

# Delaware River

John T. Fassnacht

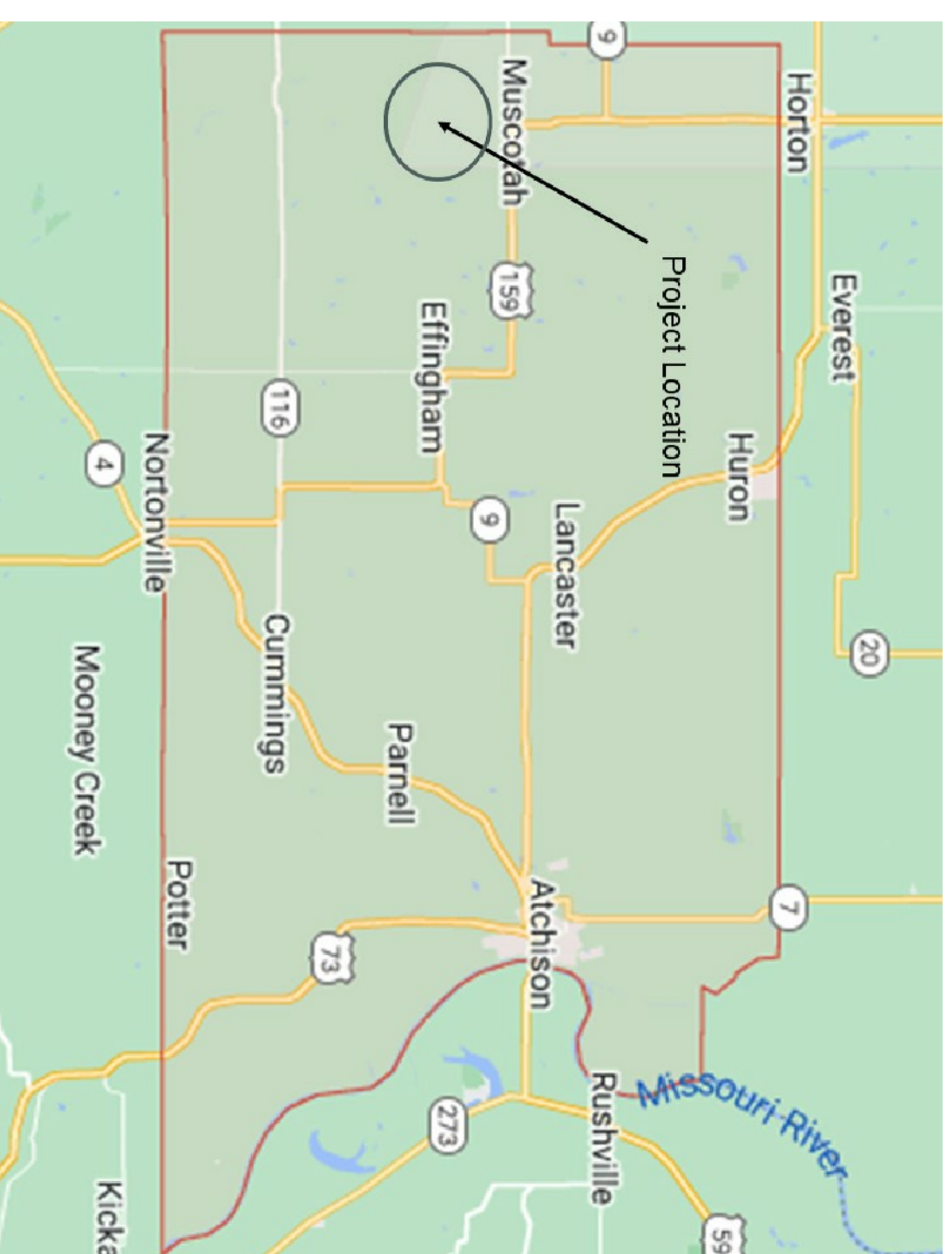
D33 Stream Rehabilitation

Atchison County, Kansas

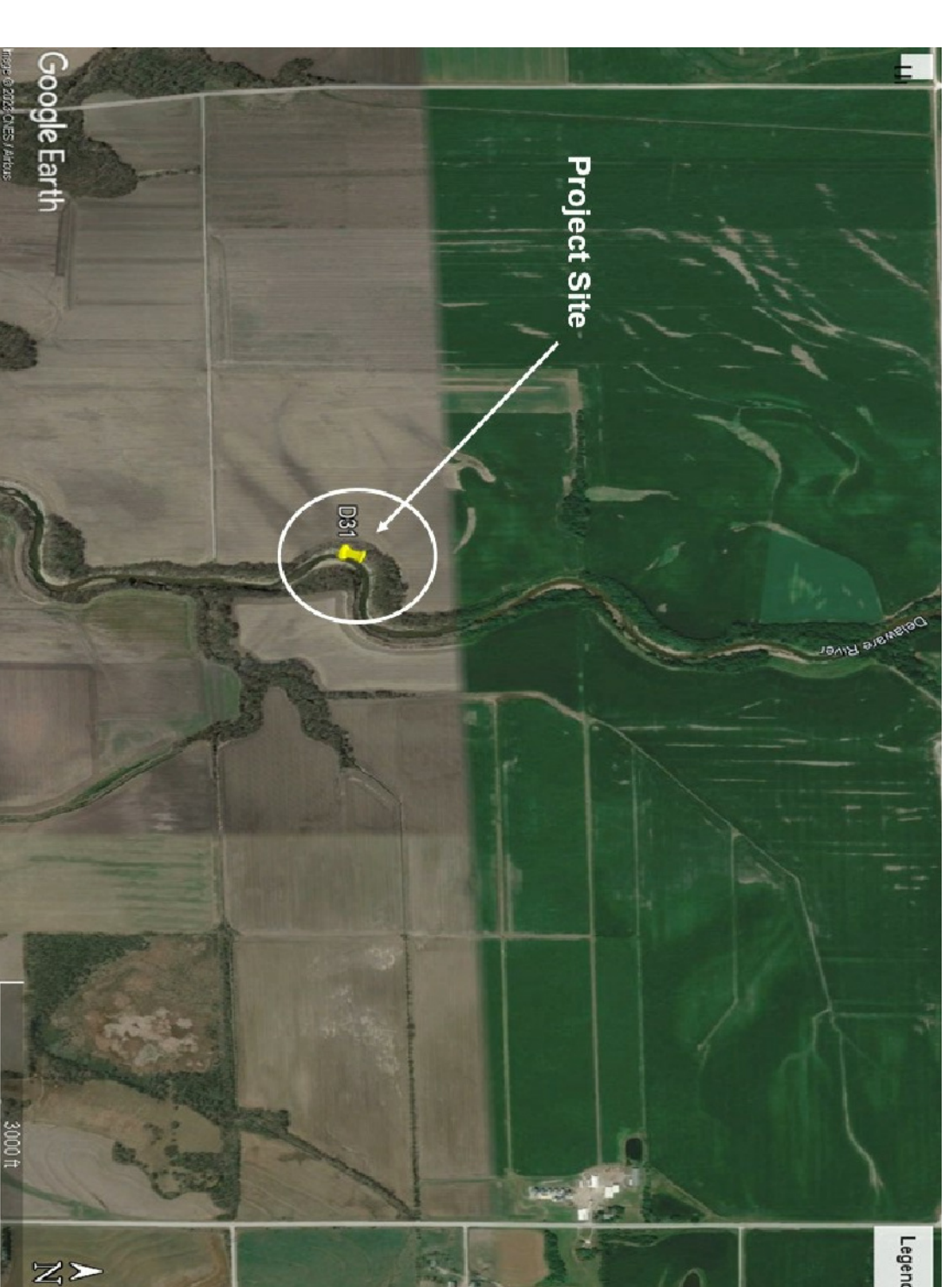
SE 1/4, SEC 29, T6S, R17E

### Sheet Index

Sheet No.	Sheet Title
1	Cover Sheet
2	General Layout
3-5	Section Views
6	Details



Atchison County Map

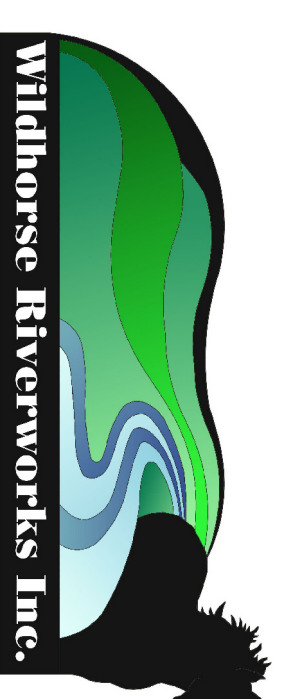


Site Location Map  
NTS



### Quantities

18" Rock / Tons	705
24" Rock / Tons	459
Soil moving/ Cubic Yds. *	12,444
Bare Root Trees	900
Live Stakes	950
Temporary Seeding / acres	1,28
Native Grass Seeding / acres	1,28
Mulching / acres	1,28



Wildhorse Riverworks Inc.  
11821 NW 13th Street - Topeka, Kansas 66615  
785-219-5778



2000 W. 69th St. Suite 200  
Topeka, Kansas 66607  
Phone: 913-302-1030

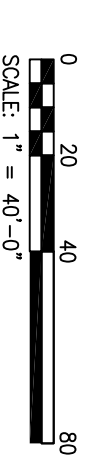
Not For Construction Without a  
Professional Engineer Seal.

**GENERAL NOTES**

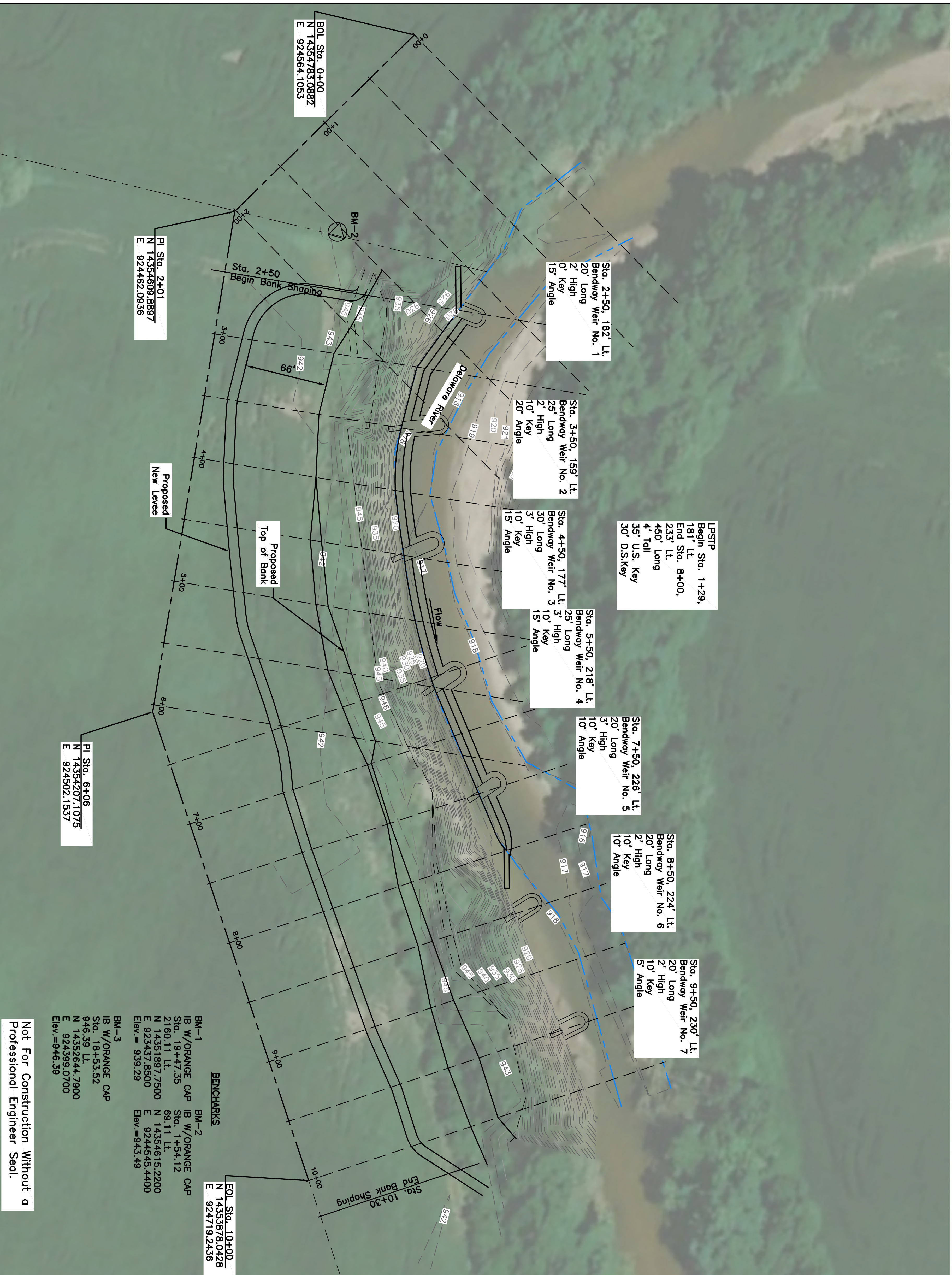
1. Before any construction activity, the contractor is responsible for calling Kansas One Call at 800-344-7233 (800-DIG-SAFE) or 811.
2. Accepted Erosion Control practices shall be applied to all disturbed areas by the Contractor.
3. All applicable permits will be obtained by others prior to project construction.
5. The information shown in these plans concerning type and location of underground utilities is not guaranteed to be accurate or all inclusive. Existing utilities and their locations, as shown on the plans, represent the best information obtained for the design. Location information has been obtained from the various utility companies and is either from company record drawings or company provided field locations. The utility locations shown are not guaranteed. Additional existing utilities may also be encountered. The contractor is responsible for making the determinations as to the type and location of underground utilities as may be necessary to avoid damage thereto. Contractor shall coordinate with utility companies as necessary for relocation and protection of utilities.
6. Contractor shall maintain construction limits within the existing and/or proposed rights-of-way and easements.
7. The engineer has not performed property or right-of-way surveys for any of the locations shown on this project. Right-of-way or property lines shown on the plans are approximate and are shown for general orientation only. Property corners or other survey markers have not been located, unless specifically called out on the plans.
8. Coordinates for this project are not associated to any known coordinate system and are local only.
9. Do not remove any trees larger than 12" DBH or over 50' in height without permission of the Engineer.
10. Soil moving calculations are based on available information. Contractor shall inspect the site and make an evaluation of existing conditions.
11. Contractor is responsible for planting from top of LPSTP or water level to top of bank.

