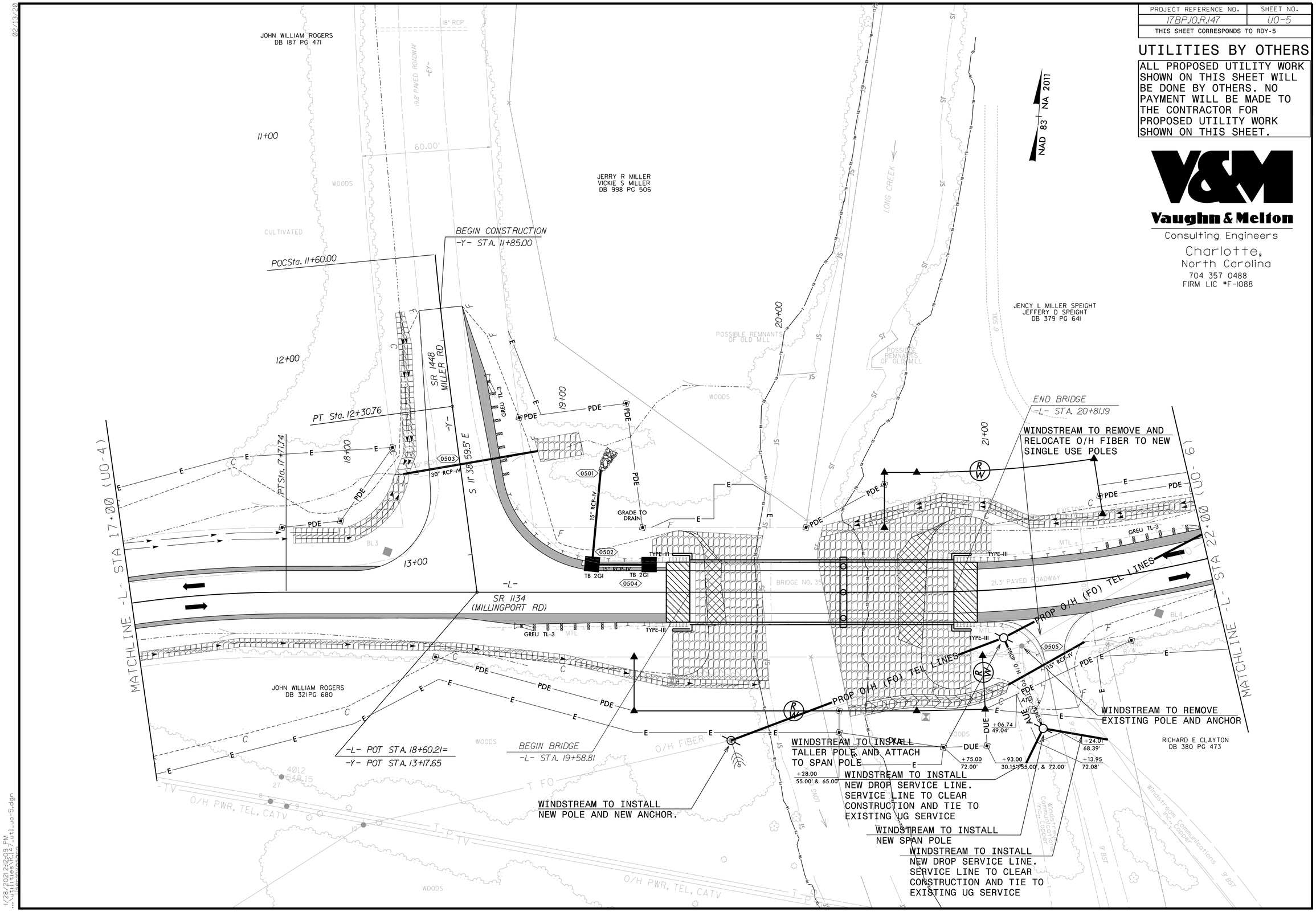
PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.147	UO-5
THIS SHEET CORRESPONDS TO RDY-5	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

Vaughn & Melton
Consulting Engineers
Charlotte, North Carolina
704 357 0488
FIRM LIC #F-1088



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THIS SHEET CORRESPONDS TO RDY-6	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

Vaughn & Melton
Consulting Engineers
Charlotte, North Carolina
704 357 0488
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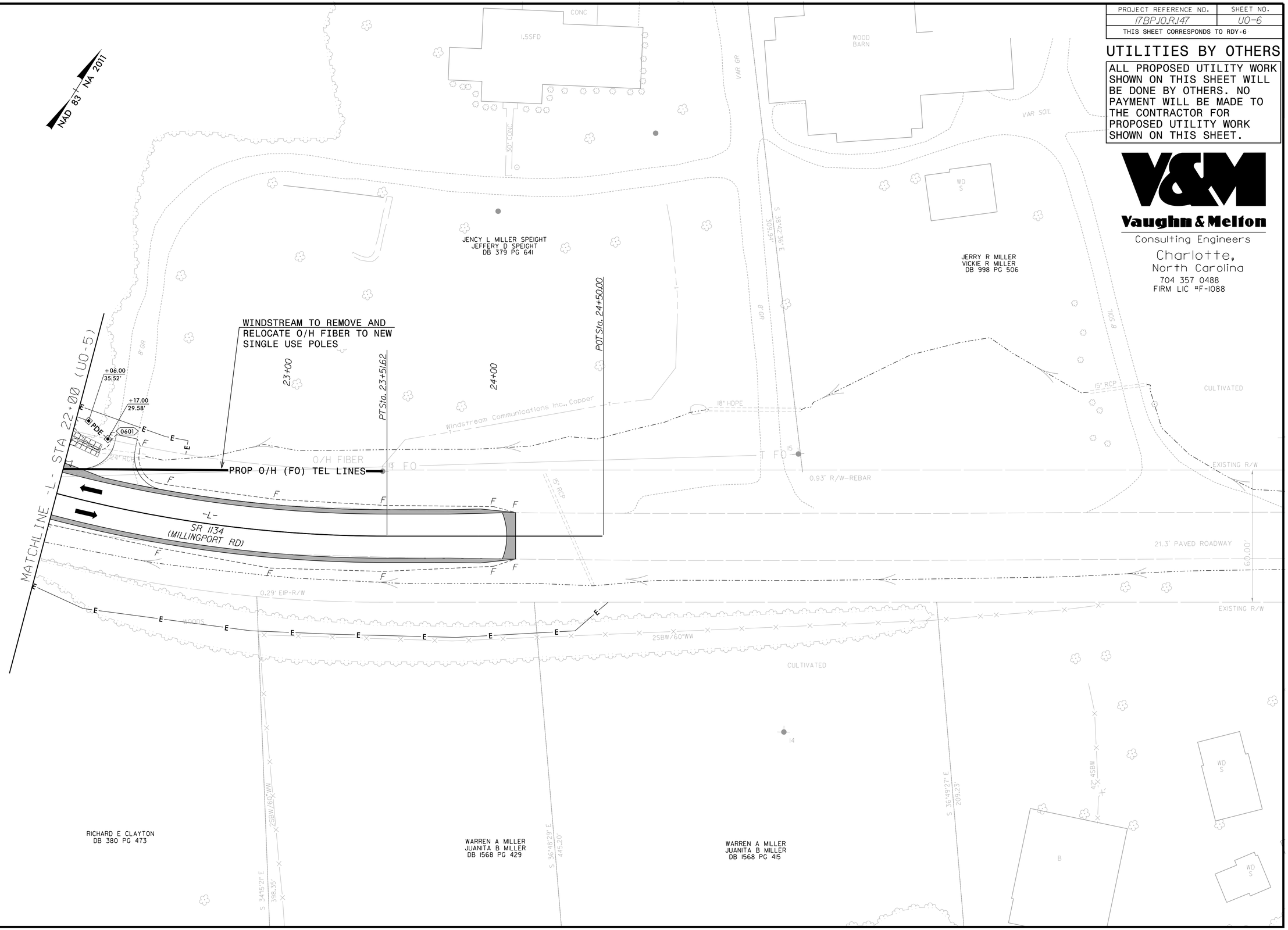

