

Baseline Assessment – Stream Attributes

Reach S-L35(1) (Pipeline ROW)

Perennial

Spread D

Nicholas County, West Virginia

Data	Included
Photos	✓
SWVM Form	✓
FCI Calculator and HGM Form	N/A – Perennial stream (not shadeable)
RBP Physical Characteristics Form	✓
Water Quality Data	✓
RBP Habitat Form	✓
RBP Benthic Form	✓
Benthic Identification Sheet	N/A –Low flow
Wolman Pebble Count	✓
Reference Reach Software Pebble Count Data	✓
Longitudinal Profile and Cross Sections	✓



Photo Type: US View at DS Edge of ROW

Location, Orientation, Photographer Initials: Downstream Edge of Right of Way, Upstream View, TF/AG/WP/EW



Photo Type: DS View at DS Edge of ROW

Location, Orientation, Photographer Initials: Downstream Edge of ROW, Downstream View, TF/AG/WP/EW



Photo Type: US View at Center of ROW
Location, Orientation, Photographer Initials: Center of Right of Way, Upstream View, TF/AG/WP/EW



Photo Type: DS View at Center of ROW
Location, Orientation, Photographer Initials: Center of Right of Way, Downstream View, TF/AG/WP/EW



38.203887° N, -80.719122° W

Photo Type: US View at US Edge of ROW

Location, Orientation, Photographer Initials: Upstream Edge of Right of Way, Upstream View, TF/AG/WP/EW



38.203887° N, -80.719122° W

Photo Type: DS View at US Edge of ROW

Location, Orientation, Photographer Initials: Upstream Edge of Right of Way, Downstream View, TF/AG/WP/EW

"Q:\Charleston\2021 Projects\21-0244- MVP- STREAM AND WETLAND CONDITIONS ASSESSMENT AND SURVEY PLAN\002 - Pre-Crossing Monitoring\Spread D\S-L35(1)"

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (FRONT)

STREAM NAMES <u>S-L35 (1)</u>	LOCATION <u>Riley Branch (1), Spread D</u>	
STATION # _____ RIVERMILE _____	STREAM CLASS <u>Perennial</u>	
LAT <u>38.203887</u> LONG <u>-80.719122</u>	COUNTY <u>Nicholas</u>	
STORET # _____	AGENCY <u>Potesta/ Edge</u>	
INVESTIGATORS <u>TF/ACJ/EW</u>		
FORM COMPLETED BY <u>TF</u>	DATE <u>8-25-21</u> TIME <u>1150</u>	REASON FOR SURVEY <u>Preliminary Assessment</u>

WEATHER CONDITIONS	<table style="width: 100%;"> <tr> <td style="width: 33%;"> Now <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input checked="" type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny </td> <td style="width: 33%;"> Past 24 hours <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input type="checkbox"/> clear/sunny </td> <td style="width: 33%;"> Has there been a heavy rain in the last 7 days? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Air Temperature <u>80</u> F °C Other _____ </td> </tr> </table>	Now <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input checked="" type="checkbox"/> %cloud cover <input checked="" type="checkbox"/> clear/sunny	Past 24 hours <input type="checkbox"/> storm (heavy rain) <input type="checkbox"/> rain (steady rain) <input type="checkbox"/> showers (intermittent) <input type="checkbox"/> %cloud cover <input type="checkbox"/> clear/sunny	Has there been a heavy rain in the last 7 days? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Air Temperature <u>80</u> F °C Other _____
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SITE LOCATION/MAP	<p>Draw a map of the site and indicate the areas sampled (or attach a photograph)</p>			
STREAM CHARACTERIZATION	<table style="width: 100%;"> <tr> <td style="width: 50%;"> Stream Subsystem <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Tidal Stream Origin <input type="checkbox"/> Glacial <input type="checkbox"/> Spring-fed <input type="checkbox"/> Non-glacial montane <input checked="" type="checkbox"/> Mixture of origins <input type="checkbox"/> Swamp and bog <input type="checkbox"/> Other _____ </td> <td style="width: 50%;"> Stream Type <input checked="" type="checkbox"/> Coldwater <input type="checkbox"/> Warmwater Catchment Area _____ km² </td> </tr> </table>	Stream Subsystem <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Tidal Stream Origin <input type="checkbox"/> Glacial <input type="checkbox"/> Spring-fed <input type="checkbox"/> Non-glacial montane <input checked="" type="checkbox"/> Mixture of origins <input type="checkbox"/> Swamp and bog <input type="checkbox"/> Other _____	Stream Type <input checked="" type="checkbox"/> Coldwater <input type="checkbox"/> Warmwater Catchment Area _____ km ²	
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PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (BACK)

