

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Jeffery J. Ford  
15 Meadow Lane  
Bridgeport, WV 26330



9590 9402 2859 7069 5448 27

2. Article Number (Transfer from service label)

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  
 X *C Fowler*  Agent  Addressee  
 B. Received by (Printed Name) *Christopher Fowler*  
 C. Date of Delivery *8-5-2017*  
 D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

7015 3430 0000 1569 7828

U.S. Postal Service™  
**CERTIFIED MAIL® RECEIPT**  
 Domestic Mail Only

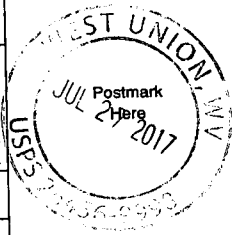
For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee	\$ 3.35
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ 2.75
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	.49
Total Postage and Fees	\$ 6.59

Sent To  
 Street and Apt. No., or PO Box No.  
 City, State, ZIP+4®

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



7015 3430 0000 1569 7804

U.S. Postal Service™  
**CERTIFIED MAIL® RECEIPT**  
 Domestic Mail Only

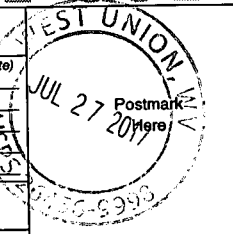
For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee	\$ 3.35
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ 2.75
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	.49
Total Postage and Fees	\$ 6.59

Sent To  
 Street and Apt. No., or PO Box No.  
 City, State, ZIP+4®

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



7015 3430 0000 1569 7811

U.S. Postal Service™  
**CERTIFIED MAIL® RECEIPT**  
 Domestic Mail Only

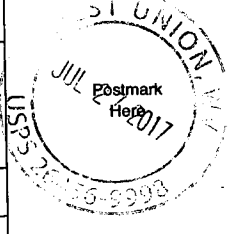
For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee	\$ 3.35
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ 2.75
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	.49
Total Postage and Fees	\$ 6.59

Sent To  
 Street and Apt. No., or PO Box No.  
 City, State, ZIP+4®

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



7015 3430 0000 1569 7842

U.S. Postal Service™  
**CERTIFIED MAIL® RECEIPT**  
 Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee	\$ 3.35
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ 2.75
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	.49
Total Postage and Fees	\$ 6.59

Sent To  
 Street and Apt. No., or PO Box No.  
 City, State, ZIP+4®

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



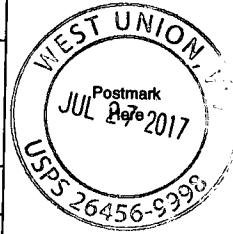
7015 3430 0001 1569 7835  
695T 1000 DEHE 5T02

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Certified Mail Fee	\$ 3.35
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ 2.95
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$ .49
<b>Total Postage and Fees</b>	<b>\$ 6.59</b>



Sent To \_\_\_\_\_  
Street and Apt. No., or PO Box No. \_\_\_\_\_  
City, State, ZIP+4® \_\_\_\_\_

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**1. Article Addressed to:**

**Mr. John R. Clowser**  
**3735 Big Issac Road**  
**Salem, WV 26426**



9590 9402 2859 7069 5448 34

**2. Article Number (Transfer from service label)****COMPLETE THIS SECTION ON DELIVERY****A. Signature**

**X** *John Clowser*

- Agent  
 Addressee

**B. Received by (Printed Name)**

*John R Clowser*

**C. Date of Delivery**

*7/29/17*

- D. Is delivery address different from item 1?  Yes**  
**If YES, enter delivery address below:  No**

**3. Service Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

USPS TRACKING #



9590 9402 2859 7069 5448 34



First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

United States  
Postal Service

• Sender: Please print your name, address, and ZIP+4® in this box•

George Eidel  
Doddridge County OEM/CFM  
105 Court St., Ste. 3  
West Union, WV 26456

17-473



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Earl Richards  
544 Independence Road  
Salem, WV 26426



9590 9402 2859 7069 5448 10

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X   Agent  
 Addressee

B. Received by (Printed Name)

Earl Richards

C. Date of Delivery

7/29/17

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |

USPS TRACKING #



First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

9590 9402 2859 7069 5448 10

**United States  
Postal Service**

• Sender: Please print your name, address, and ZIP+4® in this box•

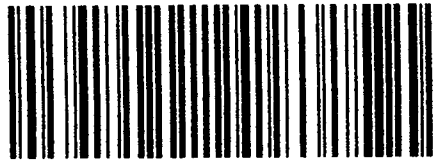
George Eidel  
Doddridge County OEM/CFM  
105 Court St., Ste. 3  
West Union, WV 26456

17-473

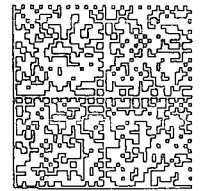


**CERTIFIED MAIL®**

George Eidel  
Doddridge County OEM/CFM  
105 Court St., Ste. 3  
West Union, WV 26456



7015 3430 0001 1569 7811



HASLER

\$006.59  
07/26/2017 ZIP  
012E14643162

POSTAGE

Mr. John Russel Clowser  
P.O. Box 98  
Lost Creek, WV 26385

*UNC*

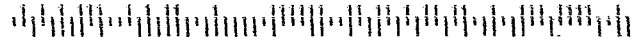
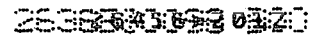
7/29  
8/3 ✓  
8/13

NIXIE 250 DE 1 0008/15/17

RETURN TO SENDER  
UNCLAIMED  
UNABLE TO FORWARD

UNC

BC: 26456201205 \*1771-14623-27-45



PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF RETURN ADDRESS FOR POSTAL USE

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**Mr. John Russel Clowser**  
P.O. Box 98  
Lost Creek, WV 26385



9590 9402 2859 7069 5448 03

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

Agent

Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                               | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery           | <input type="checkbox"/> Registered Mail™                           |
| <input type="checkbox"/> Certified Mail®                               | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery            | <input type="checkbox"/> Return Receipt for Merchandise             |
| <input type="checkbox"/> Collect on Delivery                           | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail                                  |   |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) |   |



Doddridge County Office of  
Emergency Management/Floodplain Management  
105 Court Street Suite 3  
Tel 304-873-1343  
doddridgecountyfpm@gmail.com



Dear Sir or Ma'am,

You are receiving this letter because you have been identified as a land surface and/or mineral rights owner for property or adjacent property related to the proposed development/project identified by the following page.

No action is required of you. This letter is simply to inform you of the proposed development.

If you would like to comment on this proposed project, or would like additional information, you may contact the Doddridge County Floodplain Manager at the above address.

Respectfully yours,

George Eidel, CFM

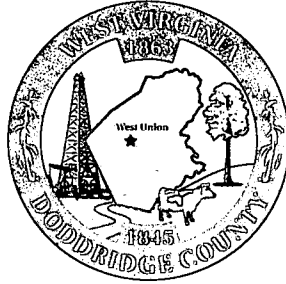
Doddridge County Floodplain Manager



## **Doddridge County Floodplain Permits**

**(Week of July 31, 2017)**

Please take notice that on the 25<sup>th</sup> day of July, 2017, Potesta Engineers and Environmental Consultants on behalf of Mountain Valley Pipeline, LLC filed an application for a Floodplain Permit (#17-473) to develop land located at or about 11872 Meathouse Fork coordinates 39.2012850 N, -80.5533870 W. The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours. Any interested persons who desire to comment shall present the same in writing by August 21, 2017 (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Clerk of the County Court at 108 Court Street Ste. 1, West Union, WV 26456. This project is for the Mountain Valley Pipeline project.



# 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 #: 17-473 (90 Day Extension)

**Date Approved: August 21, 2018**

**Expires: November 19, 2018**

**Issued to: Mountain Valley Pipeline, LLC**

**POC: Matt Hoover 724-873-3009**

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

**Project Address: 11872 Meathouse Fork Rd**

**Firm: 54017C0260C**

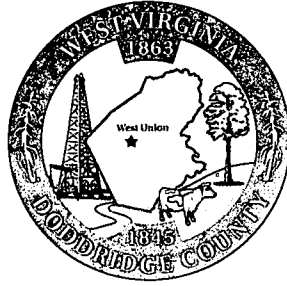
**Lat/Long: 39.2012850 N,-80.553870 W**

**Purpose of development: Natural Gas Pipeline Project**

**Issued by: George C. Eidel, Doddridge County FPM (or designee)**

**Date: August 21, 2018**

For additional information regarding this permit, please contact  
Doddridge County Floodplain Manager at 304.873.1343, or via email at  
doddridgecountyfpm@gmail.com  
105 Court Street Suite 3; West Union, WV 26456



# 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: #17-473**

**Date Approved: August 21, 2017**

**Expires: August 21, 2018**

**Issued to: Mountain Valley Pipeline, LLC**

**POC: Matt Hoover 724/873-3009**

**Company Address: 555 Southpoint Blvd., Ste. 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: August 21, 2017**

---

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

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COPY

COPY

HOLD TO LIGHT TO VIEW WATERMARK IN PAPER. HEAT SENSITIVE PEO IMAGE DISAPPEARS WITH HEAT. DETECTION AREA REVEALS A LOCK WHEN TESTED.

13878

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

Check Fraud  
Protection for Business  
69-36-519

DATE 07/13/17

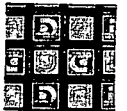
PAY TO THE ORDER OF Doddridge County Commission

\$ 3,245.32

Three Thousand Two Hundred Forty Five Dollars and 32/100 DOLLARS

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

Dana L. Burns



FOR \_\_\_\_\_

⑈013878⑈ ⑆051900366⑆

625733274⑈

# 17-473

COPY

## Doddridge County, West Virginia

RECEIPT NO: 9434

DATE: 2017/08/02

FROM: POTESTA & ASSOCIATES INC AMOUNT: \$ 3,245.32

THREE THOUSAND TWO HUNDRED FORTY FIVE DOLLARS AND 32 CENTS

FOR: #17-473 FLOODPLAIN PERMIT

00000013878 FP-BUILDING PERMITS

020-318

TOTAL: \$3,245.32

MICHAEL HEADLEY

SHERIFF & TREASURER

MEC

CLERK

Customer Copy

**FLOODPLAIN PERMIT #17-473**

**11872 Meathouse Fork/Pipeline Project**

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

7015 3430 0001 1569 7804

7015 3430 0001 1569 7835

7015 3430 0001 1569 7811

7015 3430 0001 1569 7842

7015 3430 0001 1569 7828



## **Doddridge County Floodplain Permits**

**(Week of July 31, 2017)**

Please take notice that on the 25<sup>th</sup> day of July, 2017, Potesta Engineers and Environmental Consultants on behalf of Mountain Valley Pipeline, LLC filed an application for a Floodplain Permit (#17-473) to develop land located at or about 11872 Meathouse Fork coordinates 39.2012850 N, -80.5533870 W. The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours. Any interested persons who desire to comment shall present the same in writing by August 21, 2017 (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Clerk of the County Court at 108 Court Street Ste. 1, West Union, WV 26456. This project is for the Mountain Valley Pipeline project.





July 14, 2017

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

JUL24 17 11:26AM

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 • Cambridge, Ohio

Mr. George Eidel  
July 14, 2017  
Page 2

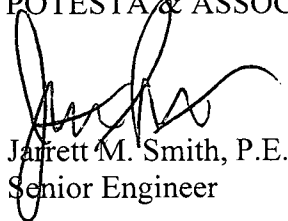
Below is an expanded list of each crossing and its associated temporary and permanent construction activities.

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](mailto:jmsmith@potesta.com) or Matt Hoover (MVP) at (724) 873-3009 or [mhoover@eqt.com](mailto:mhoover@eqt.com).

Sincerely,

POTESTA & ASSOCIATES, INC.

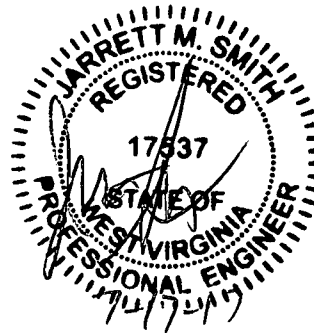


Jarrett M. Smith, P.E.  
Senior Engineer

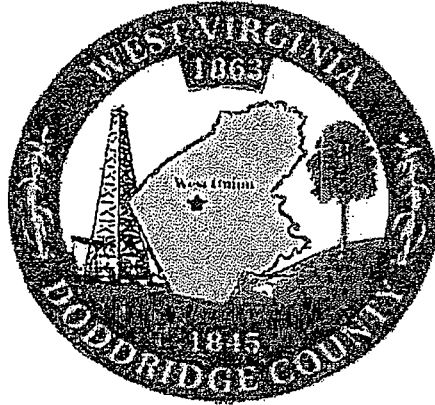
JMS:JWB/clr

Enclosures

c: Mr. Matt Hoover – MVP (via email)



JUL24 17 11:26AM



Permit#	<u>17-473</u>
Project Name:	<u>Mountain Valley Pipeline</u>
Permittees Name:	<u>Mountain Valley Pipeline, LLC</u>

## Doddridge County, WV

### Floodplain Development Permit Application

JUL24 17 11:26AM

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

Shirley M. Poy

DATE

7-6-17

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Applicant Information:**

*Please provide all pertinent data.*

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

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Project Narrative:**

*Describe in detail the proposed development including project name/title, type of development, estimated start and completion timeline, and its potential impact on the floodplain. Use additional copies of this page as needed.*

<b>Project Narrative:</b>
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. Estimated construction cost
is \$549,064.

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:**

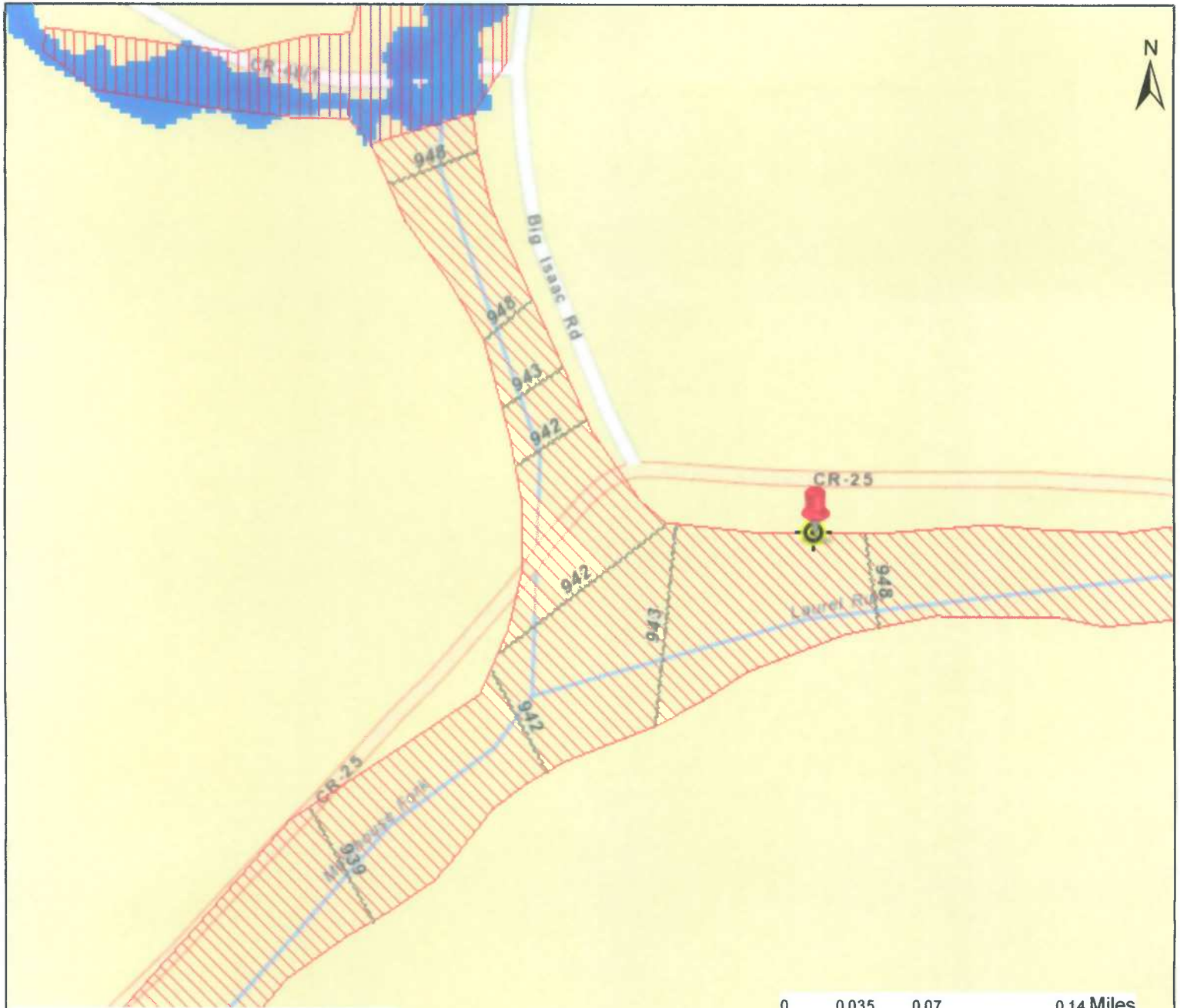
- Fill                     Mining                     Drilling                     Pipelining
- Grading
- Excavation (except for STRUCTURAL DEVELOPMENT checked above)
- Watercourse Alteration (including dredging and channel modification)
- Drainage Improvements (including culvert work)
- Road, Street,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

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# WV Flood Map



- Cross Section (XS) Lines
- Base Flood Elevation (BFE) Lines

 Floodway

### Flood Hazard Zone

-  Approximate Study (Zone A)
-  Detailed Study (AE, AH, AO)
-  High : 134.442
-  Low : -7.71759

 Location of flood information  
User Notes:

0 0.035 0.07 0.14 Miles

or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

Map created on July 24, 2017

### Flood Hazard Area:

Flood Hazard Area: Location is WITHIN the FEMA 100-year floodplain.

**Flood Hazard Zone:** AE

**Stream:** Laurel Run

**FEMA Issued Flood Map:** 54017C0260C

**Watershed (HUC8):** Little Musringum-Middle Island (5030)

**Advisory Flood Height:** N/A

**Water Depth:** N/A

**Elevation:** About 946 ft

**Location (long, lat):** (80.553414 W, 39.201198 N)

**Location (UTM 17N):** (538561, 4339198)

**Contacts:** Doddridge

**CRS Information:** N/A

**Flood Profile:** 54017\_010

**HEC-RAS Model:** N/A

**Parcel Number:** No Parcel

### Disclaimer:

The online map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. To obtain more detailed information in areas where Base Flood Elevations have been determined, users are encouraged to consult the latest Flood Profile data contained in the official flood insurance study. These studies are available online at [www.msc.fema.gov](http://www.msc.fema.gov).

WV Flood Tool (<http://www.MapWV.gov/flood>) is supported by FEMA, WV NFIP Office, and WV GIS Technical Center.

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 ____
------------------------------------

<b>Site/Property Information:</b>		
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:		

<b>Floodplain Location Data: (to be completed by Floodplain Manager or designee)</b>			
Community:	Number:	Panel:	Suffix:
Location (Lat/Long):		Approximate Elevation:	
Estimated BFE:		Is the development in the floodplain?	
Is the development in the floodway? 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.

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

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

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

**DODDRIDGE COUNTY FLOODPLAIN  
LAND OWNER INFORMATION  
MOUNTAIN VALLEY PIPELINE**

Owner	Address	Legal Description	Mile Post	District	Map	Parcel	Deed Book/Page
<b>Land Owners</b>							
Jeffery J Ford	15 Meadow LN Bridgeport, WV 26330	Meathouse 90.74 AC	34.8	04	11	36	281/665
<b>Adjacent Land Owners</b>							
Jeffery J Ford	15 Meadow LN Bridgeport, WV 26330	BIG Isaac 1 AC	34.8	04	11	31	281/665
Jeffery J Ford	15 Meadow LN 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 Rd, 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.**

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.*

<b>Property Designation:</b> ___ of ___		
<b>Contractor/Sub-Contractor (C/SC) Information:</b>		
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:		

<b>Engineer Firm Information:</b>		
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: \_\_\_\_\_

7-6-17

Applicant Printed Name: Shawn Posey - SVP MVP Engineering and Construction

# WV Flood Map



— Cross Section (XS) Lines  
 --- Base Flood Elevation (BFE) Lines

- Floodway
- Flood Hazard Zone**
- Approximate Study (Zone A)
- Detailed Study (AE, AH, AO)
- High : 134.442
- Low : -7.71759

Location of flood information  
 User Notes:



Map created on July 26, 2017

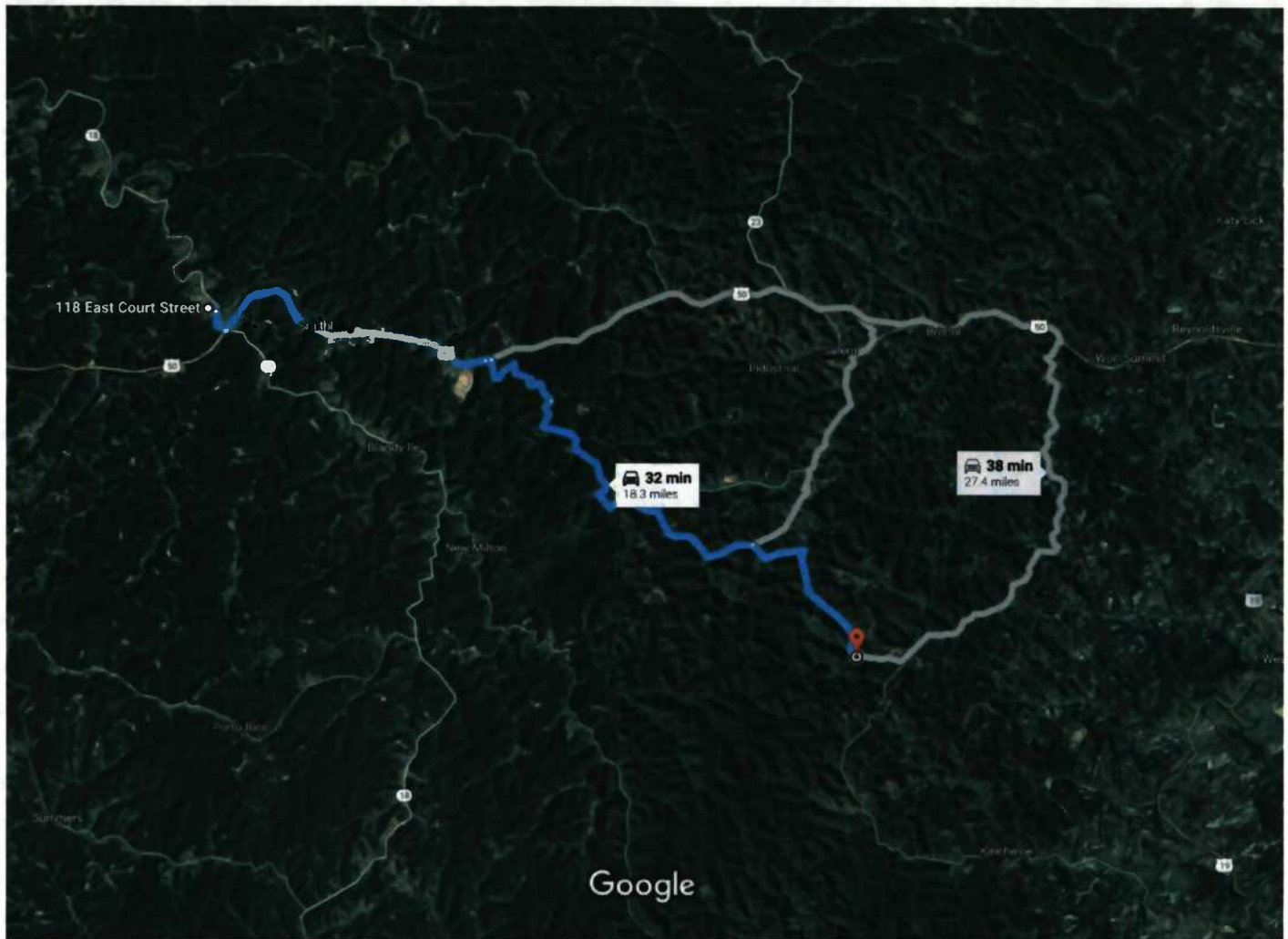
<b>Flood Hazard Area:</b> Flood Hazard Area: Location is WITHIN the FEMA 100-year floodplain.	
<b>Flood Hazard Zone:</b>	AE
<b>Stream:</b>	Laurel Run
<b>FEMA Issued Flood Map:</b>	54017C0260C
<b>Watershed (HUC8):</b>	Little Musringum-Middle Island (5030)
<b>Advisory Flood Height:</b>	N/A
<b>Water Depth:</b>	N/A
<b>Elevation:</b>	About 945 ft
<b>Location (long, lat):</b>	(80.553400 W, 39.201145 N)
<b>Location (UTM 17N):</b>	(538562, 4339192)
<b>Contacts:</b>	Doddridge
<b>CRS Information:</b>	N/A
<b>Flood Profile:</b>	54017_010
<b>HEC-RAS Model:</b>	N/A
<b>Parcel Number:</b>	No Parcel

**Disclaimer:**  
 The online map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. To obtain more detailed information in areas where Base Flood Elevations have been determined, users are encouraged to consult the latest Flood Profile data contained in the official flood insurance study. These studies are available online at [www.msc.fema.gov](http://www.msc.fema.gov).  
 WV Flood Tool (<http://www.MapWV.gov/flood>) is supported by FEMA, WV NFIP Office, and WV GIS Technical Center.



