

7015 3430 0001 1569 8092

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

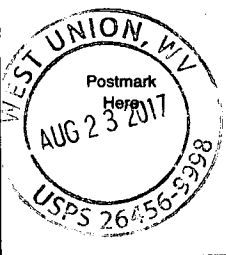
For delivery information, visit our website at www.usps.com®

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
 Jonathan L. & Louella D. Davis (Surv.)
 Street and Apt. No., or PO Box No.
 3175 Sam Cavins Rd.
 City, State, ZIP+4®
 West Union, WV 26456 17-480

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



7015 3430 0001 1569 8085

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

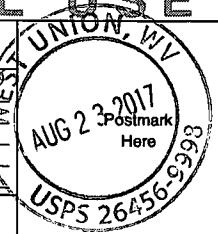
For delivery information, visit our website at www.usps.com®

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
 Martha A. Ford McConnell
 Street and Apt. No., or PO Box No.
 182 Shorty Ford Rd.
 City, State, ZIP+4®
 West Union, WV 26456 17-480

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



7015 3430 0001 1569 8108

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

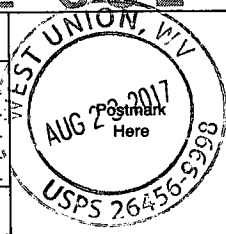
For delivery information, visit our website at www.usps.com®

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
 Eugene Vance Chippis, II
 Street and Apt. No., or PO Box No.
 304 Tumber Creek Dr.
 City, State, ZIP+4®
 Clarksburg, WV 26101 17-480

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



7015 3430 0001 1569 8115

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

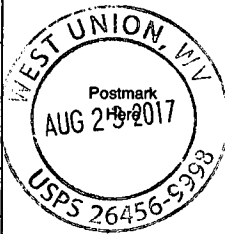
For delivery information, visit our website at www.usps.com®

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
 Eli W. & Jeffrey A. Hayhurst
 Street and Apt. No., or PO Box No.
 1207 Fawn View Dr.
 City, State, ZIP+4®
 Fairmont, WV 26554 17-480

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



7015 3430 0001 1569 8122

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

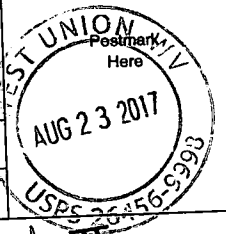
For delivery information, visit our website at www.usps.com®

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
 James E. Shepherd, II
 Street and Apt. No., or PO Box No.
 4801 Long Run Rd.
 City, State, ZIP+4®
 Pennington, WV 26415 17-480

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



U.S. Postal Service
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com

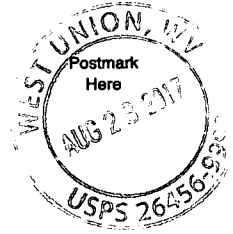
OFFICIAL USE

Certified Mail Fee
\$ 3.35

Extra Services & Fees (check box, add fee as appropriate)
 Return Receipt (hardcopy) \$ 2.95
 Return Receipt (electronic) \$
 Certified Mail Restricted Delivery \$
 Adult Signature Required \$
 Adult Signature Restricted Delivery \$

Postage .49

Total Postage and Fees
\$ 6.59



Sent To John Paul Etal Strickling
Street and Apt. No., or PO Box No.
756 Strickling Farm Ln.
City, State, ZIP+4®
West Union WV 26456 17-480

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

U.S. Postal Service
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com

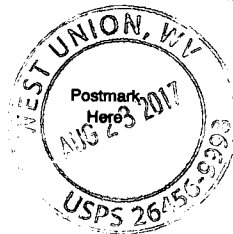
OFFICIAL USE

Certified Mail Fee
\$ 3.35

Extra Services & Fees (check box, add fee as appropriate)
 Return Receipt (hardcopy) \$ 2.95
 Return Receipt (electronic) \$
 Certified Mail Restricted Delivery \$
 Adult Signature Required \$
 Adult Signature Restricted Delivery \$

Postage .49

Total Postage and Fees
\$ 6.59



Sent To Michael Shepherd
Street and Apt. No., or PO Box No.
4362 Long Run Rd.
City, State, ZIP+4®
Greenwood WV 26415 17-480

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

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com

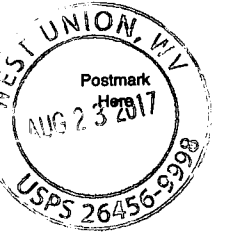
OFFICIAL USE

Certified Mail Fee
\$ 3.35

Extra Services & Fees (check box, add fee as appropriate)
 Return Receipt (hardcopy) \$ 2.95
 Return Receipt (electronic) \$
 Certified Mail Restricted Delivery \$
 Adult Signature Required \$
 Adult Signature Restricted Delivery \$

Postage .49

Total Postage and Fees
\$ 6.59



Sent To Virginia M. & Jack G. Ash (Surv.)
Street and Apt. No., or PO Box No.
1414 Washington Gardens Circle
City, State, ZIP+4®
Washington WV 26181 17-480

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

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com

OFFICIAL USE

Certified Mail Fee
\$ 3.35

Extra Services & Fees (check box, add fee as appropriate)
 Return Receipt (hardcopy) \$ 2.95
 Return Receipt (electronic) \$
 Certified Mail Restricted Delivery \$
 Adult Signature Required \$
 Adult Signature Restricted Delivery \$

Postage .49

Total Postage and Fees
\$ 6.59



Sent To Ralph M. & Rita E. Hiley (Surv.)
Street and Apt. No., or PO Box No.
93 Pineview Dr.
City, State, ZIP+4®
Parkersburg WV 26101 17-480

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

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com

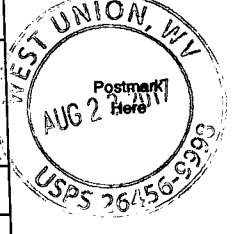
OFFICIAL USE

Certified Mail Fee
\$ 3.35

Extra Services & Fees (check box, add fee as appropriate)
 Return Receipt (hardcopy) \$ 2.95
 Return Receipt (electronic) \$
 Certified Mail Restricted Delivery \$
 Adult Signature Required \$
 Adult Signature Restricted Delivery \$

Postage .49

Total Postage and Fees
\$ 6.59



Sent To Jonathan L. & Jeffery W. Davis (Life)
Street and Apt. No., or PO Box No.
3175 Sam Cavins Rd.
City, State, ZIP+4®
West Union WV 26456 17-480

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

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com

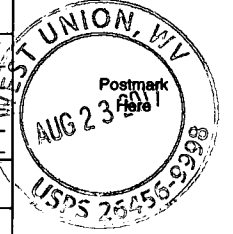
OFFICIAL USE

Certified Mail Fee
\$ 3.35

Extra Services & Fees (check box, add fee as appropriate)
 Return Receipt (hardcopy) \$ 2.95
 Return Receipt (electronic) \$
 Certified Mail Restricted Delivery \$
 Adult Signature Required \$
 Adult Signature Restricted Delivery \$

Postage .49

Total Postage and Fees
\$ 6.59



Sent To Joel W. & Bonnie Ostroff
Street and Apt. No., or PO Box No.
2912 Joyce Rd.
City, State, ZIP+4®
Rosllyn PA 19001 17-480

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

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:

Eli W. & Jeffrey A. Hayhurst
1207 Fawn View Drive
Fairmont, WV 26554



9590 9402 2859 7069 5446 74

2. Article Number (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

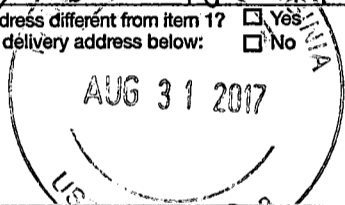
-
- Agent
-
-
- Addressee

B. Received by (Printed Name)

R. W. Hayhurst

C. Date of Delivery

8-31-17

 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 5446 74

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

17-480



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:

Ralph M. & Rita E. Hiley (Surv.)
 93 Pineview Drive
 Parkersburg, WV 26101



9590 9402 2859 7069 5447 35

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

A. Signature

X *Ralph M. Hiley*

-
- Agent
-
-
- Addressee

B. Received by (*Printed Name*)

C. Date of Delivery

8/25/17

 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 5447 35

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

17-480



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:

Virginia M. & Jack G. Ash (Surv.)
 14 Washington Gardens Circle
 Washington, WV 26181



9590 9402 2859 7069 5447 42

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

8-25

- 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

USPS TRACKING #



9590 9402 2859 7069 5447 42



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

17-480



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: _____

Michael Shepherd
4362 Long Run Road
Greenwood, WV 26415



9590 9402 2859 7069 5447 59

2. Article Number. (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature

 Angela Jones
 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

- 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

USPS TRACKING #



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

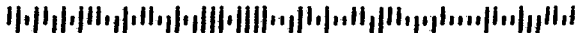
9590 9402 2859 7069 5447 59

United States
Postal Service

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

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

17-480



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:

James E. Shepherd, II
4801 Long Run Road
Pensboro, WV 26415



9590 9402 2859 7069 5446 67

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) | |

USPS TRACKING #



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

9590 9402 2859 7069 5446 67

**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**

17-480



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:

Joel W. & Bonnie Ostroff
 2912 Joyce Road
 Roslyn, PA 19001



9590 9402 2859 7069 5447 11

2. Article Number (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature
 Joel Ostroff Agent
 Addressee

B. Received by (Printed Name) C. Date of Delivery
 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
- 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

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

Domestic Return Receipt

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:

John Paul Etal Strickling
 756 Strickling Farm Lane
 West Union, WV 26456



9590 9402 2859 7069 5447 66

2. Article Number (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature
 Rebecca Strickling Agent
 Addressee

B. Received by (Printed Name) C. Date of Delivery
 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
- 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

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

Domestic Return Receipt

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:

Martha A. Ford McConnell
 182 Shorty Ford Road
 West Union, WV 26456



9590 9402 2859 7069 5447 04

2. Article Number (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature
 Martha Ann McConnell Agent
 Addressee

B. Received by (Printed Name) C. Date of Delivery
 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

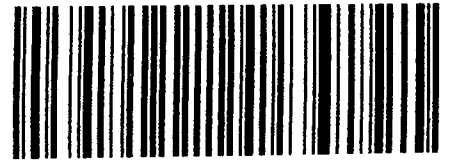
3. Service Type
- Adult Signature
 - Adult Signature Restricted Delivery
 - Certified Mail®
 - Certified Mail Restricted Delivery
 - Collect on Delivery
 - Collect on Delivery Restricted Delivery
 - Insured Mail
 - Insured Mail Restricted Delivery (over \$500)
 - Priority Mail Express®
 - Registered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

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

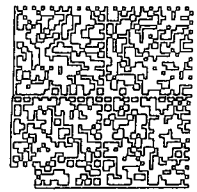
Domestic Return Receipt

CERTIFIED MAIL

Floodplain Manager
Doddridge County Office of Emergency Management
105 Court Street, Ste. 3
West Union, WV 26456



7015 3430 0001 1569 8108



HASLER

\$006.59⁰⁰

08/22/2017 ZIP 26456
012E14643162

US POSTAGE

Eugene Vance Chipps, II
304 Tymber Creek Drive
Clarksburg, WV 26301

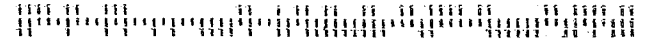
Handwritten:
NIXIE
8.24
+1

NIXIE 250 DE 1 0010/10/17

RETURN TO SENDER
UNCLAIMED
UNDELIVERABLE TO ADDRESSEE

UNC
2645672012

BC: 26456201205 *1771-04501-10-29



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:

Eugene Vance Chipps, II
 304 Tymber Creek Drive
 Clarksburg, WV 26301



9590 9402 2859 7069 5446 81

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

- 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

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

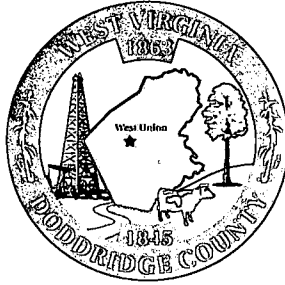
A handwritten signature in black ink, appearing to read 'George Eidel', written over the printed name.



Doddridge County Floodplain Permits

(Week of August 28, 2017)

Please take notice that on the 16th day of August, 2017, Antero Resources Corp. filed an application for a Floodplain Permit (#17-480) to develop land located at or about From Greenwood to Crystal Lake Coordinates 39.327986 N, -80.82311 W to 39.3329 N, -80.792750 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 September 25, 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 Crystal Lake 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 #: 17-480

Date Approved: October 26, 2017

Expires: October 26, 2018

Issued to: Antero Midstream, LLC

POC: Rachel Gryzbek

Company Address: 535 White Oaks Blvd. Bridgeport, WV 26330

Project Address: Doddridge County

Firm: 54017C0105C, 54017C0115C, 54017C0120C, 54017C0110C

Lat/Long: 39.327986 N, -80.842311 W to 39.332917 N, -80.792750 W

Purpose of development: Crystal Lake Pipeline Project

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

Date: October 26, 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



ANTERO MIDSTREAM LLC
1615 WYNKOOP STREET
DENVER, COLORADO 80202

Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	Sep-25-2017	108117	\$1,825.00

INV #	INV DATE	DESCRIPTION	AMOUNT	DISCOUNTS	NET AMOUNT
SR09252017	09/25/17	FLOODPLAIN PERMIT CRYSTAL LAKE PIPE	1,825.00	0.00	1,825.00

FP # 17-480

OCT 2 17 1:33PM

COPY

COPY

TOTAL INVOICES PAID \implies 1,825.00 0.00 1,825.00

DETACH AND RETAIN FOR TAX PURPOSES

THIS CHECK HAS A COLORED FACE ON WHITE STOCK AND AN ARTIFICIAL WATERMARK ON THE BACK.



ANTERO MIDSTREAM LLC
1615 WYNKOOP STREET
DENVER, COLORADO 80202

Wells Fargo
Denver, CO

Check No. 108117

11-24
412

800 - AP ACCT WELLS FARGO

Void After 90 Days

CHECK NUMBER	DATE	PAY EXACTLY
108117	Sep-25-2017	\$1,825.00

PAY EXACTLY \$1,825.00

One Thousand Eight Hundred Twenty Five Dollars and Zero Cents

TO THE ORDER OF

DODDRIDGE COUNTY COMMISSION
111 E COURT ST STE 1~
WEST LAFAYETTE, WV 26456

COPY

[Handwritten Signature]
COPY

⑈ 108117⑈ ⑆041203824⑆ 9657481710⑈



ANTERO MIDSTREAM LLC
 1615 WYNKOOP STREET
 DENVER, COLORADO 80202

Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	Sep-25-2017	108117	\$1,825.00

INV #	INV DATE	DESCRIPTION	AMOUNT	DISCOUNTS	NET AMOUNT
SR09252017	09/25/17	FLOODPLAIN PERMIT CRYSTAL LAKE PIPE	1,825.00	0.00	1,825.00

FP # 17-480

Doddridge County, West Virginia

RECEIPT NO: 9778

DATE: 2017/10/05

FROM: ANTERO MIDSTREAM

AMOUNT: \$ 1,825.00

ONE THOUSAND EIGHT HUNDRED TWENTY FIVE DOLLARS AND 00 CENTS

FOR: #17-480 CRYSTAL LAKE PIPELINE

00000108117 FP-BUILDING PERMITS

020-318

TOTAL: \$1,825.00

MICHAEL HEADLEY

SHERIFF & TREASURER

MEC

CLERK

Customer Copy

DETACH AND RETAIN FOR TAX PURPOSES

FLOODPLAIN PERMIT #17-480

Crystal Lake Pipeline Project

TASK	COMPLETE (DATE)	NOTES
CHECK RECEIVED	10-2-17	
US ARMY CORP. ENGINEERS (USACE)	10/26/17	
US FISH & WILDLIFE SERVICES (USFWS)		
WV DEPT. NATURAL RESOURCES (WVDNR)		
WV DEPT. ENVIROMENTAL PROTECTION (WVDEP)		
STATE HISTORIC & PRESERVATION OFFICE (SHPO)	10-26-17	
OFFICE of LAND & STREAM (OLS)		
DATE OF COMMISSION READING	9/5/17	
DATE AVAILABLE TO BE GRANTED		
PERMIT GRANTED	9/25/17	
COMPLETE		

7015 3430 0001 1569 8023

7015 3430 0001 1569 8030

7015 3430 0001 1569 8047

7015 3430 0001 1569 8054

7015 3430 0001 1569 8061

7015 3430 0001 1569 8078

7015 3430 0001 1569 8085

7015 3430 0001 1569 8092

7015 3430 0001 1569 8108
7015 3430 0001 1569 8115
7015 3430 0001 1569 8122



Doddridge County Floodplain Permits

(Week of August 28, 2017)

Please take notice that on the 16th day of August, 2017, Antero Resources Corp. filed an application for a Floodplain Permit (#17-480) to develop land located at or about From Greenwood to Crystal Lake Coordinates 39.327986 N, -80.82311 W to 39.3329 N, -80.792750 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 September 25, 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 Crystal Lake pipeline project.

 **Antero**
Midstream Partners LP
Antero Midstream, LLC
535 White Oaks Blvd
Bridgeport, WV 26330
Office 304.842.4100
Fax 304.842.4102

August 2, 2017

Doddridge County Commission
Attn: George Eidel, Doddridge County Floodplain Manager
118 East Court Street, Room 102
West Union, WV 26456

Mr. Eidel:

Antero Midstream LLC would like to submit a Doddridge County Floodplain permit application for our *Crystal Lake Pipeline* project. Our project is located in Doddridge County beginning at coordinates 39.327986N, 80.842311W, and continues to coordinates 39.332917N, 80.792750W. Per the FIRM Maps #54017C0105C, #54017C0115C, #54017C0120C, and #54017C0110C, this location is in the floodplain.

Attached you will find the following:

- Doddridge County Floodplain Permit Application
- No-Rise Certificate
- WV Flood Tool Map
- FIRM Maps
- Design Plans

If you have any questions please feel free to contact me at (304) 842-4008.

Thank you in advance for your consideration.

Sincerely,



Rachel Grzybek
Environmental Specialist II
Antero Resources Corporation

AUG16 17 3:59PM

Enclosures



Permit# _____

Project Name: _____

Permittees Name: _____

Doddridge County, WV

Floodplain Development Permit Application

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

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

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

AUG16 17 3:59PM

APPLICANT'S SIGNATURE

Brian Swanson

DATE

8-7-17

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Applicant Information:

Please provide all pertinent data.

Applicant Information		
Responsible Company Name: Antero Midstream, LLC		
Corporate Mailing Address: 1615 Wynkoop Street		
City: Denver	State: CO	Zip: 80202
Corporate Point of Contact (POC):		
Corporate POC Title:		
Corporate POC Primary Phone:		
Corporate POC Primary Email:		
Corporate FEIN:	Corporate DUNS:	
Corporate Website: www.anteroresources.com		
Local Mailing Address: 535 White Oaks Blvd		
City: Bridgeport	State: WV	Zip: 26330
Local Project Manager (PM):		
Local PM Primary Phone:		
Local PM Secondary Phone:		
Local PM Primary Email:		
Person Filing Application: Rachel Grzybek		
Applicant Title: Environmental Specialist II		
Applicant Primary Phone: (304) 842-4008		
Applicant Secondary Phone: (304) 641-2396		
Applicant Primary Email: rgrzybek@anteroresources.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.

Project Narrative:
The Crystal Lake Pipeline project involves the installation of a 24" high pressure steel gas line
and a 24" HDPE waterline, beginning west of CR 11 and ending east of WV 18 near Crystal Lake.
Portions of the project are located in the Long Run Zone A, Arnold Creek Zone A, and Middle Island
Creek Zone A and AE Flood Hazard Areas, according the Flood Insurance Rate Maps for Doddridge
County, Maps 54017C0105C, 54017C0110C, 54017C0115C, and 54017C0120C, all with a map
revised date of October 4, 2011. The proposed work that will occur in the floodplain includes the
installation of permanent water bars, pipelines, and temporary wareyards. The material needed
to construct the permanent water bars will be excavated from the up-gradient side of the berm.
Any and all fill generated will be temporary, and all disturbed areas will be returned to
preconstruction conditions. The crossing of WV 18 and the Middle Island Creek Zone AE
Flood Hazard Area will be performed using HDD Bore Methods, and thus will not have an impact
on the Zone AE Flood Hazard Area. As a result, the project will not result in a decrease of the
available floodplain storage area and will not adversely affect the existing base flood
elevations of Long Run, Arnold Creek, and Middle Island Creek.

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)

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: 1 of 21

Site/Property Information:		
Legal Description: LONG RUN 69.86 AC		
Physical Address/911 Address: ROUTE 11		
Decimal Latitude/Longitude: 39.327114, -80.841644		
DMS Latitude/Longitude: 39°19' 37.61"N, 80°50'29.92W		
District: 01	Map: 2	Parcel: 6
Land Book Description:		
Deed Book Reference: Deed Book 335, Page 502		
Tax Map Reference: 09 01 0002 0006 0000 0000		
Existing Buildings/Use of Property: OIL & GAS		

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

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: 2 of 21

Site/Property Information:		
Legal Description: Arnolds CK Three TRS 102.19 AC		
Physical Address/911 Address: RT 26 LONG RUN		
Decimal Latitude/Longitude: 39.322806, -80.843458		
DMS Latitude/Longitude: 39°19'22.10"N, 80°50'36.45"W		
District: 01	Map: 4	Parcel: 1
Land Book Description:		
Deed Book Reference: Deed Book 335, Page 497		
Tax Map Reference: 09 01 0004 0001 0000 0000		
Existing Buildings/Use of Property: OIL & GAS		

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

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: 3 of 21

Site/Property Information:		
Legal Description: LONG RUN 58.23 AC		
Physical Address/911 Address: ROUTE 26		
Decimal Latitude/Longitude: 39.316825, -80.840939		
DMS Latitude/Longitude: 39°19'00.57"N, 80°50'27.38"W		
District: 01	Map: 4	Parcel: 10
Land Book Description:		
Deed Book Reference: Deed Book 232, Page 152		
Tax Map Reference: 09 01 0004 0010 0000 0000		
Existing Buildings/Use of Property: WOODED, BARN, FARM, ROAD		

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

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: 4 of 21

Site/Property Information:		
Legal Description: ARNOLDS CREEK 7.64 AC		
Physical Address/911 Address:		
Decimal Latitude/Longitude: 39.320042, -80.839394		
DMS Latitude/Longitude: 39°19'12.15"N, 80°50'21.82W		
District: 01	Map: 4	Parcel: 1.3
Land Book Description:		
Deed Book Reference: Deed Book 280, Page 636		
Tax Map Reference: 09 01 0004 0001 0003 0000		
Existing Buildings/Use of Property: FARM		

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

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: 5 of 21

Site/Property Information:		
Legal Description: ARNOLDS CREEK 119.96 AC		
Physical Address/911 Address: RT 11 OVER 1		
Decimal Latitude/Longitude: 39.317819, -80.836269		
DMS Latitude/Longitude: 39°19'4.15"N, 80°50'10.57"W		
District: 01	Map: 4	Parcel: 11.1
Land Book Description:		
Deed Book Reference: Deed Book 232, Page 152		
Tax Map Reference: 09 01 0004 0011 0001 0000		
Existing Buildings/Use of Property: WOODED, HOUSE, BUILDING		

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

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: 6 of 21

Site/Property Information:		
Legal Description: ARNOLDS CREEK 10 AC		
Physical Address/911 Address: ROUTE 11		
Decimal Latitude/Longitude: 39.317722, -80.831044		
DMS Latitude/Longitude: 39°19'3.80"N, 80°49'51.76"W		
District: 01	Map: 4	Parcel: 14.1
Land Book Description:		
Deed Book Reference: Deed Book 232, Page 152		
Tax Map Reference: 09 01 0004 0014 0001 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 7 of 21

Site/Property Information:		
Legal Description: LONG RUN 4.41 AC		
Physical Address/911 Address: RT 11		
Decimal Latitude/Longitude: 39.321750, -80.838419		
DMS Latitude/Longitude: 39°19'18.30"N, 80°50'18.31"W		
District: 01	Map: 4	Parcel: 1.2
Land Book Description:		
Deed Book Reference: Deed Book 312, Page 461		
Tax Map Reference: 09 01 0004 0001 0002 0000		
Existing Buildings/Use of Property: HOUSE, BUILDINGS, DRIVEWAY, BARN/TRAILER		

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

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: 8 of 21

Site/Property Information:		
Legal Description: ARNOLDS CREEK 23.20 AC		
Physical Address/911 Address: RT 11		
Decimal Latitude/Longitude: 39.317278, -80.827267		
DMS Latitude/Longitude: 39°19'02.20"N, 80°49'38.16"		
District: 01	Map: 4	Parcel: 14
Land Book Description:		
Deed Book Reference: Deed Book SF8, Page 405		
Tax Map Reference: 09 01 0004 0014 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 9 of 21

Site/Property Information:		
Legal Description: 15 AC ARNOLDS CK		
Physical Address/911 Address: RT 11		
Decimal Latitude/Longitude: 39.314894, -80.827422		
DMS Latitude/Longitude: 39°18'53.62"N, 80°49'38.72"W		
District: 01	Map: 4	Parcel: 11
Land Book Description:		
Deed Book Reference: Deed Book SF8, Page 405		
Tax Map Reference: 09 01 0004 0011 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 10 of 21

Site/Property Information:		
Legal Description: ARNOLDS CREEK 66.79 AC		
Physical Address/911 Address: ROUTE 11		
Decimal Latitude/Longitude: 39.319606, -80.822775		
DMS Latitude/Longitude: 39°19'10.58"N, 80°49'21.99"W		
District: 01	Map: 4	Parcel: 13
Land Book Description:		
Deed Book Reference: Deed Book SF8, Page 405		
Tax Map Reference: 09 01 0004 0013 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 11 of 21

Site/Property Information:		
Legal Description: ARNOLDS CREEK 66.55 AC		
Physical Address/911 Address: ROUTE 11		
Decimal Latitude/Longitude: 39.315594, -80.821450		
DMS Latitude/Longitude: 39°18'56.14"N, 80°49'17.22"W		
District: 01	Map: 4	Parcel: 22.2
Land Book Description:		
Deed Book Reference: Deed Book 283, Page 654		
Tax Map Reference: 09 01 0004 0022 0002 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 12 of 21

Site/Property Information:		
Legal Description: ¼ INT 63 AC J I HILEY FARM ARNOLDS CK		
Physical Address/911 Address: ROUTE 11		
Decimal Latitude/Longitude: 39.313969, -80.817547		
DMS Latitude/Longitude: 39°18'50.29"N, 80°49'3.17"W		
District: 01	Map: 4	Parcel: 23
Land Book Description:		
Deed Book Reference: Deed Book 236, Page 537		
Tax Map Reference: 09 01 0004 0023 0000 0000		
Existing Buildings/Use of Property: HOUSE, BUILDINGS, DRIVEWAY, WOODED		

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

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: 13 of 21

Site/Property Information:		
Legal Description: ARNOLDS CK 62.92 AC (PARCEL B)		
Physical Address/911 Address:		
Decimal Latitude/Longitude: 39.308844, -80.820225		
DMS Latitude/Longitude: 39°18'31.84"N, 80°49'12.81"W		
District: 01	Map: 4	Parcel: 33.1
Land Book Description:		
Deed Book Reference: Deed Book 329, Page 283		
Tax Map Reference: 09 01 0004 0033 0001 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 14 of 21

Site/Property Information:		
Legal Description: ROCK RUN OF ARNOLDS CK 12.74 AC ALL O&G		
Physical Address/911 Address: OFF RT 11 OVER 2		
Decimal Latitude/Longitude: 39.310647, -80.813806		
DMS Latitude/Longitude: 39°18'38.33"N, 80°48'49.70"W		
District: 01	Map: 4	Parcel: 37
Land Book Description:		
Deed Book Reference: Deed Book 243, Page 262		
Tax Map Reference: 09 01 0004 0037 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 15 of 21

Site/Property Information:		
Legal Description: ROCK RUN OF ARNOLDS CK 5 AC ¼ O&G		
Physical Address/911 Address: OFF RT 11 OVER 2		
Decimal Latitude/Longitude: 39.312331, -80.815006		
DMS Latitude/Longitude: 39°18'44.39"N, 80°48'54.02"W		
District: 01	Map: 4	Parcel: 37.1
Land Book Description:		
Deed Book Reference: Deed Book 243, Page 262		
Tax Map Reference: 09 01 0004 0037 0001 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 16 of 21

Site/Property Information:		
Legal Description: ROCK RUN OF ARNOLDS CK 12 AC 96 PO 1/2 O&G		
Physical Address/911 Address: OFF RT 11/2		
Decimal Latitude/Longitude: 39.309919, -80.811456		
DMS Latitude/Longitude: 39°18'35.71"N, 80°48'41.24"W		
District: 01	Map: 4	Parcel: 37.2
Land Book Description:		
Deed Book Reference: Deed Book 243, Page 262		
Tax Map Reference: 09 01 0004 0037 0002 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 17 of 21

Site/Property Information:		
Legal Description: RUSH RUN OF ARNOLDS CK 45 AC ½ INT		
Physical Address/911 Address: OFF RT 11/2		
Decimal Latitude/Longitude: 39.315322, -80.813733		
DMS Latitude/Longitude: 39°18'55.16"N, 80°48'49.44"W		
District: 01	Map: 4	Parcel: 41
Land Book Description:		
Deed Book Reference: Deed Book 225, Page 308		
Tax Map Reference: 09 01 0004 0041 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 18 of 21

Site/Property Information:		
Legal Description: RUSH RUN B 202.28 AC		
Physical Address/911 Address: 13 RUSH RUN		
Decimal Latitude/Longitude: 39.312392, -80.804533		
DMS Latitude/Longitude: 39°18'44.61"N, 80°48'16.32"W		
District: 08	Map: 6	Parcel: 4
Land Book Description:		
Deed Book Reference: Deed Book 264, Page 633		
Tax Map Reference: 09 08 0006 0004 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 19 of 21

Site/Property Information:		
Legal Description: MI CREEK 124.13 AC		
Physical Address/911 Address: STAR RT WEST UNION		
Decimal Latitude/Longitude: 39.316864, -80.802667		
DMS Latitude/Longitude: 39°19'00.71"N, 80°48'9.60"W		
District: 08	Map: 7	Parcel: 6
Land Book Description:		
Deed Book Reference: Deed Book 201, Page 285		
Tax Map Reference: 09 08 0007 0006 0000 0000		
Existing Buildings/Use of Property: HOUSE, DRIVEWAY, FARM, WOODED		

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

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: 20 of 21

Site/Property Information:		
Legal Description: M I CREEK 176 AC 80P		
Physical Address/911 Address: STAR RT W UNION M.I CRK		
Decimal Latitude/Longitude: 39.320639, -80.801472		
DMS Latitude/Longitude: 39°19'14.30N, 80°48'5.30"W		
District: 08	Map: 7	Parcel: 5
Land Book Description:		
Deed Book Reference: Deed Book 0167, Page 0782		
Tax Map Reference: 09 08 0007 0005 0000 0000		
Existing Buildings/Use of Property: WOODED		

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

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: 21 of 21

Site/Property Information:		
Legal Description: MI CREEK 357.75 AC		
Physical Address/911 Address: STAR RT W UNION RT 28		
Decimal Latitude/Longitude: 39.330847, -80.794492		
DMS Latitude/Longitude: 39°19'51.05"N, 80°47'40.17"W		
District: 08	Map: 4	Parcel: 28
Land Book Description:		
Deed Book Reference: Deed Book WB28, Page 314		
Tax Map Reference: 09 08 0004 0028 0000 0000		
Existing Buildings/Use of Property: HOUSE, DRIVEWAY, BARN, FARM, WOODED		

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

Doddridge County Commercial/Industrial
Floodplain Development Permit 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: 1 & 2 of 21