WATERSHED FEATURES	Predominant Surrounding Landuse <input type="checkbox"/> Forest <input type="checkbox"/> Commercial <input type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Other <u>Pipeline ROW</u> <input type="checkbox"/> Residential		Local Watershed NPS Pollution <input type="checkbox"/> No evidence <input checked="" type="checkbox"/> Some potential sources <input type="checkbox"/> Obvious sources Local Watershed Erosion <input checked="" type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy
RIPARIAN VEGETATION (18 meter buffer)	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input checked="" type="checkbox"/> Herbaceous Dominant species present <u>jewelweed</u>		
INSTREAM FEATURES DS point	Estimated Reach Length <u>60</u> ft <small>m</small> Estimated Stream Width <u>2.5</u> ft <small>m</small> Sampling Reach Area <u>150</u> ft ² Area in km² (m²x1000) _____ km ² Estimated Stream Depth <u>0.3</u> ft <small>m</small> Surface Velocity <small>0.08 ft/sec</small> _____ m/sec Stream Dry <input type="checkbox"/>		Canopy Cover <input checked="" type="checkbox"/> Partly open <input type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded High Water Mark <u>4.0</u> ft <small>m</small> Proportion of Reach Represented by Stream Morphology Types Rifle ²⁰ _____ % Run ²⁰ _____ % Pool ⁶⁰ _____ % Channelized <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Dam Present <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
LARGE WOODY DEBRIS	LWD <u>1.5</u> m ² Density of LWD _____ m ² /km ² (LWD/ reach area)		
AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating Algae <input type="checkbox"/> Attached Algae Dominant species present _____ Portion of the reach with aquatic vegetation <u>0</u> %		
WATER QUALITY DS point	Temperature <u>18.4</u> °C Specific Conductance <u>47.8</u> us/cm Dissolved Oxygen <u>7.41</u> mg/L pH <u>5.49</u> SU Turbidity <u>4.44</u> ntu WQ Instrument Used <u>ysi</u>		Water Odors <input checked="" type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____ Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input type="checkbox"/> Globs Flecks <input checked="" type="checkbox"/> None <input type="checkbox"/> Other _____ Turbidity (if not measured) <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
SEDIMENT/SUBSTRATE	Odors <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic <input type="checkbox"/> None <input type="checkbox"/> Other _____ Oils <input checked="" type="checkbox"/> Absent <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Profuse Deposits <input type="checkbox"/> Sludge <input type="checkbox"/> Sawdust <input type="checkbox"/> Paper fiber <input type="checkbox"/> Sand <input type="checkbox"/> Relict shells <input type="checkbox"/> Other _____ Looking at stones which are not deeply embedded, are the undersides black in color? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock		10	Detritus	sticks, wood, coarse plant materials (CPOM)	5
Boulder	> 256 mm (10")	5			
Cobble	64-256 mm (2.5"-10")	25	Muck-Mud	black, very fine organic (FPOM)	0
Gravel	2-64 mm (0.1"-2.5")	25			
Sand	0.06-2mm (gritty)	25	Marl	grey, shell fragments	0
Silt	0.004-0.06 mm	10			
Clay	< 0.004 mm (slick)	0			

HABITAT ASSESSMENT FIELD DATA SHEET - HG - USE ON ALL STREAMS (FRONT)

STREAM NAMES-L35 (1)		LOCATION Riley Branch (1)	
STATION # _____ RIVERMILE _____		STREAM CLASS Perennial	
LAT 38.203887 _____ LONG -80.719122 _____		COUNTY Nicholas	
STORET # _____		AGENCY Potesta/ Edge	
INVESTIGATOR STF/ AG/ EW _____			
FORM COMPLETED BY TF		DATE 8-25-21 TIME 1150 _____ AM PM	REASON FOR SURVEY Preliminary Assessment

Parameters to be evaluated in sampling reach	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
Parameters to be evaluated in sampling reach	1. Epifaunal Substrate/ Available Cover <input type="checkbox"/> N/A SCORE 15 ▾	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
	2. Embeddedness SCORE 15 ▾	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	
	3. Velocity/Depth Regime <input type="checkbox"/> N/A SCORE 12 ▾	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0		
4. Sediment Deposition SCORE 14 ▾	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0		
5. Channel Flow Status <input type="checkbox"/> N/A SCORE 11 ▾	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0		