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

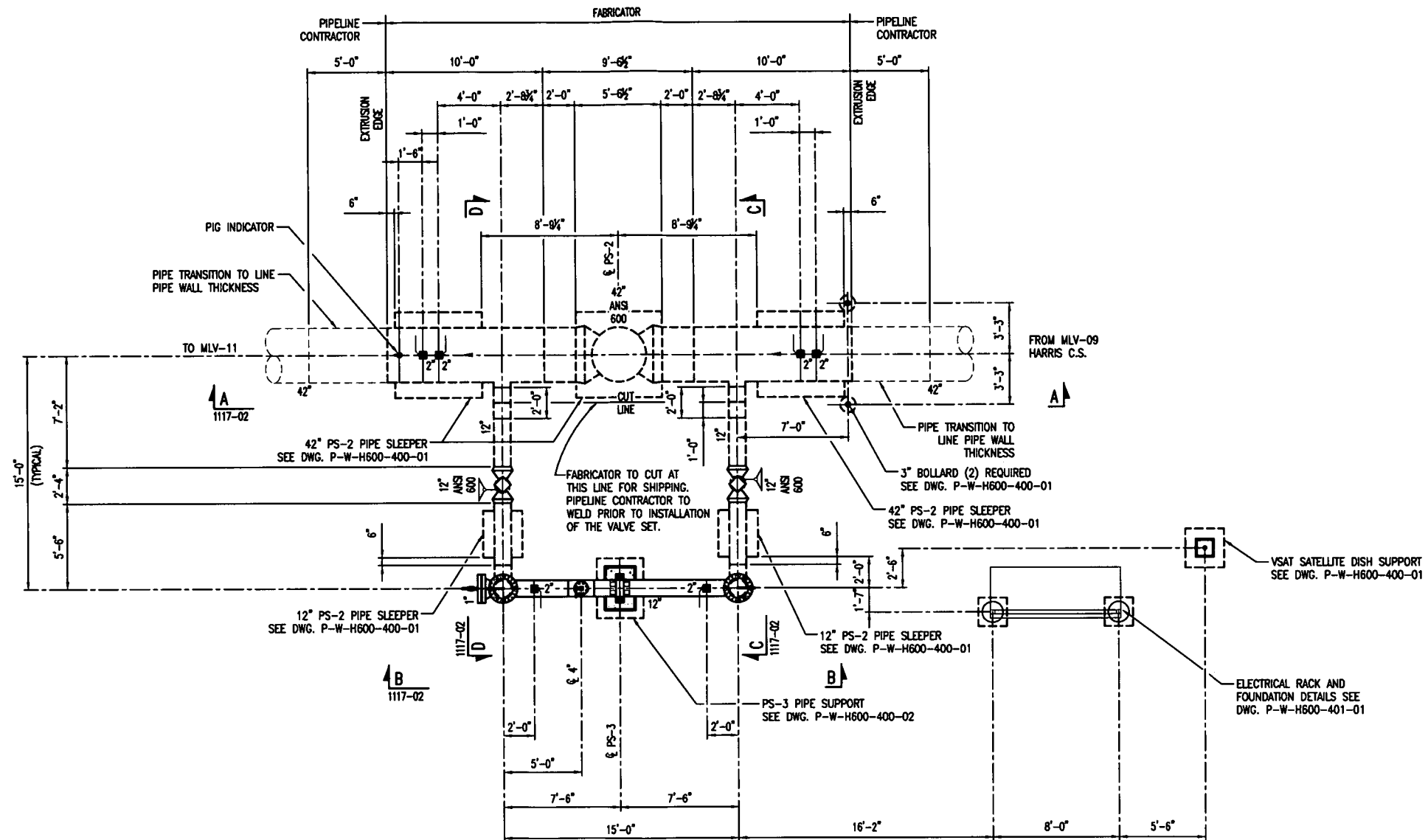
31 min (18.1 mi)



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.

Plotted by: Harter, Joan on: April 7, 2016 - 9:50 AM  
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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	JOM	KDS	RLM																		
P-W-H600-400-01	PS-2 PIPE SLEEPER AND FOUNDATION DETAILS																								
P-W-H600-400-02	PS-3 AND PS-4 PIPE SUPPORT DETAILS																								
P-W-H600-401-01	ELECTRICAL EQUIP. RACK & FOUNDATION DETAIL																								
P-W-H600-1100-12	MLV-10 VALVE SETTING - PLOT PLAN																								
P-W-H600-1117-02	MLV-10 VALVE SETTING INSTALLATION - SECTIONS																								
P-W-H600-1117-03	MLV-10 VALVE SETTING INSTALLATION - BOM																								

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

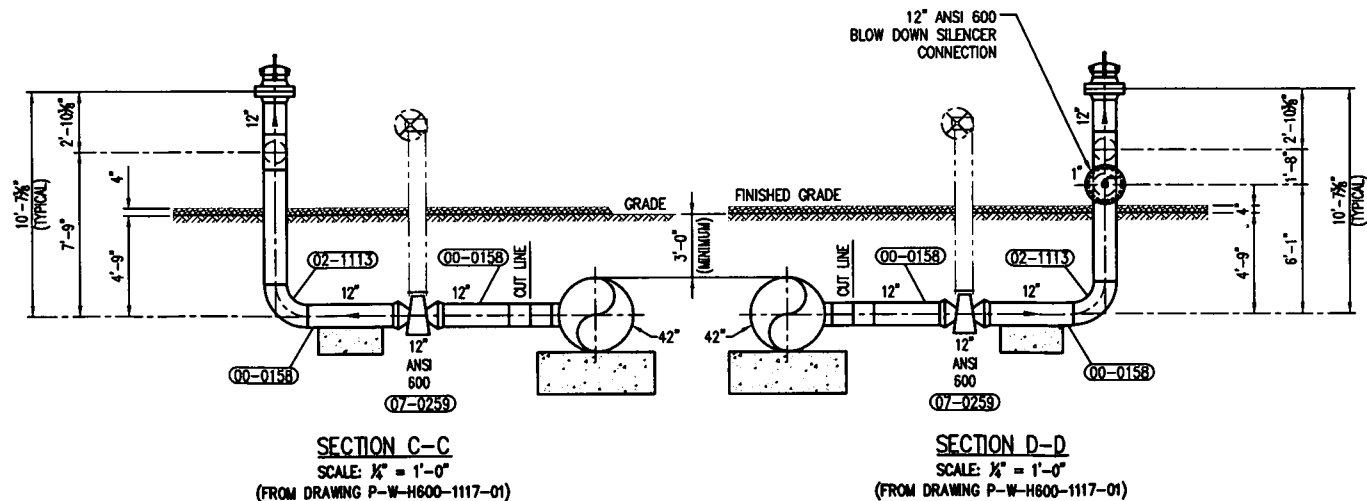
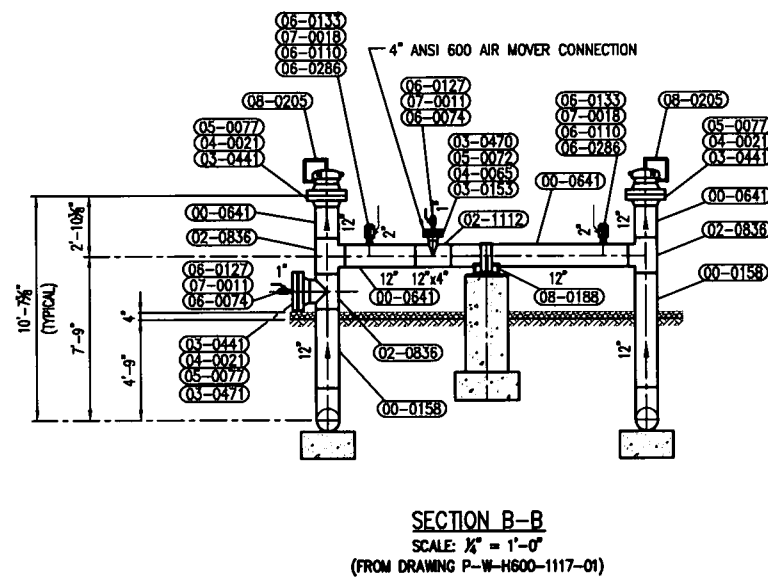
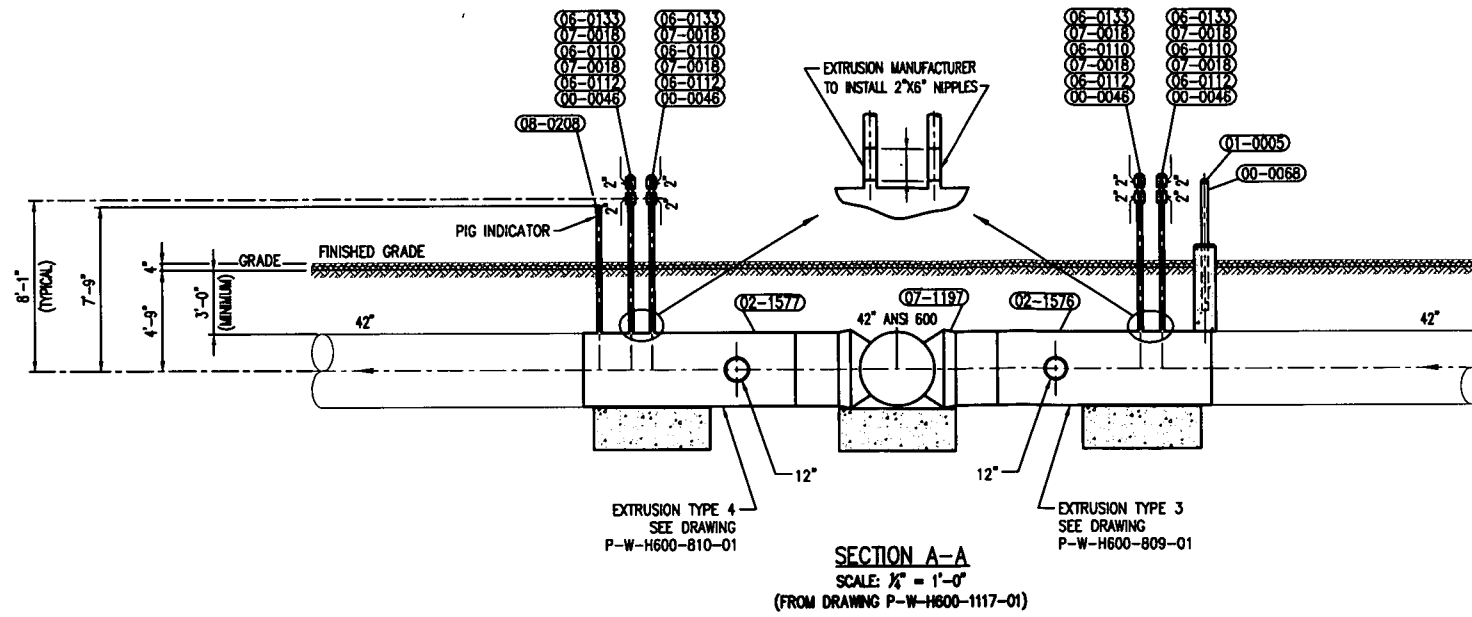
PROJECT ID

DRAWING SCALE: NONE

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

FACILITY	STATE	IDENTIFICATION	SERIES	SHEET	REVISION
P	W	H600	1117	01	P9

WEBSTER COUNTY, WV



WEBSTER COUNTY, WV

REFERENCE DRAWINGS		NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER	DRAWING TITLE			ISSUED FOR BID	JDM	KDS	RLM						
P-W-H600-1117-01	MLV-10 INSTALLATION - PLAN		04/08/2016										
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

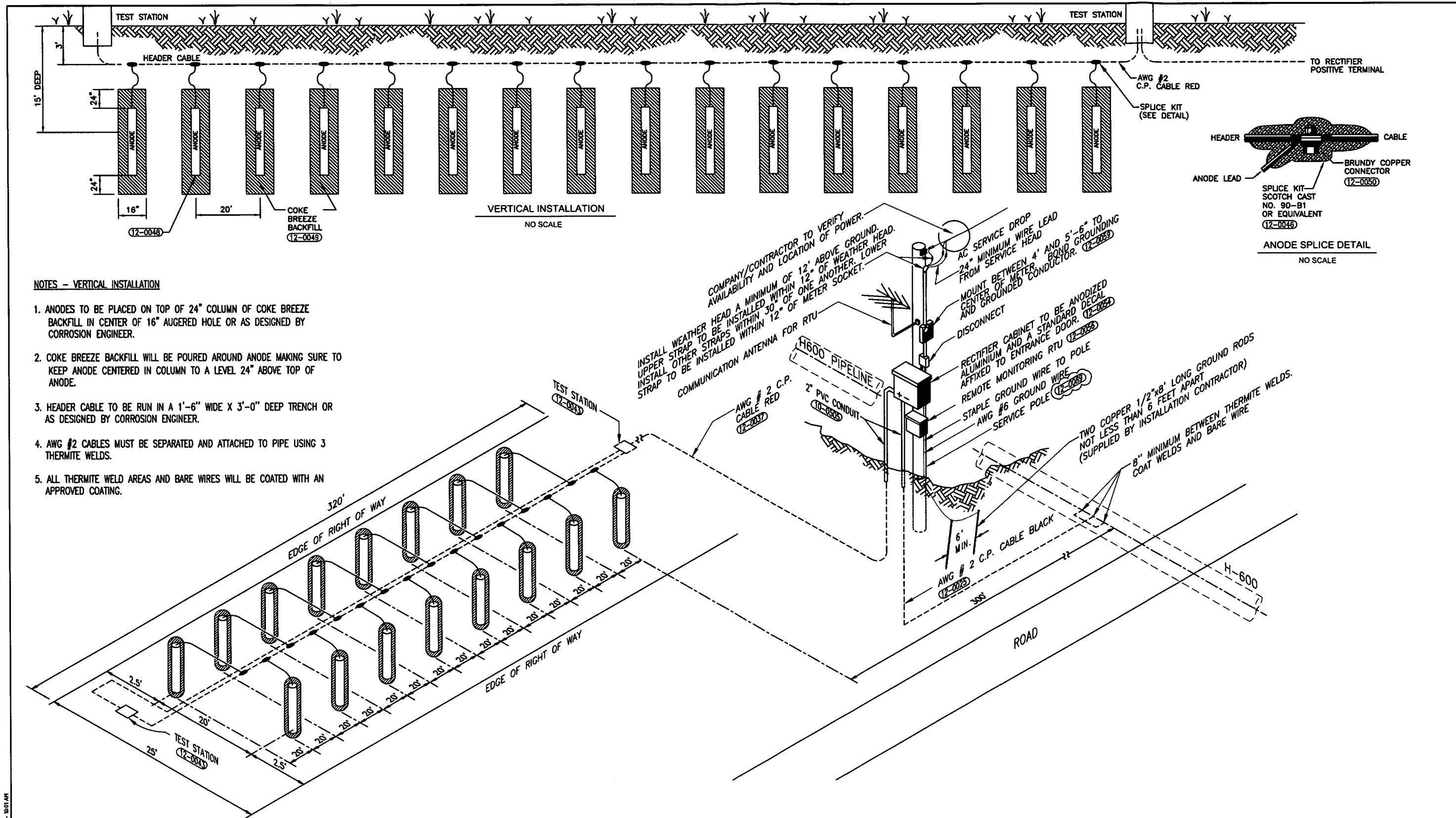
**DRAFT**

DATE: 4/8/2016

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

		DRAWING TITLE: <b>H600</b> 42" 1480 PSIG ANSI 600 MLV-10 VALVE SETTING INSTALLATION SECTIONS			
PROJECT ID		FACILITY	STATE	IDENTIFICATION	SHEET
DRAWING SCALE	NONE	P	W	H600	02
					REVISION
					P9

Plotted by: Mark...  
 Date: April 7, 2016, 9:51 AM  
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**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.

Plotted by: Vitaris, Jack on January 3, 2017 - 10:01 AM  
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DRAWING NUMBER	DRAWING TITLE																
P-W-H600-01-1204-07	GROUNDRED (16) VERTICAL ANODES - BOM	P	5/25/2016				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

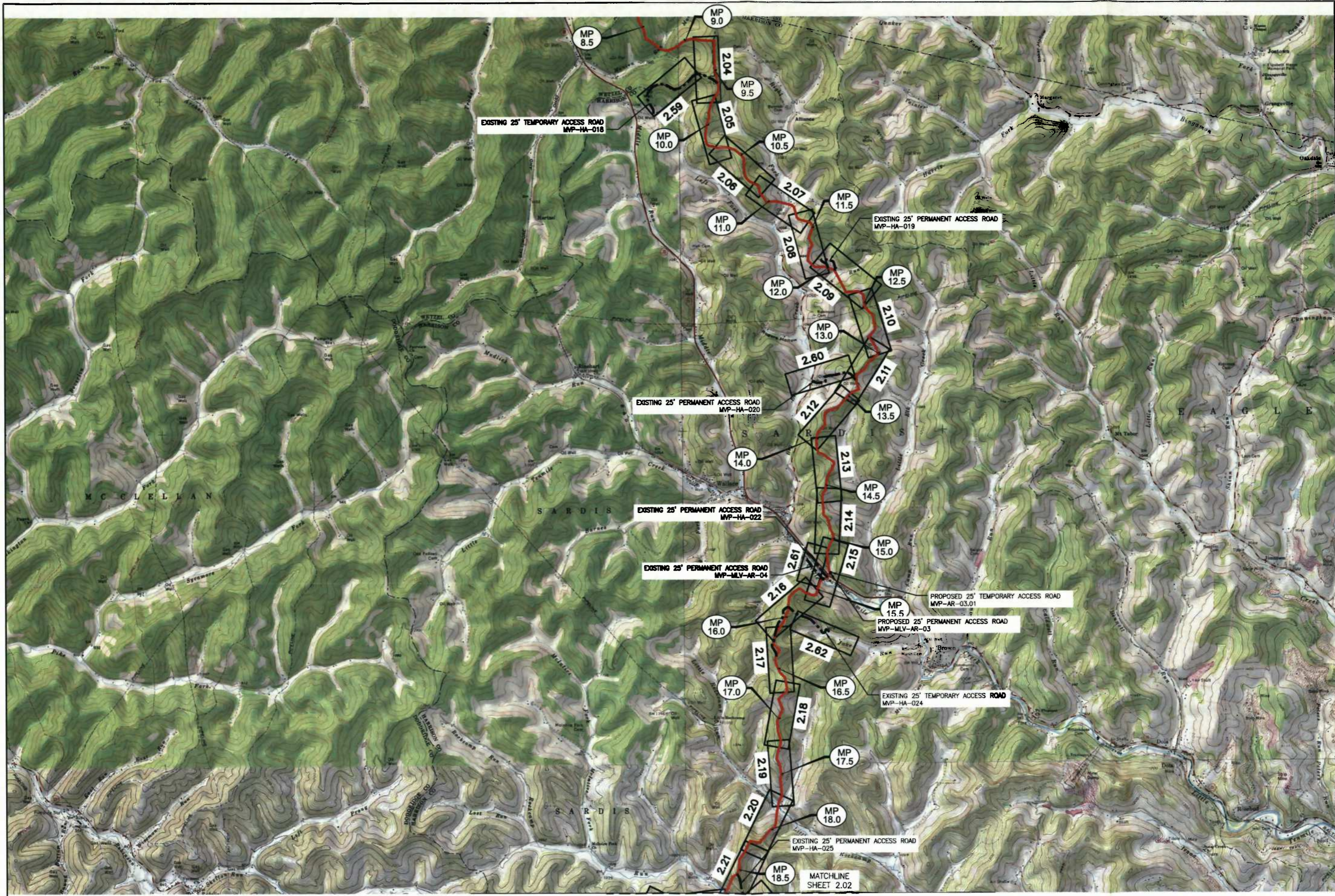
DATE

ELECTRICAL DESIGN ENGINEER

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 RECTIFIER AND CONVENTIONAL GROUNDRED INSTALLATION - (16) VERTICAL ANODES			
PROJECT ID	P8960	FACILITY	STATE	IDENTIFICATION
DRAWING SCALE:	NONE	P	W	H600-01
				SERIES
				1204
				SHEET
				06
				REVISION
				P



NO.	DATE	DRAWN	CHKD.	APPL.	DESCRIPTION

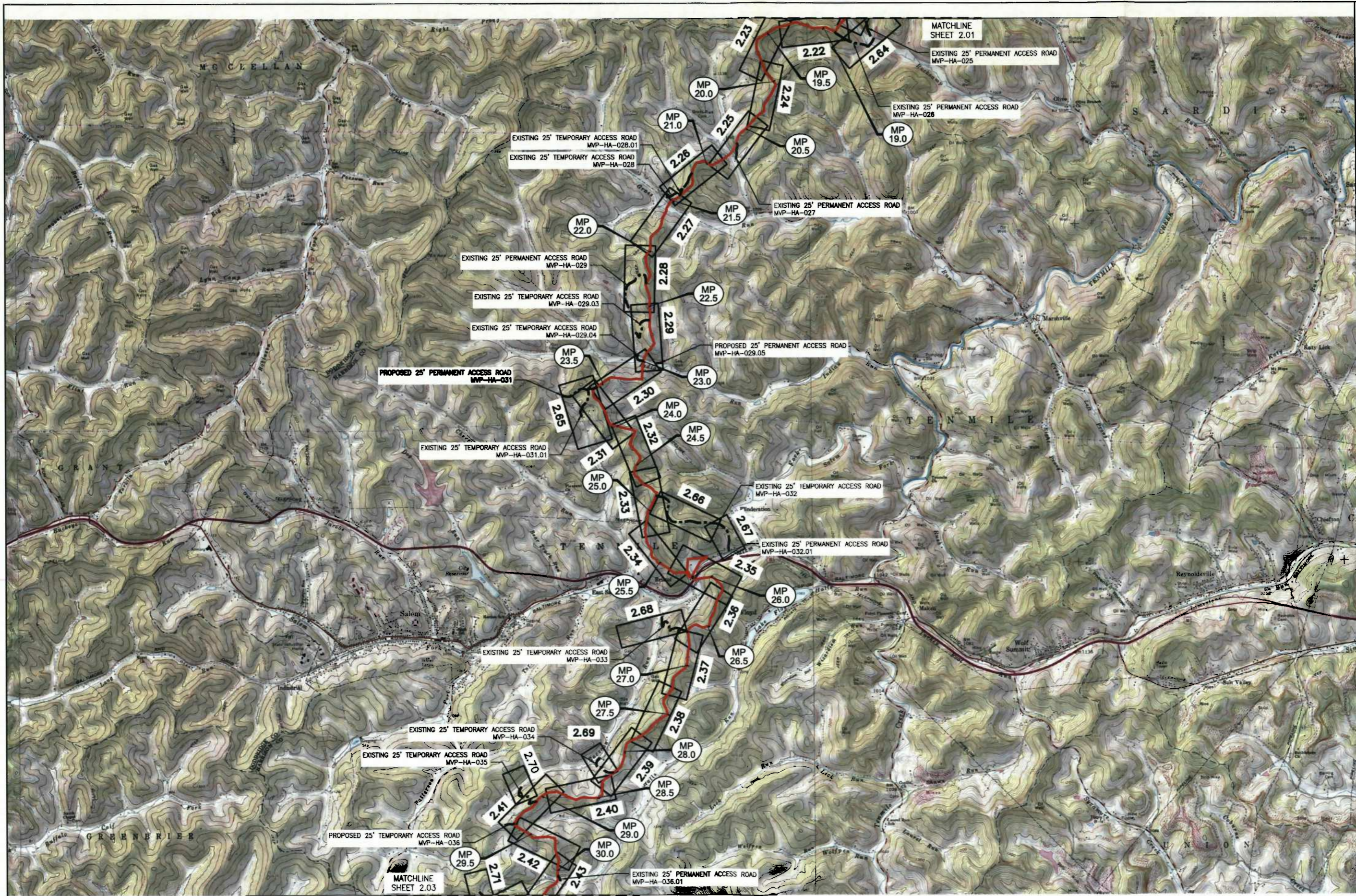
REVISIONS:

Mountain Valley  
**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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**CONSTRUCTION PLANS**

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 DATE: 2/19/2018  
 SCALE: AS SHOWN  
 SHT. NO. 2.01 OF 2.76