**LEGEND**

	Benchmarks
	Existing Edge of Water
	Existing Top of Bank
	Existing Toe of Bank
	Existing 1' Contour
	Existing 5' Contour
	Proposed 5' Contour
	Proposed 1' Contour
	New Improvements



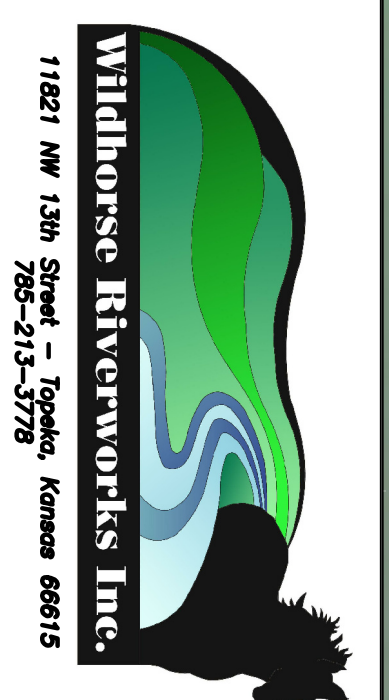
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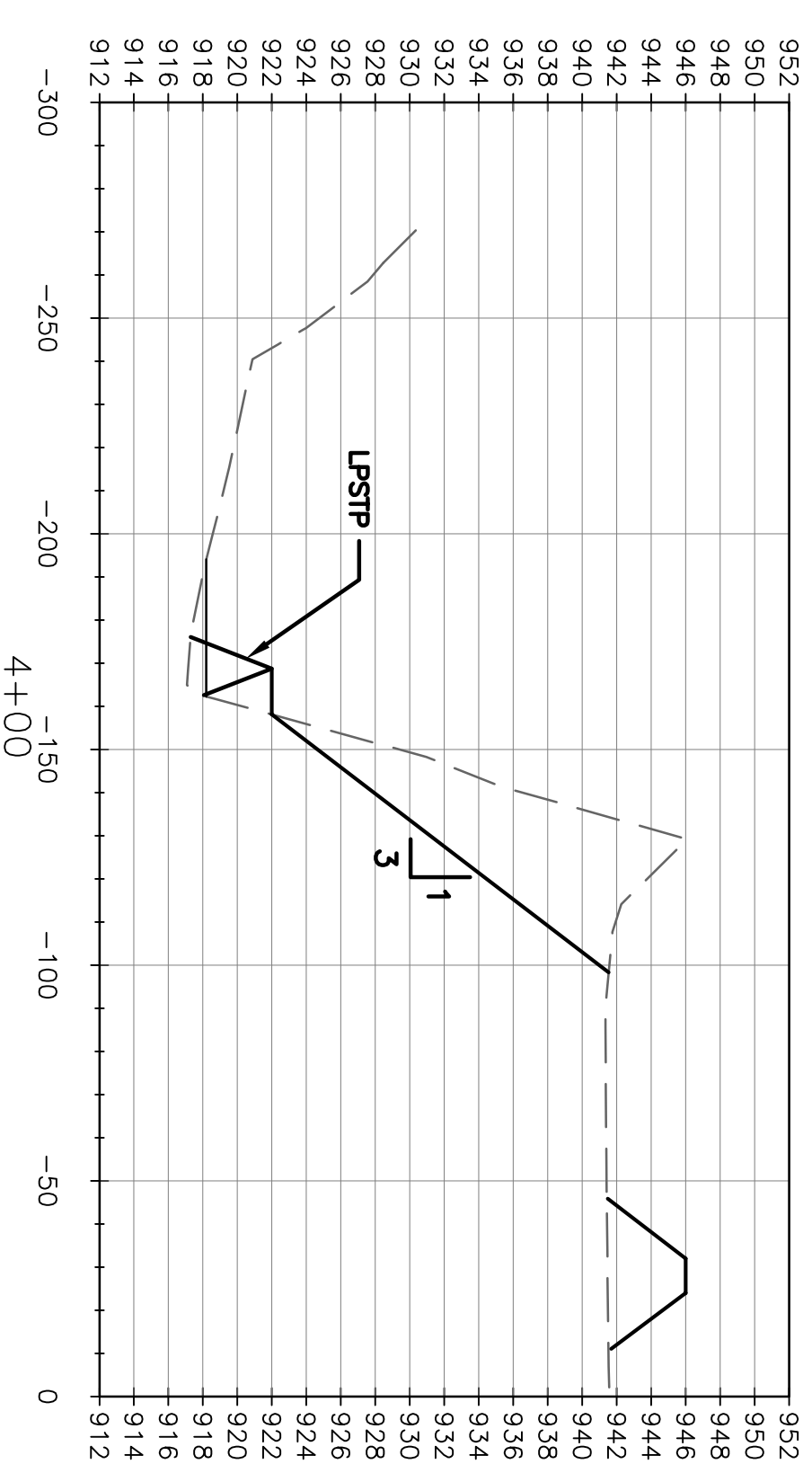
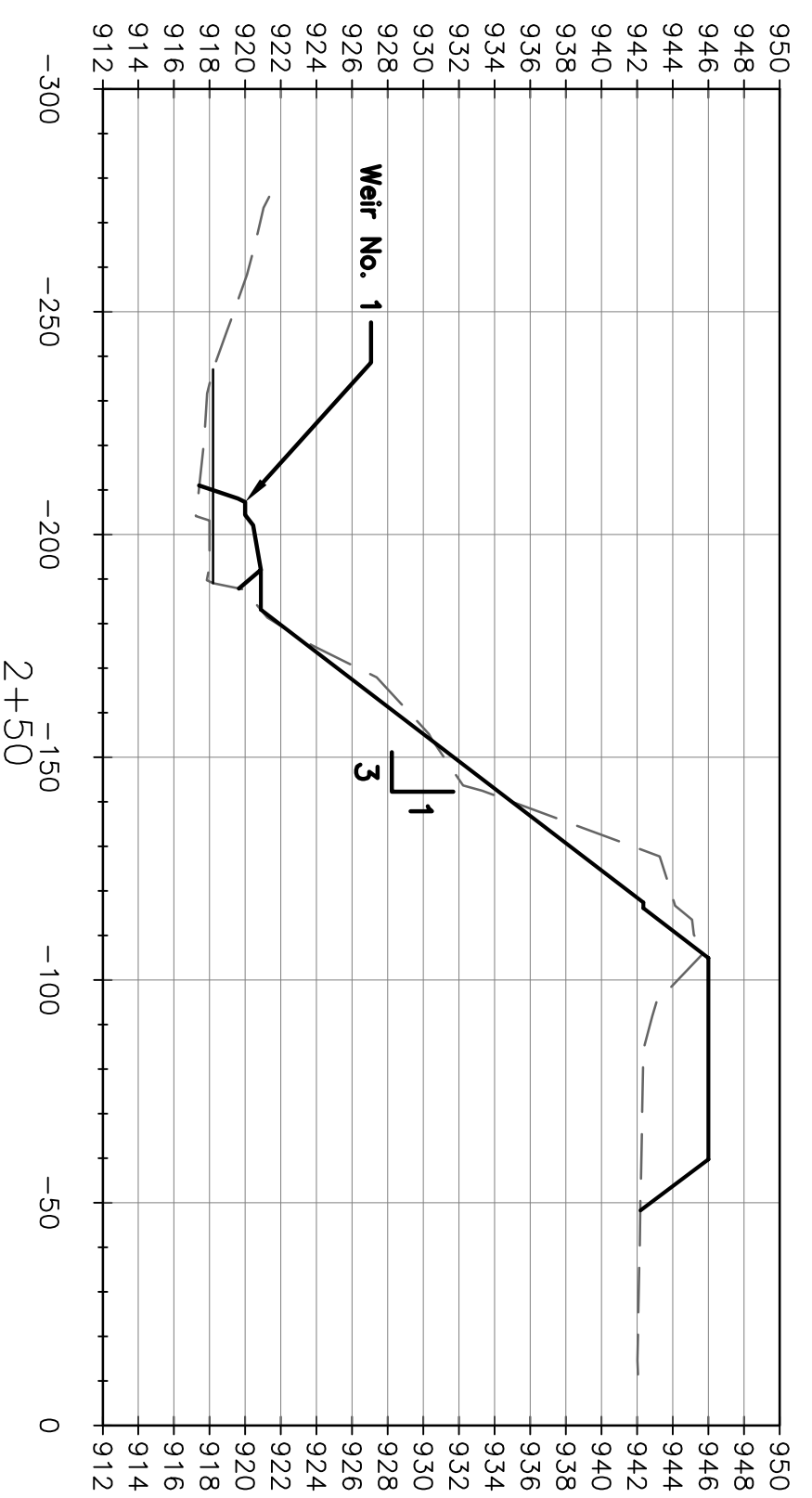
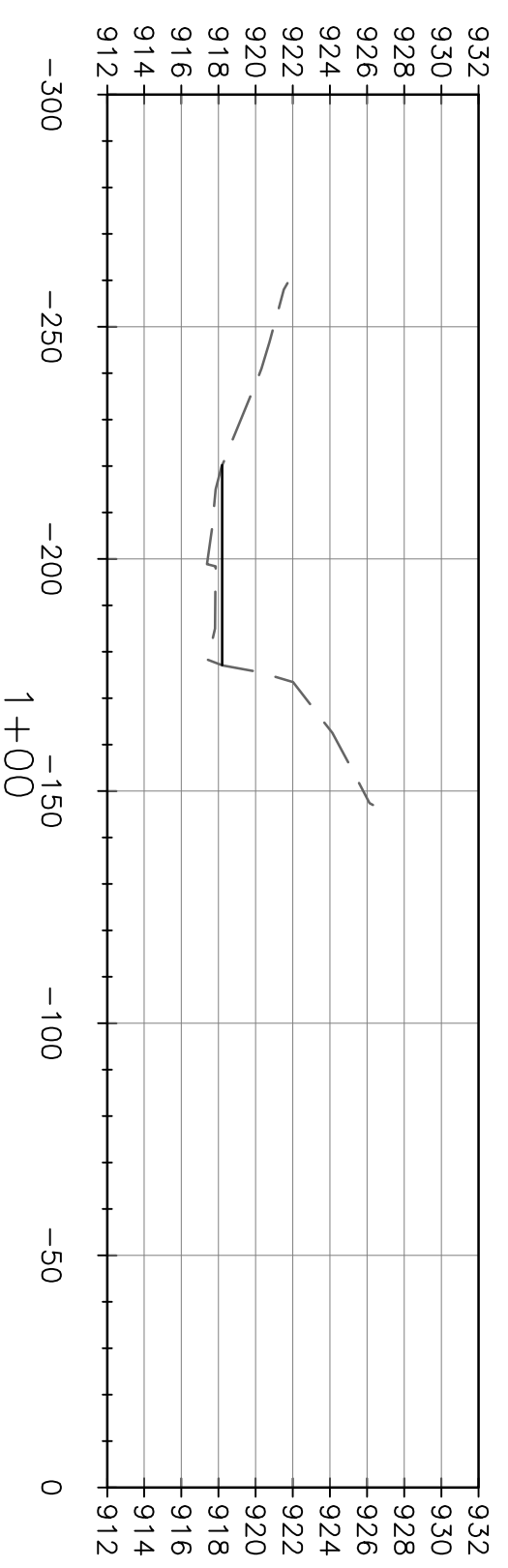
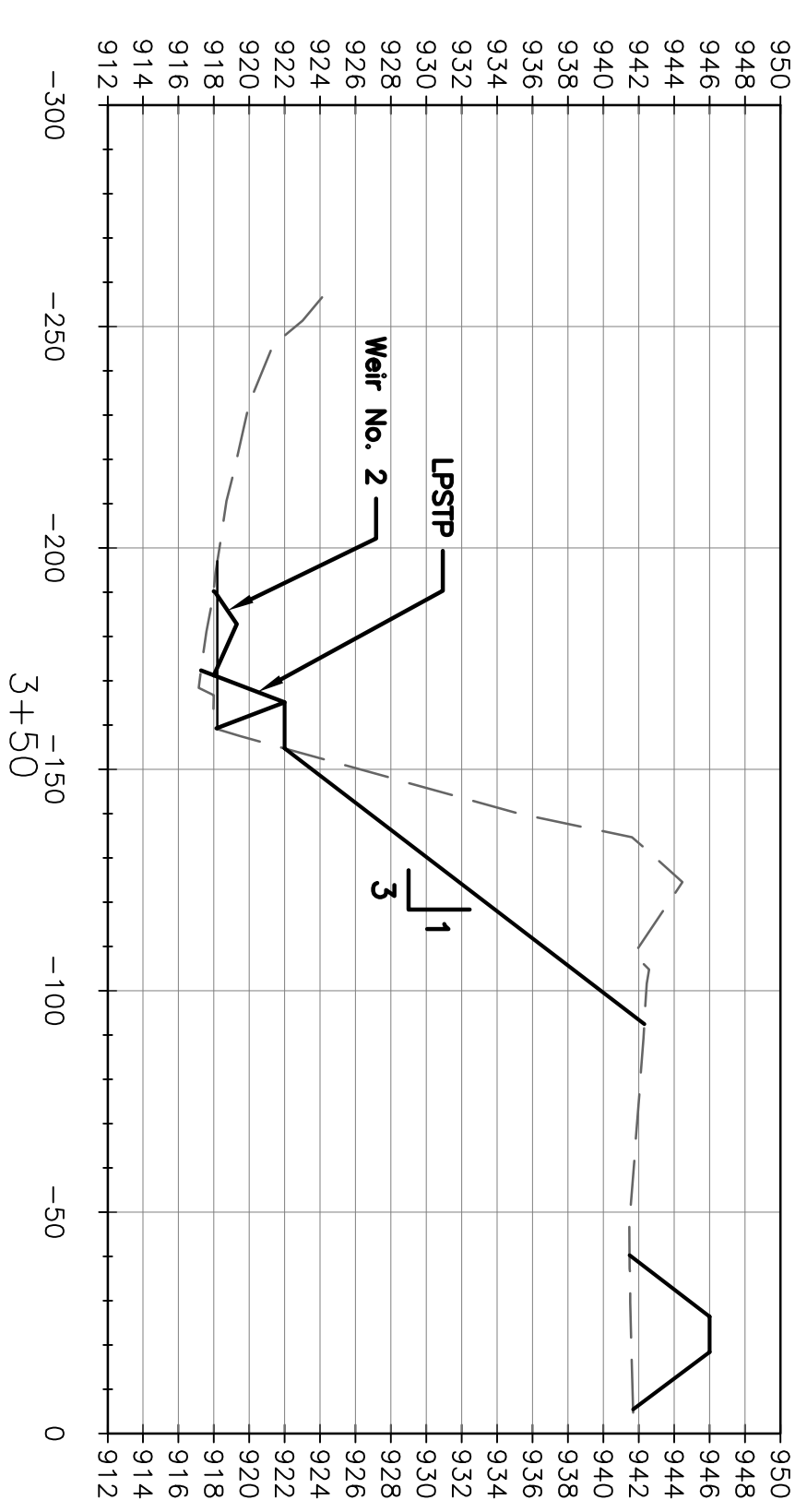
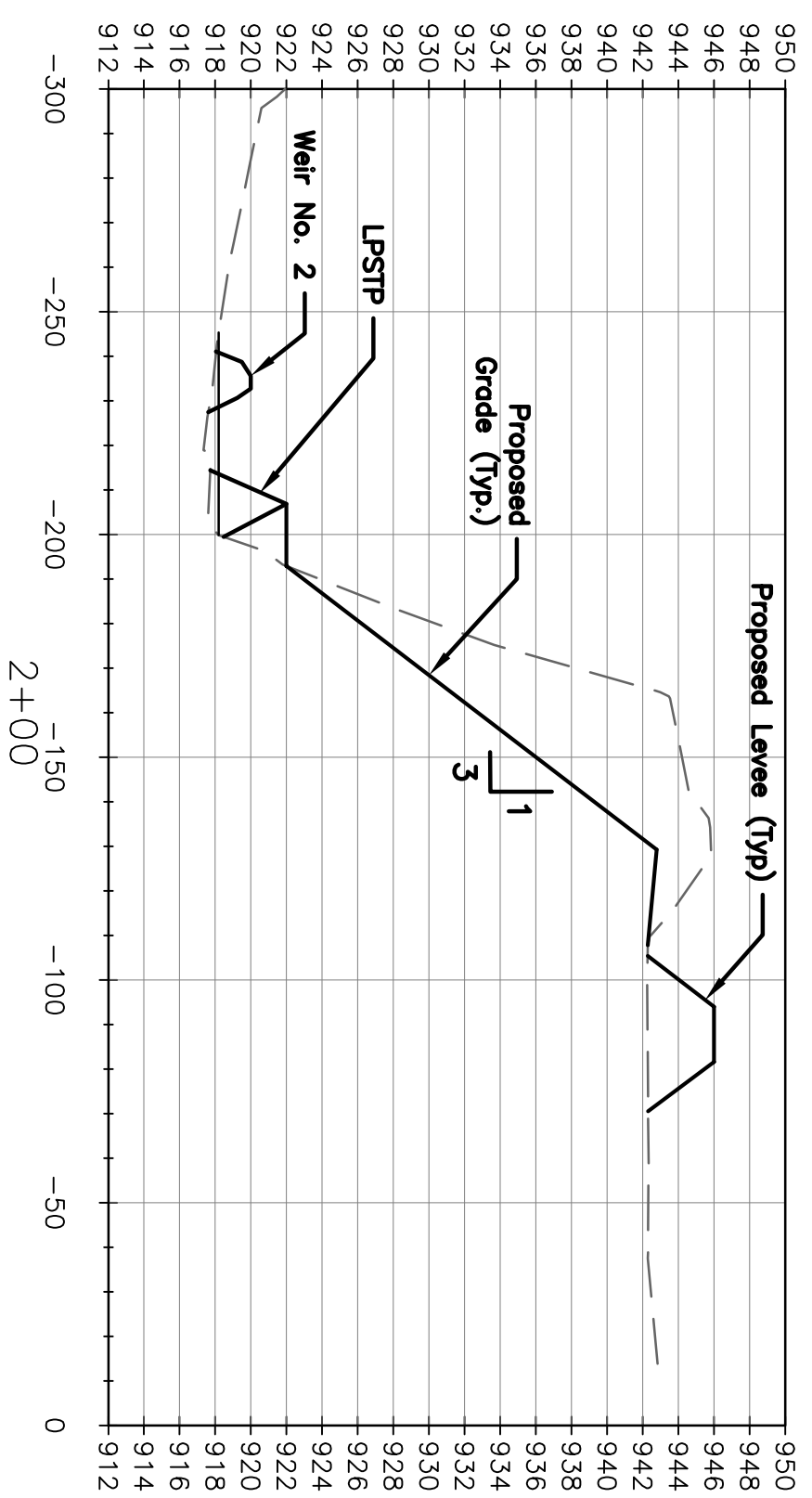
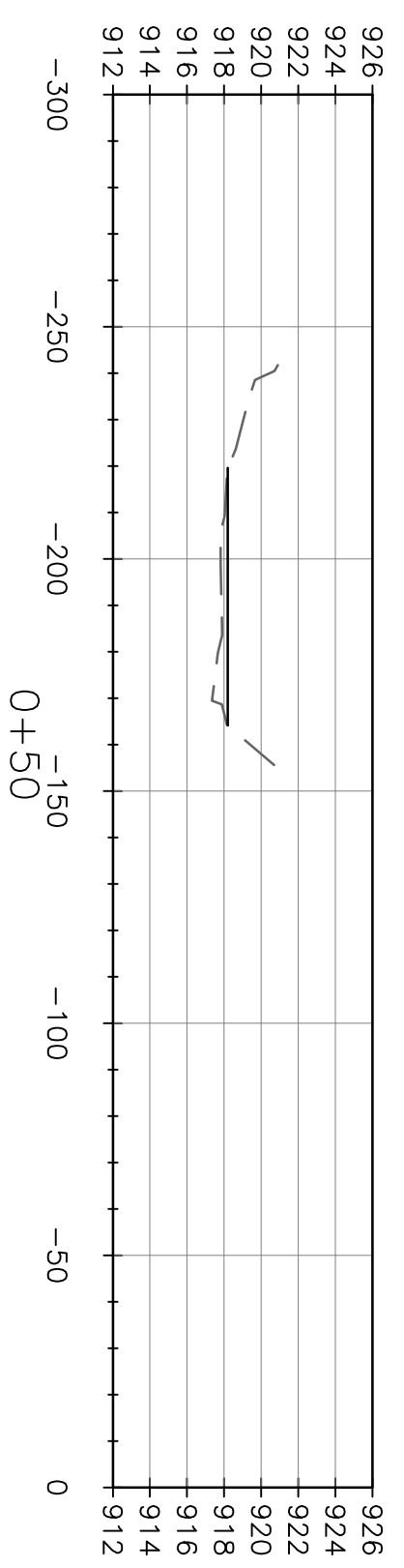
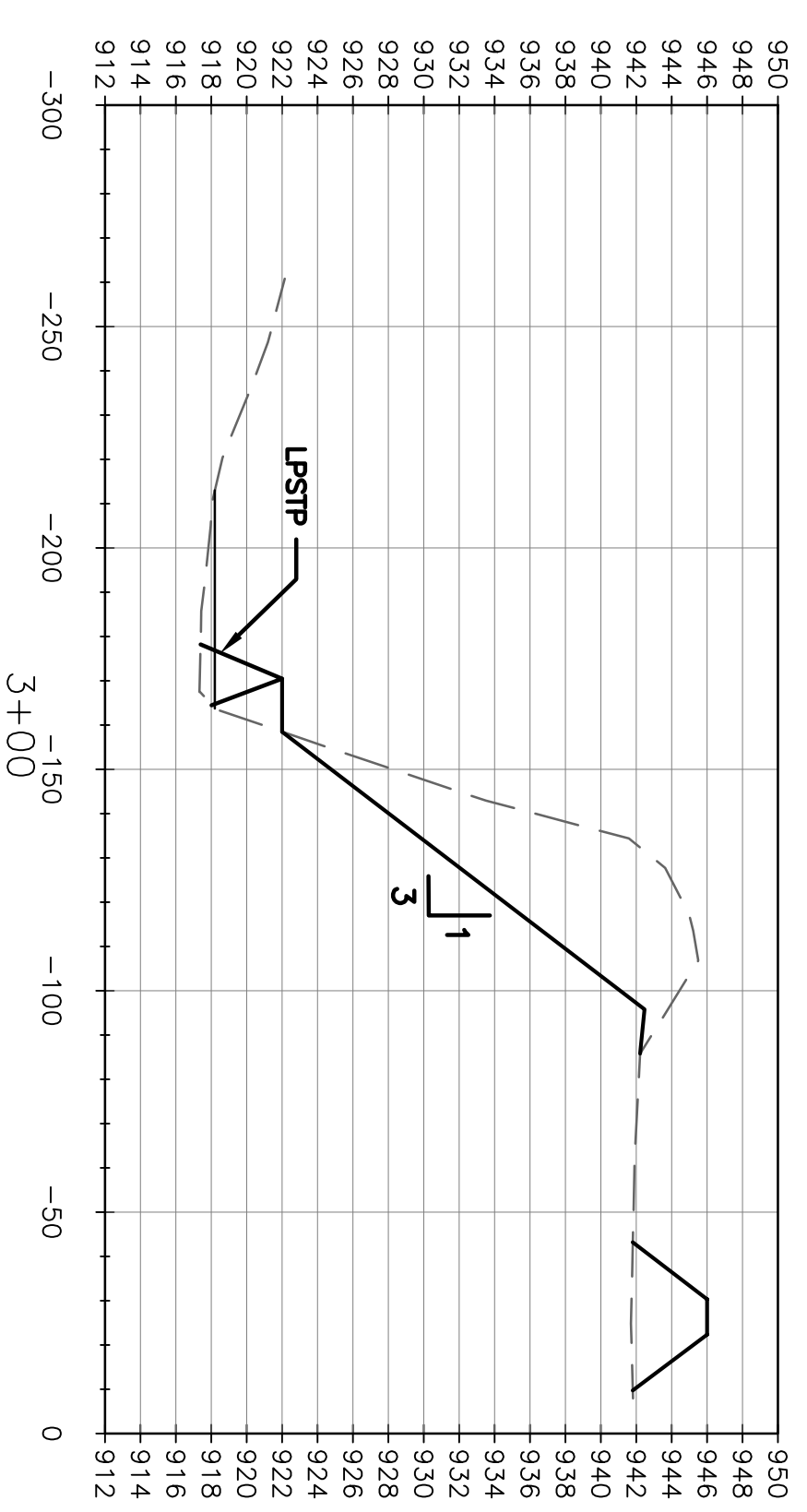
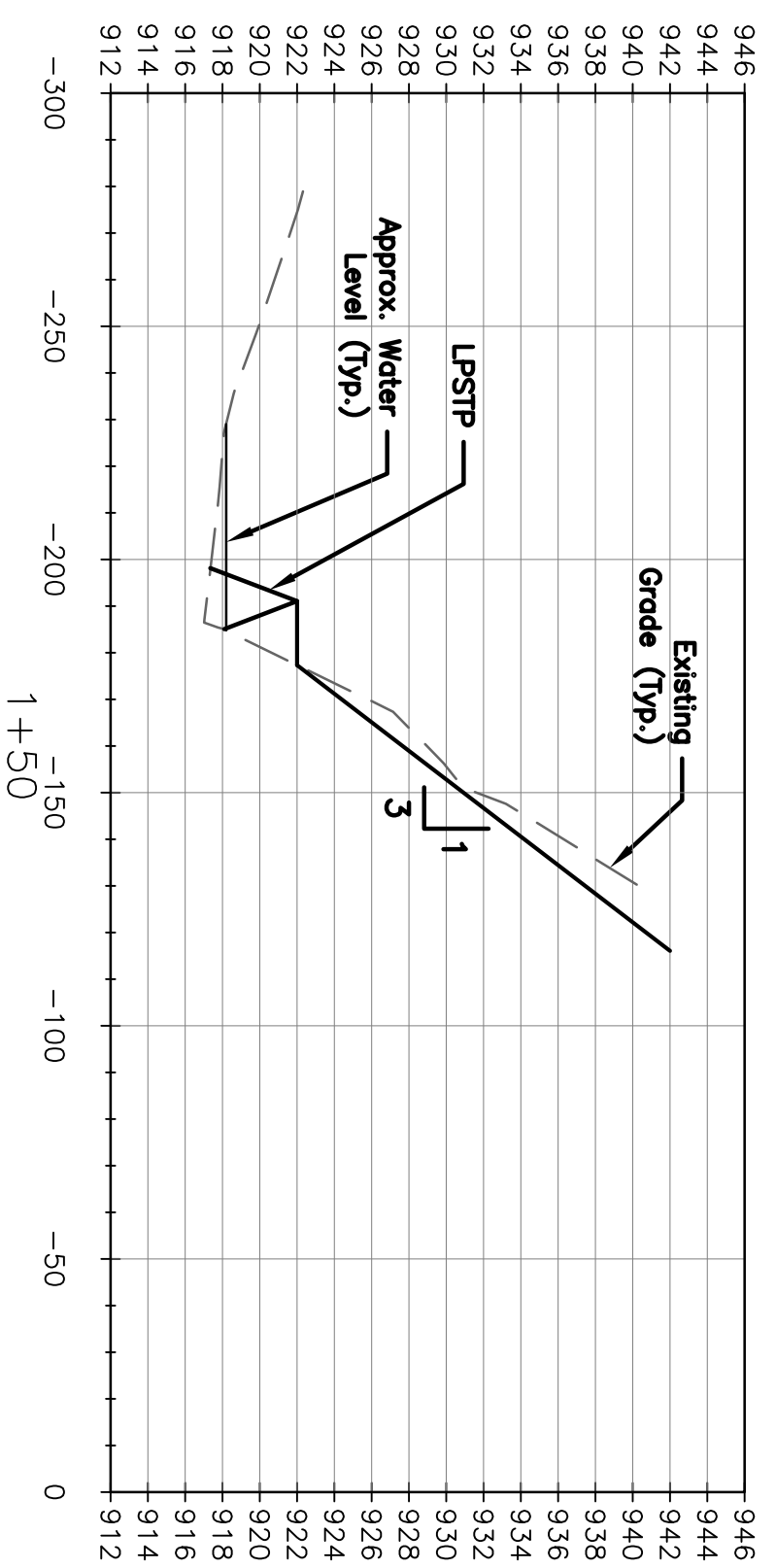
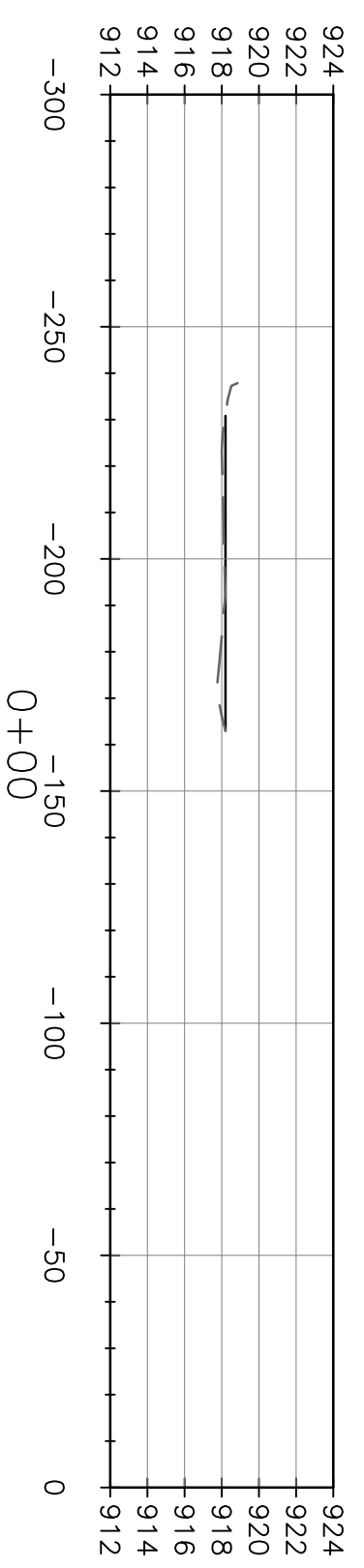
**BENCHMARKS**