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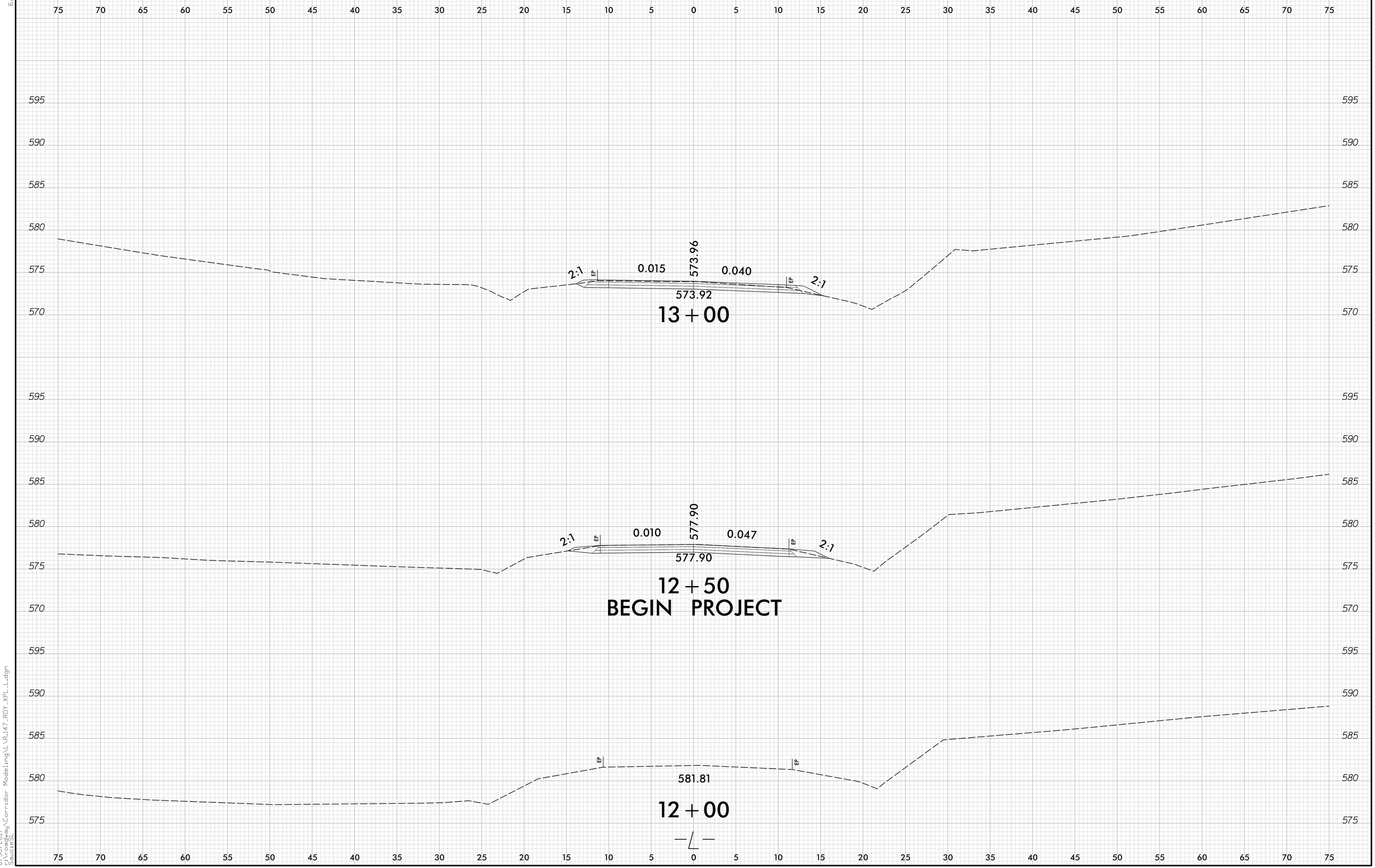

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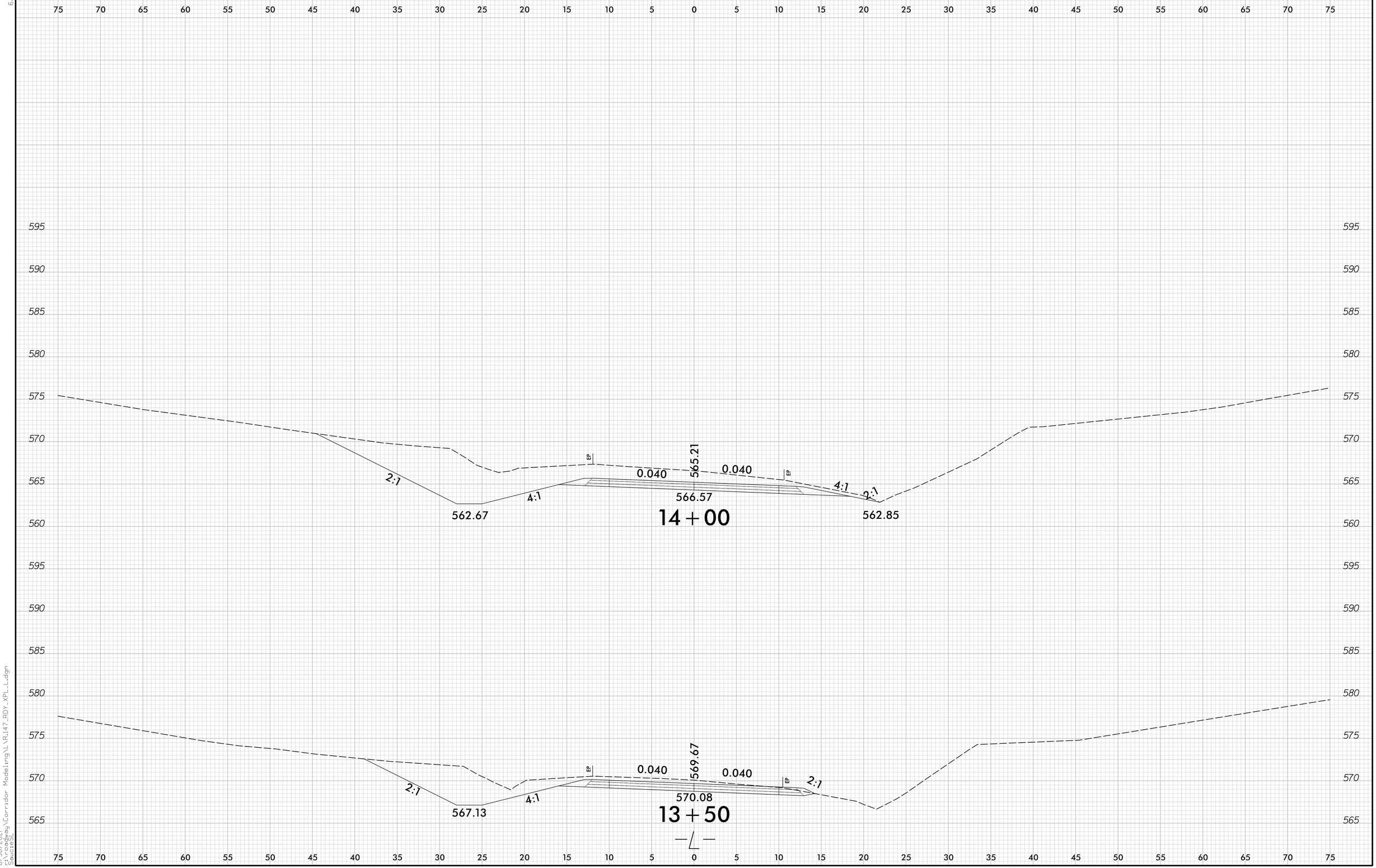