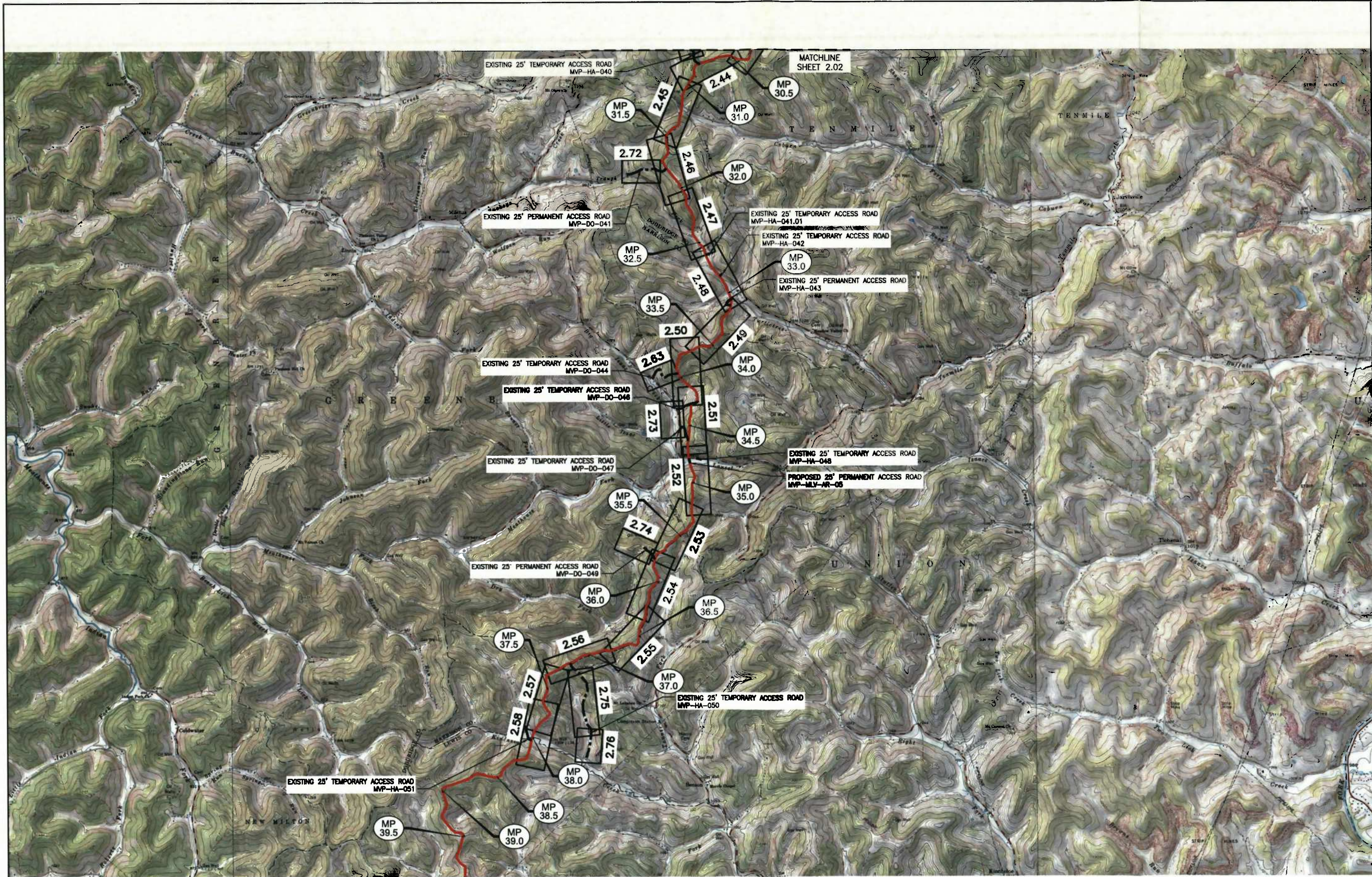
NO.	DATE	DRAWN	CHECKED	APPROVED	DESCRIPTION

Mountain Valley Pipeline  
**EROSION AND SEDIMENT CONTROL PLANS**  
**MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE**  
 HARRISON & DODDRIDGE COUNTY, WEST VIRGINIA  
**MOUNTAIN VALLEY PIPELINE, LLC**  
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 APPROVED BY: RE  
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 SHT. NO. 2.02 OF 2.76



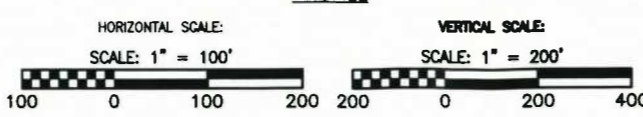
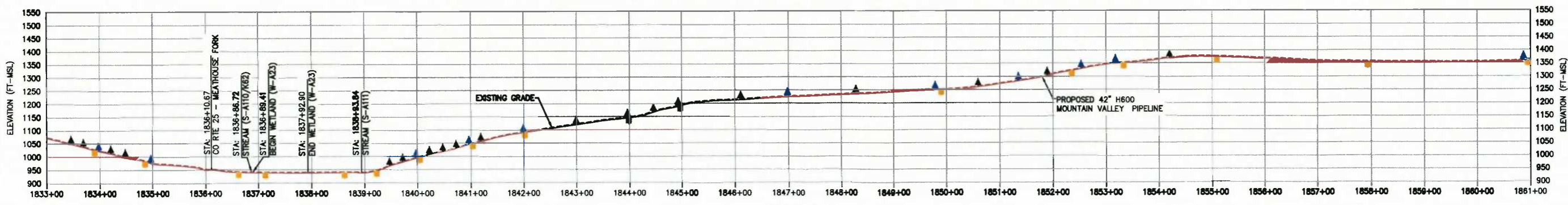
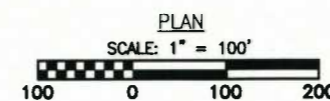
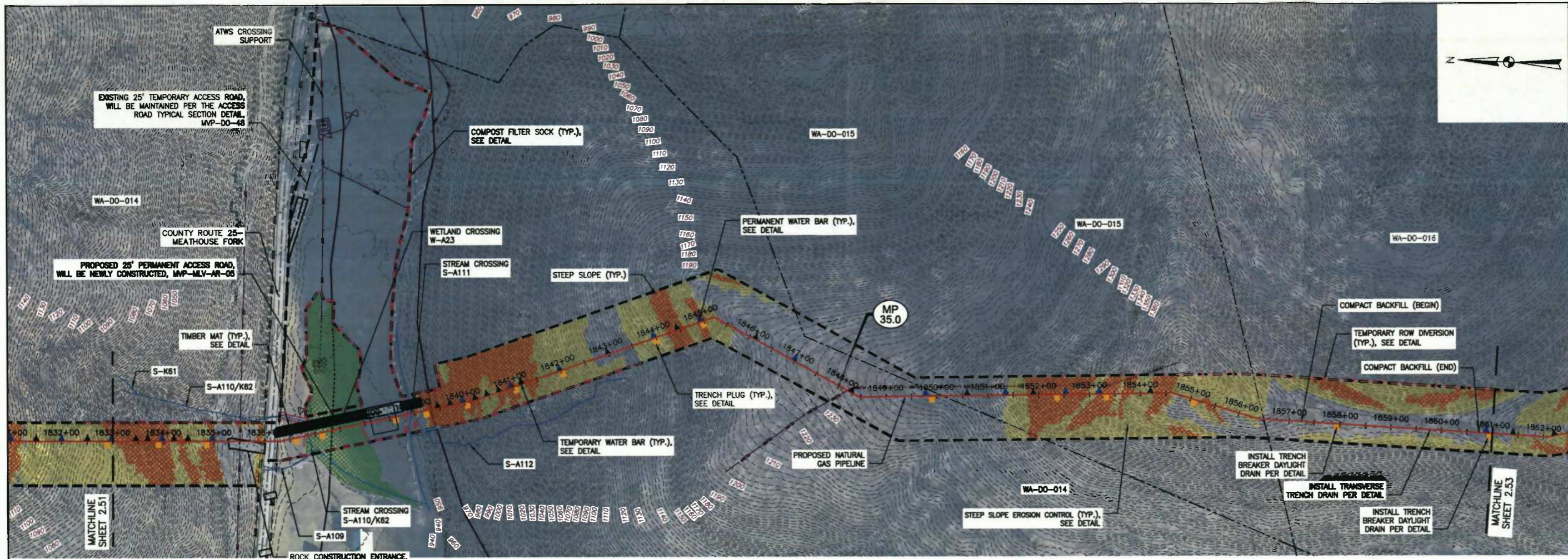
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**Mountain Valley**  
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**CONSTRUCTION PLANS**

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 SHEET NO. 2.03 OF 2.78



**LEGEND**

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

**ACCESS ROAD LEGEND**

① ROCK CONSTRUCTION ENTRANCE	③ STREAM CROSSING
② WETLAND 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. FLEXTERA 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.	APPR.	DESCRIPTION

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

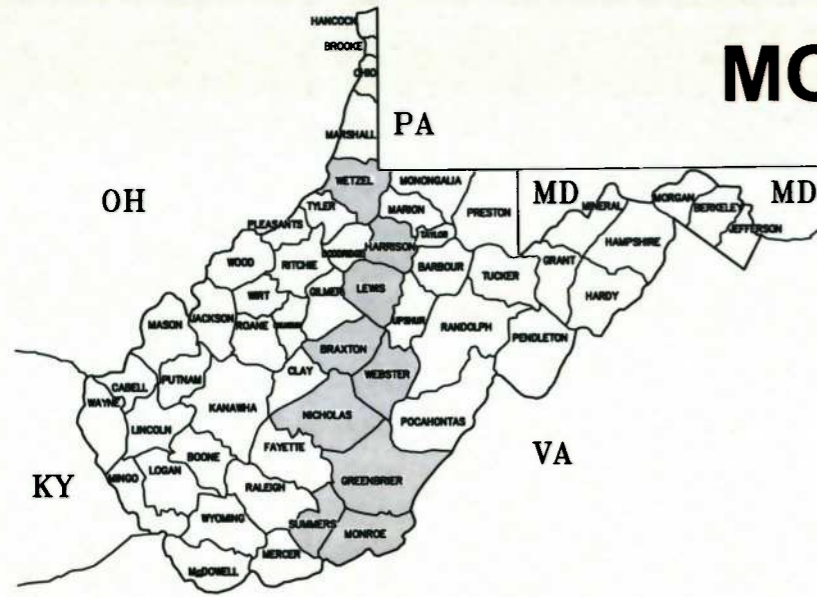
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# MOUNTAIN VALLEY PIPELINE, LLC

## 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.

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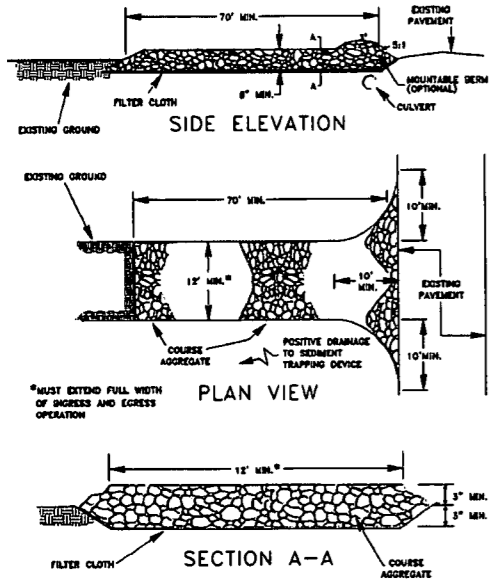
Mountain Valley Pipeline  
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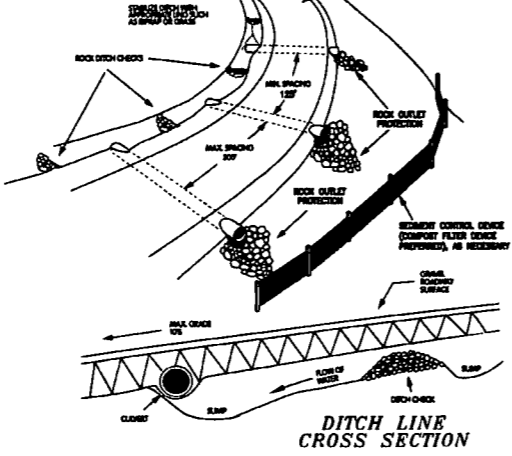
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**STONE CONSTRUCTION ENTRANCE**

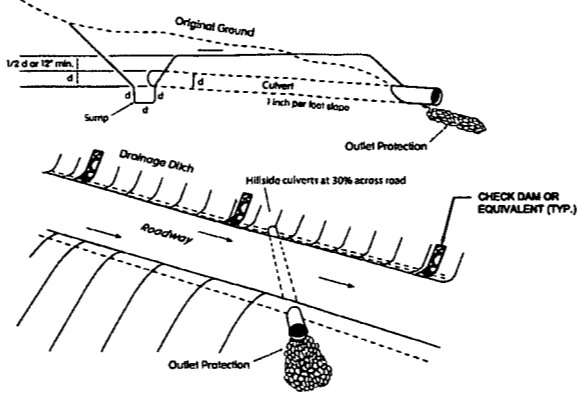


**STONE CONSTRUCTION ENTRANCE**  
TAKEN FROM 2008 MANUAL

**PERSPECTIVE VIEW**



**SEDIMENT AND EROSION CONTROL FOR ACCESS ROADS**  
TAKEN FROM 2012 MANUAL



**DITCH RELIEF CULVERT**  
TAKEN FROM 2012 MANUAL

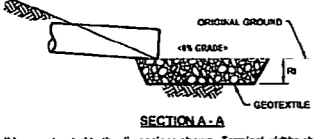
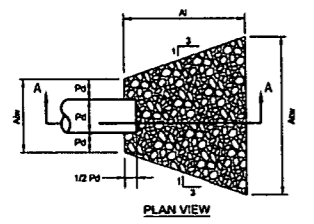
**Table 3.35.1**  
Average slope of watershed

Drainage area (acres)	Average slope of watershed			
	1%	4%	8%	16%
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.

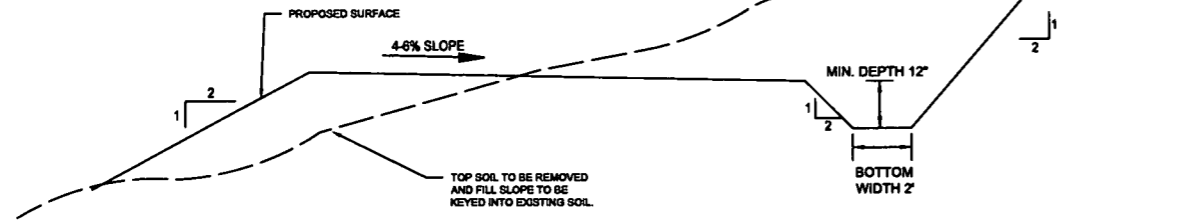
REFERENCE: WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER AND WASTE MANAGEMENT, EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, 2006.

**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 SEEDED 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 2008 MANUAL

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

REVISIONS:

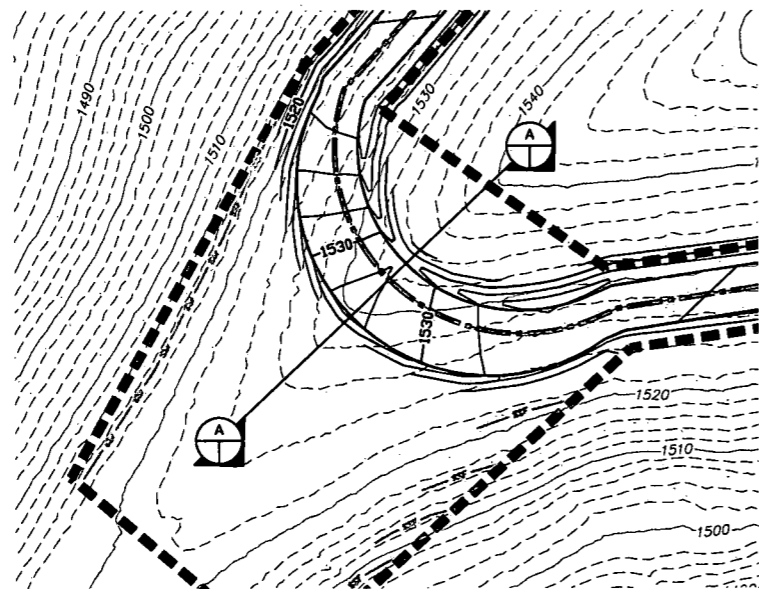
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Mountain Valley Pipeline  
EROSION AND SEDIMENT CONTROL DETAILS  
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE  
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA  
MOUNTAIN VALLEY PIPELINE, LLC  
555 SOUTHPOINTE BOULEVARD, SUITE 200  
CANONSBURG,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

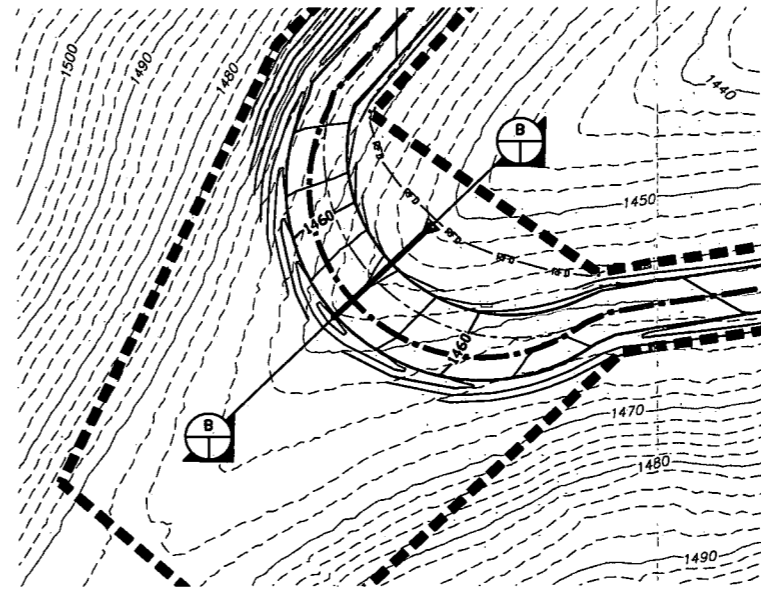
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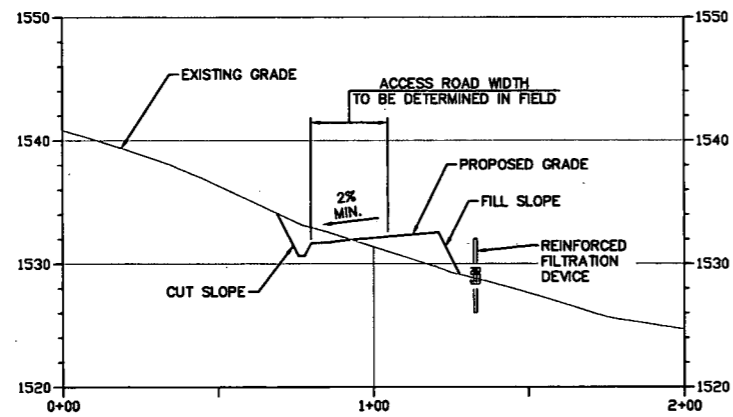
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PLAN VIEW  
SCALE 1" = 50'

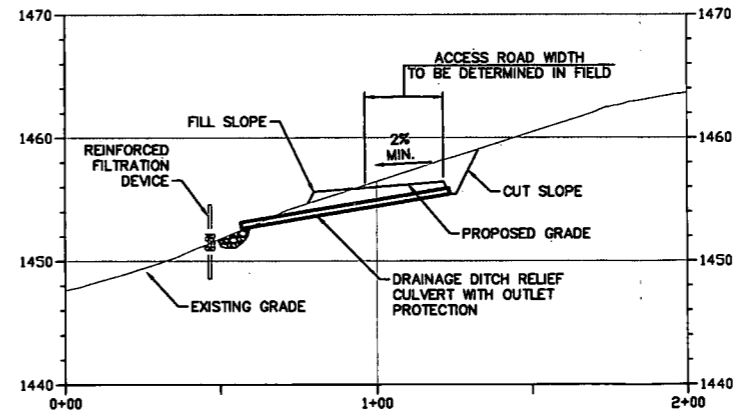


PLAN VIEW  
SCALE 1" = 50'



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	BY	CHKD.	APPL.	DESCRIPTION

Mountain Valley  
present  
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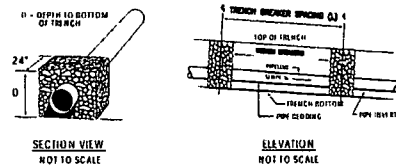
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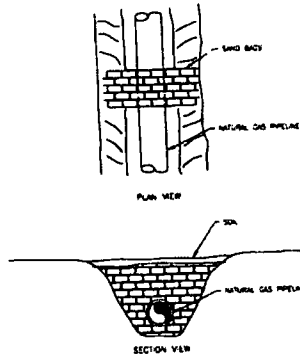
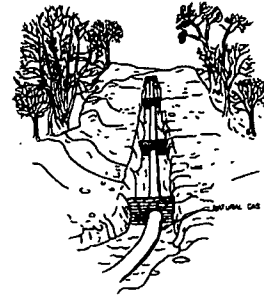
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REQUIRED SPACING AND MATERIALS FOR TRENCH BREAKERS		
TRENCH SLOPE (%)	SPACING (FEET)	BREAKER MATERIAL
< THAN 5	*	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
5 TO 15	500	EARTHEN FILL, SAND, OR CONCRETE FILLED SACKS
15 TO 25	300	EARTHEN FILL, SAND, 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.

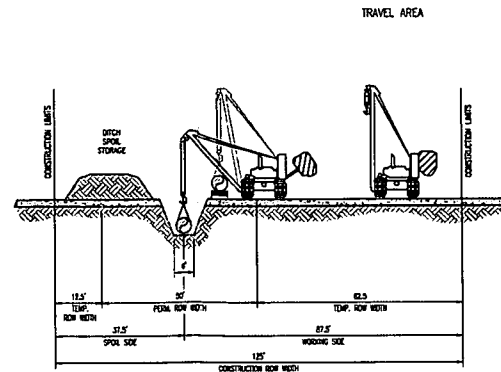
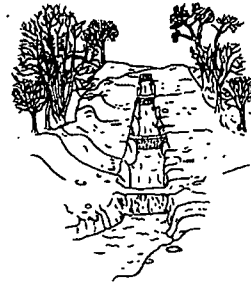


TRENCH BREAKER



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

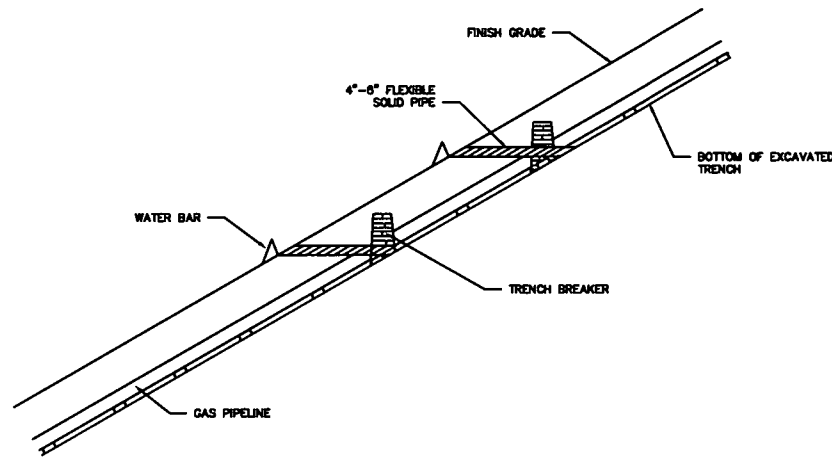
TRENCH PLUG



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.

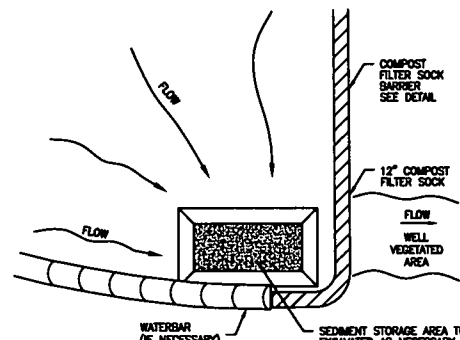
DRAWING ASSUMES TYPE "B" SOIL

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



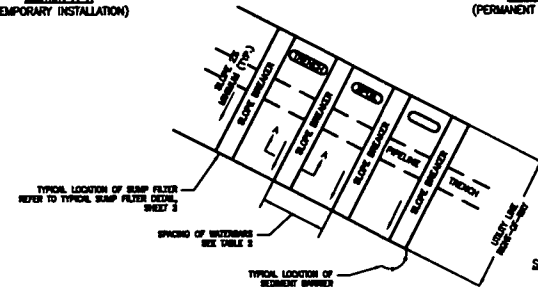
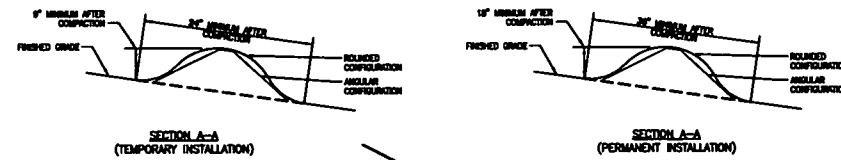
TRENCH DETAIL  
 N.T.S.