BM-1 IB W/ORANGE CAP Sta. 19+47.35 2160.11 Lt. N 14351897.7500 E 923437.8500 Elev.= 939.29	BM-2 IB W/ORANGE CAP Sta. 1+54.12 69.11 Lt. N 14354615.2200 E 9244545.4400 Elev.= 943.49
BM-3 IB W/ORANGE CAP Sta. 18+53.52 946.39 Lt. N 14352644.7900 E 924399.0700 Elev.= 946.39	EOL Sta. 10+00 N 14353678.0428 E 924719.2436

Date				
Designed By: PGB	Comment	No.	BY	CK
Drawn By: MEM		1		
Checked By: DWB		2		
Date: 8/06/23		3		
Scale: 1"=40'		4		



**Delaware River**  
Site 33  
Atchinson County, Kansas



**Note:**  
All slopes steeper than 3:1 require Excelsior Blanket on disturbed slopes.

Not For Construction  
Without a Professional  
Engineer Seal.

Scale:  
Horiz.: 1"=40'  
Vert.: 1"=10'

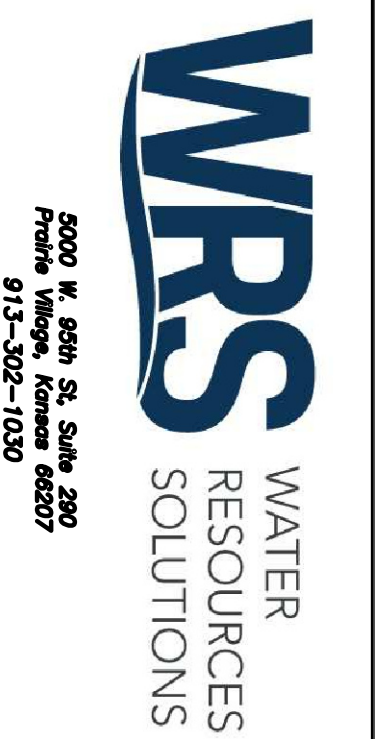
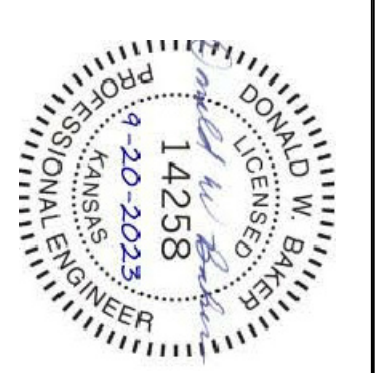
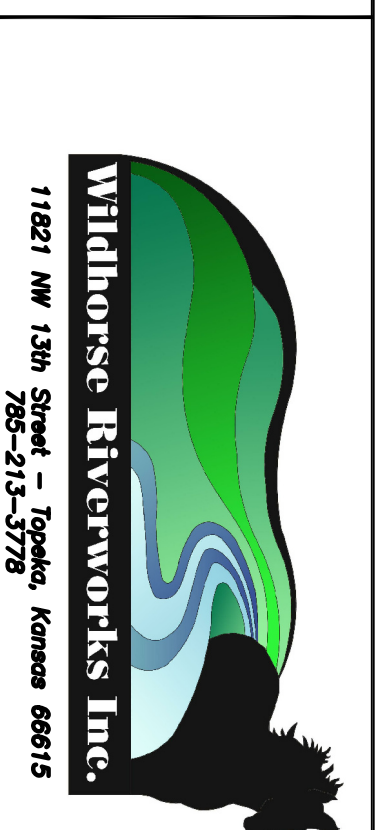
**Delaware River**  
Site 33  
Atchinson County, Kansas