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
6. Channel Alteration Channelization or dredging absent or minimal; stream with normal pattern. SCORE <u>15</u>	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Frequency of Riffles (or bends) <input type="checkbox"/> N/A SCORE <u>13</u>	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream. SCORE <u>8</u> SCORE <u>8</u>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
9. Vegetative Protection (score each bank) SCORE <u>8</u> SCORE <u>8</u>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone) SCORE <u>8</u> SCORE <u>8</u>	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0

Parameters to be evaluated broader than sampling reach

Total Score 143

BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

STREAM NAMES-L35 (1)		LOCATION Riley Branch (1)	
STATION # _____ RIVERMILE _____		STREAM CLASS Perennial	
LAT <small>38.203887</small> _____ LONG <small>-80.719122</small> _____		COUNTY Nicholas	
STORET # _____		AGENCY Potesta/ Edge	
INVESTIGATOR STF/ AG/ EW			LOT NUMBER
FORM COMPLETED BY TF		DATE <u>8-25-21</u> TIME <u>1150</u>	REASON FOR SURVEY Preliminary Assessment

HABITAT TYPES	Indicate the percentage of each habitat type present <input type="checkbox"/> Cobble _____% <input type="checkbox"/> Snags _____% <input type="checkbox"/> Vegetated Banks _____% <input type="checkbox"/> Sand _____% <input type="checkbox"/> Submerged Macrophytes _____% <input type="checkbox"/> Other (_____) _____%
SAMPLE COLLECTION	Gear used <input type="checkbox"/> D-frame <input type="checkbox"/> kick-net <input type="checkbox"/> Other _____ How were the samples collected? <input type="checkbox"/> wading <input type="checkbox"/> from bank <input type="checkbox"/> from boat Indicate the number of jabs/kicks taken in each habitat type. <input type="checkbox"/> Cobble _____ <input type="checkbox"/> Snags _____ <input type="checkbox"/> Vegetated Banks _____ <input type="checkbox"/> Sand _____ <input type="checkbox"/> Submerged Macrophytes _____ <input type="checkbox"/> Other (_____) _____
GENERAL COMMENTS	Benthics not taken - flow is too low

QUALITATIVE LISTING OF AQUATIC BIOTA

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare, 2 = Common, 3= Abundant, 4 = Dominant

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

FIELD OBSERVATIONS OF MACROBENTHOS

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare (1-3 organisms), 2 = Common (3-9 organisms), 3= Abundant (>10 organisms), 4 = Dominant (>50 organisms)

Porifera	0	1	2	3	4	Anisoptera	0	1	2	3	4	Chironomidae	0	1	2	3	4
Hydrozoa	0	1	2	3	4	Zygoptera	0	1	2	3	4	Ephemeroptera	0	1	2	3	4
Platyhelminthes	0	1	2	3	4	Hemiptera	0	1	2	3	4	Trichoptera	0	1	2	3	4
Turbellaria	0	1	2	3	4	Coleoptera	0	1	2	3	4	Other	0	1	2	3	4
Hirudinea	0	1	2	3	4	Lepidoptera	0	1	2	3	4						
Oligochaeta	0	1	2	3	4	Sialidae	0	1	2	3	4						
Isopoda	0	1	2	3	4	Corydalidae	0	1	2	3	4						
Amphipoda	0	1	2	3	4	Tipulidae	0	1	2	3	4						
Decapoda	0	1	2	3	4	Empididae	0	1	2	3	4						
Gastropoda	0	1	2	3	4	Simuliidae	0	1	2	3	4						
Bivalvia	0	1	2	3	4	Tabinidae	0	1	2	3	4						
						Culcidae	0	1	2	3	4						