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



- 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.
  - SUMP FILTER 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



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, SHOULDER, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION. WATERBARS ON RETIRED ROADWAYS, SHOULDER, 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.

WATERBAR INSTALLATION DETAIL

REFERENCES:  
 WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006.  
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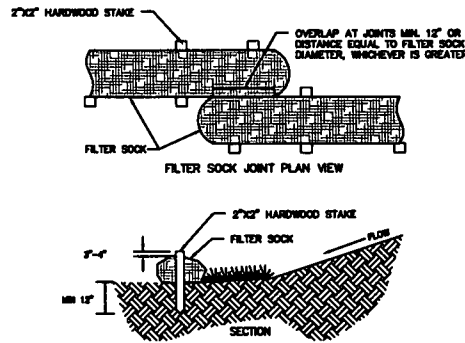
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SCALE:	AS SHOWN
SHT. NO.	0.03 OF 0.21



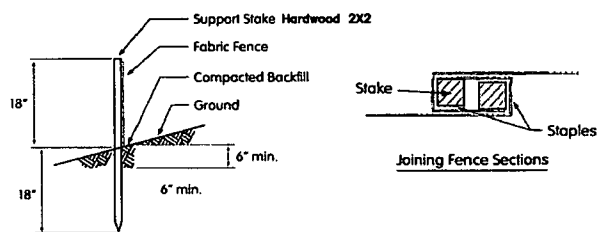
**NOTES:**

- 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.
- FILTER SOCKS SHALL BE 3 TO 5 MIL CONTINUOUS TUBULAR HDPE 8 INCHES KNOTTED MESH NETTING MATERIAL FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.
- FILTER SOCKS WILL 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.
- 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.
- MANUFACTURER'S SPECIFICATIONS ARE TO BE FOLLOWED WHEN JOINING FILTER SOCK SEGMENTS. PLAN VIEW ABOVE IS TO BE CONSIDERED A MINIMUM.
- 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.
- ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
- REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/2 OF THE EXPOSED HEIGHT OF THE PRACTICE.
- WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
- 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	250	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

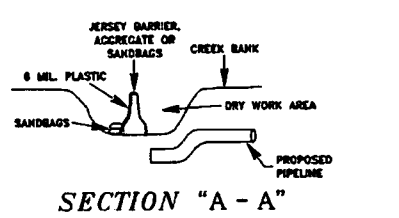
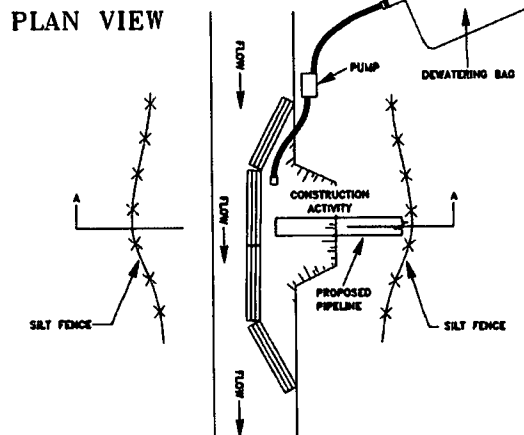
**MAXIMUM SLOPE LENGTH ABOVE COMPOST FILTER SOCK AND RECOMMENDED DIAMETER**

**COMPOST FILTER SOCK**



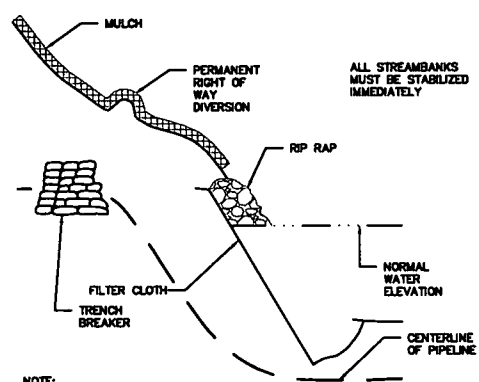
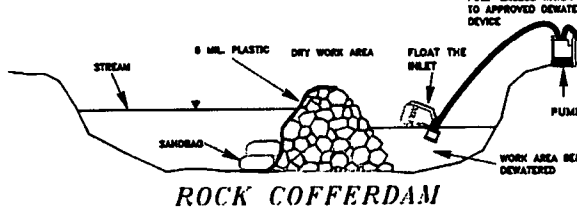
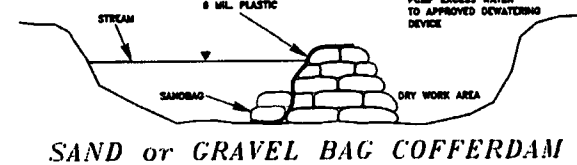
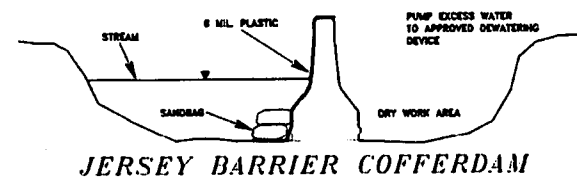
**SILT FENCE**  
TAKEN FROM 2008 MANUAL

**COFFERDAM CROSSING**

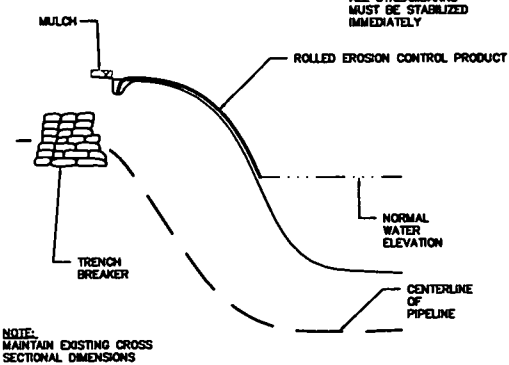


**COFFERDAM STREAM CROSSING**  
DEVELOPED FROM 2008 MANUAL

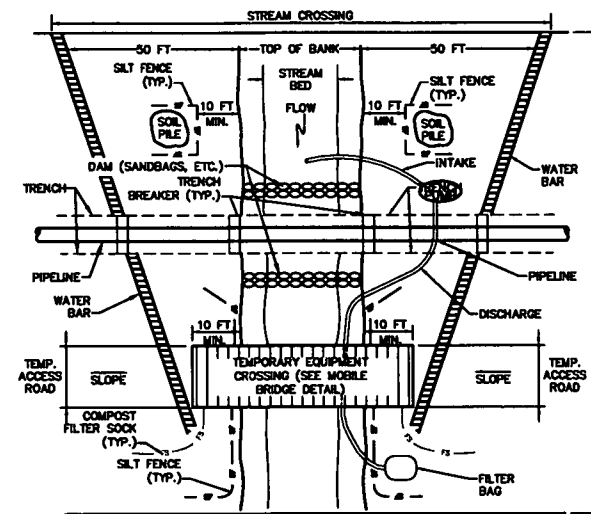
**COFFERDAMS**



**STREAM BANK STABILIZATION W/ RIP RAP**  
DEVELOPED FROM 2008 MANUAL

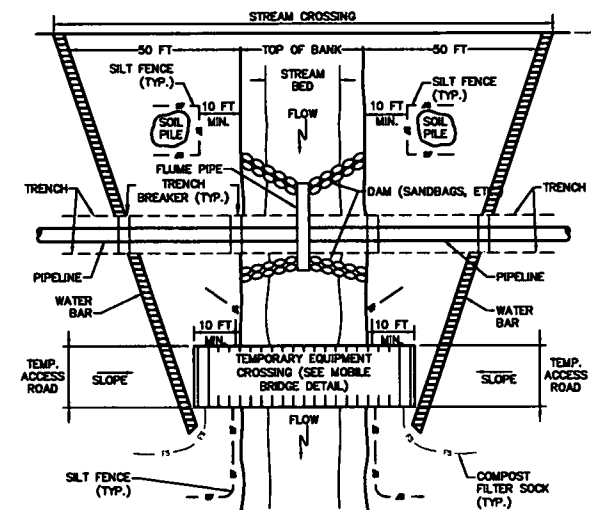


**STREAM BANK STABILIZATION W/R.E.C.P.**  
DEVELOPED FROM 2008 MANUAL



- PLAN VIEW**
- INSTALL COMPOST FILTER SOCKS, TRENCH BREAKERS, PUMP, ENERGY DISSIPATER, AND DAMS BEFORE TRENCHING STREAM.
  - 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.
  - PLACE SOIL PILES A MINIMUM OF 10 FEET FROM TOP OF BANK.
  - INSTALL WATER BARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCKS, SILT FENCE, OR SUPER SILT FENCE (AS INDICATED ON PLAN SHEETS).
  - MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
  - APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
  - RESTORE AREA TO APPROXIMATE ORIGINAL CONTOURS.

**TYPICAL STREAM CROSSING PUMP DIVERSION**



- PLAN VIEW**
- INSTALL COMPOST FILTER SOCKS, TRENCH PLUGS, PUMP, AND DAMS BEFORE TRENCHING STREAM.
  - 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.
  - PLACE SOIL PILES A MINIMUM OF 10 FEET FROM TOP OF BANK.
  - INSTALL WATER BARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCKS, SILT FENCE, OR SUPER SILT FENCE (AS INDICATED ON PLAN SHEETS).
  - ALONG STREAM BANKS AND DOWN-SLOPE END OF WATER BARS.
  - MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
  - APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
  - 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

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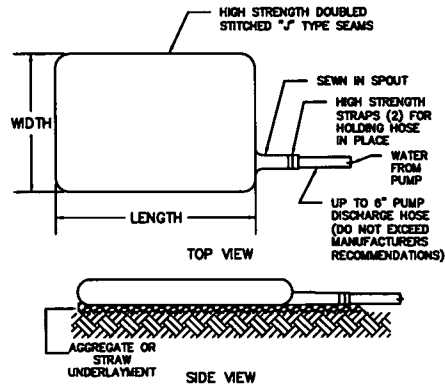
NO.	DATE	BY	CHKD	APPL	DESCRIPTION

Mountain Valley Pipeline  
**EROSION AND SEDIMENT CONTROL DETAILS**  
**MOUNTAIN VALLEY PIPELINE PROJECT - H800 LINE**  
 WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA  
**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

**CONSTRUCTION PLANS**

DRAWN BY:	KAL
CHECKED BY:	HT
APPROVED BY:	RE
DATE:	2/19/2018
SCALE:	AS SHOWN
SHT. NO.	0.04 OF 0.21

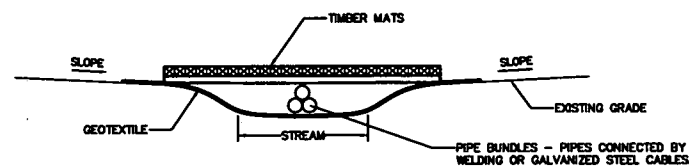


- NOTES:
1. THE BAG SHALL BE INSTALLED ON A VERY SLIGHT SLOPE SO INCOMING WATER FLOWS DOWNHILL THROUGH THE BAG WITHOUT CREATING MORE EROSION.
  2. THE NECK OF THE FILTER BAG SHALL BE TIGHTLY STRAPPED (MINIMUM TWO STRAPS) TO THE DISCHARGE HOSE.
  3. THE BAG SHOULD BE PLACED ON AN AGGREGATE BED TO MAXIMIZE 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 4854 OF 100 LB./IN.
  11. THE GEOTEXTILE FABRIC SHALL BE A NONWOVEN FABRIC WITH THE FOLLOWING PROPERTIES:

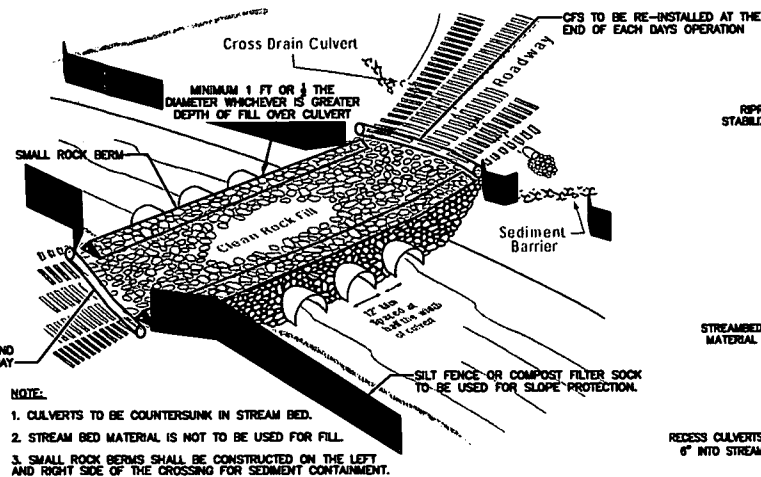
PROPERTIES	TEST METHOD	ENGLISH	METRIC
GRAB TENSILE	ASTM D-4853	250 LBS.	113 KG
PUNCTURE	ASTM D-4813	165 LBS.	75 KG
FLOW RATE	ASTM D-4491	70 GAL/MIN/50 FT	25 LITERS/MIN/30 METER
PERMEABILITY	ASTM D-4491	1.3 SEC.-1	1.3 SEC.-1
MULLENBURST	ASTM D-3785	350 LBS./SQ INCH	3.79 MPa
UV RESISTANT	ASTM D-4355	70%	70%
AOS % RETAINED	ASTM D-4751	100%	100%

\*ALL PROPERTIES ARE MINIMUM AVERAGE ROLL VALUE

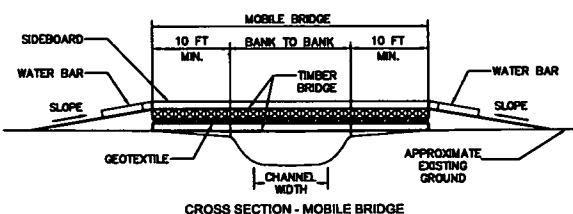
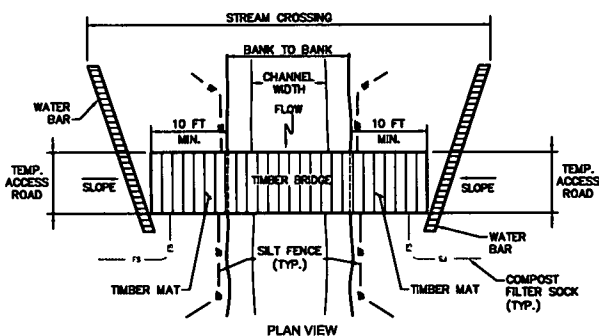
DEWATERING BAG  
DEVELOPED FROM 2006 MANUAL



TIMBER MAT AND PIPE BUNDLE  
TEMPORARY STREAM CROSSING

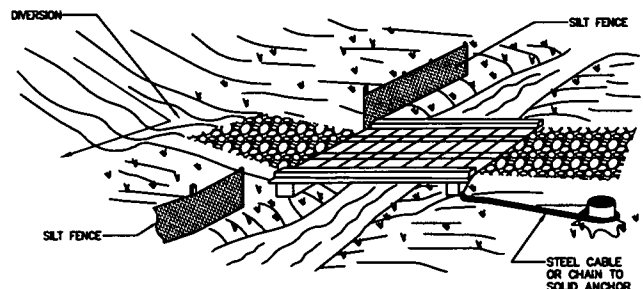


TYPICAL E&S CONTROL FOR STREAM CROSSINGS  
TAKEN FROM 2012 MANUAL

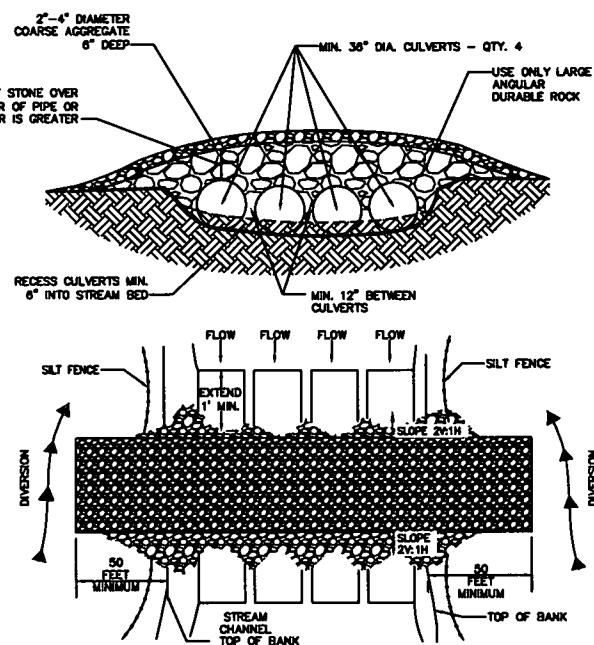


- NOTES:
1. INSTALL WATER BARS OR SILT FENCE AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCKS ALONG STREAM BANKS. INSTALL COMPOST FILTER SOCK AT OUTLET OF WATER BARS.
  2. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
  3. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
  4. GEOTEXTILE LINER TO COME UP ON THE SIDES OF THE BRIDGE A MINIMUM OF 18".
  5. SIDEBOARDS TO BE ATTACHED TO THE UPPER DECK. GEOTEXTILE TO BE WRAPPED AROUND SIDEBOARDS PRIOR TO FASTENING.

MOBILE BRIDGE

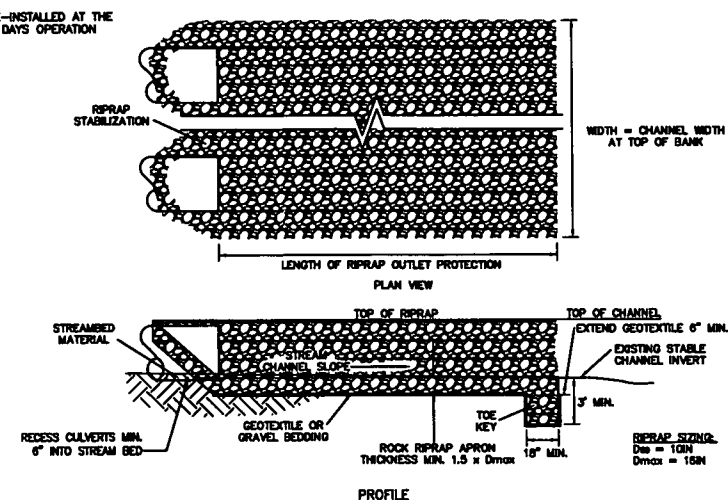


TEMPORARY BRIDGE STREAM CROSSING DETAIL



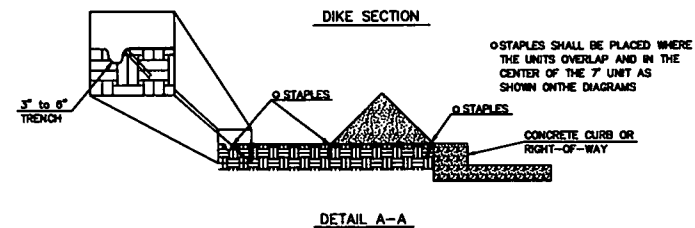
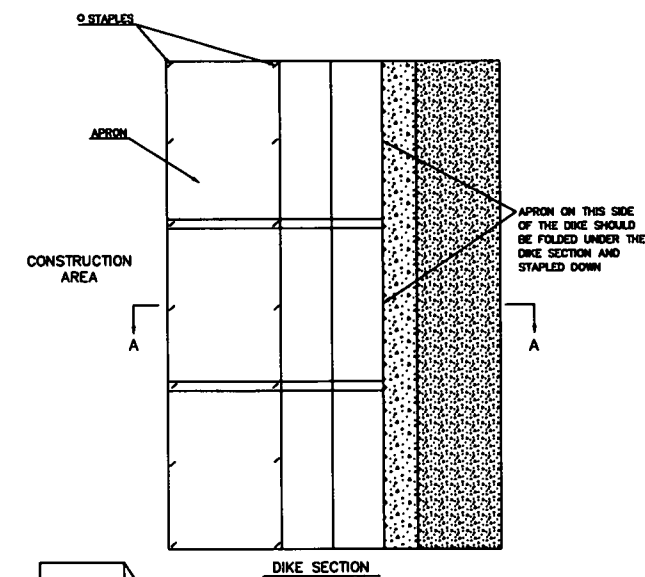
- NOTES:
1. 2" TO 4" COARSE AGGREGATE OR LARGER WILL BE USED TO FORM THE CROSSING. DO NOT USE ERODIBLE MATERIAL FOR CONSTRUCTION OF THE CROSSING. THE DEPTH OF STONE COVER OVER THE CULVERT SHALL BE EQUAL TO ONE-HALF THE DIAMETER OF THE CULVERT OR 12", WHICHEVER IS GREATER. IF MULTIPLE CULVERTS ARE USED, THEY SHALL BE SEPARATED BY AT LEAST 12" OF COMPACTED AGGREGATE FILL TO PROTECT THE SIDES OF THE STONE FROM EROSION. RIPRAP SHALL BE USED. STREAM BED MATERIAL IS NOT TO BE USED FOR FILL.
  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" - 4"
    - 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, A 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" AND MAX. OF 1' BEYOND THE END OF THE CULVERT AND BEDDING MATERIAL.
  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. 87'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 STREAM 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



TEMPORARY SILT DIKE INSTALLATION FOR  
CONTINUOUS BARRIER  
SOURCE ACF ENVIRONMENTAL

REFERENCES:  
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006.  
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-25-2010.  
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012

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DESCRIPTION:	
DATE:	
DRAWN:	
CHECKED:	
APPROVED:	
SCALE:	AS SHOWN
SHT. NO.	0.05 OF 0.21

REVISIONS:

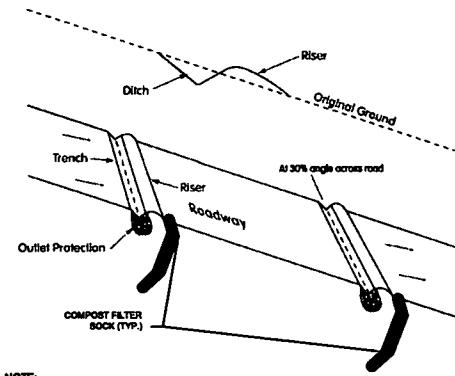
NO.	DATE	BY	DESCRIPTION

Mountain Valley Pipeline  
EROSION AND SEDIMENT CONTROL DETAILS  
MOUNTAIN VALLEY PIPELINE PROJECT - H800 LINE  
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA  
MOUNTAIN VALLEY PIPELINE, LLC  
555 SOUTHPOINTE BOULEVARD, SUITE 200  
CANONSBURG, PA 15317

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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. 0.05 OF 0.21

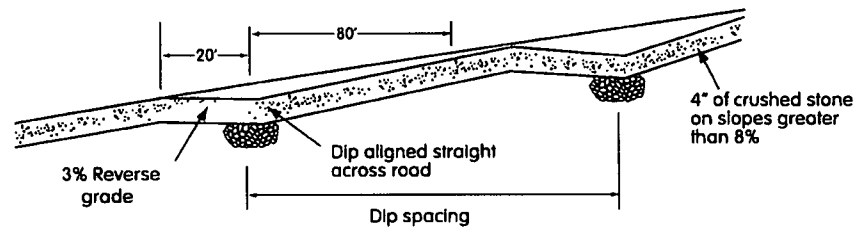


NOTE:  
APPROPRIATELY SIZED COMPOST FILTER SOCK TO BE USED AS SEDIMENT CONTROL DEVICE ON WATER BAR OUTLETS. REFER TO RECOMMENDED DIAMETER TABLE ON SHEET 4.