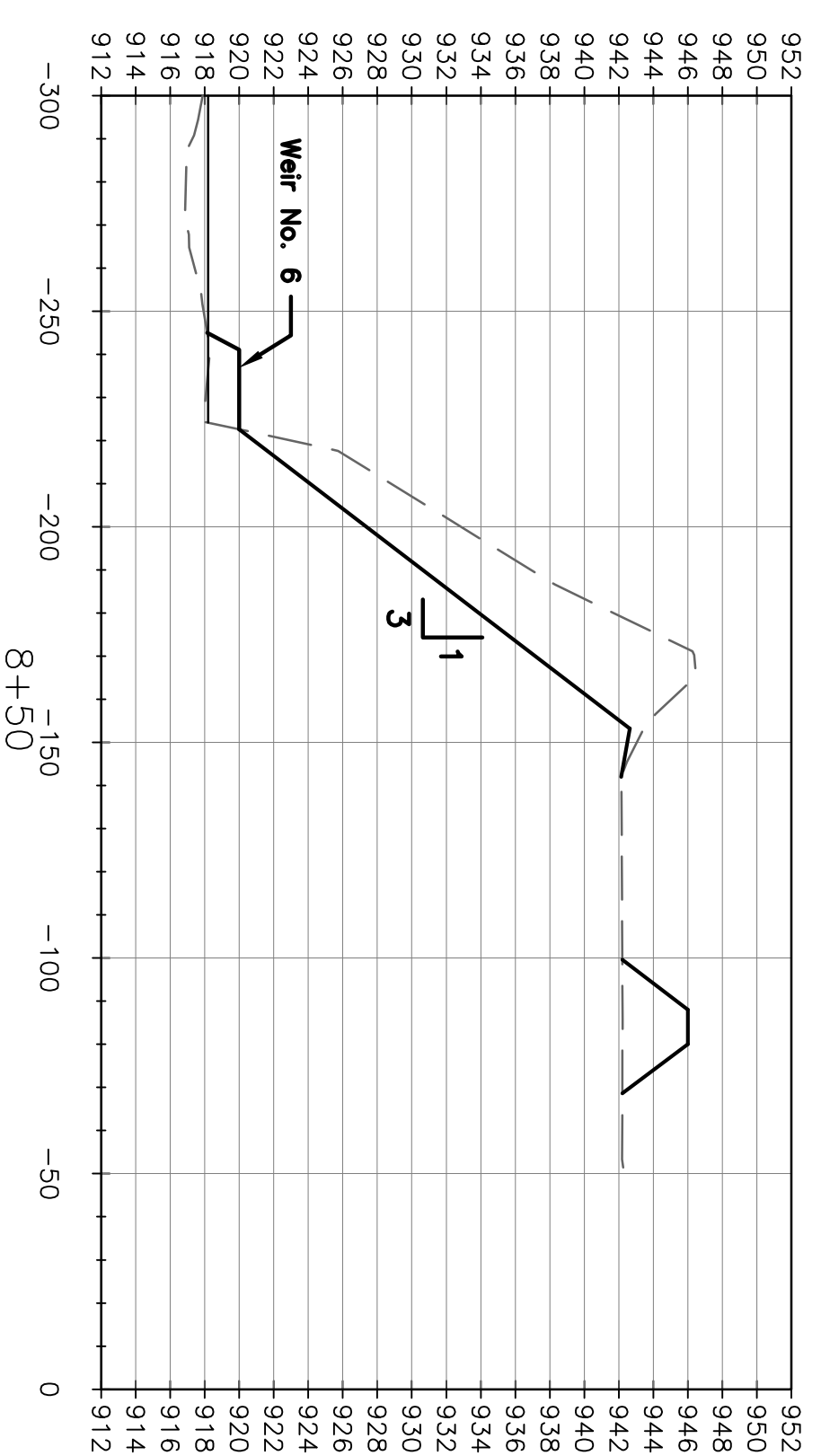
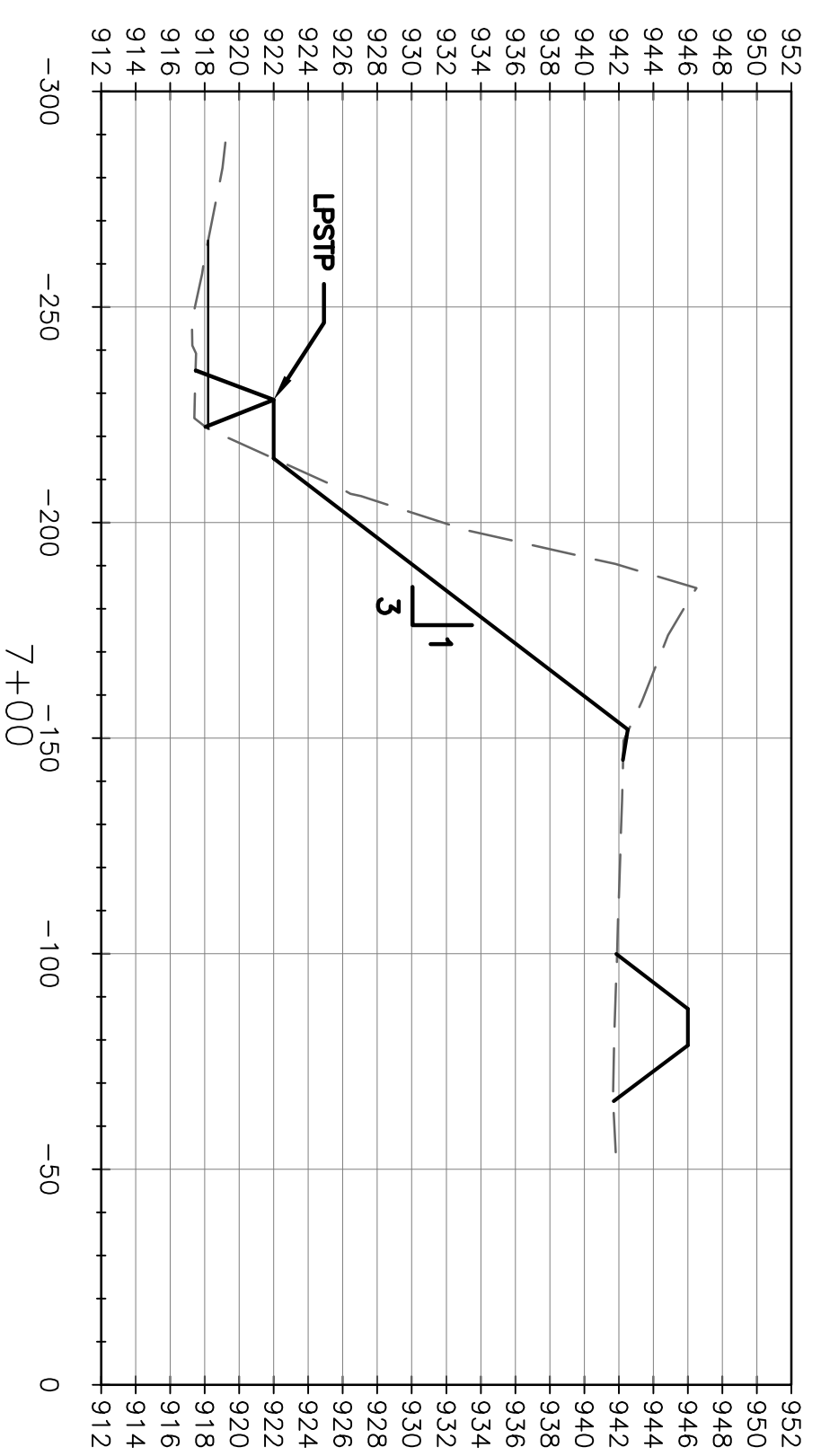
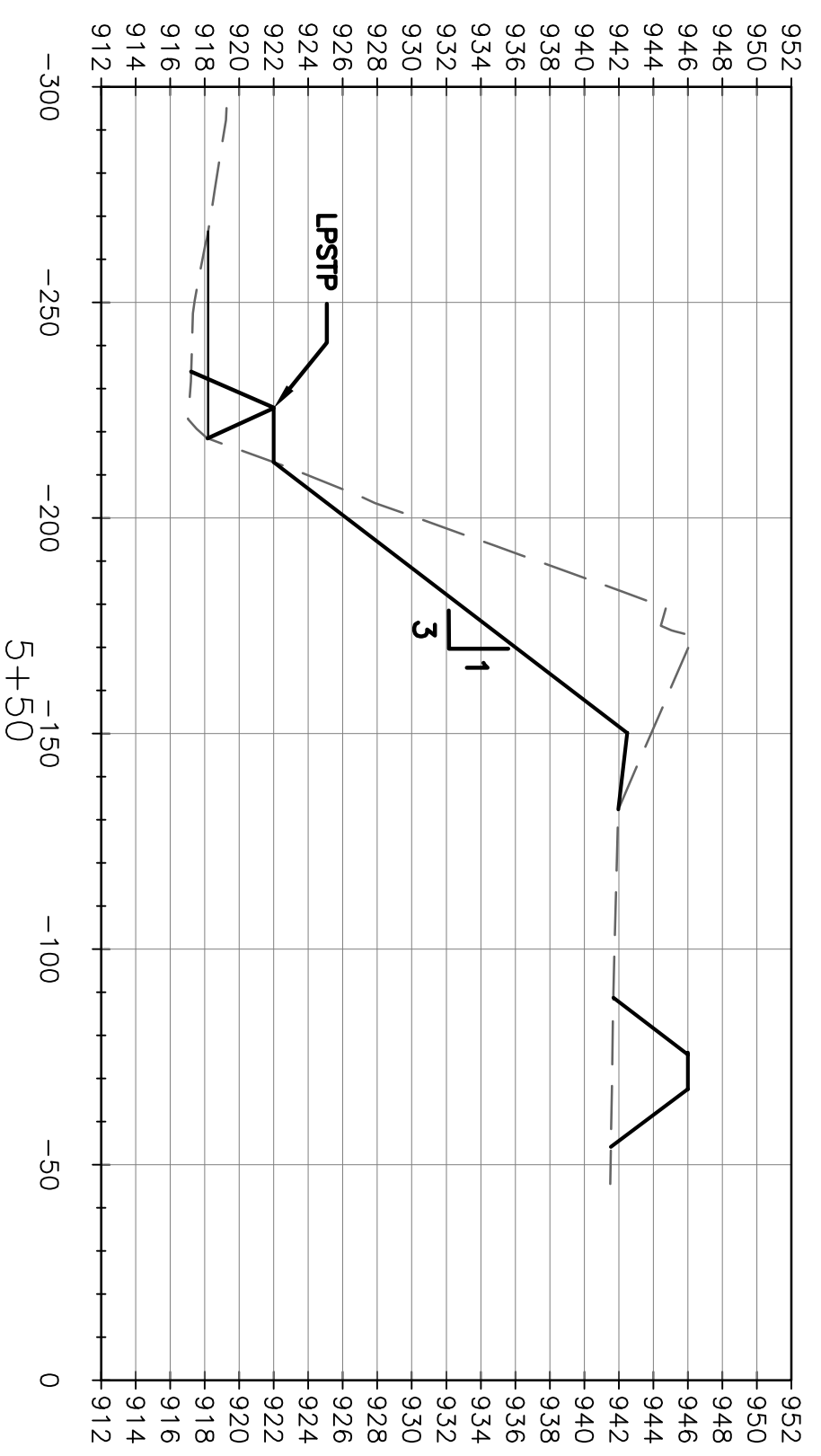
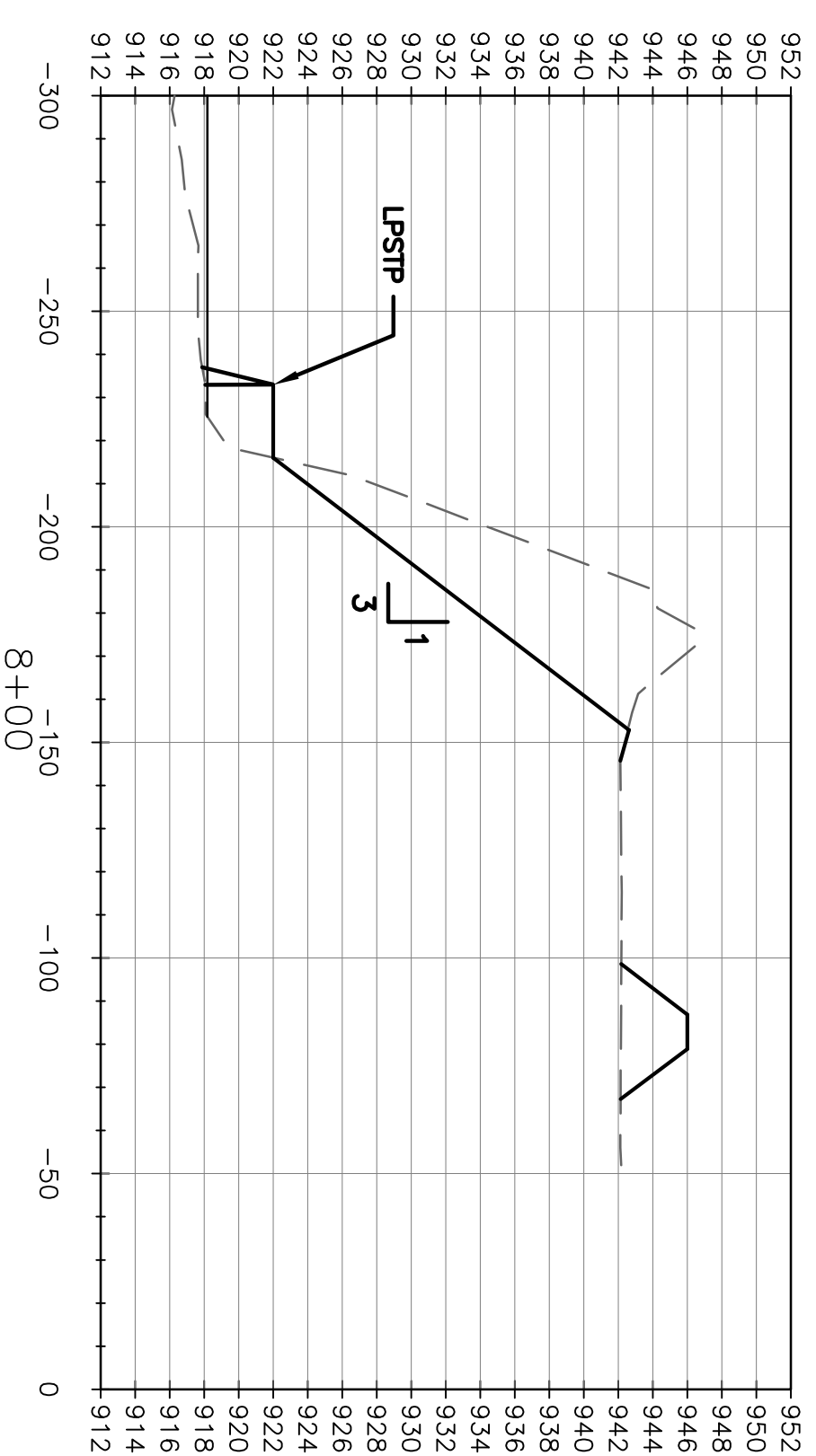
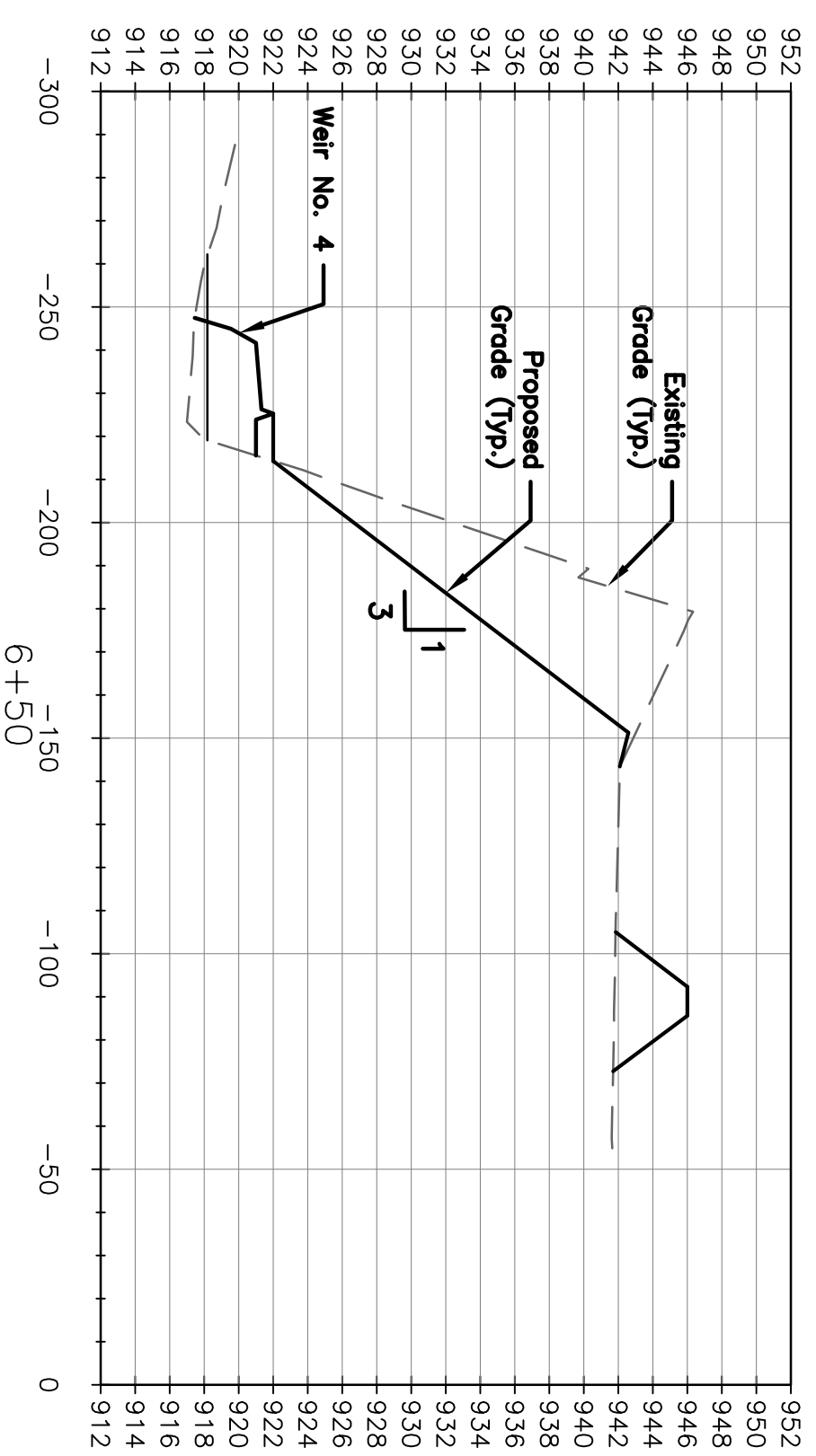
