



Floodplain Development Permit

Doddridge County, WV Floodplain Management

This permit gives approval for the development/ project listed that impacts the FEMA-designated floodplain and/or floodway of Doddridge County, WV, pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance. This permit must be posted at the site of work as to be clearly visible and must remain posted during entirety of development.

Permit: #18-535
Renewal of #17-473

Date Approved: December 9, 2018

Expires: December 9, 2019

Issued to: Mountain Valley Pipeline, LLC

POC: Matt Hoover - 724/873-3009

Company Address: 555 Southpoint Blvd., Suite 200 Canonsburg, PA 15317

Project Address: 11872 Meathouse Fork

Firm: 54017C0260C

Lat/Long: 39.2012850N, -80.5533870W

Purpose of Development: Pipeline Project

Issued by: George C. Eidel, CFM, OEM Director/Doddridge County FPM (or designee)

Date: December 9, 2018

For additional information regarding this permit, please contact
Doddridge County Floodplain Manager at 304.873.2631, or via email at
doddridgecountyfpm@gmail.com
118 East Court Street; West Union, WV 26456

COPY

COPY

COPY

POTESTA & ASSOCIATES, INC.
7012 MACCORMICK AVE SE
CHARLESTON, WEST VIRGINIA 25304

14307

EZShield™ Check Fraud
Protection for Business
69-36-519

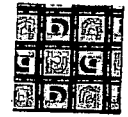
DATE Nov. 09, 2018

PAY TO THE ORDER OF Doddridge County Commission

Three thousand two hundred forty-five ³³/₁₀₀ DOLLARS \$ 3,245.33

CHASE
JPMorgan Chase Bank, N.A.
www.Chase.com

[Signature]



FOR _____

⑈014307⑈ ⑆051900366⑆

625733274⑈

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FLOODPLAIN PERMIT #18-535

Potesta/Mountain Valley Pipeline Meathouse Fork 39.2012850N,-80.5533870W Renewal of 17-473

TASK	COMPLETE (DATE)	NOTES
<i>CHECK RECEIVED</i>	11/13/18	
<i>US ARMY CORP. ENGINEERS (USACE)</i>		
<i>US FISH & WILDLIFE SERVICES (USFWS)</i>		
<i>WV DEPT. NATURAL RESOURCES (WVDNR)</i>		
<i>WV DEPT. ENVIROMENTAL PROTECTION (WVDEP)</i>		
<i>STATE HISTORIC & PRESERVATION OFFICE (SHPO)</i>		
<i>OFFICE of LAND & STREAM (OLS)</i>		
<i>DATE OF COMMISSION READING</i>		
<i>DATE AVAILABLE TO BE GRANTED</i>	12/9/18	
<i>PERMIT GRANTED</i>		
<i>COMPLETE</i>		



Doddridge County Floodplain Permits

(Week of November 19, 2018)

Please take notice that on the 13th of November, 2018, Potesta Engineering and Environmental Consultants filed an application for a Floodplain Permit (#18-535) to develop land located at or about Meathouse Fork Rd ; Coordinates: 39.2012850 N, -80.5533870 W . The Application is on file with the Floodplain Manager of the County and may be inspected or copied during regular business hours in accordance to WV Code Chapter 29B Freedom of Information, Article 1 Public Records and county policy and procedures. Any interested persons who desire to comment shall present the same in writing by **(December 9, 2018)** (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Floodplain Manager of the County at 105 Court Street, Suite #3, West Union, WV 26456. This project is a renewal of permit #17-473 Mountain Valley Pipeline


GEORGE C. EIDEL, CFM

Doddridge County Floodplain Manager



Engineers and Environmental Consultants

7012 MacCorkle Avenue, SE, Charleston, WV 25304 - (304) 342-1400 • FAX (304) 343-9031; www.potesta.com

November 8, 2018

Mr. George Eidel
Doddridge County Floodplain Coordinator
Doddridge County Commission
118 East Court Street
West Union, West Virginia 26456

NOV 13 18 1:33PM

RE: Floodplain Permit Application
Mountain Valley Pipeline, LLC (MVP)
Doddridge County, West Virginia
POTESTA Project No. 0101-16-0259-008C

Dear Mr. Eidel:

Potesta & Associates, Inc. (POTESTA) is pleased to submit this cover letter with the associated Floodplain Development Permit Application for the proposed Mountain Valley Pipeline (MVP) Project. MVP spans from northwestern West Virginia to southern Virginia, with approximately 196 miles in West Virginia and 5 miles being located within Doddridge County.

One floodplain crossing is located in Doddridge County with approximately 250 linear feet of pipeline construction at Station 1837+00. Temporary aboveground construction within floodplain limits include additional temporary work space (ATWS) utilized for stream crossing support, access roads including stone construction entrances, timber mats, and various erosion and sediment control devices (compost filter sock (CFS), silt fence, super silt fence, and erosion matting). Permanent aboveground structures associated with crossings within the floodplain limits will be one service pole associated with the ground bed rectifier systems and mainline valve sites at linear Station 1837+00. It should be noted that the mainline valve site will be placed at the current ground elevation without increasing the current grade. Additionally, construction of permanent roads, temporary roads, or maintenance of existing roads will occur within the floodplain limits. The one crossing is located within the FEMA Flood Zone AE, which is the regulatory floodplain associated with the Base Flood (1 percent annual chance flood event), commonly referred to as the 100-year floodplain, and indicates that the limits of the floodplain are determined by detailed methods.

Included within this letter are the following documents: the permit application, directions to the sites, relative construction drawings, and details of temporary or permanent structures within the floodplain limits.

POTESTA & ASSOCIATES, INC.

Charleston, West Virginia • Morgantown, West Virginia • Winchester, Virginia

Mr. George Eidel
November 8, 2018
Page 2

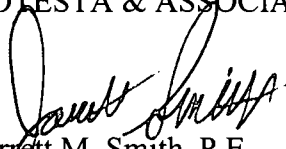
Below is an expanded list of each crossing and its associated temporary and permanent construction activities.

Page Number	Mile Post	Stationing	Temporary Impacts	Permanent Impacts
2.52	34.8	1837+00 to 1839+50	Timber Mat, Stone Construction Entrance, SSF, ATWS	Ground Bed Rectifier, Access Road, Mainline Valve Site

If you have any questions, please feel free to contact me at (304) 342-1400 or jmsmith@potesta.com or Matt Hoover (MVP) at (724) 873-3009 or mhoover@eqt.com.

Sincerely,

POTESTA & ASSOCIATES, INC.


Jarrett M. Smith, P.E.
Senior Engineer

JMS:JWB/clr

Enclosures

c: Mr. Matt Hoover – MVP (via email)





Permit# 18-535
Project Name: Mountain Valley Pipeline
Permittees Name: Mountain Valley Pipeline, LLC

(Renewal of
17-473)

NOV13 18 1:33PM

Doddridge County, WV

Floodplain Development Permit Application

This document is to be used for projects that impact/potentially impact the FEMA—designated floodplain and/or floodway of Doddridge County, WV pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance.

SECTION 1: GENERAL PROVISIONS (APPLICANT TO READ AND SIGN)

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Compliance is issued.
5. The permit will expire if no work is commenced within six months of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal requirements.
7. Applicant hereby gives consent to the Floodplain Administrator/Manager or his/her representative to make inspections to verify compliance.
8. I THE APPLICANT CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.

APPLICANT'S SIGNATURE

Robert J. Coyne

DATE 11/08/2018

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Applicant Information:

Please provide all pertinent data.

Applicant Information		
Responsible Company Name: Mountain Valley Pipeline, LLC		
Corporate Mailing Address: 555 Southpoint Boulevard, Suite 200		
City: Canonsburg	State: PA	Zip: 15317
Corporate Point of Contact (POC): Matt Hoover		
Corporate POC Title: Senior Environmental Coordinator		
Corporate POC Primary Phone: (724) 873-3009		
Corporate POC Primary Email: MHoover@eqt.com		
Corporate FEIN: 25-0754685	Corporate DUNS: N/A	
Corporate Website: N/A		
Local Mailing Address: N/A		
City: N/A	State: N/A	Zip: N/A
Local Project Manager (PM): Same as Point of Contact		
Local PM Primary Phone: Same as Point of Contact		
Local PM Secondary Phone: Same as Point of Contact		
Local PM Primary Email: Same as Point of Contact		
Person Filing Application: Jordan Beard		
Applicant Title: Engineer		
Applicant Primary Phone: (304) 342-1400		
Applicant Secondary Phone: N/A		
Applicant Primary Email: jwbeard@potesta.com		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Proposed Development:

Please check all elements of the proposed project that apply.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

<u>ACTIVITY</u>	<u>STRUCTURAL TYPE</u>
<input type="checkbox"/> New Structure	<input type="checkbox"/> Residential (1 – 4 Family)
<input type="checkbox"/> Addition	<input type="checkbox"/> Residential (more than 4 Family)
<input type="checkbox"/> Alteration	<input type="checkbox"/> Non-residential (floodproofing)
<input type="checkbox"/> Relocation	<input type="checkbox"/> Combined Use (res. & com.)
<input type="checkbox"/> Demolition	<input type="checkbox"/> Replacement
<input type="checkbox"/> Manufactured/Mobil Home	

B. OTHER DEVELOPMENT ACTIVITIES:

- | | | | |
|---|---------------------------------|-----------------------------------|--|
| <input type="checkbox"/> Fill | <input type="checkbox"/> Mining | <input type="checkbox"/> Drilling | <input checked="" type="checkbox"/> Pipelining |
| <input type="checkbox"/> Grading | | | |
| <input type="checkbox"/> Excavation (except for STRUCTURAL DEVELOPMENT checked above) | | | |
| <input type="checkbox"/> Watercourse Alteration (including dredging and channel modification) | | | |
| <input type="checkbox"/> Drainage Improvements (including culvert work) | | | |
| <input type="checkbox"/> Road, Street, or Bridge Construction | | | |
| <input type="checkbox"/> Subdivision (including new expansion) | | | |
| <input type="checkbox"/> Individual Water or Sewer System | | | |
| <input type="checkbox"/> Other (please specify) | | | |

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

Please provide physical description of the site/property, along with pertinent ownership (surface and mineral rights) data as applicable. Attach appropriate maps from the WV Flood Tool showing location of proposed development. Use additional copies of this page if development spans multiple property boundaries. Designate each property by number (i.e. Property 1 of 1, Property 2 of 7, etc.)

Property Designation: ____ of ____

Site/Property Information:		
Legal Description: Please See Attached		
Physical Address/911 Address:		
Decimal Latitude/Longitude: 39.201285, -80.553387		
DMS Latitude/Longitude:		
District:	Map:	Parcel:
Land Book Description:		
Deed Book Reference:		
Tax Map Reference:		
Existing Buildings/Use of Property:		

Floodplain Location Data: (to be completed by Floodplain Manager or designee)			
Community:	Number:	Panel:	Suffix:
Location (Lat/Long):		Approximate Elevation:	
		Estimated BFE:	
Is the development in the floodway?		Is the development in the floodplain?	
Yes No		Yes No Zone: _____	
Notes:			

Doddridge County Commercial/Industrial Floodplain Development Permit Application

Mountain Valley provided a non-public list of affected landowners to FERC. FERC requires that this information be filed as privileged to protect the privacy of the landowners. To be consistent with these FERC requirements, the landowner information has been omitted from this application.

Property Owner Data:

Please provide data on current site/property landowner(s), both surface and mineral rights (as applicable). Use additional copies of this page as needed. Designate each page in relation to each property listed above.

Property Designation: ___ of ___ See attached for property owners/adjacent landowners.

Property Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Mineral Rights Owner Data: (As Applicable)		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Contractor Data:

Please provide all pertinent data for contractors and sub---contractors that may be participating in this project. Use additional copies of this page as needed. Designate each page in relation to each property listed above.

Property Designation: ____ of ____		
Contractor/Sub-Contractor (C/SC) Information:		
C/SC Company Name: N/A		
C/SC WV License Number:		
C/SC FEIN:	C/SC DUNS:	
Local C/SC Point of Contact (POC):		
Local C/SC POC Title:		
C/SC Mailing Address:		
City:	State:	Zip-Code:
Local C/SC Office Phone:		
Local C/SC POC Phone:		
Local C/SC POC E-Mail:		

Engineer Firm Information:		
Engineer Firm Name:		
Engineer WV License Number:		
Engineer Firm FEIN:	Engineer Firm DUNS:	
Engineer Firm Primary Point of Contact (POC):		
Engineer Firm Primary POC Title:		
Engineer Firm Mailing Address:		
City:	State:	Zip-Code:
Engineer Firm Office Phone:		
Engineer Firm Primary POC Phone:		
Engineer Firm Primary POC E-Mail:		

Adjacent and/or Affected Landowners Data

Please provide data for all adjacent and/or affected surface owners (both up and down stream) whose property may be impacted by proposed development as demonstrated by a floodplain study or survey. Use additional copies of this page as needed.

Adjacent Property Owner Data: Upstream		
Name of Primary Owner (PO):		
Physical Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data: Upstream		
Name of Primary Owner (PO):		
Physical Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data: Downstream		
Name of Primary Owner (PO):		
Physical Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data: Downstream		
Name of Primary Owner (PO):		
Physical Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Site Plan

A Site Plan is an accurate and detailed map of the proposed development for this project. It shows the size, shape, location and special features of the project property, and the size and location of any development planned to the property, especially as that development will impact the floodplain and/or floodway. Site plans show what currently exists on the project property, and any changes or improvements you are proposing to make. **A certified and licensed engineering firm should complete site plans.**

A SITE PLAN MUST CONTAIN THE FOLLOWING INFORMATION:

1. Legal description of the parcel, north arrow and scale
2. All property lines and their dimensions
3. Names of adjacent roads, location of driveways
4. Location of sloughs, tributaries, streams, rivers, wetlands, ponds, and lakes, with setbacks indicated, and including FEMA floodplain data based on most updated FIRM.
5. Location, size, shape of all buildings, existing and proposed, with elevation of lowest floor indicated.
6. Location and dimensions of existing or proposed on-site sewage systems.
7. Location of all propane tanks, fuel tanks or other liquid storage tanks whether above ground or below ground level.
8. Location and dimensions of any proposed pipeline placement(s) into floodplain/floodway.
9. Location and dimensions of any roadway development into floodplain/floodway. *(Includes initial development access roads)*
10. Location and dimensions of any bridge and/or culvert development into floodplain/floodway.
11. Location and dimensions of any storage yard or facility into the floodplain/floodway.
12. Location of any existing utilities and/or proposed utility placement and/or displacement.
13. Location, dimensions and depth of any existing or proposed fill on site.
14. A survey showing the **existing ground elevations** of at least location on the building site. **ELEVATION NOTE:** All vertical datum will reference either NGVD 29 or NAVD 88. Assumed datum will not be acceptable unless the property is located in an area where vertical datum has not been published. For those areas where vertical datum has not been established, a site plan with contours, elevations using assumed datum, high water marks and existing water levels of sloughs, rivers, lakes or streams and proposed lowest floor elevation.

Applicant

Please read print name, sign and date below:

- I certify that I am authorized to submit this application for the primary project developer.
- I certify that the information included in this application is to the best of my knowledge true and complete.
- I certify that all required Federal, State, and local permits required by law and/or ordinance for the above described development of this project have been properly attained, are current and valid, and must be presented with this application before a Doddridge County Floodplain Permit may be issued.
- I understand that if in the course of the development project additional permits become required that were not needed during the initial proposal, the primary developer must notify the Doddridge County Floodplain Manager within 48 hours of such need, and that a "Stop Work" order may be issued for all project work directly impacting the floodplain or floodway, until such time the required additional permits are acquired.
- I understand that once the floodplain permit is submitted, the application will be entered into official public record at the next regularly scheduled Doddridge County Commission meeting after the date of submittal.
- I understand that from the date of submittal of the fully completed permit application, the Doddridge County Floodplain Manager has ninety (90) days to make a determination to either grant or deny said permit application. During this approval period, the Doddridge County Floodplain Manager may, at his or her discretion, conduct a review and/or additional study of provided documentation by means of an independent engineering firm. All costs associated with said review and/or study must be reimbursed to the County before issuance of approved permit.
- I understand that during the approval period, the Doddridge County Floodplain Manager or designee may at his or her discretion conduct site visits and document conditions of proposed development pursuant to the permit application.
- I understand that once the Floodplain Permit is granted, the permit will be entered into official public record at the next scheduled Doddridge County Commission meeting after the date of issuance. Appeals to the permit may be made no later than twenty (20) days after said issuance. If a valid appeal is submitted, as determined by the Doddridge County Floodplain Manager, a "Stop Work" order will be issued for all project development directly involving the floodplain or floodway. A public hearing by the Doddridge County Appeals Board will be scheduled no less than ten (10) days after the next regularly scheduled Doddridge County Commission meeting.
- I understand that all decisions of the Doddridge County Appeals Board shall be final.
- I understand issuance of a Floodplain Permit authorizes me to proceed with construction as proposed. A Certificate of Compliance is required upon substantial completion of the project.
- In signing this application, the primary developer hereby grants the Doddridge County Floodplain Manager or designee the right to enter onto the above-described location to inspect the development work proposed, in progress, and/or completed.
- I understand that if I do not follow exactly the site-plan submitted and approved by this permit that a "Stop Work" order may be issued by the Wirt County Floodplain Manager and that I must stop all construction immediately until discrepancies of actual work vs. proposed work is resolved.

Applicant Signature: _____

Date: 11/08/2018

Applicant Printed Name: _____

Robert J. Cooper

**DODDRIDGE COUNTY FLOODPLAIN
LANDOWNER INFORMATION
MOUNTAIN VALLEY PIPELINE**

Owner	Address	Legal Description	Mile Post	District	Map	Parcel	Deed Book/Page
Landowners							
Jeffery J Ford	15 Meadow Lane Bridgeport, WV 26330	Meathouse 90.74 AC	34.8	04	11	36	281/665
Adjacent Landowners							
Jeffery J Ford	15 Meadow Lane Bridgeport, WV 26330	BIG Isaac 1 AC	34.8	04	11	31	281/665
Jeffery J Ford	15 Meadow Lane Bridgeport, WV 26330	BIG Isaac 30 AC	34.8	04	11	35	WB41/619
Earl Richards (Life)	544 Independence Road Salem, WV 26426	5.36 AC Meathouse	34.8	04	11	37.7	258/200
Earl Richards (Life)	544 Independence Road Salem, WV 26426	2 AC Meathouse	34.8	04	11	37.6	258/194
John R Clowser	3735 Big Issac Road Salem, WV 26426	1.51 AC Meathouse	34.8	04	11	37.4	305/436
John Russel Clowser	PO Box 98 Lost Creek, WV 26385	77 PO Two Lots Meathouse	34.8	04	11	37.2	296/700
Brett Cox	3611 Haigker Road Monroe, NC, 28110	Meathouse 30.18 AC	34.8	04	11	37.5	316/583

Mountain Valley provided a non-public list of affected landowners to FERC. FERC requires that this information be filed as privileged to protect the privacy of the landowners. To be consistent with these FERC requirements, the landowner information has been omitted from this application.



118 E Ct St, West Union, WV 26456 to 39.201285, -80.553387

Drive 18.3 miles, 32 min



Imagery ©2017 Google, Map data ©2017 Google 2 mi

118 E Ct St



West Union, WV 26456

Take Railroad St to WV-18 S

- ↑ 1. Head northeast on Cross St toward Court St 1 min (0.2 mi)
 - ↘ 2. Turn right onto Railroad St 52 ft
 - ↙ 3. Turn left toward WV-18 S 0.2 mi
- 279 ft

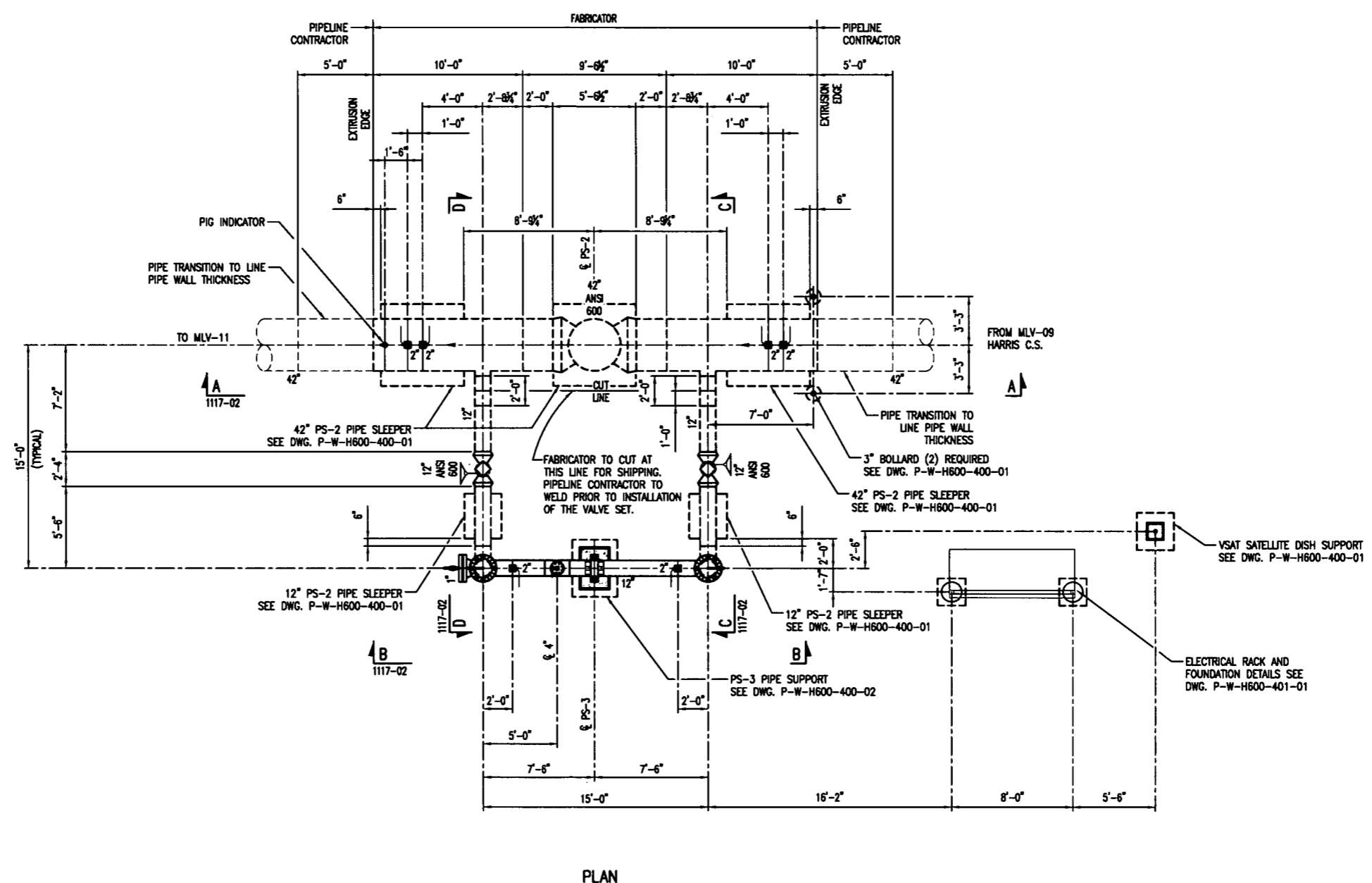
Take US-50 E, Co Rte 15 and Big Isaac to Meathouse Fork in Oak

31 min (18.1 mi)

4. Turn right onto WV-18 S 0.5 mi
5. Turn left onto US-50 E 5.6 mi
6. Turn right at Co Rte 50/35 0.1 mi
7. Continue onto Blacklick Rd 2.1 mi
8. Turn right onto Co Rte 15/Blacklick Rd/Sherwood-Greenbrier Rd
 Continue to follow Co Rte 15 6.3 mi
9. Turn right onto Big Isaac 3.4 mi
10. Big Isaac turns left and becomes Meathouse Fork
 Destination will be on the right 436 ft

39.201285, -80.553387

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



PLAN

DESIGN & TEST DATA	
DESIGN PRESSURE	1480 PSIG AT 120°F (0.5 DESIGN FACTOR).
MAXIMUM HOOP STRESS LEVEL AT 1480 PSIG	50 % SMYS. BASED ON 42" 0.888" WT. X-70 PIPE
MAOP OF 1480 PSIG AT 120°F IS LIMITED BY	ANSI 600 COMPONENTS, 42" PIPE, 42" FITTINGS.
MINIMUM TEST PRESSURE	2220 PSIG. MAXIMUM TEST PRESSURE 2245 PSIG.
TEST LIMITED BY	ANSI 600 COMPONENTS. TEST PERIOD 8 HOURS.
TEST MEDIUM	WATER. SERVICE NATURAL GAS.
NONDESTRUCTIVE INSPECTION REQUIREMENTS	100% X-RAY, MAG. PARTICLE, FILLET WELDS.

WEBSTER COUNTY, WV

Modified by Markar, Jan on April 7, 2016 - 9:50 AM

REFERENCE DRAWINGS	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER			ISSUED FOR BID	JDM	KDS	RLM						
P-W-H600-400-01		04/08/2016										
P-W-H600-400-02												
P-W-H600-401-01												
P-W-H600-1100-12												
P-W-H600-1117-02												
P-W-H600-1117-03												

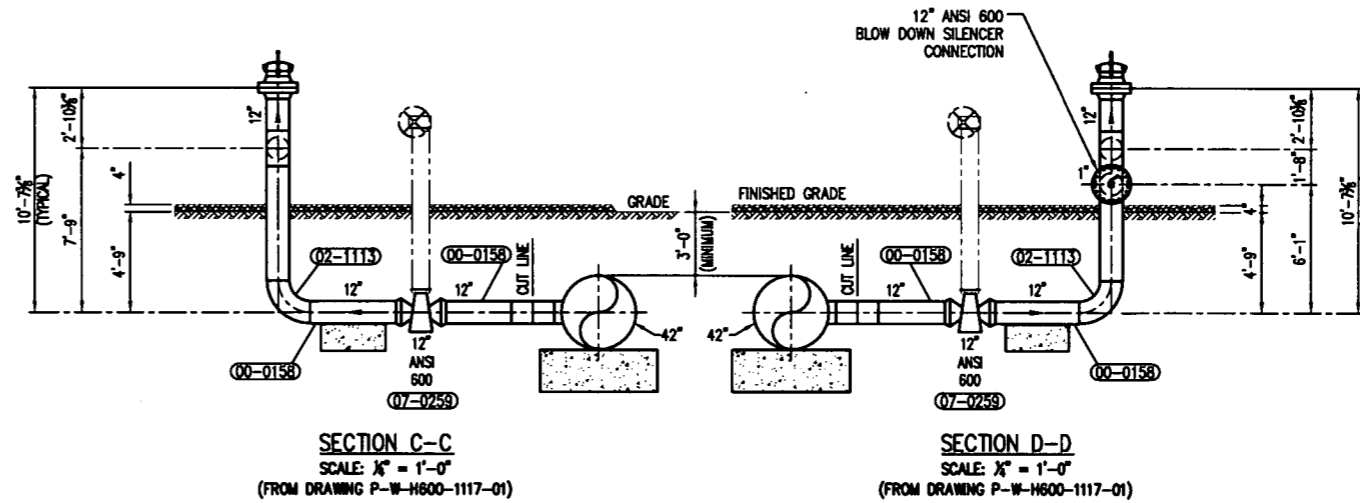
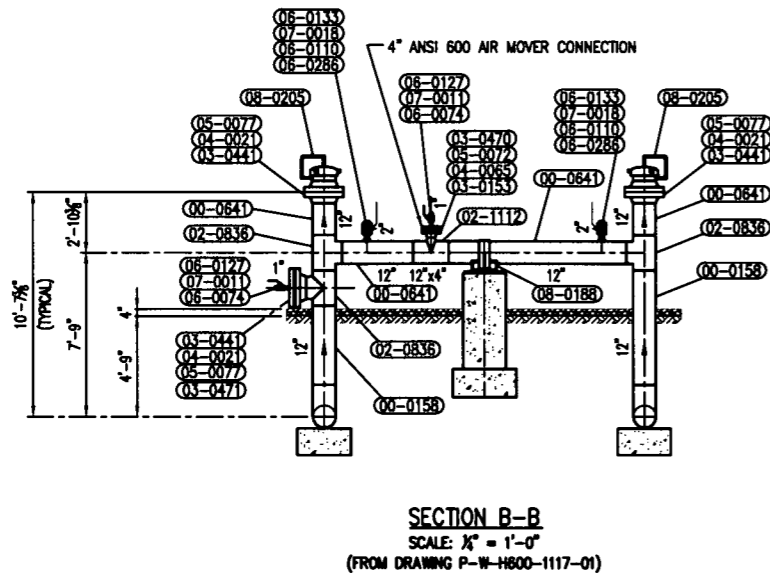
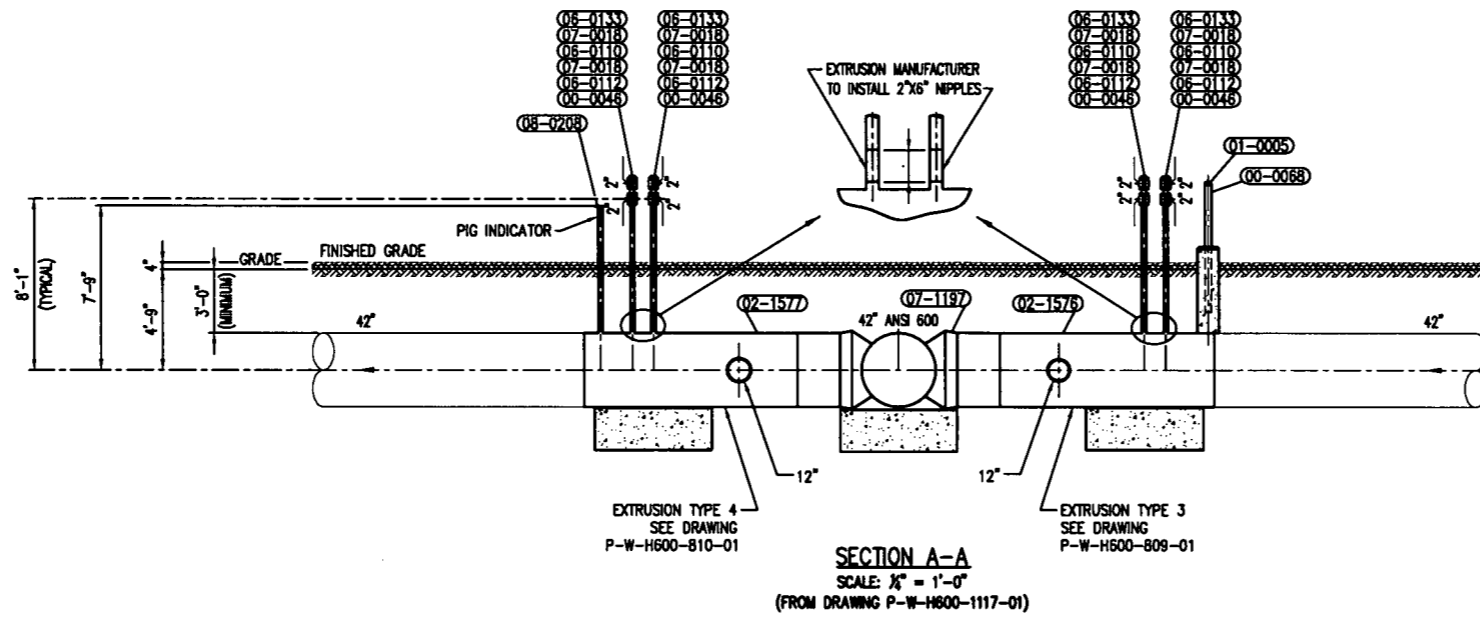
TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS

DRAFT

4/8/2016
DATE

NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.

	DRAWING TITLE:			
	H600 42" 1480 PSIG ANSI 600 MLV-10 VALVE SETTING INSTALLATION PLAN			
PROJECT ID	FACILITY	STATE	IDENTIFICATION	SERIES
	P	W	H600	1117
DRAWING SCALE:	NONE		SHEET	REVISION
			01	P9



Printed by: hester, Jan on April 7, 2016 - 9:51 AM

REFERENCE DRAWINGS		NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER	DRAWING TITLE	PS	04/08/2016	ISSUED FOR BID	JM	KDS	RLM						
P-W-H600-1117-01	MLV-10 INSTALLATION - PLAN												
P-W-H600-1117-03	MLV-10 INSTALLATION - BILL OF MATERIALS												
P-W-H600-809-01	VALVE SET EXTRUSION TYPE 3												
P-W-H600-810-01	VALVE SET EXTRUSION TYPE 4												

TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS

DRAFT

4/8/2016
DATE

NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.