SITE ID: S-L35(1) Spread D

DATE: 8/25/21

COLLECTOR(S): AG/EW/TF

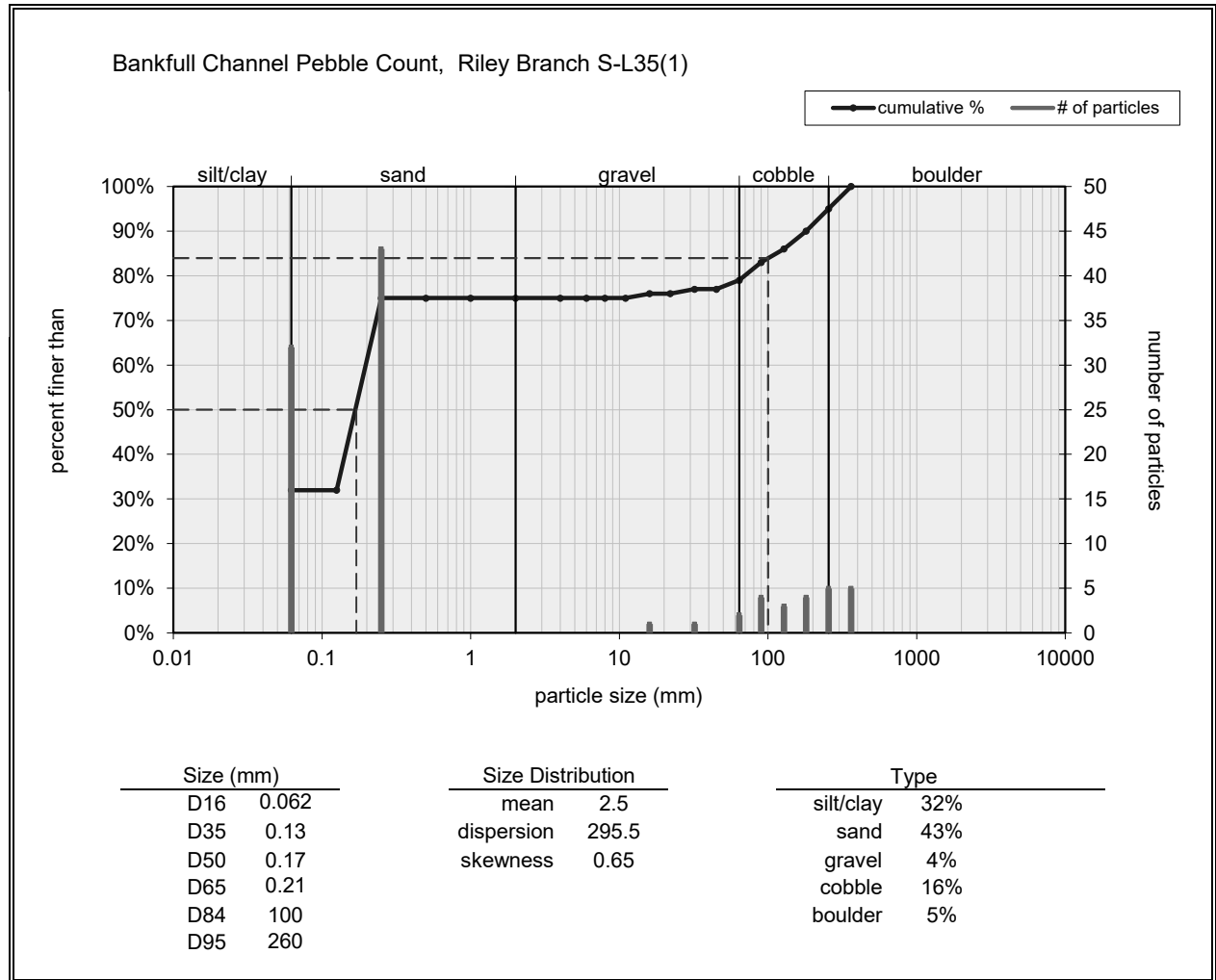
Wolman Pebble Count (Reach Wide)										NOTES:
195	125	110	FS	14	70	FS	84	75	FS	
220	170	SE	220	185	70	FS	80	90	SE	
SE	SE	265	FS	205	165	SE	SE	FS	SE	
SE	FS	SE	SE	SE	FS	SE	230	95	120	
250	170	SE	280	280	170	FS	SE	SE	FS	
SE	SE	FS	FS	FS	SE	SE	SE	FS	FS	
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	
SE	FS	FS	FS	FS	SE	FS	FS	FS	FS	
FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	
FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	