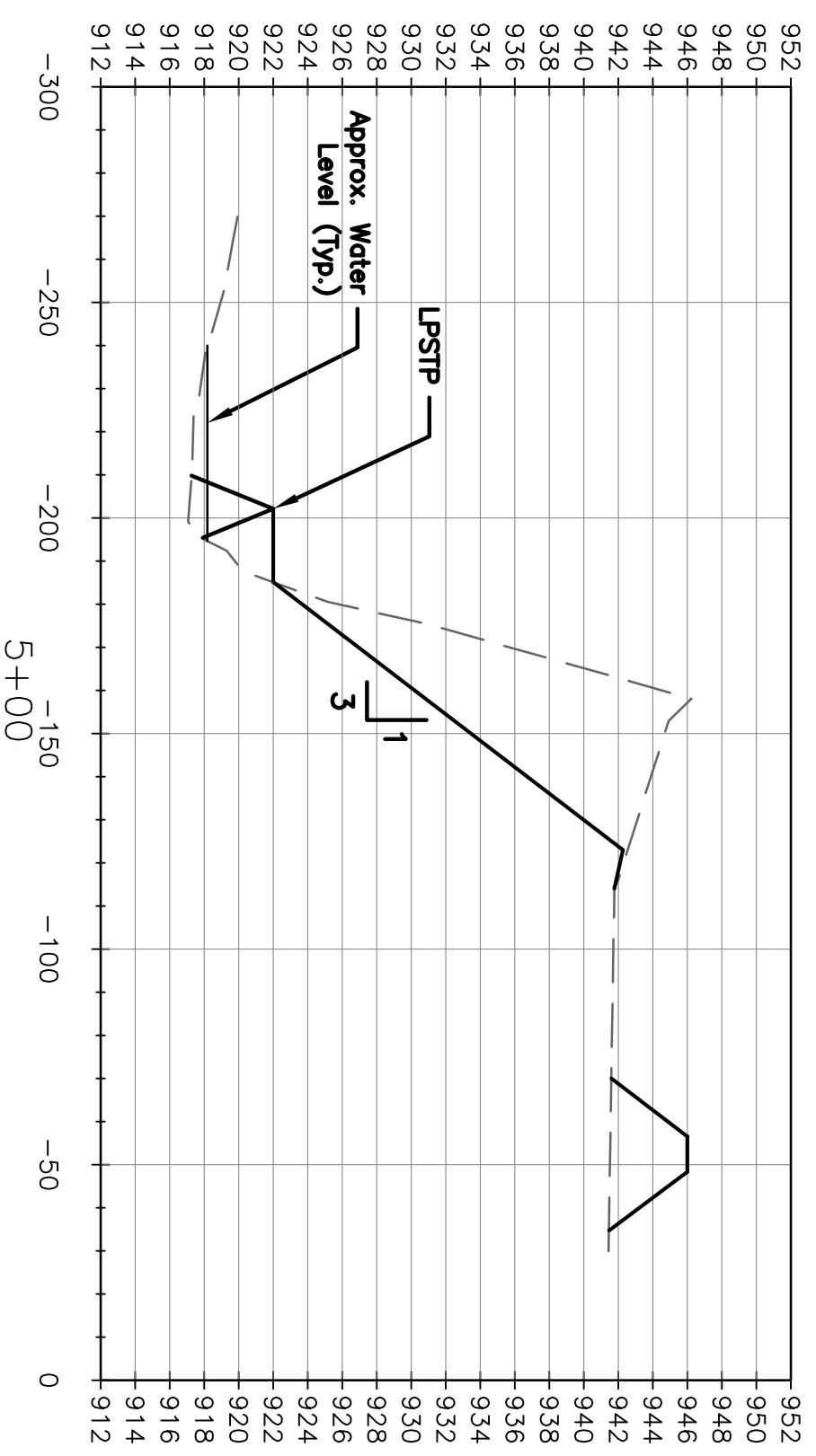
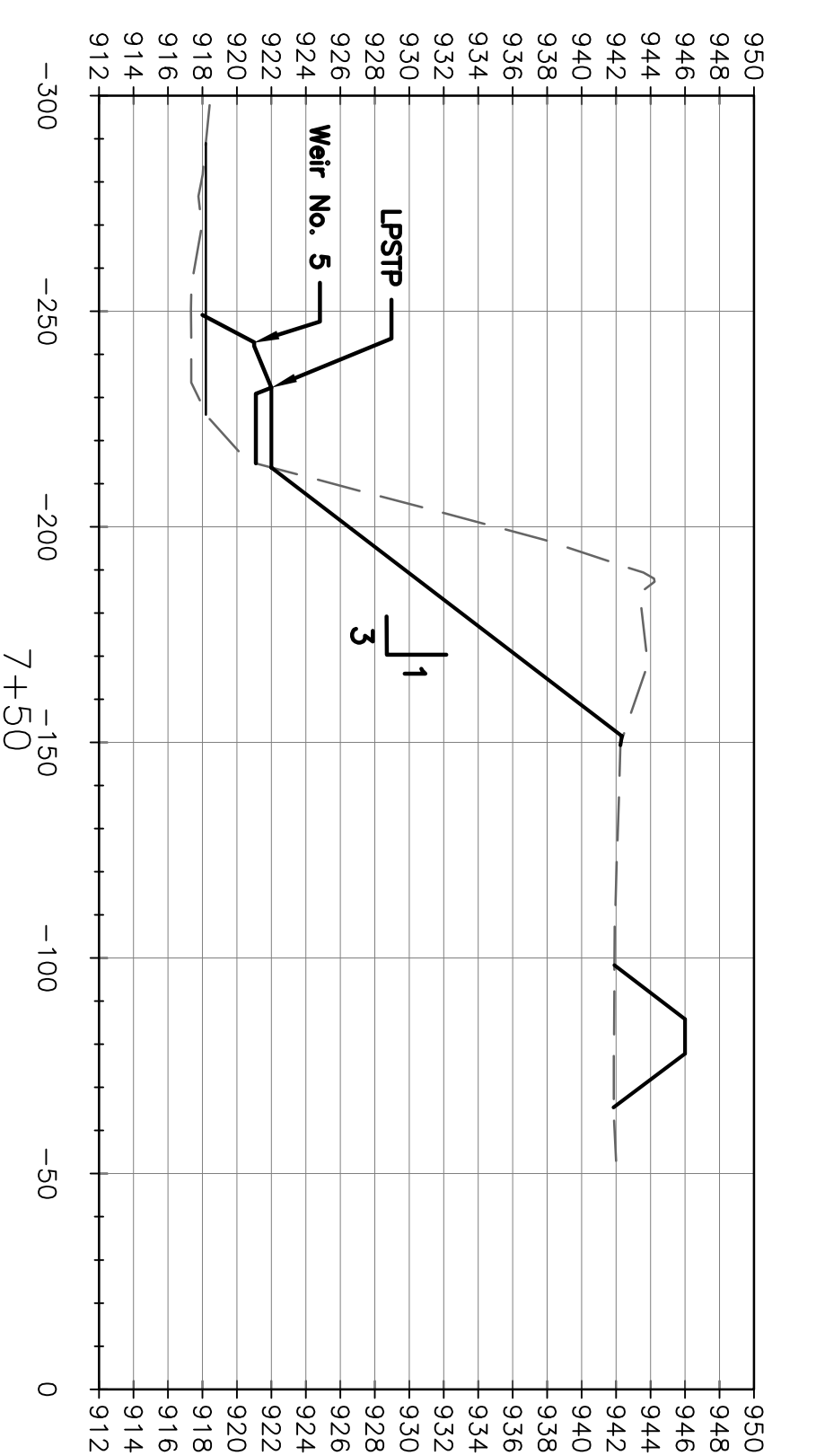
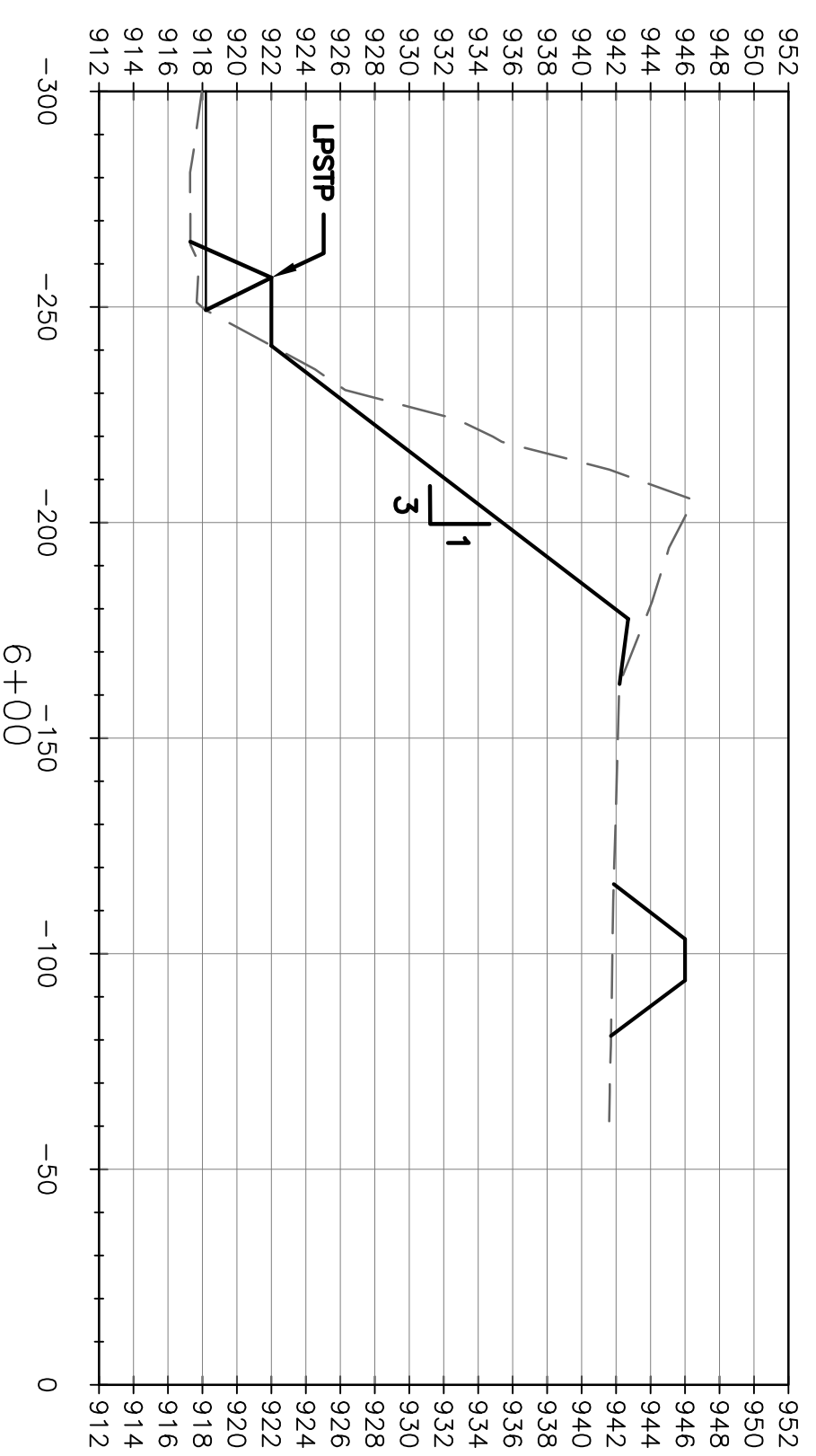
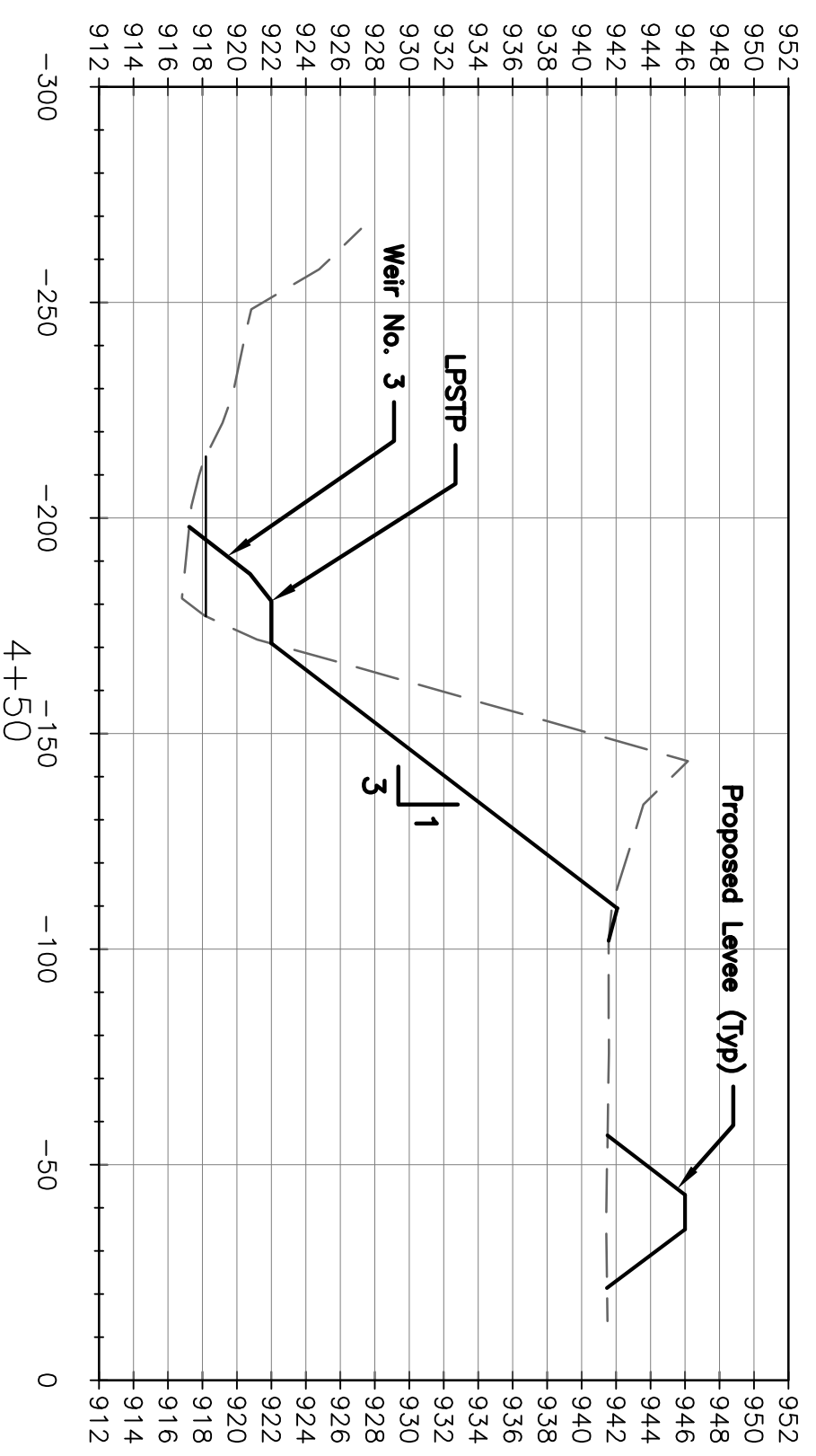
Sections Sheet 1