Mountain Valley PIPELINE

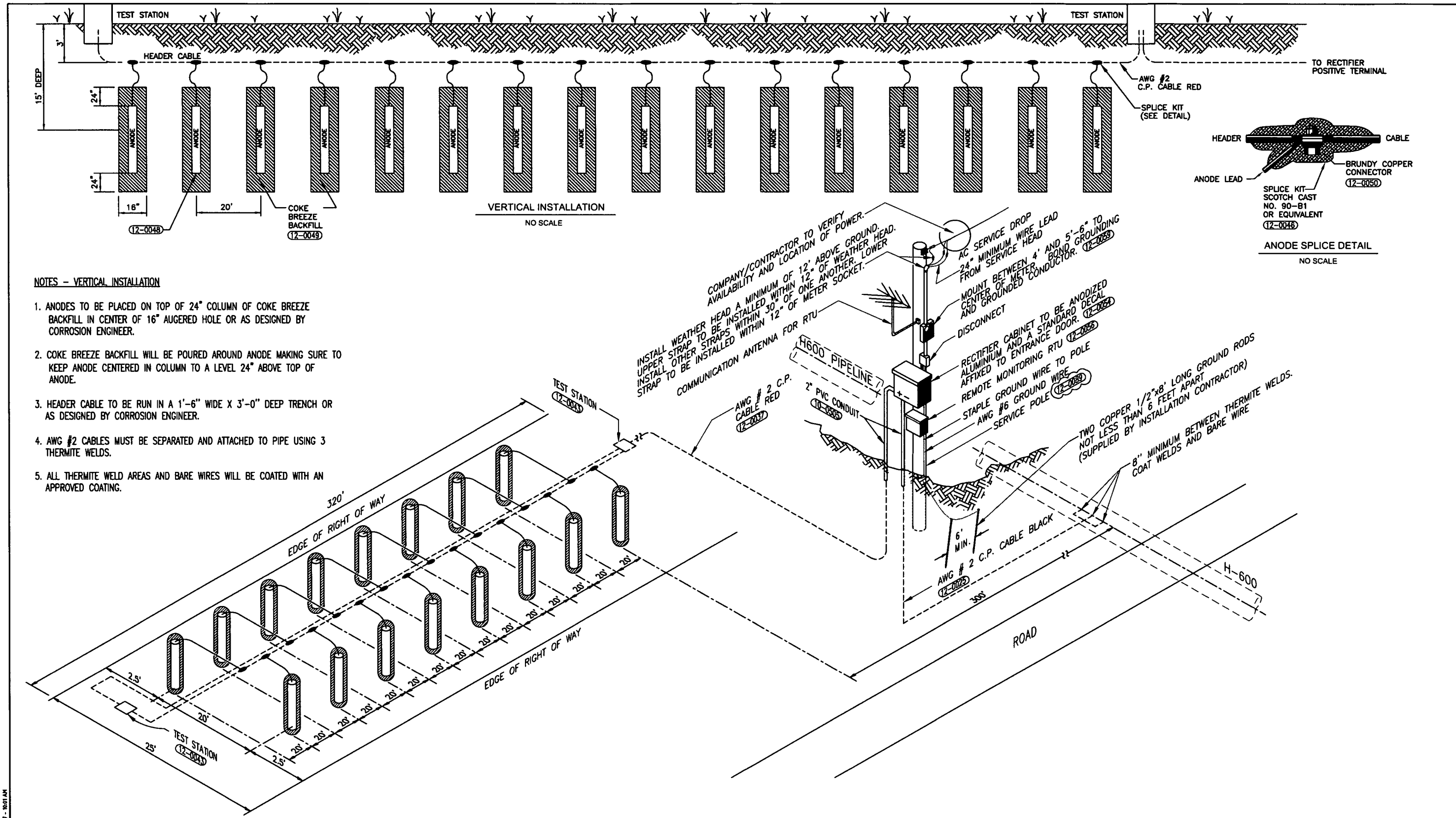
DRAWING TITLE: H600 42" 1480 PSIG ANSI 600 MLV-10 VALVE SETTING INSTALLATION SECTIONS

PROJECT ID: _____

DRAWING SCALE: NONE

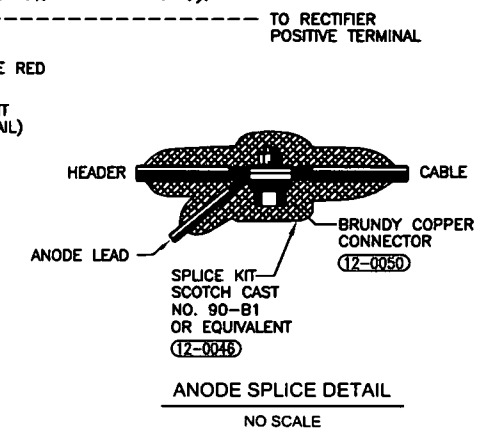
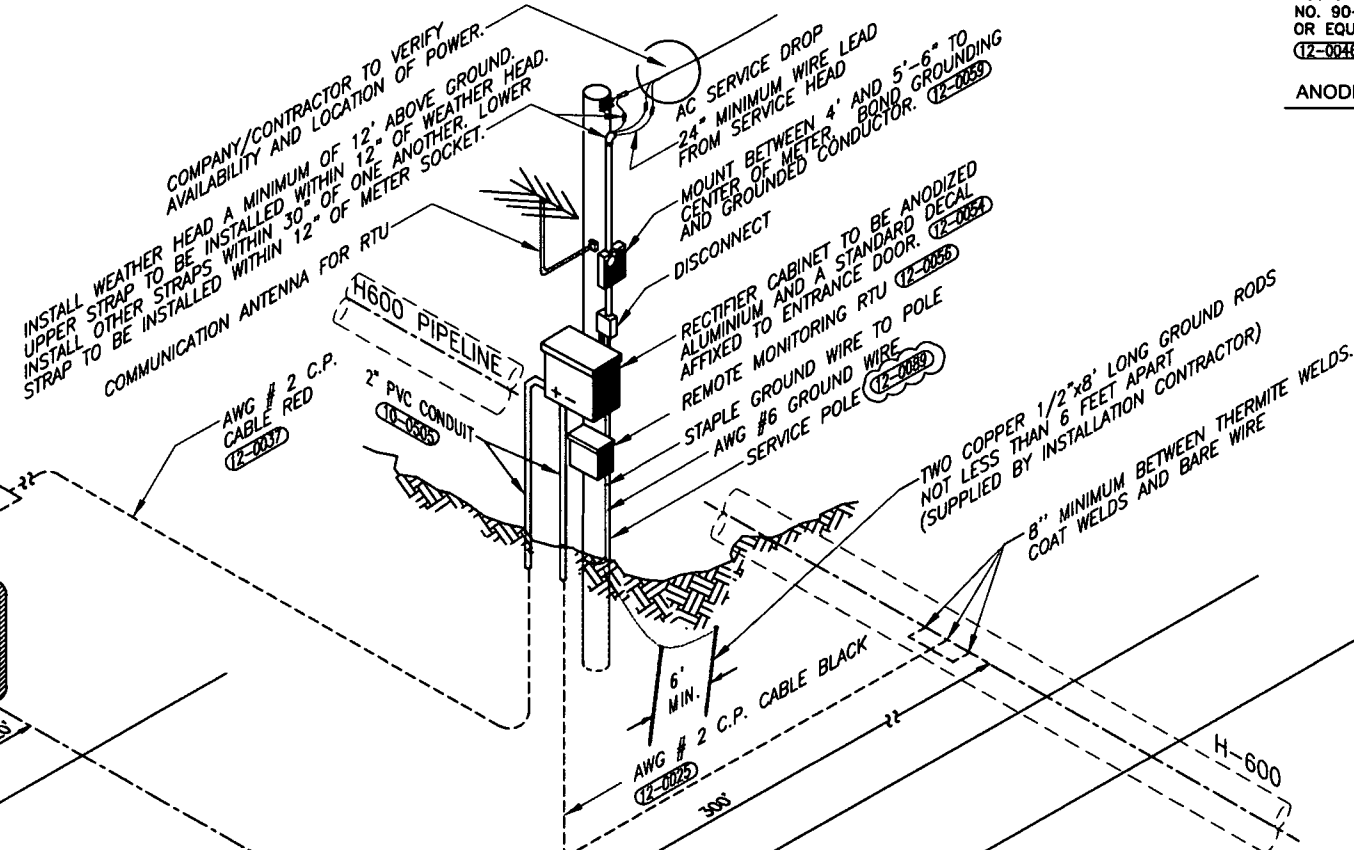
FACILITY	STATE	IDENTIFICATION	SERIES	SHEET	REVISION
P	W	H600	1117	02	P9

WEBSTER COUNTY, WV



NOTES - VERTICAL INSTALLATION

1. ANODES TO BE PLACED ON TOP OF 24" COLUMN OF COKE BREEZE BACKFILL IN CENTER OF 16" AUGERED HOLE OR AS DESIGNED BY CORROSION ENGINEER.
2. COKE BREEZE BACKFILL WILL BE POURED AROUND ANODE MAKING SURE TO KEEP ANODE CENTERED IN COLUMN TO A LEVEL 24" ABOVE TOP OF ANODE.
3. HEADER CABLE TO BE RUN IN A 1'-6" WIDE X 3'-0" DEEP TRENCH OR AS DESIGNED BY CORROSION ENGINEER.
4. AWG #2 CABLES MUST BE SEPARATED AND ATTACHED TO PIPE USING 3 THERMITE WELDS.
5. ALL THERMITE WELD AREAS AND BARE WIRES WILL BE COATED WITH AN APPROVED COATING.



REFERENCE DRAWINGS		NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER	DRAWING TITLE												
P-W-H600-01-1204-07	GROUNDING (16) VERTICAL ANODES - BOM	P	5/25/2018	PRELIMINARY	JOM								

TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS

PAUL LAYNE
MECHANICAL DESIGN ENGINEER

ELECTRICAL DESIGN ENGINEER

NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.

Mountain Valley PIPELINE

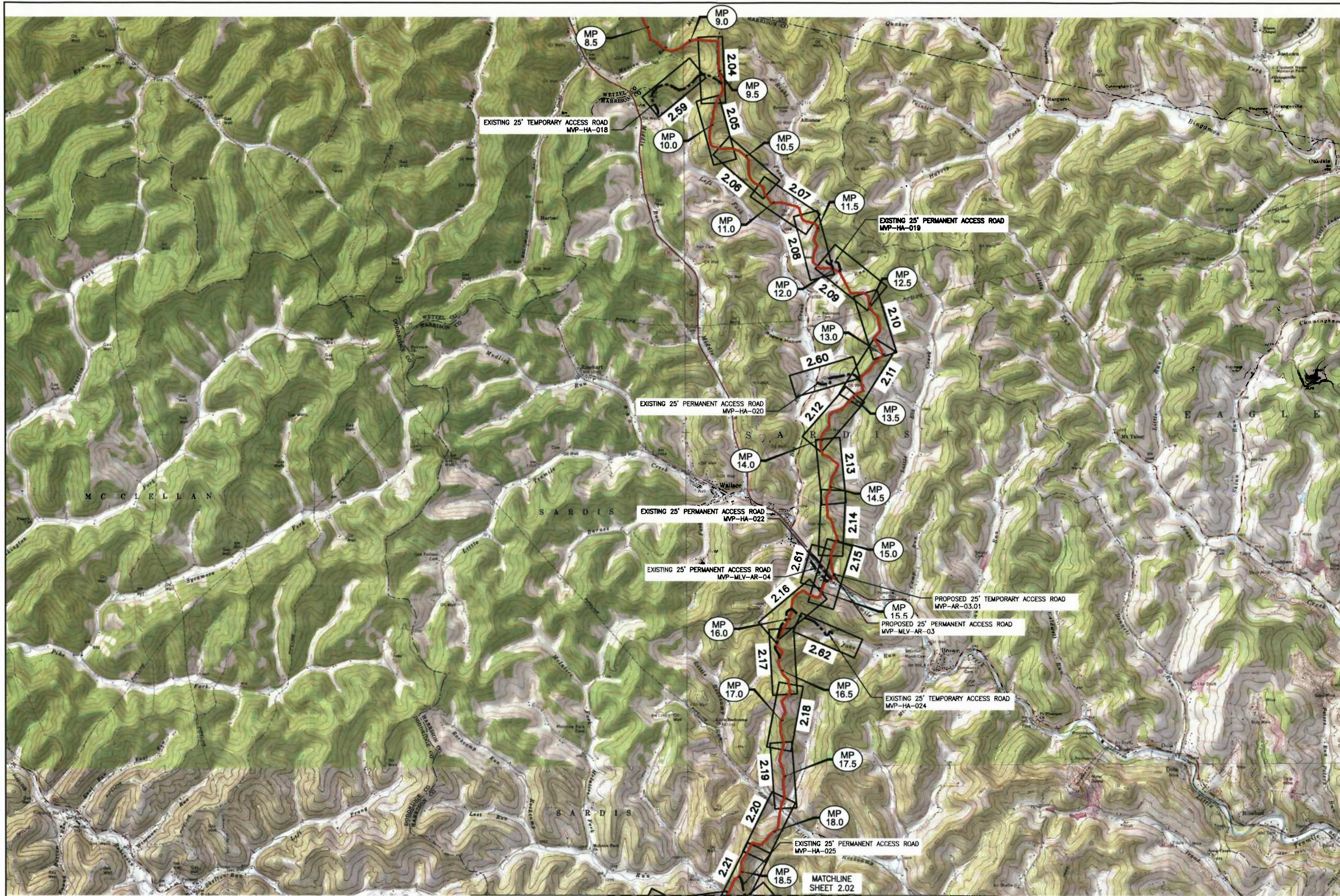
PROJECT ID: P8960

DRAWING SCALE: NONE

DRAWING TITLE: H600 42" 1480 PSIG ANSI 600 RECTIFIER AND CONVENTIONAL GROUNDING INSTALLATION - (16) VERTICAL ANODES

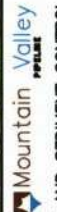
FACILITY	STATE	IDENTIFICATION	SERIES	SHEET	REVISION
P	W	H600-01	1204	06	P

Plotted by: Vlam, Jack on: January 5, 2017 - 10:01 AM
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NO.	DATE	DWN.	CHKD.	APPD.	DESCRIPTION

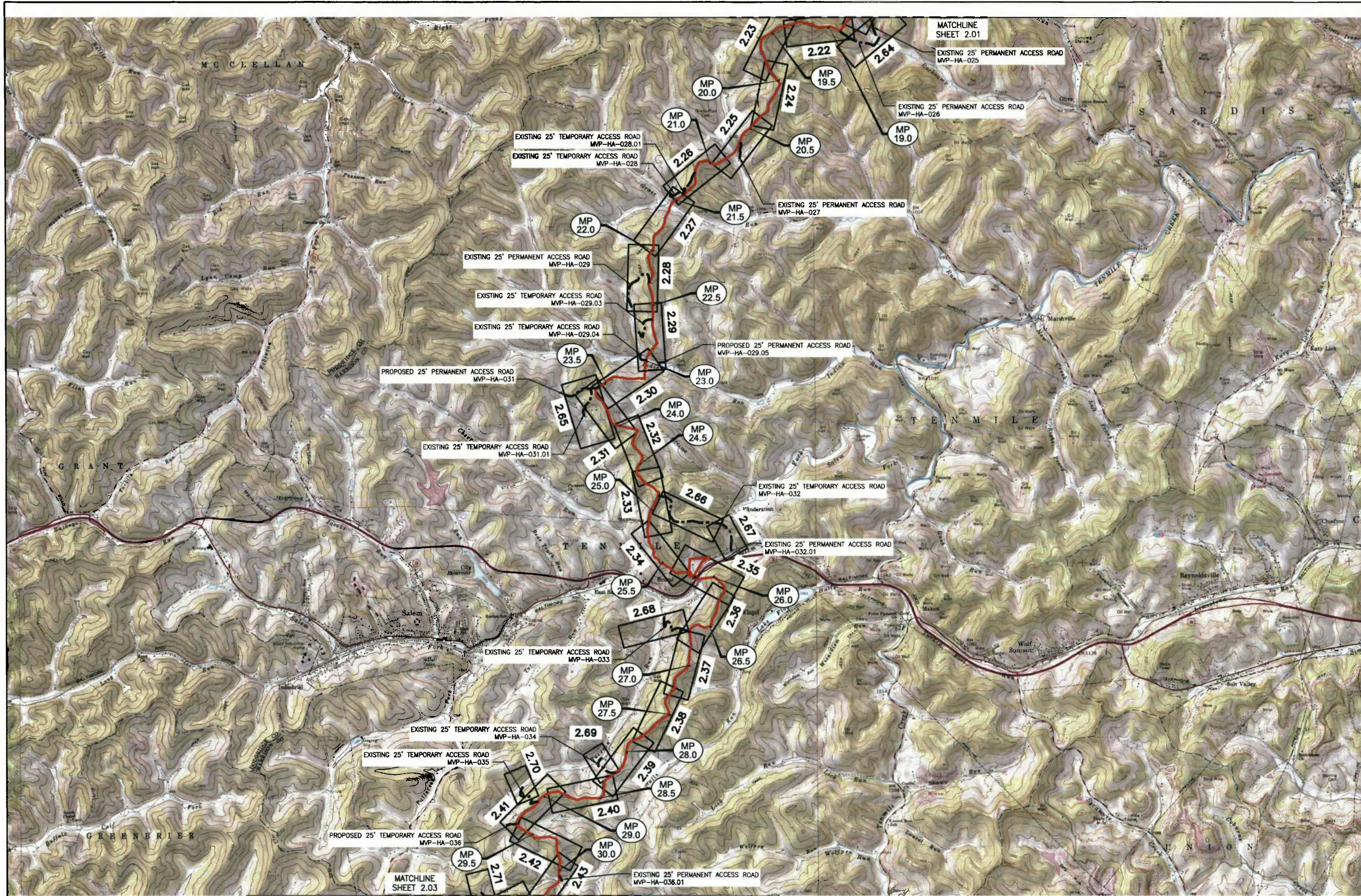
REVISIONS:


EROSION AND SEDIMENT CONTROL PLANS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
 HARRISON COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANONSBURG, PA 15317



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 PITTSBURGH, PA 15220

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PLANS**

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DATE:	2/19/2016
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SHT. NO.	2.01 OF 2.76



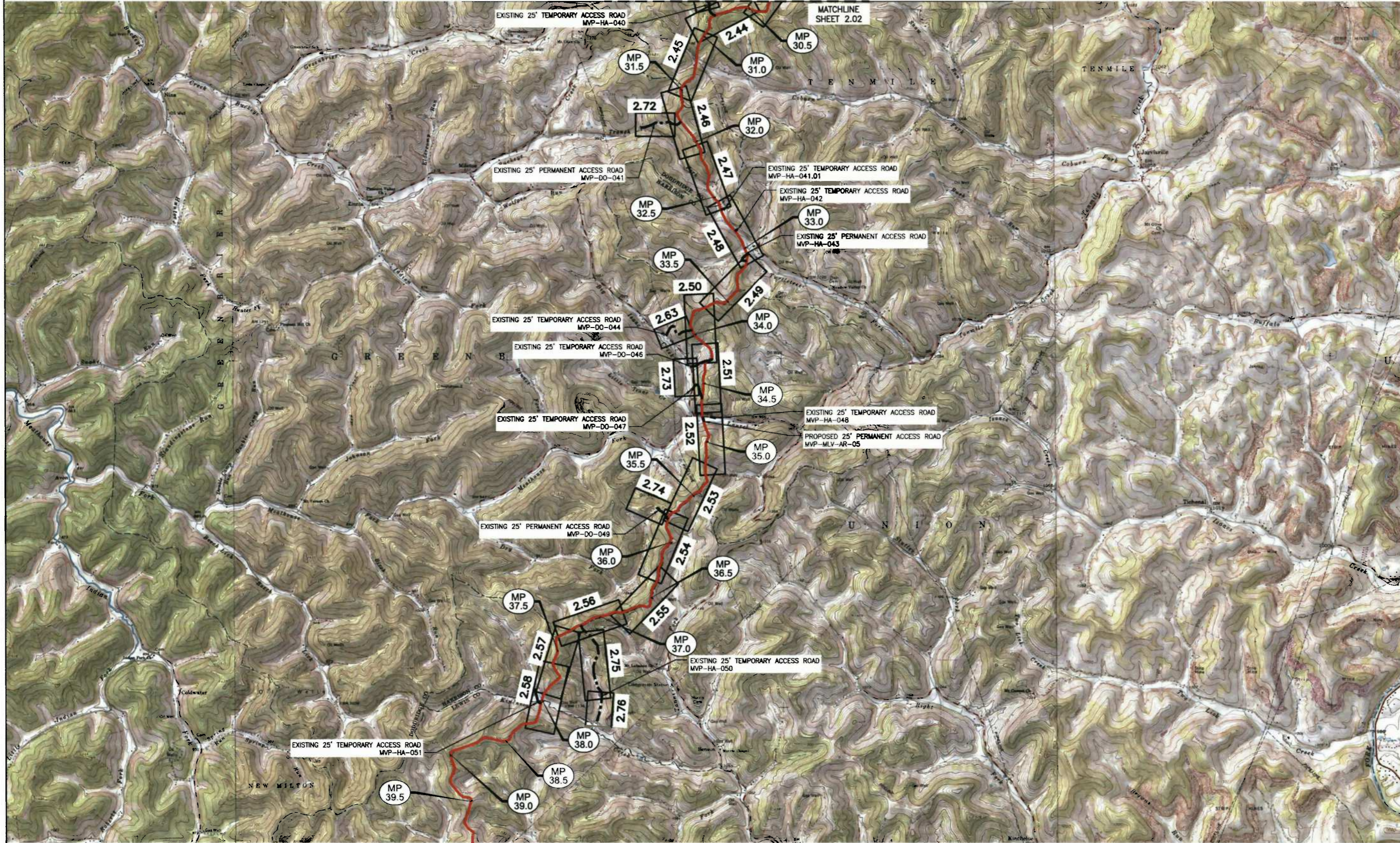
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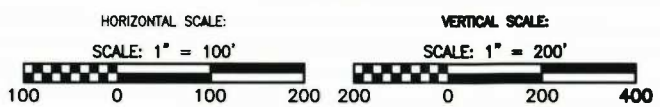
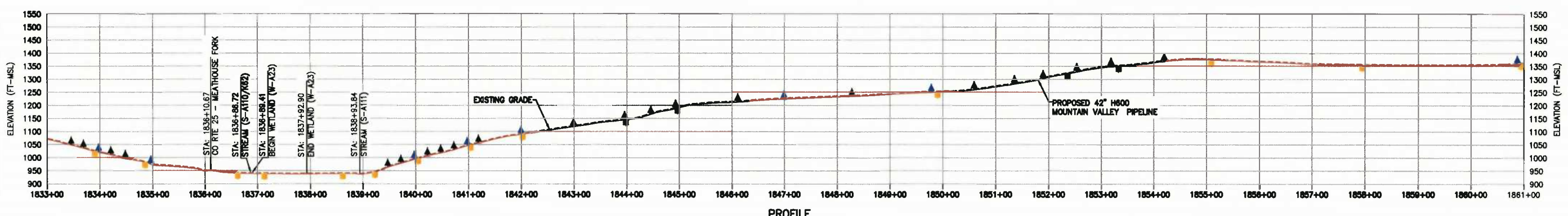
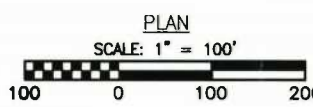
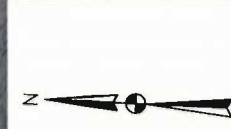
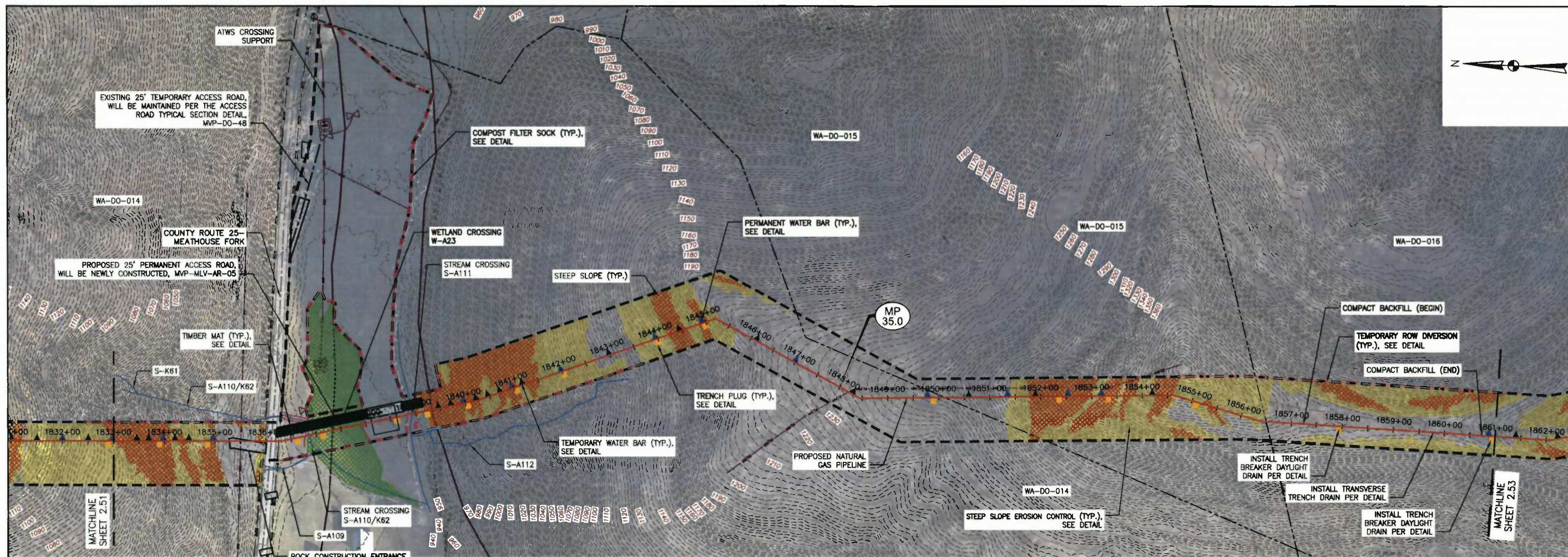
REVISIONS:

EROSION AND SEDIMENT CONTROL PLANS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
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- LEGEND**
- PROPOSED LIMIT OF DISTURBANCE
 - PROPOSED ACCESS ROAD CENTERLINE
 - PROPOSED PIPELINE
 - PROPOSED SILT FENCE (SEE NOTE 6)
 - PROPOSED SUPER SILT FENCE
 - ORANGE CONSTRUCTION SAFETY FENCE
 - PROPOSED COMPOST FILTER SOCK
 - PROPOSED REINFORCED FILTRATION DEVICE
 - PROPOSED TEMPORARY RIGHT OF WAY DIVERSION AND OUTLET
 - EXISTING CULVERT
 - STREAM
 - WETLAND
 - POND
 - PROPOSED CULVERT WITH OUTLET PROTECTION
 - TIMBER MAT
 - STEEP SLOPE EROSION CONTROL (SEE NOTE 3)
 - STEEP SLOPE (SEE NOTE 5)
 - PROPOSED PERMANENT WATER BAR
 - PROPOSED TEMPORARY WATER BAR
 - PROPOSED BROAD BASED DIP
 - PROPOSED TRENCH PLUG
 - PROPOSED ROCK CONSTRUCTION ENTRANCE

- ACCESS ROAD LEGEND**
- ① ROCK CONSTRUCTION ENTRANCE
 - ② WETLAND CROSSING
 - ③ STREAM CROSSING

- NOTES:**
1. WATERBARS WITHIN AGRICULTURAL AREAS SHALL BE USED AS TEMPORARY FEATURES.
 2. NO EROSION CONTROL MATTING SHALL BE INSTALLED IN AGRICULTURAL AREAS.
 3. FLEXTERRA OR EQUIVALENT MAY BE USED AS A SUBSTITUTE TO EROSION CONTROL BLANKET AS DIRECTED BY MVP.
 4. CONTRACTOR IS RESPONSIBLE TO IDENTIFY ALL UTILITIES. THE UTILITY LINES SHOWN ON THE PLAN ARE FOR INFORMATIONAL PURPOSES ONLY AND DO NOT REPRESENT SURVEYED LINE INFORMATION.
 5. SLOPES OF 30° OR GREATER EXIST. CONSTRUCTION FOR STEEP SLOPES TO BE PERFORMED USING STEEP SLOPE TECHNIQUES IDENTIFIED IN THE DETAIL SHEETS.
 6. WHERE CONSTRUCTION CONDITIONS PRECLUDE THE USE OF DIVERSION DITCHES DUE TO SITE CONDITIONS THE CONTRACTOR WILL INSTALL SILT FENCE AT THE DIRECTION OF MVP.
 7. IMPROVEMENTS TO PERMANENT AND TEMPORARY ACCESS ROADS WILL BE PERFORMED AS NEEDED AND BMP'S MAY BE SUBSTITUTED IF FIELD EVALUATIONS REQUIRE ADJUSTMENTS TO ACCOMMODATE FIELD VERIFIED CONDITIONS.
 8. WETLANDS AND STREAMS WILL BE CROSSED ACCORDING TO THE APPROPRIATE DETAILS. ACCESS ROADS WILL UTILIZE CULVERTS WHERE THEY EXIST AND NON-CULVERTED STREAMS OR STREAM SEGMENTS WILL BE CROSSED UTILIZING TIMBER MATS, BRIDGING, OR CULVERTS AS DICTATED BY FIELD CONDITIONS DURING CONSTRUCTION.

NO.	DATE	BY	CHKD.	APPD.	DESCRIPTION

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CONSTRUCTION PLANS

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MOUNTAIN VALLEY PIPELINE, LLC

WVDEP GENERAL WATER POLLUTION CONTROL PERMIT EROSION & SEDIMENT CONTROL PLAN

MVP PIPELINE PROJECT WETZEL COUNTY TO MONROE COUNTY NOVEMBER 2016



LOCATION MAP
N.T.S.



LOCATION MAP
MVP PIPELINE PROJECT
WETZEL COUNTY, WEST VIRGINIA TO MONROE COUNTY, WEST VIRGINIA

DRAWING INDEX	
SHEET No.	DRAWING TITLE
	GENERAL SET
ES-0.00	COVER SHEET
ES-0.01 TO ES-0.19	EROSION AND SEDIMENT CONTROL DETAILS
ES-0.20 TO ES-0.21	GENERAL NOTES AND LEGEND
WETZEL COUNTY	
ES-1.01	KEY PLAN
ES-1.02 TO ES-1.33	EROSION & SEDIMENT CONTROL PLANS
HARRISON COUNTY	
ES-2.01 TO ES-2.03	KEY PLAN
ES-2.04 TO ES-2.76	EROSION & SEDIMENT CONTROL PLANS
LEWIS COUNTY	
ES-3.01 TO ES-3.03	KEY PLAN
ES-3.04 TO ES-3.79	EROSION & SEDIMENT CONTROL PLANS
BRAXTON COUNTY	
ES-4.01 TO ES-4.02	KEY PLAN
ES-4.03 TO ES-4.50	EROSION & SEDIMENT CONTROL PLANS
WEBSTER COUNTY	
ES-5.01 TO ES-5.04	KEY PLAN
ES-5.05 TO ES-5.99	EROSION & SEDIMENT CONTROL PLANS
NICHOLAS COUNTY	
ES-6.01 TO ES-6.03	KEY PLANS
ES-6.04 TO ES-6.88	EROSION & SEDIMENT CONTROL PLANS
GREENBRIER COUNTY	
ES-7.01	KEY PLAN
ES-7.02 TO ES-7.63	EROSION & SEDIMENT CONTROL PLANS
SUMMERS COUNTY	
ES-8.01	KEY PLAN
ES-8.02 TO ES-8.51	EROSION & SEDIMENT CONTROL PLANS
MONROE COUNTY	
ES-9.01	KEY PLAN
ES-9.02 TO ES-9.59	EROSION & SEDIMENT CONTROL PLANS
PIPE YARDS	
ES-10.01 TO ES-10.07	KEY PLAN
ES-10.08 TO ES-10.24	PIPE YARD PLANS
LANDSLIDE MITIGATION	
ES-11.01	LANDSLIDE MITIGATION LEGEND
ES-11.02 TO ES-11.19	LANDSLIDE MITIGATION PLANS

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CONTRACTOR IS RESPONSIBLE TO IDENTIFY ALL UTILITIES. THE UTILITY LINES SHOWN ON THE PLAN ARE FOR INFORMATIONAL PURPOSES ONLY AND DO NOT REPRESENT SURVEYED LINE INFORMATION.

NO.	DATE	BY	DESCRIPTION

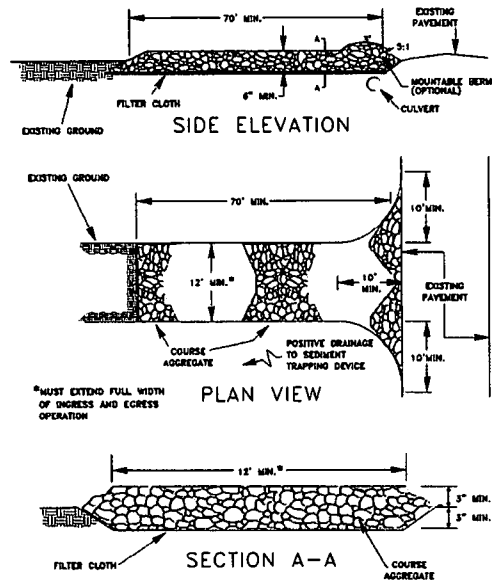
Mountain Valley Pipeline
EROSION AND SEDIMENT CONTROL PLANS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
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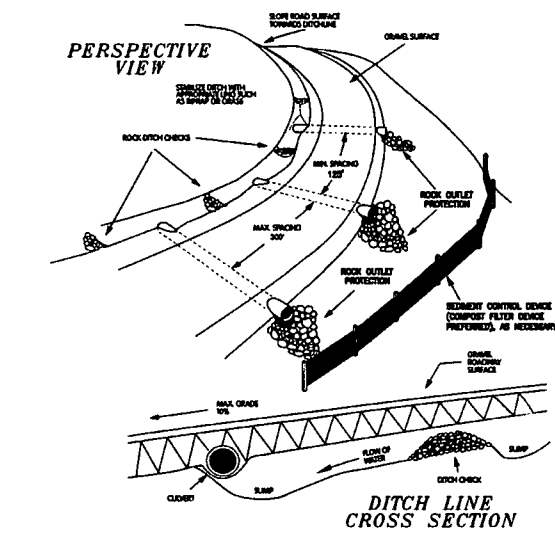
CONSTRUCTION PLANS

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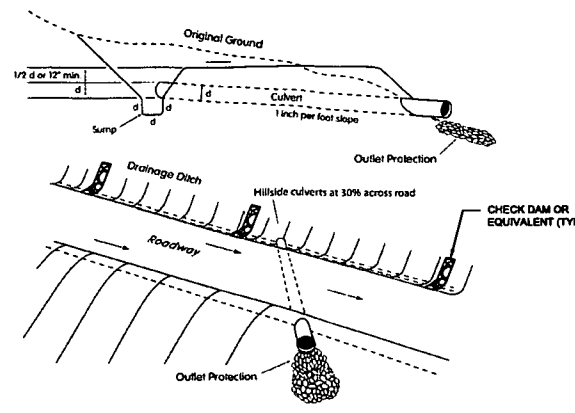
STONE CONSTRUCTION ENTRANCE



STONE CONSTRUCTION ENTRANCE
TAKEN FROM 2008 MANUAL



SEDIMENT AND EROSION CONTROL FOR ACCESS ROADS
TAKEN FROM 2012 MANUAL



NOTE:
1. ROCK CHECK DAMS, FILTER SOCK, OR EQUIVALENT WILL BE INSTALLED UPSTREAM OF THE CULVERT INLETS

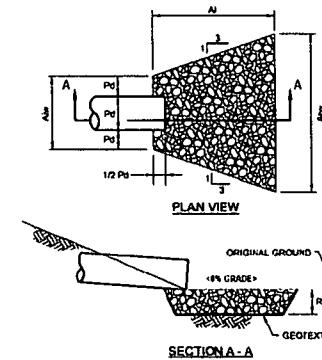
DITCH RELIEF CULVERT
TAKEN FROM 2012 MANUAL

Drainage area (acres)	Table 3.35.1 Average slope of watershed			
	1%	4%	8%	16%
	Culvert diameter (inches)			
1 - 25	24	24	30	30
26 - 50	24	30	36	36
51 - 100	30	36	42	48
101 - 150	30	42	48	48
151 - 200	36	42	48	54
200 - 250	42	48	60	60
251 - 300	42	48	60	60
301 - 350	42	48	60	60
351 - 400	42	54	60	60
401 - 450	42	54	60	72
451 - 500	42	54	60	72
501 - 550	48	60	60	72
551 - 600	48	60	60	72
601 - 640	48	60	72	72

NOTE: MINIMUM CULVERT SIZE SHALL BE 12 INCHES. CULVERT SHALL BE INSTALLED AS INDICATED ON THE DETAIL.