Property Owner Data:		
Name of Primary Owner (PO): Antero Midstream LLC, % Altus Group US		
PO Address: PO Box 1092		
City: Sparks Glencoe	State: MD	Zip: 21152
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>3-6</u> of <u>21</u>

Property Owner Data:		
Name of Primary Owner (PO): SHEPHERD, MICHAEL		
PO Address: 4362 LONG RUN RD		
City: GREENWOOD	State: WV	Zip: 26415
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: 7 of 21

Property Owner Data:		
Name of Primary Owner (PO) SHEPHERD, JAMES E II		
PO Address: 4801 LONG RUN RD		
City: PENNSBORO	State: WV	Zip: 26415
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>8-10</u> of <u>21</u>
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Property Owner Data:		
Name of Primary Owner (PO): CHIPPS, EUGENE VANCE II		
PO Address: 304 TYMBER CREEK DRIVE		
City: CLARKSBURG	State: WV	Zip: 26301
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u> 11 </u> of <u> 21 </u>
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Property Owner Data:		
Name of Primary Owner (PO): HAYHURST, ELI W & JEFFREY A		
PO Address: 1207 FAWN VIEW DR		
City: FAIRMONT	State: WV	Zip: 26554
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>12 & 17 of 21</u>
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Property Owner Data:		
Name of Primary Owner (PO) HILEY, RALPH M & RITA E (SURV)		
PO Address: 93 PINEVIEW DR		
City: PARKERSBURG	State: WV	Zip: 26101
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>12 & 17</u> of <u>21</u>

Property Owner Data:		
Name of Primary Owner (PO) ASH, VIRGINIA M & JACK G (SURV)		
PO Address: 1414 WASHINGTON GDNS CIRCLE		
City: WASHINGTON	State: WV	Zip: 26181
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>13</u> of <u>21</u>
--

Property Owner Data:		
Name of Primary Owner (PO): DAVIS, JONATHAN LEONARD & LOUELLA DIANE (SURV)		
PO Address: 3175 SAM CAVINS RD		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>14-16</u> of <u>21</u>

Property Owner Data:		
Name of Primary Owner (PO): DAVIS, JONATHAN L & JEFFERY WM (LIFE)		
PO Address: 3175 SAM CAVIS RD		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>18 & 19</u> of <u>21</u>

Property Owner Data:		
Name of Primary Owner (PO) MCCONNELL, MARTHA ANN FORD		
PO Address: 182 SHORTY FORD RD		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u>20</u> of <u>21</u>
--

Property Owner Data:		
Name of Primary Owner (PO): OSTROFF, JOEL W & BONNIE		
PO Address: 2912 JOYCE ROAD		
City: ROSLYN	State: PA	Zip: 19001
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

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: <u> 21 </u> of <u> 21 </u>
--

Property Owner Data:		
Name of Primary Owner (PO) STRICKLING, JOHN PAUL ETAL		
PO Address: 756 STRICKLING FARM LN		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

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

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Contractor Data:

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

Property Designation: ___ of ___

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

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

Adjacent and/or Affected Landowners Data

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

Adjacent Property Owner Data: Upstream		
Name of Primary Owner (PO): SHEPHERD, JAMES E II		
Physical Address: 4801 LONG RUN RD		
City: PENNSBORO	State: WV	Zip: 26415
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data: Upstream		
Name of Primary Owner (PO): KELLEY, EIAN W & JESSICA L (SURV)		
Physical Address: 40 SUMMIT DR		
City: WILLIAMSTOWN	State: WV	Zip: 26187
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data: Downstream		
Name of Primary Owner (PO): JAMES, CARLIE		
Physical Address: 151 KELLEY JAMES LN		
City: WEST UNION	State: WV	Zip: 26456
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 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): CHIPPS, EUGENE VANCE II		
Physical Address: 304 TYMBER CREEK DR		
City: CLARKSBURG	State: WV	Zip: 26301
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): CHIPPS, EUGENE VANCE II		
Physical Address: 304 TYMBER CREEK DR		
City: CLARKSBURG	State: WV	Zip: 26301
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 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): STOUT, DEBRA L		
Physical Address: #8 OLD ROSEMAR RD		
City: PARKERSBURG	State: WV	Zip: 26105
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): LYNCH WILLIAM RANDALL & DIXIE JANET CRAIG (SURV)		
Physical Address: HC 69 BOX 35		
City: WEST UNION	State: WV	Zip: 26456
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: _____

Applicant Printed Name: _____



July 26, 2017

Doddridge County Commission
Attn: George Eidel, Doddridge County Floodplain Manager
118 East Court Street, Room 102
West Union, WV 26456

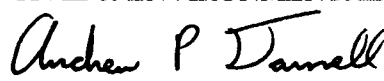
Subject: Antero Midstream, LLC.
Crystal Lake Pipeline (AFE# A05928)
No-Rise Certificate
Doddridge County, West Virginia
CEC Project 173-049


Civil & Environmental Consultants, Inc. (CEC) is pleased to evaluate the potential floodplain impacts for the above referenced project on behalf of Antero Midstream, LLC., 535 White Oaks Blvd, Bridgeport, WV 26330. Antero Midstream, LLC proposes to install a 24" High Pressure Steel Gas Line and a 24" HDPE Waterline. Portions of the proposed project are located within the Long Run Zone A, Arnold Creek Zone A, and Middle Island Creek Zone A and Zone AE Flood Hazard Areas, according to the Flood Insurance Rate Maps (FIRMs) for Doddridge County, map panels 54017C0105C, 54017C0110C, 54017C0115C, and 54017C0120C, all with a map revised date of October 4, 2011. The proposed work that will take place in the floodplain includes the installation of permanent water bars, pipelines, and temporary wareyards. The material needed to construct the permanent water bars will be excavated from the up-gradient side of the berm. Any and all fill generated will be temporary, and all disturbed areas will be returned to preconstruction conditions. The crossing of WV 18 and the Middle Island Creek Zone AE Flood Hazard Area will be performed using HDD Bore Methods, and thus will not have an impact on the Zone AE Flood Hazard Area. As a result, the project will not result in a decrease of the available floodplain storage area and will not adversely affect the existing base flood elevations of Long Run, Arnold Creek, and Middle Island Creek.

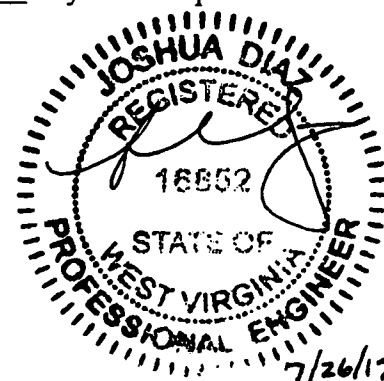
This no-rise certificate is provided in support of the floodplain development permit application. Your time and effort in reviewing this floodplain development permit application is appreciated. Please feel free to contact me at 304-933-3119 or via e-mail at adarnell@cecinc.com or contact Ms. Rachel Grzybek at 304-842-4008 or via e-mail at rgrzybek@anteroresources.com if you have questions or need additional information.

Respectfully submitted,

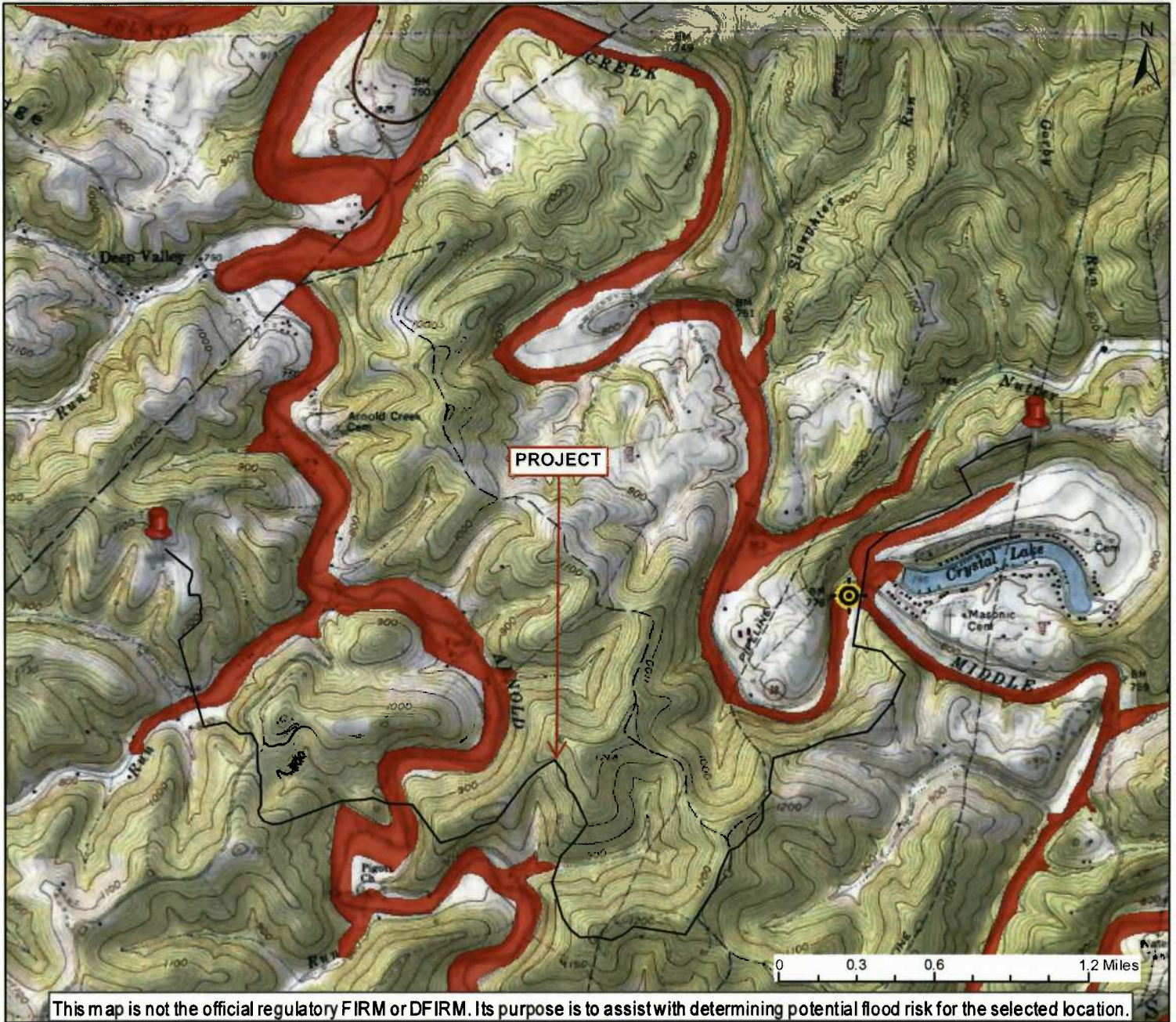
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.


Andrew P. Darnell, E.I.
Assistant Project Manager




Joshua N. Diaz, P.E.
Senior Project Manager



WV Flood Map



User Notes:
 Antero Midstream LLC
 Crystal Lake Pipeline
 AFE #A05924

-  Flood Hazard Zone
-  Flood Point of Interest

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

Map created on July 6, 2017

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

FEMA Issued Flood Map: 54017C0110C

Watershed (HUC8): Little Musringum-Middle Island (5

Elevation: About 758 ft

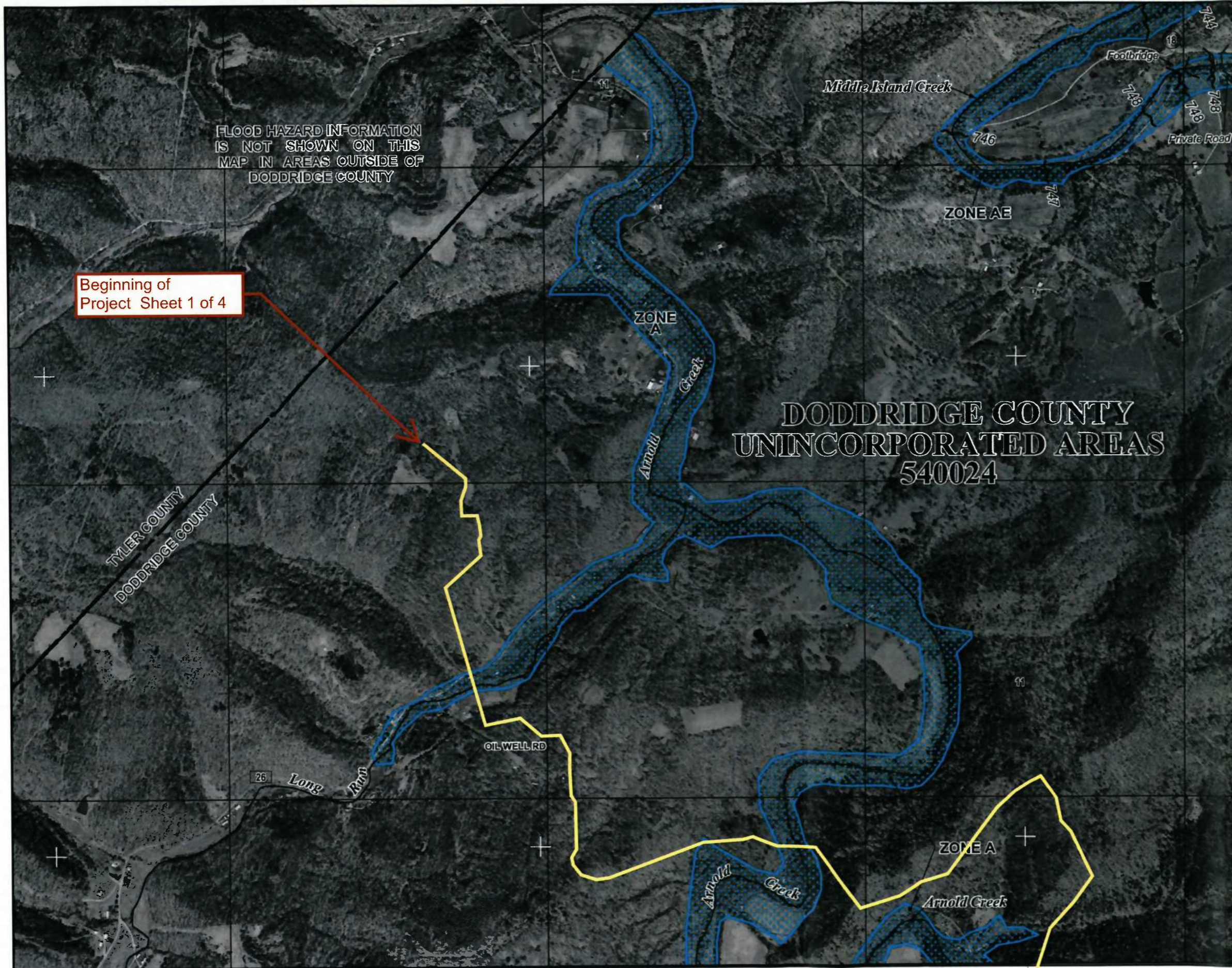
Location (long, lat): (80.803329 W, 39.325298 N)

Location (UTM 17N): (516952, 4352894)

Contacts: Doddridge

CRS Information: N/A

Parcel Number: No Parcel



FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF DODDRIDGE COUNTY

Beginning of Project Sheet 1 of 4



MAP SCALE 1" = 1000'
 500 0 1000 2000 FEET

DODDRIDGE COUNTY
 UNINCORPORATED AREAS
 540024

PANEL 0105C

FIRM
 FLOOD INSURANCE RATE MAP
 DODDRIDGE COUNTY,
 WEST VIRGINIA
 AND INCORPORATED AREAS

PANEL 105 OF 325
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0105	C

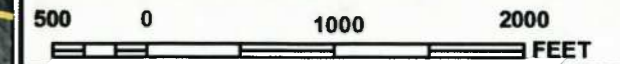
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
 54017C0105C
MAP REVISED
 OCTOBER 4, 2011
 Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



MAP SCALE 1" = 1000'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0115C

FIRM

**FLOOD INSURANCE RATE MAP
DODDRIDGE COUNTY,
WEST VIRGINIA
AND INCORPORATED AREAS**

PANEL 115 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0115	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
 54017C0115C
MAP REVISED
 OCTOBER 4, 2011
 Federal Emergency Management Agency

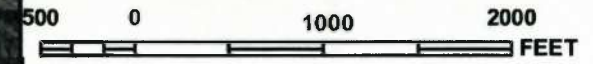
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.mec.fema.gov



Project Sheet 3 of 4



MAP SCALE 1" = 1000'



NFP

PANEL 0120C

FIRM
FLOOD INSURANCE RATE MAP
DODDRIDGE COUNTY,
WEST VIRGINIA
AND INCORPORATED AREAS

PANEL 120 OF 325
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0120	C
WEST UNION, TOWN OF	540025	0120	C

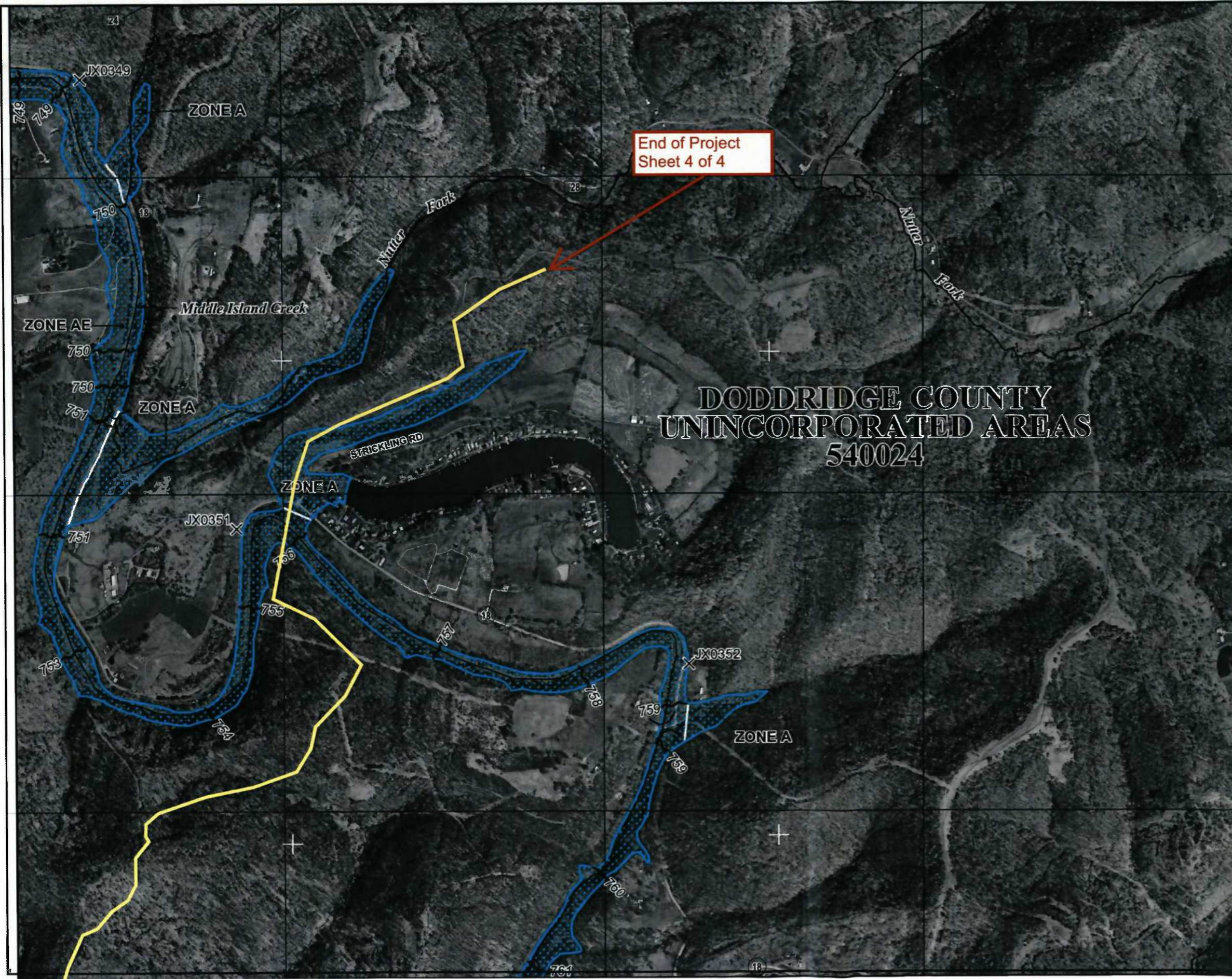
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
 54017C0120C
MAP REVISED
 OCTOBER 4, 2011

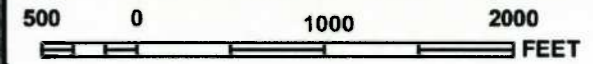
Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.mec.fema.gov



MAP SCALE 1" = 1000'



End of Project
Sheet 4 of 4

**DODDRIDGE COUNTY
UNINCORPORATED AREAS
540024**

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110C

FIRM
FLOOD INSURANCE RATE MAP
DODDRIDGE COUNTY,
WEST VIRGINIA
AND INCORPORATED AREAS

PANEL 110 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0110	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
54017C0110C
MAP REVISED
OCTOBER 4, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ANTERO MIDSTREAM LLC

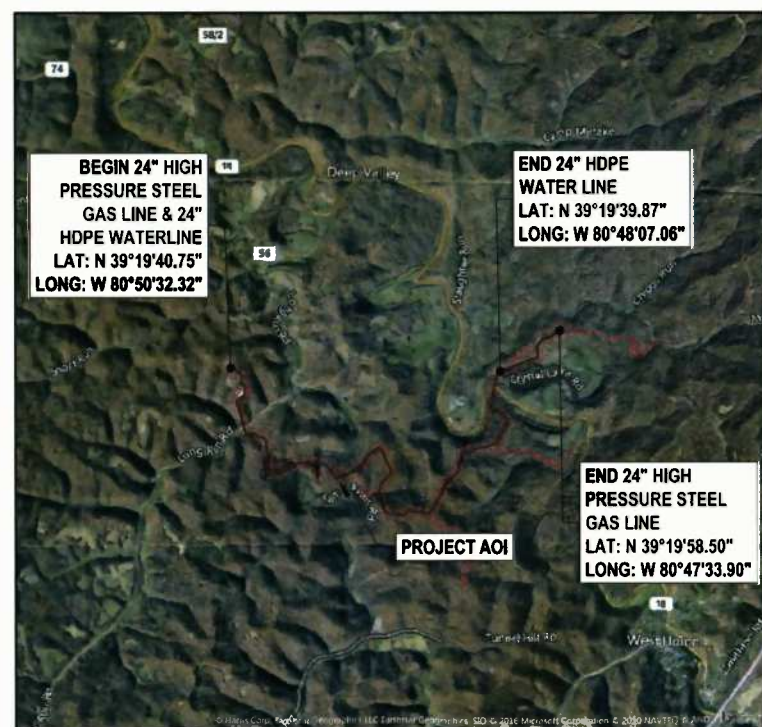
ISSUED FOR PERMITTING PLANS FOR THE CRYSTAL LAKE PIPELINE

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE

AFE #A05924 101-050-6196

DODDRIDGE COUNTY, WEST VIRGINIA MAY 2017

AERIAL MAP



VICINITY MAP
FULL SCALE: 1"=4,000'
HALF SCALE: 1"=8,000'



Know what's at stake™
Call 811
BEFORE YOU DIG

Antero
MidstreamPartners LP

PHONE: (303) 357-7310 | FAX: (303) 357-7315
1615 WYNKOOP STREET
DENVER, CO 80202

ENGINEER OF RECORD

THRASHER

PHONE: (304) 624-4108 | FAX: (304) 624-7831
600 WHITE OAKS BLVD., P.O. BOX 940
BRIDGEPORT, WV 26330

EXISTING INFORMATION SOURCES

BASE CONTOUR DATA PROVIDED BY THE WEST VIRGINIA OFFICE OF GIS AT TWO FOOT CONTOUR INTERVALS.

SUPPLEMENTAL SPOT ELEVATIONS AND ALIGNMENT PROVIDED BY:

THE THRASHER GROUP
600 WHITE OAKS BLVD., P.O. BOX 940
BRIDGEPORT, WV 26330

BENCHMARK:
HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, US SURVEY FOOT
VERTICAL - NAVD 88 (GEOID12B), US SURVEY FOOT

ROAD DESIGNATIONS OBTAINED FROM WV-DOH
(<http://www.transportation.wv.gov>)

PLAN REPRODUCTION WARNING

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Matthew W. Fluharty 4/26/17
MATTHEW W. FLUHARTY, WV P.E. # 16375

ISSUED FOR PERMITS DATE: 4/26/17 BY: *mf*
 ISSUED FOR CONSTRUCTION DATE: _____ BY: _____

LAYOUT TAB: COVER USER: robert.j.lucko
CAD FILE: R:\050-6196-REC HP LOOP-ANTERO-Survey\PLANS\COVER SHEET.dwg PLOT DATE/TIME: 5/21/2017 7:40 AM

USER: jfred d. jenkins PLOT DATE/TIME: 5/21/2017 8:59 AM LAYOUT TAB: GNOTS CAD FILE: R:\050-6196-REC HP LOOP-ANTERO-SURVEY\PLANS\GENERAL NOTES SHEETS.dwg

WVDOH GENERAL NOTES

- ALL CONSTRUCTION ON THE DIVISION OF HIGHWAYS RIGHT OF WAY WILL CONFORM TO THE FOLLOWING:
- THE FOLLOWING NOTES APPLY TO ALL PROJECT PLAN SHEETS:
 - ALL METER SETTINGS ACROSS PAVED ROADS SHALL BE BORED OR MOLED, UNLESS OPEN CUT HAS BEEN APPROVED BY W.V.D.O.H. AND SPECIFICALLY INDICATED ON PLANS.
 - NOTIFICATION OF PROPOSED EXCAVATION, DEMOLITION OR ANY OTHER EARTH DISTURBING ACTIVITIES ARE REQUIRED TO BE PLACED TO MISS UTILITY OF WEST VIRGINIA (1-800-245-4848) NOT LESS THAN FORTY EIGHT (48) BUSINESS HOURS BEFORE ANY SUCH WORK IS TO BEGIN.
 - BEDDING SHALL BE PLACED ON ASPHALT SURFACE TO PROTECT THE PAVEMENT WHEN A TRENCHER OR TRACKED VEHICLE IS USED.
 - THE WEST VIRGINIA DIVISION OF HIGHWAYS PUBLICATIONS "STANDARD SPECIFICATIONS ROADS AND BRIDGES" AND "ACCOMMODATIONS OF UTILITIES ON HIGHWAY RIGHT OF WAY" LATEST EDITION ARE PART OF THE PROJECT SPECIFICATIONS AND WILL BE ADHERED TO BY THE CONTRACTOR.
 - ALL DAMAGE TO ROAD SURFACE SHALL BE REPAIRED ACCORDING TO THE WEST VIRGINIA DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS AND DETAILS.
 - ALL EXISTING DUMP ROCK OR RIP RAP DITCHES DISTURBED BY THE WATER LINE CONTRACTOR SHALL BE RESTORED WITH THE SAME SIZE, GRADE AND QUALITY OF ROCK AFTER THE WATER LINE HAS BEEN INSTALLED. NEW DUMP ROCK (RIP RAP) IS TO BE PLACED IN ALL LOCATIONS WHERE THE DITCH LINE GRADE IS GREATER THAN 5% AND THERE IS NO EXISTING RIP RAP.
 - TRAFFIC CONTROL SHALL CONFORM TO THE W.V.D.O.H. PUBLICATION "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE" OPERATION LATEST EDITION.
 - ALL BACKFILL MATERIAL AND COMPACTION REQUIREMENT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN THE ACCOMMODATION OF UTILITIES ON HIGHWAY RIGHT OF WAY AND ADJUSTMENT AND RELOCATION OF UTILITY FACILITIES ON HIGHWAY PROJECTS AND SUBJECT TO D.O.H. APPROVAL. EVIDENCE OF PROPER COMPACTION BY TESTING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TESTING SHALL BE ONE (1) PER DAY OR EVERY 500 LINEAL FEET OR AS DETERMINED BY THE DISTRICT MANAGER (ENGINEER) OR HIS AUTHORIZED REPRESENTATIVE.
 - WATER LINES OR OTHER LINES SHALL BE PLACED EITHER AROUND, UNDER OR OVER DRAINAGE CULVERTS AS SHOWN ON PLANS.
 - AGGREGATE SHOULDER STONE IS TO BE PLACED ON THE SHOULDER AT A THICKNESS EQUAL TO 6" OR ITS ORIGINAL THICKNESS WHICHEVER IS GREATER. PAVED SHOULDERS WILL BE PAVED.
 - MAGNETIC MARKING TAPE SHALL BE INSTALLED AT A DEPTH OF 12" TO 18" BELOW THE SURFACE AND DIRECTLY ABOVE ALL LINES OR PIPE.
 - REPAIR TO DRIVEWAYS ON W.V.D.O.H. RIGHT OF WAYS SHALL CONFORM TO THE APPROPRIATE W.V.D.O.H. TYPICAL REPAIR DETAIL.
 - CLEANUP WILL BE ACCOMPLISHED DAILY. RIGHT OF WAYS SHALL CONFORM TO THE APPROPRIATE W.V.D.O.H. REPAIR. ALL CULVERTS AND DRAINAGE DITCHES SHALL BE OPEN AND MAINTAINED DURING CONSTRUCTION. SHOULDERS WILL BE RESTORED AND STABILIZED WITH STONE DAILY WITH APPROPRIATE STONE AT THE DISCRETION OF W.V.D.O.H.
 - ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN SEVEN DAYS OF COMPLETION OF BACK FILL OPERATION.
 - NO EXCESS EXCAVATION MATERIAL SHALL BE WASTED ON W.V.D.O.H. RIGHT OF WAYS WITHOUT THE AGREEMENT OF THE W.V.D.O.H.
 - THE W.V.D.O.H. RESERVES THE RIGHT TO RELOCATE WATERLINES, FIRE HYDRANTS, AND VALVES AS DEEMED NECESSARY.
 - THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITY COMPANIES, PRIOR TO CONSTRUCTION TO OBTAIN UTILITY LOCATIONS AND PERFORMING EXPLORATORY WORK TO DETERMINE SUBSURFACE MATERIALS AND STRUCTURES THAT MAY AFFECT ITS WORK.
 - PRIOR TO THE START OF ANY WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY, THE CONTRACTOR SHALL GIVE THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION 48 HOURS NOTICE.
 - THE CONTRACTOR IS RESPONSIBLE FOR ANY OFFSITE DISPOSAL REQUIRED. DISPOSAL SHALL BE TO AN ACCEPTABLE LEGAL SITE. CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL AT DISPOSAL SITES.
 - ALL ELEVATION GRADES AND DISTANCES SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE PRIOR TO CONSTRUCTION.
 - ALL CONSTRUCTION SHALL MAINTAIN 5' FROM EDGE OF PAVEMENT OR BOTTOM OF DITCH UNLESS NO OTHER PRACTICAL MEANS OF CONSTRUCTION EXISTS.
 - PERFORM ACCEPTABLE REPAIR OF ANY AND ALL SUB-BASE FAILURES THAT ARE CAUSED BY THE CONTRACTOR'S OPERATION ON A DAILY BASIS.
 - PERFORM TOTAL REPAIR AND/OR REPLACEMENT OF ANY DAMAGED ASPHALT SURFACE AS DETERMINED BY THE W.V.D.O.H. REPRESENTATIVE.
 - PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL MAKE A COMPLETE VIDEO SHOWING THE ROAD SURFACE OF THE ENTIRE PROJECT OF ROADS TO BE UTILIZED IN THE CONSTRUCTION OF THE PROJECT AND PRESENT IT TO UTILITY SUPERVISOR W.V.D.O.H.
 - REMOVE DITCH-LINE OBSTACLES AND/OR RECONSTRUCTION OF THE DITCH-LINE.
 - IN THE CASE OF MANHOLES OR VALVES IF AT ALL POSSIBLE SHALL BE PLACED OUTSIDE THE ROADWAY, SHOULDER, OR DITCH LINE IF PLACED IN THE SHOULDER THERE IS TO BE A MINIMUM OF 6 INCHES OF COVER IN THE DITCH LINE THERE IS TO BE 12 INCHES OF COVER BETWEEN THE MANHOLE AND THE INVERT OF THE DITCH.
 - ANY MANHOLES OR VALVES OR VALVE BOXES PLACED IN THE ROADWAY WILL BE ON THE SAME PLANE AS THE ROADWAY AND SET FLUSH WITH ROADWAY.
 - ANY ROADS REQUIRING AN H.L.B.C. OVERLAY, FULL WIDTH OR PARTIAL, SHALL HAVE SHOULDER STONE FROM AN APPROVED SOURCE PLACED AS PER D.O.H. SPECIFICATIONS.
 - THE DEPARTMENT OF HIGHWAYS REQUIRES THERE BE NO WORK WITHIN THE DEPARTMENT'S RIGHT-OF-WAY DURING SNOW AND ICE REMOVAL. THERE MAY BE EXCEPTIONS FOR EMERGENCY AND CASE BY CASE SITUATIONS WITH NOTIFICATION TO THE DEPARTMENT.