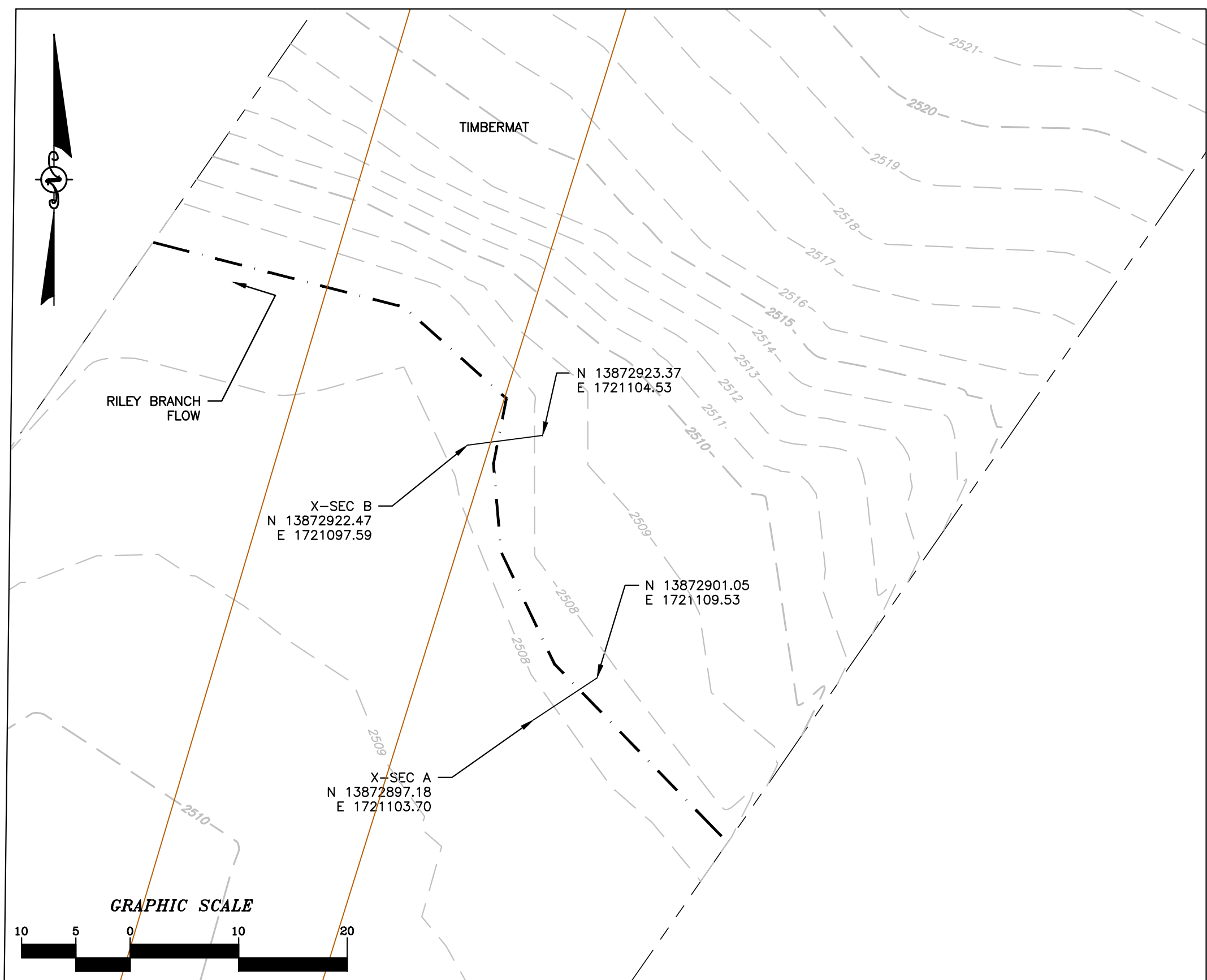
Riffle Pebble Count										NOTES:

										NOTES:

Inches	MM	Millimeter	
	Slit Clay	< 0.075	SAND
	Very Fine	0.075 - 0.25	
	Fine	0.25 - 0.5	
	Medium	0.5 - 2.0	
	Coarse	2.0 - 7.5	
0.5 - 0.75	Very Coarse	7.5 - 15	GRAVEL
0.75 - 1.0	Very Fine	15 - 20	
1.0 - 2.0	Fine	20 - 47.5	
2.0 - 4.75	Fine	47.5 - 75	
4.75 - 9.5	Medium	75 - 150	
9.5 - 19	Medium	150 - 300	
19 - 38	Coarse	300 - 600	
38 - 75	Coarse	600 - 1200	
75 - 150	Very Coarse	1200 - 2500	
150 - 300	Very Coarse	2500 - 5000	
300 - 600	Small	600 - 1200	COBBLES
600 - 1200	Small	1200 - 2500	
1200 - 2500	Large	2500 - 5000	
2500 - 5000	Small	5000 - 10000	
5000 - 10000	Medium	10000 - 20000	
10000 - 20000	Large/Very Large	20000 - 30000	
	Boulders	> 30000	