3 SHEET  
OF 6

Date	Comment	No.	BY	CK	APP
		1			
		2			
		3			
		4			

Designed By: PGB  
Drawn By: MEM  
Checked By: DWB  
Date: 8/06/23  
Scale: 1"=40'





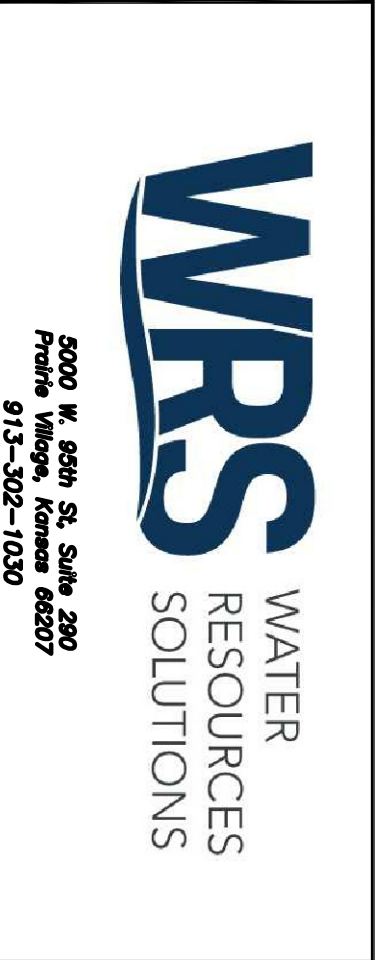
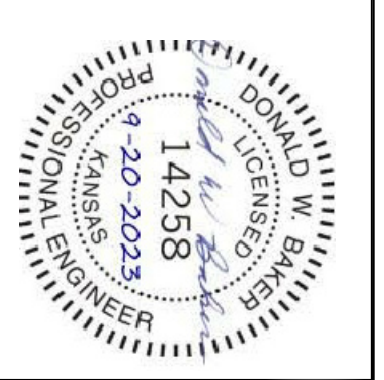
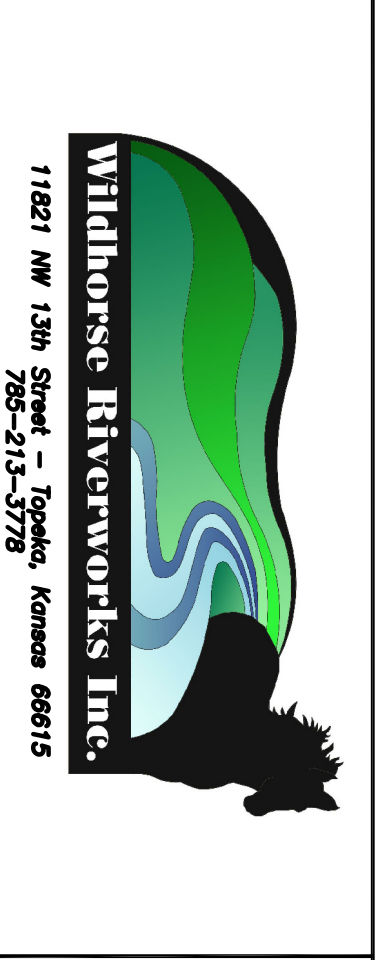
Note:  
All slopes steeper than  
3:1 require Excelsior  
Blanket on disturbed  
slopes.