**CROSS DRAIN/WATER BAR**  
TAKEN FROM 2012 MANUAL

Table II-4 Spacing of Broad-Based Dips

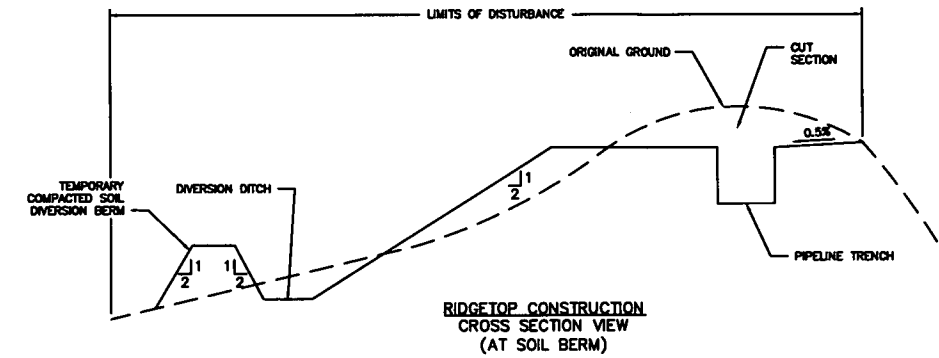
Road Grade (%)	Distance Between Drains (Ft)
2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140



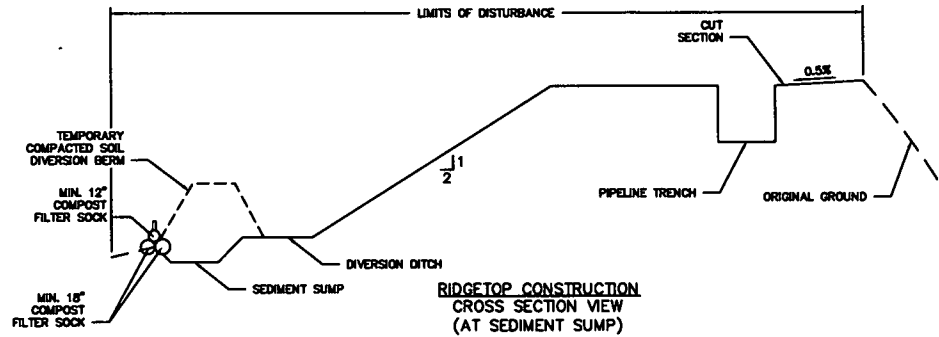
DESCRIPTION: A CONSTRUCTED DIP OR SWALE, ACROSS THE ROAD SURFACE, SLOPED TO THE OUTSLOPE FOR DRAINAGE OF THE ROAD SURFACE.

- 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 UPGRADE 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.

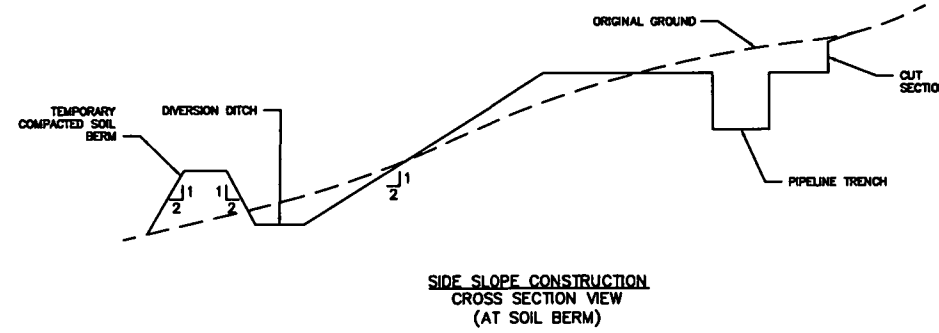
**BROAD BASED DIP DETAIL**  
N.T.S.



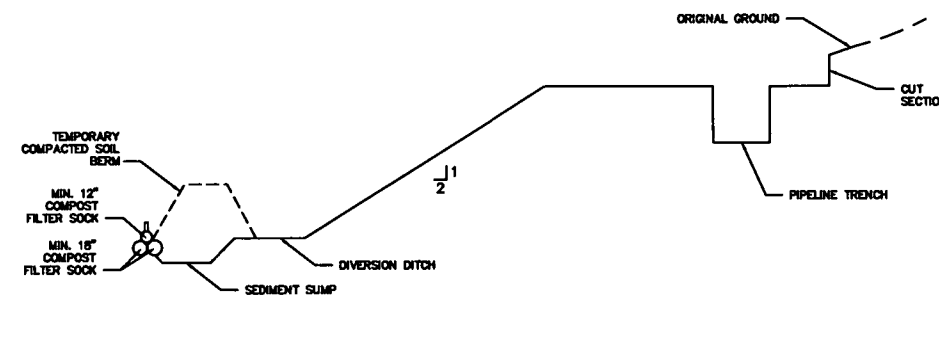
**RIDGETOP CONSTRUCTION CROSS SECTION VIEW (AT SOIL BERM)**



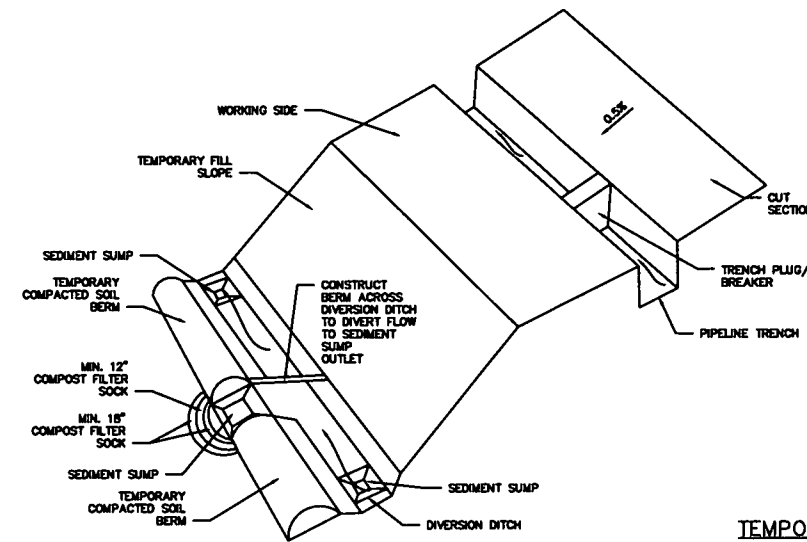
**RIDGETOP CONSTRUCTION CROSS SECTION VIEW (AT SEDIMENT SUMP)**



**SIDE SLOPE CONSTRUCTION CROSS SECTION VIEW (AT SOIL BERM)**

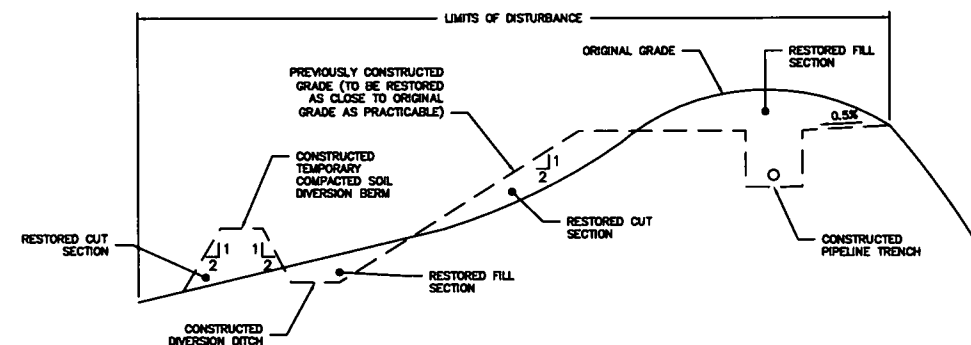


**SIDE SLOPE CONSTRUCTION CROSS SECTION VIEW (AT SEDIMENT SUMP)**

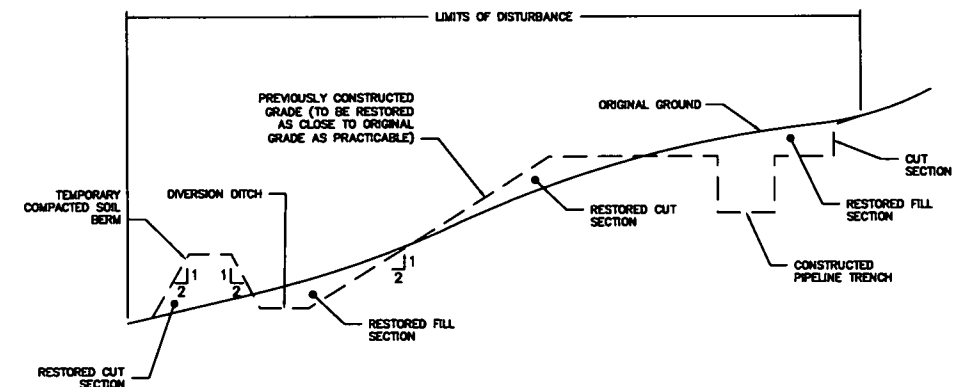


**TEMPORARY RIGHT OF WAY DIVERSION AND OUTLET DETAIL**  
N.T.S.

- NOTES:
1. 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.
  2. MULCHING SHALL BE USED TO STABILIZE THE TEMPORARY COMPACTED SOIL BERM, DIVERSION DITCH, AND TEMPORARY FILL SLOPE.
  3. REFER TO LANDSLIDE MITIGATION PLAN DETAILS FOR TRENCH BREAKER OUTLETS AND LOWPOINT DRAINAGE DETAILS.
  4. TEMPORARY FILL SLOPE TO BE CONSTRUCTED NO STEEPER THAN 2H:1V.
  5. SIDE SLOPES OF TEMPORARY SOIL BERM AND DIVERSION DITCH SHALL BE NO STEEPER THAN 2H:1V.
  6. 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 RECONSTRUCTION DETAIL**  
N.T.S.



**POST CONSTRUCTION SIDE SLOPE RECONSTRUCTION DETAIL**  
N.T.S.

- REFERENCES:
- WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006.
  - WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-25-2010.
  - WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012

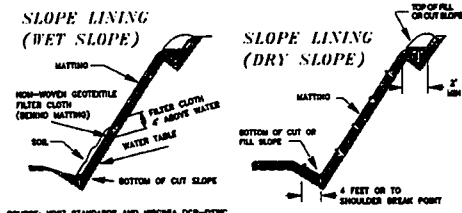
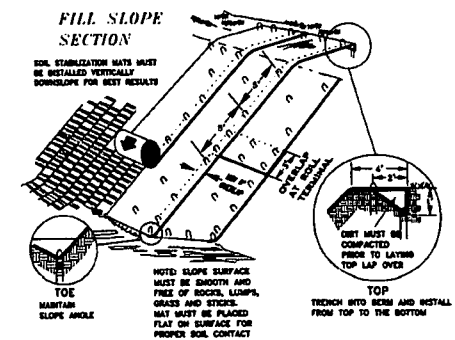
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Mountain Valley  
EROSION AND SEDIMENT CONTROL DETAILS  
MOUNTAIN VALLEY PIPELINE PROJECT - H800 LINE  
WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA  
MOUNTAIN VALLEY PIPELINE, LLC  
555 SOUTHPOINTE BOULEVARD, SUITE 200  
CANONSBURG, PA 15317

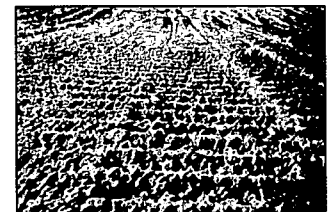
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CONSTRUCTION PLANS

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



**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 THE BFM SHOULD BE APPLIED AT A RATE OF 3,000 LBS/ACRE. STEEPER SLOPES MAY NEED AS MUCH AS 4,000 LBS/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 DISLODGED SEDIMENT THAT WILL SIGNIFICANTLY REDUCE RUNOFF TURBIDITY. PROPERLY APPLIED, A PSFM MAY BE AS MUCH AS 99% EFFECTIVE.

**Typical Polymer Stabilized Fiber Matrix Application Rates**

Maximum Rainfall of 5 30"	SLOPE						
	6:1	5:1	4:1	3:1	2:1	1.5:1	1:1
Soil Stabilizer (gal/acre)	4	5	6	7	8	9	10
Fiber (lb/acre)	1,500	1,500	1,500	1,800	2,000	2,500	3,000

Maximum Rainfall of > 30" and for Site Whitewashing	SLOPE		
	6:1	4:1	3:1
Soil Stabilizer (gal/acre)	8	8	10
Fiber (lb/acre)	2,000	2,500	3,000

**NOTES:**

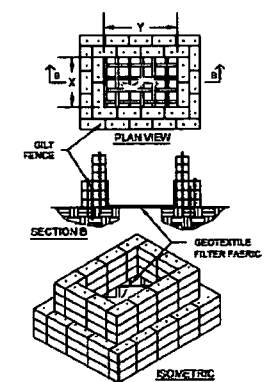
UNLIKE ROLLED BLANKETS, THERE IS NO NEED TO SMOOTH THE SLOPE PRIOR TO APPLICATION OF HYDRAULICALLY APPLIED BLANKETS. IN FACT SOME ROUGHENING OF THE SURFACE, EITHER NATURAL OR MECHANICALLY INDUCED, IS PREFERABLE. HOWEVER, LARGE ROCKS, THOSE > 9 INCHES, AND EXISTING RILLS SHOULD BE REMOVED PRIOR TO APPLICATION. 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, FOM, OR PSFM SHOULD BE SPRAYED OVER THE AREA AT THE REQUIRED APPLICATION RATE. (SEE ABOVE TABLES)

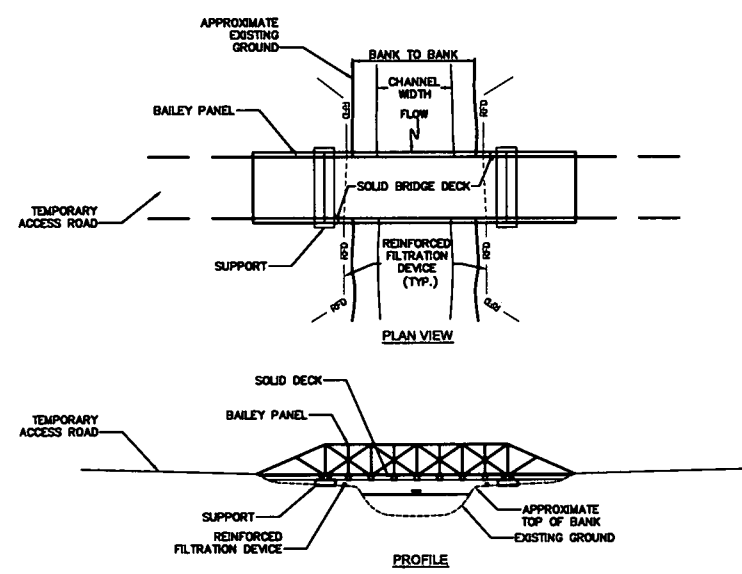
**BONDED FIBER MATRIX**

**STEEP SLOPE EROSION CONTROL OPTIONS**

MINIMUM SLUMP DIMENSIONS (FEET)		MAXIMUM PUMPING RATE (GALLONS PER MINUTE)
X	Y	
10	20	300
15	20	350
20	20	400
20	25	450
25	25	500
25	30	550
30	30	600



**TYPICAL BALE DEWATERING STRUCTURE**



**MODULAR TEMPORARY BAILEY BRIDGE**

**REFERENCES:**  
WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL, DATED 2006.  
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DRAFT DATED 7-20-2010.  
WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012

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Mountain Valley  
PROJECT

**EROSION AND SEDIMENT CONTROL DETAILS**

**MOUNTAIN VALLEY PIPELINE PROJECT - H800 LINE**

WETZEL COUNTY THROUGH MONROE COUNTY, WEST VIRGINIA

**MOUNTAIN VALLEY PIPELINE, LLC**

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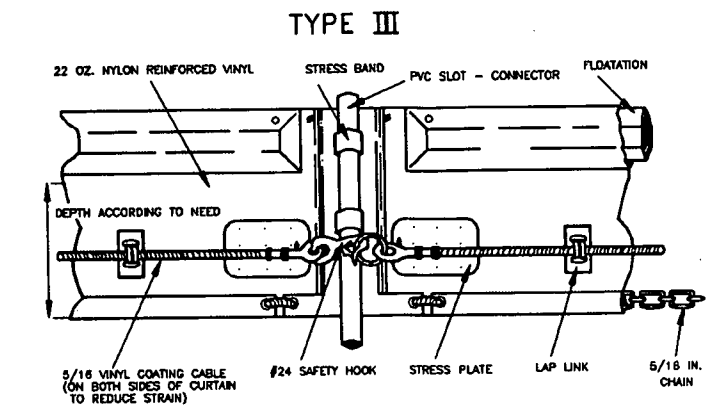
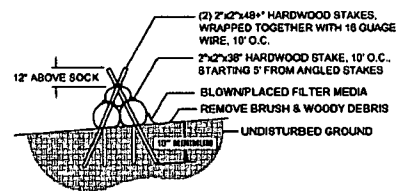
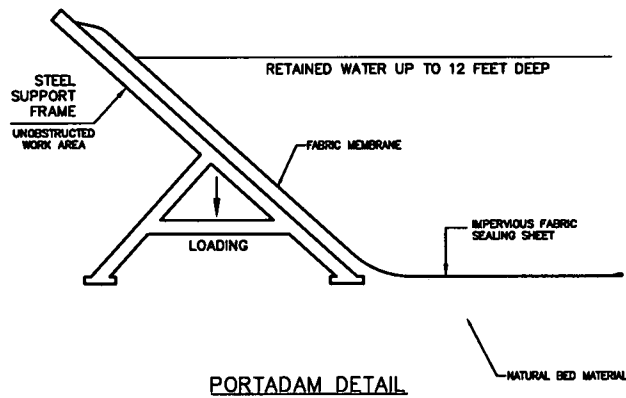
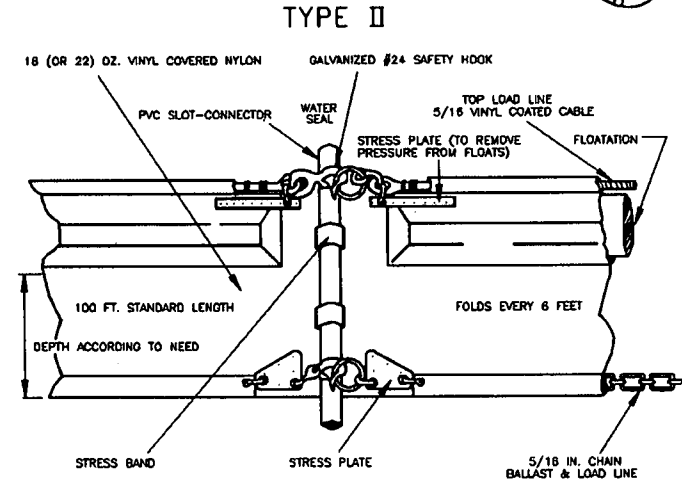
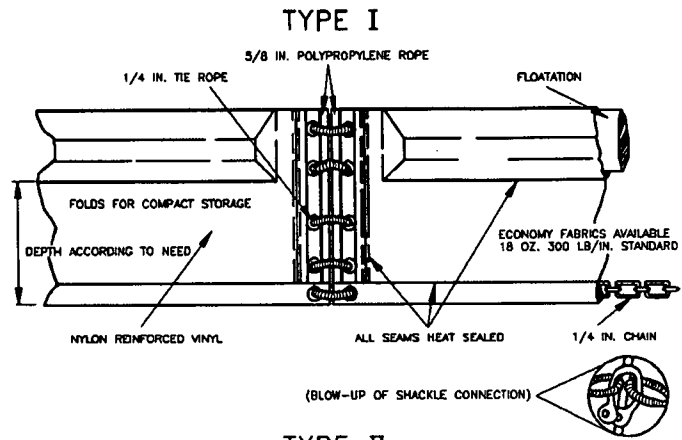
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DATE: 2/19/2016

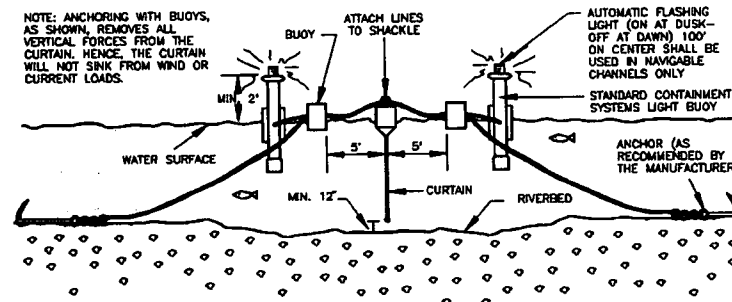
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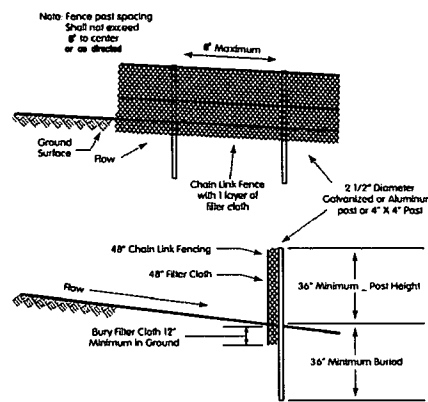




**ORIENTATION WHEN INSTALLED (TIDAL SITUATION - TYPE III)**



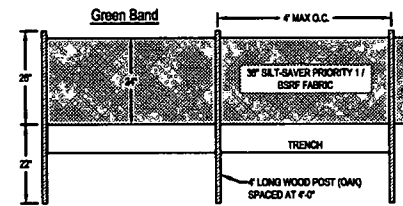
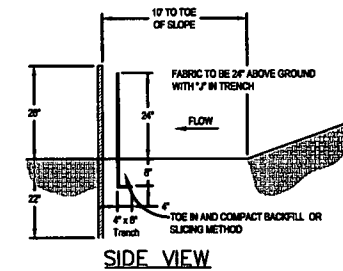
**TURBIDITY CURTAIN DETAIL DEVELOPED FROM 2006 MANUAL**



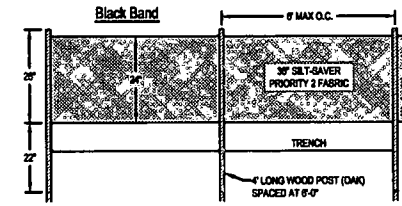
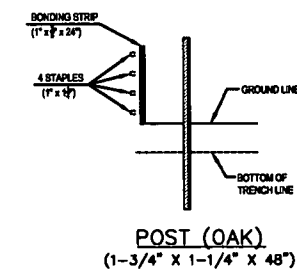
**SUPER SILT FENCE**  
TAKEN FROM 2006 MANUAL

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

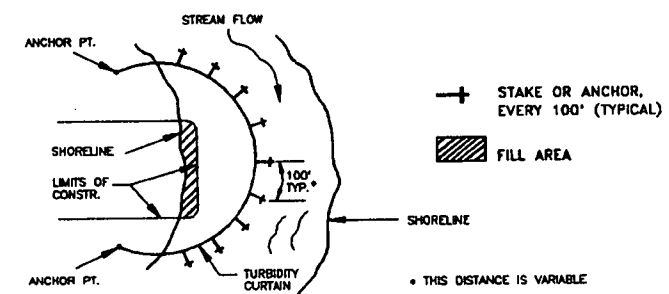
**REINFORCED FILTRATION DEVICES (RFD) (STACKED CFS, SUPER SILT FENCE, BELTED SILT RETENTION FENCE)**



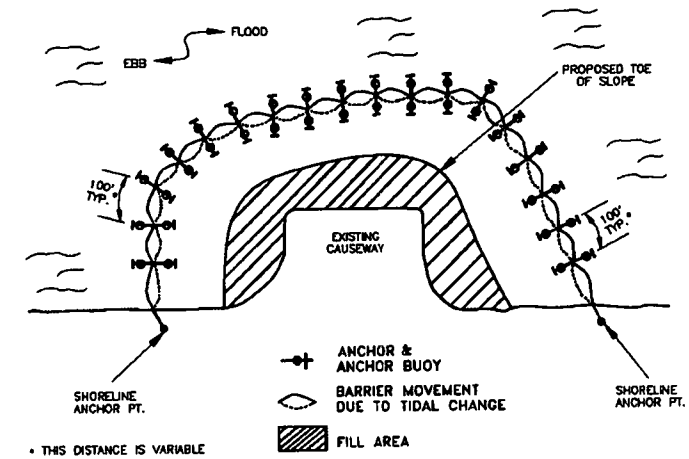
**BELTED SILT RETENTION FENCE (BSRF)**  
TAKEN FROM SILT-SAVER, INC OR EQUAL



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



**TIDAL WATERS AND/OR HEAVY WIND & WAVE ACTION**



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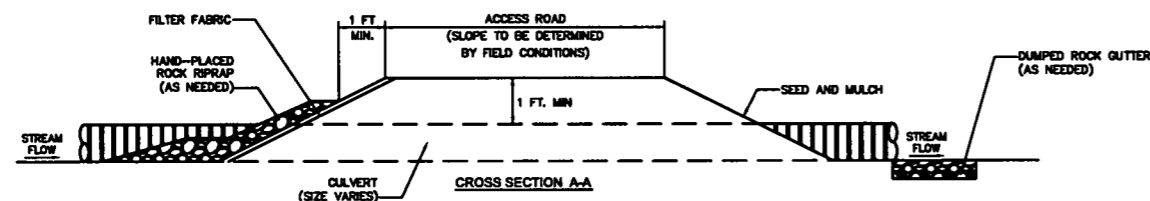
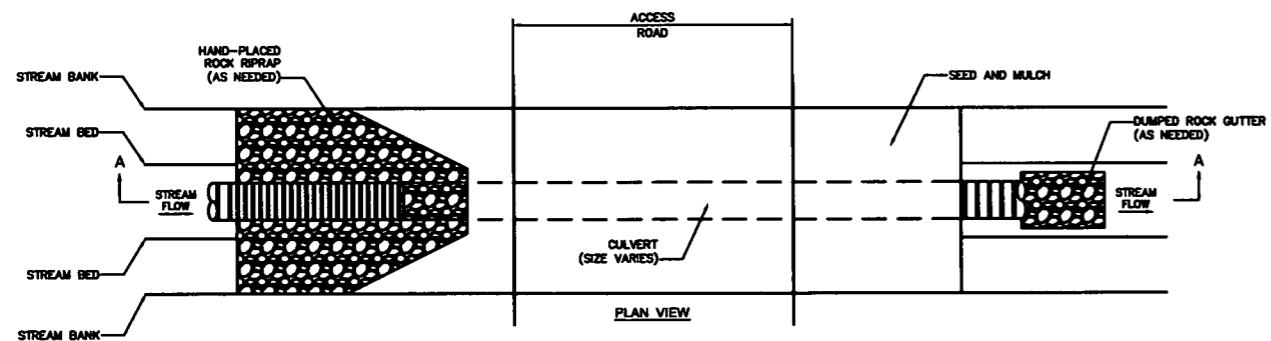
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EROSION AND SEDIMENT CONTROL DETAILS  
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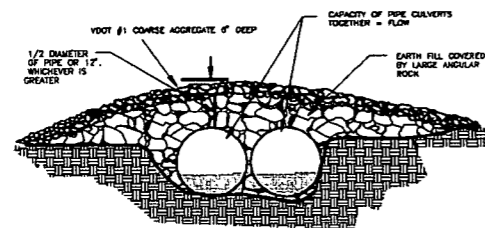
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REFERENCES:  
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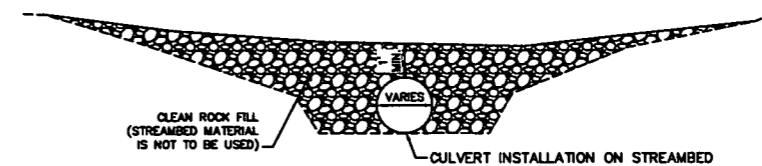


CULVERT SHALL BE DEPRESSED A MINIMUM OF 6 INCHES INTO STREAM BED TO ENSURE UPSTREAM AND DOWNSTREAM CONNECTIVITY

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.