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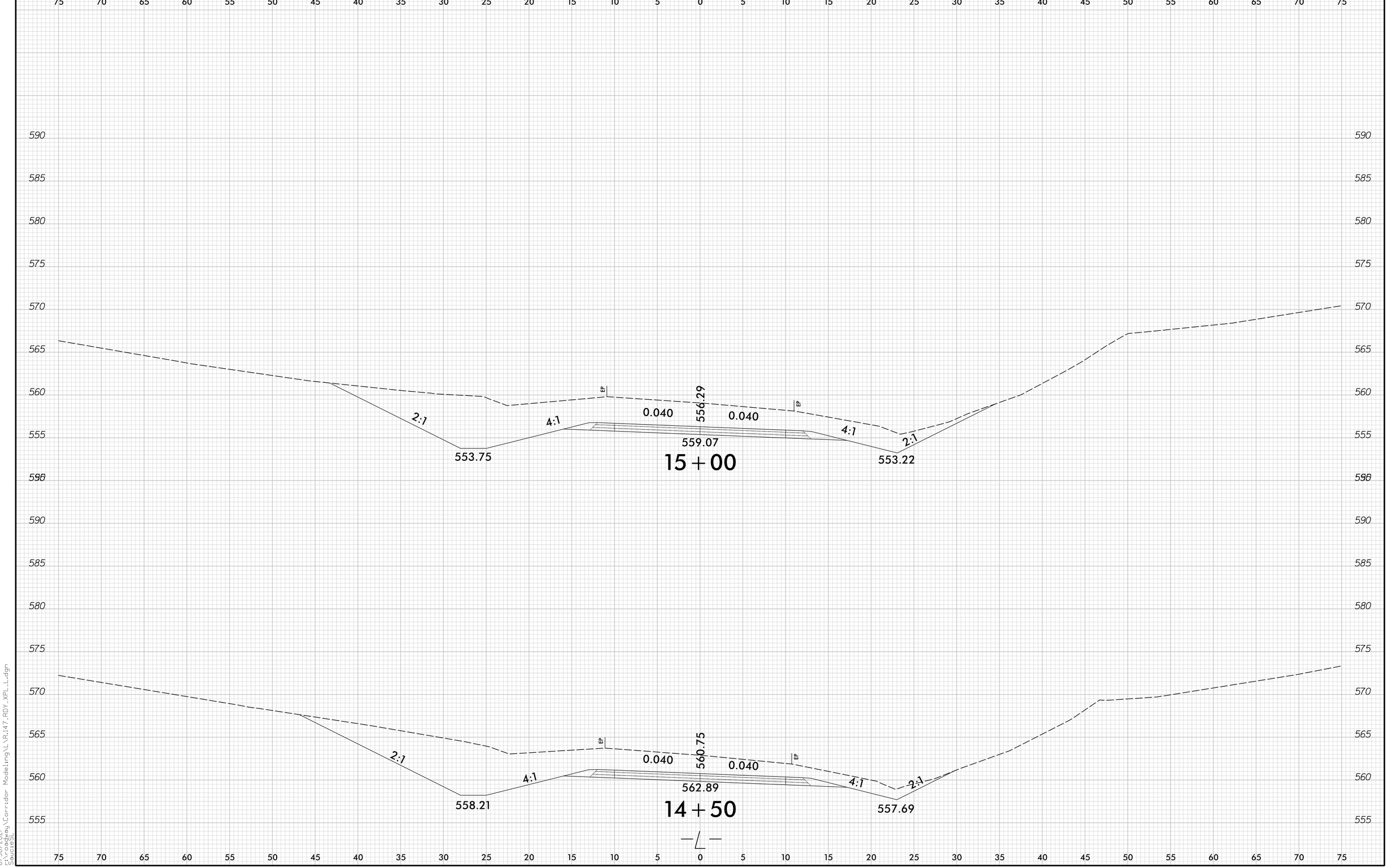

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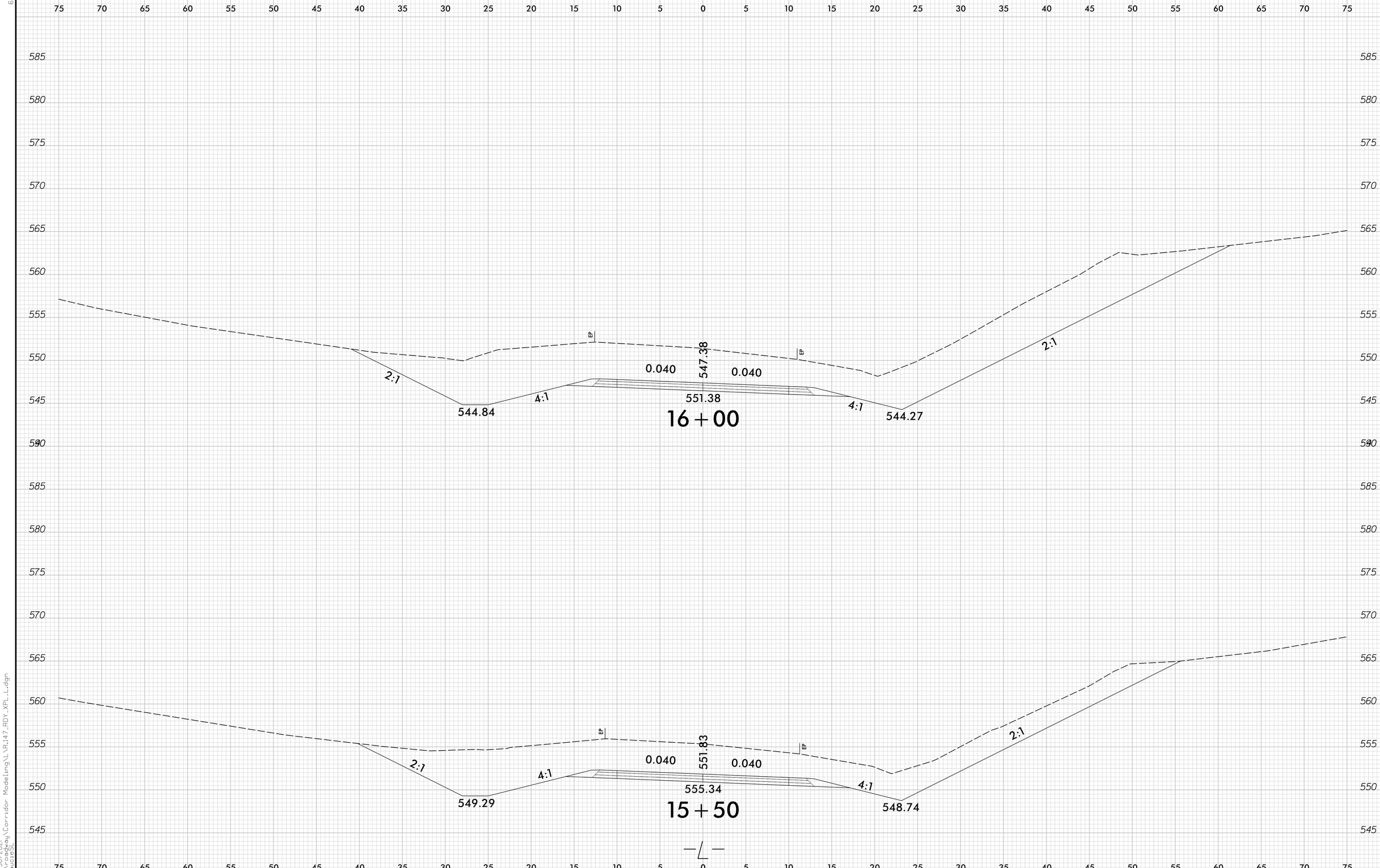