UTILITY AGENCIES SERVING PROJECT AREA

MISS UTILITY
1-800-245-4848
WEST VIRGINIA DIVISION OF HIGHWAYS
WVDOH DIST #4
P.O. BOX 4220
CLARKSBURG, WV 26301-4220
(304) 842-1576
(304) 842-1507 FAX
DAVE SCHEARER - UTILITY SUPERVISOR - CROSSINGS
DENISE RONCONE - PERMIT SUPERVISOR - TEMP. ACCESSES

GAS
DOMINION TRANSMISSION INC.
1-888-264-8240
ANTERO RESOURCES CORPORATION
1-303-357-7310
ENERGY CORPORATION OF AMERICA (ECA)
1-304-925-6100
(RICK JETT) 1-304-678-7446
KEY OIL COMPANY
1-304-269-7102
(GREG KELLY) 1-304-588-7610
RITCHIE PETROLEUM
1-304-659-2123
(JUSTIN SMITH) 1-304-266-6332
ALLIANCE PETROLEUM CORPORATION (APC)
1-330-493-0440
(GENE DILLON) 1-304-629-9120

POWER
M&N POWER
1-800-686-0022
CABLE
AT&T
1-304-216-4100

SEWER
NO PUBLIC SEWER IN PROJECT AREA
WATER
NO PUBLIC WATER IN PROJECT AREA

TELEPHONE
VERIZON TELECOMMUNICATIONS
1-800-275-2355

RESPONSE TEAMS:
NATIONAL RESPONSE CENTER FOR REPORTING CHEMICAL OR OIL SPILLS
1-800-424-8802

STATE EMERGENCY SPILL NOTIFICATION
1-800-642-3074

EMERGENCY AMBULANCE, FIRE, LAW ENFORCEMENT
911

GENERAL NOTES

- EXISTING UTILITIES SHOWN ON PLANS WHERE EVIDENCE HAS BEEN FOUND OR PROVIDED BY LOCAL UTILITIES. EXACT DEPTH AND LOCATION OF UTILITY LINES NOT KNOWN. CONTRACTOR TO VERIFY UTILITY LOCATIONS PRIOR TO CROSSING BY CONTACTING MISS UTILITY AT 1-800-245-4848 AND LOCAL UTILITY COMPANIES AS LISTED AND/OR NOT LISTED ON THIS SHEET. CONTRACTOR TO LOCATE WATER AND UTILITY SERVICES BEFORE BORING AND JACKING.
- IN THE EVENT AN ERROR WITH THE PLANS SEEMS APPARENT, THE MATTER MUST BE TAKEN UP WITH THE ENGINEER FOR REVIEW BEFORE PROCEEDING WITH CONSTRUCTION.
- ALL PERMITS MUST BE SECURED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE ALL STREAM CROSSING INSTALLATIONS PROPOSED SO NOT TO DELAY THE CONSTRUCTION PROCESS. STREAM CROSSINGS ARE TO BE CONSTRUCTED USING AN OPEN CUT CROSSING METHOD UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- ALL WVDOH ROAD CROSSINGS TO BE CONSTRUCTED USING AN OPEN CUT CROSSING METHOD UNLESS OTHERWISE SPECIFIED ON THE PLANS. WVDOH TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY WORK WITHIN WVDOH R/W.
- ALL CONSTRUCTION TO BE DONE IN THE PROPOSED PIPELINE LIMITS OF DISTURBANCE AS SHOWN.
- ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE STANDARDS AND SPECIFICATIONS PROVIDED IN A SEPARATE BOUND VOLUME.
- CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE TYPES AND O.D. PRIOR TO CONNECTION.
- PROPERTY LINES SHOWN ON PLANS WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.

EROSION & SEDIMENT CONTROL NOTES

- ALL EROSION AND SEDIMENT MEASURES TO BE IN ACCORDANCE WITH WEST VIRGINIA ONLINE BMP MANUAL FOR STANDARD GUIDELINES AND SPECIFICATIONS AVAILABLE AT:
[HTTPS://APPS.DEP.WV.GOV/DWVM/STORMWATER/BMP/INDEX.HTML](https://apps.dep.wv.gov/dwvm/stormwater/bmp/index.html)
- EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN SHOWN ON PLANS AND DETAILED IN SPECIFICATIONS.
- EXPOSED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM THE EROSION FORCES OF RAINDROPS, FLOWING WATER, AND WIND.
- CLEARING AND GRUBBING IS TO OCCUR IN THE NOTED LIMITS OF DISTURBANCE (L.O.D.) ONLY.
- ALL GRADED AREAS THAT ARE AT FINAL GRADE MUST BE SEEDED AND MULCHED WITHIN 7 DAYS AND AREAS THAT WILL NOT BE WORKED AGAIN FOR 21 DAYS OR MORE MUST BE SEEDED AND MULCHED WITHIN 7 DAYS.
- AREAS WHERE THE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RE-SEEDED IMMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.
- TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH BMPs.
- EROSION AND SEDIMENT CONTROL BMPs SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. ANY NECESSARY OR REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY.

CONSTRUCTION SEQUENCE OF EVENTS

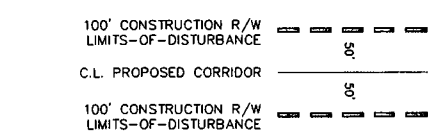
- CALL MISS UTILITY (1-800-245-4848)
- INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES.
- CONSTRUCTION OF PIPELINE WITH RESTORATIONS.
- TESTING OF PIPELINE AND APPURTENANCES.
- PROJECT CLOSE-OUT, PUNCH LIST, CLEAN UP, REPAIRS, FINAL SEEDING AND MULCHING, ETC...

LEGEND / ABBREVIATIONS

Legend of symbols and line styles for utility lines, property lines, erosion control, and construction right-of-way. Includes symbols for existing pipeline vent, existing well, gas meter, rectifiers, pipeline marker, gas valve, monument found, utility pole, pipeline, water line, fence, overhead utility, underground utility, property line, DOH right-of-way, proposed permanent right-of-way, proposed construction right-of-way, compressor limits, Antero centerline, existing ground profile, proposed pipeline profile, contour, project area, orange safety fence, siltsaver BSRF, compost filter sock, water bar, delineated streams, wetlands, groundwater seep, aquatic buffer, erosion control product, permanent right-of-way, construction right-of-way, temporary workspace, stone construction entrance, timbermat crossing, proposed access road, pipeline mile post, proposed water bar, earth trench breaker, gas line marker, proposed test station, proposed anode, proposed rectifier, proposed insulation kit, proposed AC coupon, parcel identification, and HP/LP pipeline.

*LEGEND IS TYPICAL. NOT ALL ITEMS IN LEGEND APPEAR IN DRAWING

PROPOSED 100' CONSTRUCTION RIGHT-OF-WAY



DRAWING INDEX

01	COVER	COVER SHEET
02	GNOTS	GENERAL NOTES SHEET
03	SPECS	GENERAL CONSTRUCTION SPECS SHEET
04	INDEX	INDEX SHEET
05-17	PLAN1-PLAN13	PROPOSED ALIGNMENT PLAN AND PROFILE SHEETS
18-23	AR1-AR6	ACCESS ROAD SHEETS
24	HTP	HYDROSTATIC TEST PROFILE SHEET
25-37	S&WC1-S&WC13	STREAM & WETLAND CROSSING SHEETS
38-47	ESCP1-ESCP10	ESCP DETAIL SHEETS

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
1	24" STEEL API 5L PSL-2, X-65, 0.500" WALL, FBE COATED PIPE	27,609 LF
2	24" STEEL API 5L PSL-2, X-65, 0.500" WALL, ARO COATED PIPE	1,909 LF
RECP	ROLLED EROSION CONTROL PRODUCT	1,340,206 SF
SSI	SILT SAVER BSRF-P1	16,531 LF
SS2	SILT SAVER BSRF-P2	32,862 LF
TB	EARTH TRENCH BREAKERS	114
WB	PERMANENT WATERBARS	256
GM	GAS LINE MARKERS	121
TS	TEST STATIONS	39

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
-----	-------------	-----

REVISION

NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	RAJ
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	ADJ

GENERAL INFORMATION

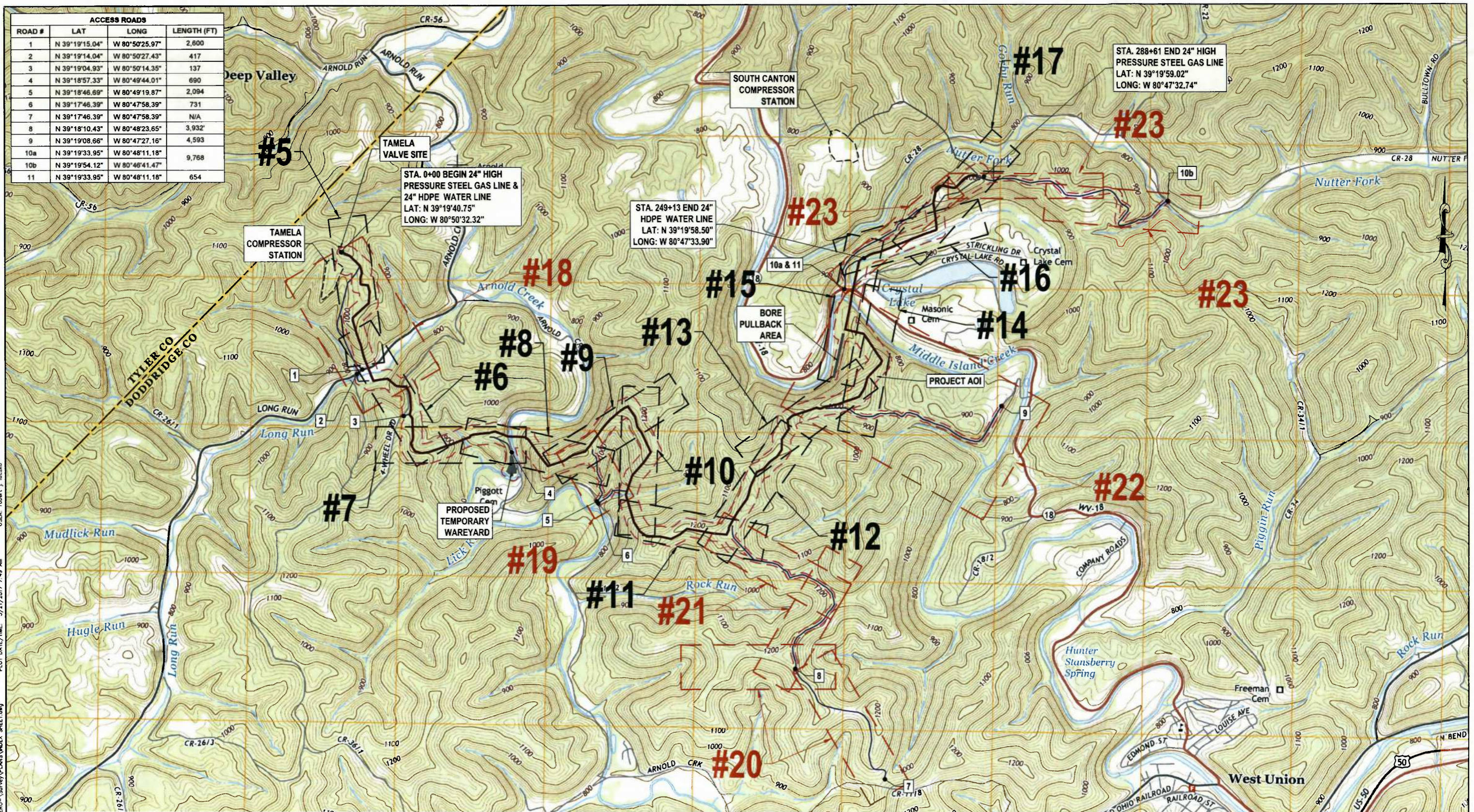
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

Antero Midstream Partners LP
CRYSTAL LAKE PIPELINE GENERAL NOTES
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA
DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: RAJ (TIG)
CHECKED: ADJ (TIG)
SHEET 02
SHT. NAME: 050-6196\CRYSTAL\GNOTS
REV. 2

ROAD #	LAT	LONG	LENGTH (FT)
1	N 39°19'15.04"	W 80°50'25.97"	2,600
2	N 39°19'14.04"	W 80°50'27.43"	417
3	N 39°19'04.93"	W 80°50'14.35"	137
4	N 39°18'57.33"	W 80°49'44.01"	690
5	N 39°18'46.69"	W 80°49'19.87"	2,094
6	N 39°17'46.39"	W 80°47'58.39"	731
7	N 39°17'46.39"	W 80°47'58.39"	N/A
8	N 39°18'10.43"	W 80°48'23.65"	3,932
9	N 39°19'08.66"	W 80°47'27.16"	4,593
10a	N 39°19'33.95"	W 80°48'11.18"	9,768
10b	N 39°19'54.12"	W 80°46'41.47"	
11	N 39°19'33.95"	W 80°48'11.18"	654



TAMELA COMPRESSOR STATION

STA. 0+00 BEGIN 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
LAT: N 39°19'40.75"
LONG: W 80°50'32.32"

STA. 249+13 END 24" HDPE WATER LINE
LAT: N 39°19'58.50"
LONG: W 80°47'33.90"

STA. 288+61 END 24" HIGH PRESSURE STEEL GAS LINE
LAT: N 39°19'59.02"
LONG: W 80°47'32.74"

LAYOUT TAB: INDEX
 CAD FILE: R:\050-6196-MC-HP-LOOP-ANTERO-SURVEY\PLANS\INDEX SHEET.dwg
 USER: robert.j.luciano
 PLOT DATE/TIME: 5/21/2017 7:49 AM

THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

0 1000 2000
HORIZ. SCALE IN FEET

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

REVISION			
NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/28/17	R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.D.U.

- GENERAL INFORMATION**
- MAPPING SOURCE: WEST UNION, WV USGS 7.5 MINUTE QUADRANGLE DATED 2014.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

Antero
MidstreamPartners LP

CRYSTAL LAKE PIPELINE INDEX SHEET

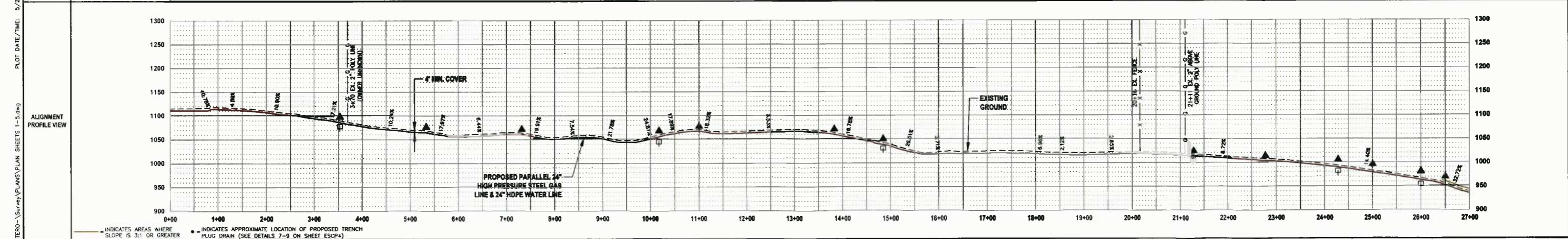
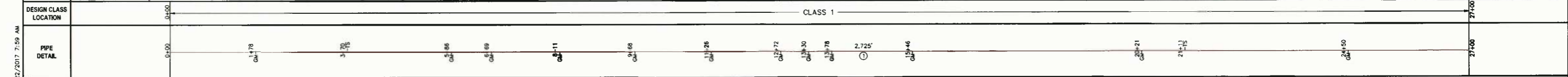
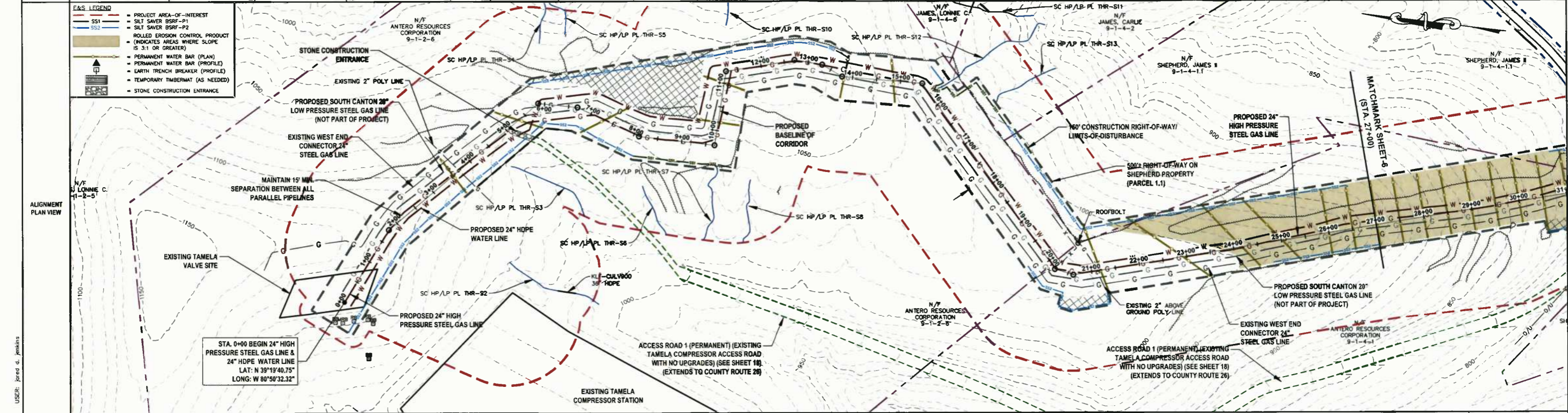
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TTS)
CHECKED BY: J.K. (TTS)

SHEET 04
SHT. NAME: 050-6196\CRYSTAL\INDEX

REV. 2

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	0+00	20+10	27+00
STATIONING & P.I. ANGLES	0+00	20+10	27+00
	P.L. 1+57.8 ANGLE: 18° RT	P.L. 15+46 ANGLE: 50° RT	
	P.L. 5+08 ANGLE: 46° RT	P.L. 11+28 ANGLE: 72° RT	
	P.L. 6+40 ANGLE: 18° RT	P.L. 12+72 ANGLE: 18° RT	
	P.L. 8+11 ANGLE: 18° LT	P.L. 13+30 ANGLE: 22° RT	
	P.L. 9+08 ANGLE: 88° LT	P.L. 13+78 ANGLE: 26° LT	
	P.L. 11+28 ANGLE: 72° RT	P.L. 15+46 ANGLE: 50° RT	
	P.L. 12+72 ANGLE: 18° RT	P.L. 20+16 EX. FENCE	
	P.L. 13+30 ANGLE: 22° RT	P.L. 20+21 ANGLE: 37° LT	
	P.L. 13+78 ANGLE: 26° LT	P.L. 20+82 ANGLE: 27° LT	
	P.L. 15+46 ANGLE: 50° RT	P.L. 21+11 EX. 2" ABOVE GROUND POLY LINE	



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

NO.	DESCRIPTION	QTY
1	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,725 LF
RECP	ROLLED EROSION CONTROL PRODUCT	55,665 SF
SS1	SILT SAVER BSRF-P1	450 LF
SS2	SILT SAVER BSRF-P2	2,834 LF
TB	EARTH TRENCH BREAKERS	6
WB	PERMANENT WATERBARS	13
GM	GAS LINE MARKERS	12
TS	TEST STATIONS	2

NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/16/17 J.D.J.

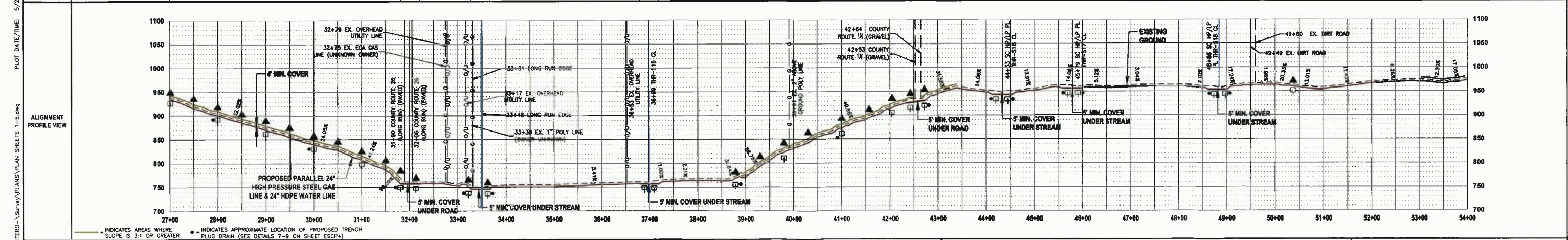
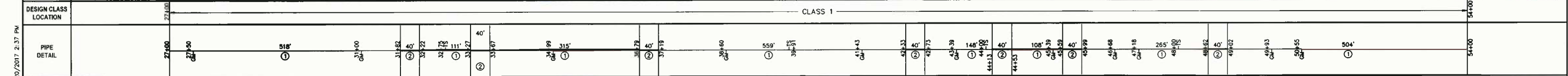
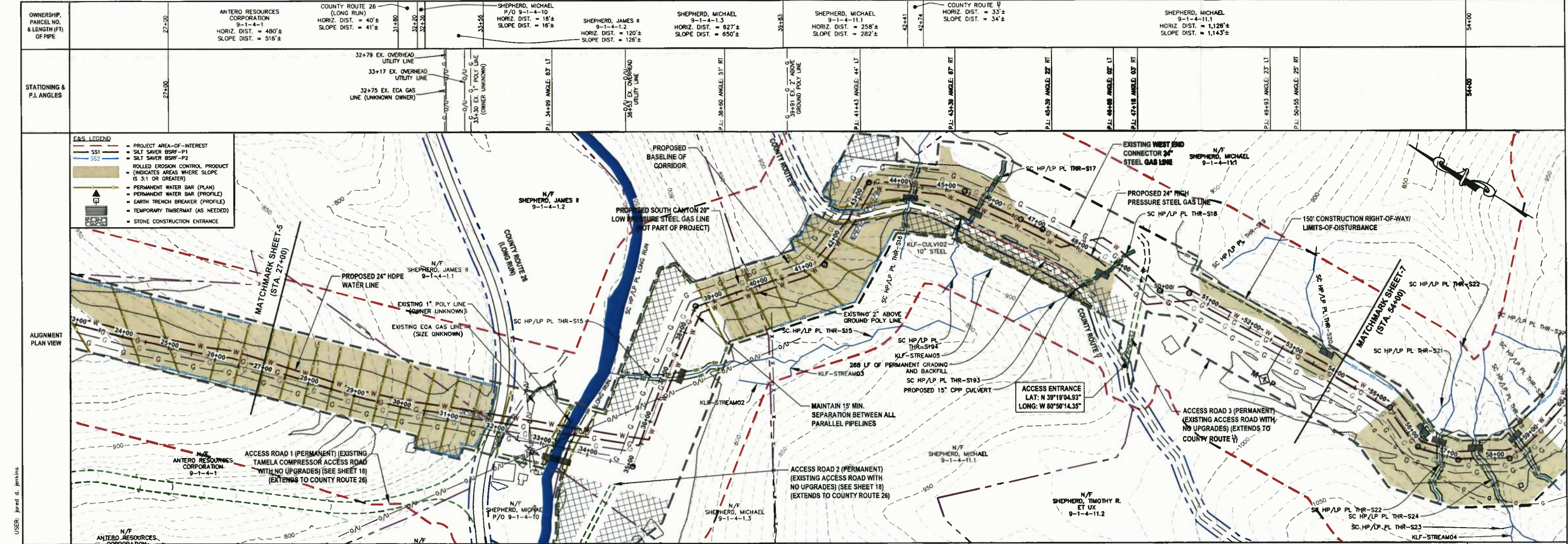
- | | |
|--|---|
| 1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig | 6. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCH INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED. |
| 2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT. VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT | 7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION. |
| 3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING. | 8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW. |
| 4. BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE. | 9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE. |
| 5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC. | 10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET. |

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 0+00 TO STA. 27+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/23/2017 AFE No: A05924
SCALE: AS SHOWN
DRAWN BY: R.A. (TRG)
CHECKED: AR (TRG)
SHEET 05
SHT. NAME: 050-6196\CRYSTAL\PLAN1 REV. 2



IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)		
①	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,528 LF
②	24" STEEL API 5L PSL-2, X-65, 0.500" WALL, ARO COATED PIPE	280 LF
RECP	ROLLED EROSION CONTROL PRODUCT	200,638 SF
SS1	SILT SAVER BSRF-P1	3,415 LF
SS2	SILT SAVER BSRF-P2	1,052 LF
TB	EARTH TRENCH BREAKERS	24
WB	PERMANENT WATERBARS	23
GM	GAS LINE MARKERS	11
TS	TEST STATIONS	4
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
①	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,528 LF
②	24" STEEL API 5L PSL-2, X-65, 0.500" WALL, ARO COATED PIPE	280 LF
RECP	ROLLED EROSION CONTROL PRODUCT	200,638 SF
SS1	SILT SAVER BSRF-P1	3,415 LF
SS2	SILT SAVER BSRF-P2	1,052 LF
TB	EARTH TRENCH BREAKERS	24
WB	PERMANENT WATERBARS	23
GM	GAS LINE MARKERS	11
TS	TEST STATIONS	4
NO.	DESCRIPTION	QTY

REVISION			
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/28/17	R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/18/17	J.D.
NO.	DESCRIPTION	DATE	BY

CRYSTAL LAKE PIPELINE

STA. 27+00 TO STA. 54+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE

DODDRIE COUNTY, WEST VIRGINIA

DATE: 5/20/2017

SCALE: AS SHOWN

DRAWN BY: RA (TIG)

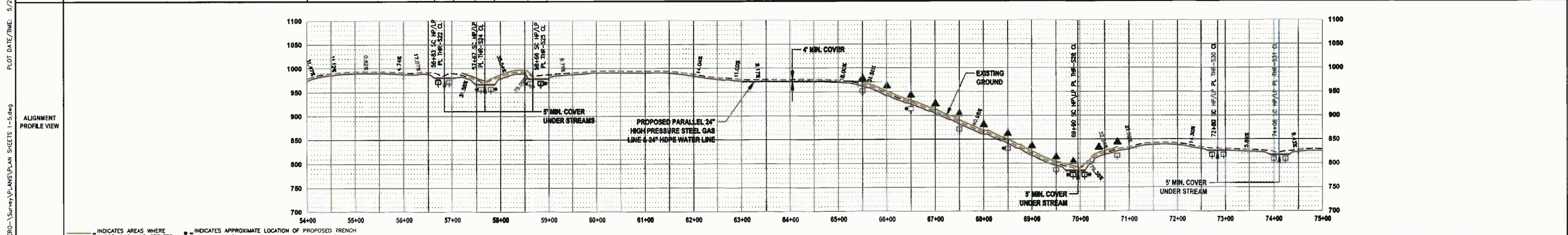
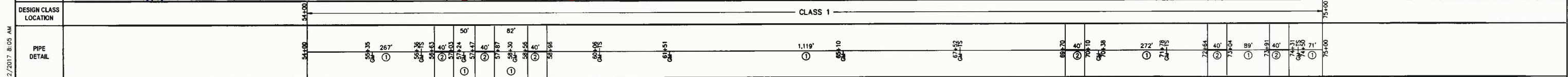
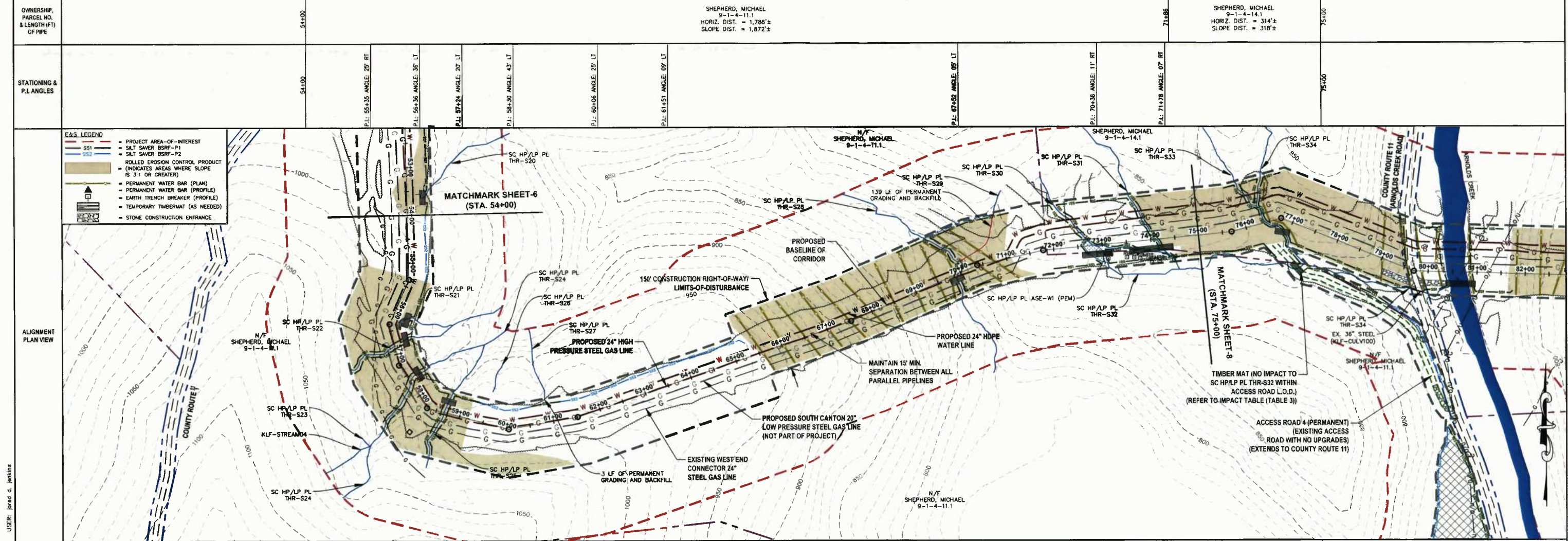
CHECKED: AR (TIG)

SHT. NAME: 050-6196\CRYSTAL\PLAN2

SHEET 06

REV. 2

LAYOUT TAB: PLAN2
 CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-Survey\PLAN\PLAN SHEETS 1-5.dwg
 PLOT DATE/TIME: 5/20/2017 2:37 PM
 USER: jared d. penkins



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)	
① 24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	1,950 LF
② 24" STEEL API 5L PSL-2, X-65, 0.500" WALL, ARO COATED PIPE	240 LF
RECP ROLLED EROSION CONTROL PRODUCT	157,305 SF
SS1 SILT SAVER BSRF-P1	3,094 LF
SS2 SILT SAVER BSRF-P2	850 LF
TB EARTH TRENCH BREAKERS	18
WB PERMANENT WATERBARS	12
GM GAS LINE MARKERS	11
TS TEST STATIONS	5
NO. DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)	
NO. DESCRIPTION	QTY

REVISION	
1	REVISED PER COMMENTS FROM KLEINFELDER, INC. 04/26/17 R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY 05/16/17 J.O.J.