Bankfull Channel		
Material	Size Range (mm)	Count
silt/clay	0 - 0.062	32
very fine sand	0.062 - 0.125	
fine sand	0.125 - 0.25	43
medium sand	0.25 - 0.5	
coarse sand	0.5 - 1	
very coarse sand	1 - 2	
very fine gravel	2 - 4	
fine gravel	4 - 6	
fine gravel	6 - 8	
medium gravel	8 - 11	
medium gravel	11 - 16	1
coarse gravel	16 - 22	
coarse gravel	22 - 32	1
very coarse gravel	32 - 45	
very coarse gravel	45 - 64	2
small cobble	64 - 90	4
medium cobble	90 - 128	3
large cobble	128 - 180	4
very large cobble	180 - 256	5
small boulder	256 - 362	5
small boulder	362 - 512	
medium boulder	512 - 1024	
large boulder	1024 - 2048	
very large boulder	2048 - 4096	
total particle count:		100
bedrock -----		
clay hardpan -----		
detritus/wood -----		
artificial -----		
total count:		100
Note: _____		





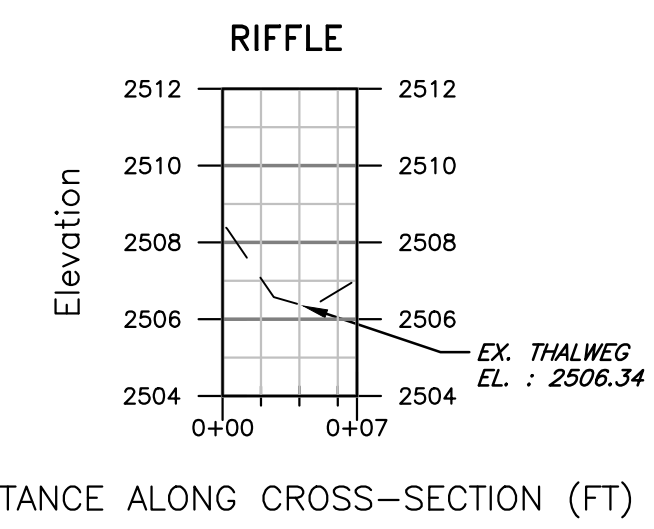
S-L35(1)

LEGEND

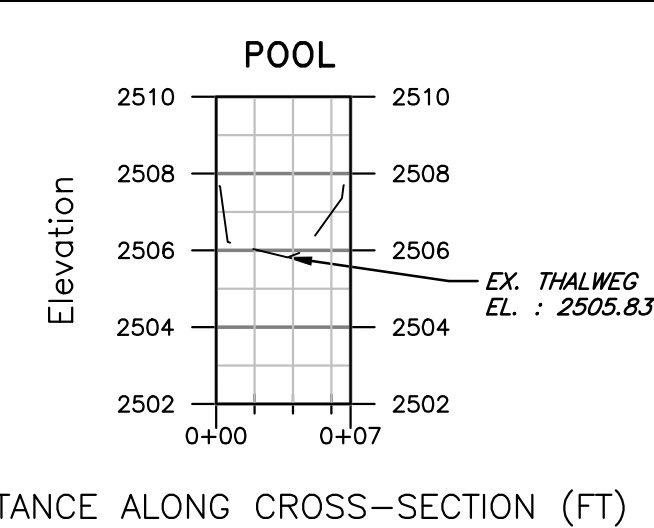
STUDY AREA (EASEMENT)
 EXISTING SURVEY-LOCATED THALWEG
 1176.87 + EXISTING SURVEYED GROUND SHOT ELEVATION

- SURVEY NOTES:**
- THIS MAP HAS BEEN ORIENTED TO NAD 1983 UTM ZONE 17N, AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), USING REAL TIME DGPS. FIELD LOCATIONS WERE COMPLETED ON 8-25-2021.
 - EASEMENT LINES SHOWN ON PLAN VIEW WERE PROVIDED BY MOUNTAIN VALLEY PIPELINE.
 - SURVEY POINTS FOR CROSS SECTIONS AND THALWEG PROFILES COLLECTED IN 2021 HAVE BEEN USED IN COMBINATION WITH SURVEY POINTS AND COLLECTED PREVIOUSLY IN 2020 IN ORDER TO GENERATE THE PRE-CROSSING SURFACE SHOWN IN PLAN. DUE TO NATURAL EROSIONAL STREAM PROCESSES THAT OCCUR OVER TIME, MINOR ADJUSTMENTS TO THE PROFILE ALIGNMENTS MAY HAVE BEEN REQUIRED IN ORDER TO GENERATE A CLEAN PRE-CROSSING SURFACE.
 - ALL SECTION VIEWS SHOWN LEFT TO RIGHT FACING DOWNSTREAM.
 - POST-CROSSING SURVEY INFORMATION SHOWN IN RED. DATA PENDING.
 - POST-CROSSING SURVEY POINTS FOR CROSS SECTIONS AND THALWEG ARE PROJECTED ONTO PRE-CROSSING SECTION AND PROFILE VIEWS FOR COMPARISON.