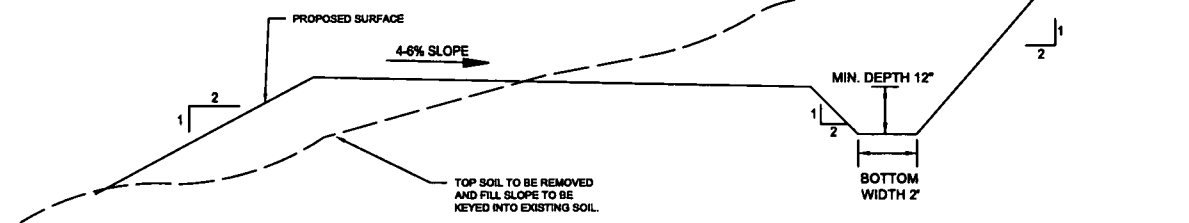
REFERENCE: WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT, EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, 2008.

CULVERT SIZING CHART
TAKEN FROM 2008 MANUAL



All aprons shall be constructed to the dimensions shown. Terminal widths shall be adjusted as necessary to match receiving channels.
All aprons shall be inspected at least weekly after each runoff event. Displaced riprap within the apron shall be replaced immediately.
Extend riprap on back side of apron to at least 1/2 depth of pipe on both sides to prevent scour around the pipe.
Contractor Responsible for Rip-Rap apron at Pipe Outlet Design.
For permanent installations inspections shall be performed periodically. Maintenance shall be performed immediately upon inspection.

OUTLET PROTECTION
TAKEN FROM 2012 MANUAL

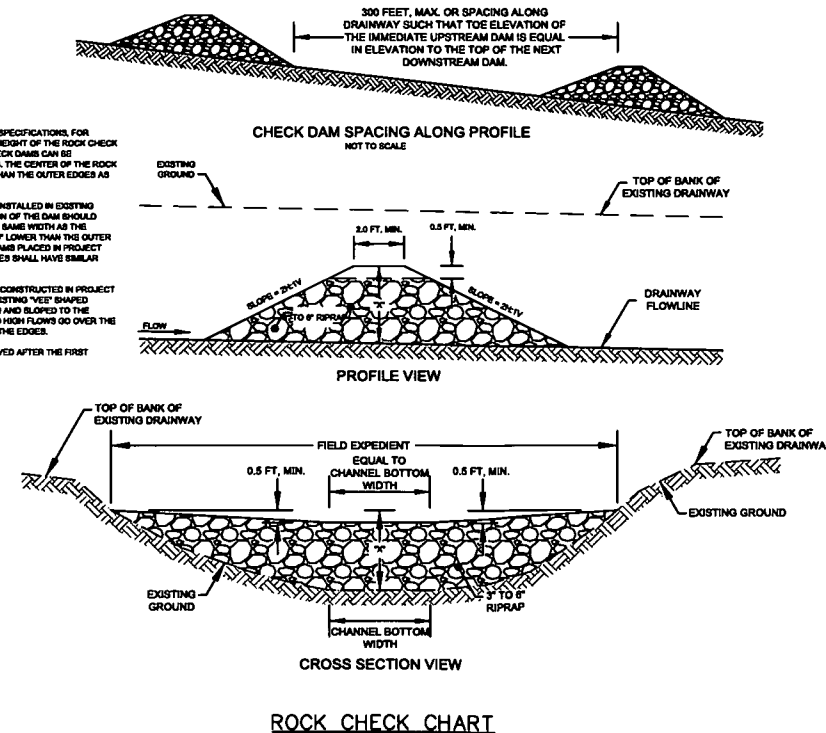


- NOTE:
- INSLOPE WITH DITCH SECTION FOR USE ON STEEP SLOPE AND AREAS WITH POOR SOILS.
 - EROSION CONTROL MATTING TO BE INSTALLED ON CUT AND FILL SLOPES STEEPER THAN 3H:1V.
 - ALL DISTURBED AREAS WILL BE IMMEDIATELY SEEDING AND MULCHED.
 - INSTALL DITCH RELIEF CULVERTS AT LOW SPOTS AND APPROPRIATE LOCATIONS.
 - EXISTING MAINTAINED ROADS WILL HAVE STONE APPLIED AND APPROPRIATE SMOOTHING IF RUTTING OCCURS.
 - ROADS TO BE GRADED AND MAINTAINED WILL BE WIDENED, GRADED AND/OR STONED AS NECESSARY WITHIN THE LOD TO MAINTAIN SAFE PASSAGE AND RESOURCE PROTECTION.

ACCESS ROAD TYPICAL SECTION
DEVELOPED FROM 2006 MANUAL

REFERENCES:
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2008.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-28-2010.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012.

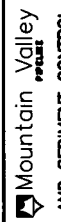
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NOTES:

- 7" DIMENSION AS DETAILED BY THE SPECIFICATIONS FOR EROSION CONTROL. THE MAXIMUM HEIGHT OF THE ROCK CHECK DAM IS 3 FEET. HOWEVER, ROCK CHECK DAMS CAN BE CONSTRUCTED IN SMALLER DITCHES. THE CENTER OF THE ROCK CHECK DAM SHALL BE 0" LOWER THAN THE OUTER EDGES AS SHOWN.
- ROCK CHECK DAMS ARE NORMALLY INSTALLED IN EXISTING DRAINAGE AND THE TOP CROSS SECTION OF THE DAM SHOULD HAVE A LEVEL CENTER SECTION THE SAME WIDTH AS THE EXISTING CHANNEL. BOTTOM AND 0" LOWER THAN THE OUTER EDGES OF THE DAM. ROCK CHECK DAMS PLACED IN PROJECT CONSTRUCTED FLAT-BOTTOM DITCHES SHALL HAVE SIMILAR DIMENSIONS.
- THE CENTER OF ROCK CHECK DAMS CONSTRUCTED IN PROJECT CONSTRUCTED "VEE" SHAPED OR EXISTING "VEE" SHAPED DITCHES SHALL BE 0" LOWER THAN AND SLOPED TO THE OUTER TOP EDGES OF THE DITCH SO HIGH FLOWS GO OVER THE TOP OF THE DAM AND NOT AROUND THE EDGES.
- ROCK CHECK DAMS SHALL BE REMOVED AFTER THE FIRST GROWING SEASON.

ROCK CHECK CHART



EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA

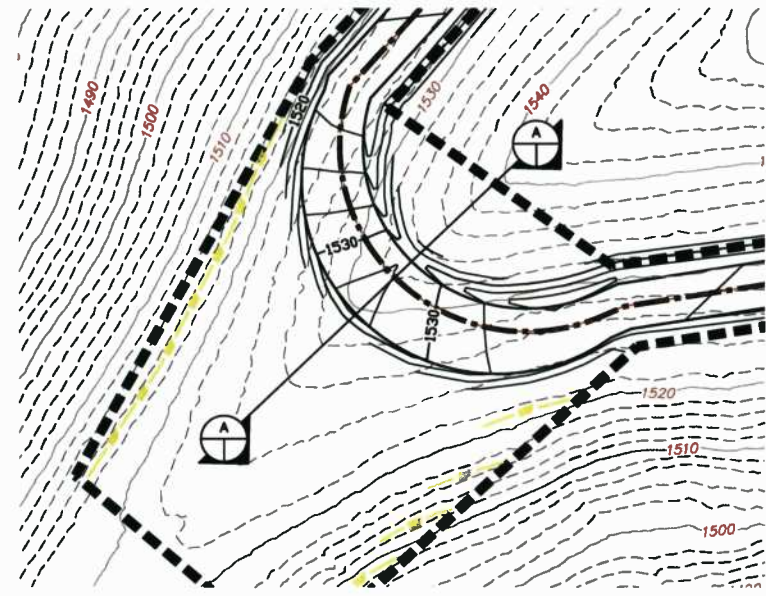
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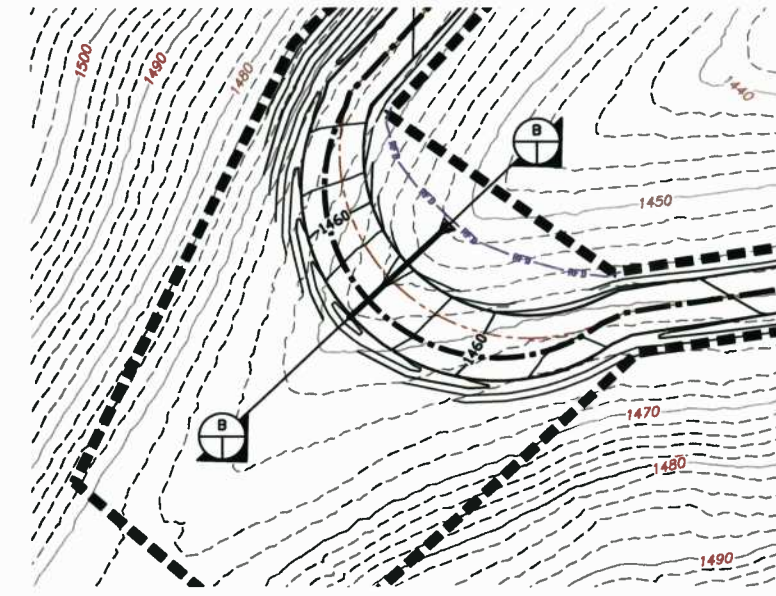
CONSTRUCTION PLANS

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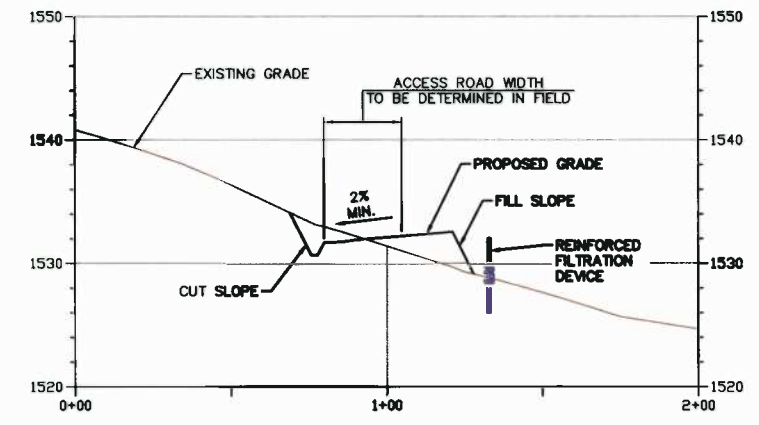
REVISIONS:



PLAN VIEW
SCALE 1" = 30'

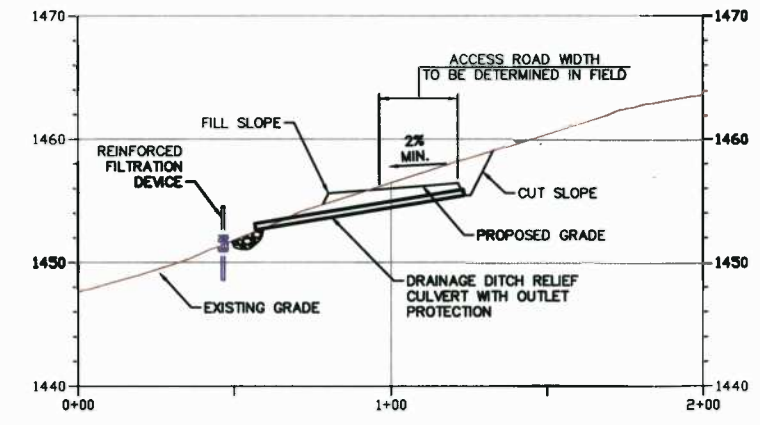


PLAN VIEW
SCALE 1" = 30'



PROFILE VIEW A-A
SCALE: NTS

ATWS VEHICLE TURNING RADIUS
NOSE DETAIL
SCALE AS SHOWN




PROFILE VIEW B-B
SCALE: NTS

ATWS VEHICLE TURNING RADIUS
VALLEY DETAIL
SCALE AS SHOWN

- NOTES:
- ELEVATIONS ARE FOR ILLUSTRATIVE PURPOSES AND ARE NOT SPECIFIC TO EACH SITE. ACTUAL ELEVATIONS WILL BE DETERMINED IN THE FIELD.
 - CUT SLOPES ARE TO BE SEEDED AND MULCHED IMMEDIATELY.

NO.	DATE	DRAWN	CHECKED	APPROVED	DESCRIPTION

 Mountain Valley
 EROSION AND SEDIMENT CONTROL DETAILS
 MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
 WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
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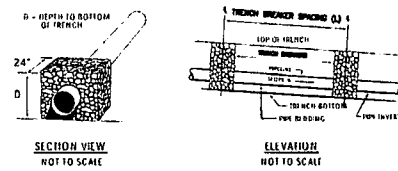
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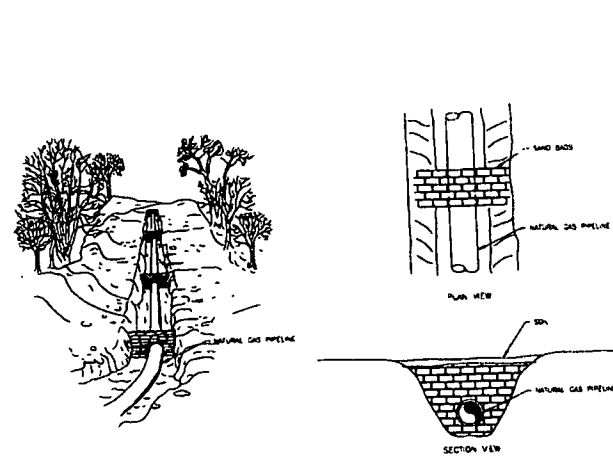
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REQUIRED SPACING AND MATERIALS FOR TRENCH BREAKERS		
TRENCH SLOPE (%)	SPACING (FEET)	BREAKER MATERIAL
< THAN 5	*	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
5 TO 15	500	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
15 TO 25	300	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
25 TO 35	200	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
35 TO 100	100	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
> THAN 100	50	CEMENT FILLED BAGS (WETTED)

NOTES:
 *TRENCH BREAKERS ARE REQUIRED AT ALL STREAM AND WATERBODY CROSSINGS REGARDLESS OF TRENCH SLOPE. OTHERWISE NOT REQUIRED AT SLOPES < 5%.
 ** SINGLE TRENCH BREAKERS WILL BE A MINIMUM WIDTH OF 24" AND DOUBLE TRENCH BREAKERS WILL BE A MINIMUM WIDTH OF 36".
 *** FOR SUBSURFACE AND TRENCH BREAKER DRAINAGE DETAILS INCLUDING THOSE FOR STEEP SLOPES, SEE LANDSLIDE MITIGATION TYPICAL DETAILS.

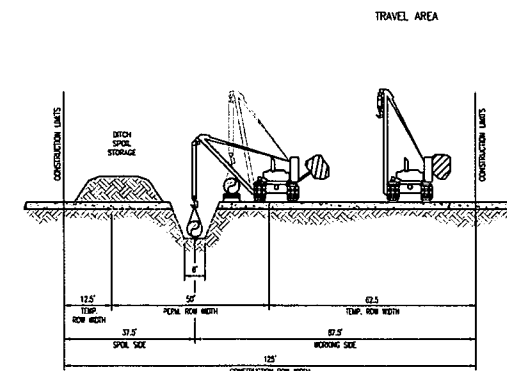


TRENCH BREAKER



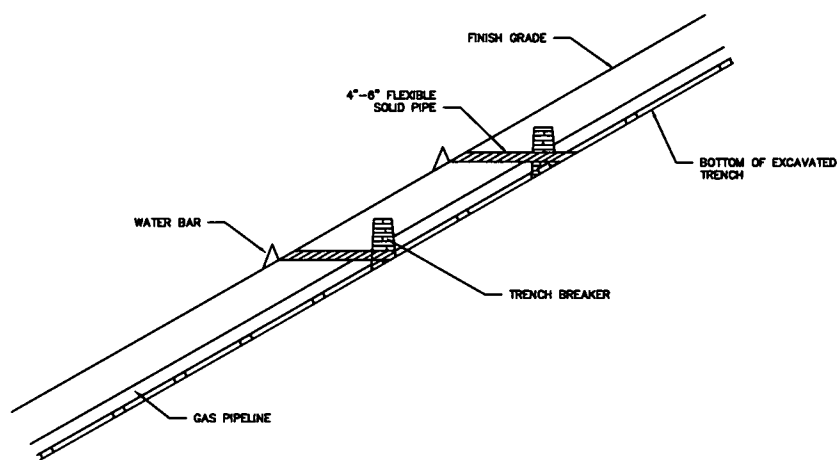
NOTE:
 TRENCH PLUG SPACING AND DIMENSIONING TO EQUAL THAT OF TRENCH BREAKERS. SEE TRENCH BREAKER DETAIL THIS SHEET.

TRENCH PLUG



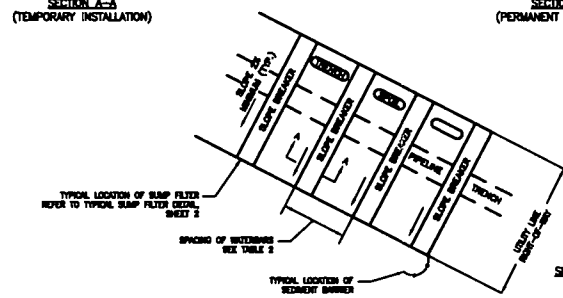
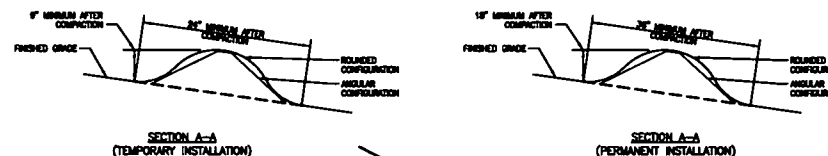
THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY VARY DEPENDING UPON FIELD CONDITIONS AND OF REGULATORY REQUIREMENTS.
 DRAWING ASSUMES TYPE 'B' SOIL

**MAINLINE CONSTRUCTION
 NON-PARALLEL CONSTRUCTION
 NO TOP SOIL SEGREGATION
 DEVELOPED FROM 2012 FIELD MANUAL**



TRENCH DETAIL
 N.T.S.

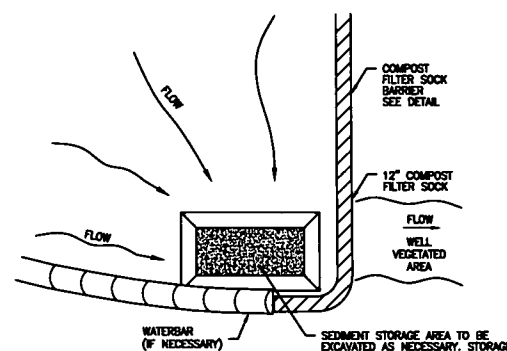
NOTE:
 4"-6" FLEXIBLE SOLID PIPE TO BE INSTALLED AT TRENCH BREAKERS ON STEEP SLOPES TO DRAIN SUBSURFACE WATER INTO WATER BARS.



REQUIRED SPACING FOR PERMANENT WATER BARS		
PIPELINE GRADE	>200' FROM STREAMS	< 200' FROM STREAMS
2-5%	400	200
6-12%	300	150
13-21%	200	100
22-34%	100	50
35-50%	50	25

NOTE:
 PERMANENT WATERBARS ARE REQUIRED AT ALL STREAM, RIVER, AND OTHER WATER-BODY CROSSINGS AS WELL AS UPSLOPE FROM ROADWAY AND ROADBED CUT SLOPES.

NOTES:
 WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
 MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.
 WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.
 SUMP FILTERS TO BE INSTALLED AT END OF WATERBARS. REFER TO SUMP FILTER DETAIL ON SHEET 2 FOR MORE DETAIL.
 OUTLET PROTECTION/COMPOST FILTER SOCK SHOULD BE INSTALLED AT THE OUTLET OF ALL WATERBARS.



- NOTES:
- SUMP FILTER MAY BE USED IN CONJUNCTION WITH WATERBAR (AS DIRECTED BY OWNER REPRESENTATIVE).
 - SUMP FILTER SHALL BE LOCATED ENTIRELY WITHIN PROPOSED RIGHT OF WAY.
 - BMP SHOULD BE CHECKED WEEKLY AND AFTER EACH STORMWATER EVENT FOR SEDIMENT ACCUMULATION, PROPER OPERATION, AND COMPOST FILTER SOCK INTEGRITY.
 - ADDITIONAL COMPOST FILTER SOCKS MAY BE NECESSARY BEYOND WHAT IS SHOWN ON DETAIL TO MEET INTENDED BMP REQUIREMENTS.

TYPICAL SUMP FILTER

WATERBAR INSTALLATION DETAIL

REFERENCES:
 WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006.
 WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-28-2010.
 WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012

Mountain Valley Project
 EROSION AND SEDIMENT CONTROL DETAILS
 MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
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 MOUNTAIN VALLEY PIPELINE, LLC
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 CANONSBURG, PA 15317

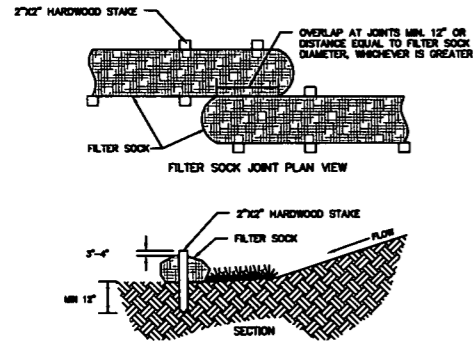
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 661 ANDERSEN DRIVE
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 PITTSBURGH, PA 15220

CONSTRUCTION PLANS

NO.	DATE	BY	CHKD.	APPR.	DESCRIPTION

REVISIONS:

DRAWN BY: KAL
 CHECKED BY: HT
 APPROVED BY: RE
 DATE: 2/19/2016
 SCALE: AS SHOWN
 SHT. NO. 0.03 OF 0.21



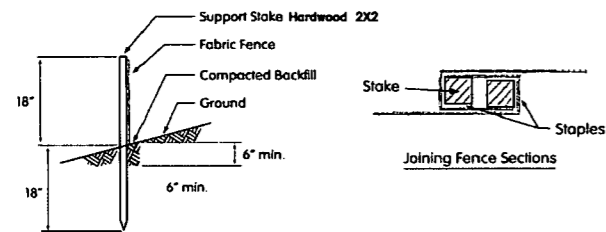
NOTES:

1. MATERIALS - COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN, AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF PARTICLES RANGING FROM 3/8 INCH TO 2 INCHES.
2. FILTER SOCKS SHALL BE 3 TO 5 MIL CONTINUOUS TUBULAR HDPE 3/8 INCHES KNITTED MESH NETTING MATERIAL FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.
3. FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE.
4. STAKES SHALL BE INSTALLED EVERY 5 FT FOR THE ENTIRE LENGTH OF THE FILTER SOCK AND WITHIN 1 FT OF EACH END. STAKES MAY GO THROUGH THE CENTER OF THE FILTER SOCK OR BE CRISS-CROSSED OVER THE TOP.
5. MANUFACTURER'S SPECIFICATIONS ARE TO BE FOLLOWED WHEN JOINING FILTER SOCK SEGMENTS. PLAN VIEW ABOVE IS TO BE CONSIDERED A MINIMUM.
6. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
7. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
8. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/2 OF THE EXPOSED HEIGHT OF THE PRACTICE.
9. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
10. REMOVAL - FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH A WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDING.

Slope Percent	Maximum Slope Length for Compost Filter Sock in Feet				
	8 in	12 in	18 in	24 in	32 in
2 (or less)	600	750	1000	1300	1650
5	400	500	550	650	750
10	200	250	300	400	500
15	140	170	200	325	450
20	100	125	140	260	400
25	80	100	110	200	275
30	60	75	90	130	200
35	60	75	80	115	150
40	60	75	80	100	125
45	40	50	60	80	100
50	40	50	55	65	75

MAXIMUM SLOPE LENGTH ABOVE COMPOST FILTER SOCK AND RECOMMENDED DIAMETER

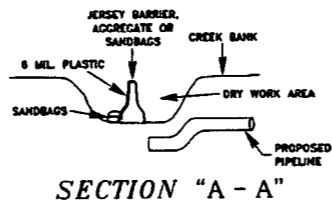
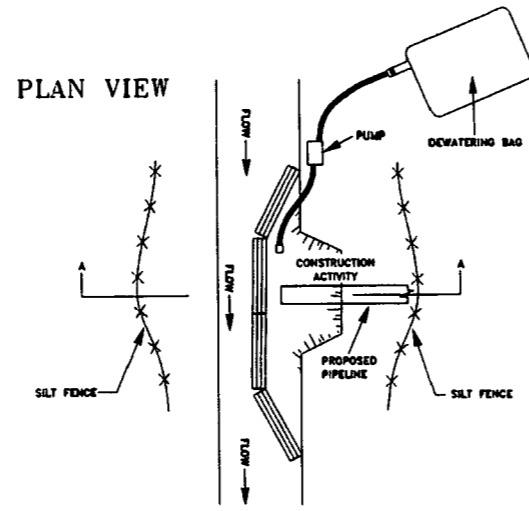
COMPOST FILTER SOCK



SILT FENCE
TAKEN FROM 2006 MANUAL

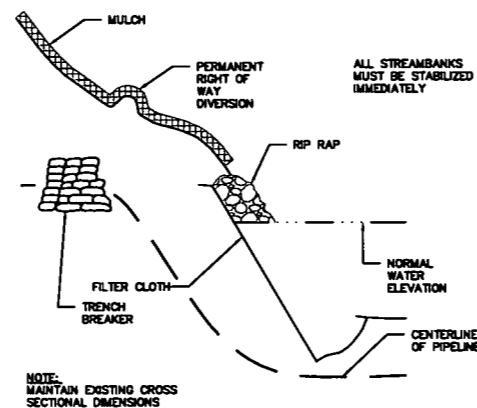
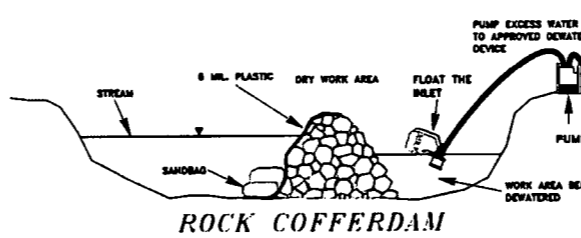
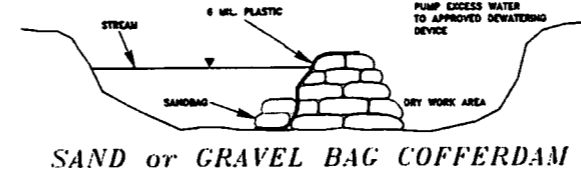
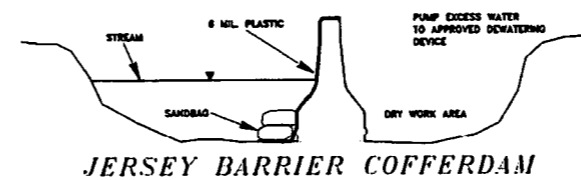
COFFERDAM CROSSING

PLAN VIEW

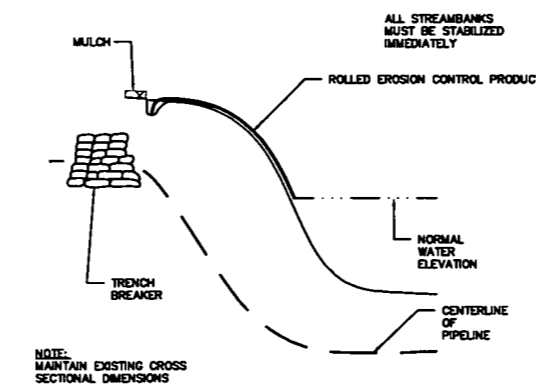


COFFERDAM STREAM CROSSING
DEVELOPED FROM 2006 MANUAL

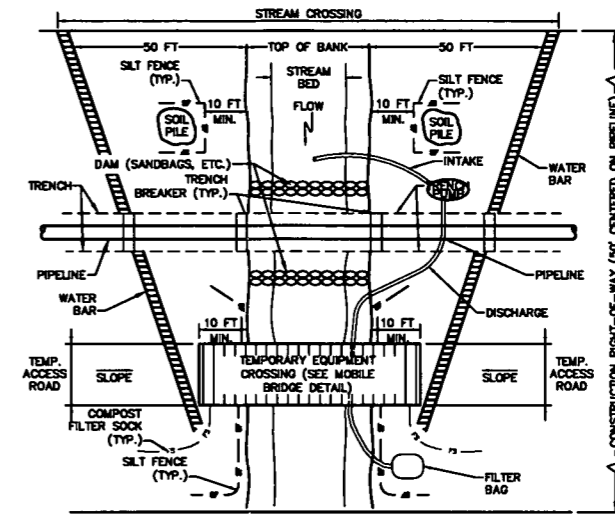
COFFERDAMS



STREAM BANK STABILIZATION W/ RIP RAP
DEVELOPED FROM 2006 MANUAL

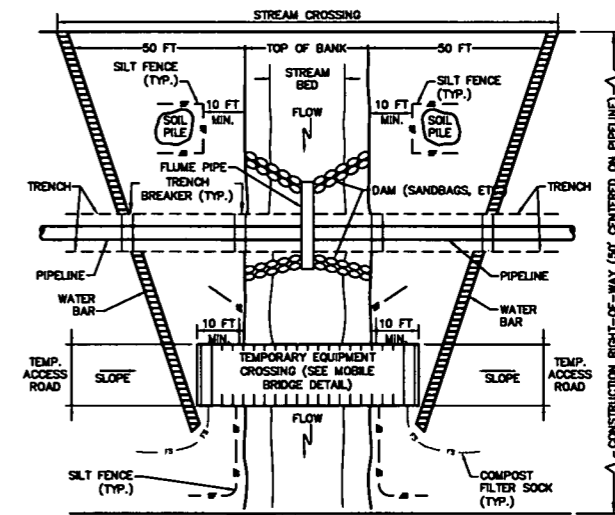


STREAM BANK STABILIZATION W/R.E.C.P.
DEVELOPED FROM 2006 MANUAL



- NOTES:**
1. INSTALL COMPOST FILTER SOCKS, TRENCH BREAKERS, PUMP, ENERGY DISSIPATER, AND DAMS BEFORE TRENCHING STREAM.
 2. PUMP MUST BE OF SUFFICIENT CAPACITY TO CONVEY NORMAL AND/OR EXISTING STREAM FLOW OVER TRENCH. A BACK-UP PUMP OF EQUAL CAPACITY MUST BE AVAILABLE ON-SITE DURING CONSTRUCTION OF THE PIPELINE CROSSING.
 3. PLACE SOIL PILES A MINIMUM OF 10 FEET FROM TOP OF BANK.
 4. INSTALL WATER BARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCKS, SILT FENCE, OR SUPER SILT FENCE (AS INDICATED ON PLAN SHEETS).
 5. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
 6. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
 7. RESTORE AREA TO APPROXIMATE ORIGINAL CONTOURS.

TYPICAL STREAM CROSSING PUMP DIVERSION



- NOTES:**
1. INSTALL COMPOST FILTER SOCKS, TRENCH PLUGS, PUMP, AND DAMS BEFORE TRENCHING STREAM.
 2. FOR FLUME PIPE AND ROCK FILL CROSSINGS, INSTALL FLUME PIPE ON EXISTING STREAMBED. MORE THAN 1 FLUME PIPE MAY BE NEEDED TO SPAN STREAM CHANNEL.
 3. PLACE SOIL PILES A MINIMUM OF 10 FEET FROM TOP OF BANK.
 4. INSTALL WATER BARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCKS, SILT FENCE, OR SUPER SILT FENCE (AS INDICATED ON PLAN SHEETS).
 5. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
 6. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
 7. RESTORE AREA TO APPROXIMATE ORIGINAL CONTOURS.

FLUME PIPE DIVERSION

REFERENCES:
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2008.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-28-2010.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012.