GENERAL INFORMATION	
1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig	6. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RECONSTRUCTED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT	7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
4. BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 54+00 TO STA. 75+00

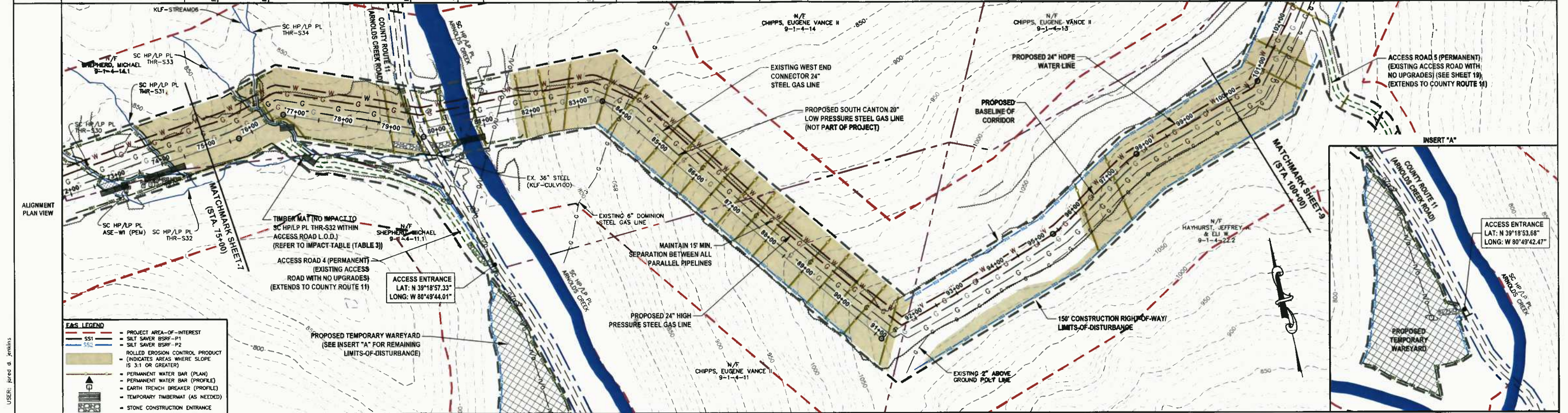
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/22/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TIG)
CHECKED: A.R. (TIG)

SHEET 07
SHT. NAME: 050-6196\CRYSTAL\PLAN3
REV. 2

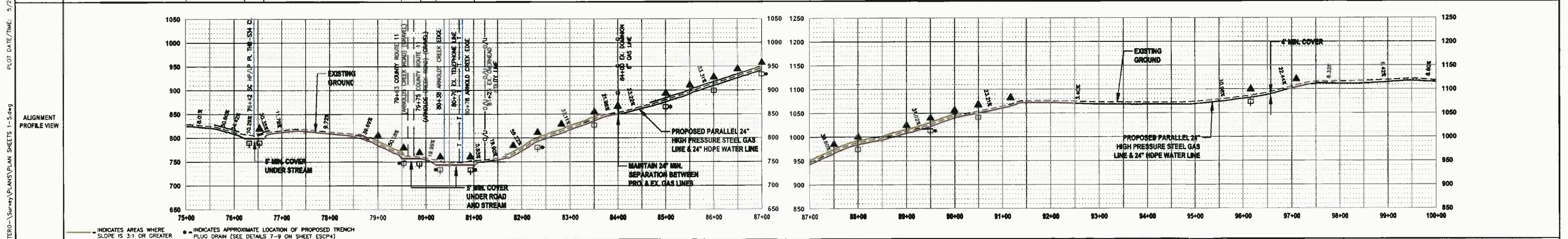
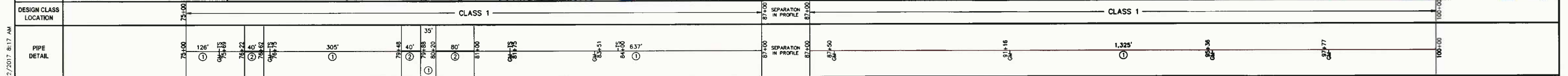
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PLOT DATE/TIME: 5/22/2017 8:05 AM
USER: jared.d.jenkins

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	75+00	SHEPHERD, MICHAEL 9-1-4-14.1 HORIZ. DIST. = 450'± SLOPE DIST. = 472'±	79+50	COUNTY ROUTE 11 (ARNOLDS CREEK ROAD) HORIZ. DIST. = 35'± SLOPE DIST. = 35'±	79+85	CHIPPIS, EUGENE VANCE II 9-1-4-14 HORIZ. DIST. = 702'± SLOPE DIST. = 742'±	86+87	CHIPPIS, EUGENE VANCE II 9-1-4-11 HORIZ. DIST. = 13'± SLOPE DIST. = 14'±	87+00	SEPARATION IN PROFILE	87+00	CHIPPIS, EUGENE VANCE II 9-1-4-11 HORIZ. DIST. = 476'± SLOPE DIST. = 497'±	91+77	HAYHURST, JEFFREY A. & ELI W. 9-1-4-22.2 HORIZ. DIST. = 824'± SLOPE DIST. = 828'±	100+00
STATIONING & P.I. ANGLES	75+00	P.L. 75+00 ANGLE: 10° LT	P.L. 76+75 ANGLE: 37° RT	P.L. 79+71 ANGLE: 20° LT	P.L. 80+70 EX. TELEPHONE LINE	P.L. 81+23 EX. UTILITY LINE	P.L. 83+51 ANGLE: 52° RT	P.L. 84+00 EX. UTILITY LINE	87+00	SEPARATION IN PROFILE	87+00	P.L. 91+16 ANGLE: 72° LT	P.L. 95+36 ANGLE: 13° LT	P.L. 97+77 ANGLE: 13° RT	100+00



EAS LEGEND

- PROJECT AREA-OF-INTEREST
- SS1 SILT SAVER BSRF-P1
- SS2 SILT SAVER BSRF-P2
- ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
- PERMANENT WATER BAR (PLAN)
- PERMANENT WATER BAR (PROFILE)
- EARTH TRENCH BREAKER (PROFILE)
- TEMPORARY TIMBERMAT (AS NEEDED)
- STONE CONSTRUCTION ENTRANCE



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)

① 24" STEEL API 5L PSL-2, X-85, 0.375" WALL, FBE COATED PIPE	2,428 LF
② 24" STEEL API 5L PSL-2, X-85, 0.500" WALL, ARO COATED PIPE	180 LF
RECP ROLLED EROSION CONTROL PRODUCT	266,387 SF
SS1 SILT SAVER BSRF-P1	2,525 LF
SS2 SILT SAVER BSRF-P2	3,091 LF
TB EARTH TRENCH BREAKERS	15
WB PERMANENT WATERBARS	25
GM GAS LINE MARKERS	8
TS TEST STATIONS	4

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/28/17 RJA
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/18/17 JOJ

GENERAL INFORMATION

- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
- ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
- BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR; IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCH INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
- ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
- ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

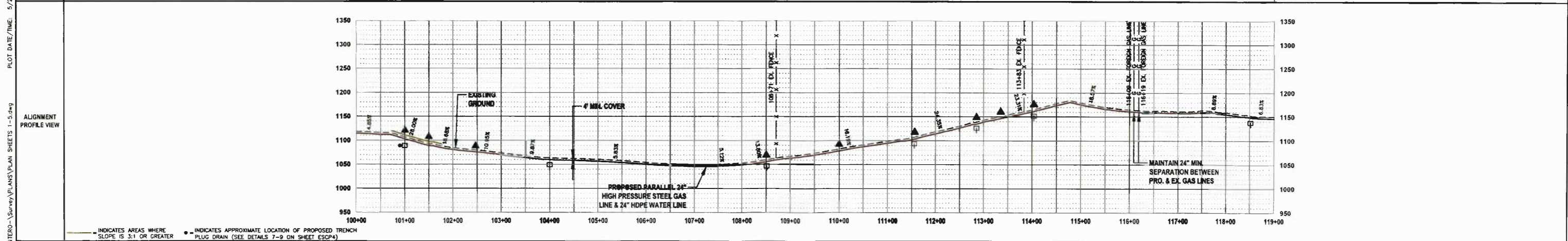
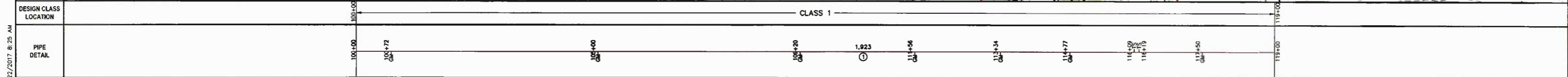
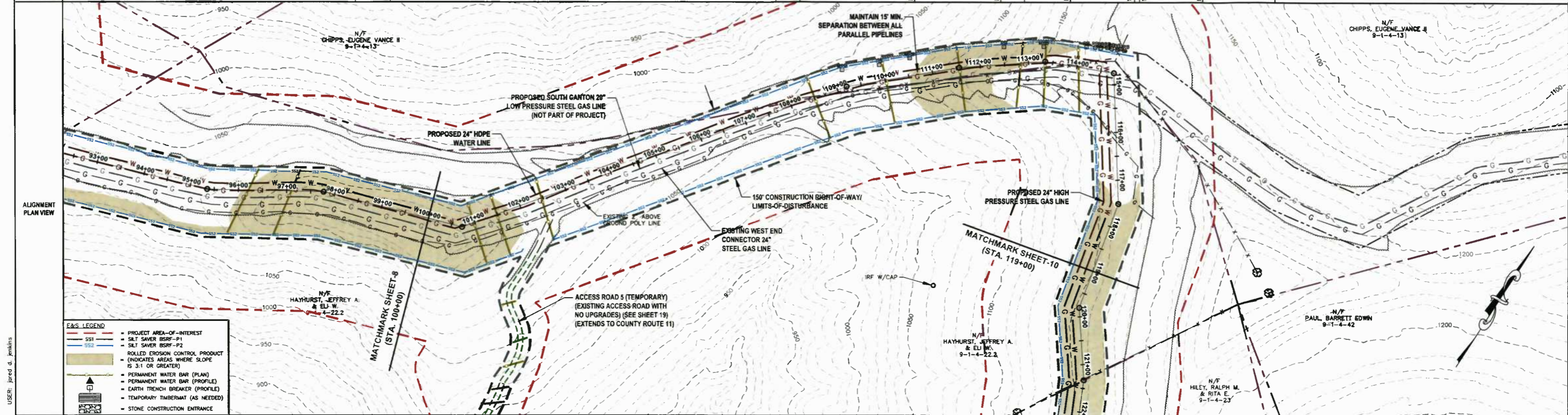
CRYSTAL LAKE PIPELINE
STA. 75+00 TO STA. 100+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/23/2017 AFE No: A05924
SCALE: AS SHOWN
DRAWN BY: RA (TTO)
CHECKED: AR (TTO)

SHEET 08
SHT. NAME: 050-6196\CRYSTAL\PLAN4
REV. 2

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	100+00	HAYHURST, JEFFREY A. & ELI W. 9-1-4-22.2 HORIZ. DIST. = 856'± SLOPE DIST. = 86.3'±	108+56	CHIPPS, EUGENE VANCE II 9-1-4-13 HORIZ. DIST. = 518'± SLOPE DIST. = 52.8'±	113+74	HAYHURST, JEFFREY A. & ELI W. 9-1-4-22.2 HORIZ. DIST. = 526'± SLOPE DIST. = 53.2'±	119+00
STATIONING & P.I. ANGLES	100+00	P.I. 100+72 ANGLE: 35° LT	108+56	P.I. 109+20 ANGLE: 11° RT	113+74	P.I. 117+50 ANGLE: 22° RT	119+00



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)	
NO.	DESCRIPTION	QTY	NO.
1	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	1,923 LF	
RECP	ROLLED EROSION CONTROL PRODUCT	71,390 SF	
SS2	SILT SAVER BSRF-P2	3,241 LF	
TB	EARTH TRENCH BREAKERS	7	
WB	PERMANENT WATERBARS	9	
GM	GAS LINE MARKERS	7	
TS	TEST STATIONS	2	

REVISION		DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/18/17	J.D.J.

- GENERAL INFORMATION**
- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
 - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT. VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

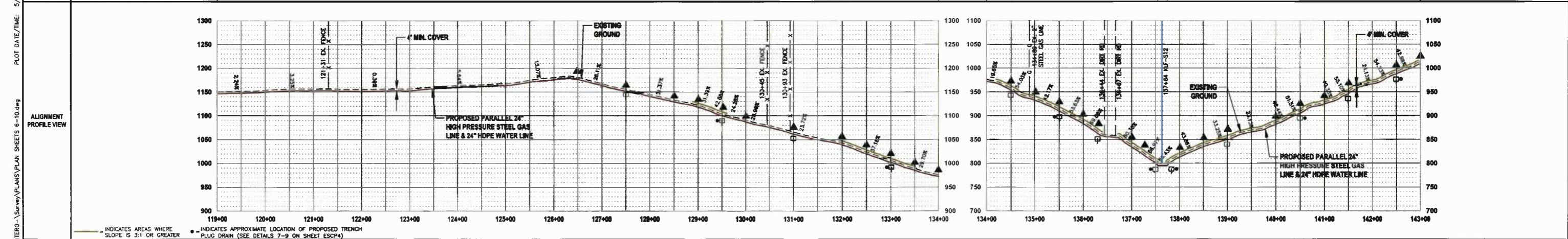
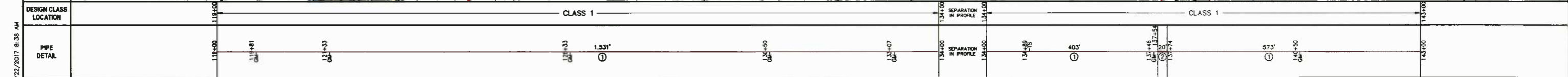
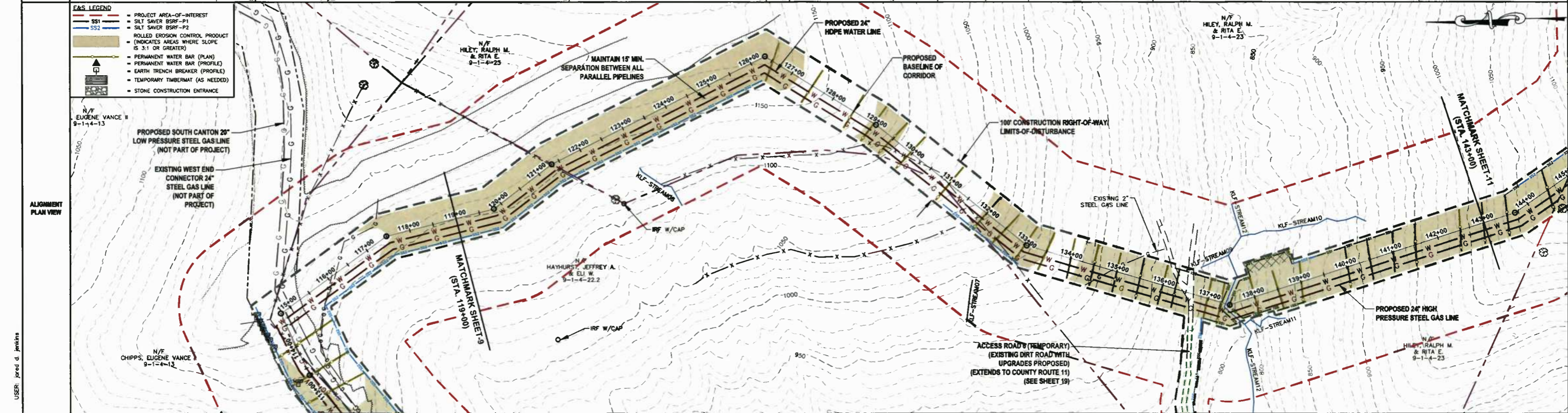
CRYSTAL LAKE PIPELINE
STA. 100+00 TO STA. 119+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/23/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: R.L. (TTS)
CHECKED: J.R. (TTS)
SHEET 09
SHT. NAME: 050-6196\CRYSTAL\PLANS REV. 2

LAYOUT TAB: PLANS
CAD FILE: R:\050-6196-MEC-HP-LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 1-5.dwg
USER: Jared D. Jenkins
PLOT DATE/TIME: 5/22/2017 8:25 AM

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	119+00	HAYHURST, JEFFREY A. & ELI W. 9-1-4-22.2 HORIZ. DIST. = 233± SLOPE DIST. = 233±	121+33	HILEY, RALPH M. & RITA E. 9-1-4-23 HORIZ. DIST. = 1,267± SLOPE DIST. = 1,298±	134+00	SEPARATION IN PROFILE	134+00	HILEY, RALPH M. & RITA E. 9-1-4-23 HORIZ. DIST. = 900± SLOPE DIST. = 996±	143+00
STATIONING & P.I. ANGLES	119+00	P.I.: 119+81 ANGLE: 24° LT	121+33	P.I.: 121+33 ANGLE: 11° RT	134+00	P.I.: 126+33 ANGLE: 59° RT	134+00	P.I.: 133+07 ANGLE: 22° LT	143+00



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)	
①	24" STEEL API SL PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,507 LF	
②	24" STEEL API SL PSL-2, X-65, 0.500" WALL, ARO COATED PIPE	20 LF	
RECP	ROLLED EROSION CONTROL PRODUCT	172,850 SF	
SS1	SILT SAVER BSRF-P1	886 LF	
SS2	SILT SAVER BSRF-P2	969 LF	
TB	EARTH TRENCH BREAKERS	13	
WB	PERMANENT WATERBARS	27	
GM	GAS LINE MARKERS	7	
TS	TEST STATIONS	1	

REVISION	
1	REVISED PER COMMENTS FROM KLEINFELDER, INC. 04/26/17 R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY 05/18/17 J.D.

- GENERAL INFORMATION**
- PROPOSED HIGH PRESSURE GAS LINE WADP = 1,440 psig
 - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION SHOWN PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
MidstreamPartners LP

CRYSTAL LAKE PIPELINE
STA. 119+00 TO STA. 143+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

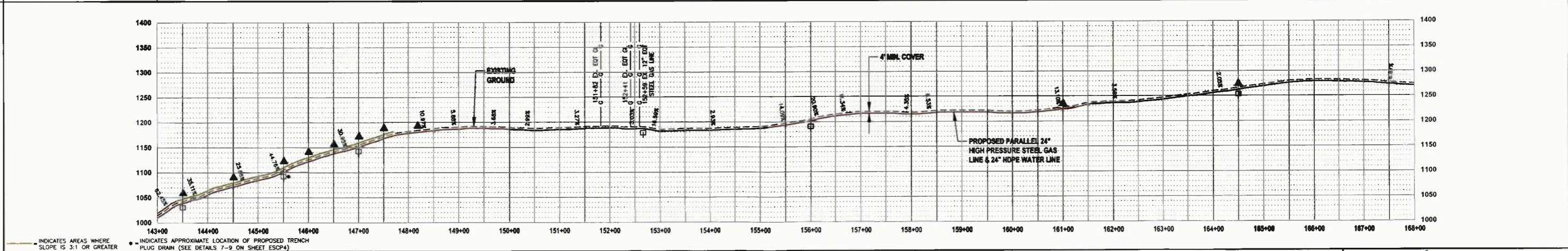
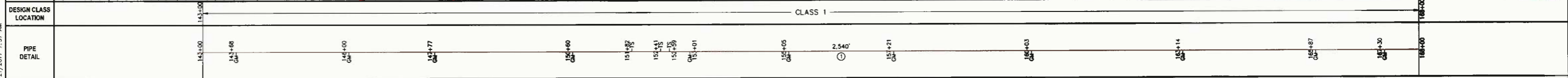
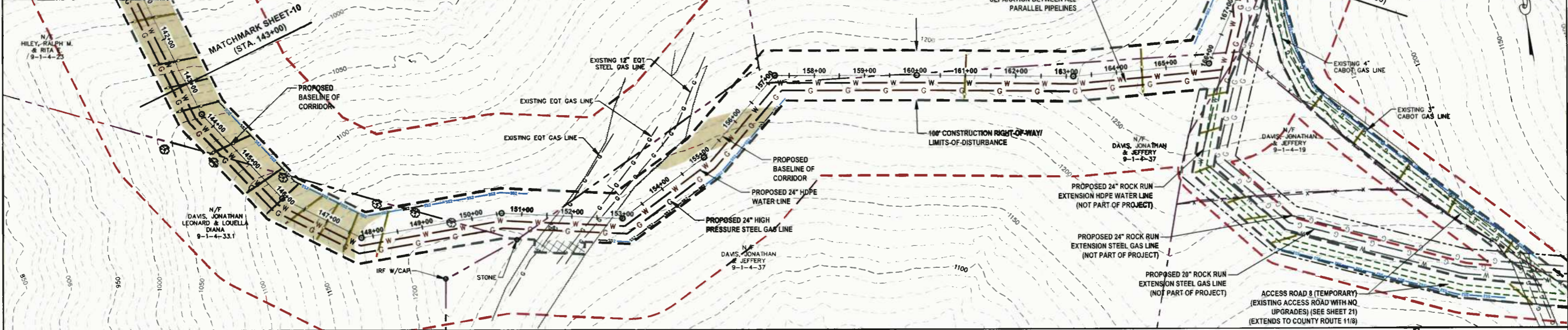
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SCALE: AS SHOWN
DRAWN BY: R.L. (TIC)
CHECKED: A.R. (TIC)

SHEET 10
SHT. NAME: 050-6196\CRYSTAL\PLAN6
REV. 2

LAYOUT TAB: PLANS
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USER: jared.d.jenkins

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	HILEY, RALPH M. & RITA E. 9-1-4-23 HORIZ. DIST. = 206± SLOPE DIST. = 222±	DAVIS, JONATHAN LEONARD & LOUELLA DIANA 9-1-4-33.1 HORIZ. DIST. = 456± SLOPE DIST. = 471±	HILEY, RALPH M. & RITA E. 9-1-4-23 HORIZ. DIST. = 197± SLOPE DIST. = 197±	DAVIS, JONATHAN & JEFFERY 9-1-4-37 HORIZ. DIST. = 543± SLOPE DIST. = 546±	DAVIS, JONATHAN & JEFFERY 9-1-4-37.2 HORIZ. DIST. = 247± SLOPE DIST. = 247±	DAVIS, JONATHAN & JEFFERY 9-1-4-37 HORIZ. DIST. = 659± SLOPE DIST. = 663±	DAVIS, JONATHAN & JEFFERY 9-1-4-37.2 HORIZ. DIST. = 192± SLOPE DIST. = 192±						
STATIONING & P.I. ANGLES	143+00 P.I.: 143+68 ANGLE: 17° LT	145+00 P.I.: 146+00 ANGLE: 20° LT	147+00 P.I.: 147+77 ANGLE: 37° LT	149+00 P.I.: 150+60 ANGLE: 13° RT	151+00 P.I.: 151+42 EX. EXT. CL.	153+00 P.I.: 153+41 EX. EXT. CL.	155+00 P.I.: 155+59 EX. EXT. CL.	157+00 P.I.: 157+21 ANGLE: 48° RT	159+00 P.I.: 159+03 ANGLE: 01° RT	161+00 P.I.: 163+14 ANGLE: 08° LT	163+00 P.I.: 165+47 ANGLE: 61° LT	165+00 P.I.: 167+30 ANGLE: 05° LT	168+00

- E&S LEGEND**
- PROJECT AREA-OF-INTEREST
 - SILT SAVER BSRF-P1
 - SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
 - PERMANENT WATER BAR (PLAN)
 - PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - TEMPORARY TIMBERMAT (AS NEEDED)
 - STONE CONSTRUCTION ENTRANCE



THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

VERT. SCALE IN FEET

HORIZ. SCALE IN FEET

NO.	DESCRIPTION	QTY
1	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,540 LF
2	ROLLED EROSION CONTROL PRODUCT	53,549 SF
3	SILT SAVER BSRF-P2	1,373 LF
4	EARTH TRENCH BREAKERS	6
5	PERMANENT WATERBARS	10
6	GAS LINE MARKERS	11
7	TEST STATIONS	3

NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17 J.D.

1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig	6. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT	7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
4. BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 143+00 TO STA. 168+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/27/2017 AFE No: A05924

SCALE: AS SHOWN

DRAWN BY: R.L. (TTO) SHEET 11

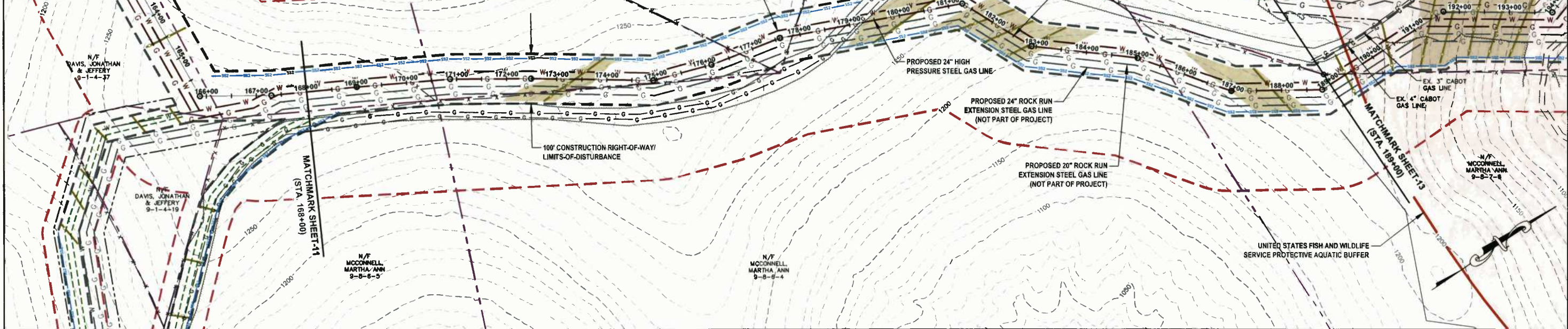
CHECKED: AN (TTO)

SHT. NAME: 050-6196\CRYSTAL\PLAN7 REV. 2

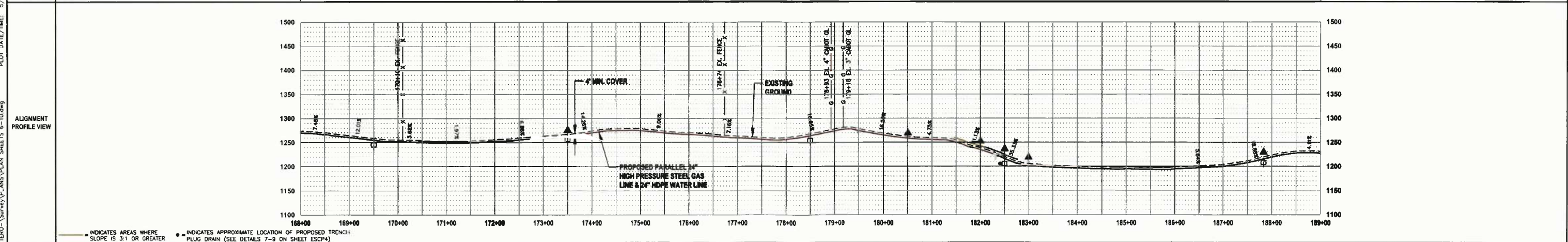
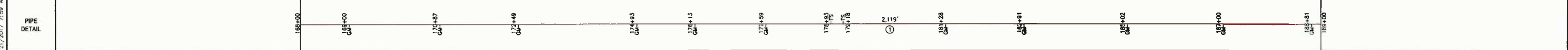
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CAD FILE: R:\050-6196-REC HP LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 6-10.dwg
PLOT DATE/TIME: 5/21/2017 7:37 AM
USER: Jared d. Jenkins

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	DAVIS, JONATHAN & JEFFERY 9-1-4-37.2 HORIZ. DIST. = 250'± SLOPE DIST. = 251'±	DAVIS, JONATHAN & JEFFERY 9-1-4-37.1 HORIZ. DIST. = 62.3'± SLOPE DIST. = 62.5'±	ASH, JACK G. & VIRGINIA M. ET AL 9-1-4-41 HORIZ. DIST. = 112'± SLOPE DIST. = 112'±	MCCONNELL, MARTHA ANN 9-8-6-4 HORIZ. DIST. = 774'± SLOPE DIST. = 787'±	MCCONNELL, MARTHA ANN 9-8-7-8 HORIZ. DIST. = 341'± SLOPE DIST. = 344'±
STATIONING & P.L. ANGLES	P.L.: 168+00	P.L.: 170+50	P.L.: 176+73	P.L.: 182+59	P.L.: 188+00

- E&S LEGEND**
- PROJECT AREA-OF-INTEREST
 - SILT SAVER BSRF-P1
 - SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
 - PERMANENT WATER BAR (PLAN)
 - PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - TEMPORARY TIMBERMAT (AS NEEDED)
 - STONE CONSTRUCTION ENTRANCE



DESIGN CLASS LOCATION: CLASS 1



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)	
24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,119 LF
ROLLED EROSION CONTROL PRODUCT	46,120 SF
SILT SAVER BSRF-P2	2,120 LF
EARTH TRENCH BREAKERS	5
PERMANENT WATERBARS	6
GAS LINE MARKERS	11
TEST STATIONS	2

SUMMARY OF MATERIALS (3D)	
NO.	DESCRIPTION
1	REVISION
2	REVISION

GENERAL INFORMATION	
1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig.	6. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT. VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT.	7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
4. BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 168+00 TO STA. 189+00

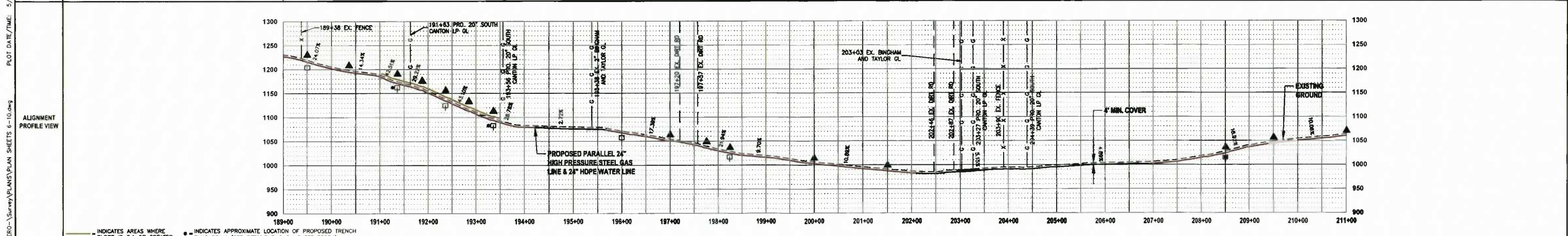
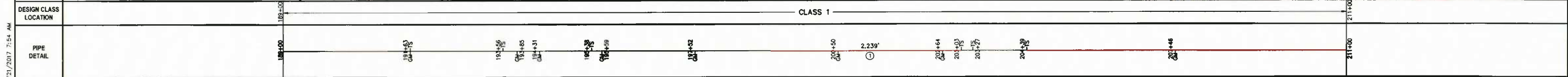
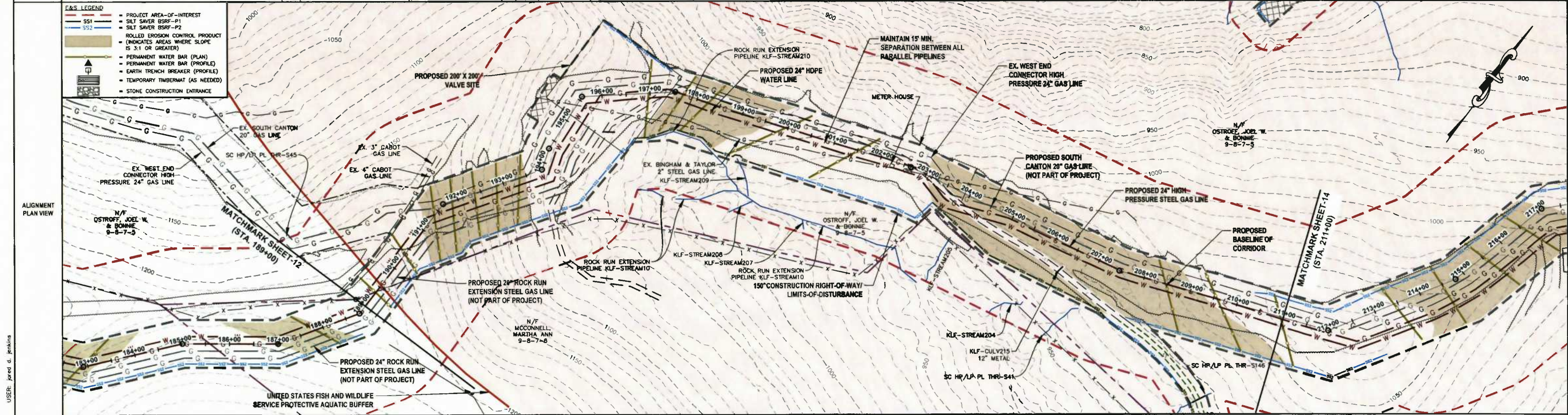
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.L. (TJD)
CHECKED BY: M.R. (TJD)

SHEET 12
SHT. NAME: 050-6196\CRYSTAL\PLAN8
REV. 2

LAYOUT TAB: PLANS
CAD FILE: R:\050-6196-MC_HP_LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 6-10.dwg
USER: jared.d.gentius
PLOT DATE/TIME: 5/21/2017 7:59 AM

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	MCCONNELL, MARTHA ANN 9-8-7-8 HORIZ. DIST. = 36'± SLOPE DIST. = 39'±	OSTROFF, JOEL W. & BONNIE 9-8-7-5 HORIZ. DIST. = 2,162'± SLOPE DIST. = 2,200'±	211+00
STATIONING & P.I. ANGLES	189+36 EX. FENCE 189+36 191+63 PRO. 20" SOUTH CANTON LP OL P.I. 191+68 ANGLE: 33° RT 193+56 PRO. 20" SOUTH CANTON LP OL 193+56 P.I. 194+31 ANGLE: 14° RT 195+38 EX. BINGHAM AND TAYLOR OL 195+38 P.I. 199+59 ANGLE: 55° RT 197+52 ANGLE: 21° RT 202+64 ANGLE: 05° RT 203+03 EX. BINGHAM AND TAYLOR OL 203+03 203+27 PRO. 20" SOUTH CANTON LP OL 203+27 203+90 EX. FENCE 203+90 204+39 PRO. 20" SOUTH CANTON LP OL 204+39 207+46 ANGLE: 11° LT 211+00		



ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
1	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,239 LF			
RECP	ROLLED EROSION CONTROL PRODUCT	137,040 SF			
SS1	SILT SAVER BSRF-P1	771 LF			
SS2	SILT SAVER BSRF-P2	1,543 LF			
TB	EARTH TRENCH BREAKERS	7			
WB	PERMANENT WATERBARS	15			
GM	GAS LINE MARKERS	8			
TS	TEST STATIONS	6			

REVISION			
NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/16/17	J.D.V.