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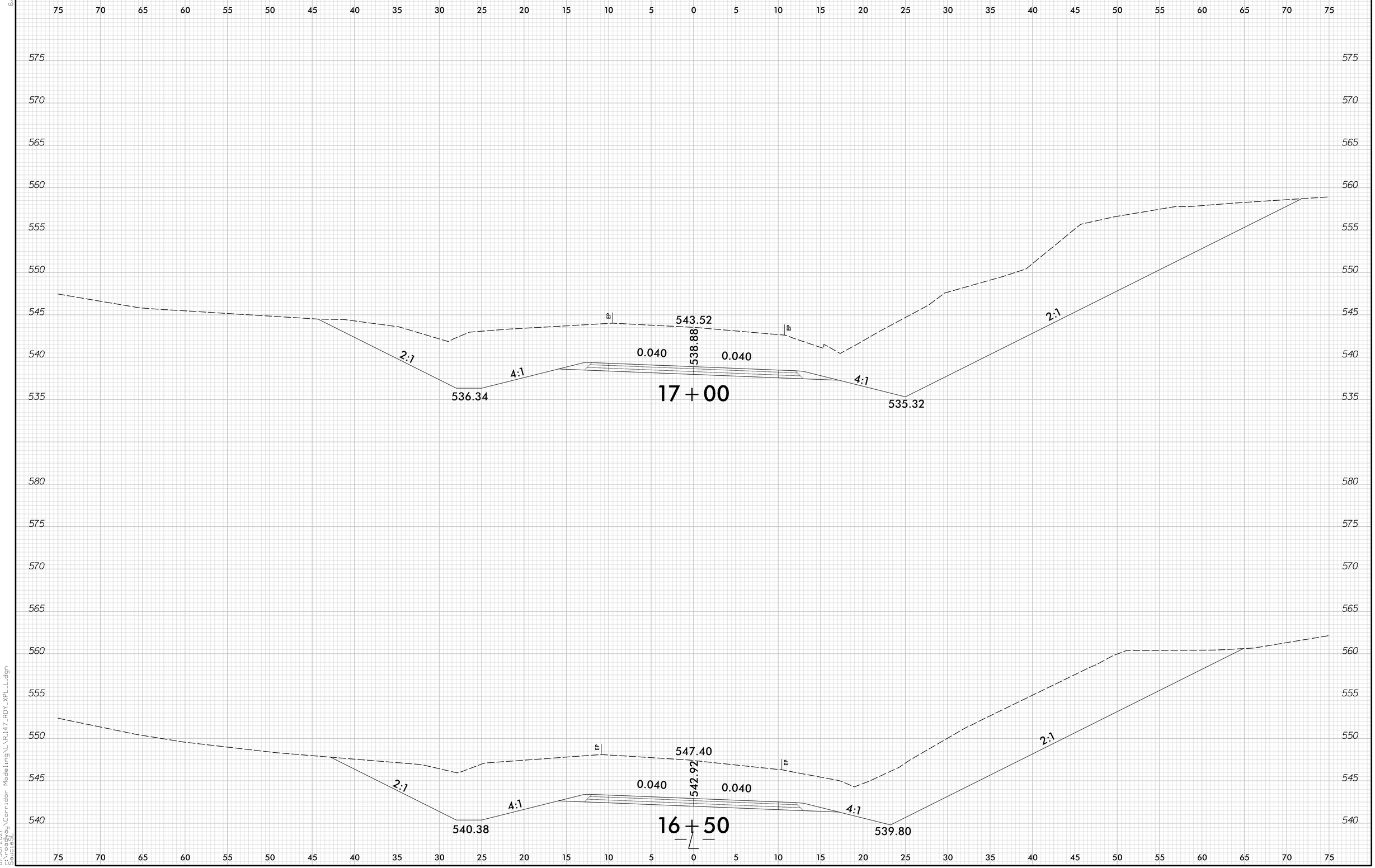

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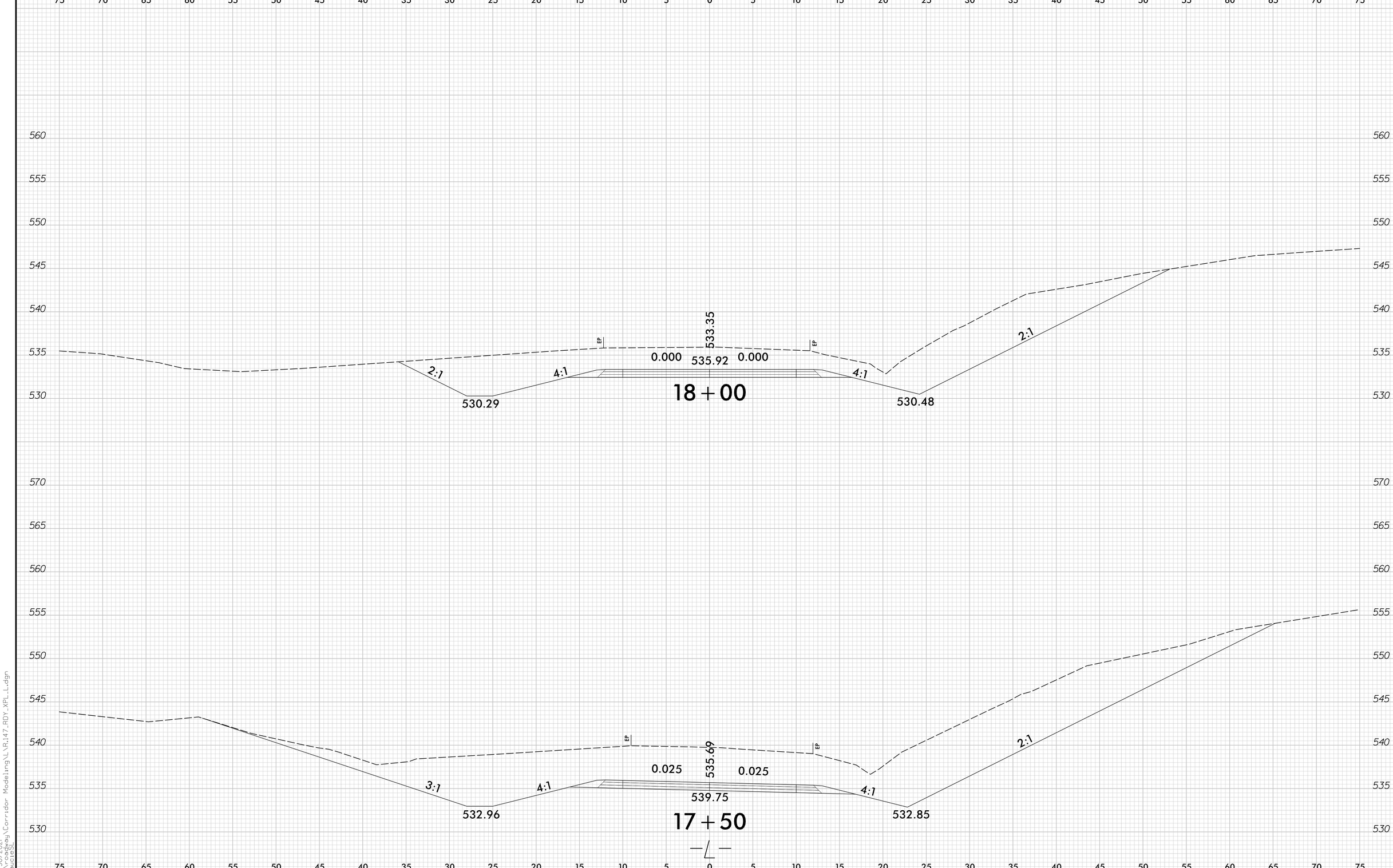