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Engineer Seal.

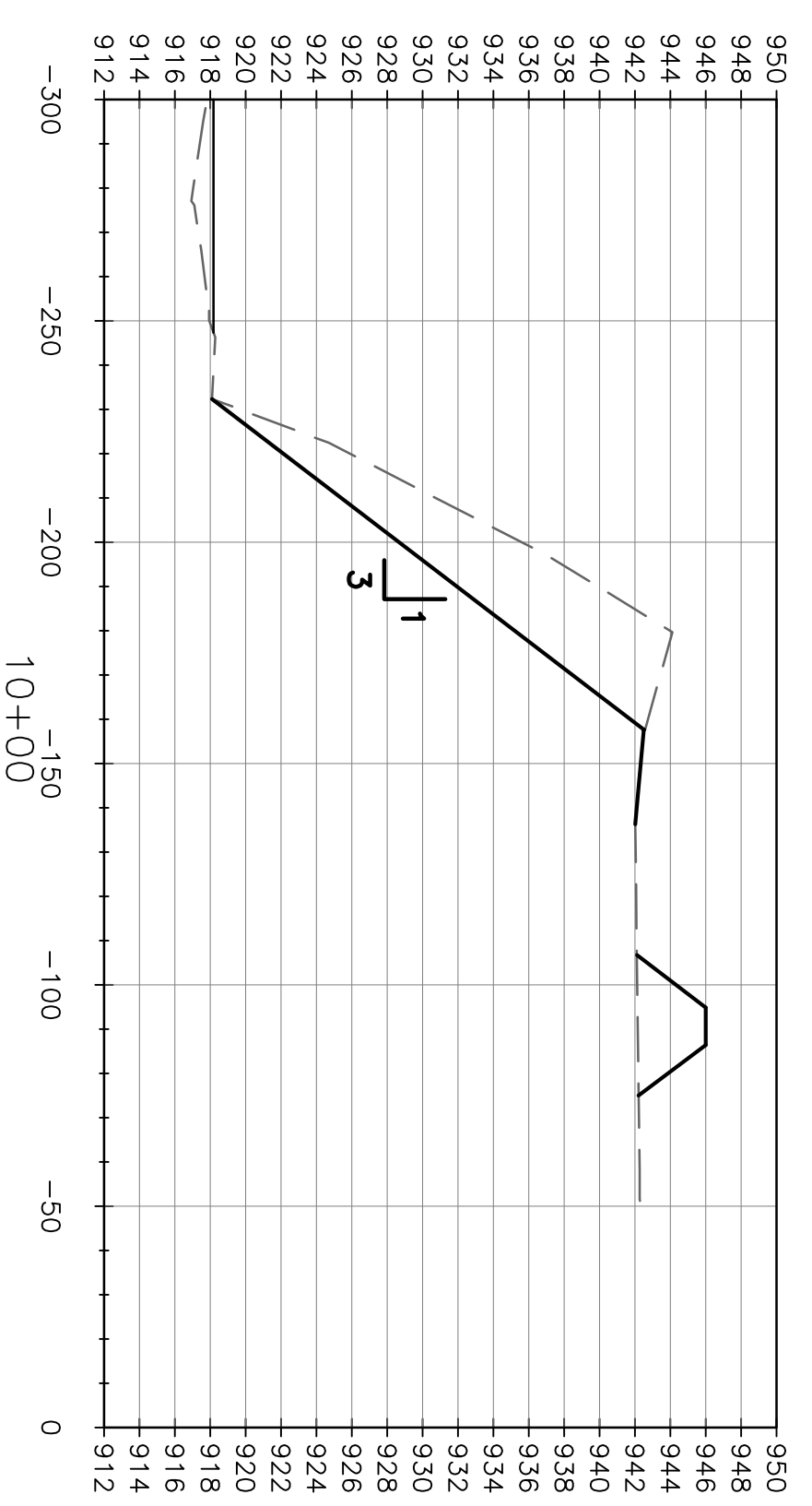
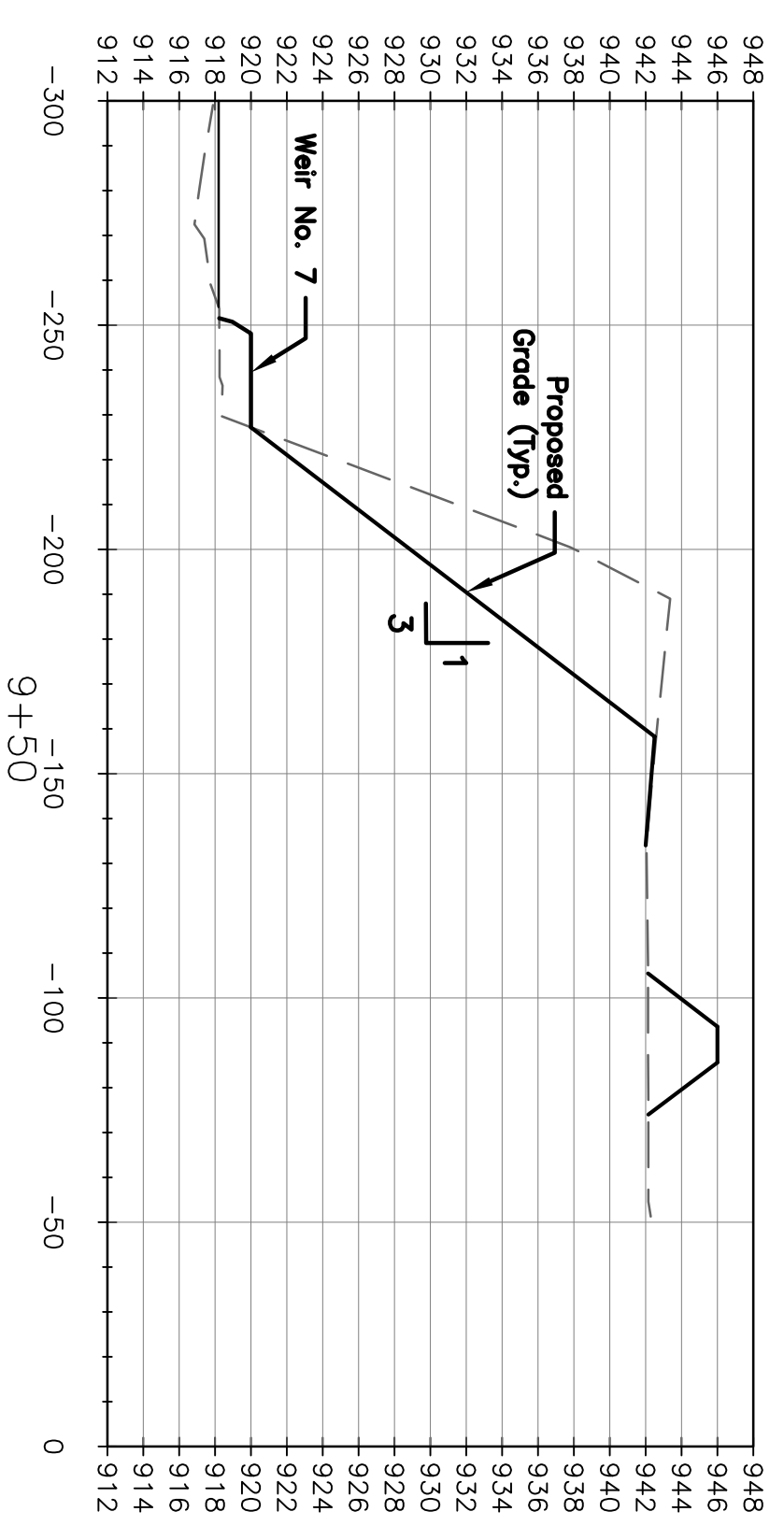
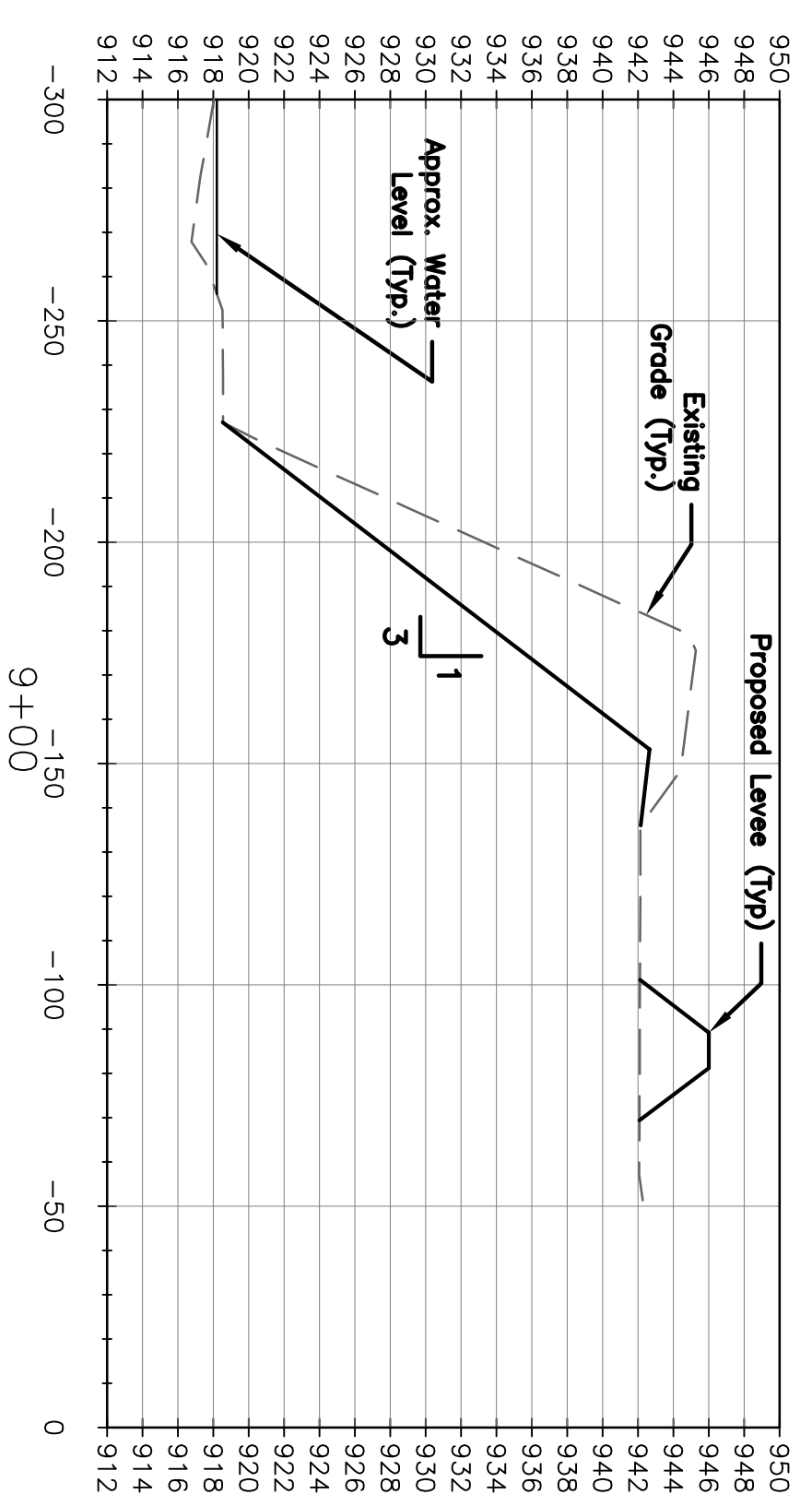
Scale:  
Horiz.: 1"=40'  
Vert.: 1"=10'

Date	By	Comment
	1	CK
	2	
	3	
	4	

Designed By:	PGB
Drawn By:	MEM
Checked By:	DWB
Date:	8/06/23
Scale:	1"=40'



**Delaware River**  
Site 33  
Atchinson County, Kansas  
**Sections Sheet 2**



**Note:**

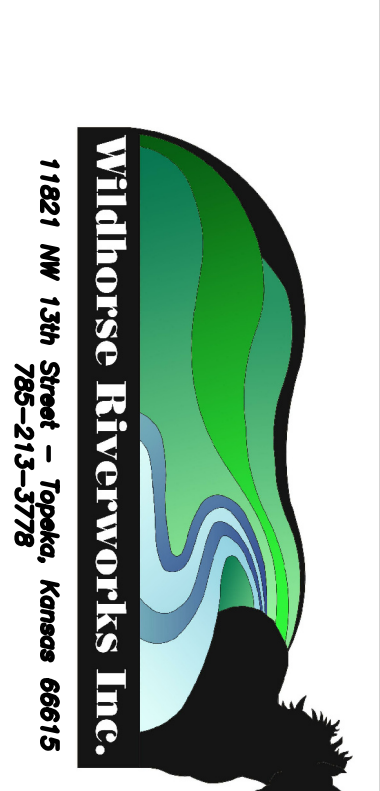
All slopes steeper than 3:1 require Excelsior Blanket on disturbed slopes.