GENERAL INFORMATION			
1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig	8. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.		
2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT	7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.		
3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.		
4. BASELINE STATION SHOWN PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.		
5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.		

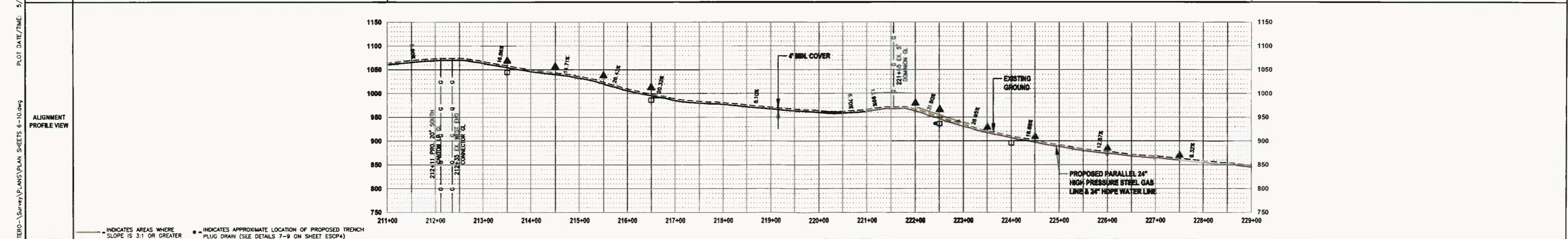
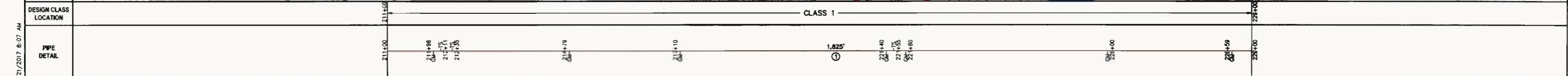
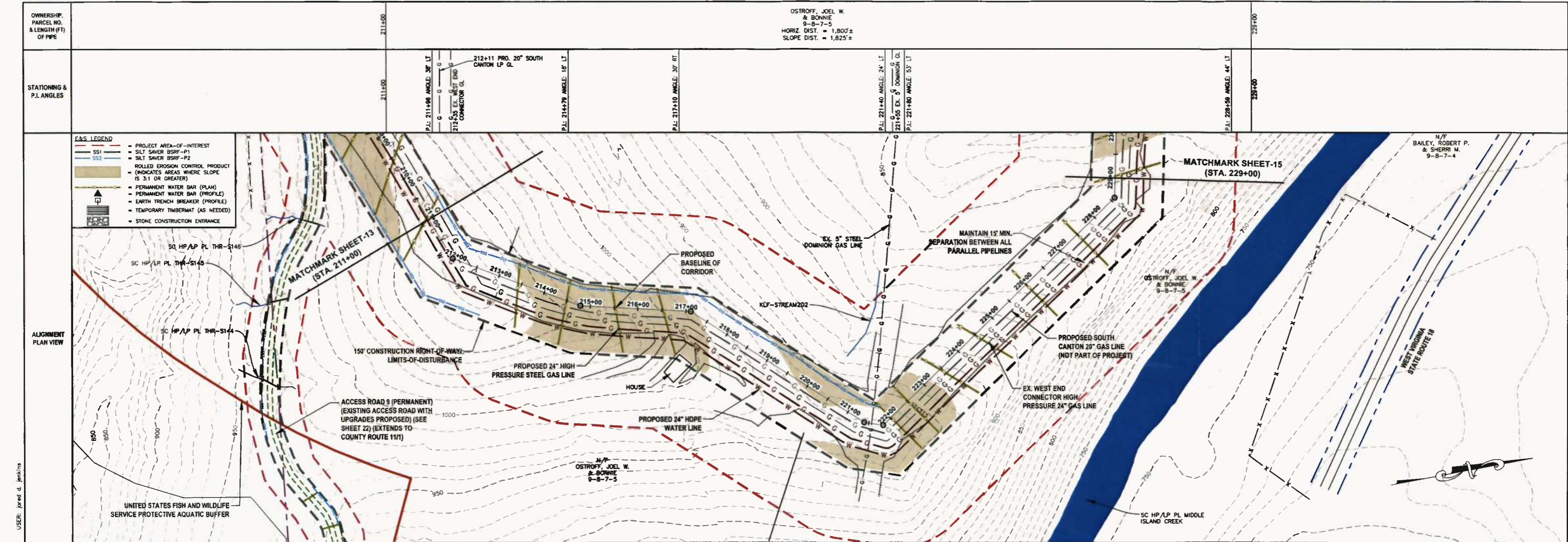
CRYSTAL LAKE PIPELINE
STA. 189+00 TO STA. 211+00

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TIT)
CHECKED: J.D.V. (TIT)

SHEET 13
SHT. NAME: 050-6196\CRYSTAL\PLAN9

LAYOUT TAB: PLANS
 CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 6-10.dwg
 PLOT DATE/TIME: 5/21/2017 7:54 AM
 USER: jared d. jenkins



DATE: 04/26/2017
AFE # A05924

ISSUED FOR PERMITTING

SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
1	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	1,825 LF			
REC1	ROLLED EROSION CONTROL PRODUCT	85,062 SF			
SS2	SILT SAVER BSRF-P2	1,290 LF			
TB	EARTH TRENCH BREAKERS	4			
WB	PERMANENT WATERBARS	10			
GM	GAS LINE MARKERS	7			
TS	TEST STATIONS	3			

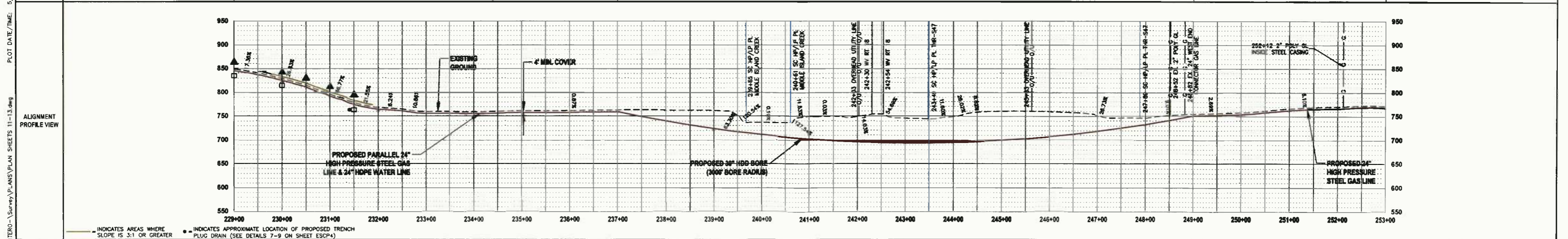
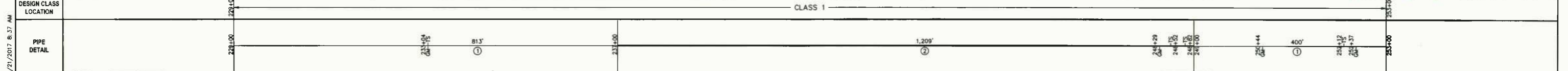
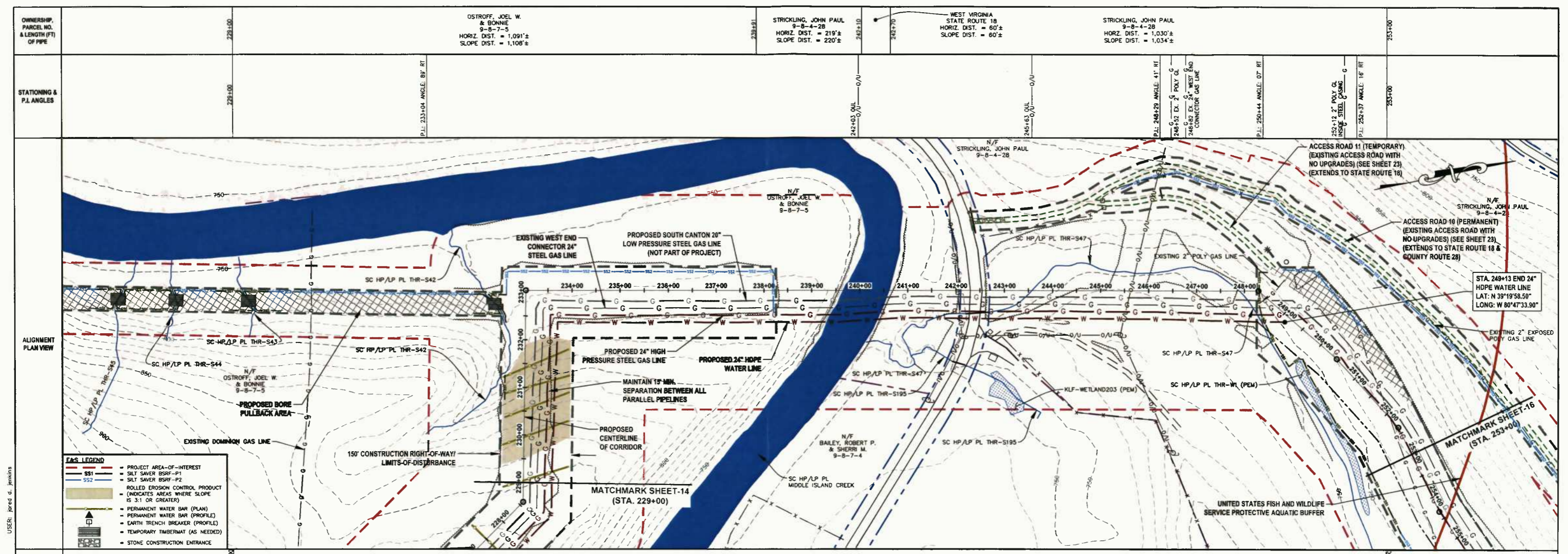
SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.J.		
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.O.		

GENERAL INFORMATION	
1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig.	6. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT. VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT.	7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
4. BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

CRYSTAL LAKE PIPELINE
STA. 211+00 TO STA. 229+00
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TTO)
CHECKED: AR (TTO)
SHEET 14
SHT. NAME: 050-6196\CRYSTAL\PLAN10
REV. 2

LAYOUT FOR: PLAN10
CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 6-10.dwg
PLOT DATE/TIME: 5/21/2017 8:07 AM
USER: jared.d.jenkins



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'

VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)	
① 24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	1,213 LF
② 24" STEEL API 5L PSL-2, X-65, 0.500" WALL, ARO COATED PIPE	1,209 LF
RECP ROLLED EROSION CONTROL PRODUCT	30,813 SF
SS1 SILT SAVER BSRF-P1	1,393 LF
SS2 SILT SAVER BSRF-P2	1,632 LF
TB EARTH TRENCH BREAKERS	3
WB PERMANENT WATERBARS	5
GM GAS LINE MARKERS	4
TS TEST STATIONS	4
NO. DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)	
NO. DESCRIPTION	QTY

REVISION	
1	REVISED PER COMMENTS FROM KLEINFELDER, INC. 04/28/17 R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY 05/18/17 J.D.J.
NO.	DESCRIPTION

- GENERAL INFORMATION**
- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
 - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT. VERTICAL - NAVD 88 (GEOID128), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - CENTERLINE STATION SHOWN PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 229+00 TO STA. 253+00

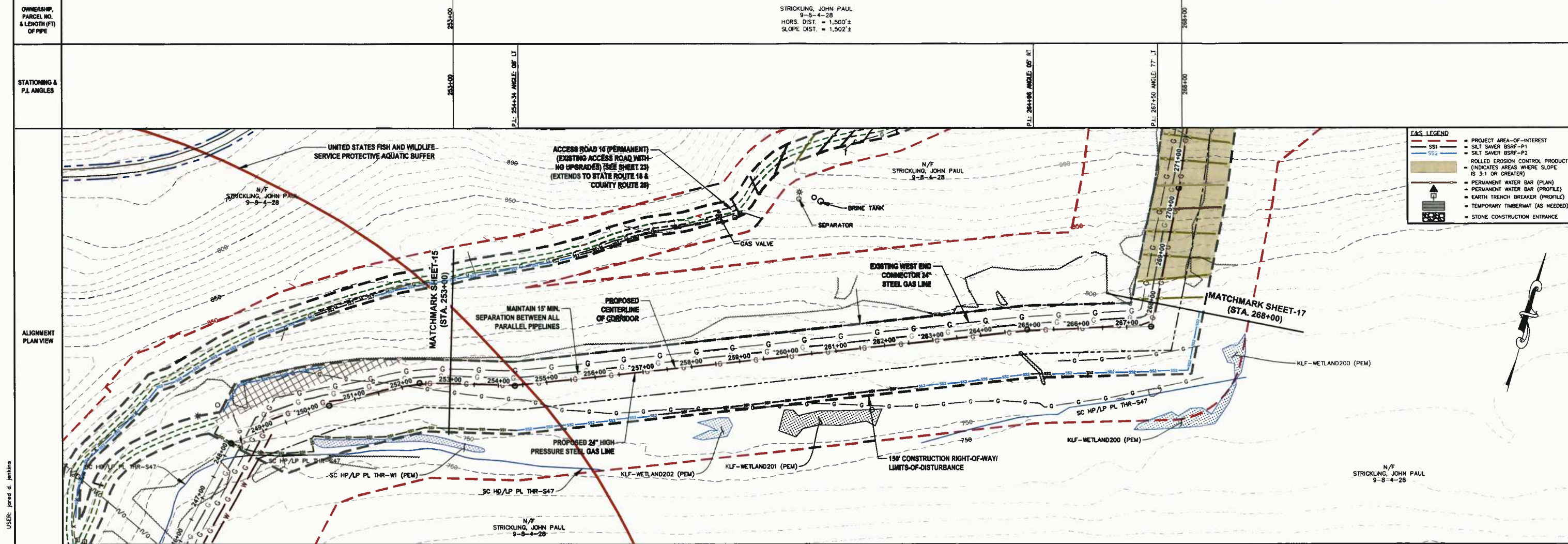
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
DRAWN BY: AS (175)
CHECKED BY: AR (175)

SHEET 15
SHT. NAME: 050-6196\CRYSTAL\PLAN11

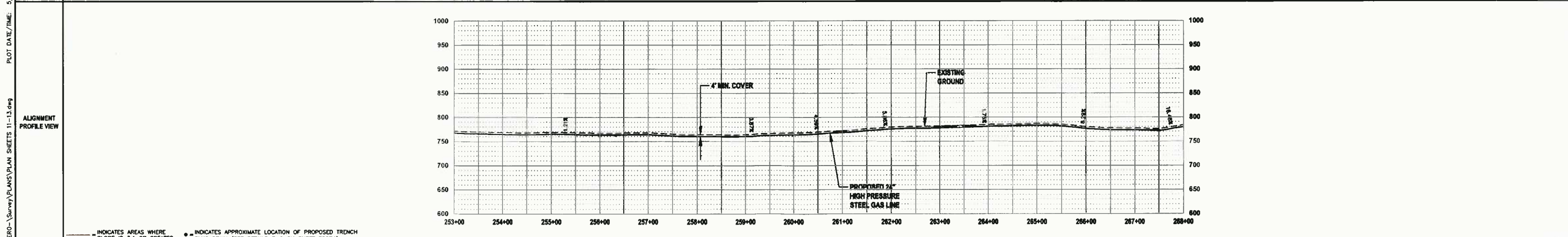
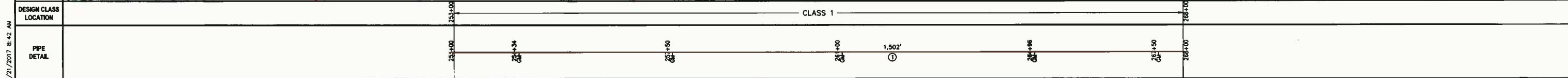
REV. 2

LAYOUT TAB: PLANT1
CAD FILE: R:\050-6196-MEC-HP-LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 11-13.dwg
PLOT DATE/TIME: 5/21/2017 8:37 AM
USER: jared.d.jenkins



E&S LEGEND

- PROJECT AREA-OF-INTEREST
- SILT SAVER BSRF-P1
- SILT SAVER BSRF-P2
- ROLLED EROSION CONTROL PRODUCT
- (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
- PERMANENT WATER BAR (PLAN)
- PERMANENT WATER BAR (PROFILE)
- EARTH TRENCH BREAKER (PROFILE)
- TEMPORARY TIMBERMAT (AS NEEDED)
- STONE CONSTRUCTION ENTRANCE



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
1	24" STEEL API 5L PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	1,502 LF
SS1	SILT SAVER BSRF-P1	648 LF
SS2	SILT SAVER BSRF-P2	1,003 LF
GM	GAS LINE MARKERS	5

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/18/17 J.D.J.

- GENERAL INFORMATION**
- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
 - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - CENTERLINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 253+00 TO STA. 268+00

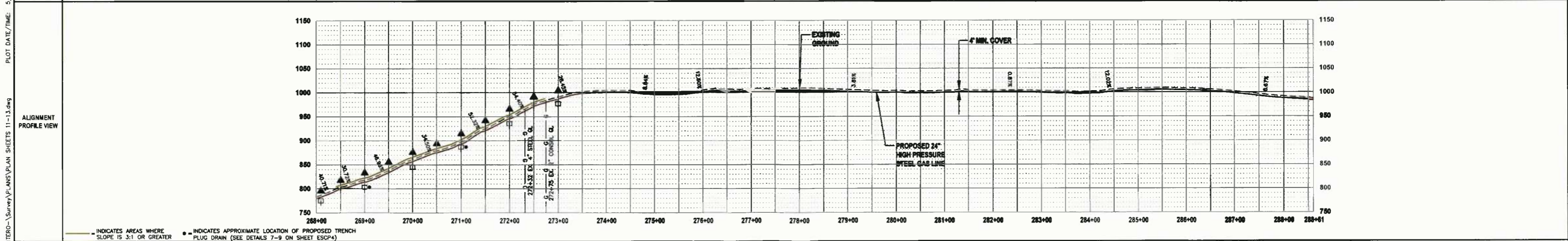
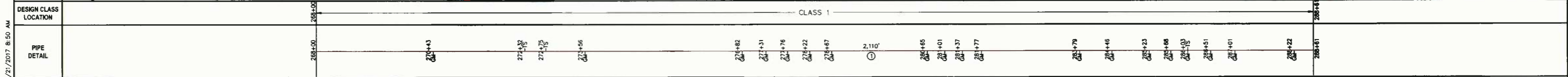
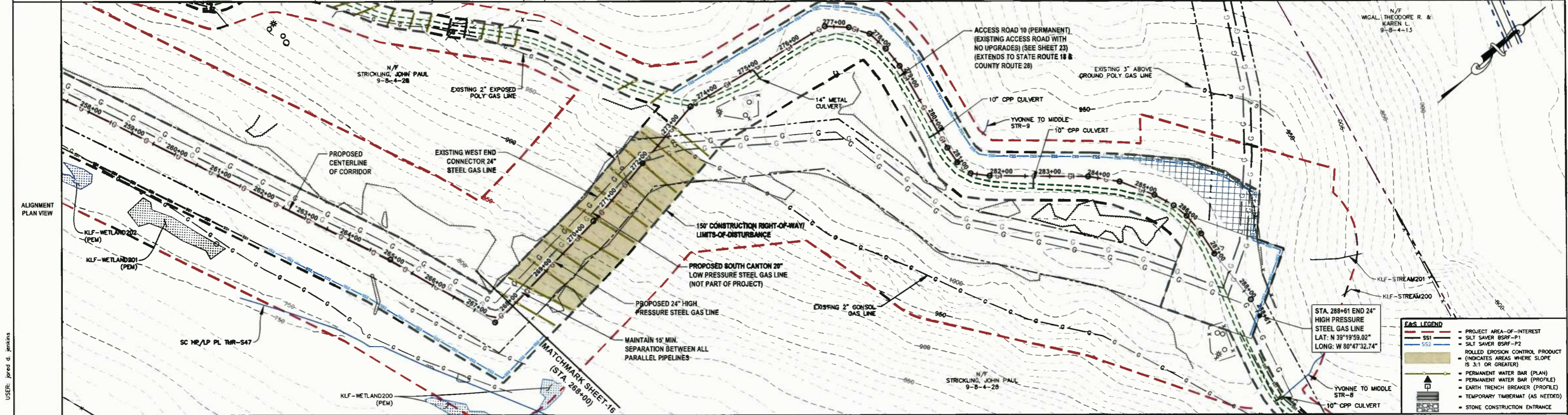
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TTC)
CHECKED: A.R. (TTC)

SHEET 16
SHT. NAME: 050-6196\CRYSTAL\PLAN12
REV. 2

USER: jared d. Jenkins
 PLOT DATE/TIME: 5/21/2017 8:42 AM
 LAYOUT TAB: PLAN12
 CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-Survey\PLANS\PLAN SHEETS 11-13.dwg

OWNERSHIP, PARCEL NO. & LENGTH (FT) OF PIPE	268+00	268+100	STRICKLING, JOHN PAUL 9-B-4-28 HORZ. DIST. = 2,051'± SLOPE DIST. = 2,110'±	268+61
STATIONING & P.I. ANGLES	268+00	268+100	P.I. 270+43 ANGLE: 04° LT 272+32 EX. 4" STEEL CL. 272+75 EX. 2" CONSO. CL. P.I. 273+56 ANGLE: 19° RT P.I. 276+82 ANGLE: 34° RT P.I. 277+31 ANGLE: 15° RT P.I. 277+76 ANGLE: 26° RT P.I. 278+22 ANGLE: 06° RT P.I. 278+67 ANGLE: 09° RT P.I. 280+65 ANGLE: 04° LT P.I. 281+01 ANGLE: 16° LT P.I. 281+37 ANGLE: 32° LT P.I. 281+77 ANGLE: 07° LT P.I. 283+79 ANGLE: 09° RT P.I. 284+46 ANGLE: 12° RT P.I. 285+23 ANGLE: 07° RT P.I. 285+68 ANGLE: 11° RT P.I. 286+03 ANGLE: 11° RT P.I. 286+51 ANGLE: 07° RT P.I. 287+01 ANGLE: 05° LT P.I. 288+22 ANGLE: 11° RT 268+61	268+61



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET: 1" = 100'
VERT. SCALE IN FEET: 1" = 20'

SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
1	24" STEEL API SL PSL-2, X-65, 0.375" WALL, FBE COATED PIPE	2,110 LF	1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17
RECP	ROLLED EROSION CONTROL PRODUCT	63,387 SF	2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17
SS2	SILT SAVER BSRF-P2	1,772 LF			
TB	EARTH TRENCH BREAKERS	6			
WB	PERMANENT WATERBARS	11			
GM	GAS LINE MARKERS	19			
TS	TEST STATIONS	3			

SUMMARY OF MATERIALS (3D)		SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.A.		
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	D.J.		

GENERAL INFORMATION	
1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig	6. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT	7. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
3. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	8. ALL SHEET BANDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
4. CENTERLINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
5. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	10. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

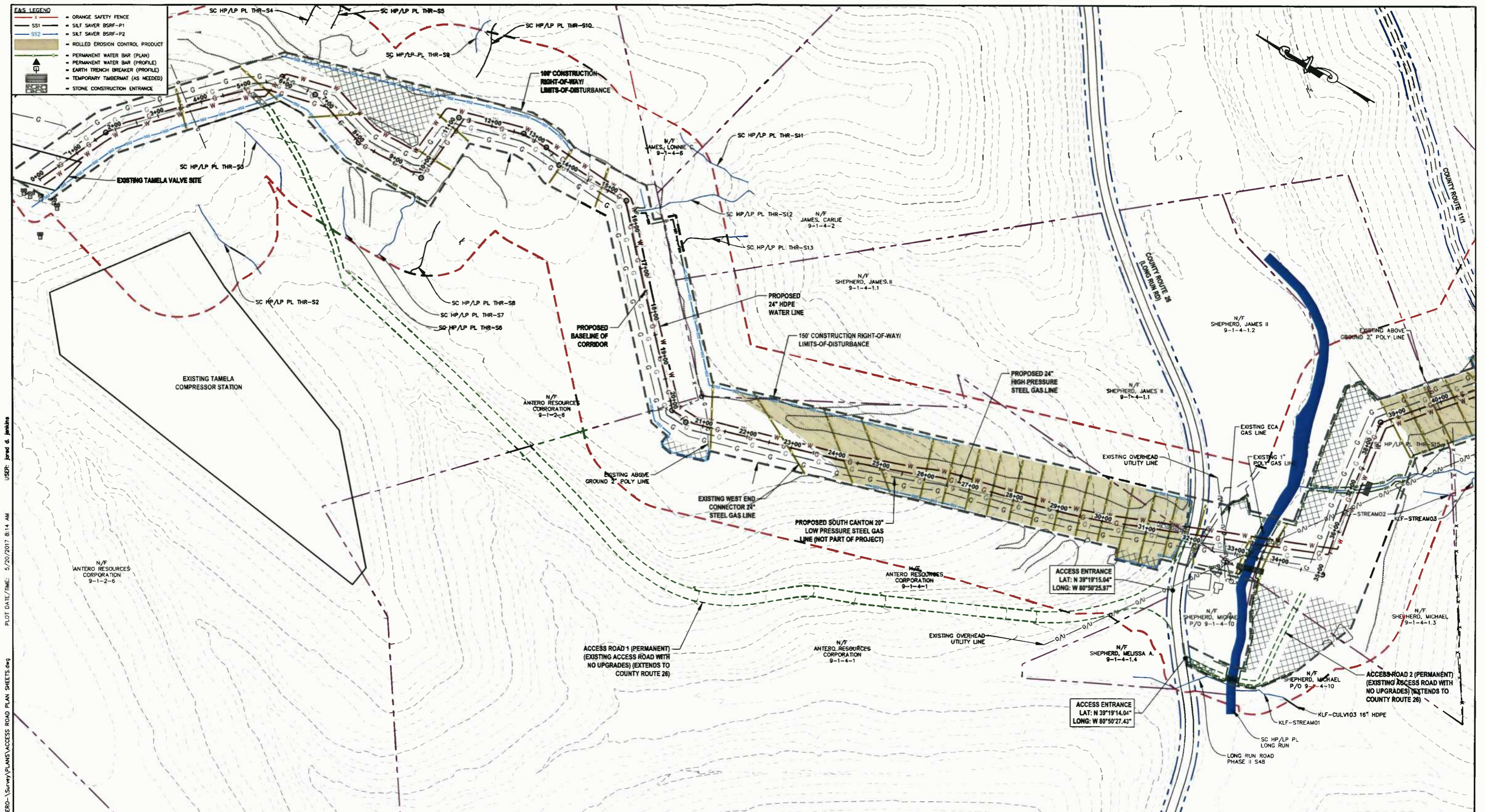
Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
STA. 268+00 TO STA. 284+61

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: R.A. (TTC) SHEET 17
CHECKED: A.R. (TTC)
SHT. NAME: 050-6196\CRYSTAL\PLAN13 REV. 2

LAYOUT TAB: PLAN13 CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-Survey\PLAN\PLAN SHEETS 11-13.dwg PLOT DATE/TIME: 5/21/2017 8:50 AM USER: jared d. jenkins



LAYOUT TAB: ART
 CAD FILE: R:\050-6196-WEC HP LOOP-ANTERO-Survey\PLANS\ACCESS ROAD PLAN SHEETS.dwg
 USER: Jared d. Jenkins
 PLOT DATE/TIME: 5/20/2017 8:14 AM

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET

SUMMARY OF MATERIALS (3D)

SS1	SILT SAVER BSRF-P1	513 LF
-----	--------------------	--------

NO.	DESCRIPTION	QTY
1	REMOVED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.L.
2	REMOVED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17 JOJ

NO.	DESCRIPTION	QTY
1	REMOVED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.L.
2	REMOVED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17 JOJ