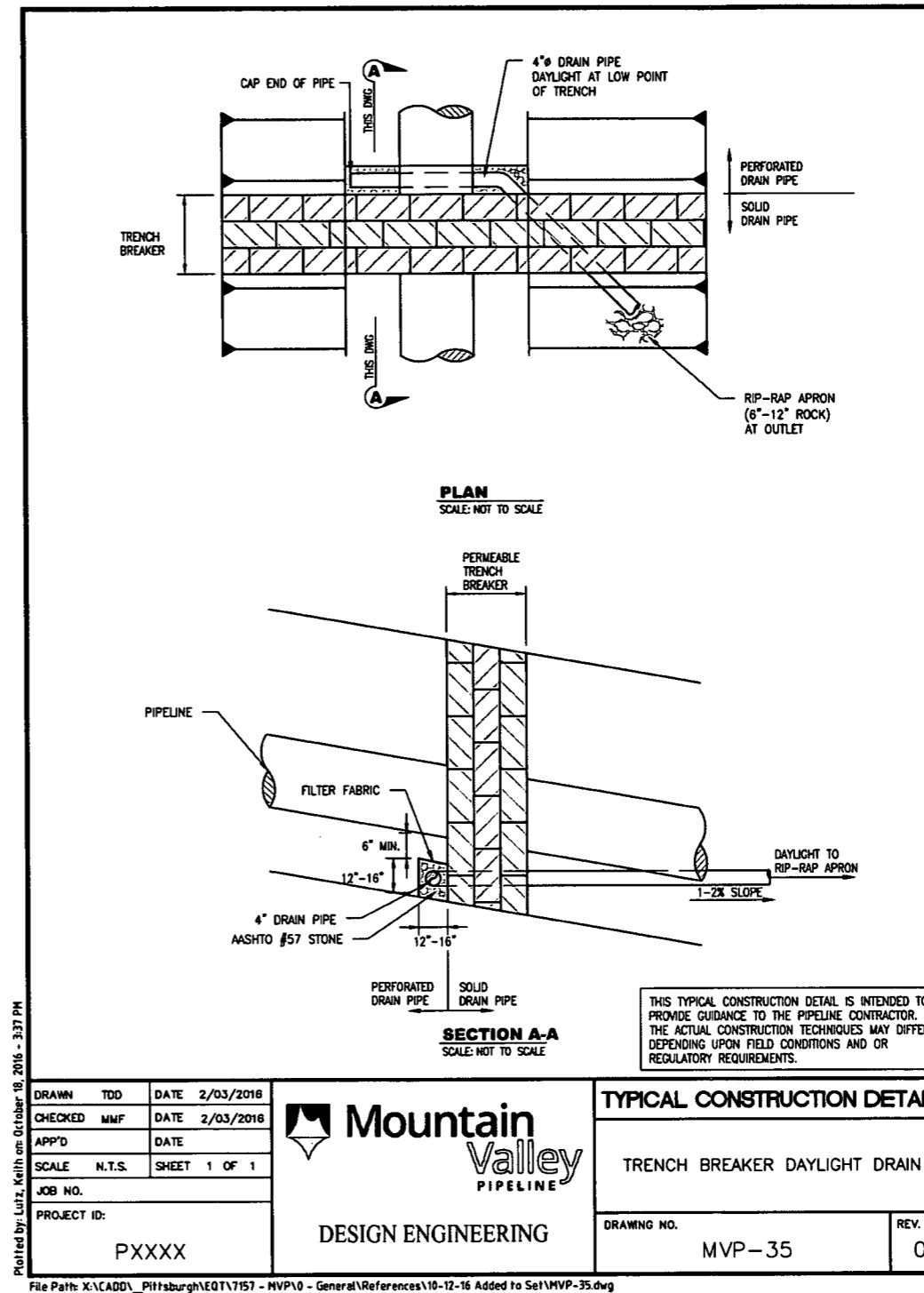
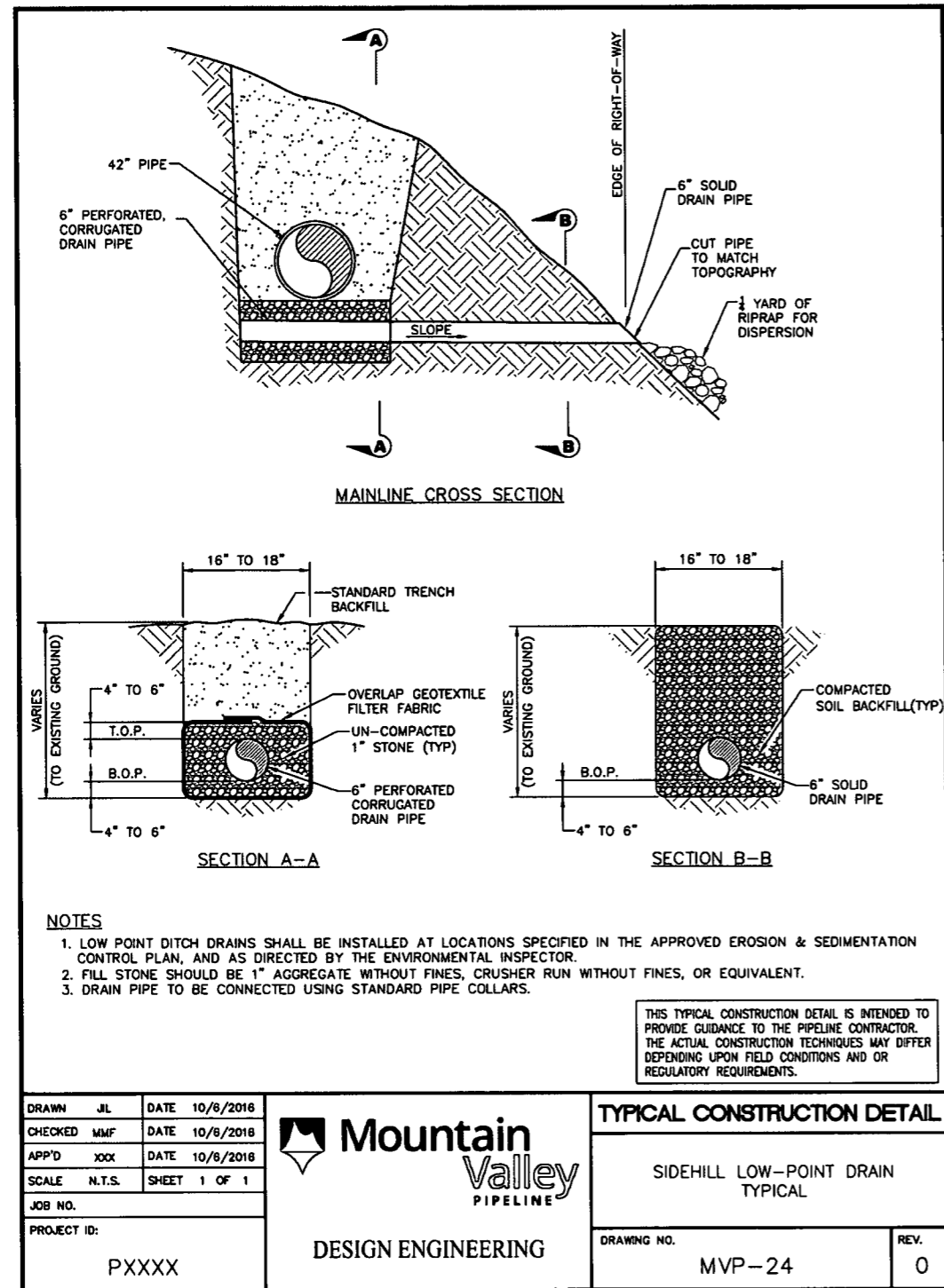
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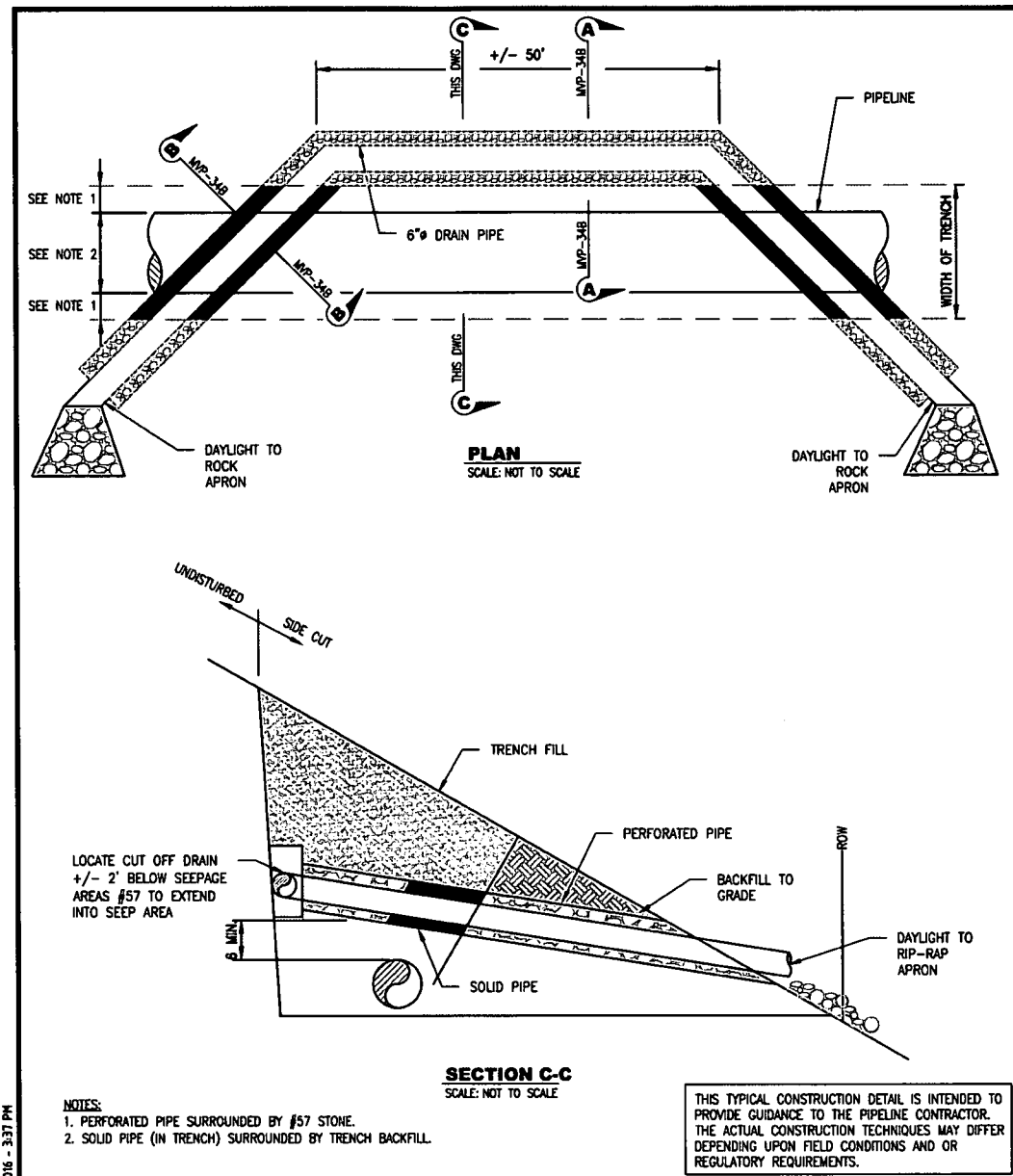
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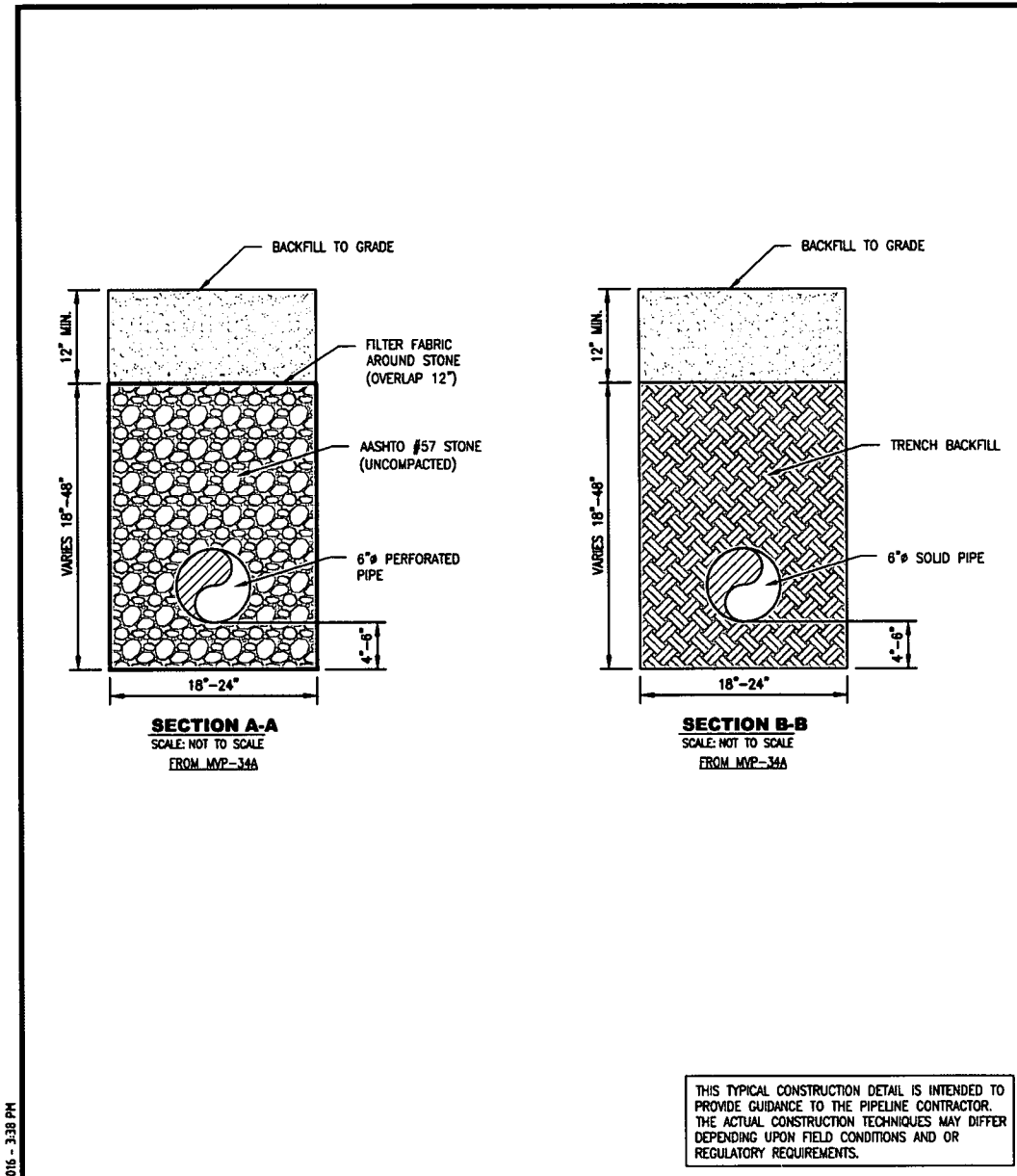
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PROJECT ID:	PXXXX		

**Mountain Valley PIPELINE**  
DESIGN ENGINEERING

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

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**Mountain Valley PIPELINE**  
DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
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DRAWING NO.	REV.
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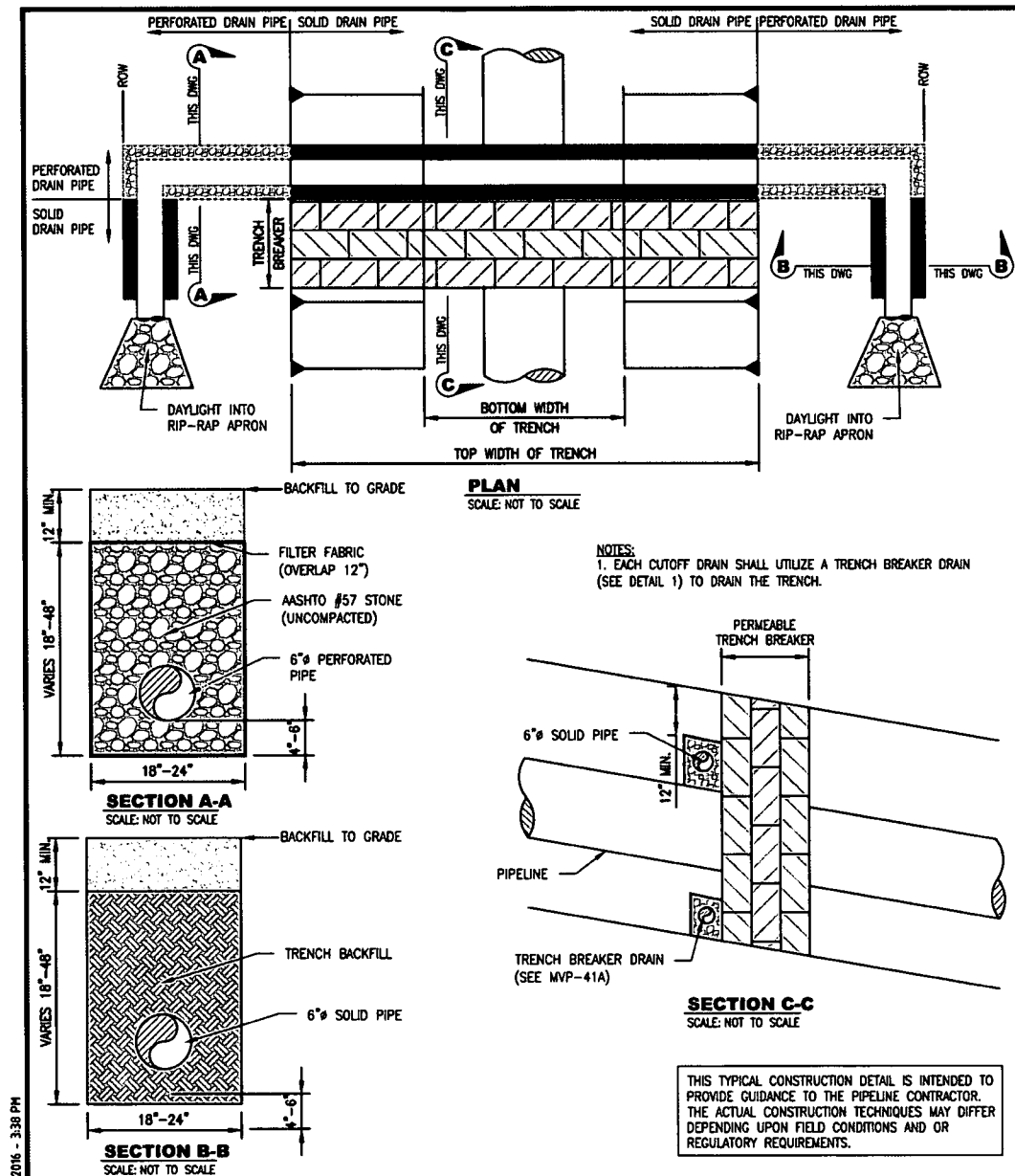
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**Mountain Valley PIPELINE**  
EROSION AND SEDIMENT CONTROL DETAILS  
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE  
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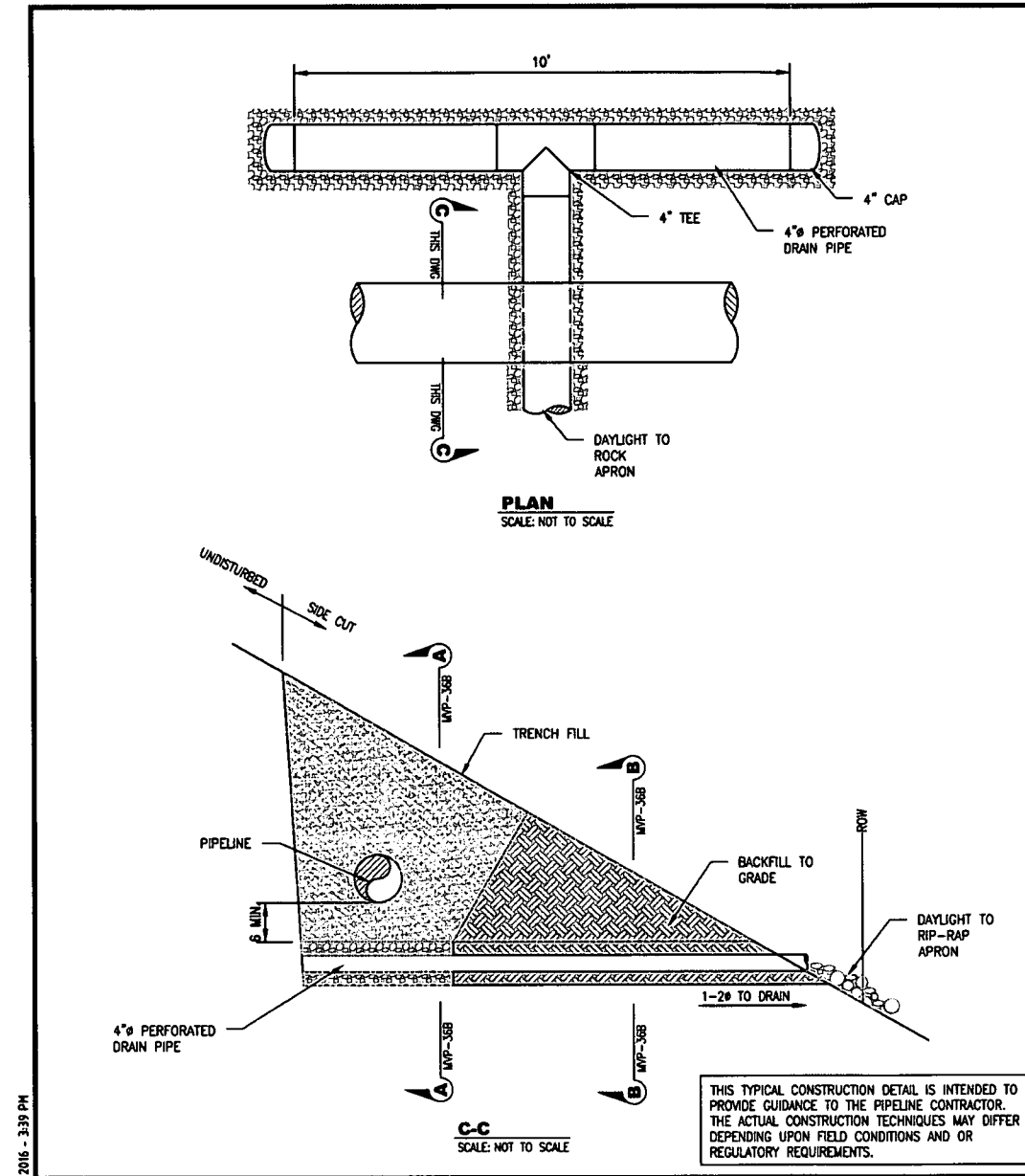
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SCALE	N.T.S.	SHEET	1 OF 1
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DESIGN ENGINEERING