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Scale:  
 Horiz.: 1"=40'  
 Vert.: 1"=10'

Date	Comment	No.	BY	CK	APP
		1			
		2			
		3			
		4			

Designed By: PGB  
 Drawn By: MEM  
 Checked By: DWB  
 Date: 8/06/23  
 Scale: 1"=40'



**Delaware River**  
 Site 33  
 Atchinson County, Kansas

Sections Sheet 3

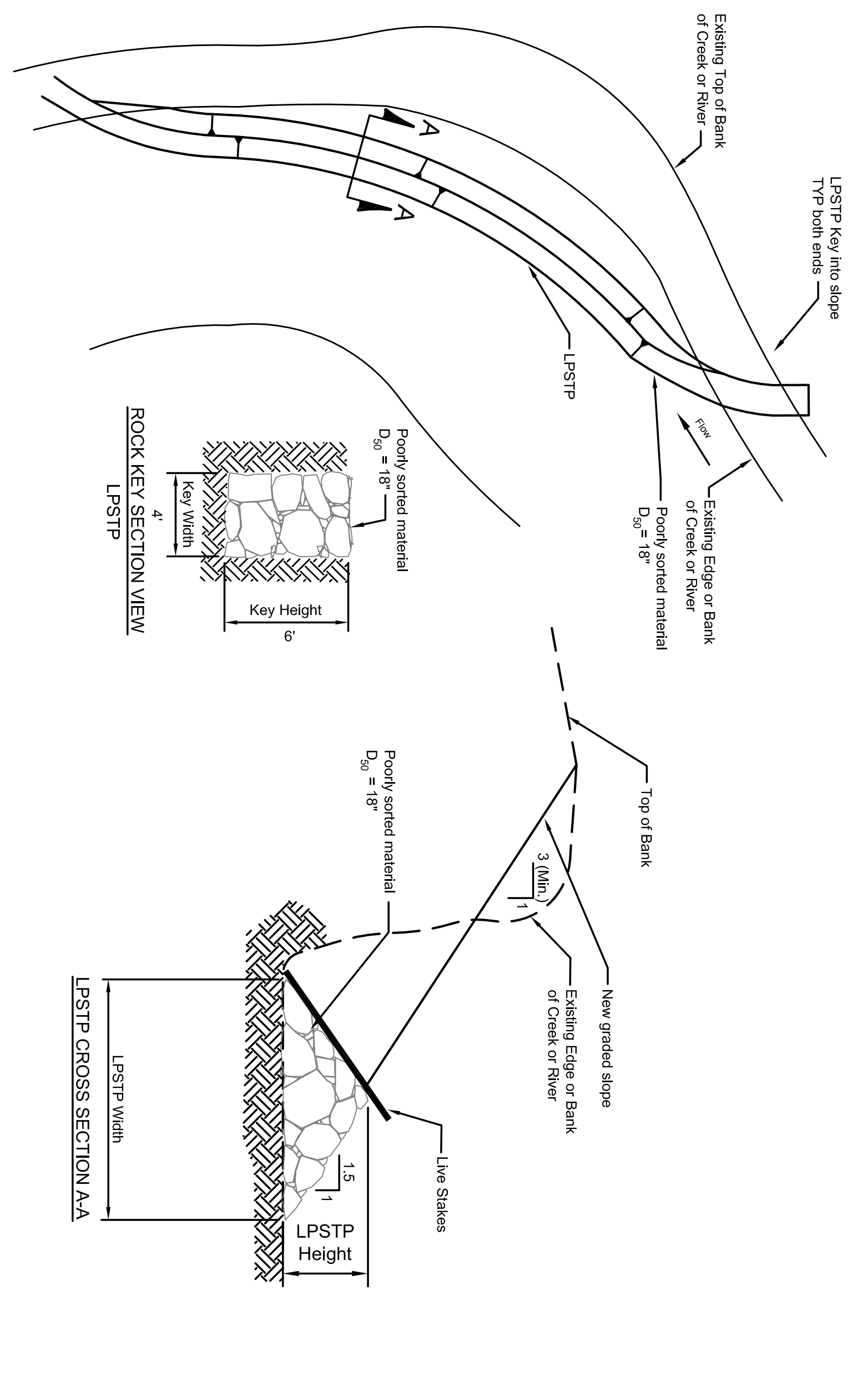
Project Name		Stream	County	State	Bank				
D333 Stream Rehabilitation		Delaware River	Atchison	Kansas	Length	Height			
#	Type	Spacing	Angle (Degrees)	Area sq. ft.	Height ft.	Length ft.	Key Yds3	Tons	Material Specifications
1	LPSTP	N/A	N/A	5400	4	65	65	705.0	Poorly Sorted Limestone Rock D50 - 18"
1	Weir	100	15	320	2	0	21	31.5	Poorly Sorted Limestone Rock D50 - 24"
2	Weir	100	20	400	2	10	24	61.0	Poorly Sorted Limestone Rock D50 - 24"
3	Weir	110	15	570	3	10	52	93.0	Poorly Sorted Limestone Rock D50 - 24"
4	Weir	92	15	475	3	25	10	81.0	Poorly Sorted Limestone Rock D50 - 24"
5	Weir	100	10	380	3	20	35	67.5	Poorly Sorted Limestone Rock D50 - 24"
6	Weir	100	10	320	2	10	35	67.5	Poorly Sorted Limestone Rock D50 - 24"
7	Weir	N/A	5	320	2	20	10	67.5	Poorly Sorted Limestone Rock D50 - 24"
				<b>8195</b>		<b>651</b>	<b>125</b>	<b>1,164</b>	
				<b>Total yds3</b>		<b>776</b>			

Site Information		Channel Length / ft.	Flow Frequency -
Structure Height / ft.	10	218	18.830
Crest Width / ft.	3.00	930	
Finished Slope Grader/H/V	5	At Station	
Schumm Channel Stage	407.074	C5	
Radius of Curvature / ft.	126.028	Channel Width / ft.	110.00
Max. Structure Spacing / ft.	76.865	Tortuosity	3.701
Req. Structure Spacing / ft.	8,120	Critical Shear Stress	0.559 lbs./sq.ft.
Hydraulic Radius / ft.	10.11	Slope = ft./ft.	124.5
Cross Sectional Area / sq. ft.	8.077	Wetted Perimeter / ft.	0.026
Bank Full Discharge / cfs		Manning's n	7.99
		Mean Velocity / fps	

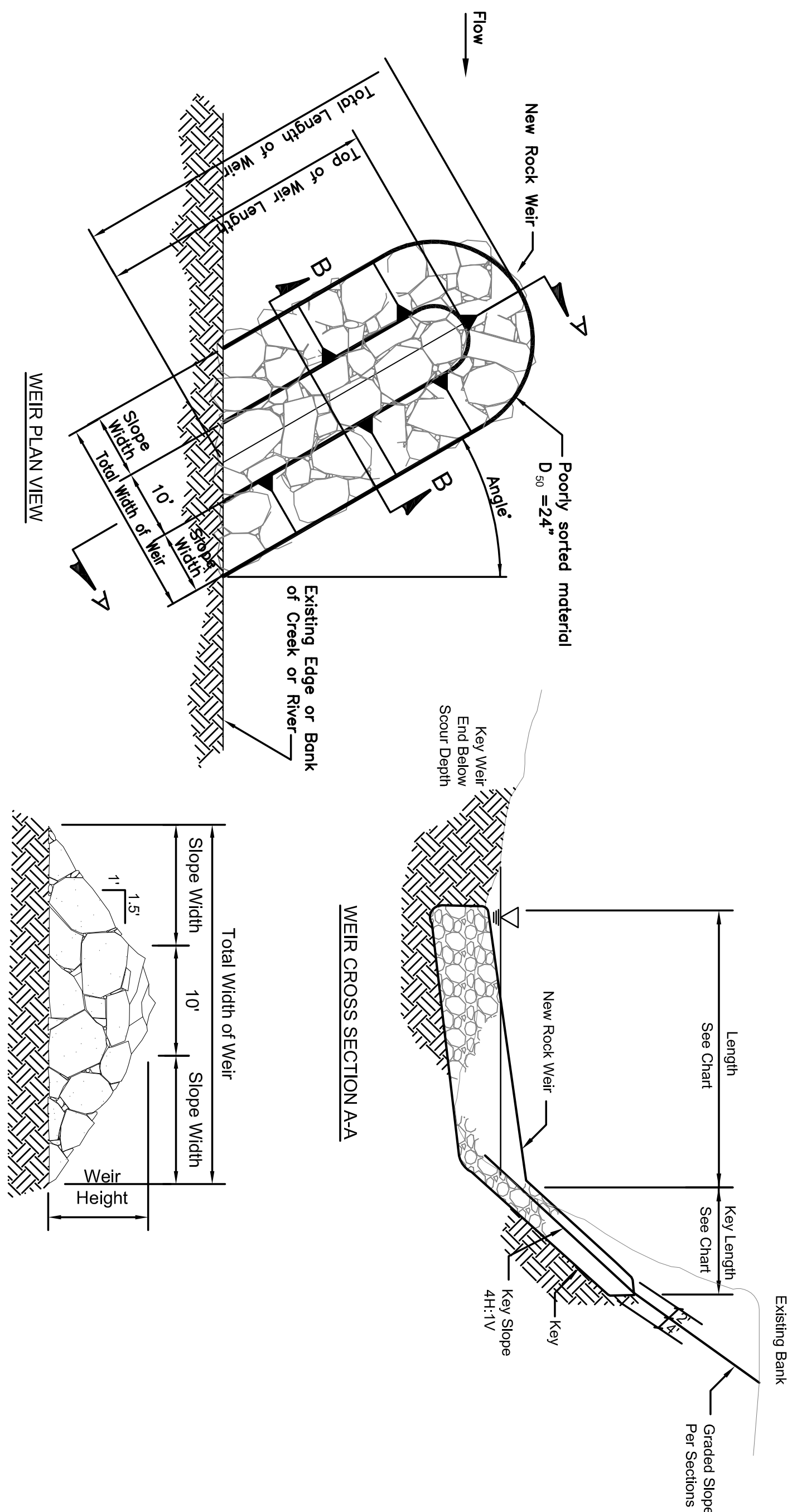
Vegetation Type	Quantity	Five Year Flood Frequency -
Bare Root Seedlings / ea.	900.00	18.830
Live Stakes / ea.	950.00	
Seeding / acres	1.28	
Mulching - Practice Code 484	1.28	470.16sq. Mi.
Mulching / acres	1.28	

Quantities List	
Shot Rock / Cubic Yards D50 = 18"	470
Shot Rock / Tons D50 = 18"	705
Shot Rock / Cubic Yards D50 = 24"	306
Shot Rock / Tons D50 = 24"	459
Soil moving / Cubic Yds.	12,444
Bare Root Trees	900.00
Live Stakes	950.00
Temporary Seeding / acres	1.28
Native Grass Seeding / acres	1.28
Mulching / acres	1.28

Landowner: John T. Fassnacht  
 C/O: fassnachts@atnhowell.net  
 Address: 1725 278th Rd.  
 City, State Zip: Muscogean, Kansas 66058  
 Phone: 785-474-3354  
 Legal: SE 1/4, Sec. 29, T6S, R17E  
 Date: 9/13/2023



LPSTP PLAN VIEW

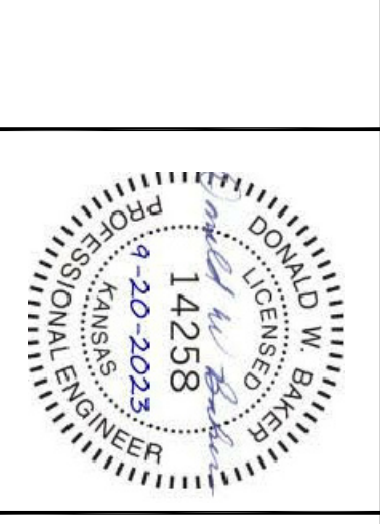
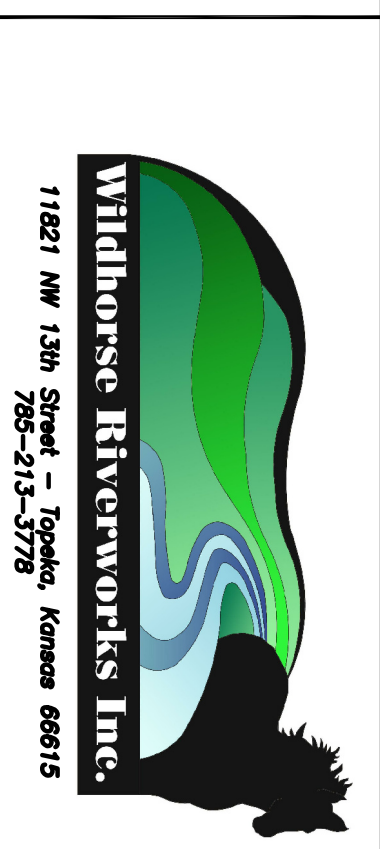


BENDWAY WEIR DETAILS

Not For Construction  
 Without a Professional  
 Engineer Seal.

Date	Comment	No.	BY	CK	IAPP
		1			
		2			
		3			
		4			

Designed By:	PGB
Drawn By:	MEM
Checked By:	DWB
Date:	8/06/23
Scale:	None



Delaware River  
 Site 33  
 Atchison County, Kansas  
 Details