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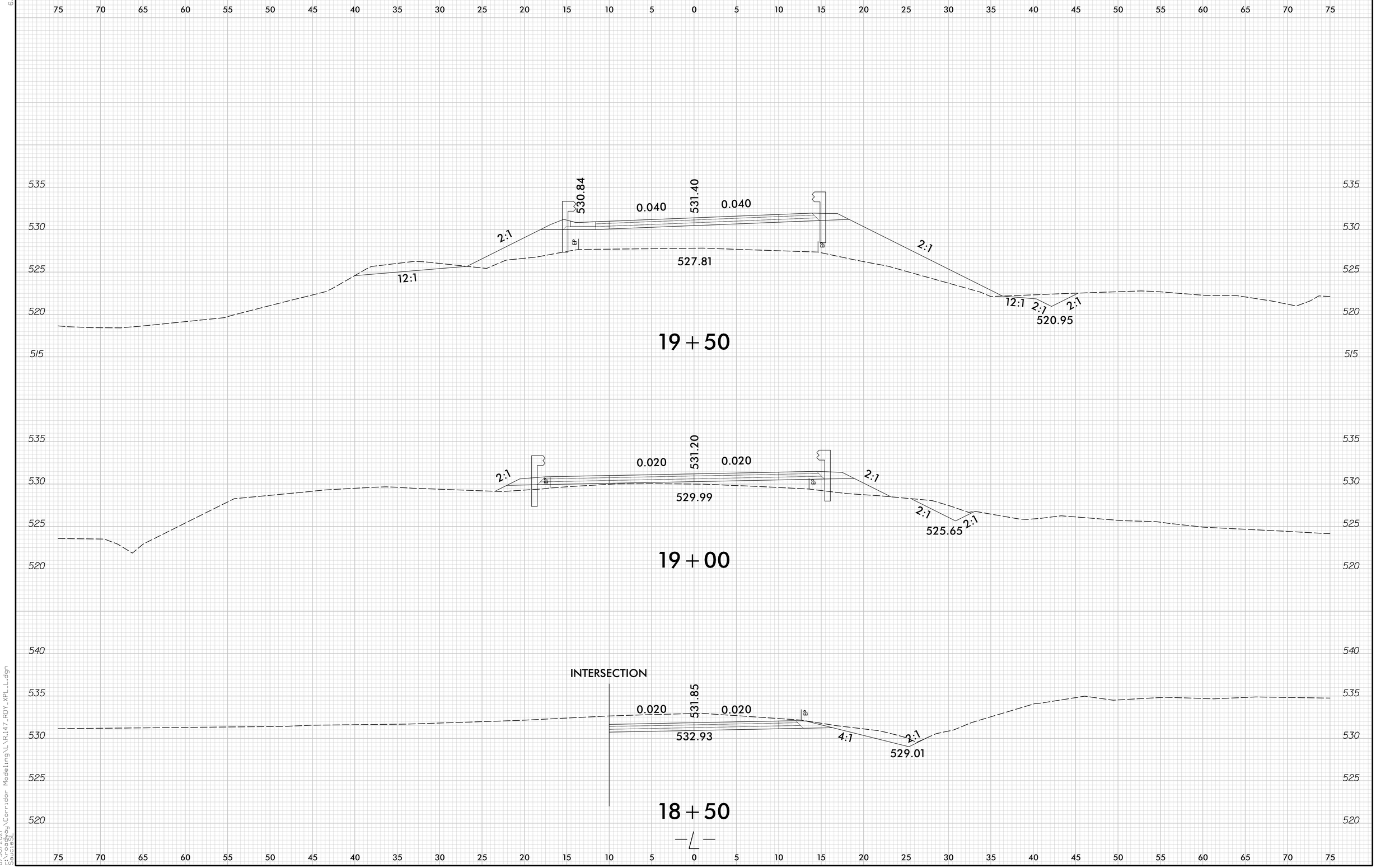

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Saurabh

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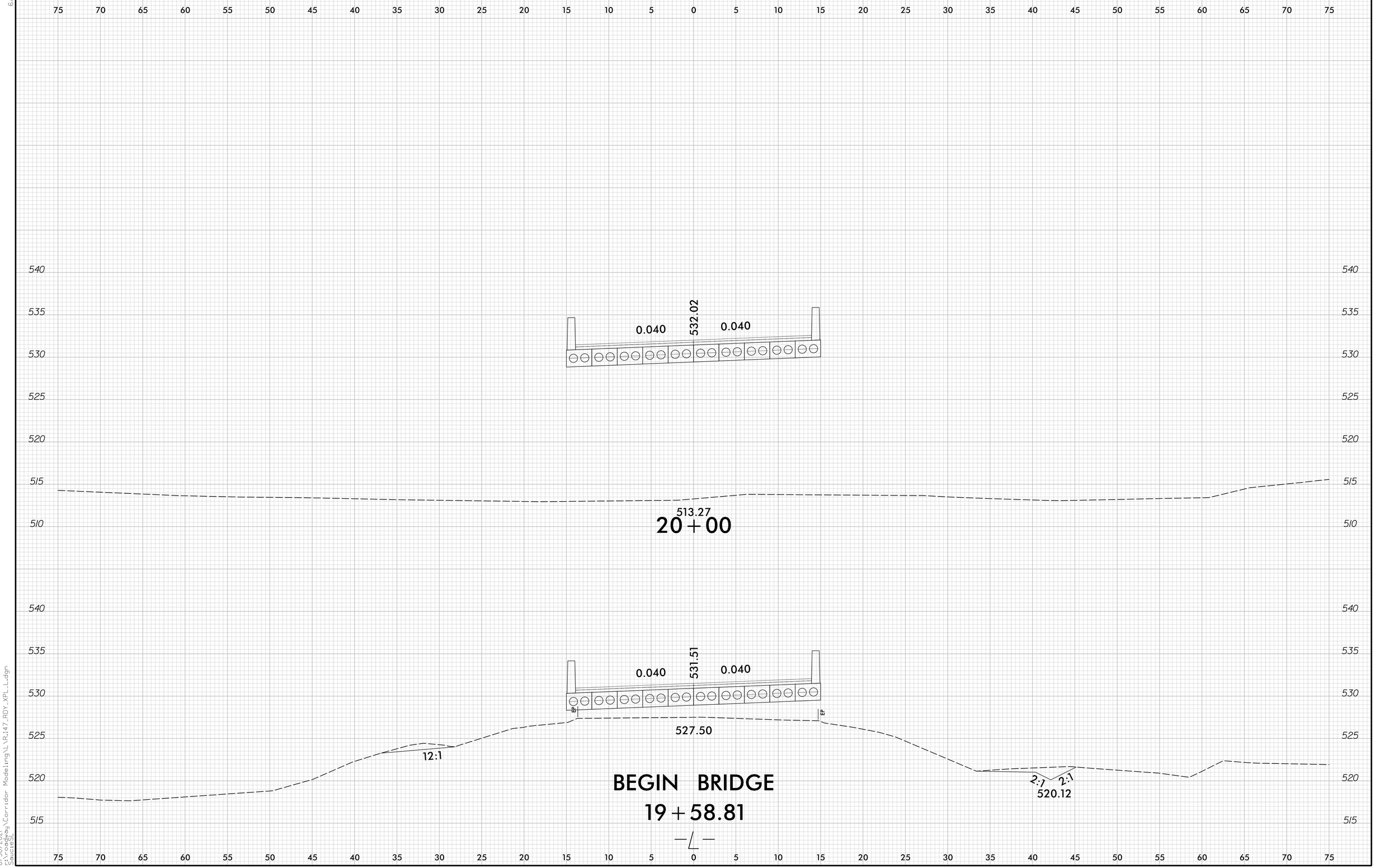

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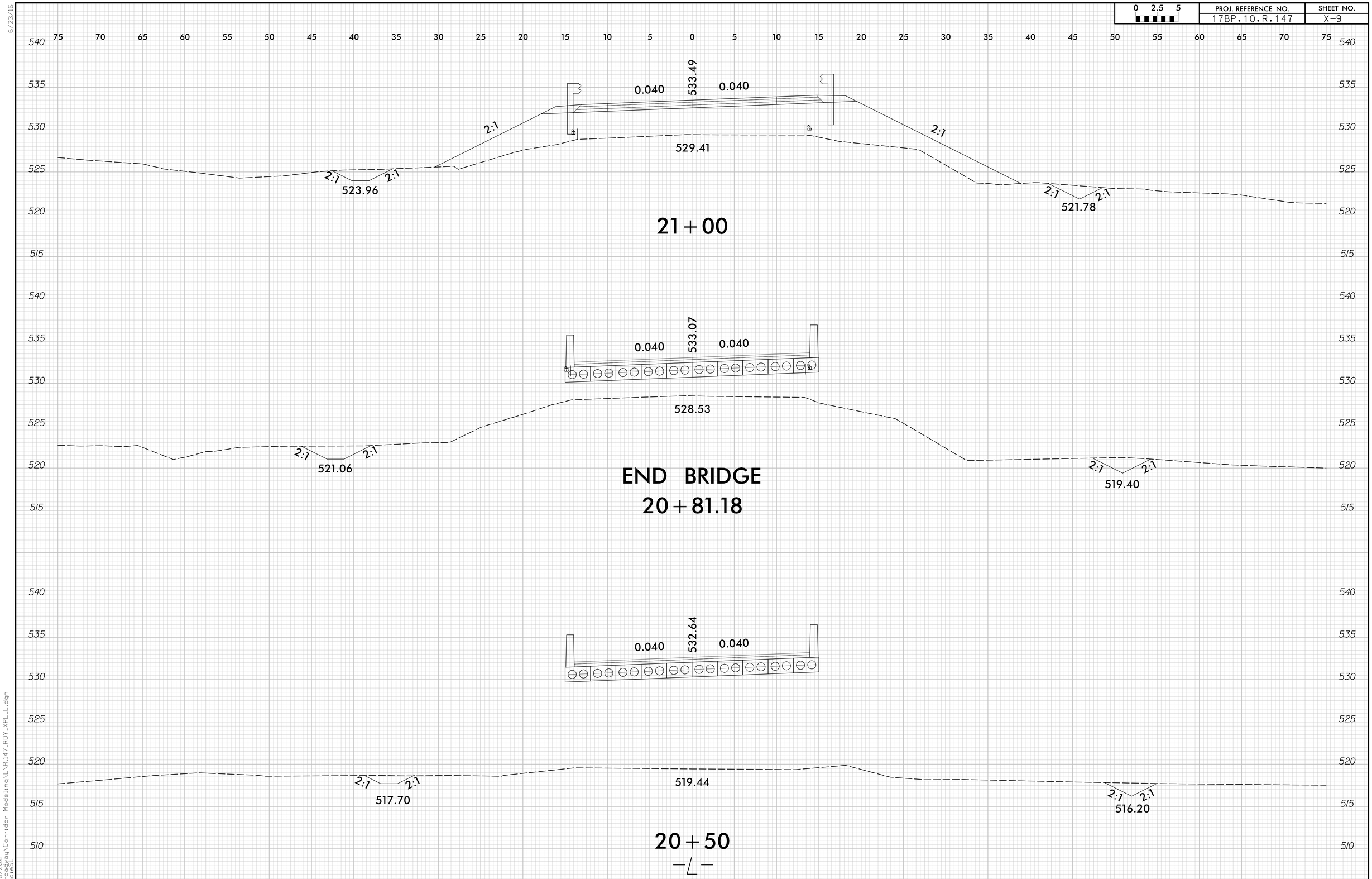