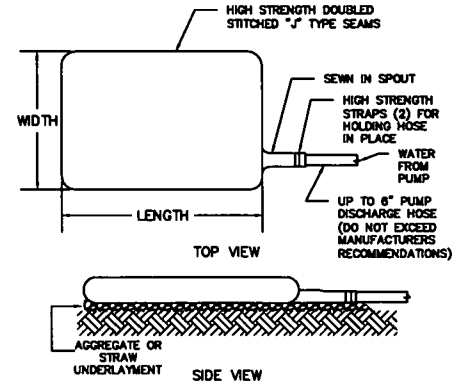
NO.	DATE	BY:	CHKD:	APPR:	DESCRIPTION

Mountain Valley
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
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PITTSBURGH, PA 15220

CONSTRUCTION PLANS

DRAWN BY:	KAL
CHECKED BY:	HT
APPROVED BY:	RE
DATE:	2/19/2016
SCALE:	AS SHOWN
SHT. NO.	0.04 OF 0.21

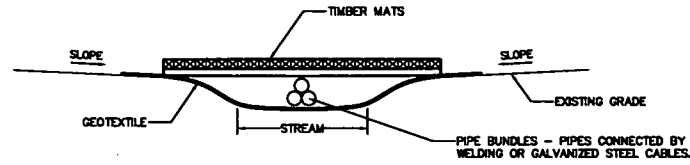


- NOTES:**
1. THE BAG SHALL BE INSTALLED ON A VERY SLIGHT SLOPE SO INCOMING WATER FLOWS DOWNHILL THROUGH THE BAG WITHOUT CREATING MORE EROSION.
 2. THE NECK OF THE FILTER BAG SHALL BE TIGHTLY TAPPED (MINIMUM TWO STRAPS) TO THE DISCHARGE HOSE.
 3. THE BAG SHOULD BE PLACED ON AN AGGREGATE BED TO MAXIMIZE WATER FLOW THROUGH THE ENTIRE SURFACE AREA OF THE BAG.
 4. THE FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR PASS WATER AT A REASONABLE RATE.
 5. FLOW RATES VARY DEPENDING ON THE SIZE OF THE DEWATERING DEVICE, AMOUNT OF SEDIMENT DISCHARGED INTO THE DEWATERING DEVICE, THE TYPE OF GROUND, ROCK, OR OTHER SUBSTANCE UNDER THE BAG AND THE DEGREE OF THE SLOPE ON WHICH THE BAG LIES. THE FILTER BAG SHOULD BE SIZED TO ACCOMMODATE THE ANTICIPATED FLOW RATES FROM THE TYPE OF PUMP USED. TYPICALLY FILTER BAGS CAN HANDLE FLOW RATES OF UP TO 1000 GALLONS PER MINUTE, BUT IN ALL CASES FOLLOW THE MANUFACTURERS RECOMMENDATIONS FOR FLOW RATES.
 6. USE OF EXCESSIVE FLOW RATES OR OVERFILLING THE DEWATERING DEVICE WITH SEDIMENT WILL CAUSE RUPTURES OF THE BAG OR FAILURE OF THE HOSE ATTACHMENT STRAPS.
 7. THE FILTER BAG CAN BE LEFT IN PLACE AFTER CUTTING THE TOP OFF AND SEEDING AND MULCHING THE ACCUMULATED SEDIMENT OR REMOVED AND DISPOSED OF OFFSITE IN AN APPROVED LANDFILL.
 8. EACH STANDARD DEWATERING DEVICE SHALL HAVE A FILL SPOUT LARGE ENOUGH TO ACCOMMODATE THE DISCHARGE HOSE. USE TWO STAINLESS STEEL STRAPS TO SECURE THE HOSE AND PREVENT PUMPED WATER FROM ESCAPING WITHOUT BEING FILTERED.
 9. THE DEWATERING DEVICE SHALL BE A NONWOVEN BAG, WHICH IS SEWN WITH A DOUBLE NEEDLE STITCHING USING A HIGH STRENGTH THREAD.
 10. THE DEWATERING DEVICE SEAMS SHALL HAVE AN AVERAGE WIDE WITH STRENGTH PER ASTM D 4884 OF 100 LB/IN.
 11. THE GEOTEXTILE FABRIC SHALL BE A NONWOVEN FABRIC WITH THE FOLLOWING PROPERTIES:

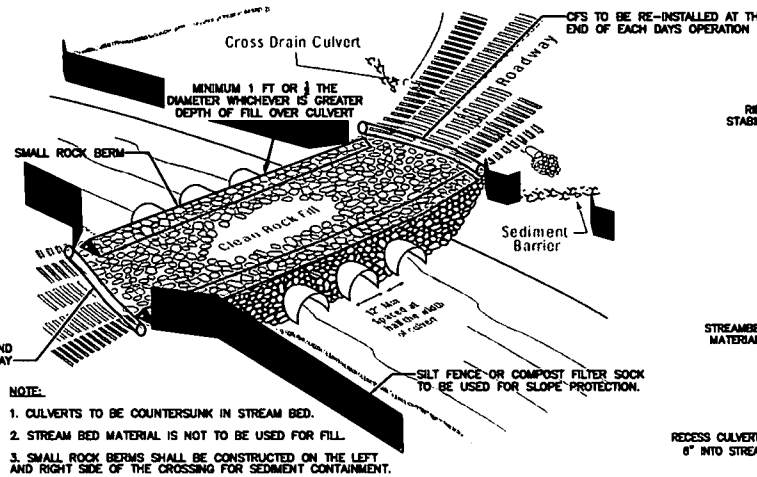
PROPERTIES	TEST METHOD	ENGLISH	METRIC
GRAB TENSILE	ASTM D-4833	250 LBS.	113 KG
PUNCTURE	ASTM D-4833	165 LBS.	75 KG
FLOW RATE	ASTM D-4491	70 GAL/MIN/ SQ FT	25 LITERS/MIN/ SQMETER
PERMEABILITY	ASTM D-4491	1.3 SEC.-1	1.3 SEC.-1
MULLENBURT	ASTM D-3785	350 LBS./SQ INCH	3.29 MPa
UV RESISTANT	ASTM D-4155	70%	70%
ACS % RETAINED	ASTM D-4751	100%	100%

*ALL PROPERTIES ARE MINIMUM AVERAGE ROLL VALUE

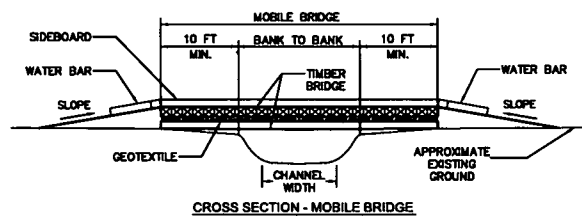
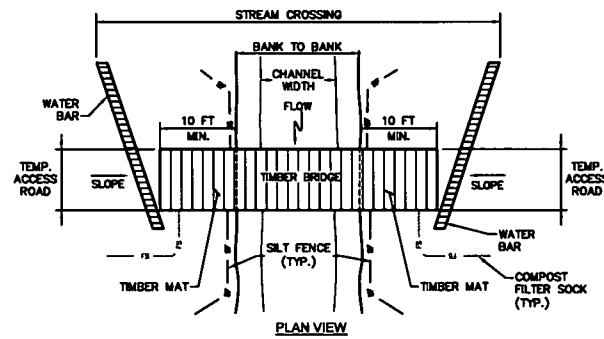
DEWATERING BAG
DEVELOPED FROM 2006 MANUAL



TIMBER MAT AND PIPE BUNDLE
TEMPORARY STREAM CROSSING

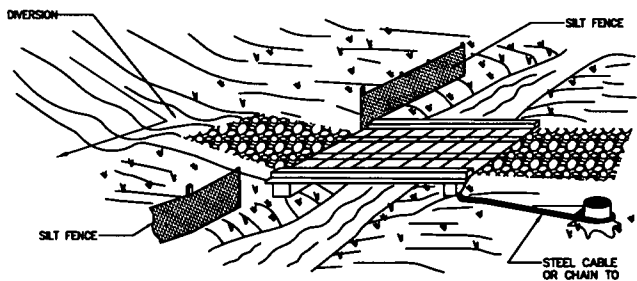


TYPICAL E&S CONTROL FOR STREAM CROSSINGS
TAKEN FROM 2012 MANUAL

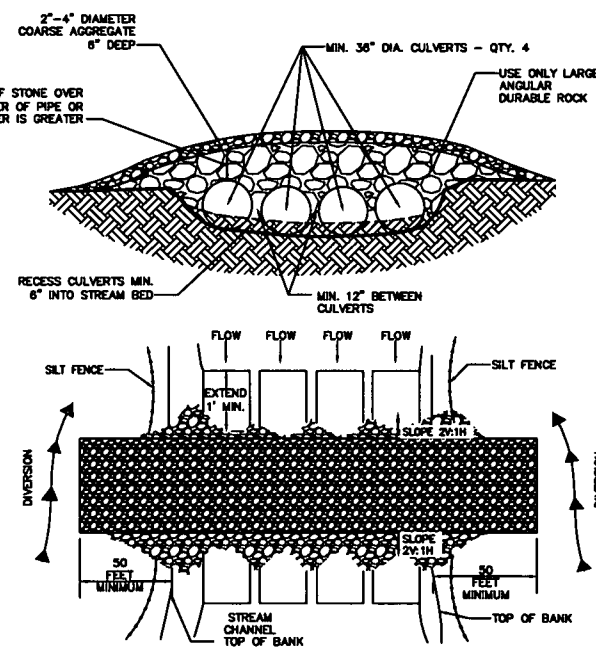


- NOTES:**
1. INSTALL WATER BARS OR SILT FENCE AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCKS ALONG STREAM BANKS.
 2. INSTALL COMPOST FILTER SOCK AT OUTLET OF WATER BARS.
 3. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
 4. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 8 INCHES ABOVE ORIGINAL GRADE.
 5. GEOTEXTILE LINER TO COME UP ON THE SIDES OF THE BRIDGE A MINIMUM OF 18\"/>

MOBILE BRIDGE

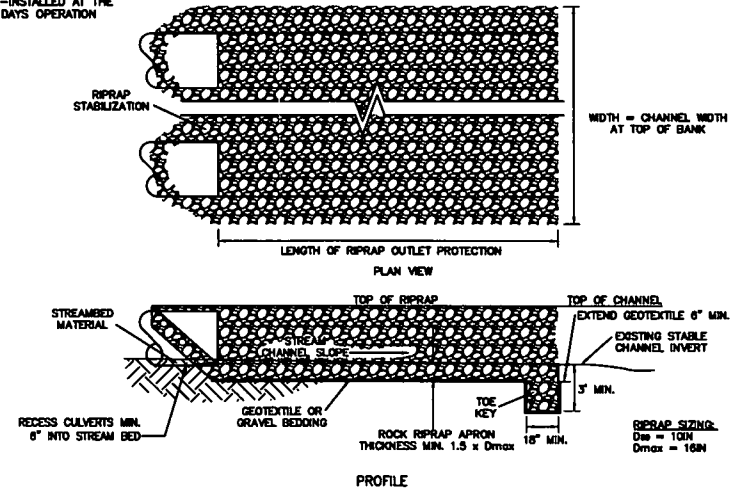


TEMPORARY BRIDGE STREAM CROSSING DETAIL



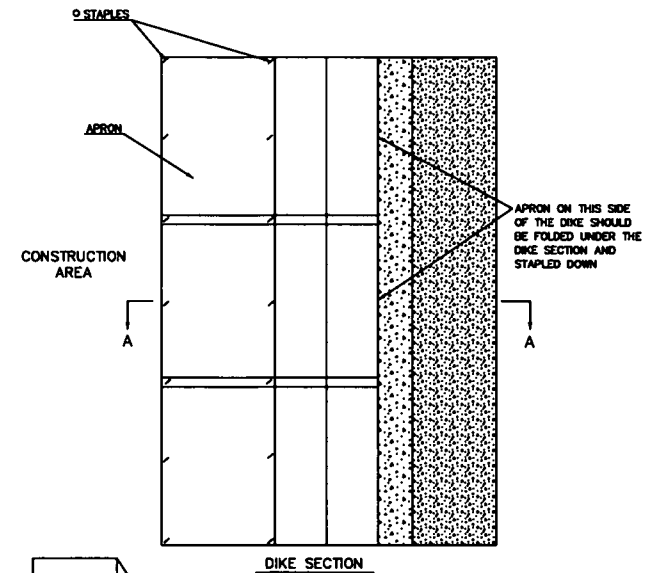
- NOTES:**
1. 2\"/>
 - 2. THE CULVERTS SHALL EXTEND A MINIMUM OF ONE FOOT BEYOND THE UPSTREAM AND DOWNSTREAM TOE OF THE AGGREGATE PLACED AROUND THE CULVERT.
 - 3. THE SLOPE OF THE CULVERT SHALL BE EQUAL TO THAT OF THE EXISTING STREAM CHANNEL AND AT LEAST 0.25 INCH PER FOOT.
 - 4. THE WATERWAY CROSSING SHALL BE AT A RIGHT ANGLE TO THE STREAM, WHERE APPROACH CONDITIONS DICTATE. THE CROSSING MAY VARY 15 DEGREES FROM A LINE DRAWN PERPENDICULAR TO THE CENTERLINE OF THE STREAM AT THE INTENDED CROSSING LOCATION.
 - 5. THE CENTERLINE OF BOTH ROADWAY APPROACHES SHALL COINCIDE WITH THE CROSSING ALIGNMENT CENTERLINE FOR A MINIMUM DISTANCE OF 50' FROM EACH BANK OF THE WATERWAY BEING CROSSED. IF PHYSICAL OR RIGHT-OF-WAY RESTRAINTS PRECLUDE THE 50' MIN. A SHORTER DISTANCE MAY BE PROVIDED. ALL FILL MATERIALS ASSOCIATED WITH THE ROADWAY APPROACH SHALL BE LIMITED TO A MAX. HEIGHT OF 2' ABOVE THE EXISTING FLOOD PLAIN ELEVATION.
 - 6. THE ROADWAY APPROACHES TO THE STRUCTURE SHALL CONSIST OF STONE PADS MEETING THE FOLLOWING SPECIFICATIONS:
 - 1) STONE: 2\"/>
 - 2) MIN. THICKNESS: 6\"/>
 - 3) MIN. WIDTH: EQUAL TO THE WIDTH OF THE STRUCTURE
 - 4) MIN. LENGTH: 50' ON EITHER SIDE OF THE CROSSING
 - 7. A WATER DIVERTING STRUCTURE SUCH AS A SWALE SHALL BE CONSTRUCTED (ACROSS THE ROADWAY ON BOTH ROADWAY APPROACHES) 50' (MAX.) ON EITHER SIDE OF THE CROSSING. THE 50' IS MEASURED FROM THE TOP OF THE BANK IF THE ROADWAY APPROACH IS CONSTRUCTED WITH A REVERSE GRADE AWAY FROM THE WATERWAY. SEPARATE DIVERTING STRUCTURE IS NOT REQUIRED.
 - 8. APPROPRIATE PERIMETER CONTROLS SUCH AS SILT FENCE AND SUPER SILT FENCE MUST BE EMPLOYED WHEN NECESSARY ALONG BANKS OF STREAM.
 - 9. CLEARING & EXCAVATION OF STREAMBED AND BANKS WILL BE KEPT TO A MINIMUM.
 - 10. THE INVERT ELEVATION OF THE CULVERT SHALL BE INSTALLED COUNTERSUNK INTO NATURAL STREAMBED GRADE BY 6\"/>
 - 11. FILTER CLOTH SHALL BE PLACED ON THE STREAMBED AND STREAMBANKS PRIOR TO PLACEMENT OF THE PIPE CULVERTS AND AGGREGATE. THE FILTER CLOTH SHALL COVER THE STREAMBED AND EXTEND A MIN. OF 6\"/>
 - 12. DURING ROUTINE ROAD MAINTENANCE, DO NOT GRADE MUD AND DEBRIS OVER THE SIDES OF THE CROSSING INTO THE STREAM.

CULVERT CROSSING
DEVELOPED FROM 2006 MANUAL

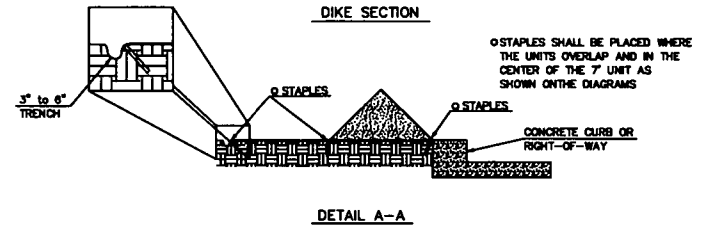


- NOTES:**
1. SUBGRADE FOR THE FILTER OR BEDDING AND RIPRAP SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES AS SHOWN ON THE PLAN. THE SUBGRADE SHALL BE CLEARED OF ALL TREES, STUMPS, ROOTS, SOIL, LOOSE ROCK, OR OTHER MATERIALS.
 2. RIPRAP SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE PLAN.
 3. GEOTEXTILE SHALL BE SECURELY ANCHORED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
 4. GRAVEL BEDDING SHALL BE AASHTO NO. 67'S OR 57'S UNLESS SHOWN DIFFERENTLY ON THE DRAWINGS.
 5. RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SLIPPAGE OR DAMAGE TO THE GEOTEXTILE.
 6. RIPRAP SHALL BE PLACED BY A METHOD THAT DOES NOT CAUSE SEGREGATION OF SIZES. EXTENSIVE PUSHING WITH A DOZER CAUSES SEGREGATION AND SHALL BE AVOIDED BY DELIVERING RIPRAP NEAR ITS FINAL LOCATION WITHIN THE CHANNEL.
 7. CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.
 8. ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.
 9. RIPRAP APRON AT BOTH INLET AND OUTLET SHALL EXTEND ACROSS THE STREAM CHANNEL BOTTOM AND UP THE CHANNEL BANKS TO THE TOP OF THE BANKS.

STREAM CULVERT CROSSING
INLET/OUTLET PROTECTION



DIKE SECTION



DETAIL A-A

TEMPORARY SILT DIKE INSTALLATION FOR
CONTINUOUS BARRIER
SOURCE ACF ENVIRONMENTAL

- REFERENCES:**
- WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2008.
 - WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-25-2010.
 - WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012.

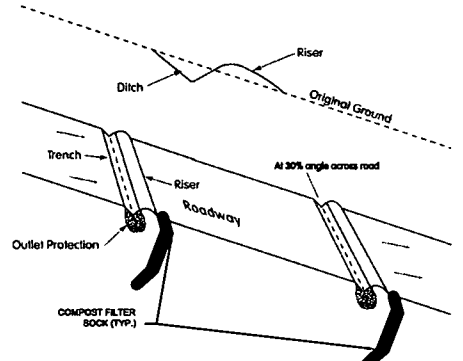
NO.	DATE	BY	CHKD.	APPR.	DESCRIPTION

Mountain Valley Pipeline
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
 WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANDOUBURG, PA 15317

TETRA TECH
 complex world CLEAR SOLUTIONS™
 661 ANDERSEN DRIVE
 FOSTER PLAZA 7
 PITTSBURGH, PA 15220

CONSTRUCTION PLANS

DRAWN BY:	KAL
CHECKED BY:	HT
APPROVED BY:	RE
DATE:	2/19/2018
SCALE:	AS SHOWN
SHT. NO.	0.05 OF 0.21

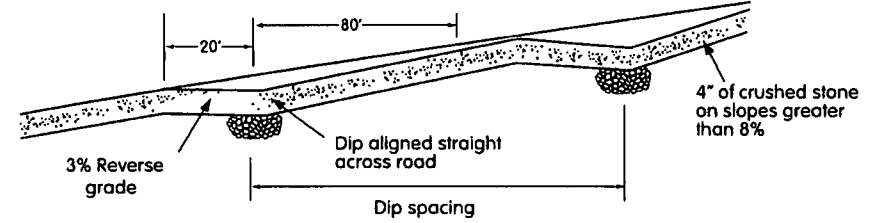


NOTE:
APPROPRIATELY SIZED COMPOST FILTER SOCK TO BE USED AS SEDIMENT CONTROL DEVICE ON WATER BAR OUTLETS. REFER TO RECOMMENDED DIAMETER TABLE ON SHEET 4.

CROSS DRAIN/WATER BAR
TAKEN FROM 2012 MANUAL

Table II-4 Spacing of Broad-Based Dips

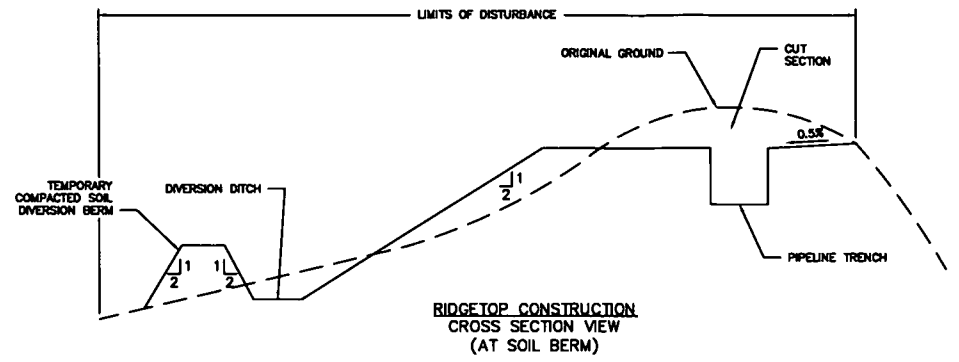
Road Grade (%)	Distance Between Drains (ft)
2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140



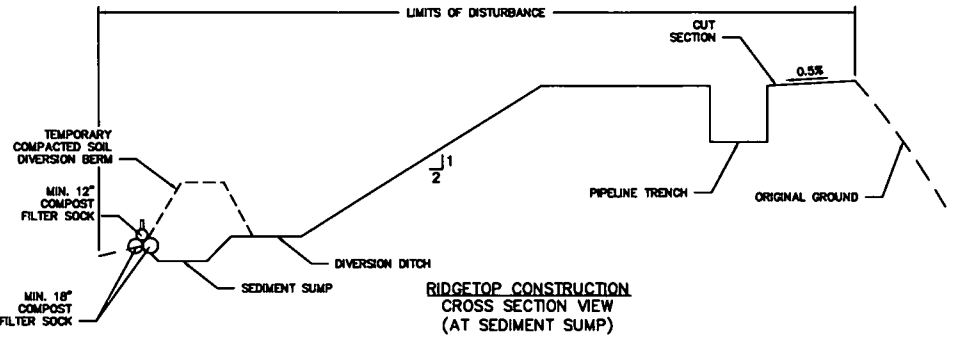
DESCRIPTION: A CONSTRUCTED DIP OR SWALE, ACROSS THE ROAD SURFACE, SLOPED TO THE OUTSLOPE FOR DRAINAGE OF THE ROAD SURFACE.

DESIGN CRITERIA:
1. MAXIMUM ROAD GRADE ON WHICH DIPS CAN BE CONSTRUCTED IS 10%.
2. A 3% REVERSE GRADE SHOULD BE CONSTRUCTED IN THE EXISTING ROADBED, BY CUTTING UPSLOPE OF THE DIP LOCATION.
3. BROAD BASED DIP SHOULD BE ARMORED WITH STONE TO WITHSTAND EXPECTED TRAFFIC.
4. DRAINAGE OUTLET PROTECTION SHALL BE PROVIDED WITH APPROPRIATE SEDIMENT BARRIER STRUCTURES.
5. SPACING: REFER TO TABLE II-4.

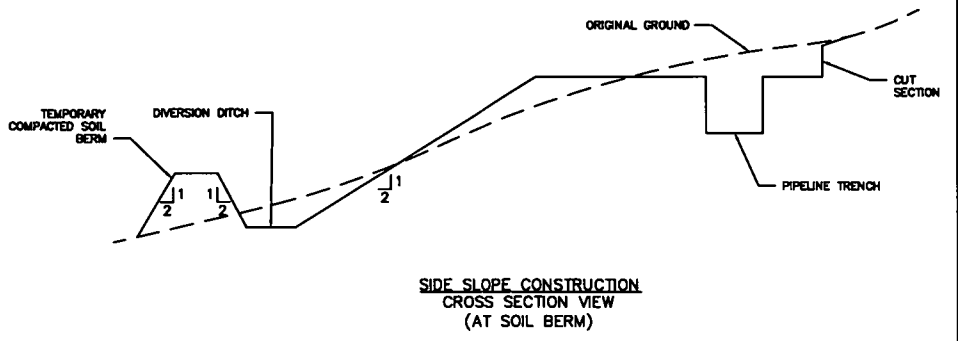
BROAD BASED DIP DETAIL
N.T.S.



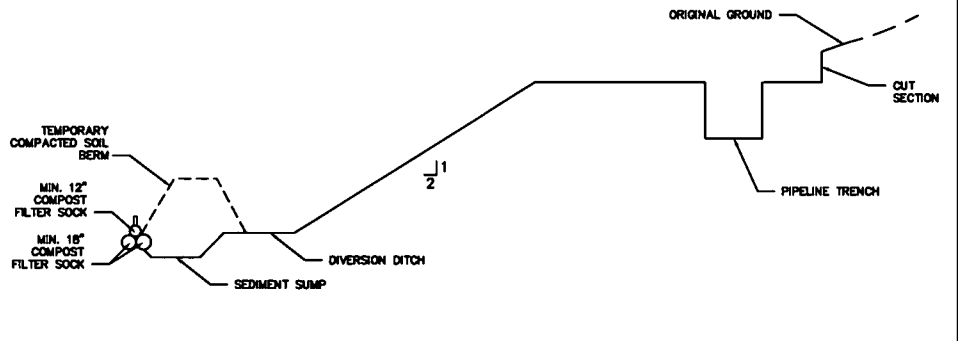
RIDGETOP CONSTRUCTION CROSS SECTION VIEW (AT SOIL BERM)



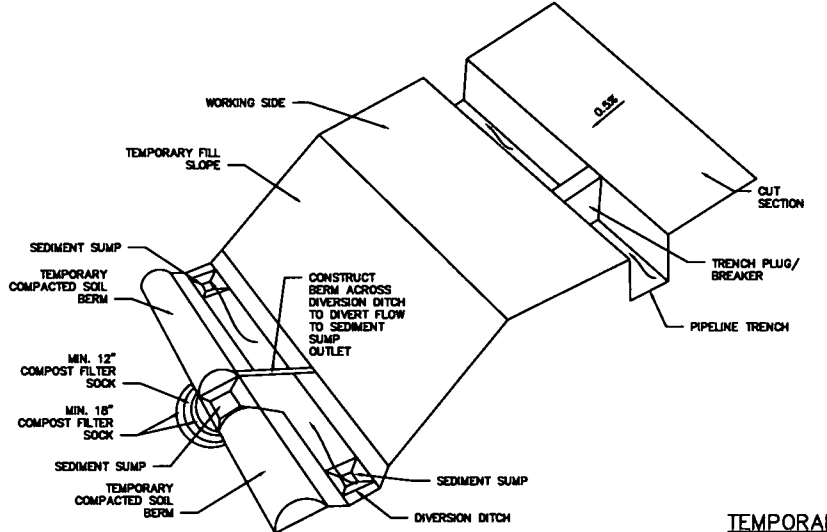
RIDGETOP CONSTRUCTION CROSS SECTION VIEW (AT SEDIMENT SUMP)



SIDE SLOPE CONSTRUCTION CROSS SECTION VIEW (AT SOIL BERM)

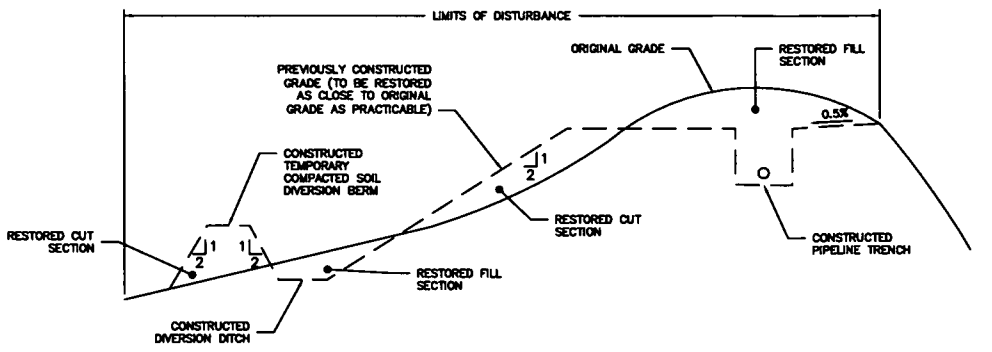


SIDE SLOPE CONSTRUCTION CROSS SECTION VIEW (AT SEDIMENT SUMP)

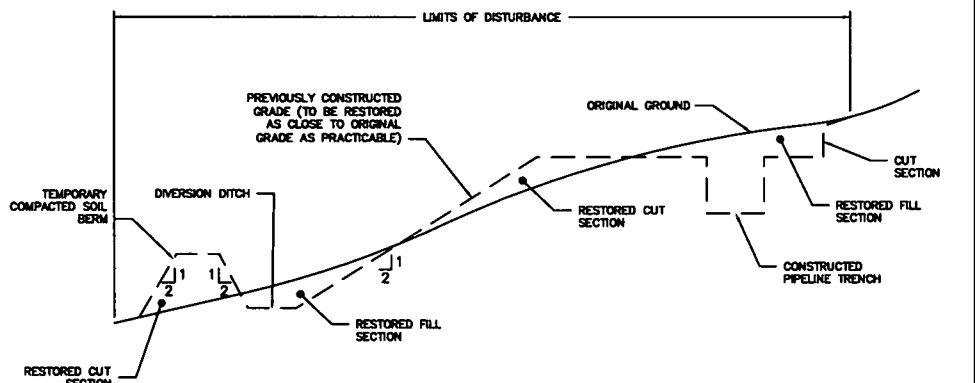


TEMPORARY RIGHT OF WAY DIVERSION AND OUTLET DETAIL
N.T.S.

- NOTES:
- TEMPORARY RIGHT OF WAY DIVERSION AND OUTLET INTENDED FOR USE IN LIEU OF SILT FENCING OR COMPOST FILTER SOCK ALONG STRAIGHT SECTIONS OF RIGHT OF WAY LOCATED NEAR RIDGE LINES.
 - MULCHING SHALL BE USED TO STABILIZE THE TEMPORARY COMPACTED SOIL BERM, DIVERSION DITCH, AND TEMPORARY FILL SLOPE.
 - REFER TO LANDSLIDE MITIGATION PLAN DETAILS FOR TRENCH BREAKER OUTLETS AND LOWPOINT DRAINAGE DETAILS.
 - TEMPORARY FILL SLOPE TO BE CONSTRUCTED NO STEEPER THAN 2H:1V.
 - SIDE SLOPES OF TEMPORARY SOIL BERM AND DIVERSION DITCH SHALL BE NO STEEPER THAN 2H:1V.
 - ENDS OF COMPOST FILTER SOCK AT SUMP OUTLET TO BE TURNED UPSLOPE AND BUTTED UP AGAINST THE BERM TO PREVENT FLOW FROM PASSING AROUND COMPOST FILTER SOCK.



POST CONSTRUCTION RIDGETOP RECLAMATION DETAIL
N.T.S.



POST CONSTRUCTION SIDE SLOPE RECLAMATION DETAIL
N.T.S.

REFERENCES:
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2008.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-28-2010.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012

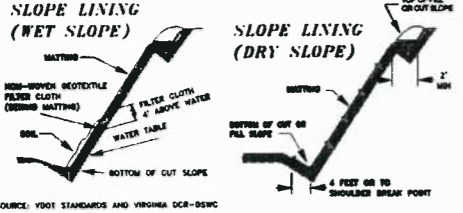
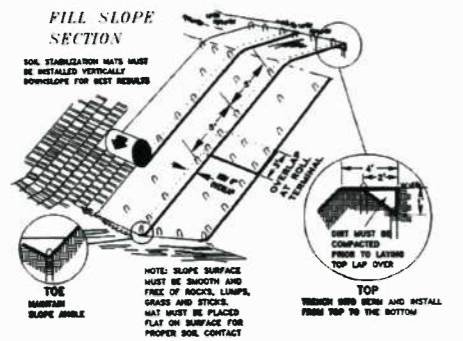
NO.	DATE	BY	CHKD.	APPD.	DESCRIPTION

Mountain Valley Project
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
 WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANONSBURG, PA 15317

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 PITTSBURGH, PA 15220

CONSTRUCTION PLANS

DRAWN BY: KAL
 CHECKED BY: HT
 APPROVED BY: RE
 DATE: 2/19/2018
 SCALE: AS SHOWN
 SHEET NO. 0.08 OF 0.21



EROSION CONTROL FABRIC BLANKETING FOR PROTECTION ON STEEP SLOPES
TAKEN FROM 2006 MANUAL



Typical Polymer Stabilized Fiber Matrix Application Rates

SLOPE	Maximum Rainfall of 2.5"					
	0:1	0.5:1	1:1	1.5:1	2:1	2.5:1
Soil Stabilizer (gal/acre)	4	8	8	7	8	10
Fiber (lb/acre)	1,000	1,500	1,500	1,800	2,000	2,000

SLOPE	Maximum Rainfall of > 2.5" and for Site Winterization		
	0.5:1	1:1	2.5:1
Soil Stabilizer (gal/acre)	6	6	10
Fiber (lb/acre)	2,000	2,500	3,000

NOTES:
A BONDED FIBER MATRIX (BFM) IS AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. BFM'S MAKE USE OF A CROSS-LINKED HYDROCOLLOID TACKIFIER TO BOND THERMALLY PROCESSED WOOD FIBERS. APPLICATION RATES VARY ACCORDING TO SITE CONDITIONS. FOR SLOPES UP TO 3:1 V THE BFM SHOULD BE APPLIED AT A RATE OF 3,000 LB/ACRE. STEEPER SLOPES MAY NEED AS MUCH AS 4,000 LB/ACRE.

BFM'S SHOULD ONLY BE USED WHEN NO RAIN IS FORECASTED FOR AT LEAST 48 HOURS FOLLOWING THE APPLICATION. THIS IS TO ALLOW THE TACKIFIER SUFFICIENT TIME TO CURE PROPERLY. ONCE PROPERLY APPLIED, A BFM IS TYPICALLY 90% EFFECTIVE IN PREVENTING ACCELERATED EROSION. BFM'S SHOULD NOT BE APPLIED BETWEEN SEPTEMBER 30 AND APRIL 1.

A POLYMER STABILIZED FIBER MATRIX (PSFM) CAN ALSO BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. PSFM'S MAKE USE OF A LINEAR SOIL STABILIZING TACKIFIER THAT WORKS DIRECTLY ON SOIL TO MAINTAIN SOIL STRUCTURE, MAINTAIN PORE SPACE CAPACITY AND FLOCCULATE DISLOOSED SEDIMENT THAT WILL SIGNIFICANTLY REDUCE RUNOFF TURBIDITY. PROPERLY APPLIED, A PSFM MAY BE AS MUCH AS 99% EFFECTIVE.