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

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
TRANSVERSE TRENCH DRAIN	
DRAWING NO.	MVP-38A
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SLIP PREVENTION DETAIL

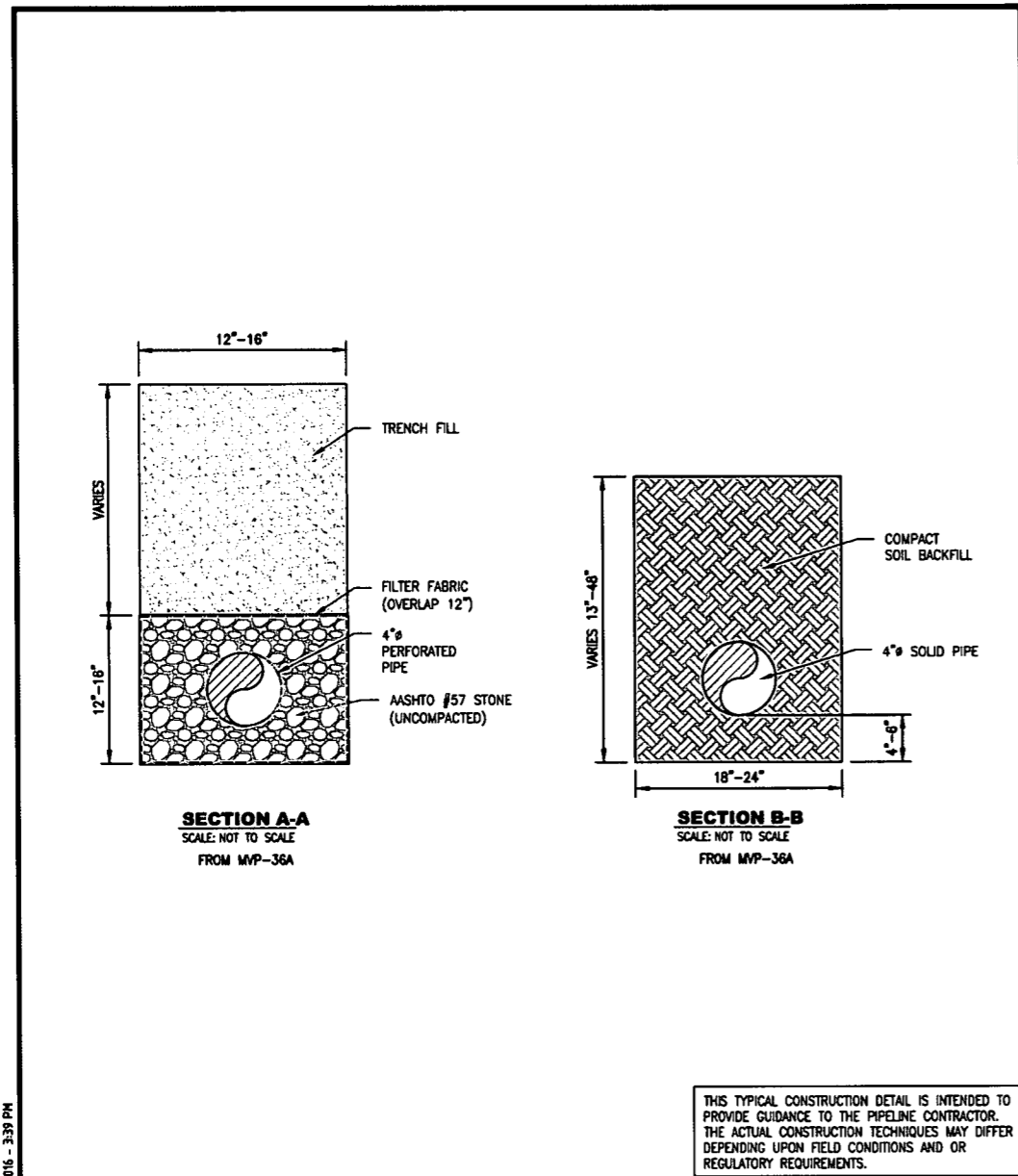
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Mountain Valley Pipeline  
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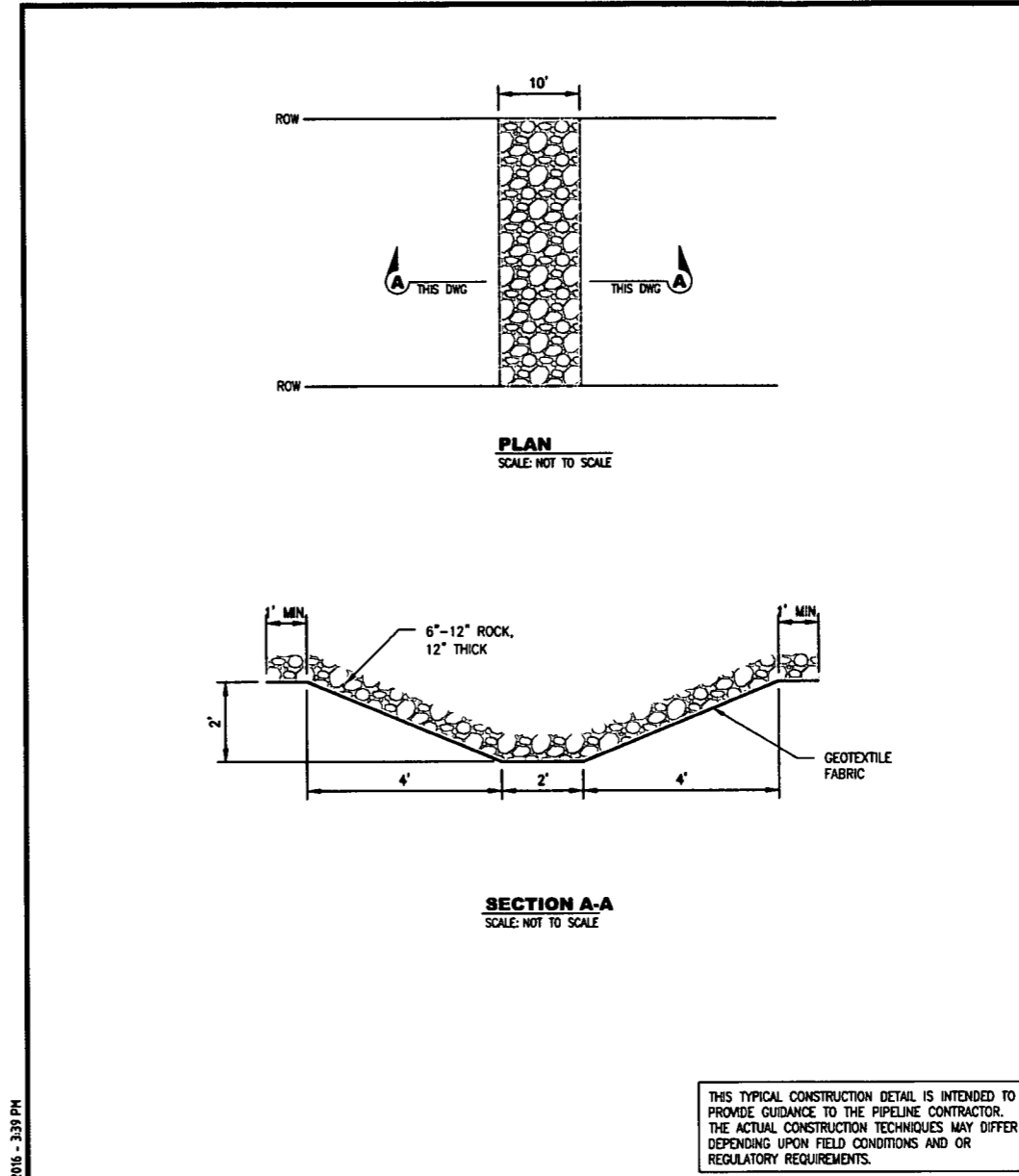
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**Mountain Valley PIPELINE**

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TYPICAL CONSTRUCTION DETAIL	
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DRAWING NO.	MVP-38B
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**Mountain Valley PIPELINE**

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
ROCK LINED SWALE	
DRAWING NO.	MVP-39
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**Mountain Valley PIPELINE**

EROSION AND SEDIMENT CONTROL DETAILS

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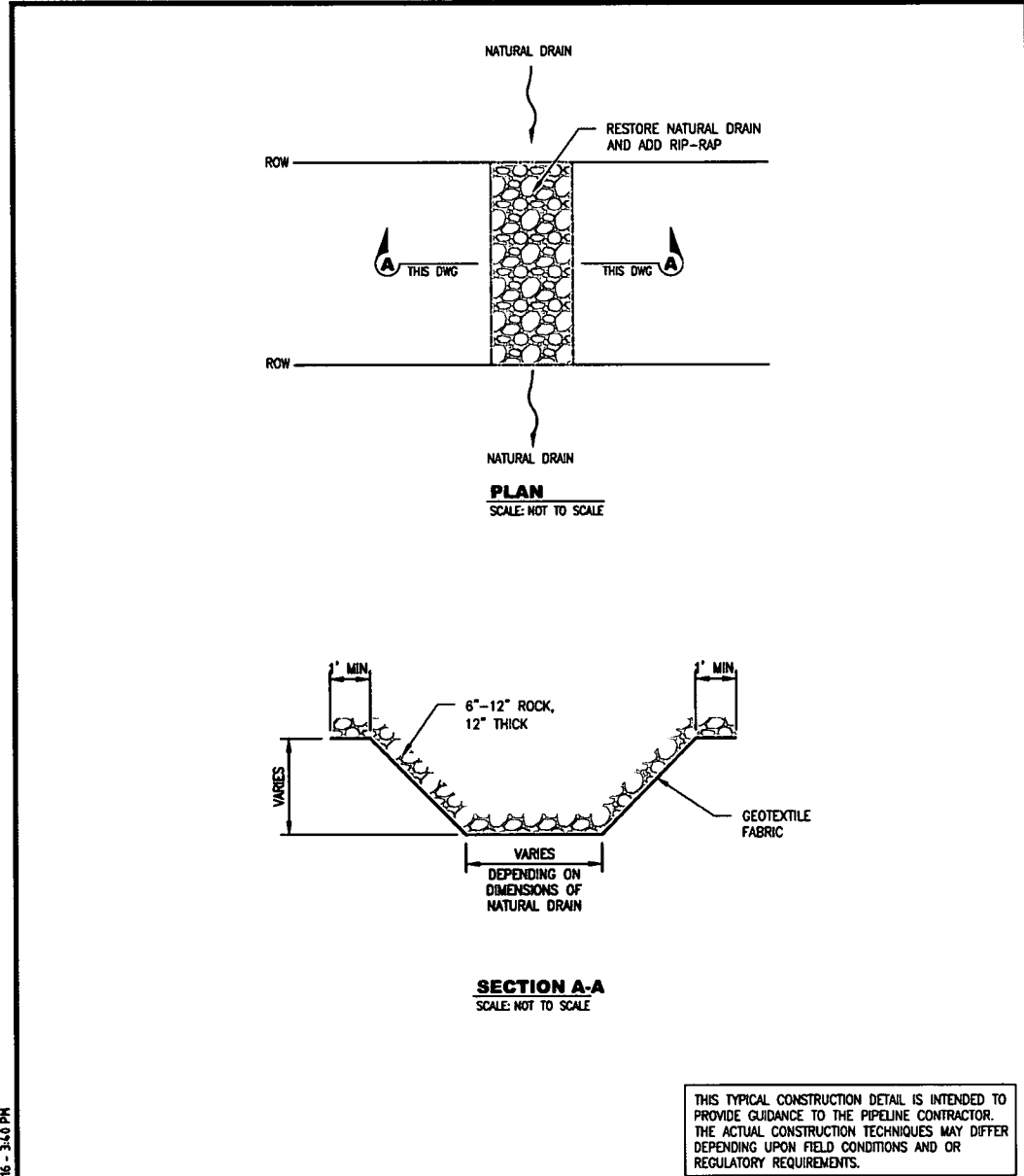
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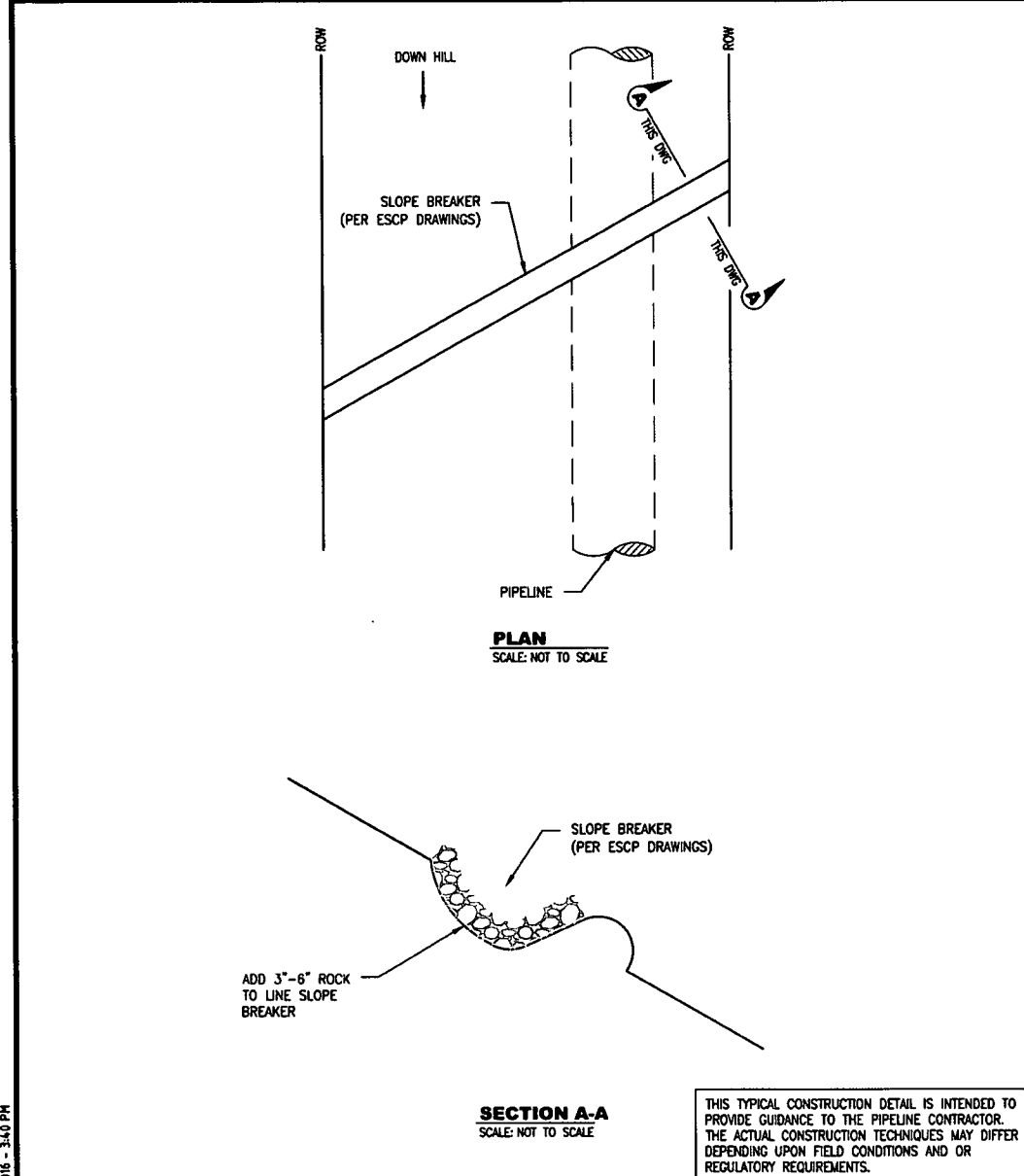
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DATE:	2/19/2018
SCALE:	AS SHOWN
SHT. NO.	0.13 OF 0.21



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SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:	PXXXX		

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

Plotted by: Lutz, Keith on: October 18, 2016 - 3:40 PM  
 File Path: X:\CADD\Pittsburgh\EQ1\7157 - MVP10 - General\References\10-12-16 Added to Set\MVP-40.dwg



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JOB NO.			
PROJECT ID:	PXXXX		

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

Plotted by: Lutz, Keith on: October 18, 2016 - 3:40 PM  
 File Path: X:\CADD\Pittsburgh\EQ1\7157 - MVP10 - General\References\10-12-16 Added to Set\MVP-41.dwg

SLIP PREVENTION DETAIL

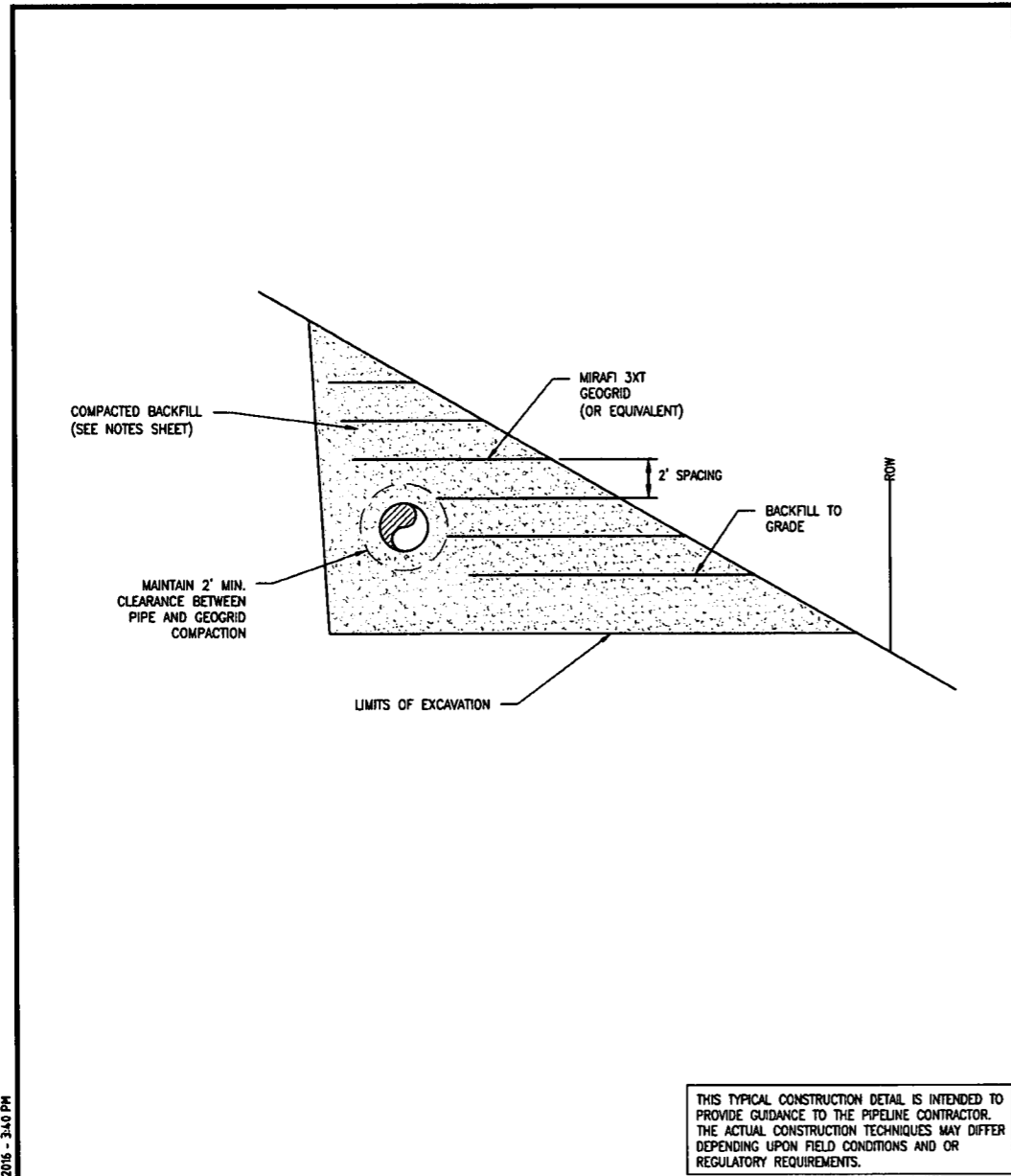
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**Mountain Valley PIPELINE**  
**EROSION AND SEDIMENT CONTROL DETAILS**  
**MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE**  
**MOUNTAIN VALLEY PIPELINE, LLC**  
 555 SOUTHPOINTE BOULEVARD, SUITE 200  
 CANONSBURG, PA 15317

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JOB NO.			
PROJECT ID:			
PXXXX			

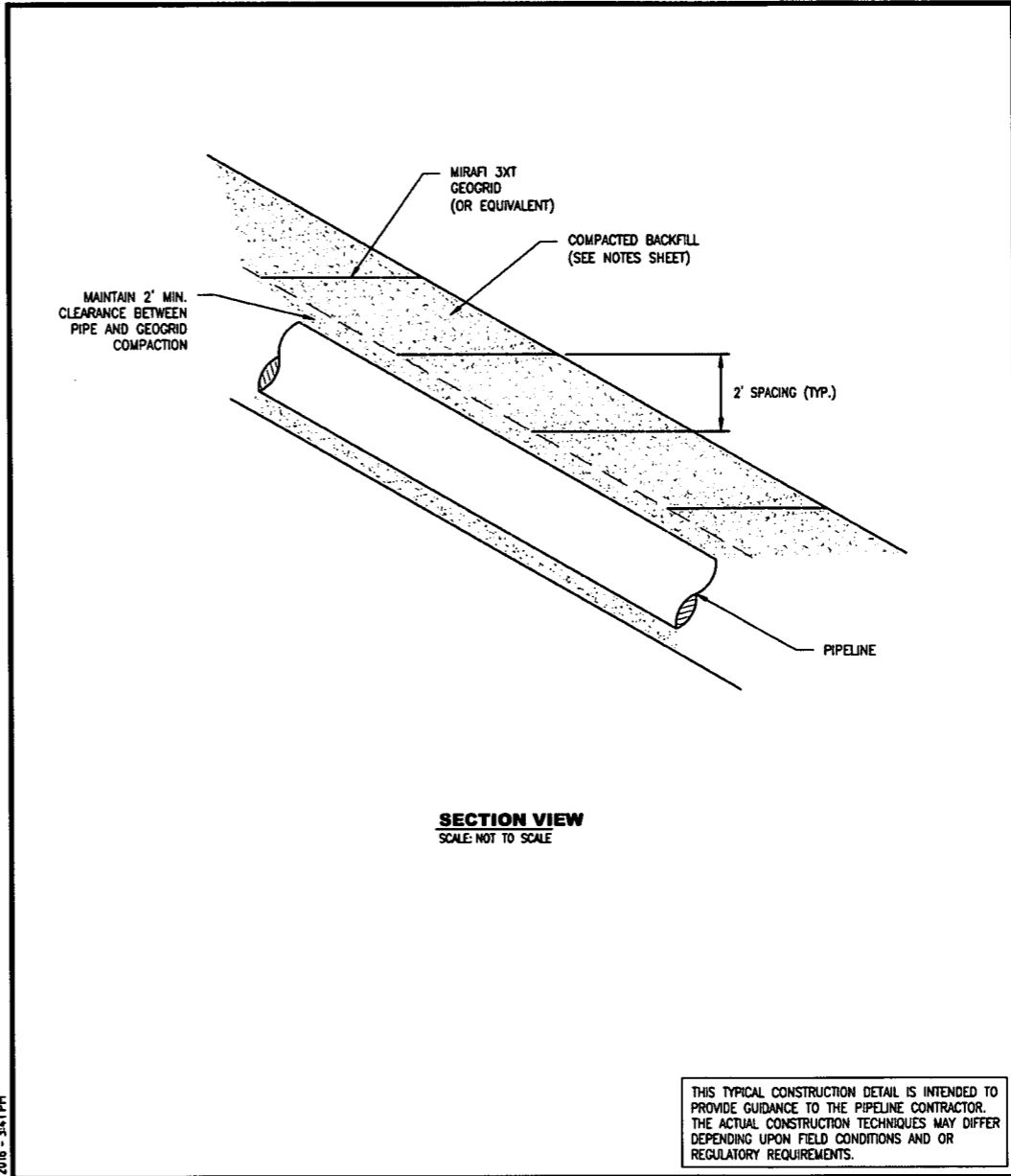


DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
GEOGRID-SIDEHILL	
DRAWING NO.	REV.
MVP-42A	0

Plotted by: Lutz, Keith on October 18, 2016 - 3:40 PM

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SCALE	N.T.S.	SHEET	2 OF 3
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

SLIDE MITIGATION DETAIL	
GEOGRID-PLANAR	
DRAWING NO.	REV.
MVP-42B	0

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

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SLIP PREVENTION DETAIL

NO.	DATE	BY:	CHKD:	APPL:	DESCRIPTION

Mountain Valley  
present  
**EROSION AND SEDIMENT CONTROL DETAILS**  
**MOUNTAIN VALLEY PIPELINE PROJECT - H800 LINE**