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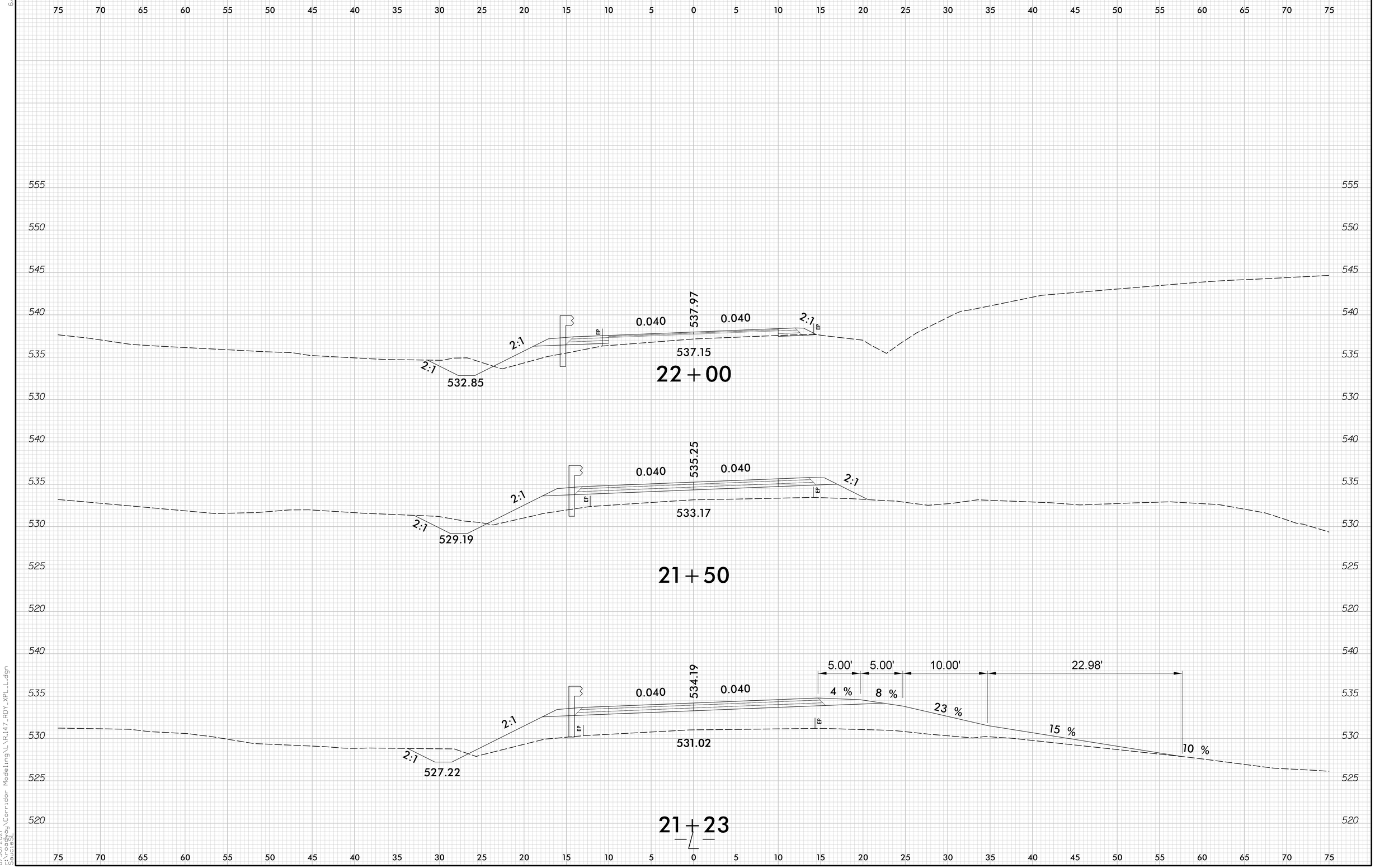

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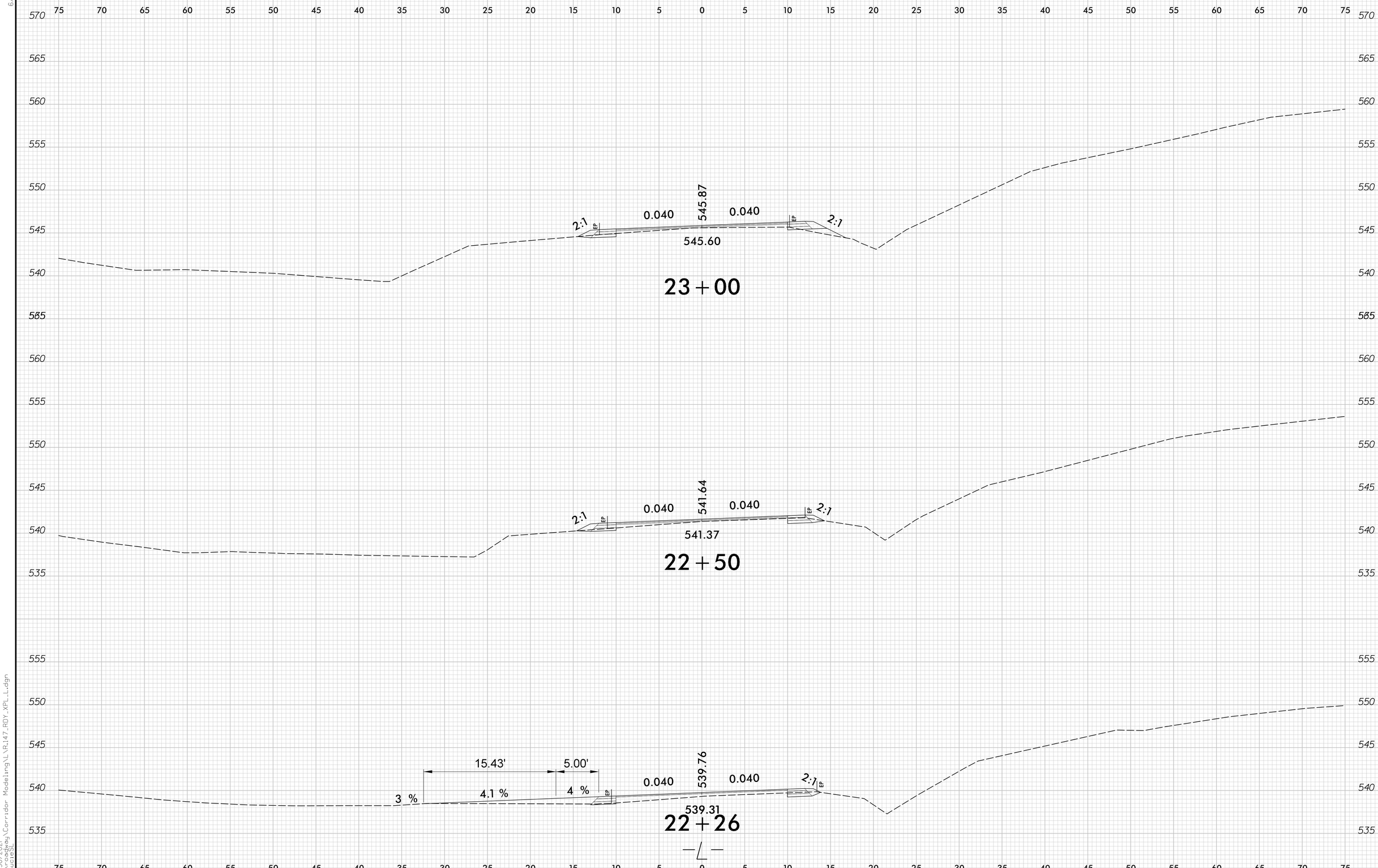