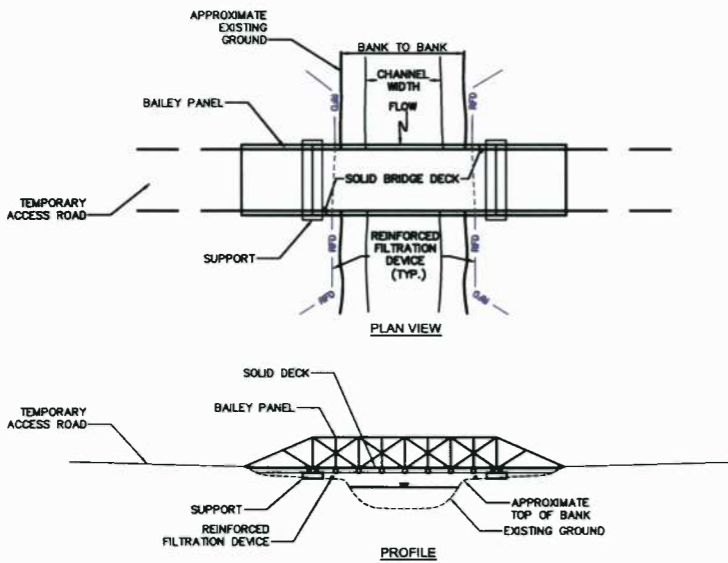
NOTES:
UNLIKE ROLLED BLANKETS, THERE IS NO NEED TO SMOOTH THE SLOPE PRIOR TO APPLICATION OF HYDRAULICALLY APPLIED BLANKETS. IN FACT SOME ROUGHENING OF THE SURFACE, EITHER NATURAL OR MECHANICALLY INDUCED, IS PREFERABLE. HOWEVER, LARGE ROCKS, THOSE > 9 INCHES, AND EXISTING RILLS SHOULD BE REMOVED PRIOR TO APPLICATION. TRACKING OR GROOVING OF SLOPES SHOULD BE CONSIDERED TO SLOW WATER FLOWS DURING A STORM EVENT. SLOPE INTERRUPTION DEVICES SUCH AS STAIR STEP GRADING OR BENCHING SHOULD BE APPLIED PRIOR TO THE APPLICATION. MIXING AND APPLICATION RATES SHOULD FOLLOW MANUFACTURER'S RECOMMENDATIONS.

HYDRAULICALLY APPLIED BLANKETS ARE TYPICALLY APPLIED IN TWO STAGES UNLESS SPECIFICALLY RECOMMENDED TO BE APPLIED IN ONE APPLICATION BY THE MANUFACTURER. THE SEED MIXTURE AND SOIL AMENDMENTS SHOULD BE APPLIED FIRST IF THE SEED IS APPLIED AT THE SAME TIME AS THE HYDRAULICALLY APPLIED BLANKET. THE BONDED FIBERS MAY KEEP THE SEED FROM MAKING SUFFICIENT CONTACT WITH THE SOIL TO GERMINATE. AFTER THE SEED MIXTURE IS APPLIED, THE BFM, FGM, OR PSFM SHOULD BE SPRAYED OVER THE AREA AT THE REQUIRED APPLICATION RATE. (SEE ABOVE TABLES)

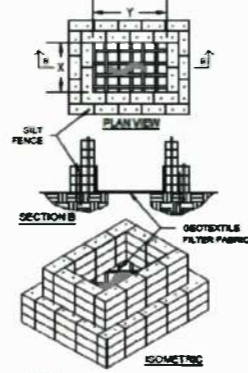
BONDED FIBER MATRIX

STEEP SLOPE EROSION CONTROL OPTIONS

MINIMUM SLUMP DIMENSIONS (FEET)		MAXIMUM PUMPING RATE (GALLONS PER MINUTE)
X	Y	
10	20	300
15	20	360
20	20	400
20	25	460
25	25	500
25	30	560
30	30	600



MODULAR TEMPORARY BAILEY BRIDGE



- NOTES:**
1. APPROXIMATE THE STRAW BALES TO THE X AND Y DIMENSIONS AS SPECIFIED IN THE CHART.
 2. IN OPTION 2, THE BOTTOM OF THE STRUCTURE IS NOT LINED WITH STRAW BALES, LINE THE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.
 3. OPERATING FILTER BAG TO BE USED IN CONNECTION WITH STRAW BALE STRUCTURE FOR IMPROVED SEDIMENT REMOVAL.
 4. SEAMS OF GEOTEXTILE FABRIC TO BE SEWN TOGETHER.

TYPICAL BALE DEWATERING STRUCTURE

REFERENCES:
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-29-2010.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012.

NO.	DATE	BY:	CHKD.:	APPD.:	DESCRIPTION:

REVISIONS:

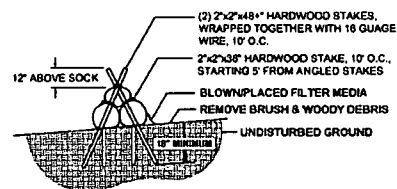
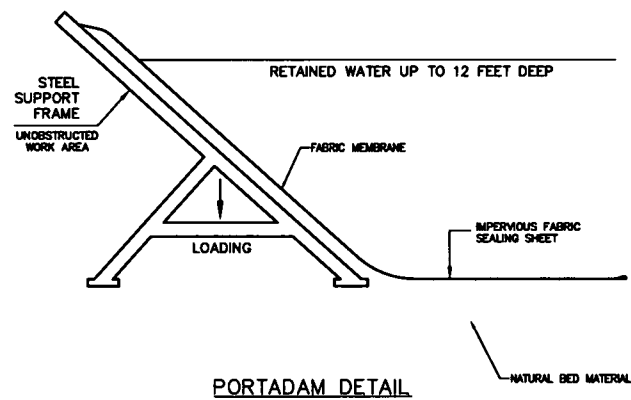
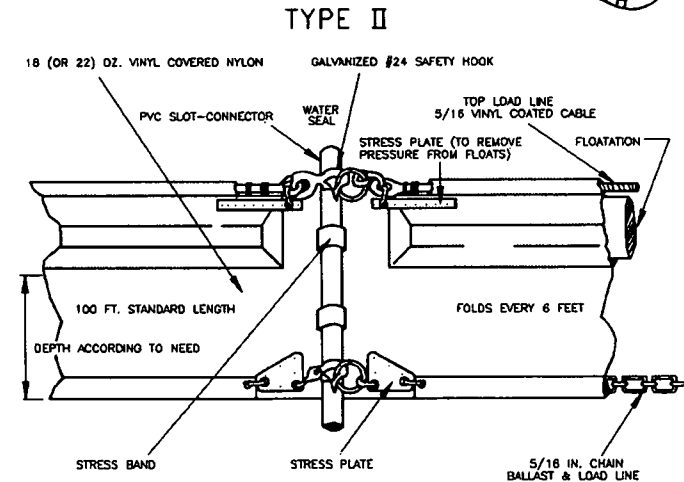
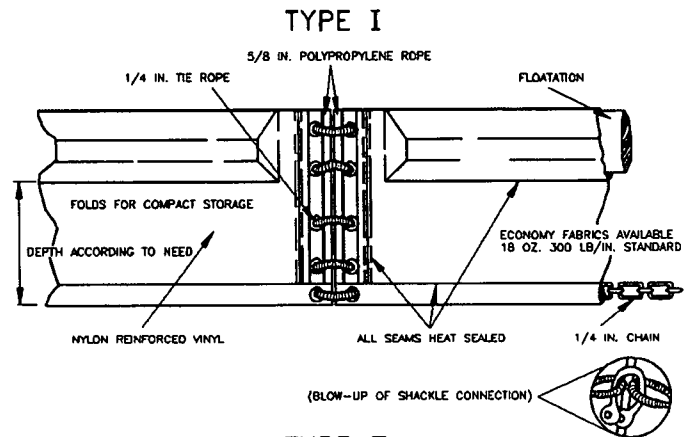
Mountain Valley
EROSION AND SEDIMENT CONTROL DETAILS
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WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA

MOUNTAIN VALLEY PIPELINE, LLC
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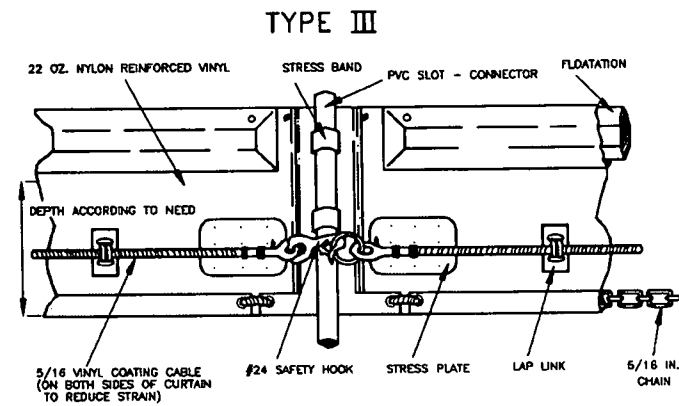
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APPROVED BY:	RE
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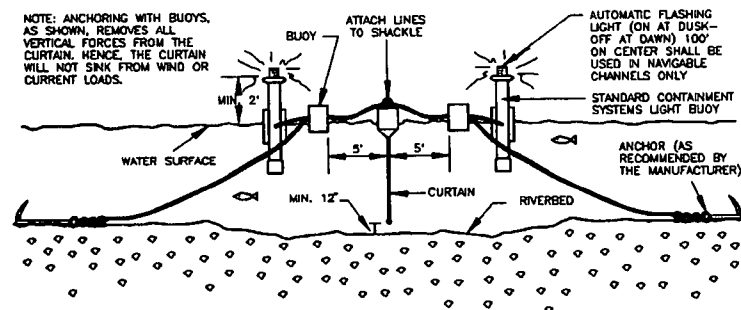
STACKED COMPOST FILTER SOCK DETAIL CROSS SECTION VIEW
(OBTAINED FROM PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL DATED MARCH 2012)

REFERENCES:
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2008.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-28-2010.
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012

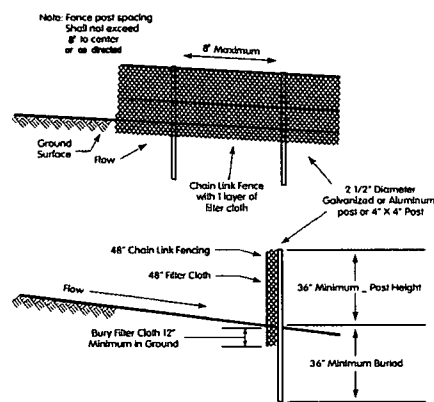
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ORIENTATION WHEN INSTALLED (TIDAL SITUATION - TYPE III)



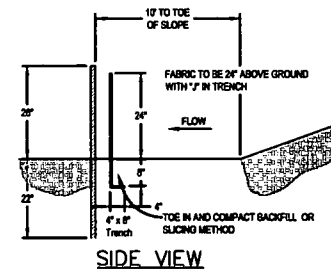
TURBIDITY CURTAIN DETAIL DEVELOPED FROM 2006 MANUAL



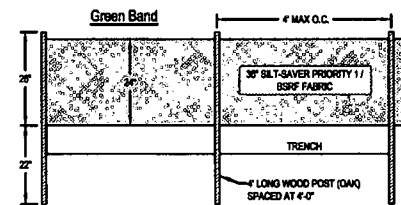
SUPER SILT FENCE TAKEN FROM 2006 MANUAL

NOTE: THE TYPE OF REINFORCED FILTRATION DEVICE WILL BE SELECTED BASED ON FIELD CONDITIONS DURING CONSTRUCTION

REINFORCED FILTRATION DEVICES (RED) (STACKED CFS, SUPER SILT FENCE, BELTED SILT RETENTION FENCE)

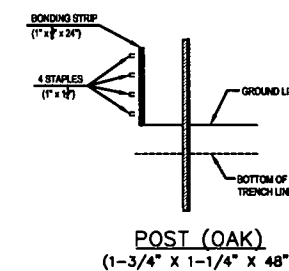


SIDE VIEW

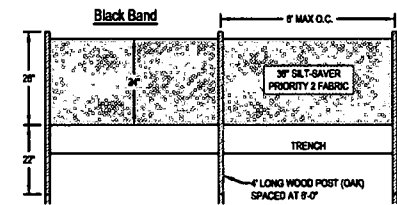


FRONT ELEVATION

PRIORITY 1 TAKEN FROM SILT-SAVER, INC OR EQUAL



POST (OAK) (1-3/4" X 1-1/4" X 48")

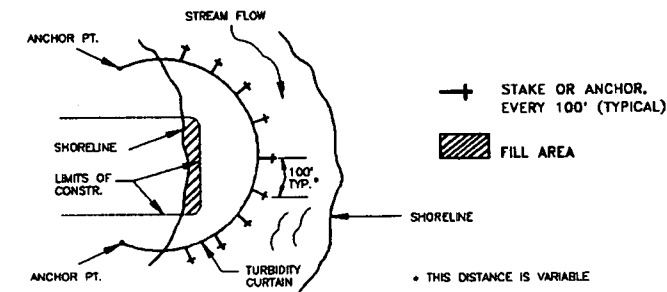


FRONT ELEVATION

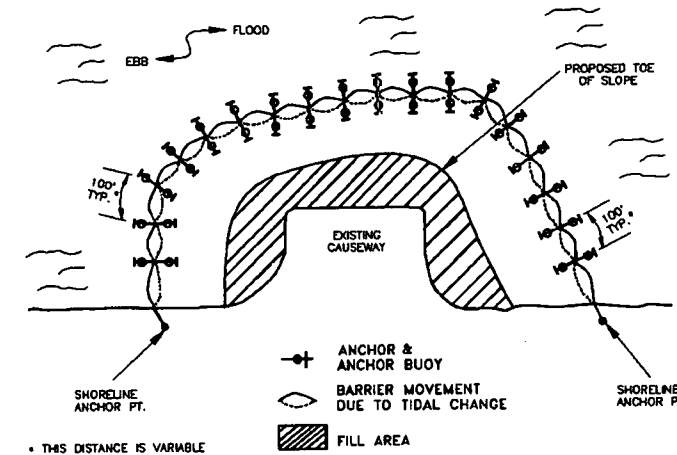
PRIORITY 2 TAKEN FROM SILT-SAVER, INC OR EQUAL

BELTED SILT RETENTION FENCE (BSRF) TAKEN FROM SILT-SAVER, INC OR EQUAL

TYPICAL LAYOUTS: STREAMS, PONDS & LAKES (PROTECTED & NON-TIDAL)



TIDAL WATERS AND/OR HEAVY WIND & WAVE ACTION



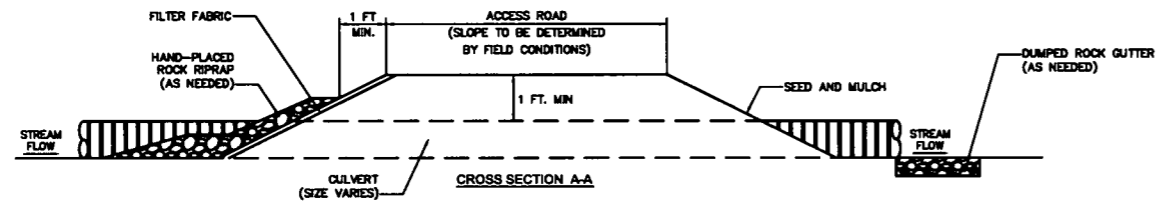
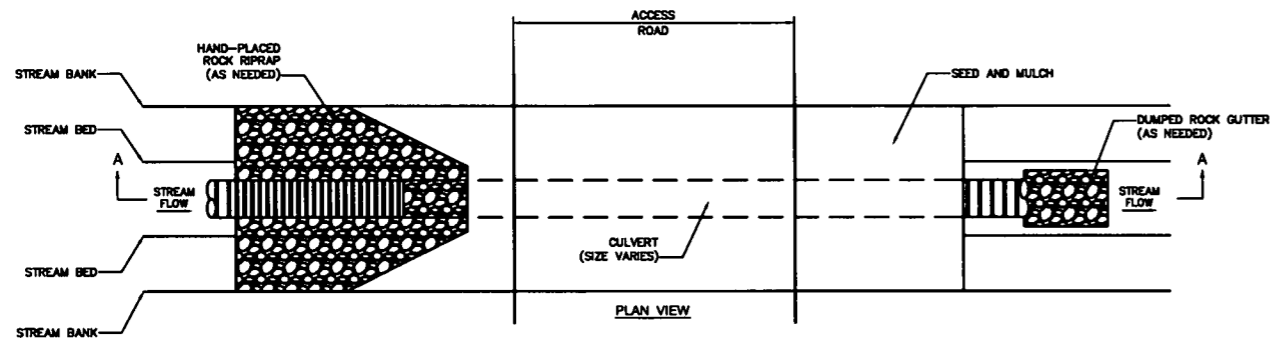
NO.	DATE	APPD.	CHKD.	DESCRPTION	REVISIONS:

Mountain Valley
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
555 SOUTHPOINTE BOULEVARD, SUITE 200
CANONSBURG, PA 15317

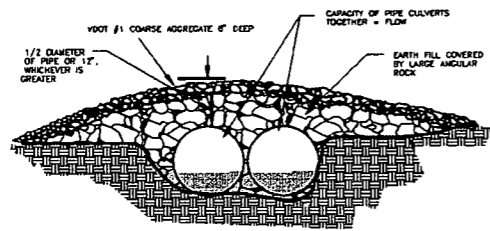
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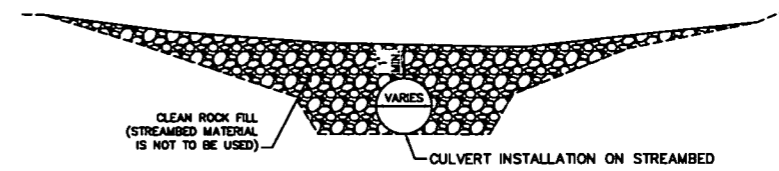
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TYPICAL ROAD CROSS-SECTION AT STREAM CROSSING



TEMPORARY CULVERT CROSSING
TAKEN FROM VADEQ 1992 MANUAL



TYPICAL STREAM CROSSING PROFILE - SINGLE CULVERT
TAKEN FROM WVDEP MANUAL

NOTE:
THE CULVERT TYPES, SIZES, AND LOCATIONS RELATIVE TO THE PIPELINE ARE SHOWN ON THE TABLE INCLUDED AS ATTACHMENT DR3 WATER RESOURCES -8A.

NO.	DATE	BY	CHKD.	APPL.	DESCRIPTION

Mountain Valley Pipeline
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE

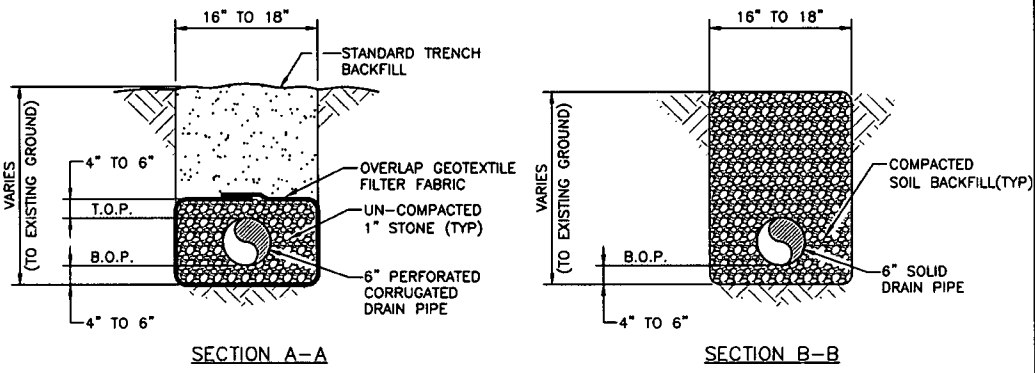
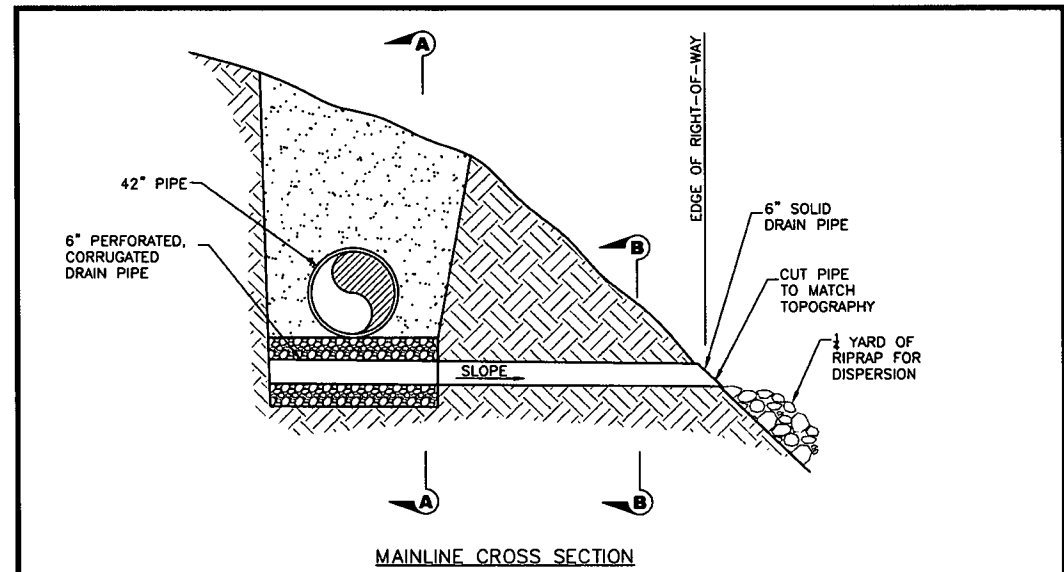
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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE FIELD. THE ACTUAL CONSTRUCTION SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS AND MAY VARY DEPENDING UPON FIELD CONDITIONS AND/OR REGULATORY REQUIREMENTS.

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DATE: 2/19/2016
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- NOTES**
1. LOW POINT DITCH DRAINS SHALL BE INSTALLED AT LOCATIONS SPECIFIED IN THE APPROVED EROSION & SEDIMENTATION CONTROL PLAN, AND AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
 2. FILL STONE SHOULD BE 1" AGGREGATE WITHOUT FINES, CRUSHER RUN WITHOUT FINES, OR EQUIVALENT.
 3. DRAIN PIPE TO BE CONNECTED USING STANDARD PIPE COLLARS.

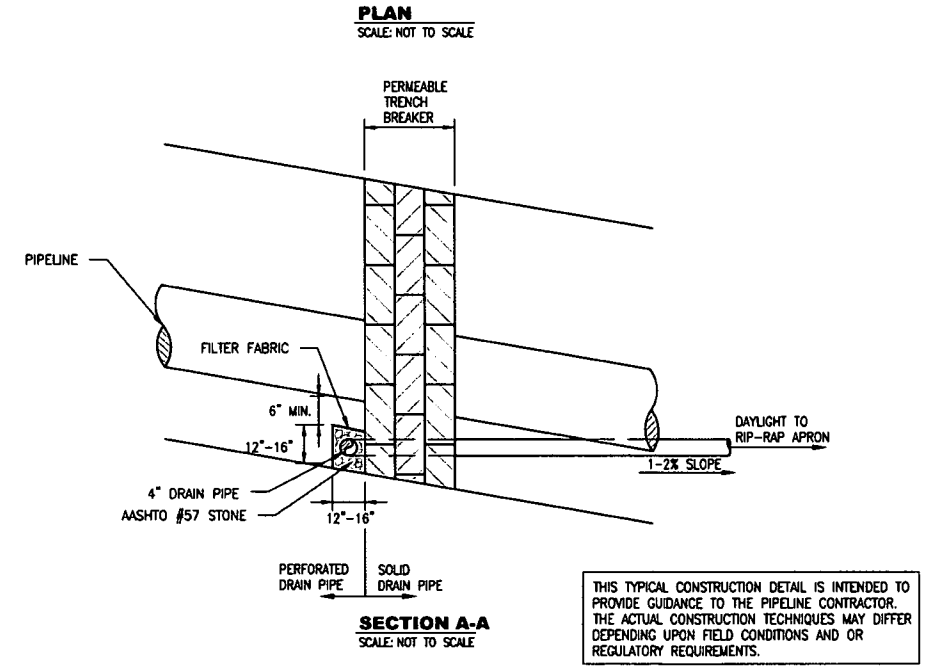
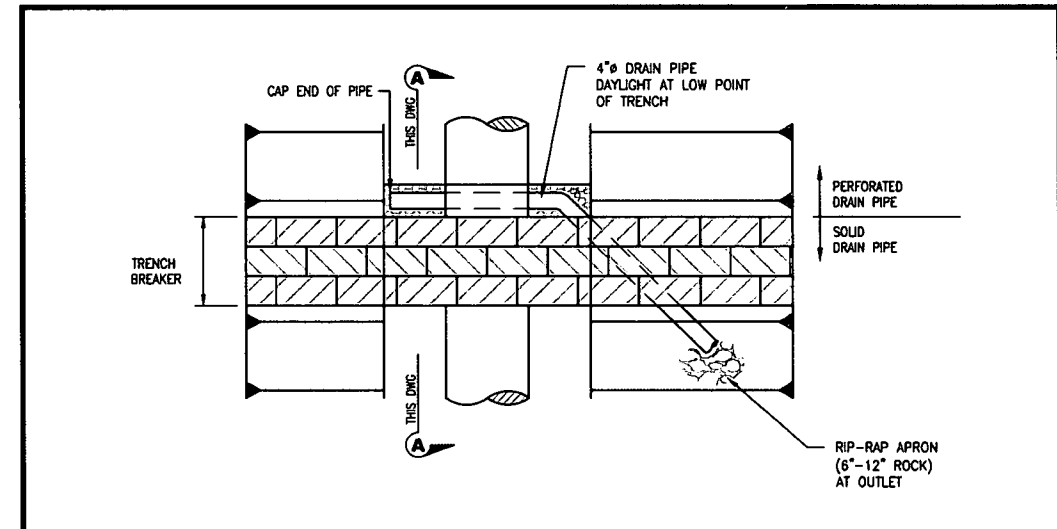
THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JL	DATE	10/6/2016
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SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:	PXXXX		

Mountain Valley PIPELINE

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
SIDEHILL LOW-POINT DRAIN TYPICAL	
DRAWING NO.	REV.
MVP-24	0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	TDD	DATE	2/03/2016
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Mountain Valley PIPELINE

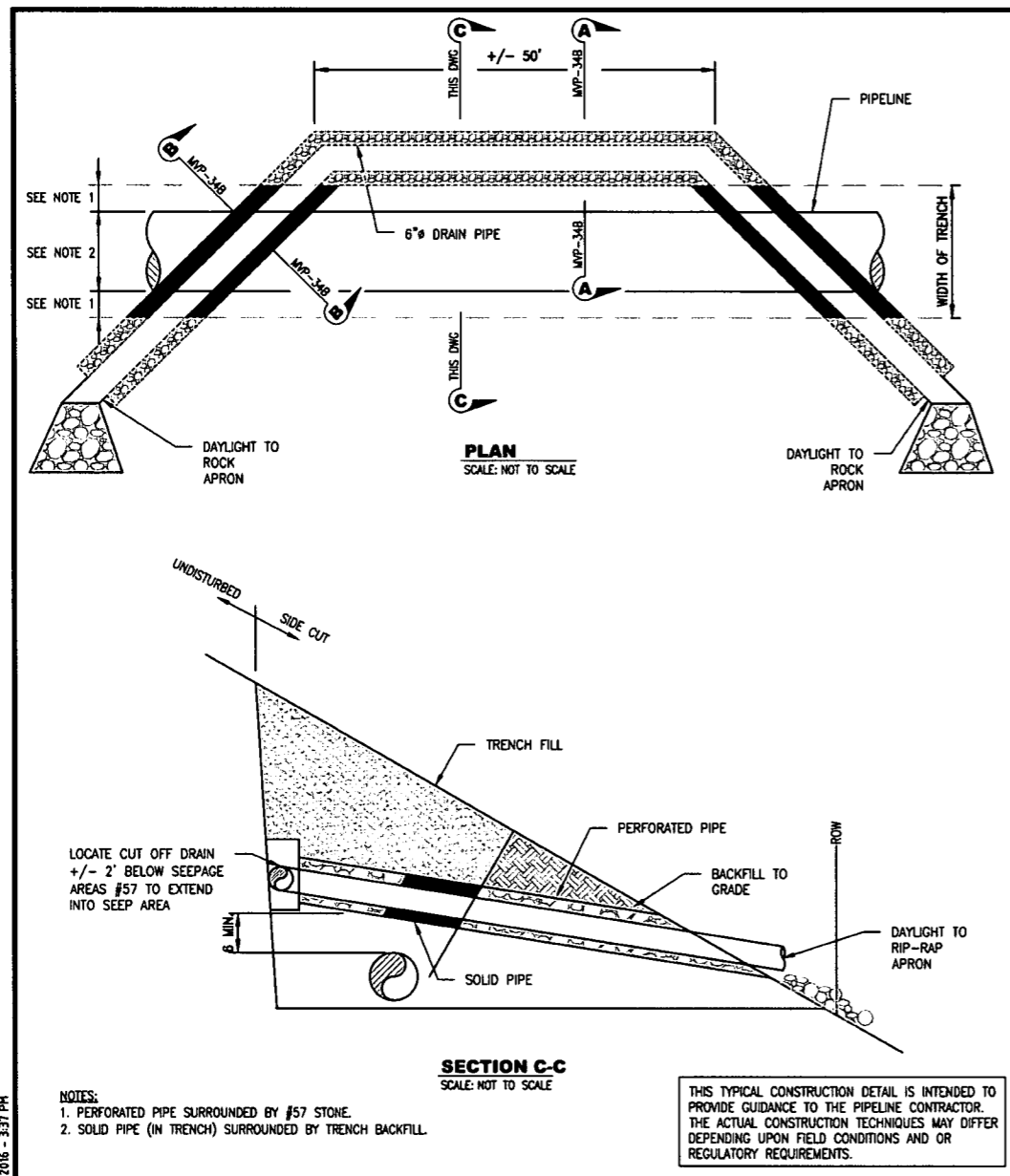
DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
TRENCH BREAKER DAYLIGHT DRAIN	
DRAWING NO.	REV.
MVP-35	0

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SLIP PREVENTION DETAIL

Mountain Valley PROJECT		EROSION AND SEDIMENT CONTROL DETAILS		MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE	
MOUNTAIN VALLEY PIPELINE, LLC		555 SOUTHPOINTE BOULEVARD, SUITE 200		CANONSBURG, PA 15317	
TETRA TECH		complex world. CLEAR SOLUTIONS™		661 ANDERSEN DRIVE FOSTER PLAZA 7 PITTSBURGH, PA 15220	
THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.					
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DATE: 2/19/2016		SCALE: AS SHOWN		SHT. NO. 0.10 OF 0.21	



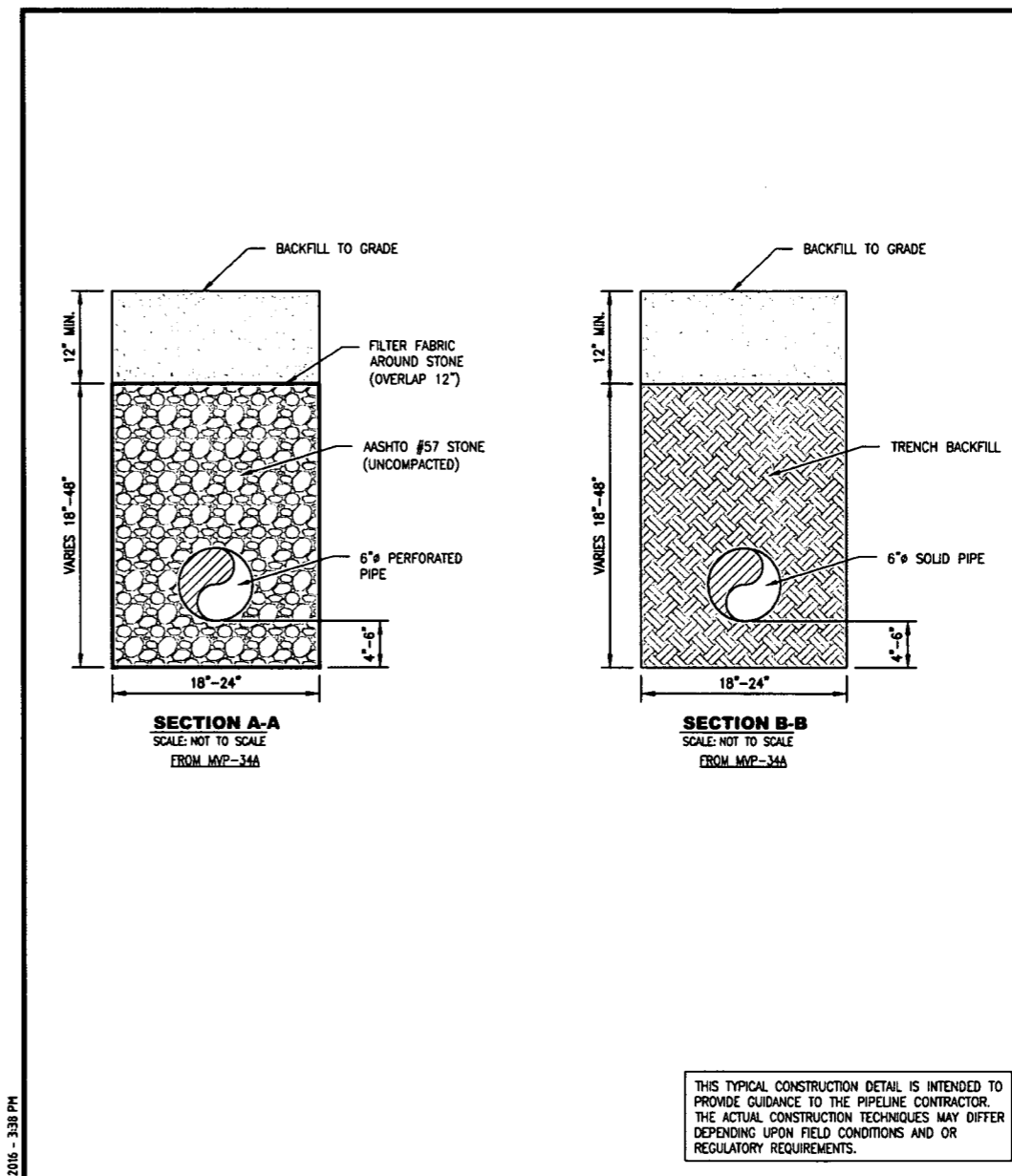
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CHECKED	MMF	DATE	2/03/2018
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 2
JOB NO.			
PROJECT ID:	PXXXX		

DESIGN ENGINEERING	

TYPICAL CONSTRUCTION DETAIL	
CUTOFF DRAIN-SIDEHILL	
DRAWING NO.	MVP-36A
REV.	0

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APP'D		DATE	
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JOB NO.			
PROJECT ID:	PXXXX		

DESIGN ENGINEERING	

TYPICAL CONSTRUCTION DETAIL	
CUTOFF DRAIN-SIDEHILL	
DRAWING NO.	MVP-36B
REV.	0

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SLIP PREVENTION DETAIL

EROSION AND SEDIMENT CONTROL DETAILS	
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE	
MOUNTAIN VALLEY PIPELINE, LLC 555 SOUTHPOINTE BOULEVARD, SUITE 200 CANONSBURG, PA 15317	

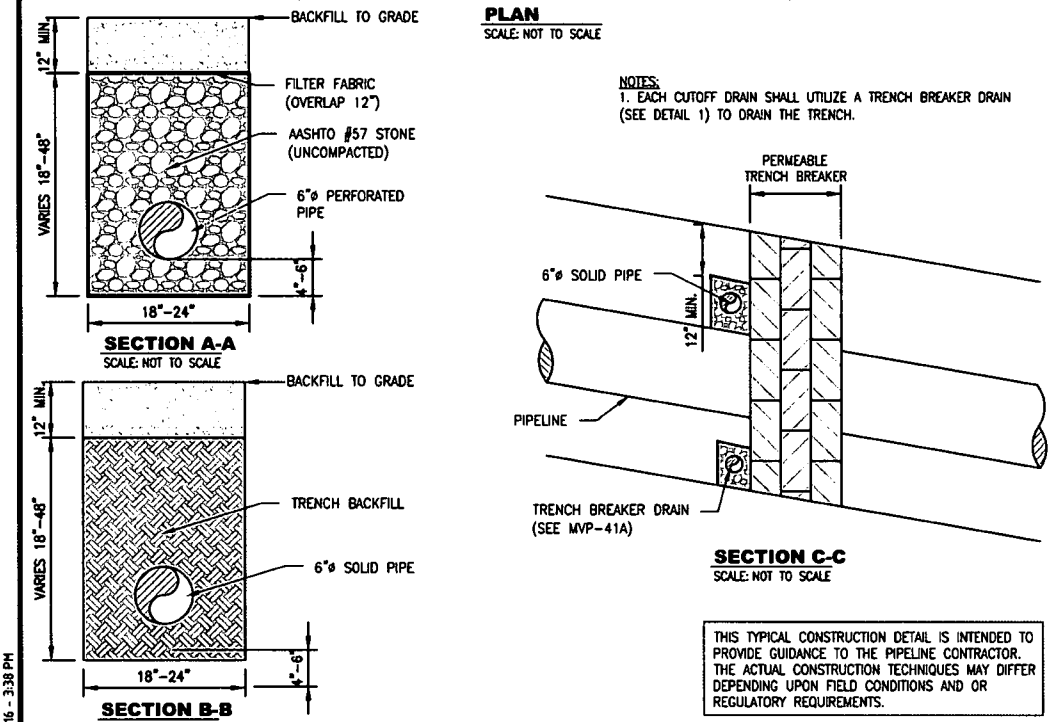
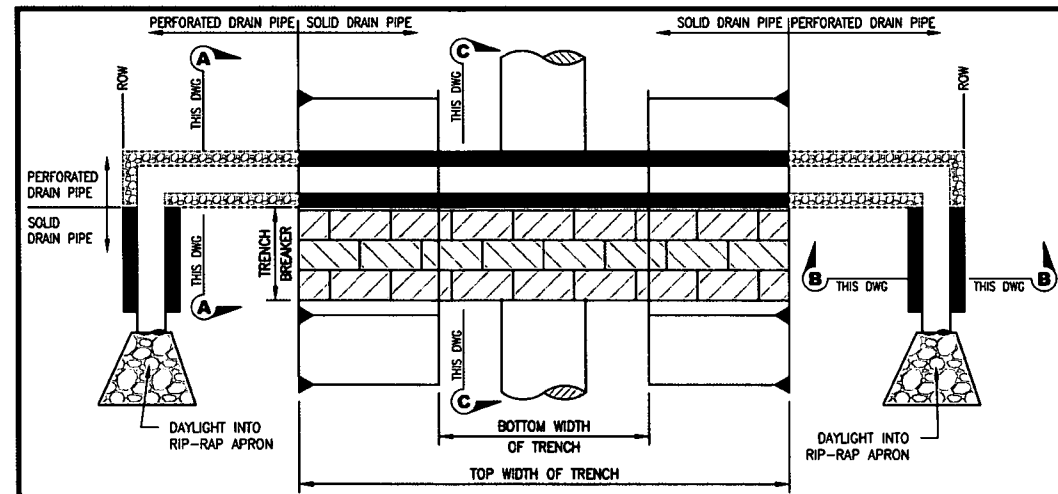
TETRA TECH	complex world CLEAR SOLUTIONS™ 661 ANDERSEN DRIVE FOSTER PLAZA 7 PITTSBURGH, PA 15220
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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.	
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NO.	DATE	CHG.	APP.	DESCRIPTION

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NOTES:
1. EACH CUTOFF DRAIN SHALL UTILIZE A TRENCH BREAKER DRAIN (SEE DETAIL 1) TO DRAIN THE TRENCH.