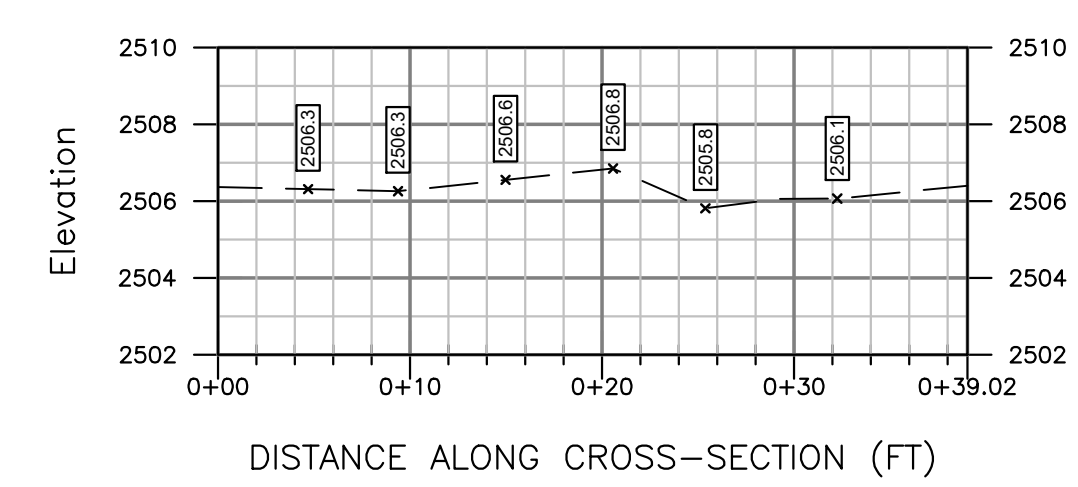
S-L35(1) BASELINE CROSS-SECTION A



S-L35(1) BASELINE CROSS-SECTION B



S-L35(1) BASELINE THALWEG PROFILE

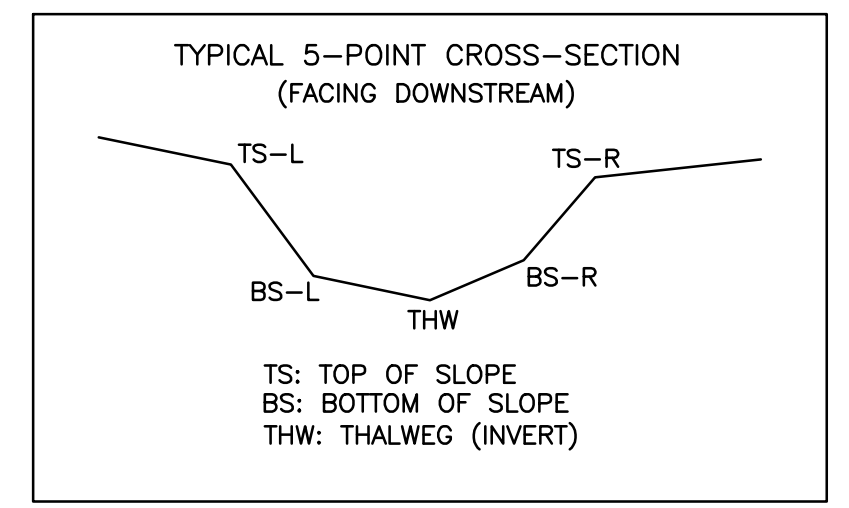


PROFILE LEGEND

EXISTING STREAM PROFILE
 INVERT ALONG THALWEG

PROFILE SCALE: H: 1"=10' V: 1"=5'