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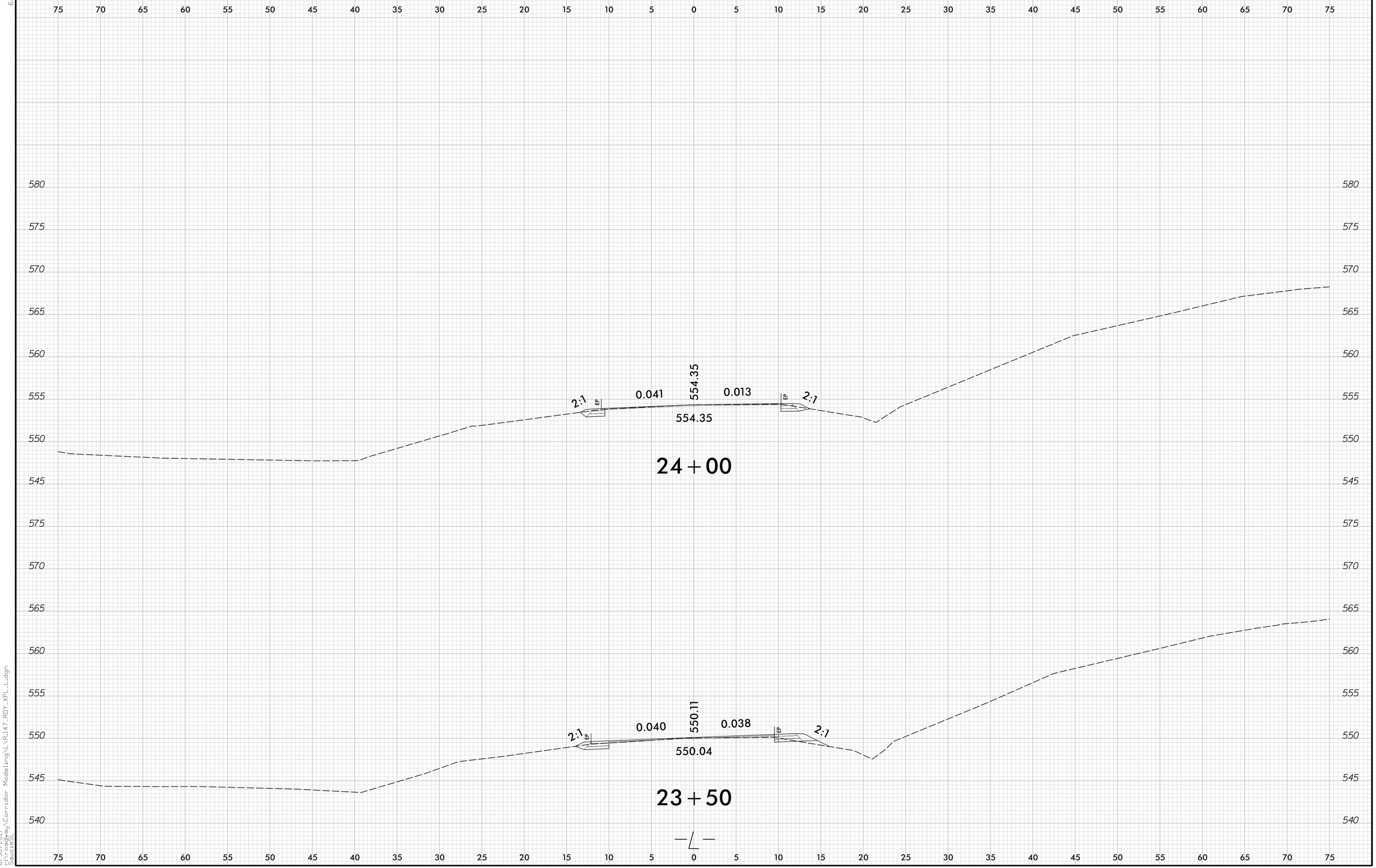

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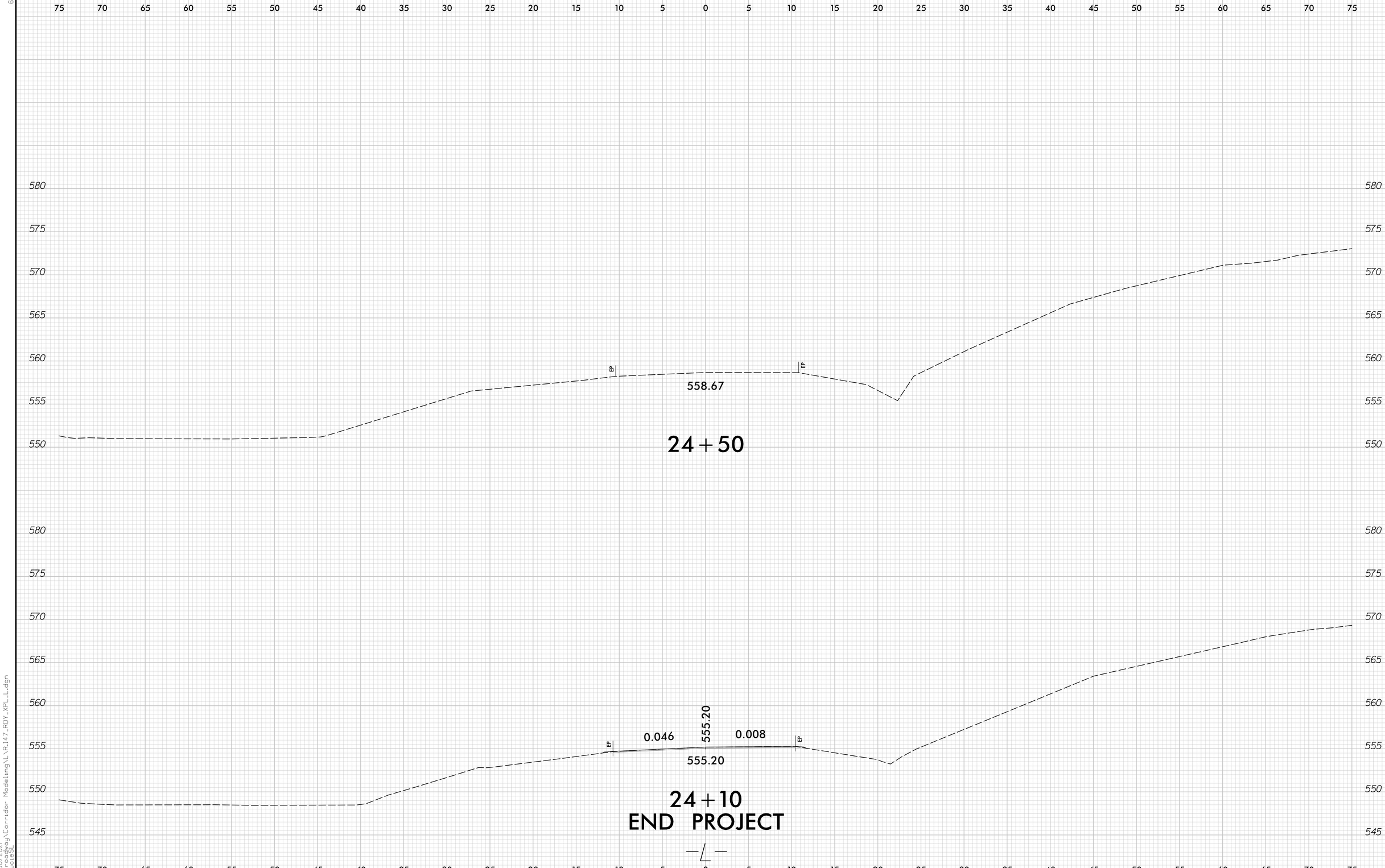