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

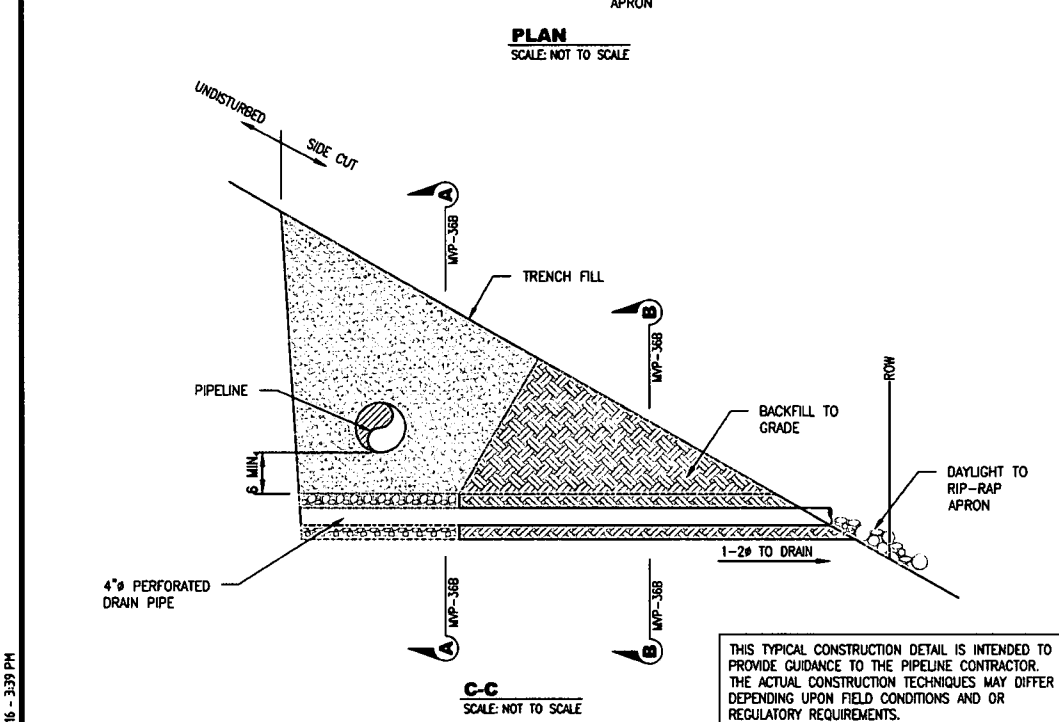
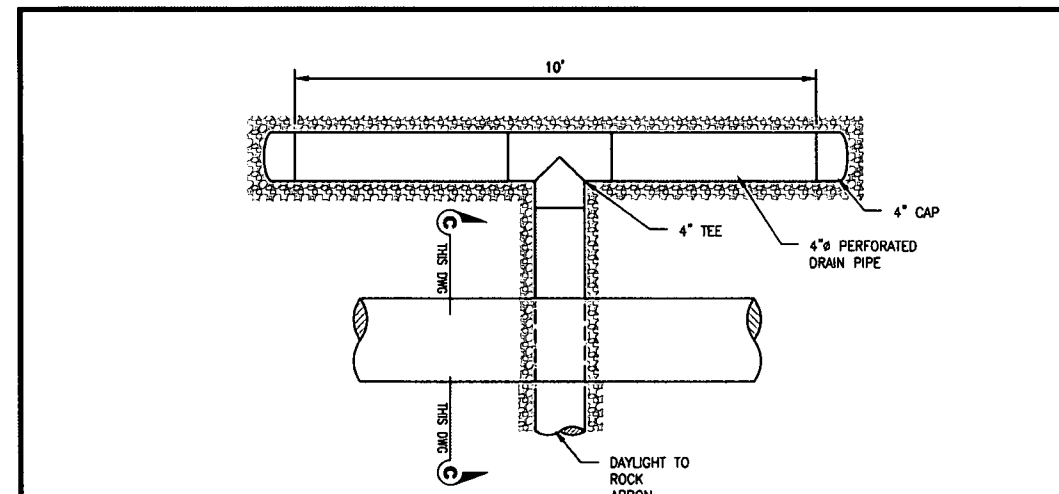
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CHECKED	MMF	DATE	2/03/2016
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:	PXXXX		



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
CUTOFF DRAIN-PLANAR	
DRAWING NO.	MVP-37
REV.	0

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-37.dwg



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DRAWN	TDD	DATE	2/03/2016
CHECKED	MMF	DATE	2/03/2016
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 2
JOB NO.			
PROJECT ID:	PXXXX		



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
TRANSVERSE TRENCH DRAIN	
DRAWING NO.	MVP-38A
REV.	0

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-38A.dwg

SLIP PREVENTION DETAIL

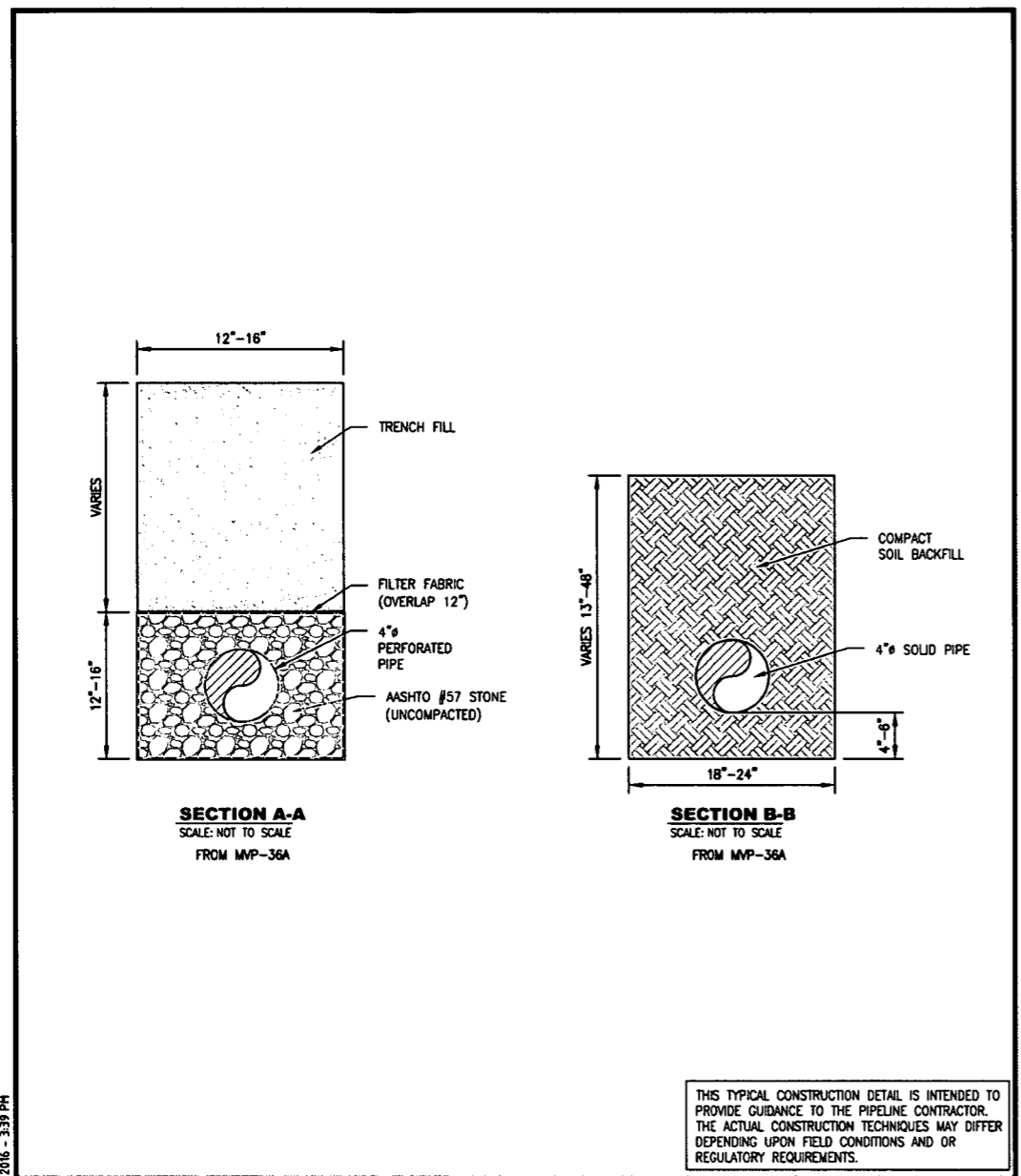
NO.	DATE	BY	CHKD.	APPD.	DESCRIPTION

Mountain Valley Pipeline
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
MOUNTAIN VALLEY PIPELINE, LLC
555 SOUTHPOINTE BOULEVARD, SUITE 200
CANONSBURG, PA 15317

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FOSTER PLAZA 7
PITTSBURGH, PA 15220

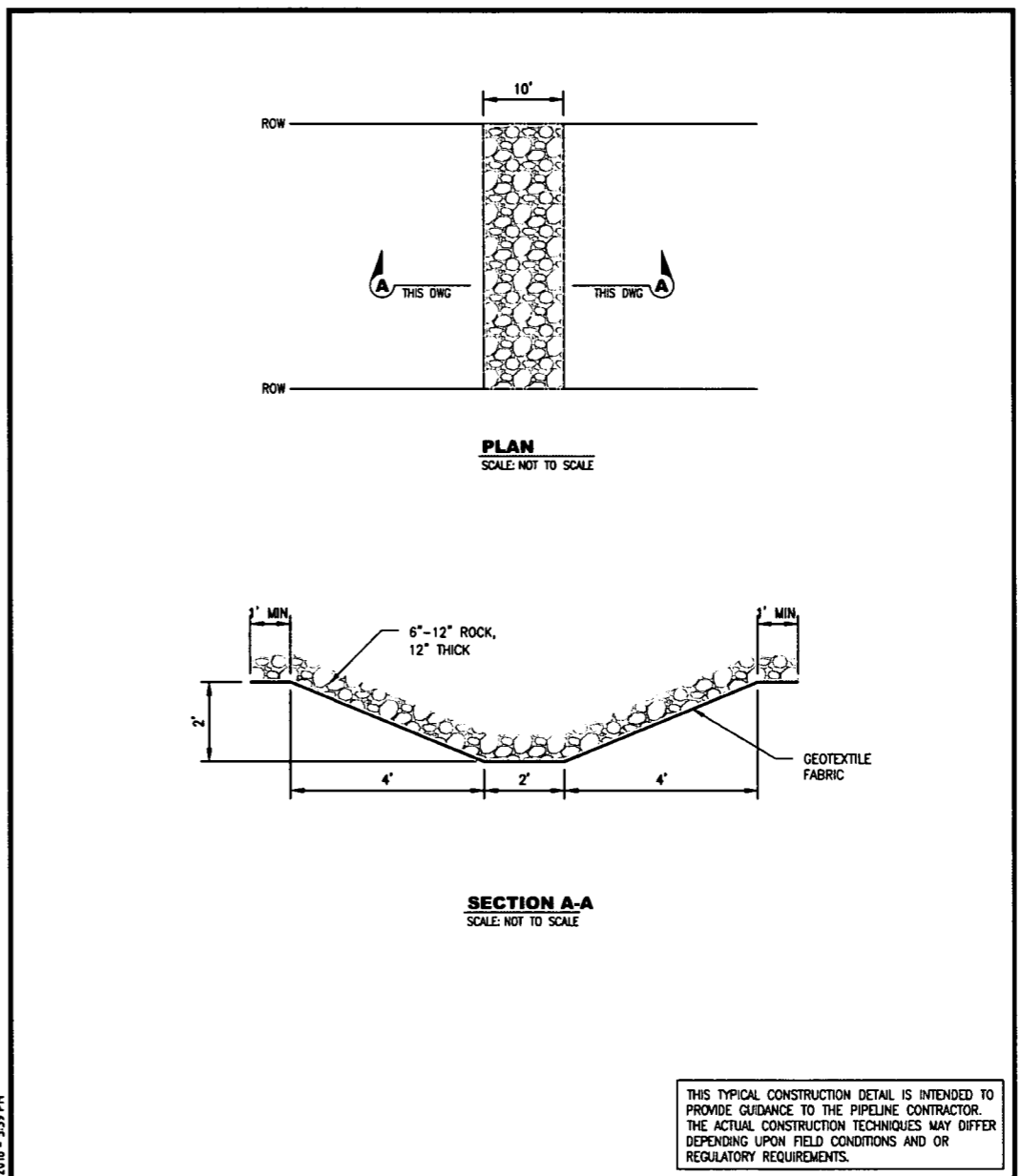
THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

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DATE:	2/19/2016
SCALE:	AS SHOWN
SHT. NO.	0.12 OF 0.21



DRAWN: TOD CHECKED: MMF APP'D: SCALE: N.T.S. SHEET: 2 OF 2 JOB NO.: PROJECT ID: PXXXX	DATE: 2/03/2016 DATE: 2/03/2016 DATE: SHEET: 2 OF 2		TYPICAL CONSTRUCTION DETAIL TRANSVERSE TRENCH DRAIN	
DESIGN ENGINEERING	DRAWING NO. MVP-38B REV. 0			

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-38B.dwg



DRAWN: TOD CHECKED: MMF APP'D: SCALE: N.T.S. SHEET: 1 OF 1 JOB NO.: PROJECT ID: PXXXX	DATE: 2/03/2016 DATE: 2/03/2016 DATE: SHEET: 1 OF 1		TYPICAL CONSTRUCTION DETAIL ROCK LINED SWALE	
DESIGN ENGINEERING	DRAWING NO. MVP-39 REV. 0			

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-39.dwg

SLIP PREVENTION DETAIL

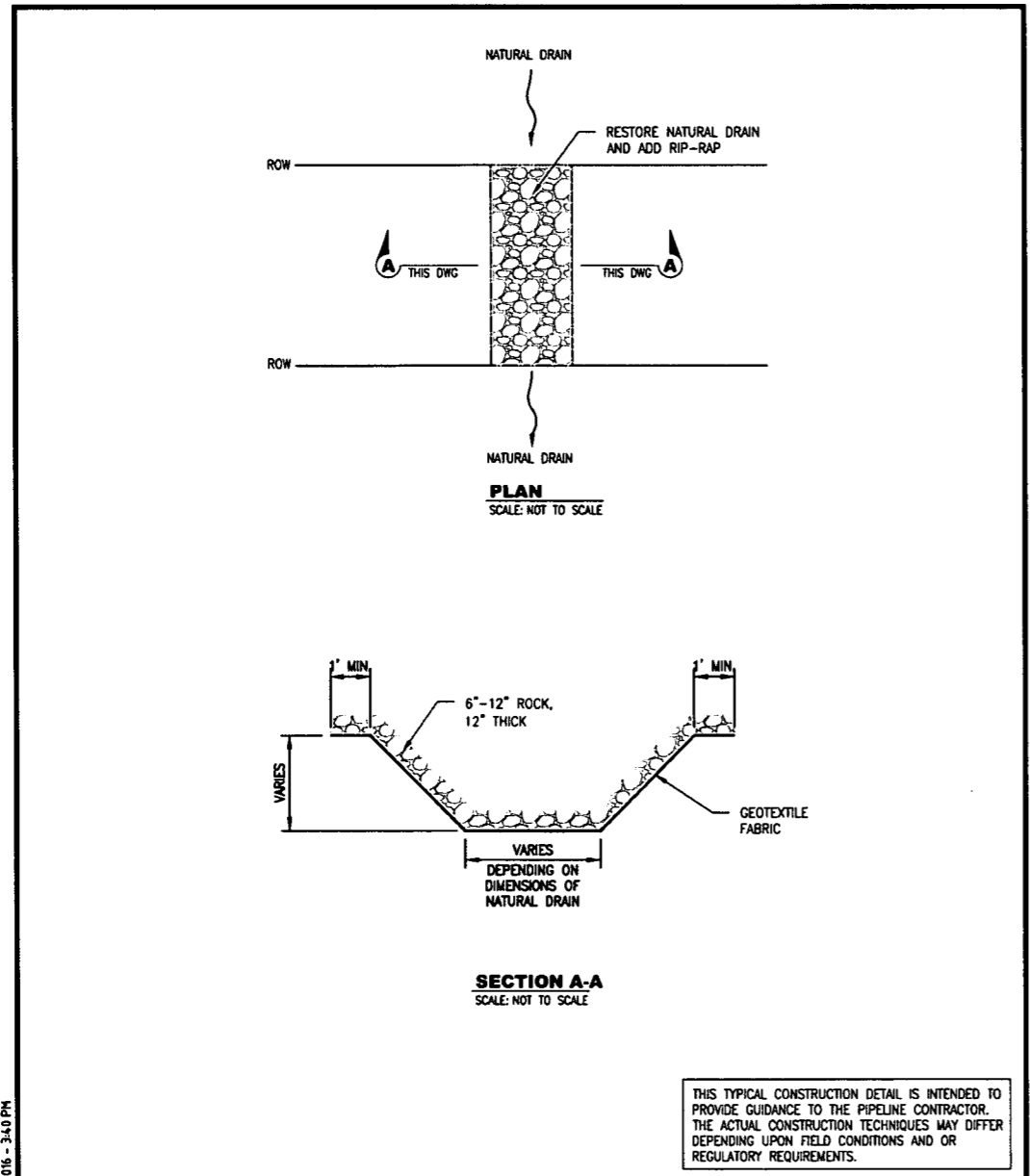
NO.	DATE	BY	CHKD.	APPL.	DESCRIPTION

EROSION AND SEDIMENT CONTROL DETAILS
 MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
 MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
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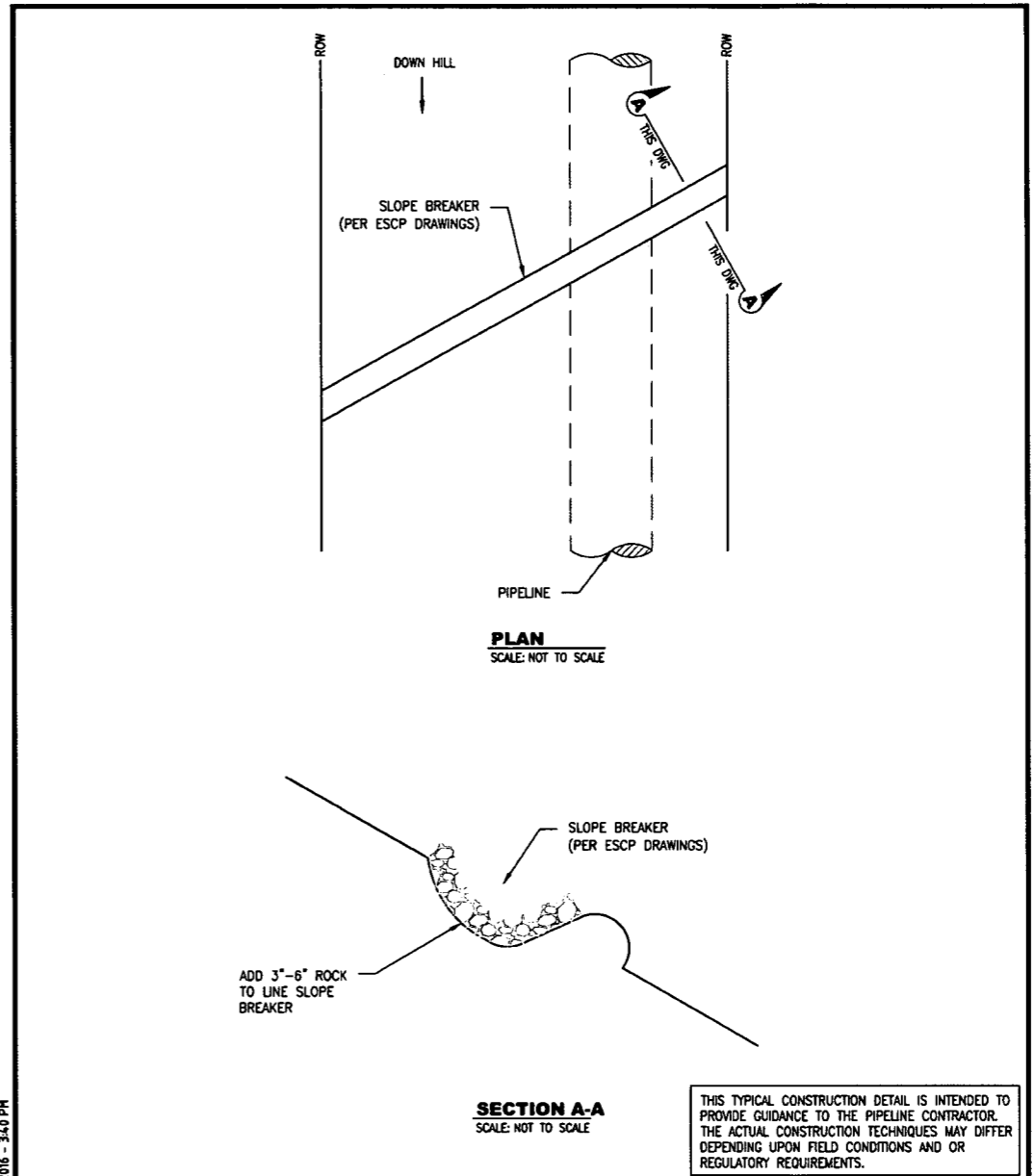
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APPROVED BY:	RE
DATE:	2/19/2018
SCALE:	AS SHOWN
SMT. NO.	0.13 OF 0.21



DRAWN	TDD	DATE	2/03/2016
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APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID: PXXXX			

Mountain Valley PIPELINE		TYPICAL CONSTRUCTION DETAIL	
DESIGN ENGINEERING		RIP-RAP NATURAL DRAIN	
DRAWING NO.	MVP-40	REV.	0

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DRAWN	TDD	DATE	2/03/2016
CHECKED	MMF	DATE	2/03/2016
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID: PXXXX			

Mountain Valley PIPELINE		TYPICAL CONSTRUCTION DETAIL	
DESIGN ENGINEERING		RIP-RAP SLOPE BREAKERS	
DRAWING NO.	MVP-41	REV.	0

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-41.dwg

SLIP PREVENTION DETAIL

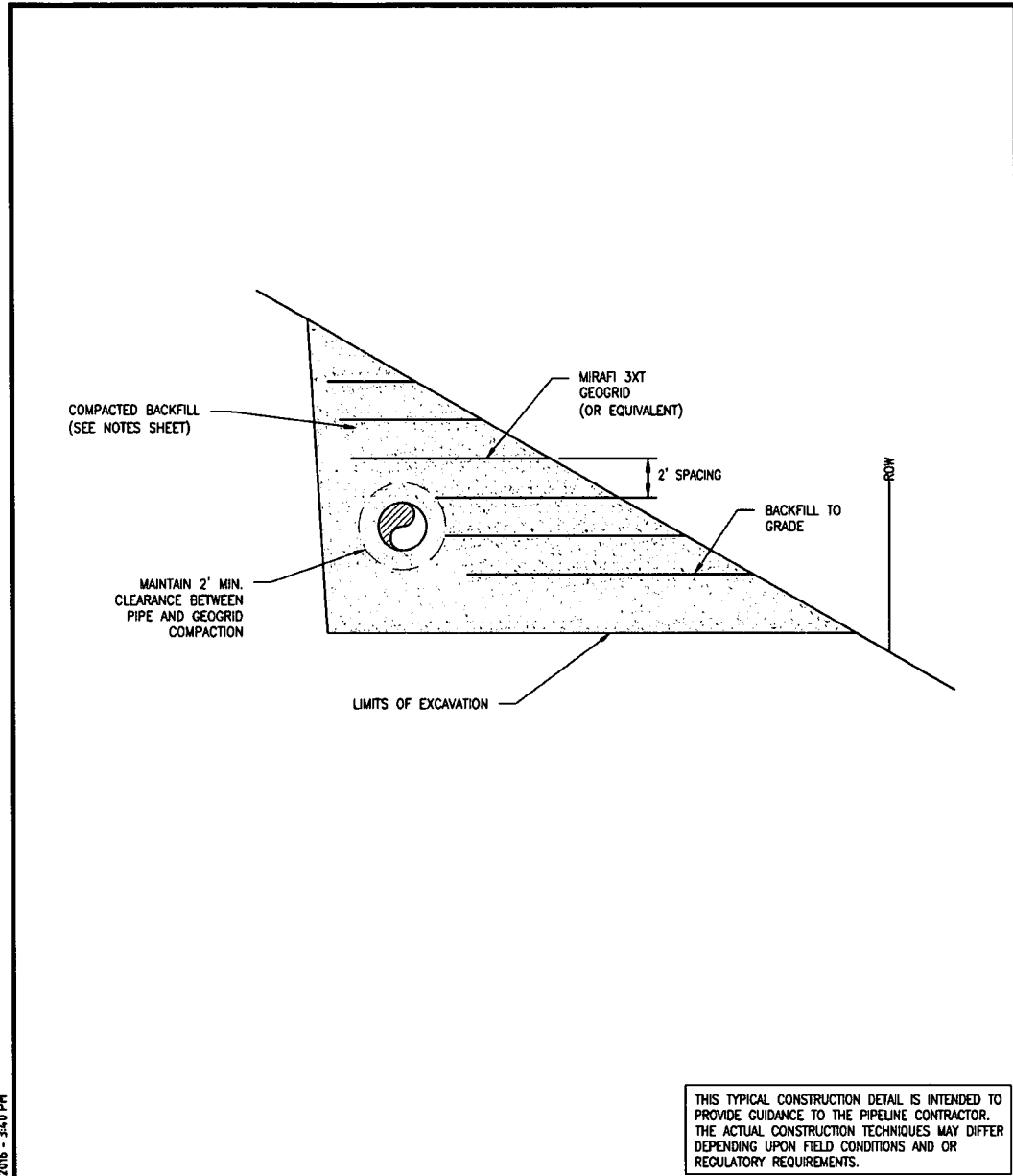
NO.	DATE	BY	CHG.	APP.	DESCRIPTION

Mountain Valley PIPELINE
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
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DRAWN BY:	KAL
CHECKED BY:	HT
APPROVED BY:	RE
DATE:	2/19/2016
SCALE:	AS SHOWN
SHT. NO.	0.14 OF 0.21

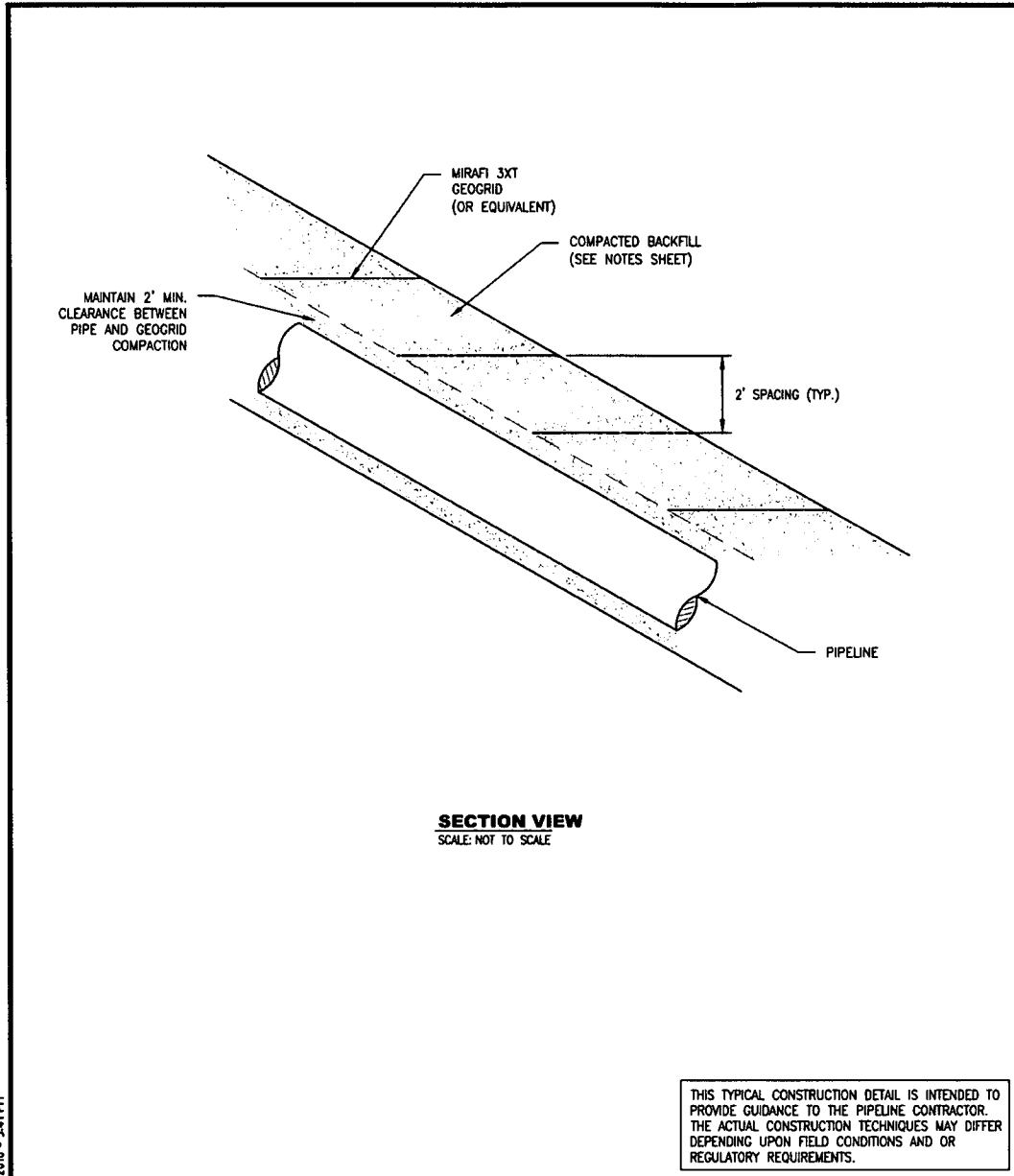


DRAWN TDD DATE 2/03/2016 CHECKED MMF DATE 2/03/2016 APP'D DATE SCALE N.T.S. SHEET 1 OF 3 JOB NO. PROJECT ID: PXXXX	 DESIGN ENGINEERING	TYPICAL CONSTRUCTION DETAIL	
GEOGRID-SIDEHILL		DRAWING NO. MVP-42A REV. 0	

Plotted by: Lutz, Keith on: October 19, 2016 - 3:40 PM

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DRAWN TDD DATE 2/03/2016 CHECKED MMF DATE 2/03/2016 APP'D DATE SCALE N.T.S. SHEET 2 OF 3 JOB NO. PROJECT ID: PXXXX	 DESIGN ENGINEERING	SLIDE MITIGATION DETAIL	
GEOGRID-PLANAR		DRAWING NO. MVP-42B REV. 0	

Plotted by: Lutz, Keith on: October 19, 2016 - 3:41 PM

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

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SLIP PREVENTION DETAIL

NO.	DATE	BY	CHKD.	APPR.	DESCRIPTION

EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANONSBURG, PA 15317

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DRAWN BY:	KAL
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APPROVED BY:	RE
DATE:	2/19/2016
SCALE:	AS SHOWN

SHT. NO. 0.15 OF 0.21

COMPACTION NOTES

- 1) ALL ROCKS LARGER THAN 6 INCHES IN SIZE, AND MORE THAN 10 PERCENT BY VOLUME SHOULD BE REMOVED AND PROPERLY DISPOSED FROM THE BACKFILL MATERIAL.
- 2) THE SUBGRADE AT THE BASE OF THE EXCAVATION SHOULD BE PROOFROLLED WITH A PNEUMATIC TIRE ROLLER OR VEHICLE.
- 3) THE EXCAVATED AREA SHALL BE BACKFILLED WITH THE CLEANED EXCAVATED SOIL MATERIAL AND COMPACTED IN PLACE.
- 4) BACKFILL OPERATIONS SHALL BE PERFORMED WHEN SOIL IS SUITABLE FOR COMPACTION (I.E., NOT IMMEDIATELY FOLLOWING A LARGE RAIN, SNOW, OR ICE EVENT). FROZEN FILL SHALL NOT BE USED.
- 5) THE BACKFILL SHALL BE PLACED IN COMPACTED LIFTS NO GREATER THAN 12 INCHES.
- 6) MAINTAIN A MINIMUM 2FT CLEARANCE BETWEEN COMPACTION ACTIVITY AND THE GAS PIPELINE.