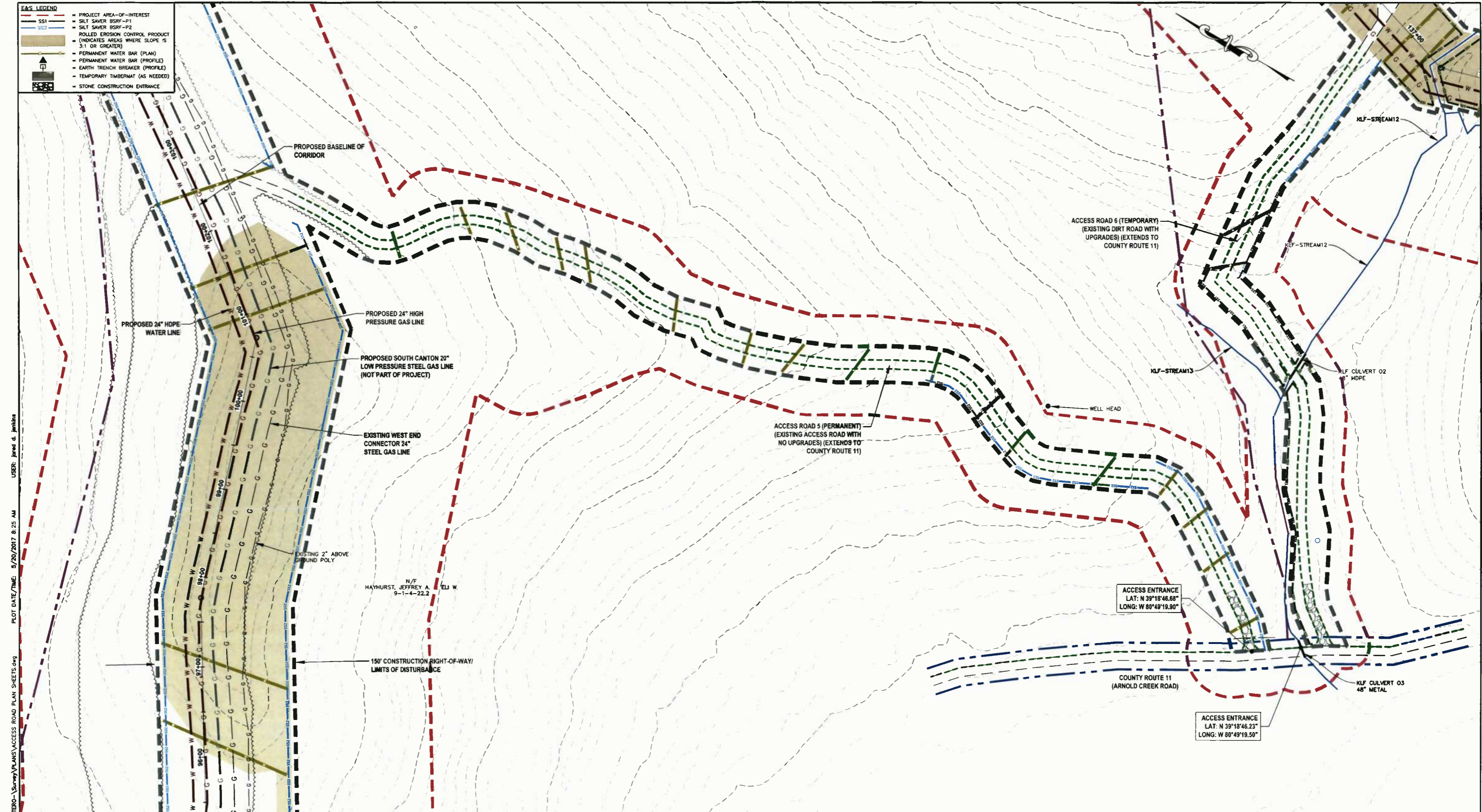
- GENERAL INFORMATION**
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID28), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

CRYSTAL LAKE PIPELINE ACCESS ROAD PLAN SHEET

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/20/2017
SCALE: AS SHOWN
DRAWN BY: [Signature]
CHECKED BY: [Signature]
SHEET 18
SHT. NAME: 050-6196\CRYSTAL\AR1

REV. 2



E&S LEGEND

- PROJECT AREA-OF-INTEREST
- SILT SAVER BSRF-P1
- SILT SAVER BSRF-P2
- ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
- PERMANENT WATER BAR (PLAN)
- PERMANENT WATER BAR (PROFILE)
- EARTH TRENCH BREAKER (PROFILE)
- TEMPORARY TIMBERMAT (AS NEEDED)
- STONE CONSTRUCTION ENTRANCE

LAYOUT TAB: AR2
 CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-Survey\PLANS\ACCESS ROAD PLAN SHEETS.dwg
 PLOT DATE/TIME: 5/20/2017 8:25 AM
 USER: Jared S. Jenkins

THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

0 50 100
HORIZ. SCALE IN FEET

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
SS1	SILT SAVER BSRF-P1	679 LF
SS2	SILT SAVER BSRF-P2	834 LF
WB	PERMANENT WATERBARS	19

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.J.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17 J.J.

REVISION

NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.J.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.J.

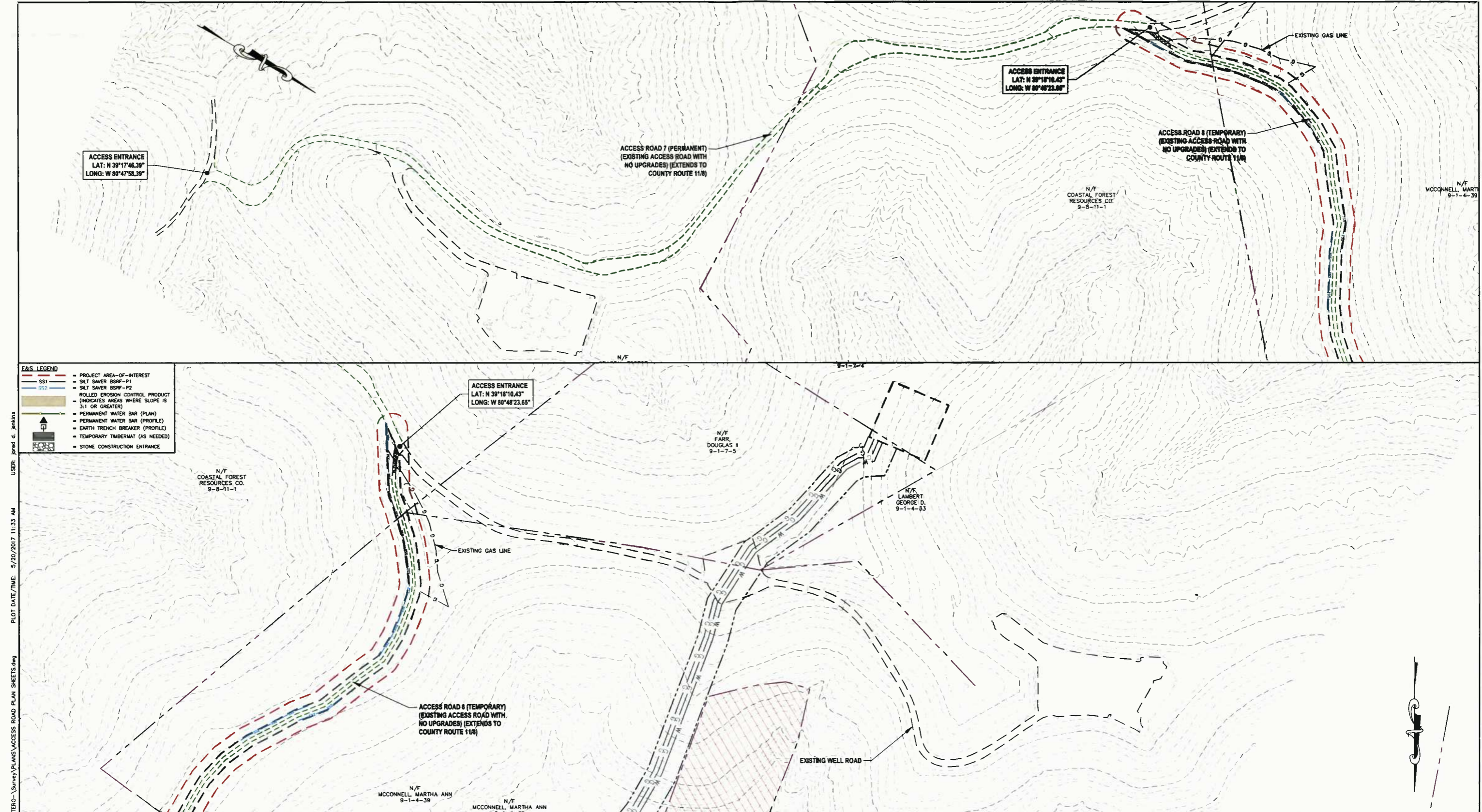
- GENERAL INFORMATION**
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - MAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID128), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATIONING DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

**CRYSTAL LAKE PIPELINE
ACCESS ROAD PLAN SHEET**

PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/20/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: R.A. (RJT)
CHECKED BY: AR (TJG)
SHEET 19
SHT. NAME: 050-6196\CRYSTAL\AR2 REV. 2



E&S LEGEND

- PROJECT AREA-OF-INTEREST
- SILT SAVER BSRF-P1
- SILT SAVER BSRF-P2
- ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
- PERMANENT WATER BAR (PLAN)
- PERMANENT WATER BAR (PROFILE)
- EARTH TRENCH BREAKER (PROFILE)
- TEMPORARY TIMBERMAT (AS NEEDED)
- STONE CONSTRUCTION ENTRANCE

LAYOUT TAB: AR3
 CAD FILE: R:\050-6196-MEC HP LOOP-ANTERO-1\SURVEY\PLANS\ACCESS ROAD PLAN SHEETS.dwg
 USER: jared d. jenkins
 PLOT DATE/TIME: 5/20/2017 11:33 AM

THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

0 100 200
HORIZ. SCALE IN FEET

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

REVISION

NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	JDJ

- GENERAL INFORMATION**
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID128), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
MidstreamPartners LP

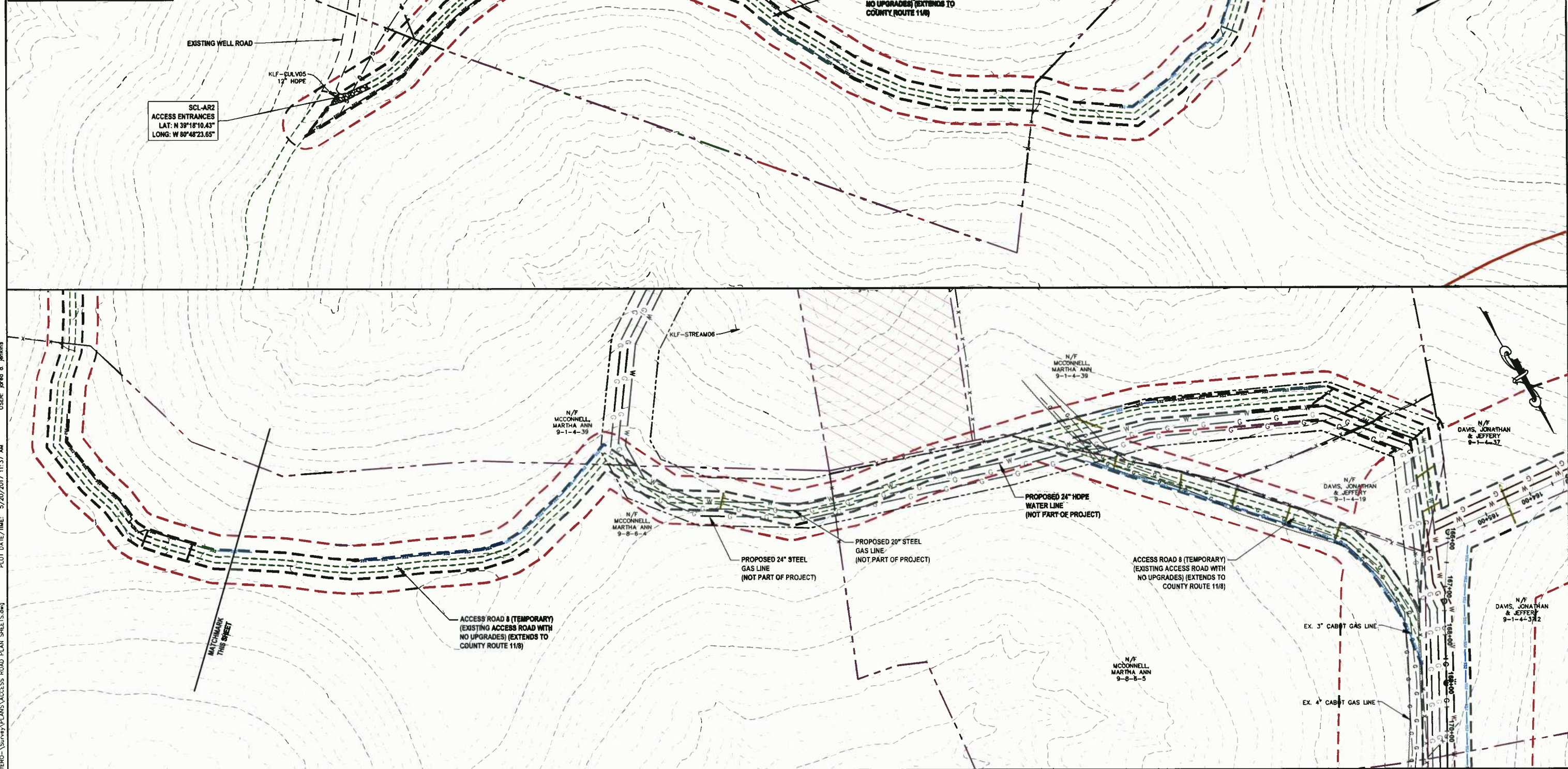
**CRYSTAL LAKE PIPELINE
ACCESS ROAD PLAN SHEET**

PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/20/2017 AFE No: A05924
SCALE: AS SHOWN
DRAWN BY: R.L. (TTC)
CHECKED BY: AR (TTC)
SHEET 20
SHT. NAME: 050-6196\CRYSTAL\AR3 REV. 2

E&S LEGEND

- PROJECT AREA-OF-INTEREST
- SILT SAVER BSRF-P1
- SILT SAVER BSRF-P2
- ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
- PERMANENT WATER BAR (PLAN)
- PERMANENT WATER BAR (PROFILE)
- EARTH TRENCH BREAKER (PROFILE)
- TEMPORARY TIMBERMAT (AS NEEDED)
- STONE CONSTRUCTION ENTRANCE



THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

HORIZ. SCALE IN FEET
0 100 200

DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)

SS2	SILT SAVER BSRF-P2	3,704 LF
WB	PERMANENT WATERBARS	15
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY
-----	-------------	-----

REVISION

1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.D.J.

- GENERAL INFORMATION**
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION SHOWN PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
 - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
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 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

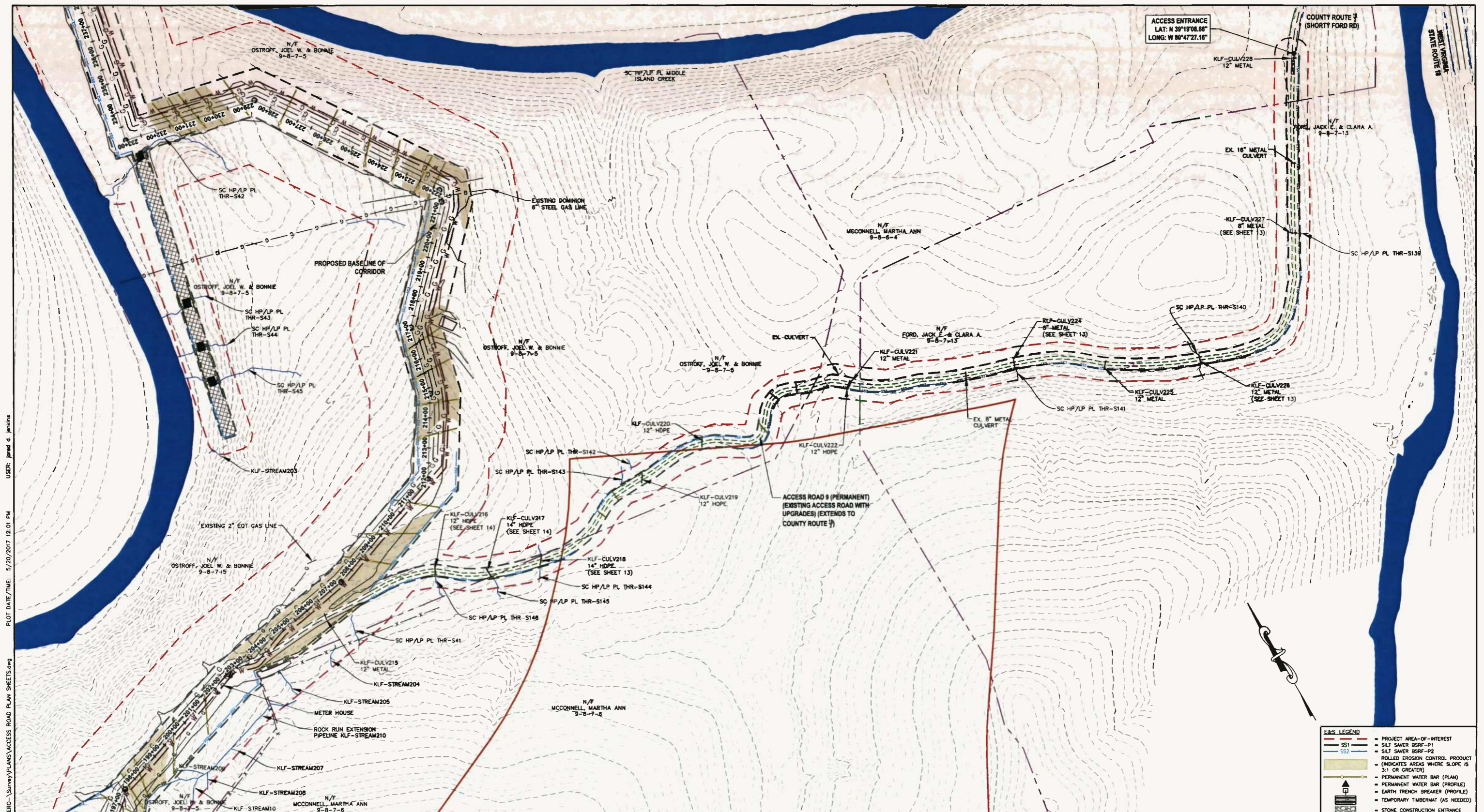
CRYSTAL LAKE PIPELINE ACCESS ROAD PLAN SHEET

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/20/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TID)
CHECKED: A.R. (TID)

SHEET 21
SHT. NAME: 050-6196\CRYSTAL_AR4
REV. 2

LAYOUT TAB: AR4
CAD FILE: R:\050-6196-MEC-HP-LOOP-ANTERO-SURVEY\PLANS\ACCESS ROAD PLAN SHEETS.dwg
USER: Jared d. Jenkins
PLOT DATE/TIME: 5/20/2017 11:37 AM



LAYOUT TAB: AR5
 CAD FILE: R:\050-6196-MEC-HP LOOP-ANTERO-Survey\PLANS\ACCESS ROAD PLAN SHEETS.dwg
 USER: jared.d.jenkins
 PLOT DATE/TIME: 5/20/2017 12:01 PM

THRASHER
 ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

IFP
 ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY
SS1	SILT SAVER BSRF-P1	577 LF
SS2	SILT SAVER BSRF-P2	3,620 LF
WB	PERMANENT WATERBARS	5

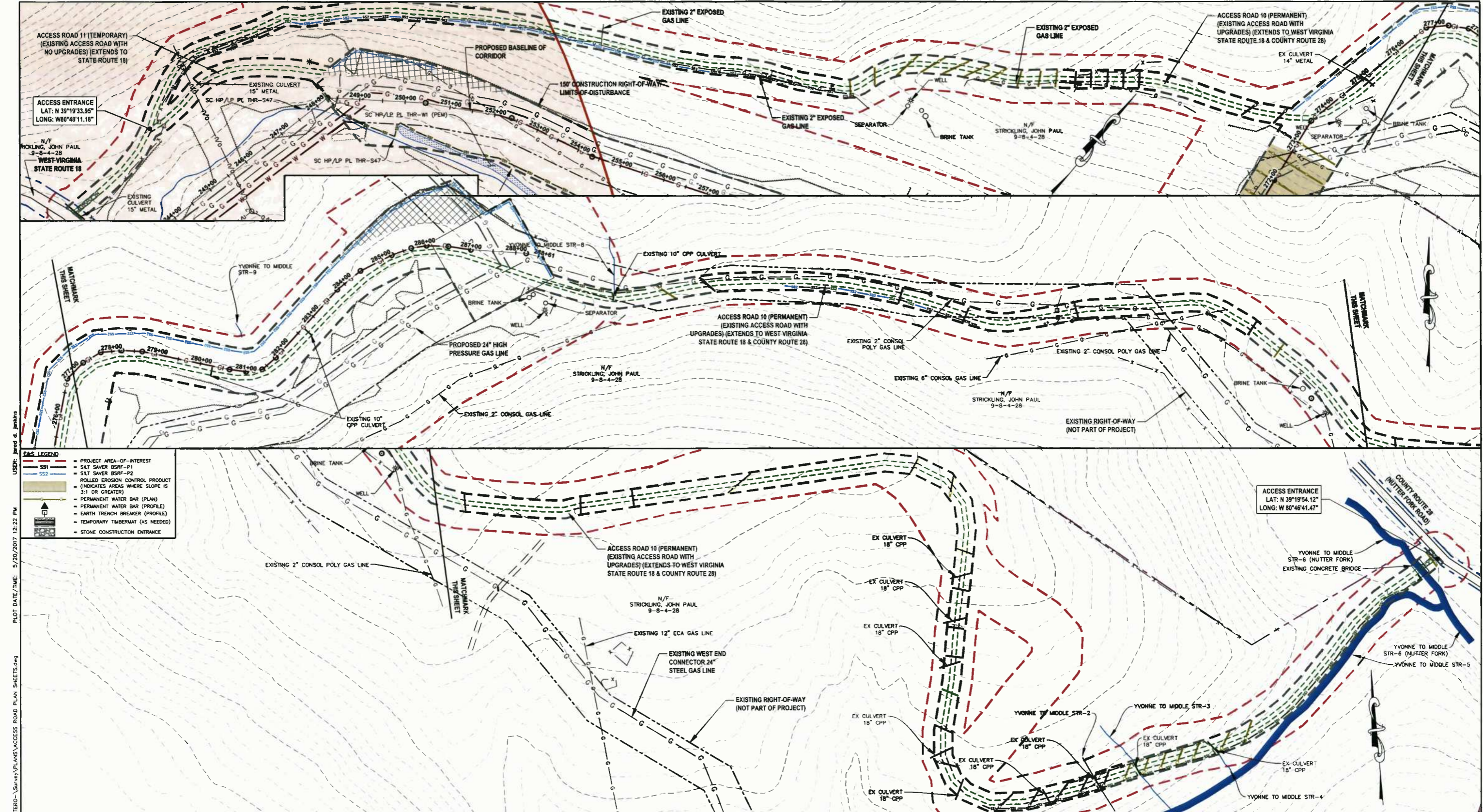
SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

REVISION			
NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	JDJ

- GENERAL INFORMATION**
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID128), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION DEPICTED PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
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 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

E&S LEGEND
 - PROJECT AREA-OF-INTEREST
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
 - PERMANENT WATER BAR (PLAN)
 - PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - TEMPORARY TIMBERMAT (AS NEEDED)
 - STONE CONSTRUCTION ENTRANCE

Antero
 MidstreamPartners LP
CRYSTAL LAKE PIPELINE ACCESS ROAD PLAN SHEET
 PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA
 DATE: 5/20/2017
 SCALE: AS SHOWN
 DRAWN BY: R.L. (TFO)
 CHECKED: AR (TFO)
 SHEET 22
 SHT. NAME: 050-6196\CRYSTAL\AR5
 REV. 2



USER: Jared d. Jenkins
 PLOT DATE/TIME: 5/20/2017 12:22 PM
 LAYOUT TAB: AR6
 CAO FILE: R:\050-6196-MEC-HP-LOOP-ANTERO-SURVEY\PLANS\ACCESS ROAD PLAN SHEETS.dwg

THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

0 100 200
HORIZ. SCALE IN FEET

SUMMARY OF MATERIALS (3D)		
SS1	SILT SAVER BSRF-P1	1,580 LF
SS2	SILT SAVER BSRF-P2	2,124 LF
WB	PERMANENT WATERBARS	50
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

REVISION		
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17 J.D.J.
NO.	DESCRIPTION	DATE BY

- GENERAL INFORMATION**
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID128), U.S. SURVEY FOOT
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - BASELINE STATION SHOWN PERTAINS TO THE CENTER OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
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 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
MidstreamPartners LP

**CRYSTAL LAKE PIPELINE
ACCESS ROAD PLAN SHEET**

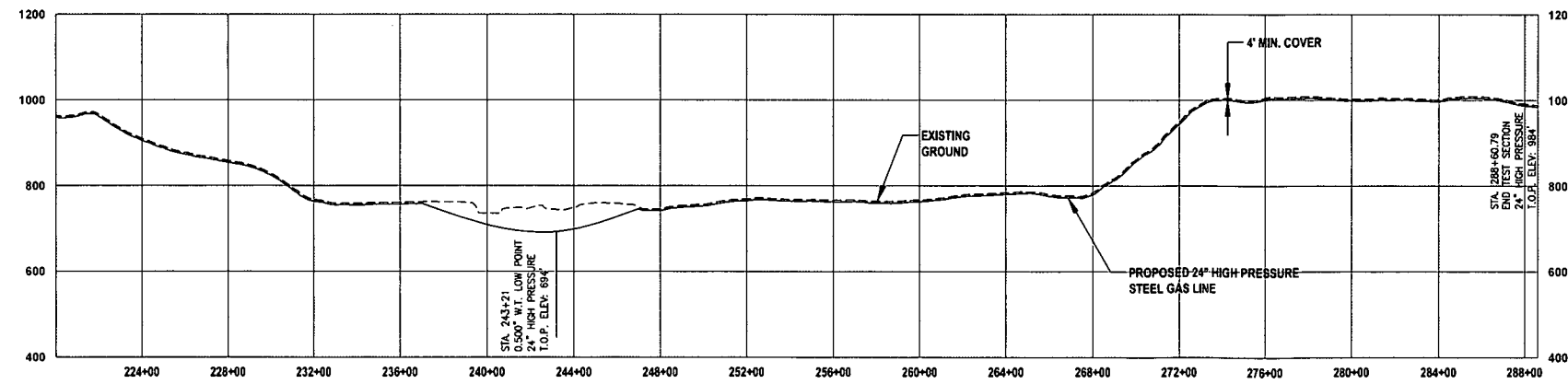
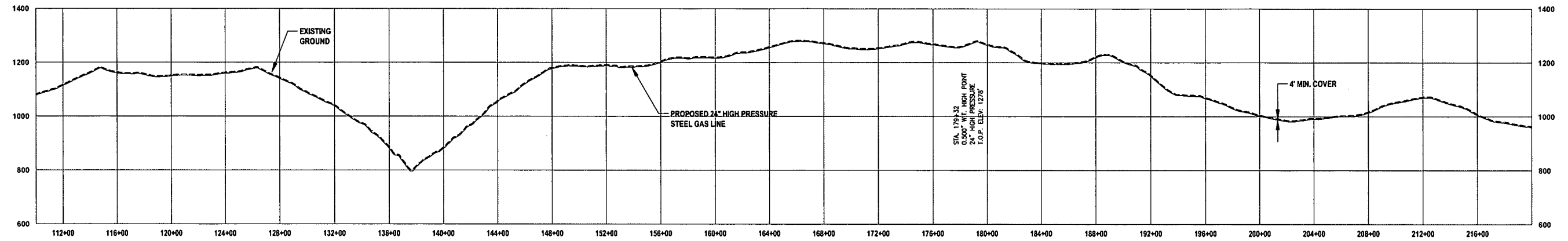
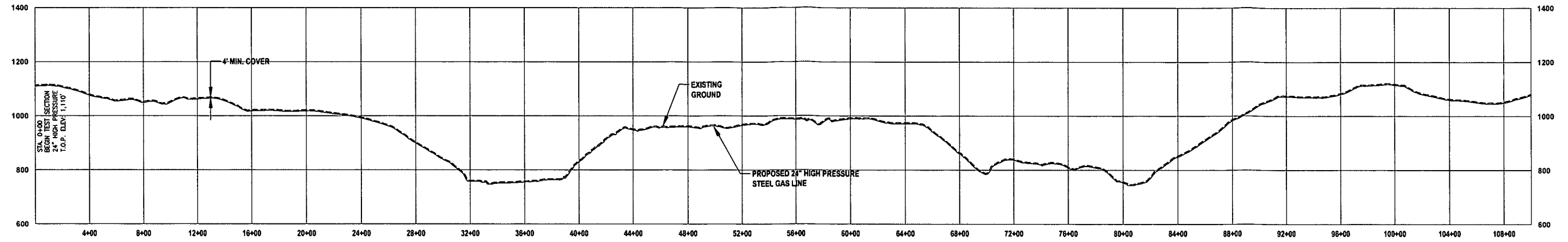
PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/20/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: R.A. (TTC)
CHECKED: J.B. (TTC)
SHEET 23
SHT. NAME: 050-6196\CRYSTAL\AR6 REV. 2

USER: robert.j.lucko

PLOT DATE/TIME: 5/21/2017 7:38 AM

LAYOUT TAB: HTP
 CAD FILE: R:\050-6196-REC-HP-LOOP-ANTERO-SURVEY\PLANS\HYDROSTATIC TEST PROFILE.dwg



HYDROSTATIC TEST (24" HIGH PRESSURE)		Station	Elevation (ft msl)
Start Point		0+00	1110
Low Point (0.500 wt X-65)		243+21	694
High Point (0.500 wt X-65)		179+32	1278
End Point		288+60.79	984
Differential (0.500 wt X-65)			584
Static Head Pressure @ 694' (0.500 wt X-65) PSI			253.0472

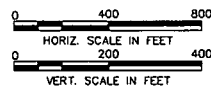
THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924



SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

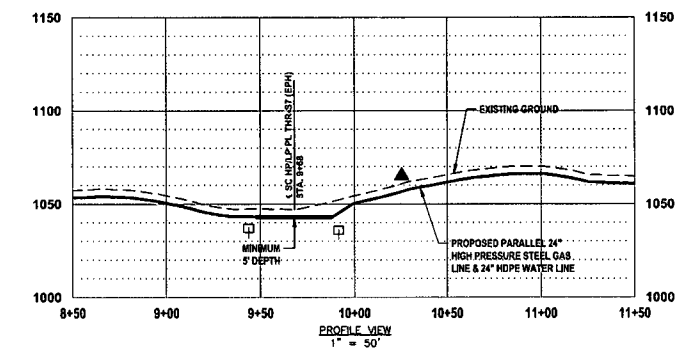
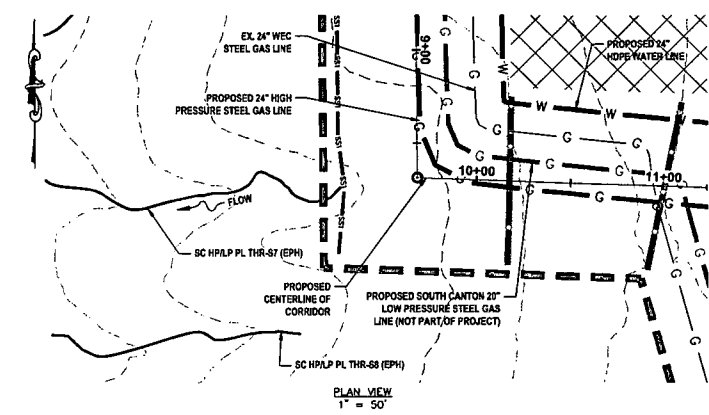
1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
2. REFER TO ANTERO MIDSTREAM PRESSURE TESTING PROCEDURE.
3. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
 HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
 VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
4. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
5. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.