**MOUNTAIN VALLEY PIPELINE, LLC**  
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SHT. NO.	0.15 OF 0.21



**COMPACTION NOTES**

- 1) ALL ROCKS LARGER THAN 8 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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Plotted by: Lutz, Keith on October 18, 2016 - 3:41 PM

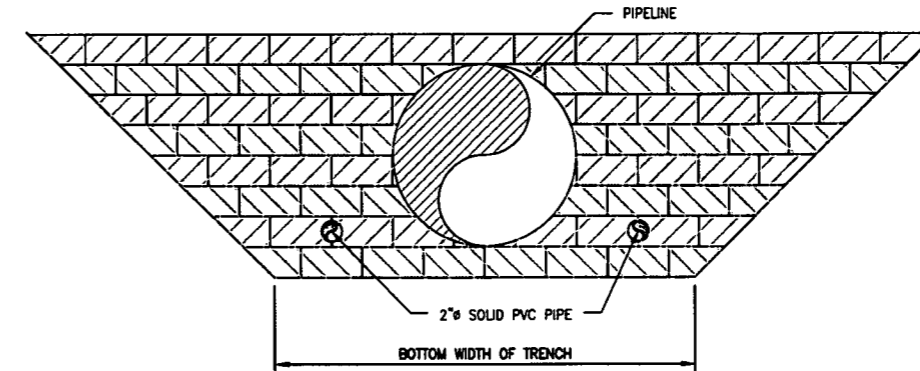
DRAWN	TDD	DATE	2/03/2016
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SCALE	N.T.S.	SHEET	3 OF 3
JOB NO.			
PROJECT ID:			
PXXXX			

**Mountain Valley PIPELINE**

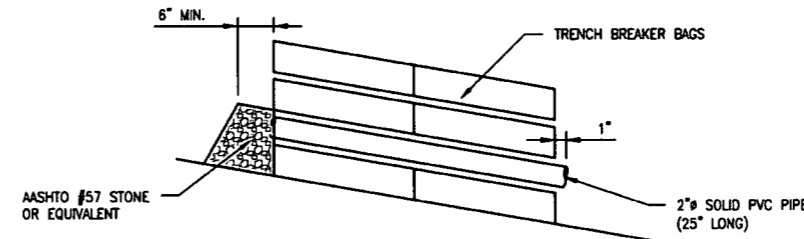
DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
GEOGRID NOTES	
DRAWING NO.	REV.
MVP-42C	0

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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SCALE	N.T.S.	SHEET	1 OF 2
JOB NO.			
PROJECT ID:			
PXXXX			

**Mountain Valley PIPELINE**

DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
TRENCH BREAKER PASS-THROUGH DRAIN	
DRAWING NO.	REV.
MVP-43A	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 - H800 LINE

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

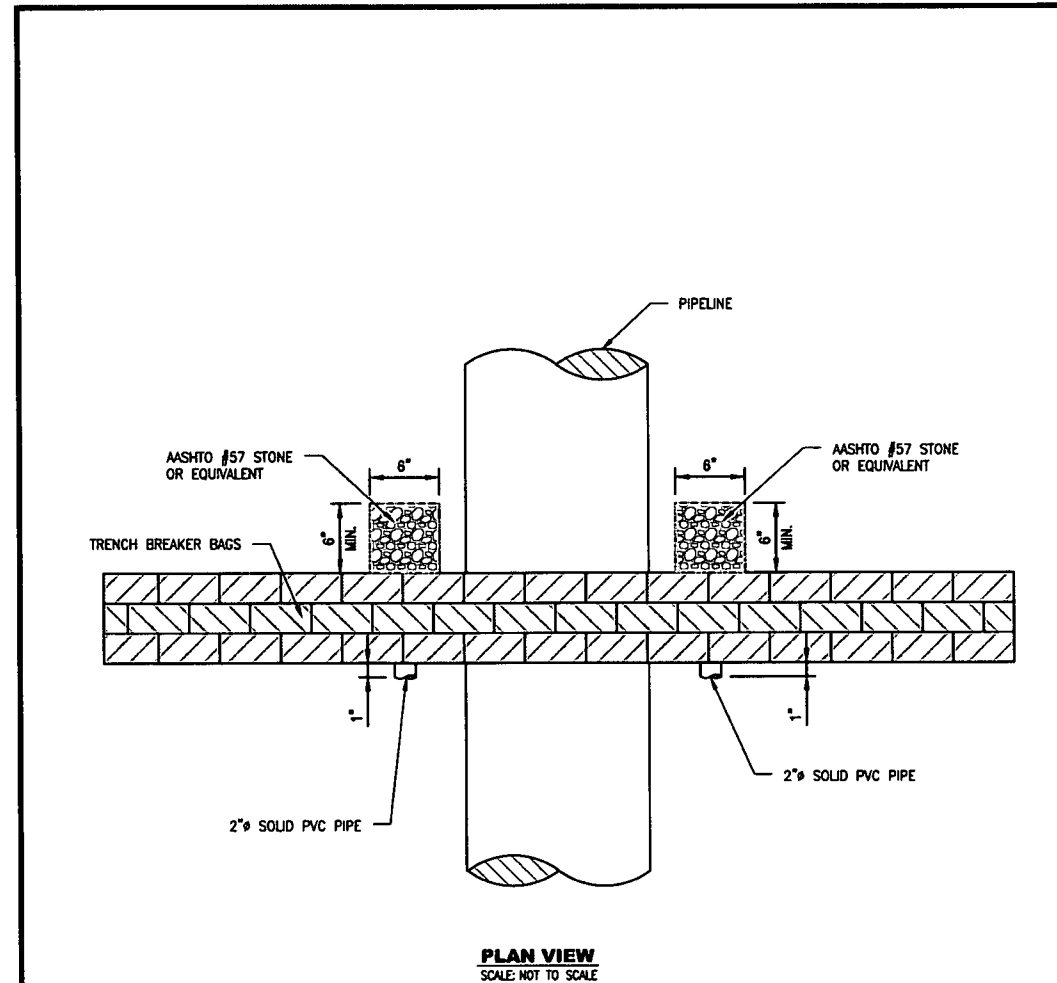
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**PLAN VIEW**  
SCALE: NOT TO SCALE

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DRAWN	TDD	DATE	4/14/2016
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SCALE	N.T.S.	SHEET	2 OF 2
JOB NO.			
PROJECT ID:	PXXXX		

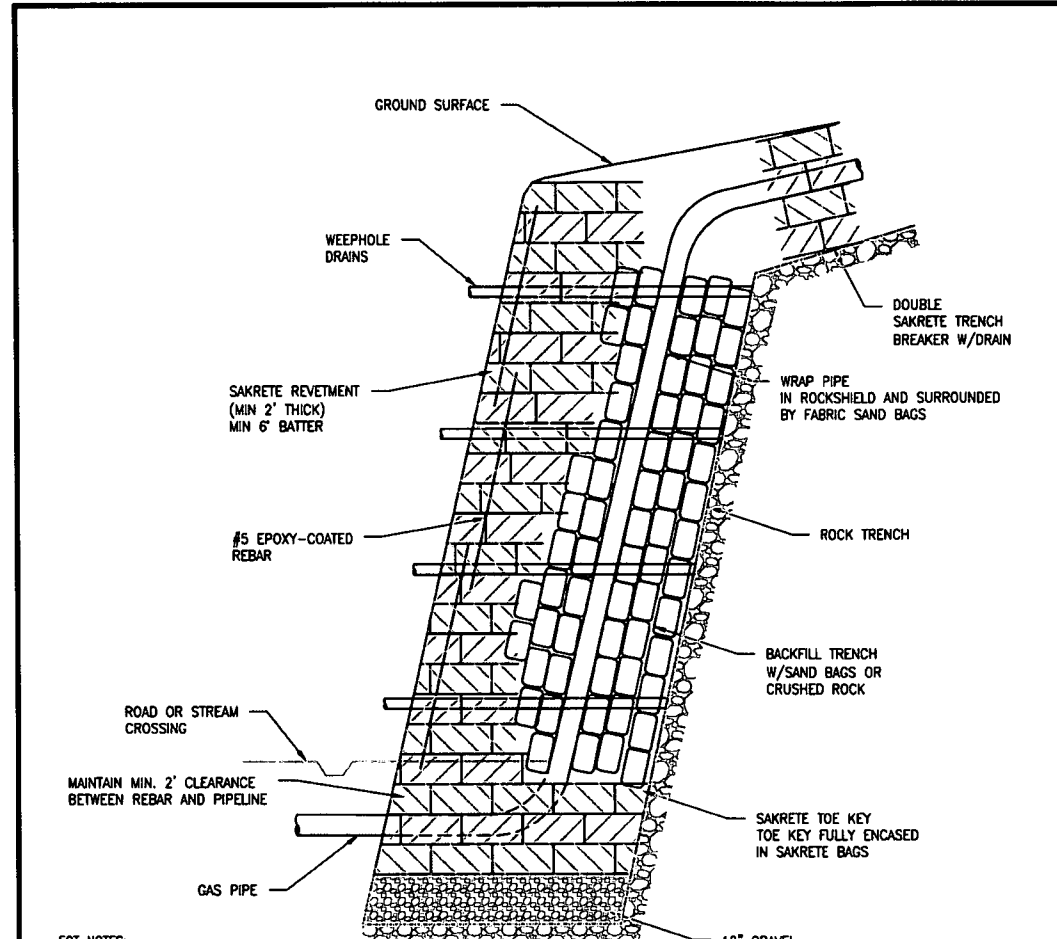


DESIGN ENGINEERING

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

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

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**SIDE VIEW**  
SCALE: NOT TO SCALE

**EQT 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
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SCALE	N.T.S.	SHEET	1 OF 2
JOB NO.			
PROJECT ID:	PXXXX		



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

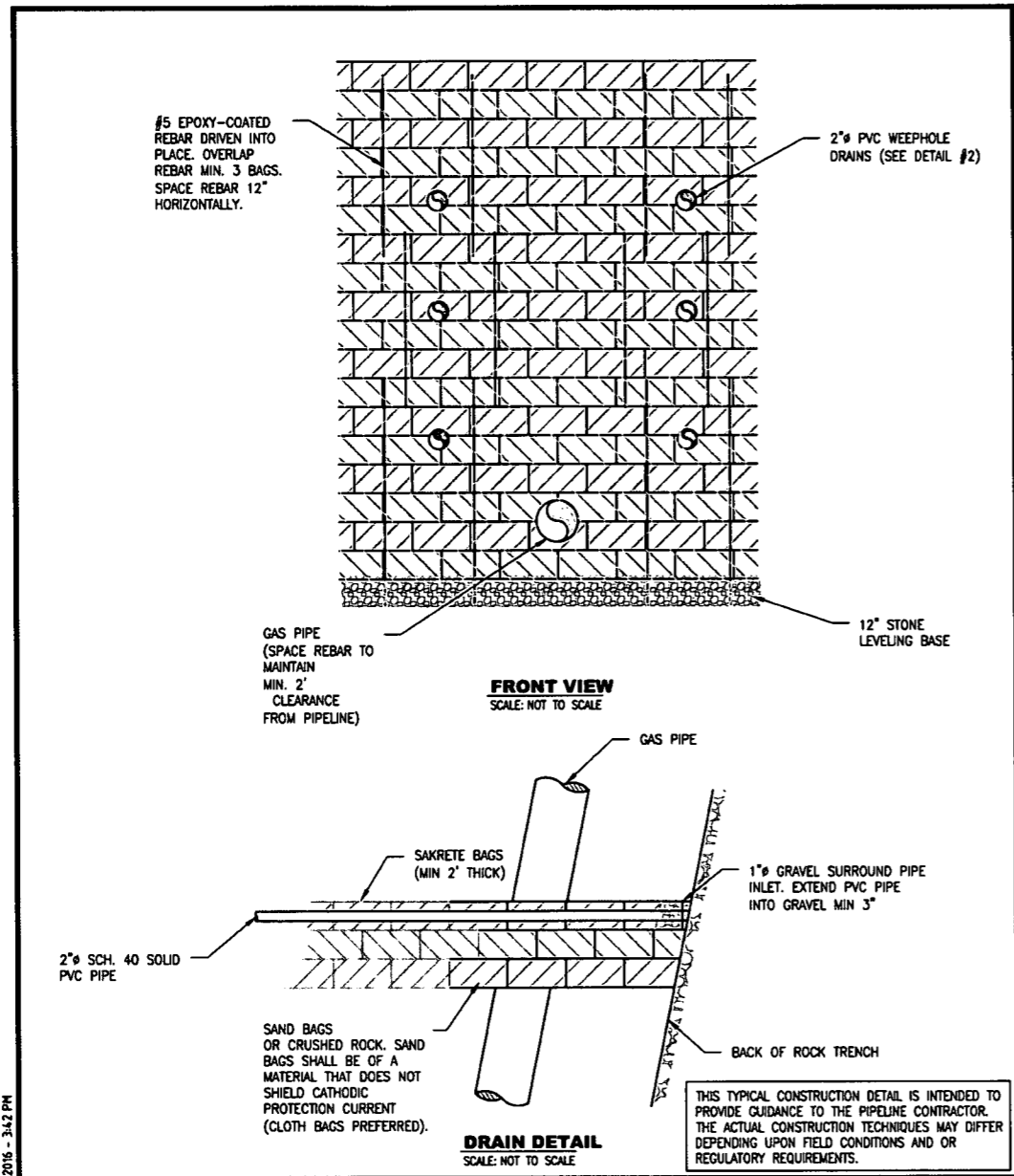
NO.	DATE	BY:	CHKD:	APPL:	DESCRIPTION:

Mountain Valley Pipeline  
EROSION AND SEDIMENT CONTROL DETAILS  
MOUNTAIN VALLEY PIPELINE PROJECT - H600 LINE  
MOUNTAIN VALLEY PIPELINE, LLC  
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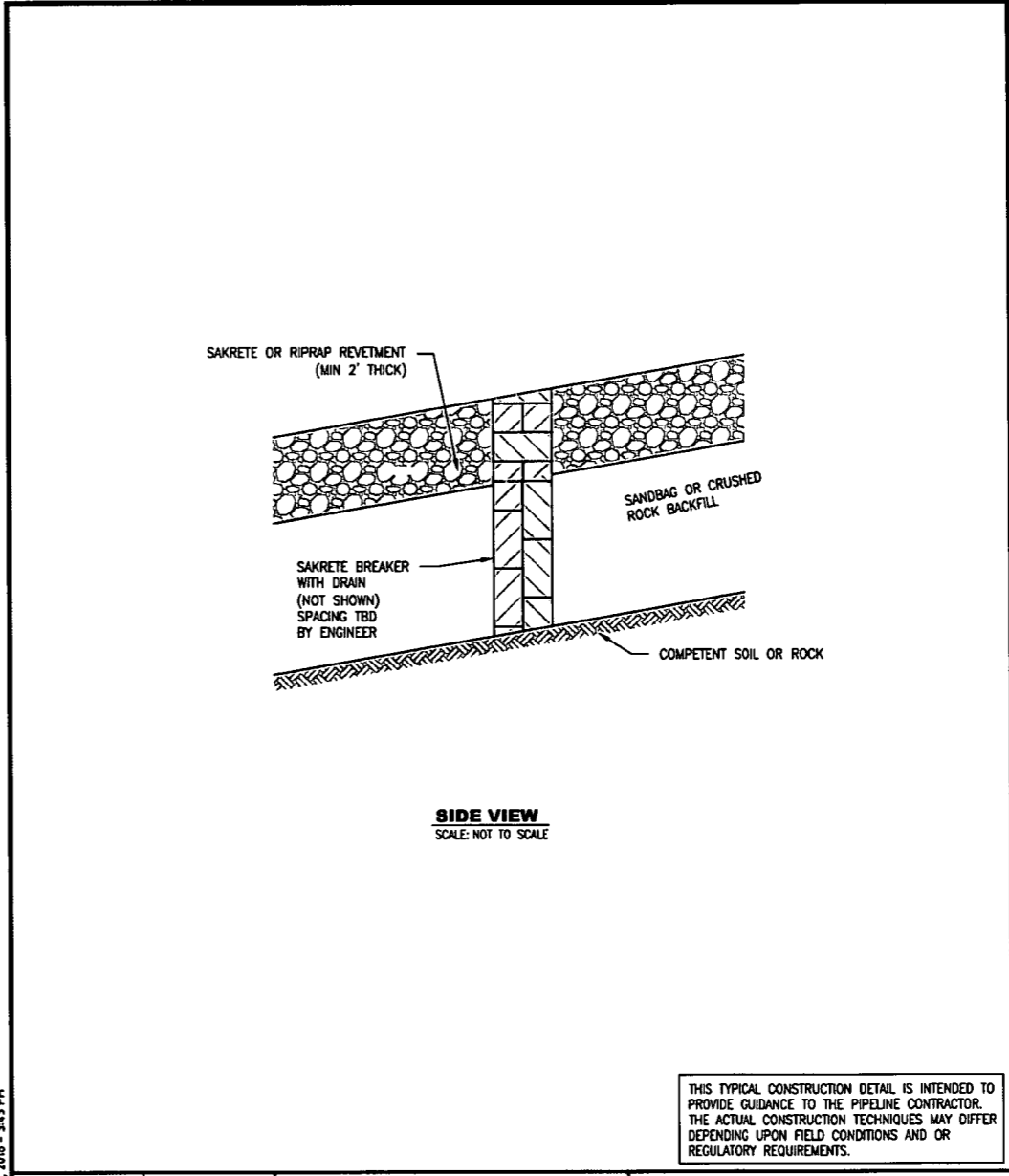
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SCALE	N.T.S.	SHEET	2 OF 2
JOB NO.			
PROJECT ID:	PXXXX		

**Mountain Valley PIPELINE**

DESIGN ENGINEERING

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

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JOB NO.			
PROJECT ID:	PXXXX		

**Mountain Valley PIPELINE**

DESIGN ENGINEERING

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

File Path: X:\CADD\Pittsburgh\EQT\7157 - MVP\0 - General\References\10-12-16 Added to Set\MVP-45.dwg

SLIP PREVENTION DETAIL

NO.	DATE	BY:	CHKD:	APPR:	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

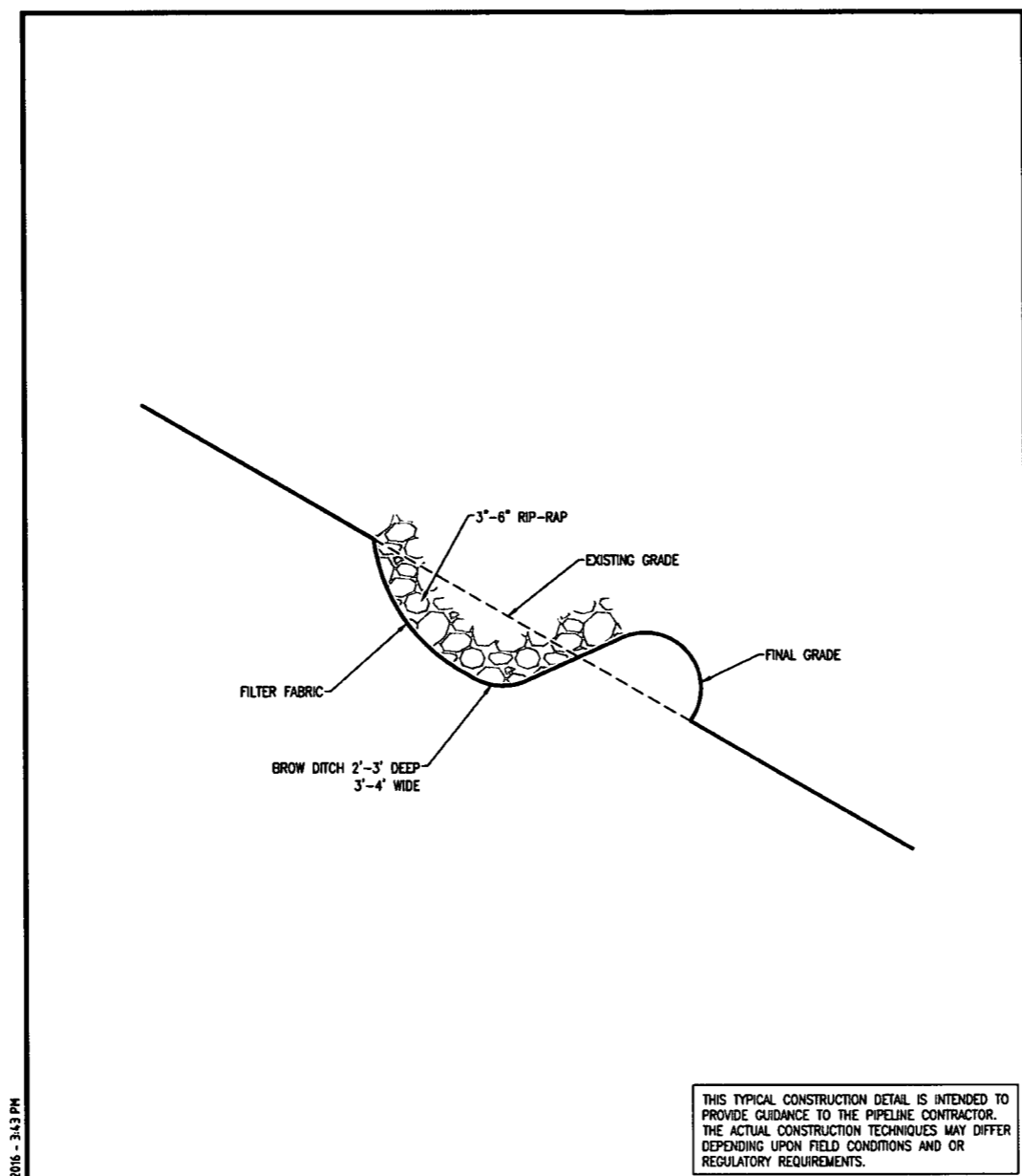
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DRAWN	TDD	DATE	7/12/2016
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JOB NO.			
PROJECT ID:	PXXXX		



DESIGN ENGINEERING

**TYPICAL CONSTRUCTION DETAIL**

BROW DITCH DETAIL

DRAWING NO.	MVP-46	REV.	0
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Plotted by: Lutz, Keith on October 18, 2016 - 3:43 PM

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

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**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**

- 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
- 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
- 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
- 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.
- FLEX TERRA OR EQUIVALENT MAY BE USED AS A SUBSTITUTE TO EROSION CONTROL BLANKET AS DIRECTED BY MVP.
- 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 MVP.
- 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	BY	CHKD.	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:	2/19/2018
SCALE:	AS SHOWN
SHT. NO.	0.21 OF 0.21



George Eidel &lt;doddridgecountyfpm@gmail.com&gt;

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**Permit #17-473 90-day extension request**

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Jarrett M. Smith &lt;JMSmith@potesta.com&gt;

Wed, Aug 15, 2018 at 8:23 AM

To: "doddridgecountyfpm@gmail.com" &lt;doddridgecountyfpm@gmail.com&gt;

Cc: "Hoover, Matthew S." &lt;MHoover@eqt.com&gt;, "Jordan W. Beard" &lt;jwbeard@potesta.com&gt;

George,

As per our recent conversation we would like to request a 90-day extension for Permit #17-473 which expires on August 21, 2018.

Thanks,

Jarrett M. Smith, P.E.

Senior Engineer

Potesta &amp; Associates, Inc.

7012 MacCorkle Avenue, SE

Charleston, WV 25304

Phone: (304) 342-1400

Fax : (304) 343-9031

AUG15 18 2:22PM

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 **Doddridge County Floodplain Approval.pdf**  
264K



George Eidel &lt;doddridgecountyfpm@gmail.com&gt;

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**Property Information Requested (16-0259-008C)**

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**Jordan W. Beard** <jwbeard@potesta.com>

Wed, Jul 26, 2017 at 1:51 PM

To: "doddridgecountyfpm@gmail.com" &lt;doddridgecountyfpm@gmail.com&gt;

Cc: "Jarrett M. Smith" &lt;JMSmith@potesta.com&gt;, "Hoover, Matthew S." &lt;MHoover@eqt.com&gt;, "Jessica L. Yeager" &lt;JLYeager@potesta.com&gt;, "Charlene L. Racer" &lt;CLRacer@potesta.com&gt;

Mr. Eidel,

Below is the requested Physical Location and attached is the land owner information. If further information is needed please let me know.

Physical Address of Pipeline Crossing - County Route 2/5, Salem, WV 26426

Coordinates - 39.2012850, -80.5533870

Thanks,

**Jordan Beard****Engineer****Potesta & Associates, Inc.****7012 MacCorkle Avenue, SE****Charleston, WV 25304****Phone: (304) 342-1400****Fax: (304) 343-9031**

*This electronic communication and its attachment contain confidential information. The recommendations and/or design data included herein are provided as a matter of convenience and should not be used for final design or ultimate decision making. Rely only on the final hardcopy materials bearing the consultant's original signature and seal. If you have received this information in error, please notify the sender immediately.*

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 **Doddridge County Land Owner Information 008C.pdf**  
9K



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Email to  
~~B.~~ Jarrett  
Smith

@ Potesta  
ON ~~Tues~~  
Monday