GRAVEL DRAIN NOTES

- 1) GEOTEXTILE FABRIC SHALL BE TENCATE MIRAFI 140N OR APPROVED EQUIVALENT.
- 2) THE GEOTEXTILE FABRIC SHALL BE STORED UNDAMAGED PURSUANT TO MANUFACTURERS RECOMMENDATIONS.
- 3) DO NOT OPERATE CONSTRUCTION EQUIPMENT DIRECTLY ON THE GEOTEXTILE FABRIC.
- 4) DRAINAGE AGGREGATE SHALL MEET THE REQUIREMENTS OF AASHTO NO. 57 STONE.
- 5) DRAINAGE AGGREGATE SHALL NOT BE COMPACTED.

GEOGRID NOTES

- 1) GEOGRID REINFORCEMENT SHALL BE TENCATE MIRAFI 3XT OR APPROVED EQUIVALENT.
- 2) THE GEOGRID MATERIAL SHALL BE STORED UNDAMAGED PURSUANT TO MANUFACTURERS RECOMMENDATIONS.
- 3) GEOGRID SHALL BE PLACED HORIZONTALLY ON THE BACKFILL WITH THE PRINCIPAL STRENGTH DIRECTION PERPENDICULAR TO THE FACE OF THE SLOPE. ADJACENT PIECES OF PRIMARY GEOGRID SHALL NOT OVERLAP BUT ARE TO BE BUTTED SIDE TO SIDE.
- 4) REMOVE ALL SLACK IN THE GEOGRID MATERIAL AND ANCHOR AS NECESSARY WITH PINS, OR BAGS TO PREVENT SLACK FROM DEVELOPMENT DURING FILL PLACEMENT AND COMPACTION.
- 5) FILL IS TO BE PLACED AND SPREAD DIRECTLY ON THE GEOGRID MATERIAL WITH RUBBER TIRE EQUIPMENT ONLY. SPEEDS ARE TO BE KEPT SLOW WITH AS FEW STOPS AND TURNS AS PRACTICAL.
- 6) DO NOT OPERATE TRACKED EQUIPMENT DIRECTLY ON THE GEOGRID MATERIAL.
- 7) MAINTAIN A MINIMUM 2FT CLEARANCE BETWEEN GEOGRID MATERIAL AND THE GAS PIPELINE.

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DRAWN	TDD	DATE	2/03/2016
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JOB NO.			
PROJECT ID:	PXXXX		



DESIGN ENGINEERING

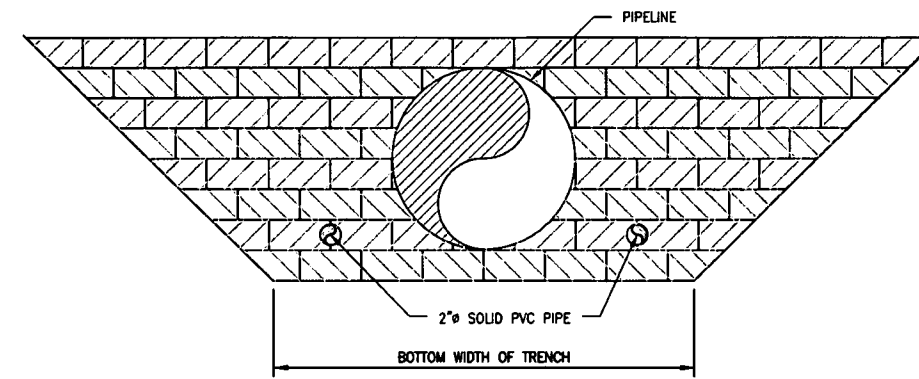
TYPICAL CONSTRUCTION DETAIL

GEOGRID NOTES

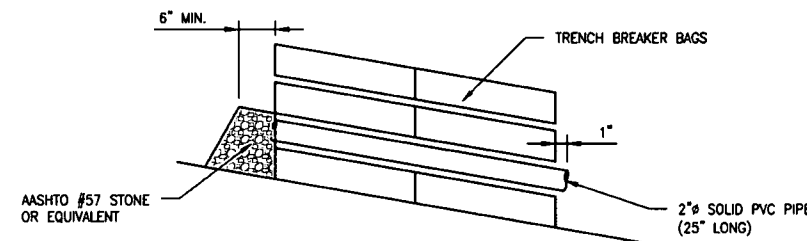
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Plotted by: Lutz, Keith on: October 18, 2016 - 3:41 PM

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-42C.dwg



FRONT VIEW
SCALE: NOT TO SCALE



SECTION VIEW
SCALE: NOT TO SCALE

- NOTES:**
1. PLACE PVC DRAIN PIPE ON FIRST LAYER OF TRENCH BREAKER BAGS.
 2. PLACE PVC DRAIN PIPE EQUIDISTANT FROM THE OUTSIDE EDGE OF THE 30" GAS PIPE AND THE BOTTOM LIMITS OF THE TRENCH.
 3. EXTEND PVC PIPE THROUGH ENTIRE TRENCH BREAKER AND EXTEND APPROX. 1" PAST END OF BREAKER.
 4. AASHTO #57 STONE SHALL BE PLACED TO A MINIMUM 6" THICKNESS UPSLOPE OF THE DRAIN PIPE.

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Plotted by: Lutz, Keith on: October 18, 2016 - 3:41 PM

DRAWN	TDD	DATE	4/14/2016
CHECKED	MMF	DATE	4/14/2016
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 2
JOB NO.			
PROJECT ID:	PXXXX		



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

TRENCH BREAKER
PASS-THROUGH DRAIN

DRAWING NO.	MVP-43A	REV.	0
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SLIP PREVENTION DETAIL

NO.	DATE	BY:	CHKD:	APPL:	DESCRIPTION

Mountain Valley Pipeline
EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE

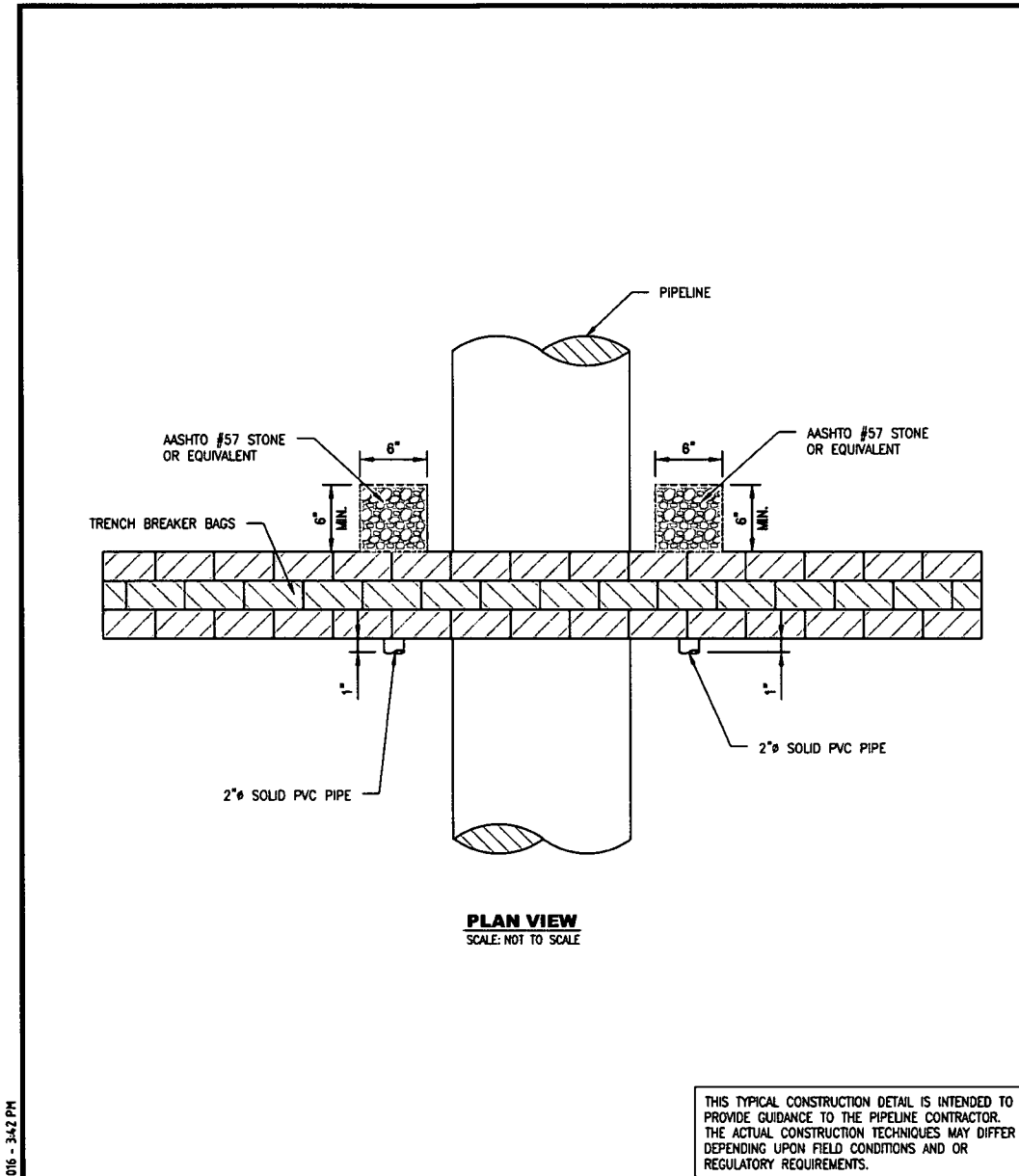
MOUNTAIN VALLEY PIPELINE, LLC
555 SOUTHPOINTE BOULEVARD, SUITE 200
CANONSBURG, PA 15317

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PITTSBURGH, PA 15220

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APPROVED BY:	RE
DATE:	2/19/2016
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PLAN VIEW
SCALE: NOT TO SCALE

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DRAWN	TDD	DATE	4/14/2016
CHECKED	MMF	DATE	4/14/2016
APP'D		DATE	
SCALE	N.T.S.	SHEET	2 OF 2
JOB NO.			
PROJECT ID:			
PXXXX			

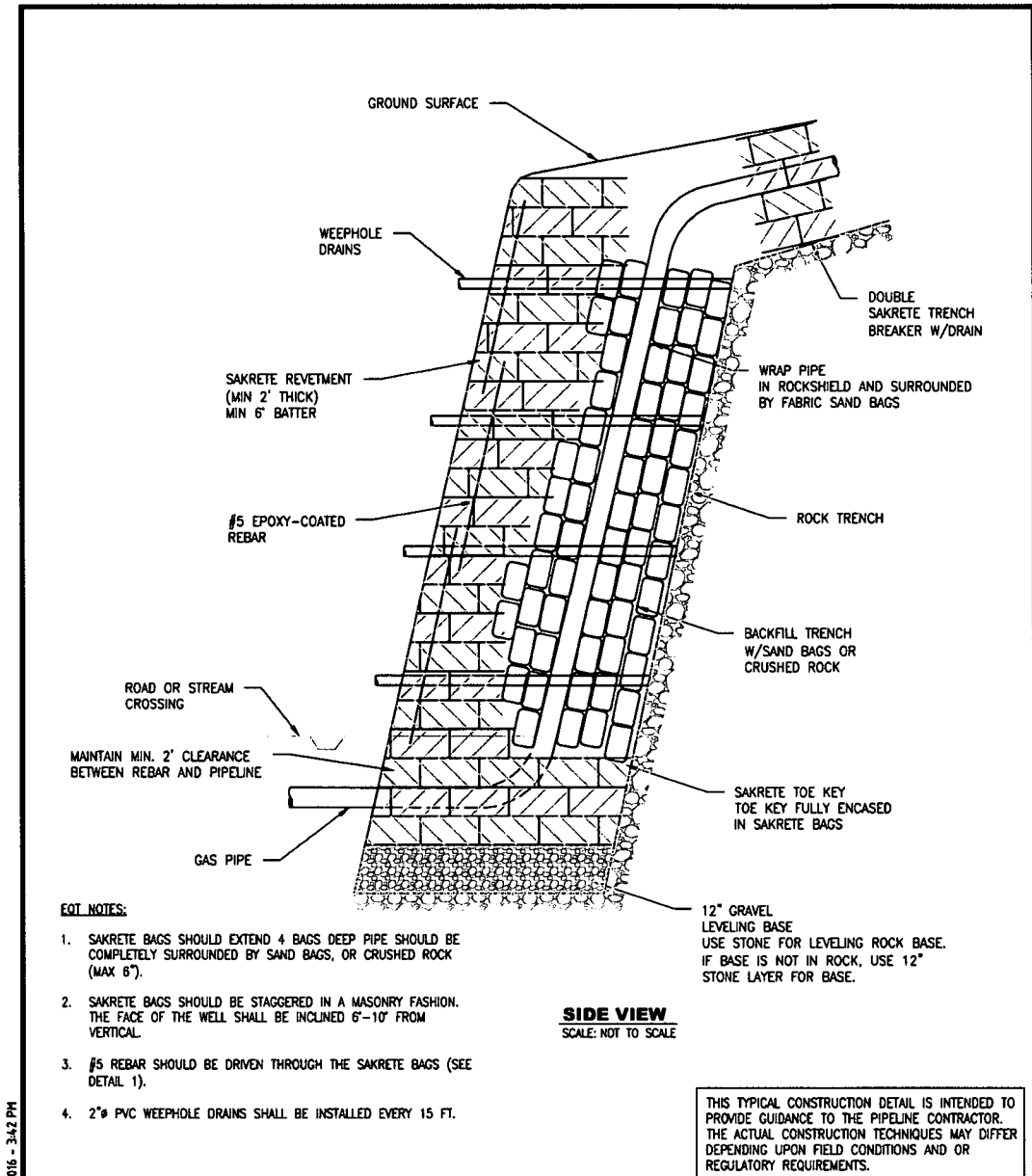
Mountain Valley PIPELINE

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
TRENCH BREAKER PASS-TROUGH DRAIN	
DRAWING NO.	MVP-43B
REV.	0

Plotted by: Lutz, Keith on: October 18, 2016 - 3:42 PM

File Path: X:\CADD\Pittsburgh\EQ1\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-43B.dwg



SIDE VIEW
SCALE: NOT TO SCALE

NOTES:

1. SAKRETE BAGS SHOULD EXTEND 4 BAGS DEEP PIPE SHOULD BE COMPLETELY SURROUNDED BY SAND BAGS, OR CRUSHED ROCK (MAX 6").
2. SAKRETE BAGS SHOULD BE STAGGERED IN A MASONRY FASHION. THE FACE OF THE WELL SHALL BE INCLINED 6"-10" FROM VERTICAL.
3. #5 REBAR SHOULD BE DRIVEN THROUGH THE SAKRETE BAGS (SEE DETAIL 1).
4. 2" PVC WEEPHOLE DRAINS SHALL BE INSTALLED EVERY 15 FT.

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DRAWN	OL	DATE	6/29/2016
CHECKED	MMF	DATE	-
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 2
JOB NO.			
PROJECT ID:			
PXXXX			

Mountain Valley PIPELINE

DESIGN ENGINEERING

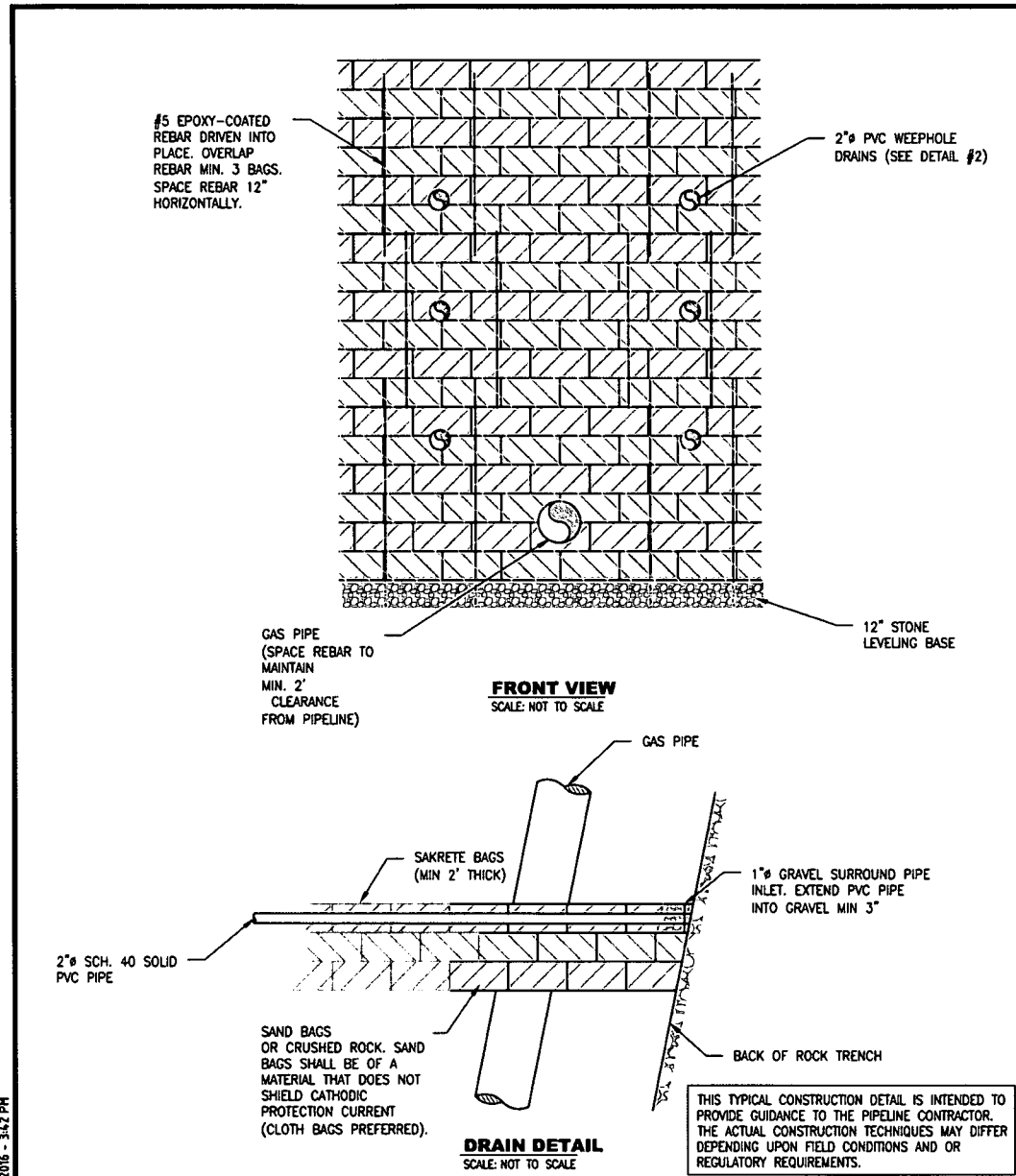
TYPICAL CONSTRUCTION DETAIL	
SLIDE MITIGATION HIGHWALL REVETMENT SIDE VIEW	
DRAWING NO.	MVP-44A
REV.	0

Plotted by: Lutz, Keith on: October 18, 2016 - 3:42 PM

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SLIP PREVENTION DETAIL

Mountain Valley PIPELINE		EROSION AND SEDIMENT CONTROL DETAILS		MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE	
MOUNTAIN VALLEY PIPELINE, LLC		555 SOUTHPOINTE BOULEVARD, SUITE 200		CANONSBURG, PA 15317	
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DRAWN BY:		KAL		REVISED:	
CHECKED BY:		HT		DATE:	
APPROVED BY:		RE		2/19/2018	
DATE:		2/19/2018		SCALE:	
SCALE:		AS SHOWN		SHT. NO. 0.17 OF 0.21	
SHT. NO. 0.17		OF 0.21		REVISIONS:	



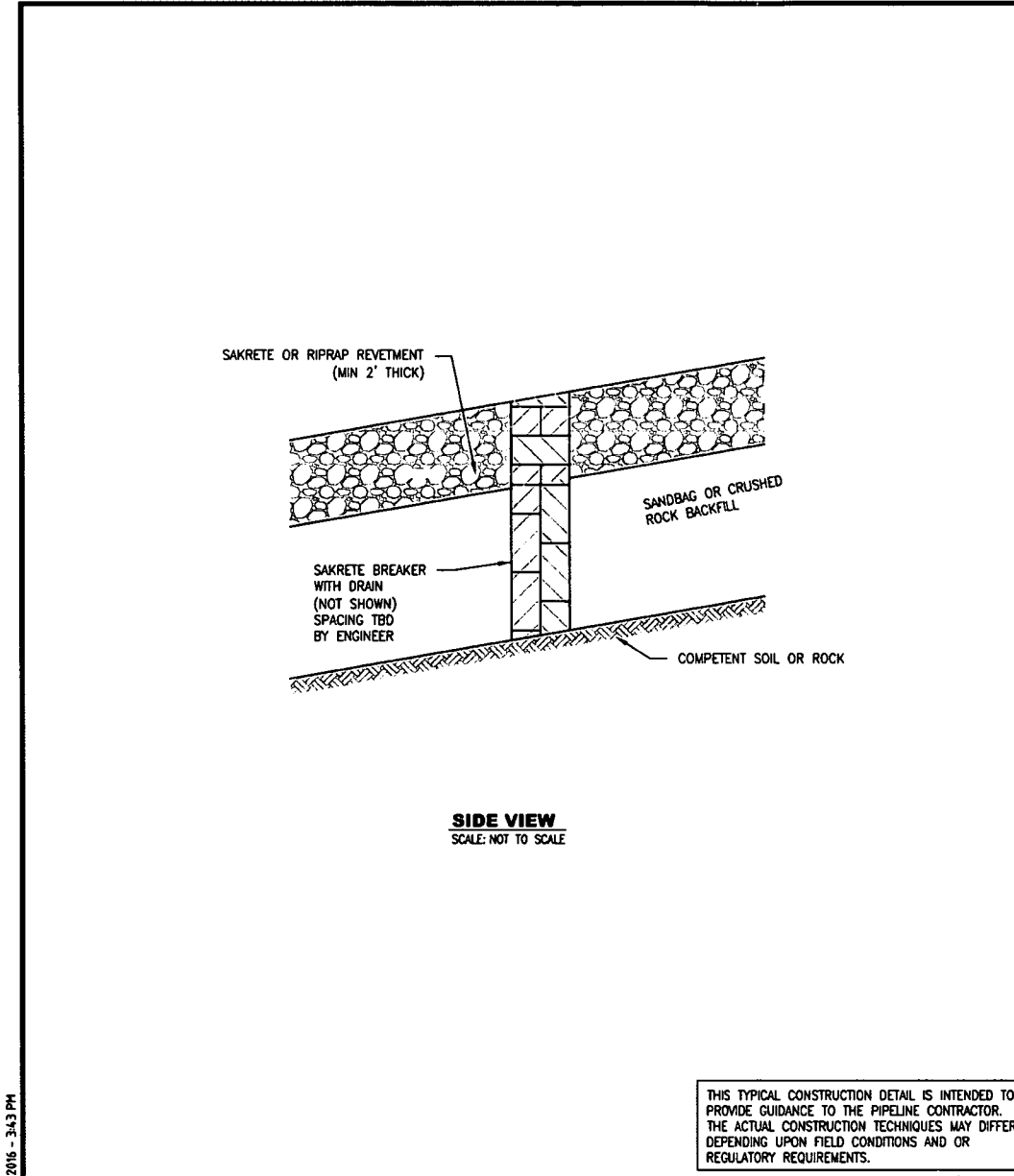
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DRAWN	OL	DATE	6/29/2016
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APP'D		DATE	
SCALE	N.T.S.	SHEET	2 OF 2
JOB NO.			
PROJECT ID:			
	PXXXX		

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
SLIDE MITIGATION HIGHWALL REVETMENT FRONT VIEW AND DRAIN DETAIL	
DRAWING NO.	MVP-44B
REV.	0

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APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
	PXXXX		

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
STEEP SLOPE REVETMENT	
DRAWING NO.	MVP-45
REV.	0

File Path: X:\CADD\Pittsburgh\EQT\17157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-45.dwg

SLIP PREVENTION DETAIL

REVISIONS:				
NO.	DATE	BY	APP'D.	DESCRIPTION

EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE

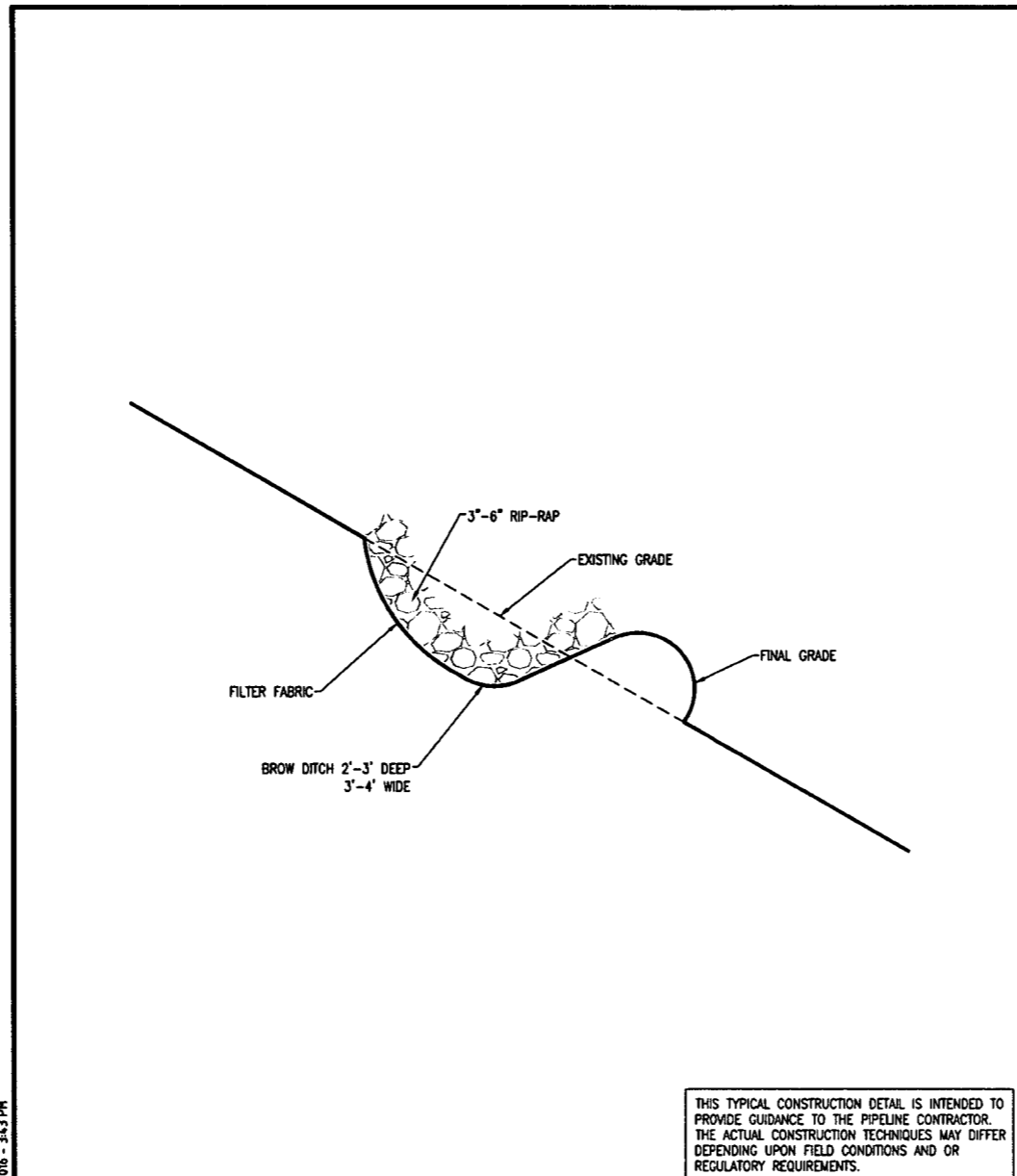
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DRAWN	TDD	DATE	7/12/2016
CHECKED	MMF	DATE	7/12/2016
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
BROW DITCH DETAIL	
DRAWING NO.	REV.
MVP-46	0

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-46.dwg

SLIP PREVENTION DETAIL

NO.	DATE	BY:	CHKD:	APPL:	DESCRIPTION

EROSION AND SEDIMENT CONTROL DETAILS
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE

MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANONSBURG, PA 15317

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CHECKED BY:	HT
APPROVED BY:	RE
DATE:	2/19/2016
SCALE:	AS SHOWN
SMT. NO.	0.19 OF 0.21

GENERAL CONSTRUCTION SEQUENCE

THE FOLLOWING IS A GENERAL SEQUENCE FOR EARTHMOVING ACTIVITIES ASSOCIATED WITH CONSTRUCTION OF THE PIPELINE:

- INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS PRIOR TO EARTH DISTURBANCE. REFER TO BEST MANAGEMENT PRACTICES (BMP) INSTALLATION AND REMOVAL NOTES. APPROPRIATE BMP'S SHOULD BE PLACED AROUND SENSITIVE AREAS PRIOR TO EARTH DISTURBANCE. STONE CONSTRUCTION ENTRANCES (SCE) ARE TO BE PROVIDED AT ALL LOCATIONS WHERE ACCESS ROADS AND PIPELINES WILL BE ACCESSING OR CROSSING A PUBLIC ROADWAY.
- INSTALL TEMPORARY E&S CONTROLS FOR STREAM CROSSINGS AT LOCATIONS SHOWN ON THE E&S PLAN SHEETS. NO EARTH DISTURBANCE ACTIVITIES WITHIN 50 FEET OF STREAM CHANNELS WILL BE PERFORMED UNTIL MATERIALS NEEDED TO COMPLETE THE CROSSING ARE AT THE LOCATION.
- GENERAL CLEARING AND GRUBBING OF THE TREES AND BRUSH ALONG THE RIGHT-OF-WAY (ROW) FOR PIPELINE TRENCHING MAY COMMENCE TO THE WIDTH SPECIFIED IN THE ROW AGREEMENTS OR CONSTRUCTION ALIGNMENT SHEETS, WHICHEVER IS LESS. SMALLER DEBRIS, SUCH AS SHRUBS OR LIMBS, ARE TO BE CHIPPED AND UTILIZED ON-SITE AS PART OF THE SOIL STABILIZATION. UNLESS OTHERWISE DIRECTED BY THE LANDOWNER, LOGS WILL EITHER BE HAULED OFF-SITE OR GIVEN TO THE LANDOWNER UPON THEIR REQUEST; STUMPS AND/OR LOGS WILL BE GROUND, CHIPPED, WINDROWED, OR HAULED OFF-SITE.
- INSTALL TEMPORARY WATERBARS IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE SOIL IN ACCORDANCE WITH THE WATERBAR SPACING AND SIZING REQUIREMENTS SHOWN ON THE PLAN AND DETAIL SHEETS. WATERBARS WILL BE CONSTRUCTED OF SOIL AND USED TO REDUCE RUNOFF VELOCITY AND DIVERT WATER OFF THE PIPELINE ROW. WATERBARS WILL BE INSTALLED WITH COMPOSTED FILTER SOCK AT THE DISCHARGE END.
- EXCAVATE PIPELINE TRENCH AND BEGIN GRADING OF PROPOSED METER AND RECTIFIER ANODE BED SITES. THE PROPOSED CONSTRUCTION ROW AND EXTRA WORKSPACES ARE TO BE USED AS A WORK AREA FOR TRENCH EXCAVATION, EQUIPMENT MOVEMENT AND THE TEMPORARY STORAGE OF SOIL STOCKPILES, AS NEEDED. EQUIPMENT, SOIL STOCKPILES AND OTHER MATERIALS ARE TO REMAIN UPSLOPE OF BMPS DURING CONSTRUCTION ACTIVITIES. REFER TO BMP INSTALLATION AND REMOVAL SEQUENCE FOR THE BMPS TO BE USED FOR PROTECTION DURING TRENCH EXCAVATION AND AROUND TEMPORARY SOIL STOCKPILES. SEGREGATION OF TOPSOIL AND SUBSOIL WILL BE PERFORMED WHERE TRENCH EXCAVATION TAKES PLACE IN AN AGRICULTURAL, WETLAND OR RESIDENTIAL AREA.
- PIPELINE SECTIONS WILL BE TRANSPORTED TO THE WORK AREA AND STRUNG ALONG THE WORKING SIDE OF THE ROW PARALLEL TO THE TRENCH LINE. WELDING CAN OCCUR IN OR OUT OF THE TRENCH. THE PIPELINE WILL BE BENT TO CONFORM TO THE TRENCH CONTOUR. ALIGNED WELDS AND PLACED ON TEMPORARY SUPPORTS ALONGSIDE THE TRENCH. WELDS WILL BE VISUALLY AND RADIO-GRAPHICALLY INSPECTED AND REPAIRED AS NECESSARY. THE PIPE SECTION WILL BE LOWERED INTO THE TRENCH AND PLACED ON PADDING PER MVP CONSTRUCTION STANDARDS. ANY WELDS ENCOUNTERED DURING CONSTRUCTION WORK WILL BE DEWATERED BY USING PUMPS, HOSES, AND PUMPED FILTER (DEWATERING) BAGS, AND WILL BE DISCHARGED TO A WELL VEGETATED, UPLAND AREA. NO STANDING WATER IS PERMITTED IN PIPE TRENCH AT ANY POINT IN TIME EXCEPT FOR WETLAND AREAS.
- STREAM PIPELINE CROSSING CONSTRUCTION METHODS WILL BE INSTALLED AT LOCATIONS SHOWN ON THE E&S PLAN SHEETS AND AS SPECIFIED ON DETAIL SHEET. STREAM BANK STABILIZATION WILL BE INSTALLED IMMEDIATELY FOLLOWING COMPLETION OF PIPELINE INSTALLATION AS SHOWN ON THE DETAIL SHEET.
- INSTALL TRENCH BREAKERS AT LOCATIONS SHOWN ON THE DRAWINGS OR AS DIRECTED BY MVP AND AS SPECIFIED ON THE DETAIL SHEET.
- THE TRENCH WILL SUBSEQUENTLY BE BACKFILLED WITH SUITABLE EXCAVATED MATERIAL. THE BACKFILL MATERIAL WILL BE SLIGHTLY CROWNED IN UPLAND AREAS TO ALLOW FOR SETTLEMENT THAT MAY OCCUR. CROWNING THE SOIL SLIGHTLY OVER THE PIPELINE WILL HELP PREVENT FUTURE STORM WATER-RELATED PROBLEMS FROM SETTLING OF THE BACKFILLED AREA. NO CROWNING OF SOILS WILL TAKE PLACE IN WETLANDS, STREAMS OR FLOODPLAINS. IN AREAS WHERE TOPSOIL HAS BEEN SEGREGATED, THE SUBSOIL WILL BE REPLACED FIRST, AND THEN THE TOPSOIL WILL BE SPREAD OVER THE AREA FROM WHICH IT WAS REMOVED. DISTURBED AREAS WILL BE RESTORED TO THEIR APPROXIMATE ORIGINAL TOPOGRAPHIC CONTOURS.
- STABILIZE EXPOSED AND UNWORKED SOILS BY APPLICATION OF EFFECTIVE BMPS THAT PROTECT THE SOIL FROM THE EROSION FORCES OF RAINDROPS, FLOWING WATER, AND WIND. AREAS AT FINAL GRADE SHOULD BE SEEDED AND MULCHED OR OTHERWISE STABILIZED WITHIN 7 DAYS AND AREAS THAT WILL NOT BE WORKED AGAIN FOR 21 DAYS OR MORE MUST BE SEEDED AND MULCHED OR OTHERWISE STABILIZED WITHIN 7 DAYS.
- IN THE UNLIKELY EVENT THAT THERE ARE EXCESS EXCAVATED MATERIALS REMAINING AFTER THE TRENCH HAS BEEN BACKFILLED; THE MATERIAL IS TO BE DISPOSED OF WITHIN THE EXISTING ROW IN AN UPLAND AREA OUTSIDE OF THE 100-YEAR FLOODPLAIN. MATERIAL WILL BE SPREAD IN A THIN LAYER AND TIED INTO EXISTING CONTOURS TO CREATE POSITIVE DRAINAGE FOR STORMWATER RUNOFF.
- CONSTRUCT PERMANENT WATERBARS AFTER COMPLETION OF GRADING IN ACCORDANCE WITH THE WATERBAR SPACING AND SIZING REQUIREMENTS SHOWN ON PLAN AND DETAIL SHEETS. PERMANENT WATERBARS ARE NOT PERMITTED IN AGRICULTURAL OR PASTURE LANDS.
- REVEGETATE DISTURBED AREA PER TABLES ON THIS SHEET OR PER LANDOWNER REQUEST. FOR 3:1 OR STEEPER SLOPES THE DISTURBED AREA WILL HAVE EROSION CONTROL FABRIC (BLANKETING, HYDROSEEDING, FLEXITERRA, OR APPROVED EQUAL) INSTALLED AS SHOWN ON DETAIL SHEET. BLANKETING IS NOT PERMITTED IN AGRICULTURAL OR PASTURE LANDS.
- RE-ESTABLISH APPROPRIATE DRAINAGE IN EXISTING ROAD CHANNELS PRIOR TO SEEDING AND MULCHING.
- INSPECTION OF ALL EROSION AND SEDIMENTATION CONTROLS WITHIN DISTURBED AREAS WILL BE, AT A MINIMUM, PERFORMED ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. REPAIRS OR MAINTENANCE SHALL BE PERFORMED IMMEDIATELY TO BMPS. A FINAL INSPECTION SHALL BE REQUESTED ONCE THERE IS UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE ESTABLISHED. TEMPORARY BMPS WILL BE REMOVED UPON ACHIEVING VEGETATIVE STABILIZATION. THE 70 PERCENT REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED. DISTURBED AREAS NOT ATTAINING A UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE SHALL BE RE-SEEDED AS NEEDED UNTIL UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE IS ESTABLISHED.
- ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATERS. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON-SITE.

FOR STREAM CROSSINGS, REFER TO THE FOLLOWING STEPS:

- INSTALL TEMPORARY EQUIPMENT BRIDGE, BYPASS HOSE, FLUME, PUMP, OR COFFERDAM AS DESCRIBED IN STREAM CROSSING DETAILS AROUND THE WORK AREA.
- DEWATER WORK AREA UTILIZING PUMP WATER FILTER BAGS. WHERE POSSIBLE, EXCAVATION WILL BE FROM THE TOP OF THE STREAM BANK. STOCKPILE STREAM BED MATERIAL SEPARATELY FROM OTHER SOILS TO BE USED DURING THE STREAM RESTORATION.
- INSTALL TRENCH PLUGS, PIPE, AND BACKFILL.
- STABILIZE CHANNEL EXCAVATION AND STREAM BANKS PRIOR TO REDIRECTING STREAM FLOW. STOCKPILE STREAM BED MATERIAL WILL BE THE LAST MATERIAL RESTORED IN THE STREAM CHANNEL.
- REMOVE BYPASS HOSE, FLUME, PUMP, AND TEMPORARY DAM AS NEEDED.

IF WORKING WITHIN A WETLAND AREA, FOLLOW THE GENERALIZED CONSTRUCTION SEQUENCE BELOW:

- INSTALL EITHER SUPER SILT FENCE OR COMPOST FILTER SOCKS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- MATS, PADS, OR SIMILAR DEVICES WILL BE USED DURING THE CROSSINGS OF WETLANDS. ORIGINAL GRADES THROUGH WETLANDS MUST BE RESTORED AFTER TRENCHING AND BACKFILLING. ANY EXCESS FILL MATERIALS MUST BE REMOVED FROM THE WETLAND AND NOT SPREAD WITHIN WETLANDS.
- SOIL EXCAVATED FROM WETLAND AREAS WILL BE CAREFULLY REMOVED WITH THE ROOTS INTACT. THIS SOIL SHOULD BE PLACED IN A SEPARATE STOCKPILE TO BE REUSED DURING THE WETLAND SURFACE RESTITUTION.
- DEWATER WORK AREA UTILIZING PUMP WATER FILTER BAGS.

- INSTALL PIPE.
- INSTALL TRENCH PLUGS IN WETLAND AREAS TO PREVENT THE TRENCH FROM DRAINING THE WETLAND OR CHANGING ITS HYDROLOGY.
- BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL TO MATCH ORIGINAL SURFACE GRADES.
- COMPACT BACKFILL AND GRADE THE SURFACE OF THE TRENCH AREA TO ALLOW FOR POSITIVE DRAINAGE TO SOIL E&SCS AND TO PREPARE DISTURBED AREAS FOR PERMANENT TRENCH RESTORATION.
- MAINTAIN ALL E&SCS DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70-PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
- REMOVE ALL SOIL AND E&SC MEASURES UPON ESTABLISHMENT OF A UNIFORM 70-PERCENT VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL E&SCS.

BMP MAINTENANCE

- TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE AS STATED IN WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT, EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, 2006.
- IN NON-AGRICULTURAL AREAS THE VISUAL SURVEY SHALL BE COMPARED TO THE DENSITY AND COVER OF ADJACENT UNDISTURBED LANDS. IN AGRICULTURAL AREAS, THE VISUAL SURVEY SHALL BE COMPARED TO THE ADJACENT UNDISTURBED PORTIONS OF THE SAME FIELD, UNLESS THE EASEMENT AGREEMENT SPECIFIES OTHERWISE.
- WETLANDS ALONG THE PROPOSED PIPELINE ARE EXPECTED TO EXHIBIT VARYING DEGREES OF SATURATION AND WATER ELEVATION, REQUIRING A VARIETY OF PLANT SPECIES TO BE RE-ESTABLISHED. IN UNSATURATED WETLANDS, MOST VEGETATION WILL BE REPLACED BY SEEDING. SATURATED WETLANDS WILL TYPICALLY BE ALLOWED TO RE-VEGETATE NATURALLY. WETLAND REVEGETATION WILL BE CONSIDERED SUCCESSFUL WHEN THE COVER OF HERBACEOUS AND/OR WOODY SPECIES IS AT LEAST 80 PERCENT OF THE TYPE, DENSITY, AND DISTRIBUTION OF THE VEGETATION IN ADJACENT WETLAND AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION. REVEGETATION EFFORTS WILL CONTINUE UNTIL WETLAND REVEGETATION IS SUCCESSFUL.
- INSPECTION OF ALL EROSION AND SEDIMENTATION CONTROLS WITHIN DISTURBED AREAS WILL BE, AT A MINIMUM, PERFORMED ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT EQUAL TO OR GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. REPAIRS OR MAINTENANCE SHALL BE PERFORMED IMMEDIATELY TO BMPS. A FINAL INSPECTION SHALL BE REQUESTED ONCE THERE IS UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE ESTABLISHED. TEMPORARY BMPS WILL BE REMOVED UPON ACHIEVING VEGETATIVE STABILIZATION. THE 70 PERCENT REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT A PERCENT OF THE SITE. DISTURBED AREAS NOT ATTAINING A UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE SHALL BE RE-SEEDED AS NEEDED UNTIL UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE IS ESTABLISHED.
- TEMPORARY EROSION AND SEDIMENT CONTROL BMPS SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.

REFERENCES

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT, EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, 2006.
 WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS, WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, MAY 2012.

RECOMMENDED PERMANENT AND TEMPORARY SEED MIXTURES AND FERTILIZER/MULCH FOR REVEGETATION OF UPLAND AREAS

ITEM UPLANDS		
PERMANENT SEED AND MULCH APPLICATION RATES		
Seed ¹	Kentucky 31 tall fescue	65 pounds per acre
Seed ¹	Empire Birdfoot Trefoil (1/2 Empire, 1/2 Viking)	5 pounds per acre of inoculated seed
Seed ¹	Redfescue	20 pounds per acre
Lime	Agricultural Grade (Pellet Form)	2 Tons per acre without a soil test
Fertilizer	10-20-20	1/2 ton per acre
Mulch	Grass Hay or Cereal Straw	3 tons per acre
TEMPORARY SEED AND MULCH APPLICATION RATES		
Seed ¹	Annual Ryegrass	40 pounds per acre
Mulch	Grass Hay or Cereal Straw	3 tons per acre

NOTES

- ALL SEED IS PURE LIVE SEED.
- UNLESS OTHERWISE REQUESTED BY LANDOWNER IN R.O.W.

REVEGETATION OF WETLAND AREAS

ITEM	WETLANDS ¹	
Seed ¹	Annual Ryegrass	48 pounds per acre

NOTES

- ALL SEED IS PURE LIVE SEED.
- DO NOT APPLY MULCH, FERTILIZER, OR LIME IN WETLAND AREAS.

ALTERNATE PERMANENT SEED MIXTURES

ITEM ALTERNATE NO. 1		
PERMANENT SEED AND MULCH APPLICATION RATES		
Seed ¹	Alfalfa	18 pounds per acre
Seed ¹	Clover	5 pounds per acre

ITEM ALTERNATE NO. 2		
PERMANENT SEED APPLICATION RATES		
Seed ¹	Orchard Grass	30 pounds per acre
Seed ¹	Clover	5 pounds per acre

ITEM ALTERNATE NO. 3 - WLDLIFE SEED MIX		
PERMANENT SEED APPLICATION RATES		
Seed ¹	ERNMX - 280 PA Piedmont Province UPL Mix	20 pounds per acre
	26% Indiangrass	
	26% Little Bluestem	
	20% Virginia Wildrye	
	10% Big Bluestem	
	7% Purpletop	
	5% Switchgrass	
	4% Deertongue	
	2% Purple Lovegrass	

NOTES

- ALL SEED IS PURE LIVE SEED.
- CONTRACTOR TO USE ALTERNATE SEED MIXTURES PER LANDOWNER REQUEST DOCUMENTATION PROVIDED BY MVP.

NO.	DATE	DWG.	CHG.	APPR.	DESCRIPTION	REVISONS:

Mountain Valley Project

GENERAL NOTES AND LEGEND

MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE

WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA

MOUNTAIN VALLEY PIPELINE, LLC

555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANNONBURG, PA 15317

TETRA TECH

complex world CLEAR SOLUTIONS™

681 ANDERSEN DRIVE
 FOSTER PLAZA 7
 PITTSBURGH, PA 15220

CONSTRUCTION PLANS

DRAWN BY: KAL

CHECKED BY: HT

APPROVED BY: RE

DATE: 2/19/2016

SCALE: AS SHOWN

SHT. NO. 020 OF 021

REVISION:

BEST MANAGEMENT PRACTICES (BMP) INSTALLATION & REMOVAL NOTES

TEMPORARY AND PERMANENT BMPs WILL BE USED DURING CONSTRUCTION ACTIVITIES TO AVOID AND/OR MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS OF CONSTRUCTION ACTIVITIES.

THE FOLLOWING ARE GENERAL BMP INSTALLATION NOTES FOR PIPELINE CONSTRUCTION ACTIVITIES.

- A STONE CONSTRUCTION ENTRANCE, SHOWN ON DETAIL SHEET, SHALL BE PROVIDED AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL BE ACCESSING A PAVED ROAD DIRECTLY FROM A DISTURBED AREA.
- TEMPORARY SEDIMENT BARRIERS, INCLUDING APPROPRIATELY SIZED SILT FENCE OR COMPOST FILTER SOCK WILL BE PLACED AROUND SOIL STOCKPILES, AS NEEDED.
- APPROPRIATELY SIZED COMPOST FILTER SOCK WILL BE PLACED AROUND WETLANDS AND WATERBODIES IN AND ADJACENT TO THE WORK AREA PRIOR TO ANY TRENCHING ACTIVITIES.
- STOCKPILE SLOPES WILL BE 2:1 OR FLATTER, AND STOCKPILES WILL NOT EXCEED 35 FEET IN HEIGHT.
- TEMPORARY STREAM CROSSINGS SHALL BE INSTALLED AS INDICATED ON THE E&S PLAN SHEETS AND AS PER THE E&S DETAIL SHEETS.
- EXCAVATED TRENCH SPOIL MATERIAL WILL BE USED FOR TEMPORARY RIGHT OF WAY DIVERSIONS AS SHOWN IN THE DETAIL AT THE LOCATIONS INDICATED ON THE PLAN SHEETS.
- WATERBARS WILL BE INSTALLED IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE SOIL IN ACCORDANCE WITH THE SPACING AND SIZING REQUIREMENTS SHOWN ON PLAN AND DETAIL SHEET. WATERBARS WILL BE CONSTRUCTED OF SOIL TO REDUCE RUNOFF VELOCITY AND DIVERT WATER OFF THE PIPELINE ROW.
- TRENCH DEWATERING, IF NEEDED, WILL BE CONDUCTED USING A PUMP AND HOSE. WATER WILL BE RELEASED INTO A FILTER BAG THAT WILL BE LOCATED IN A WELL-VEGETATED UPLAND AREA.
- TRENCH BREAKERS WILL BE INSTALLED ON SLOPES ADJACENT TO STREAMS, WETLANDS, AND ROAD CROSSINGS TO PREVENT SUBSURFACE EROSION. TRENCH BREAKERS WILL BE INSTALLED AS SHOWN ON THE DETAILS.
- THE WORK AREA WILL BE BACKFILLED FOLLOWING PIPELINE INSTALLATION OR OTHER EXCAVATION WORK. IN AREAS WHERE TOPSOIL HAS BEEN SEGREGATED, THE SUBSOIL WILL BE REPLACED FIRST, AND THEN THE TOPSOIL WILL BE SPREAD OVER THE AREA FROM WHICH IT WAS REMOVED. DISTURBED AREAS WILL BE RESTORED TO THEIR ORIGINAL TOPOGRAPHIC CONTOURS.
- PERMANENT WATERBARS WILL BE CONSTRUCTED WITH A TWO PERCENT (TYPICAL) OUTSLOPE TO DIVERT SURFACE FLOW TO A WELL VEGETATED STABLE AREA.
- IMMEDIATELY FOLLOWING BACKFILLING ALL DISTURBED AREAS WILL BE GRADED IN PREPARATION FOR SEEDING AND MULCHING. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL COVER MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. REFER TO TABLES ON THIS SHEET FOR TEMPORARY AND PERMANENT SEEDING SPECIFICATIONS.
- FOR 3:1 OR STEEPER SLOPES THE DISTURBED AREA WILL HAVE EROSION CONTROL BLANKETING INSTALLED AS INDICATED ON DETAIL SHEET.
- TEMPORARY SEDIMENT BARRIERS WILL BE MAINTAINED, UNTIL VEGETATION HAS BECOME ESTABLISHED WITH A UNIFORM COVERAGE OF DENSITY OF 70 PERCENT OR MORE WITHIN THE DISTURBED ROW. ONCE THIS COVERAGE HAS BEEN OBTAINED, APPROPRIATE CONTROLS WILL BE REMOVED FROM THE WORK AREA. AREAS DISTURBED DURING THE REMOVAL OF THE EROSION CONTROLS WILL BE STABILIZED IMMEDIATELY. THE 70 PERCENT REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT A PERCENT OF THE SITE.
- ALL WASTE MATERIAL WILL BE TRANSPORTED OFFSITE FOR RECYCLING AND/OR DISPOSAL AT A FACILITY APPROVED TO RECEIVE THE MATERIAL.
- IN NON-AGRICULTURAL AREAS THE VISUAL SURVEY SHALL BE COMPARED TO THE DENSITY AND COVER OF ADJACENT UNDISTURBED LANDS. IN AGRICULTURAL AREAS, THE VISUAL SURVEY SHALL BE COMPARED TO THE ADJACENT UNDISTURBED PORTIONS OF THE SAME FIELD, UNLESS THE EASEMENT AGREEMENT SPECIFIES OTHERWISE.
- WETLANDS ALONG THE PROPOSED PIPELINE ARE EXPECTED TO EXHIBIT VARYING DEGREES OF SATURATION AND WATER ELEVATION, REQUIRING A VARIETY OF PLANT SPECIES TO BE RE-ESTABLISHED. IN UNSATURATED WETLANDS, MOST VEGETATION WILL BE REPLACED BY SEEDING. SATURATED WETLANDS WILL TYPICALLY BE ALLOWED TO RE-VEGETATE NATURALLY. WETLAND REVEGETATION WILL BE CONSIDERED SUCCESSFUL WHEN THE COVER OF HERBACEOUS AND/OR WOODY SPECIES IS AT LEAST 80 PERCENT OF THE TYPE, DENSITY, AND DISTRIBUTION OF THE VEGETATION IN ADJACENT WETLAND AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION. REVEGETATION EFFORTS WILL CONTINUE UNTIL WETLAND REVEGETATION IS SUCCESSFUL.

STREAM CROSSING PROCEDURES

GENERAL PROCEDURES THAT WILL BE FOLLOWED AT STREAM CROSSING LOCATIONS INCLUDE THE FOLLOWING:

- MINIMIZE CLEARING AND GRUBBING OF VEGETATION UP TO STREAMS, AS POSSIBLE, UNTIL THE TIME OF THE PIPELINE INSTALLATION;
- ONLY THAT AREA WHICH IS REQUIRED FOR PIPELINE INSTALLATION SHALL BE DISTURBED WITHIN THE PROPOSED LIMIT OF DISTURBANCE OR RIGHT-OF-WAY AT STREAM CROSSINGS; LOCATING STAGING AREAS 50 FEET AWAY FROM THE STREAM, WHERE POSSIBLE;
- STORING CHEMICALS, STORING EQUIPMENT, WASHING EQUIPMENT, OR REFUELING EQUIPMENT MUST BE DONE IN AREAS THAT ARE GREATER THAN 100 FEET AWAY FROM THE STREAM;
- SPOIL PILE PLACEMENT AND BMPs WILL BE MONITORED AT ALL TIMES DURING STREAM CROSSING PROCEDURES; ONCE WORK WITHIN A STREAM AREA IS STARTED, IT WILL BE CONDUCTED CONTINUOUSLY TO COMPLETION; EMPHASIS WILL BE PLACED ON MINIMIZING TIME OF DISTURBANCE;
- SPOILS FROM STREAM CROSSINGS MUST BE PLACED AT LEAST 10 FEET FROM THE WATER'S EDGE; AND
- CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED IN THE STREAM CHANNEL WHEN EXCAVATION CAN BE DONE FROM EITHER SIDE OR A TEMPORARY CROSSING WHILE WORKING AT THE STREAM CROSSING.
- SOME OF THE WATERSHEDS CROSSED BY THE PROJECT ARE CLASSIFIED AS WARM WATER OR TROUT STREAMS. REFER TO TABLES IN ATTACHMENT 2 OF THE NARRATIVE FOR A LISTING OF THE STREAMS. IN-STREAM WORK DESIGNATED WARM WATER STREAMS AND THEIR ADJACENT TRIBUTARIES IS RESTRICTED DURING THE FISH SPAWNING SEASON OF APRIL-JUNE. IN-STREAM WORK IN DESIGNATED TROUT WATER AND THEIR ADJACENT TRIBUTARIES IS RESTRICTED DURING THE SPAWNING SEASON SEPTEMBER 15-MARCH 31ST UNLESS A SPAWNING SEASON WAIVER IS GRANTED FROM THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES, WILDLIFE RESOURCES SECTION. IN STREAM WORK MAY OCCUR DURING THE RESPECTIVE SPAWNING SEASON EPHEMERAL WATERS WITHOUT A WAIVER IF ALL REASONABLE MEASURES ARE TAKEN TO MINIMIZE TURBIDITY AND SEDIMENTATION DOWNSTREAM ASSOCIATED WITH THE PROPOSED PROJECT.

THE FOLLOWING SECTIONS DESCRIBE STREAM CROSSING TECHNIQUES THAT MAY BE USED DURING PIPELINE RELOCATION/INSTALLATION ACTIVITIES. REFER TO THE DETAIL SHEETS AND SWPPP FOR ADDITIONAL INFORMATION.

DRY CROSSING TECHNIQUES: THESE TECHNIQUES WILL BE USED TO PERFORM PIPELINE WORK IN A RELATIVELY DRY WORKING CONDITION OR AROUND THE OPEN EXCAVATION. THESE TECHNIQUES INCLUDE PUMP AROUND AND FLUME PIPE CROSSING METHODS. THE LIMITING FACTORS FOR THESE TECHNIQUES ARE USUALLY STREAM SIZE, FLOW, AND WATER DEPTH.

DIRECTIONAL BORING IS ALSO A TECHNIQUE THAT CAN BE UTILIZED AS IT WILL LESSEN THE IMPACTS ON THE WATERBODIES.

E&S CONTROL MEASURES WILL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE AND ADDRESSED IF NECESSARY IMMEDIATELY AFTER DISTURBANCE OF THE WATERBODY.

FLUME PIPE METHOD: PLEASE SEE DETAIL SHEETS AND SWPPP FOR MORE INFORMATION ON THE FLUME PIPE METHOD. THIS PROCEDURE INVOLVES CONSTRUCTING TWO BULKHEADS, EITHER SANDBAGS OR PLASTIC DAMS, TO DIRECT THE STREAM FLOW THROUGH A FLUME PIPE PLACED OVER THE TRENCH PRIOR TO EXCAVATION. THE FLUME SHALL BE ALIGNED AS TO PREVENT BANK EROSION AND BED SCOUR. THE FLUME WILL NOT BE REMOVED DURING TRENCHING, PIPE LAYING OR BACKFILLING.

PUMP AROUND METHOD: PLEASE SEE THE DETAIL SHEETS AND SWPPP FOR MORE INFORMATION ON THE PUMP AROUND METHOD. THIS PROCEDURE INVOLVES CONSTRUCTING TWO BULKHEADS, EITHER SANDBAGS OR PLASTIC DAMS. THE UPSTREAM DAM WILL CAUSE THE WATER TO POND WHERE IT CAN BE PUMPED AROUND THE WORK AREA AND BE DISCHARGED BEHIND THE DOWNSTREAM BULKHEAD. PUMPS OF SUFFICIENT SIZE TO TRANSMIT THE FLOW DOWNSTREAM WILL BE USED. BACKUP PUMPS MUST BE ON-SITE. PUMP INTAKES MUST BE SCREENED. PUMP DISCHARGES MUST NOT CAUSE SCOUR.

TEMPORARY ROAD CROSSINGS: TEMPORARY ROAD CROSSINGS, CONSISTING OF BRIDGES OF TIMBER MATS OR CLEAN ROCK FILL AND FLUME(S), WILL BE INSTALLED TO CROSS MINOR OR INTERMEDIATE STREAMS. TIMBER MATS SHALL BE USED TO CROSS SMALLER STREAMS WHERE THE SPAN OF THE MAT WILL STRETCH FROM BANK TO BANK, OTHERWISE IN STREAM SUPPORTS MAY BE INSTALLED. CLEAN ROCK FILL AND FLUMED CROSSINGS WILL BE UTILIZED WHERE IT IS NOT FEASIBLE TO UTILIZE TIMBER MATS. AS AN ALTERNATIVE, PORTABLE BRIDGES MAY BE USED INSTEAD FOR SMALL CROSSINGS. EQUIPMENT WILL NOT BE ALLOWED TO FORD FLOWING STREAMS DURING CONSTRUCTION ACTIVITIES. TEMPORARY ROAD CROSSINGS OF STREAMS MUST MAINTAIN FOR ADEQUATE FLOW DOWNSTREAM.

STREAM BANK STABILIZATION: PERMANENT STABILIZATION SHALL OCCUR IMMEDIATELY UPON INSTALLATION, BACKFILLING, AND GRADING AT EACH STREAM CROSSING.

LEGEND

- 1160 EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING PROPERTY LINE
- EXISTING COUNTY LINE
- EXISTING ROAD
- EXISTING UTILITY POLE
- ⊗ EXISTING GUY ANCHOR
- ⊗ EXISTING GAS VALVE
- ⊗ EXISTING GAS WELL
- ⊗ EXISTING WATER WELL
- ⊗ EXISTING UNKNOWN WELL
- ⊗ EXISTING GATE POST
- ⊗ EXISTING GATE POST
- 1 FEMA 100 YEAR FLOODPLAIN
- EXISTING STREAM
- ▨ EXISTING WETLAND
- EXISTING FENCE
- EXISTING WATERLINE
- EXISTING COLUMBIA GAS PIPELINE
- EXISTING MOUNTAINEER GAS PIPELINE
- EXISTING REX GAS PIPELINE
- EXISTING EQT GAS PIPELINE
- EXISTING EAST RESOURCES GAS PIPELINE
- EXISTING DOMINION GAS PIPELINE
- EXISTING UNKNOWN GAS PIPELINE
- EXISTING OVERHEAD ELECTRIC
- 1160 PROPOSED CONTOUR (MAJOR)
- PROPOSED CONTOUR (MINOR)
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED ACCESS ROAD CENTERLINE
- PROPOSED PIPELINE
- 57 57 PROPOSED SILT FENCE (SEE NOTE 6)
- PROPOSED SUPER SILT FENCE
- OCSF ORANGE CONSTRUCTION SAFETY FENCE
- OFS PROPOSED COMPOST FILTER SOCK
- RFD PROPOSED REINFORCED FILTRATION DEVICE
- > > PROPOSED TEMPORARY RIGHT OF WAY DIVERSION AND OUTLET
- ▶ PROPOSED CULVERT WITH OUTLET PROTECTION
- ▨ TIMBER MAT
- STEEP SLOPE EROSION CONTROL (SEE NOTE 3)
- ▨ STEEP SLOPE (SEE NOTE 5)
- ▲ PROPOSED WATERBAR
- ▲ PROPOSED WATERBAR TEMP
- PROPOSED TRENCH PLUG
- ▨ PROPOSED ROCK CONSTRUCTION ENTRANCE
- ▭ ROCK CHECK DAM

ACCESS ROAD LEGEND

- ① ROCK CONSTRUCTION ENTRANCE
- ② WETLAND CROSSING
- ③ STREAM CROSSING

NOTES:

- WATERBARS WITHIN AGRICULTURAL AREAS SHALL BE USED AS TEMPORARY FEATURES.
- NO EROSION CONTROL MATTING SHALL BE INSTALLED IN AGRICULTURAL AREAS.
- FLEXITERRA OR EQUIVALENT MAY BE USED AS A SUBSTITUTE TO EROSION CONTROL BLANKET AS DIRECTED BY MWP.
- CONTRACTOR IS RESPONSIBLE TO IDENTIFY ALL UTILITIES. THE UTILITY LINES SHOWN ON THE PLAN ARE FOR INFORMATIONAL PURPOSES ONLY AND DO NOT REPRESENT SURVEYED LINE INFORMATION.
- SLOPES OF 30° OR GREATER EXIST. CONSTRUCTION FOR STEEP SLOPES TO BE PERFORMED USING STEEP SLOPE TECHNIQUES IDENTIFIED IN THE DETAIL SHEETS.
- WHERE CONSTRUCTION CONDITIONS PRECLUDE THE USE OF DIVERSION DITCHES DUE TO SITE CONDITIONS THE CONTRACTOR WILL INSTALL SILT FENCE AT THE DIRECTION OF MWP.
- IMPROVEMENTS TO PERMANENT AND TEMPORARY ACCESS ROADS WILL BE PERFORMED AS NEEDED AND BMP'S MAY BE SUBSTITUTED IF FIELD EVALUATIONS REQUIRE ADJUSTMENTS TO ACCOMMODATE FIELD VERIFIED CONDITIONS.

NO.	DATE	CHG.	APPR.	DESCRIPTION

Mountain Valley Project
GENERAL NOTES AND LEGEND
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE
 WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA
MOUNTAIN VALLEY PIPELINE, LLC
 555 SOUTHPOINTE BOULEVARD, SUITE 200
 CANNONBURG, PA 15317

TETRA TECH
 complex world CLEAR SOLUTIONS™
 661 ANDERSEN DRIVE
 FOSTER PLAZA 7
 PITTSBURGH, PA 15220

CONSTRUCTION PLANS

DRAWN BY:	KAL
CHECKED BY:	HT
APPROVED BY:	RE
DATE:	2/19/2016
SCALE:	AS SHOWN
SHT. NO.	0.21 OF 0.21



The Doddridge Independent
PUBLISHER'S CERTIFICATE

I, Michael D. Zorn, Publisher of The
Doddridge Independent, A newspaper of
general circulation published in the town
of West Union, Doddridge County,
West Virginia, do hereby certify that:


Please take notice that on the 13th of November, 2018, Potesta
Engineering and Environmental Consultants filed an application for a
Floodplain Permit (#18-535) to develop land located at or about
Meathouse Fork Rd ; Coordinates: 39.2012850 N, -80.5533870 W . The
Application is on file with the Floodplain Manager of the County and
may be inspected or copied during regular business hours in
accordance to WV Code Chapter 29B Freedom of Information, Article
1 Public Records and county policy and procedures. Any interested
persons who desire to comment shall present the same in writing by
(December 9, 2018) (20 calendar days after the announcement at the

was published in The Doddridge Independent
2 times commencing on Friday, November 16, 2018 and
Ending on Friday, November 23, 2018 at the request of:

**George Eidel, OES/OEM Director, Floodplain
Mgr. for Doddridge County Commission**

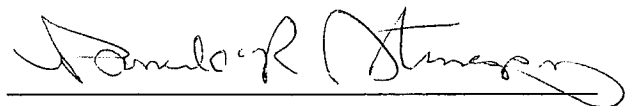
Given under my hand this Friday, November 23, 2018

The publisher's fee for said publication is:
\$ 31.42 1st Run/\$ 23.57 Subsequent Runs
This Legal Ad Total: \$ 54.99



Michael D. Zorn
Publisher of The Doddridge Independent

Subscribed to and sworn to before me on
this date: 11 / 23 / 18




Notary Public in and for Doddridge County

My Commission expires on
The 17th day of MAY 20 19

Legal Ads • NRA Armed Citizen

Legal Notice • Legal Notice

Engineering and Environmental Consultants filed an application for
about Meathouse Fork Rd ; Coordinates: 39.2012850 N, -80.5533870 W .
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Article 1 Public Records and county policy and procedures. Any interested
ing by (December 9, 2018) (20 calendar days after the announcement at the
delivered to the Floodplain Manager of the County at 105 Court Street, Suite
7-473 Mountain Valley Pipeline C2 11/02 - 11/09


1918. His death, and that
binson, was noted in a
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it is buried at Arlington
ve marker showing his

15-1918