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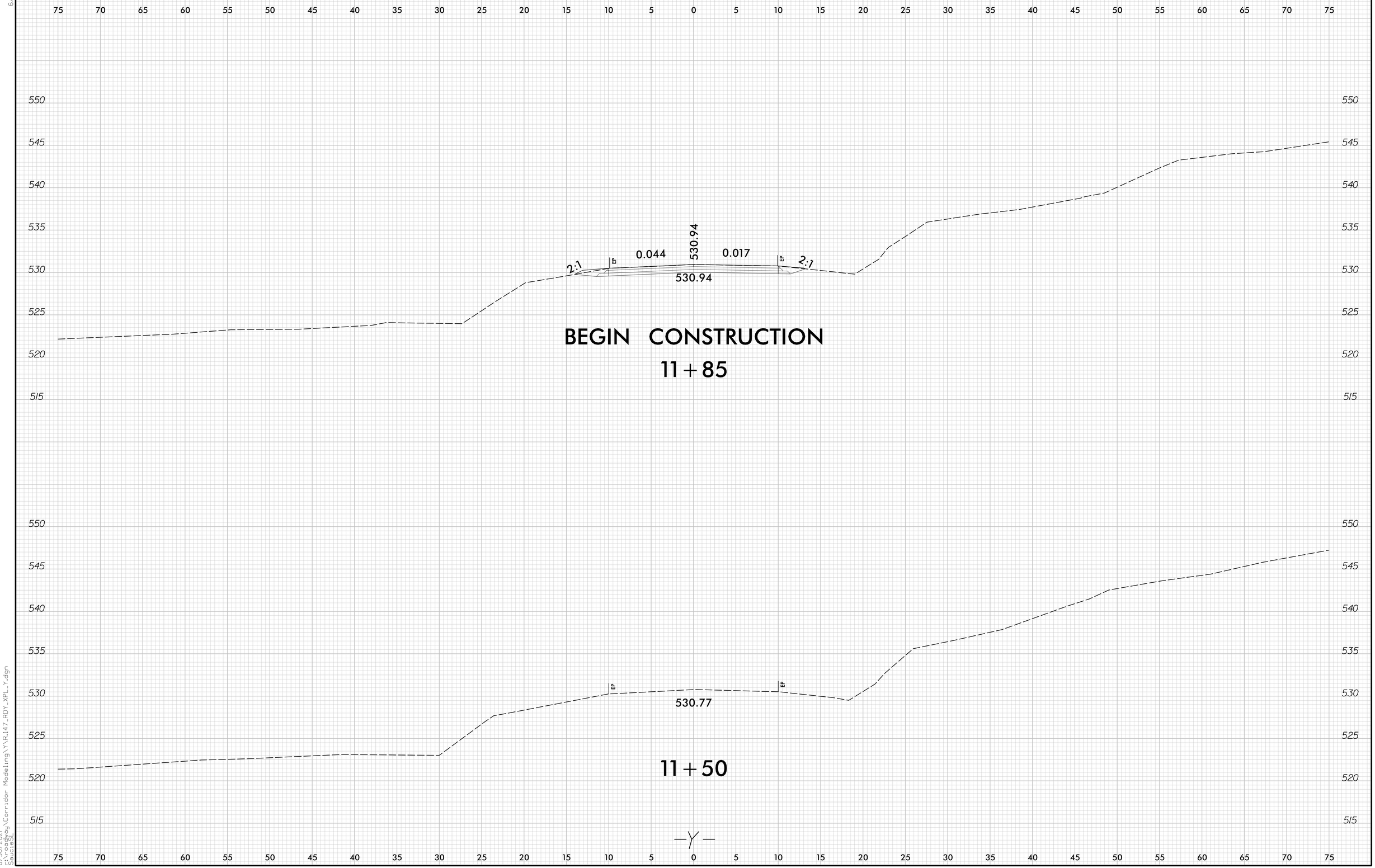

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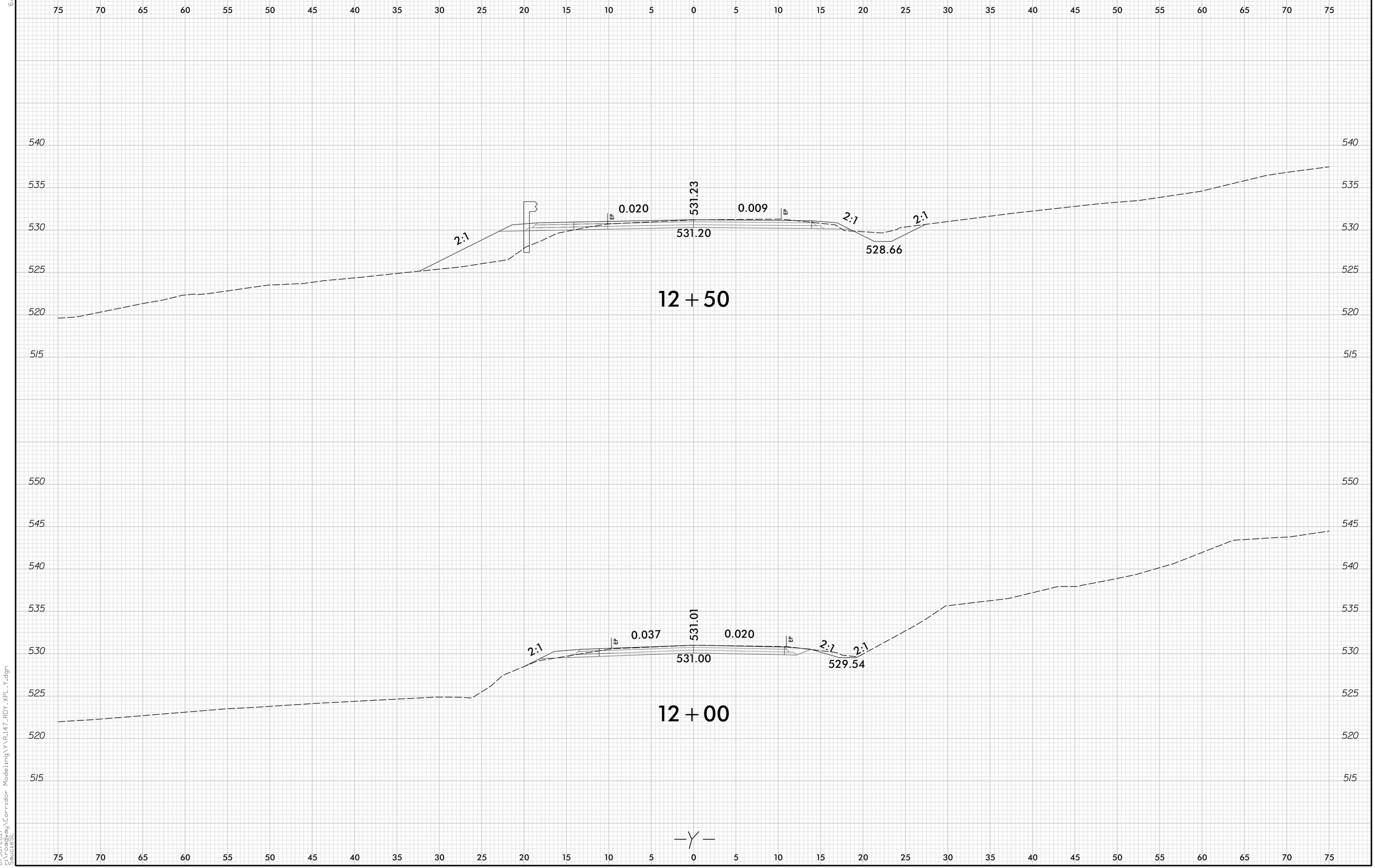

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