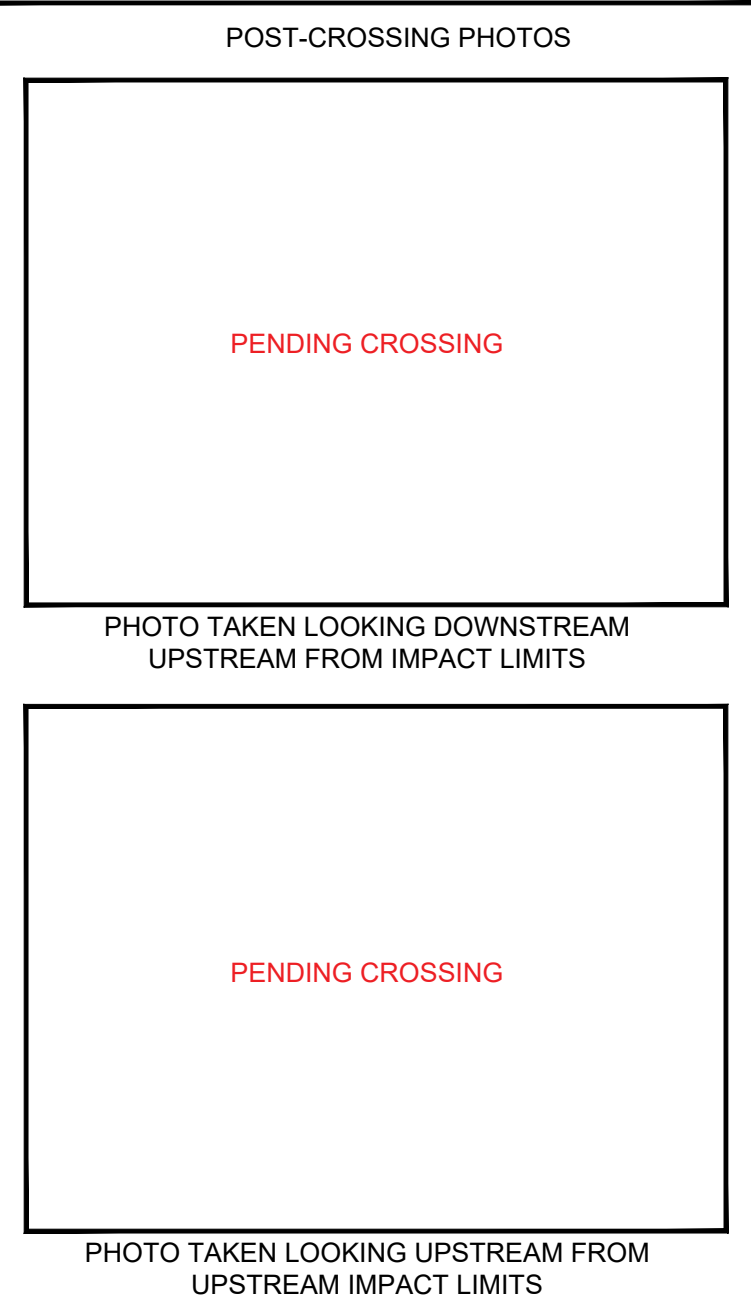
AS-BUILT TABLE: S-L35(1) CROSS SECTION B					
	PRE-CROSSING			AS-BUILT	
PT. LOC.	NORTHING	EASTING	ELEV.	VERT. DIFF.	HORZ. DIFF.
TS-L	13872922.53	1700078.25	2507.68		
BS-L	13872922.63	1721098.14	2506.21		
THW	13872922.83	1721101.31	2505.81		
BS-R	13872923.48	1721103.68	2506.30		
TS-R	13872923.26	1721104.21	2507.70		



CROSS SECTION LEGEND

EXISTING GRADE
 EXISTING THALWEG

CROSS SECTION SCALE: H: 1"=10' V: 1"=5'



NOTE: ALL SECTION VIEWS SHOWN LEFT TO RIGHT FACING DOWNSTREAM.

PRE-CROSSING

File: S:\3D-Pre-Crossing\21-0244-MVA\21-0244-S-L35-1.dwg
 Date: 9/27/2021 10:58:47 AM
 Plot: 21-0244-S-L35-1.dwg

DATE ISSUED 9/27/2021

-S-L35-1
 CAD File No.
 MBS
 Drawn
 CHH
 Checked
 BB/JLY
 Approved
 NOTED
 Scale:
 SEPT. 2021
 Date:
 21-0244-005
 Project No.

POTESTA & ASSOCIATES, INC.
 ENGINEERS AND ENVIRONMENTAL CONSULTANTS
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 E-Mail: potesta@potesta.com

POTESTA

Client: **MOUNTAIN VALLEY PIPELINE, LLC**
 2200 ENERGY DRIVE, 2ND FLOOR
 CANONSBURG, PA 15317

Title: **PROFILE AND CROSS-SECTIONS**
 BASELINE SURVEY
 CROSSING S-L35(1) - RILEY BRANCH (1)
 (MP 124.68)
 NICHOLAS COUNTY, WV

1

Drawing No.