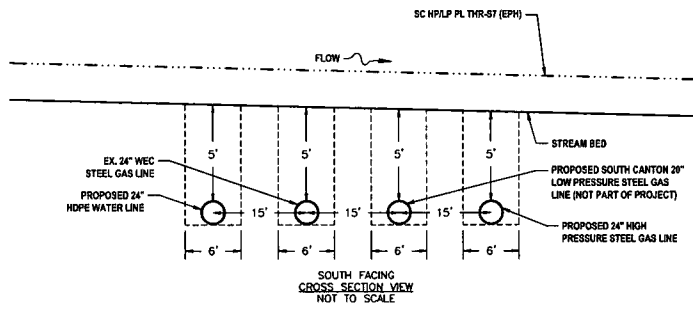
**CRYSTAL LAKE PIPELINE
 HYDROSTATIC TEST PROFILE**
 PROPOSED 24" HIGH PRESSURE STEEL
 GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017	AFE No.: A05924
SCALE: AS SHOWN	
DRAWN BY: R.L. (TTC)	SHEET 24
CHECKED: AR. (TTC)	
SHT. NAME: 050-6196\CRYSTAL\HTP	
	REV. 2

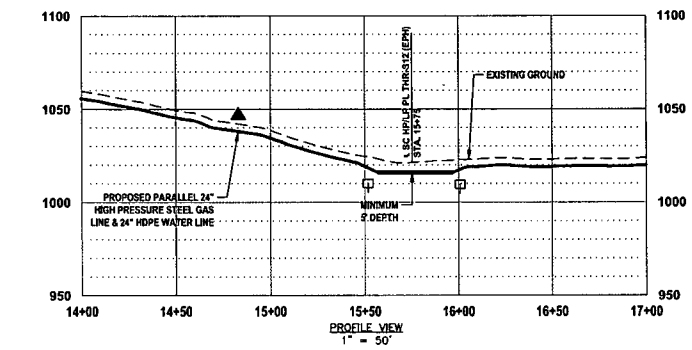
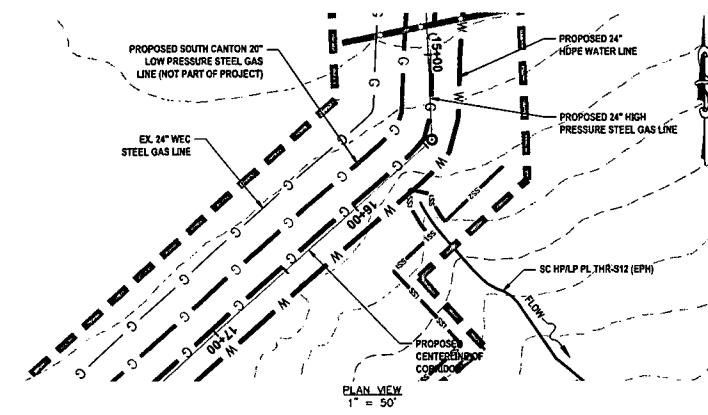
STREAM CROSSING 1 SC HP/LP PL THR-S7 (EPH)



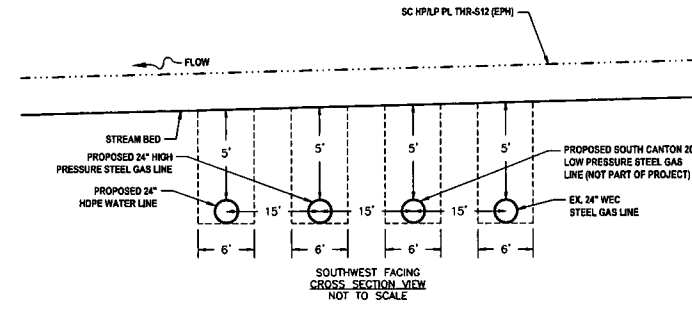
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 1.32'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°19'33.81" N
LONG: 80°50'27.24" W
SHEET REF: SHEET 05
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



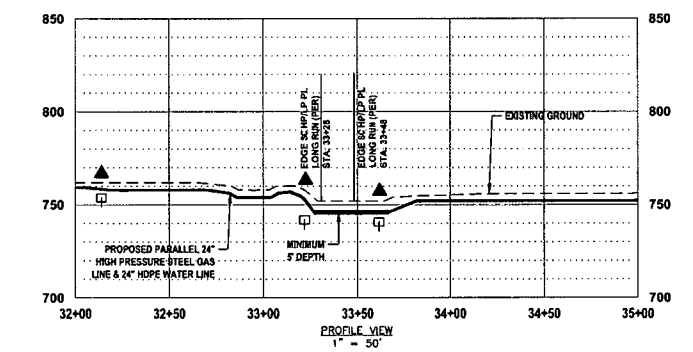
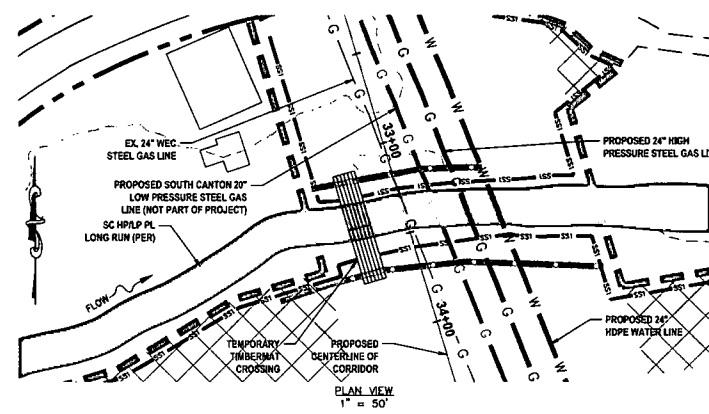
STREAM CROSSING 2 SC HP/LP PL THR-S12 (EPH)



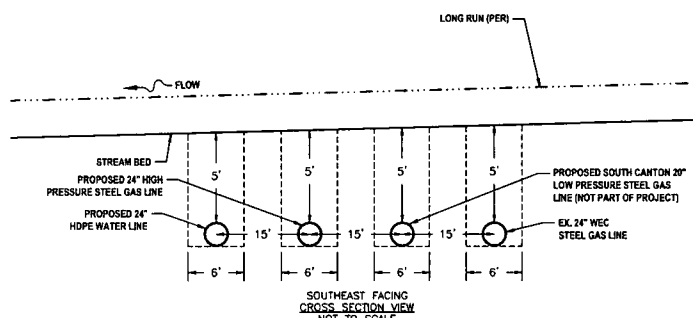
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.0'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°19'28.25" N
LONG: 80°50'24.44" W
SHEET REF: SHEET 05
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



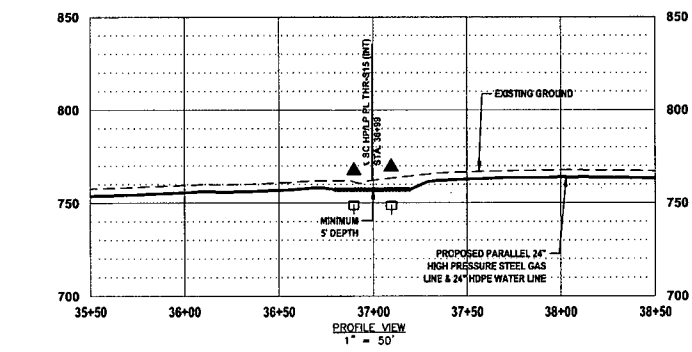
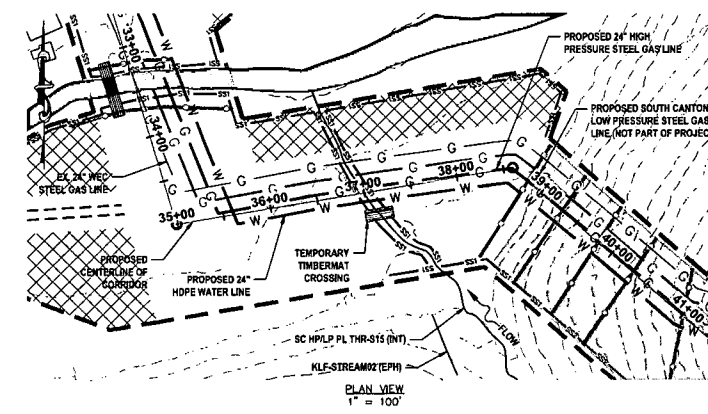
STREAM CROSSING 3 SC HP/LP PL LONG RUN (PER)



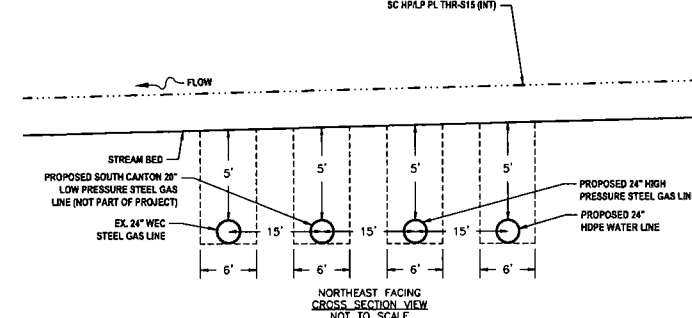
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: PERENNIAL
STREAM WIDTH: 22.0'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°19'33.95" N
LONG: 80°50'24.05" W
SHEET REF: SHEET 06
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



STREAM CROSSING 4 SC HP/LP PL THR-S15 (INT)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: INTERMITTENT
STREAM WIDTH: 4.2'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°19'12.80" N
LONG: 80°50'20.91" W
SHEET REF: SHEET 06
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



THRASHER

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION		
NO.	DESCRIPTION	DATE
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/28/17 R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17 DJJ

Antero
Midstream Partners LP

**CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS**

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HOPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

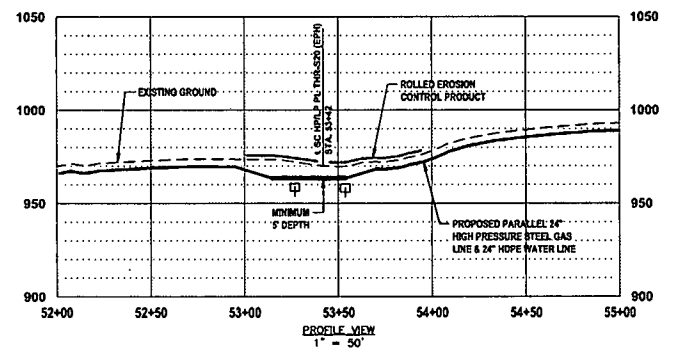
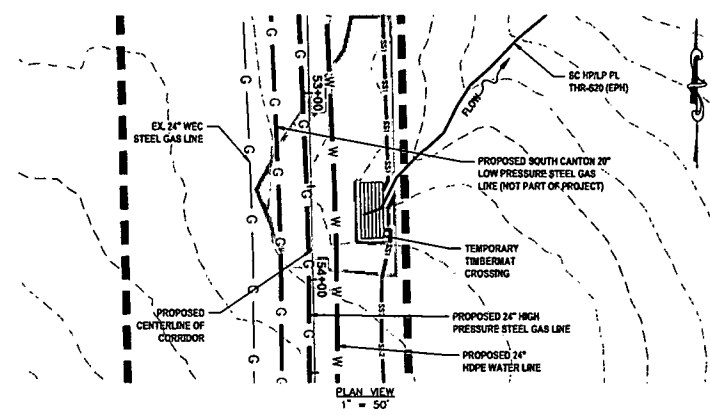
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DRAWN BY: R.A. (TIG)
CHECKED: AR. (TIG)

SHEET 25

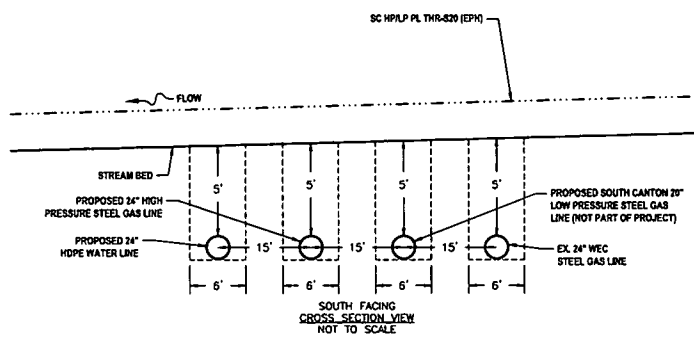
SHT. NAME: 050-6196\CRYSTAL\S&WC1
REV. 2

LAYOUT TAB: S&WC1
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PLOT DATE/TIME: 5/20/2017 3:24 PM
USER: robert.j.luczko

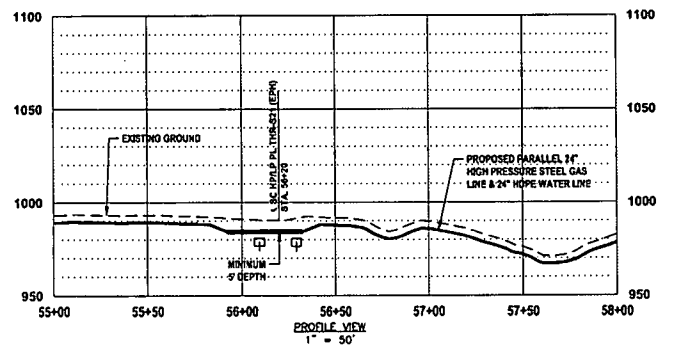
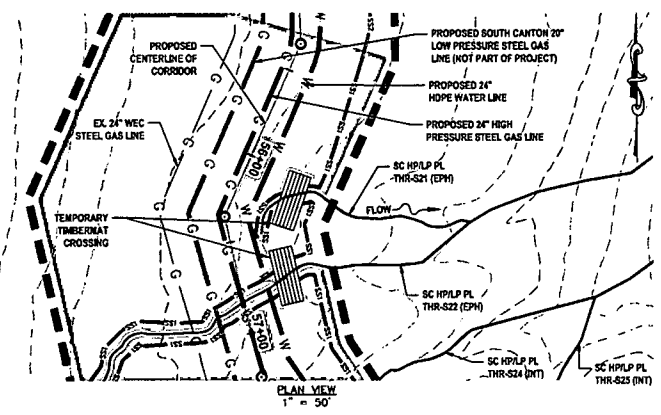
**STREAM CROSSING 9
SC HP/LP PL THR-S20 (EPH)**



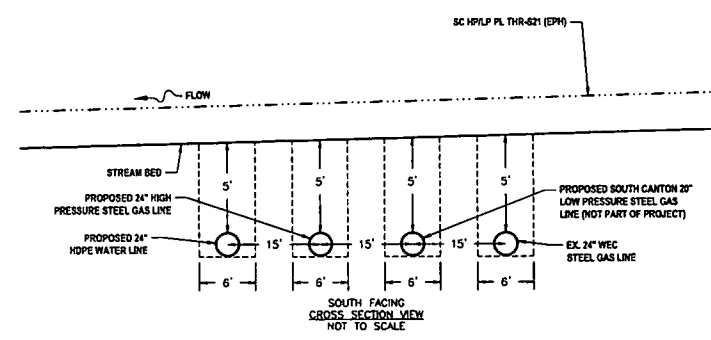
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 1.5'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°18'01.53" N
LONG: 80°50'11.87" W
SHEET REF: SHEET 06
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



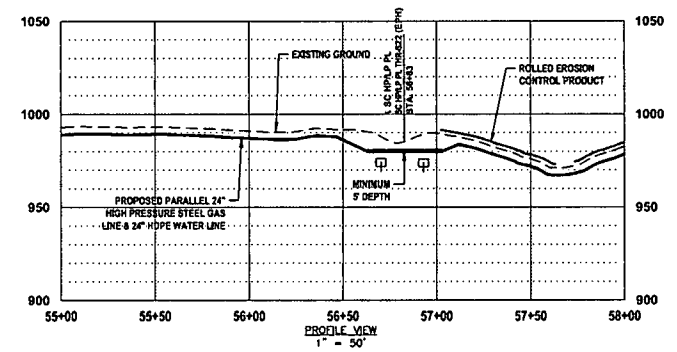
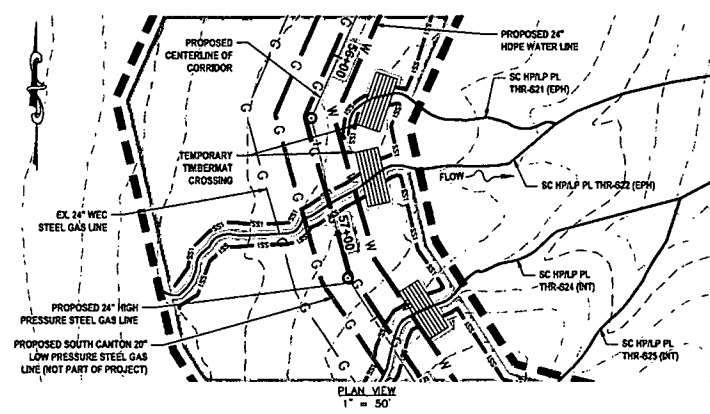
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SC HP/LP PL THR-S21 (EPH)**



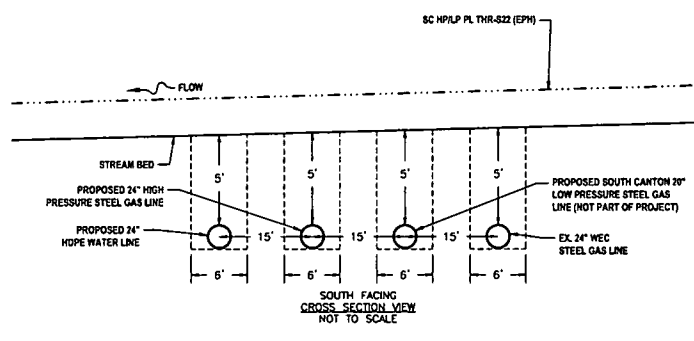
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 1.1'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°18'58.87" N
LONG: 80°50'11.79" W
SHEET REF: SHEET 07
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



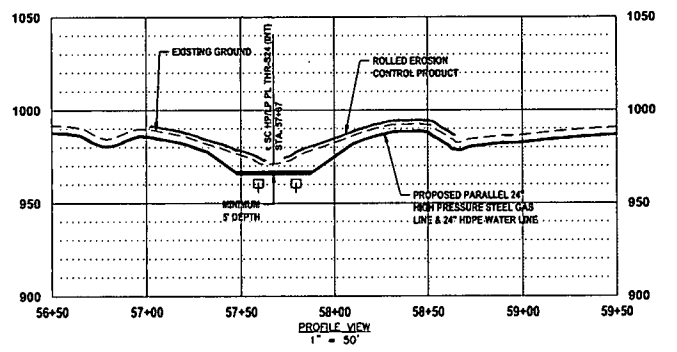
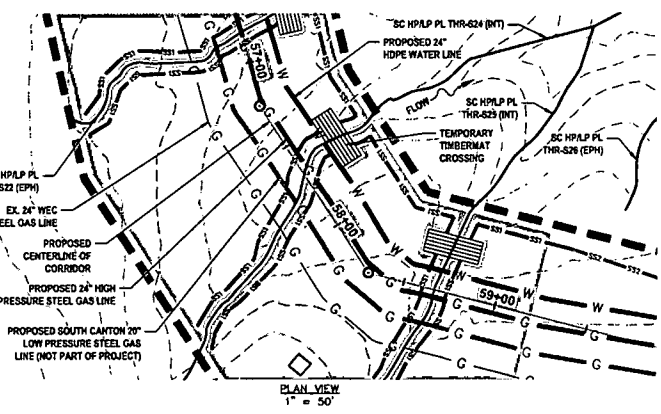
**STREAM CROSSING 11
SC HP/LP PL THR-S22 (EPH)**



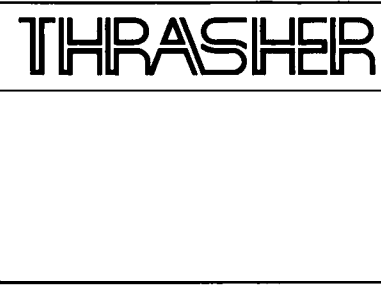
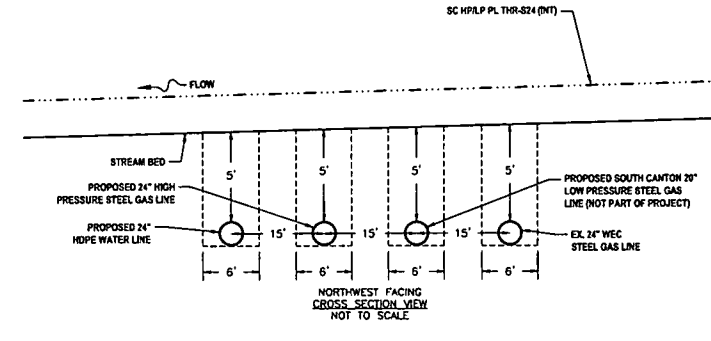
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.0'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°18'58.48" N
LONG: 80°50'11.87" W
SHEET REF: SHEET 07
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



**STREAM CROSSING 12
SC HP/LP PL THR-S24 (INT)**



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
- STREAM CLASSIFICATION: INTERMITTENT
STREAM WIDTH: 3.1'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
- LAT: 39°18'57.73" N
LONG: 80°50'11.88" W
SHEET REF: SHEET 07
- NOTES:**
- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 - CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 - ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

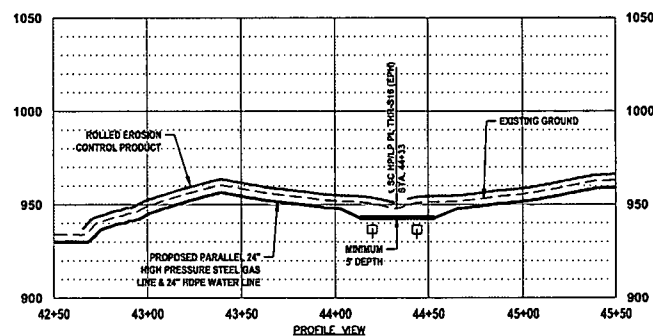
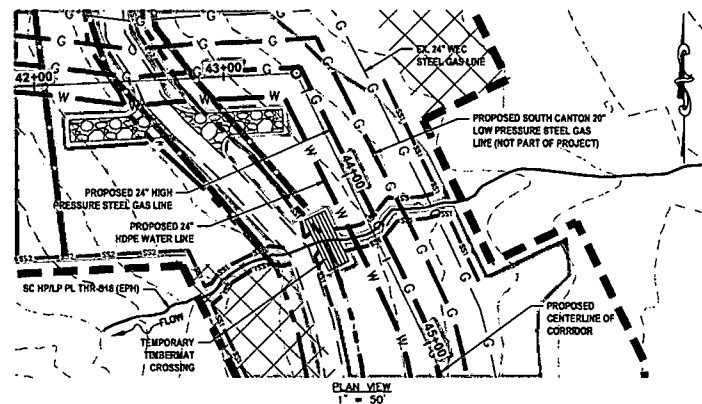
- GENERAL INFORMATION**
- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
 - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
 - FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
 - ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
 - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34") FOR REDUCTIONS. REFER TO GRAPHIC SCALE.
 - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP
**CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS**
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HOPE WATER LINE
ODDORIDGE COUNTY, WEST VIRGINIA

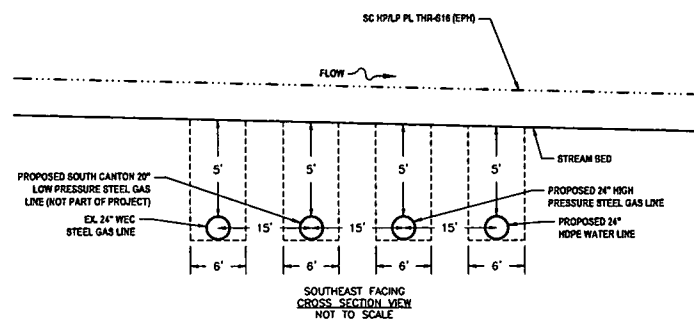
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DRAWN BY: J.A. (TTC)
CHECKED: AR. (TTC)
SHEET 27
SHT. NAME: 050-6196\CRYSTAL\S&WC3
REV. 2

LAYOUT TAB: S&WC3
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USER: robert.j.nuzzo

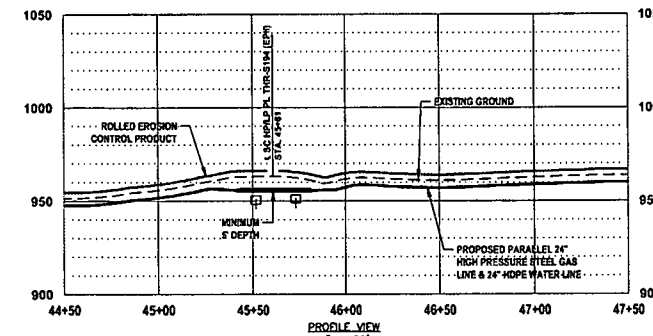
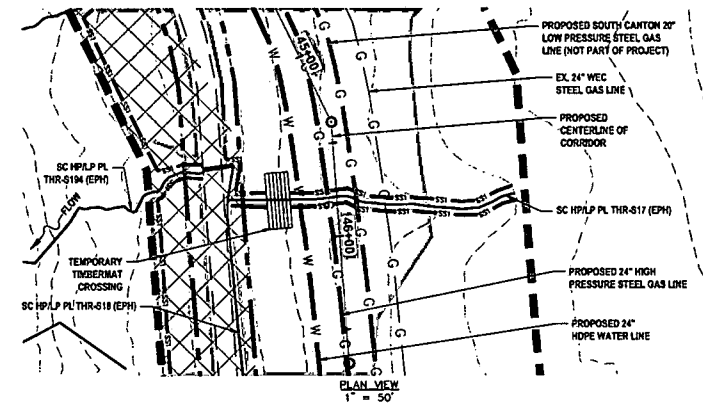
**STREAM CROSSING 5
SC HP/LP PL THR-S16 (EPH)**



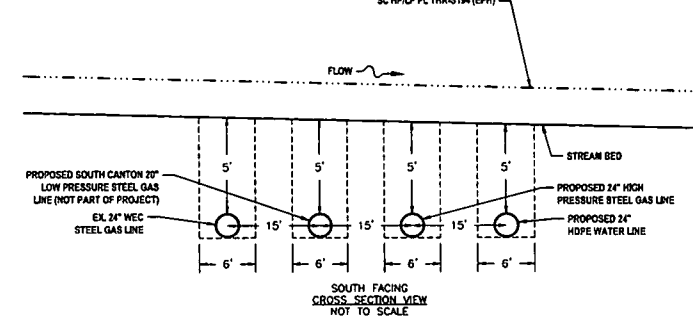
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 1.3'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'10.55" N
LONG: 80°50'13.18" W
SHEET REF: SHEET 06
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



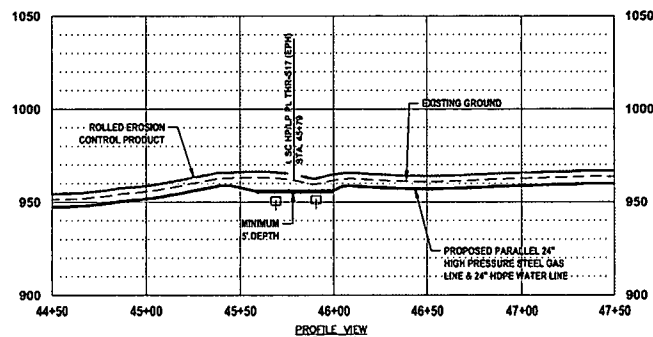
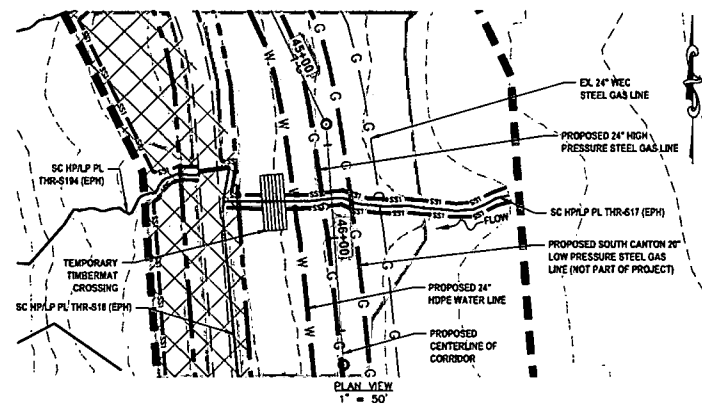
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SC HP/LP PL THR-S194 (EPH)**



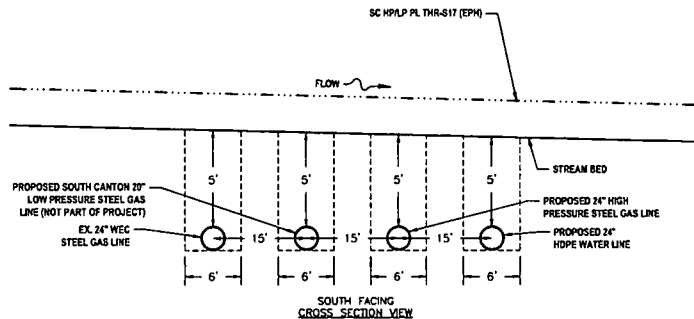
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 4.0'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'09.34" N
LONG: 80°50'13.47" W
SHEET REF: SHEET 06
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



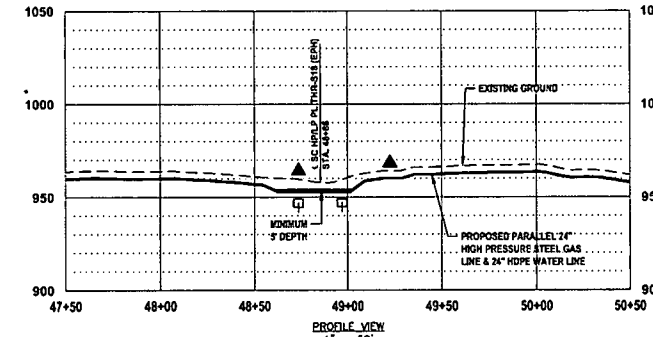
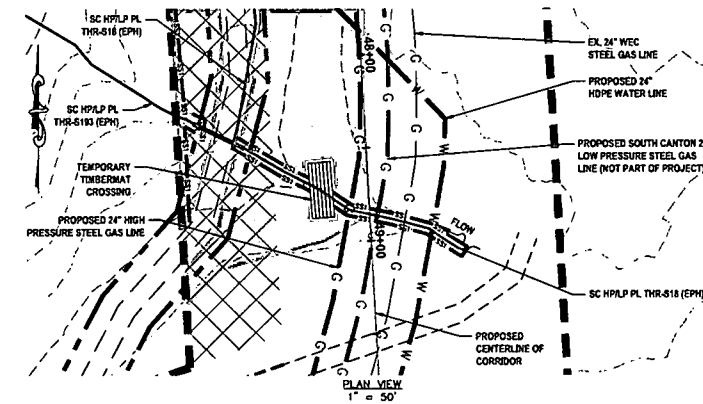
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SC HP/LP PL THR-S17 (EPH)**



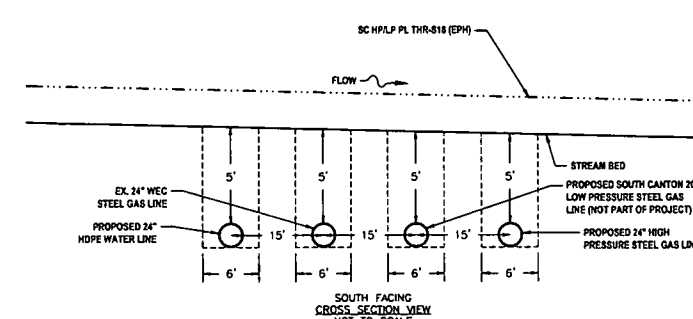
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 0.3'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'09.22" N
LONG: 80°50'12.81" W
SHEET REF: SHEET 06
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



**STREAM CROSSING 8
SC HP/LP PL THR-S18 (EPH)**



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.3'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'06.20" N
LONG: 80°50'12.19" W
SHEET REF: SHEET 06
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.



THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
VERTICAL - NAVD 88 (GEOID128), U.S. SURVEY FOOT
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
Midstream Partners LP

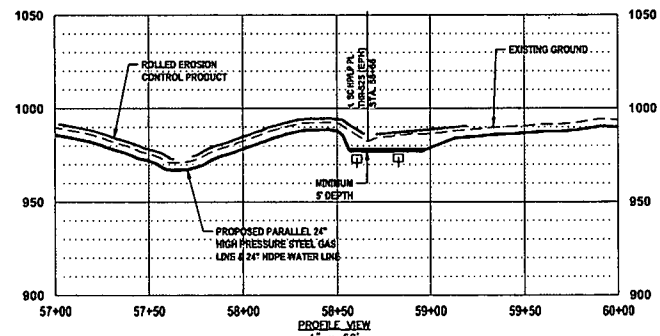
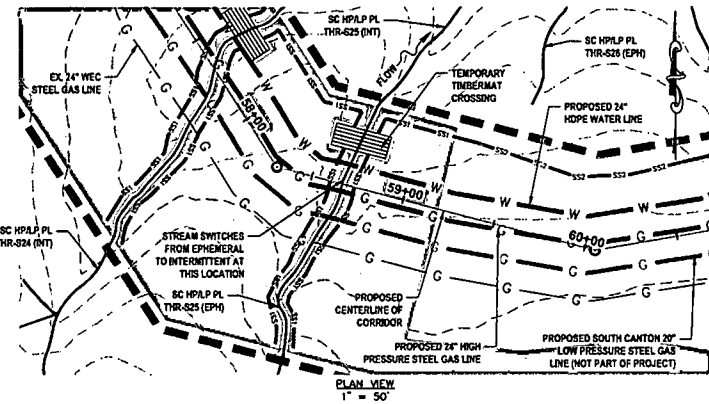
**CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS**

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

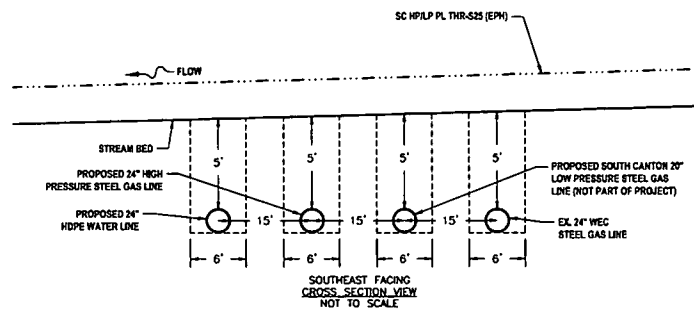
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DRAWN BY: R.A. (TIG) SHEET 26
CHECKED: AR (TIG)
SHT. NAME: 050-6196\CRYSTAL\S&WC2 REV. 2

LAYOUT TAB: S&WC2
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USER: robert.j.lucero
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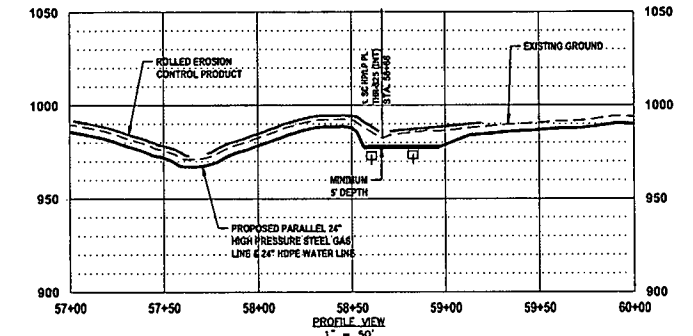
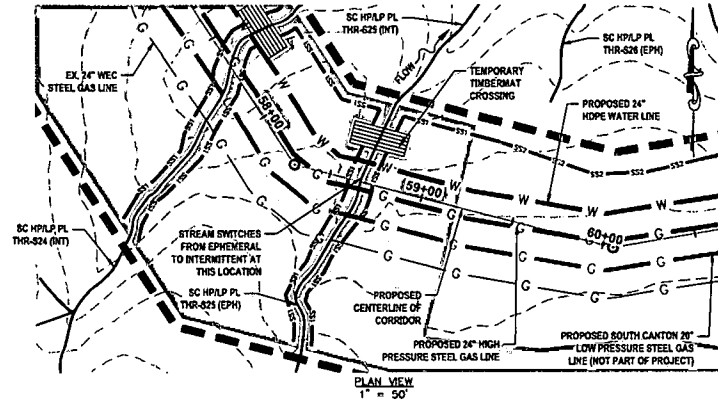
STREAM CROSSING 13 SC HP/LP PL THR-S25 (EPH)



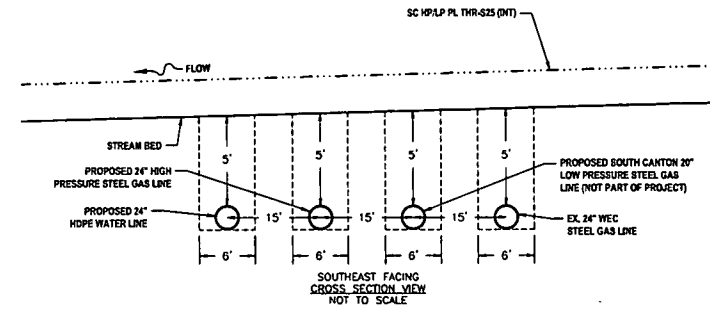
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - ▭ DELINEATED STREAM
 - ▭ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.8'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- COORDINATES:**
LAT: 39°22'04.01" N
LONG: 80°52'55.27" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



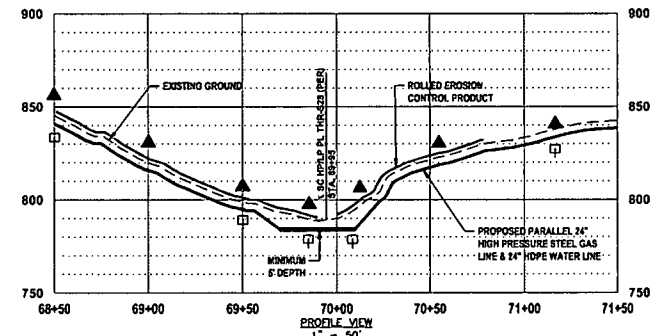
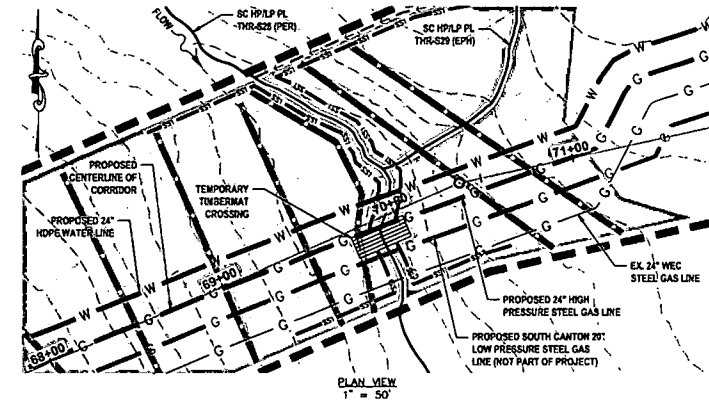
STREAM CROSSING 14 SC HP/LP PL THR-S25 (INT)



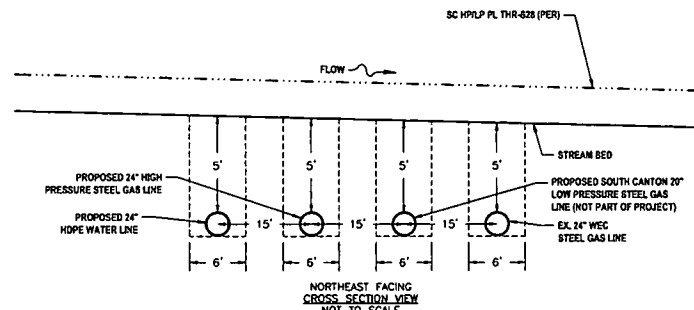
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - ▭ DELINEATED STREAM
 - ▭ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: INTERMITTENT
STREAM WIDTH: 2.8'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- COORDINATES:**
LAT: 39°22'04.01" N
LONG: 80°52'55.27" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



STREAM CROSSING 15 SC HP/LP PL THR-S28 (PER)



- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - ▭ DELINEATED STREAM
 - ▭ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HOPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: PERENNIAL
STREAM WIDTH: 1.3'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- COORDINATES:**
LAT: 39°10'00.09" N
LONG: 82°14'37.08" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION			
1.	PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig		
2.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT		
3.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.		
4.	ALL STATIONING SHOWN IS HORIZONTAL STATIONING.		
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.		
6.	FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.		

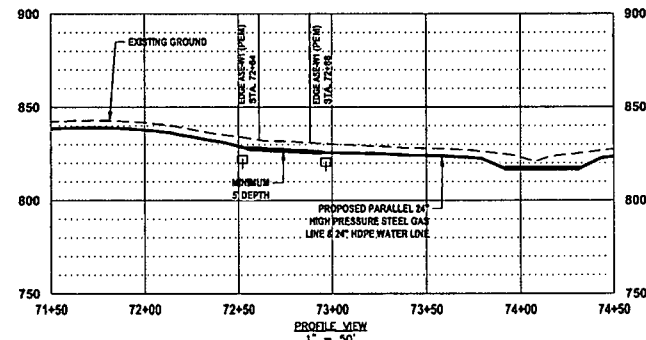
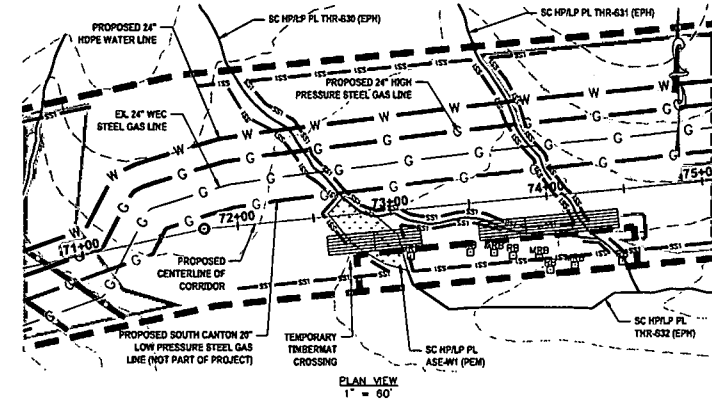
Antero
Midstream Partners LP
**CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS**
PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HOPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 3/20/2017
SCALE: AS SHOWN
DRAWN BY: RA (TTC)
CHECKED: AR (TTC)

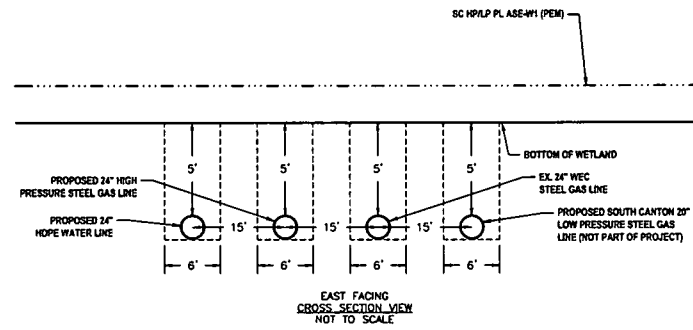
SHEET 28
SHT. NAME: 050-6196\CRYSTAL\S\WC4
REV. 2

LAYOUT TAB: SAWCA
CAD FILE: R:\050-6196-HEC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg
USER: robert.j.nuzio
PLOT DATE/TIME: 5/20/2017 3:38 PM

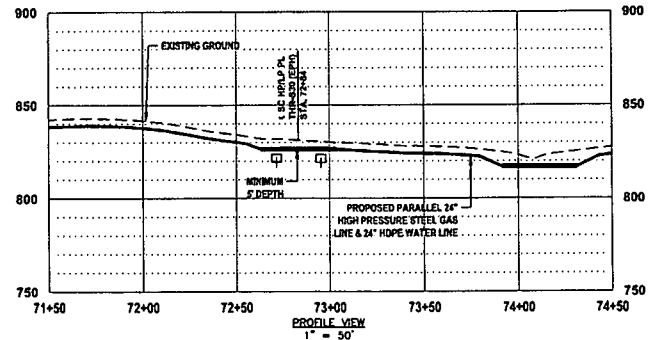
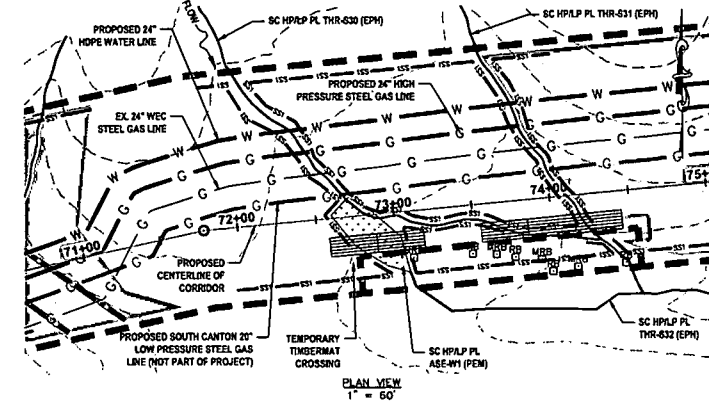
**WETLAND CROSSING 1
SC HP/LP PL ASE-W1 (PEM)**



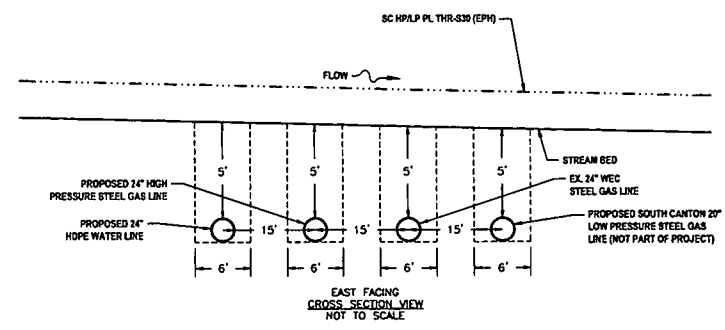
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRP-P1
 - SS2 SILT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 6 OF PROPOSED CORRIDOR WITH STATIONING
- WETLAND INFORMATION:**
WETLAND CLASSIFICATION: PALUSTRINE EMERGENT
WETLAND WIDTH: 24.6'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'00.89" N
LONG: 80°49'53.82" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



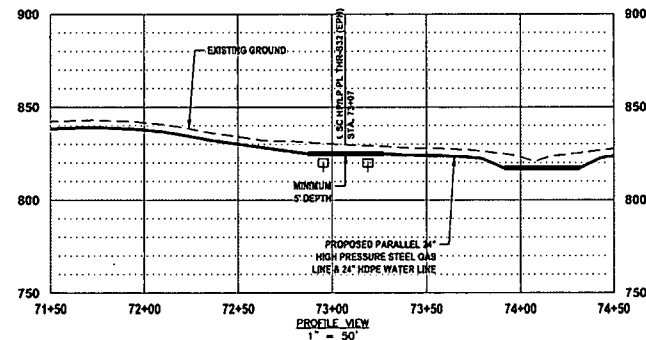
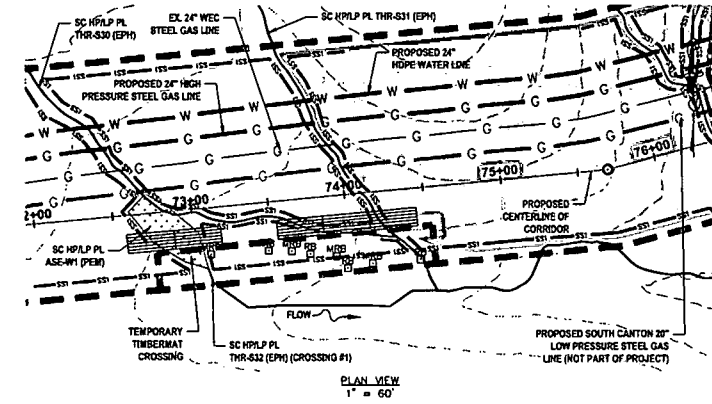
**STREAM CROSSING 16
SC HP/LP PL THR-S30 (EPH)**



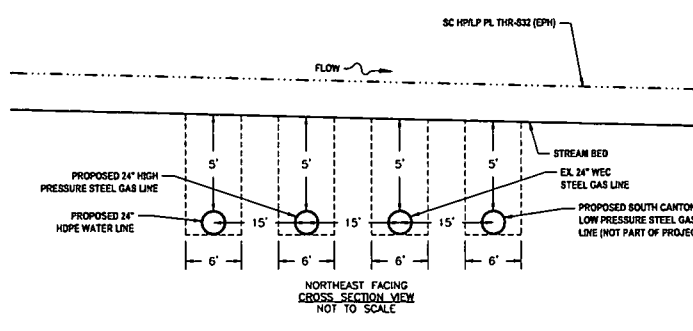
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRP-P1
 - SS2 SILT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 6 OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.2'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'00.89" N
LONG: 80°49'53.82" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



**STREAM CROSSING 17
SC HP/LP PL THR-S32 (EPH) (CROSSING #1)**



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRP-P1
 - SS2 SILT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELIMITED STREAM
 - DELIMITED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HOPE WATER LINE
 - 21+00 6 OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 1.2'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'00.34" N
LONG: 80°49'53.14" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

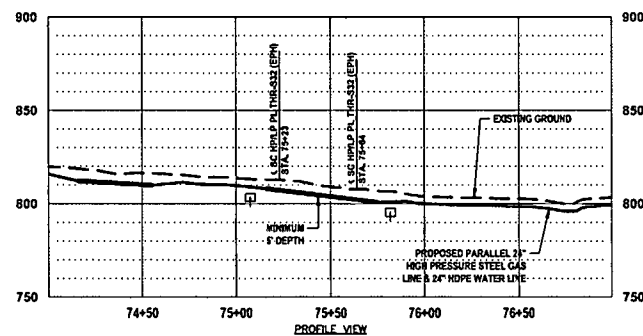
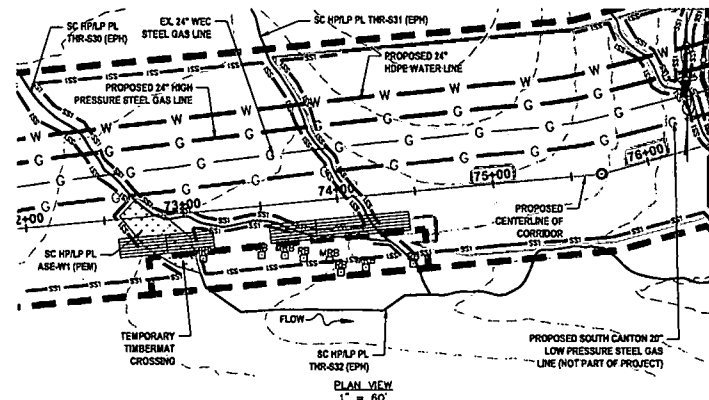
GENERAL INFORMATION			
1.	PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig		
2.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT		
3.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.		
4.	ALL STATIONING SHOWN IS HORIZONTAL STATIONING.		
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.		
6.	FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.		

Antero
Midstream Partners LP
**CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS**
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HOPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

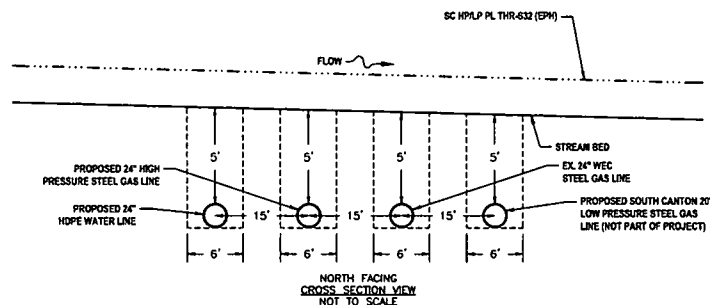
DATE: 3/20/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: R.A. (TIG) SHEET 29
CHECKED: AR (TIG)
SHT. NAME: 050-6196\CRYSTAL\S&WC5 REV. 2

LAYOUT TAB: S&WC5
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PLOT DATE/TIME: 5/20/2017 3:43 PM
USER: robert.j.lucero

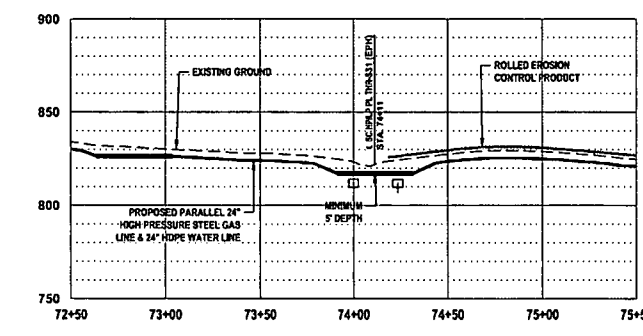
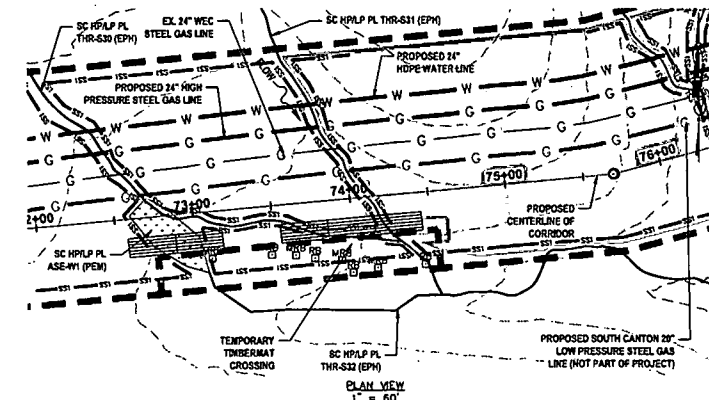
STREAM CROSSING 18
SC HP/LP PL THR-S32 (EPH) (CROSSING #2)



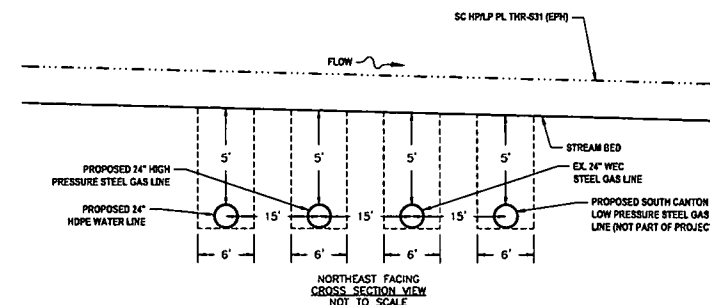
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 1.5'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'00.84" N
LONG: 80°49'01.14" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



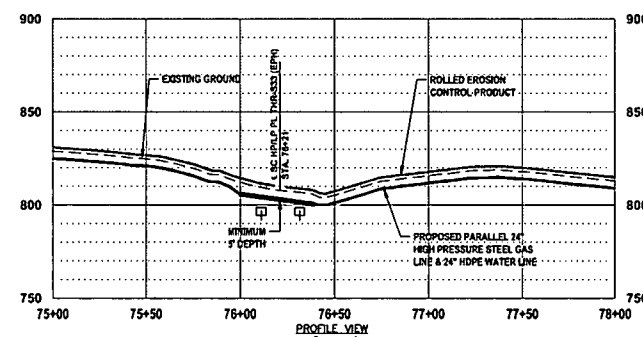
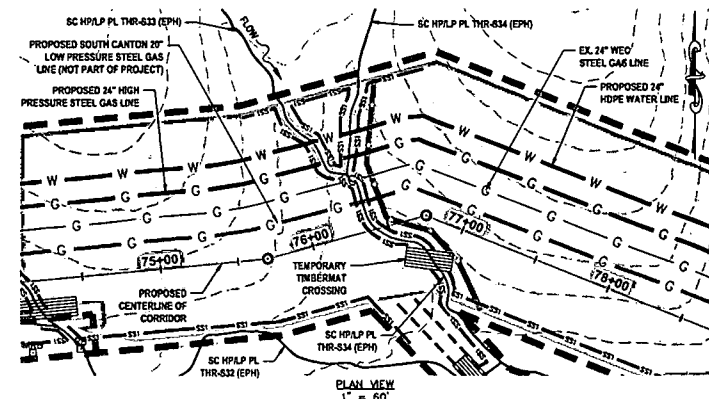
STREAM CROSSING 19
SC HP/LP PL THR-S31 (EPH)



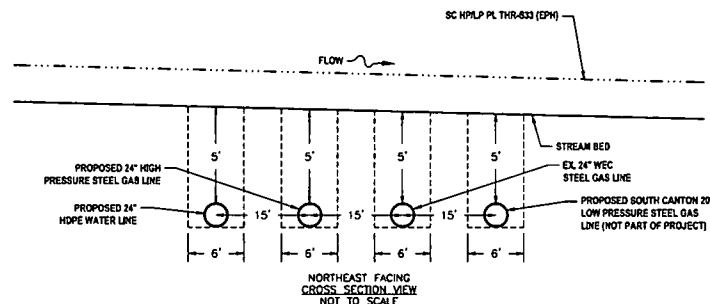
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 3.4'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'00.84" N
LONG: 80°49'01.14" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



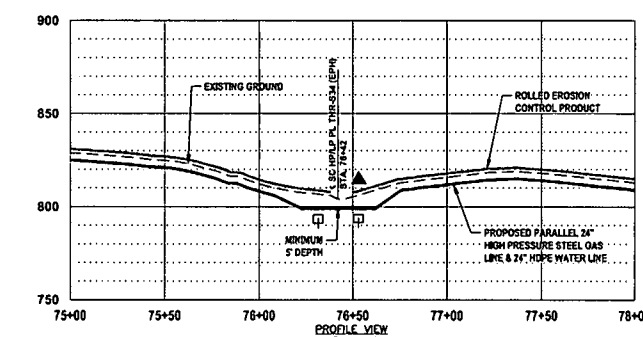
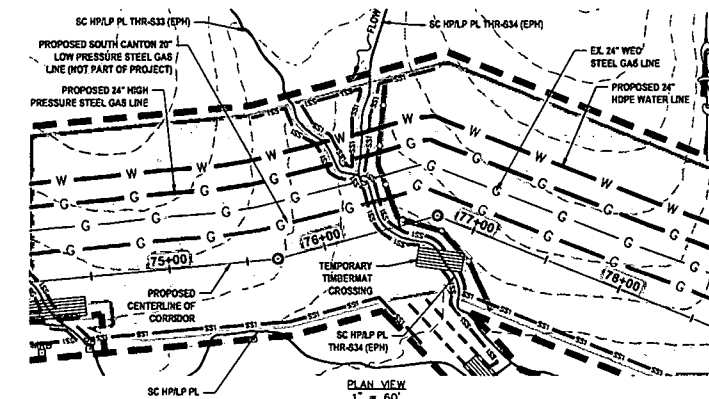
STREAM CROSSING 20
SC HP/LP PL THR-S33 (EPH)



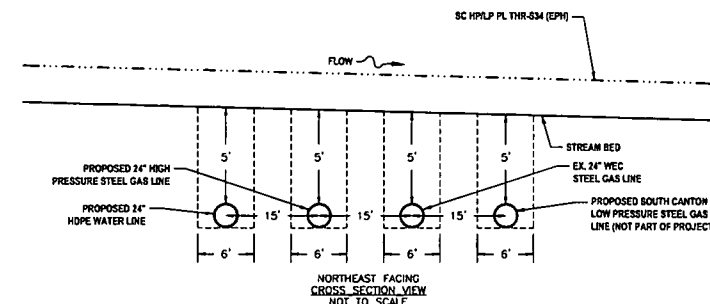
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 3.4'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'01.54" N
LONG: 80°49'49.35" W
SHEET REF: SHEET 08
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



STREAM CROSSING 21
SC HP/LP PL THR-S34 (EPH) (CROSSING #1)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 3.0'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
LAT: 39°19'01.21" N
LONG: 80°49'46.99" W
SHEET REF: SHEET 08
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

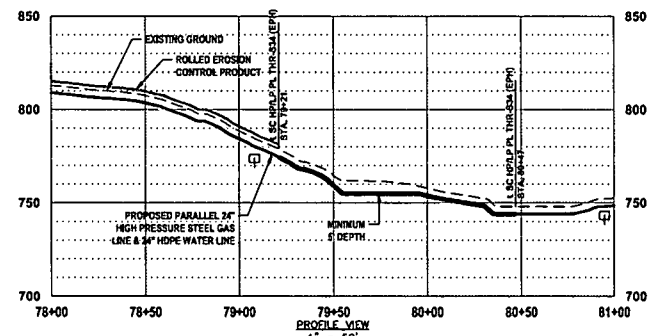
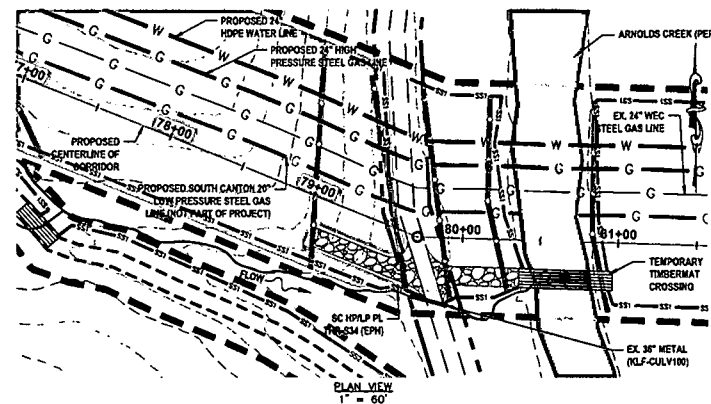
GENERAL INFORMATION		
1.	PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig.	
2.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT	
3.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	
4.	ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.	
6.	FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.	

Antero
Midstream Partners LP
CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

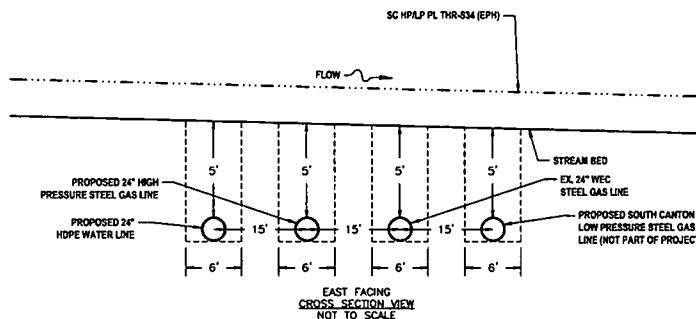
DATE: 5/20/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (ETG)
CHECKED: AB (ETG)
SHEET 30
SHT. NAME: 050-6196\CRYSTAL\S&WC6
REV. 2

LAYOUT TAB: S&WC6
CAD FILE: R:\050-6196-WEC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg
PLOT DATE/TIME: 5/20/2017 3:49 PM
USER: robert.j.lucero

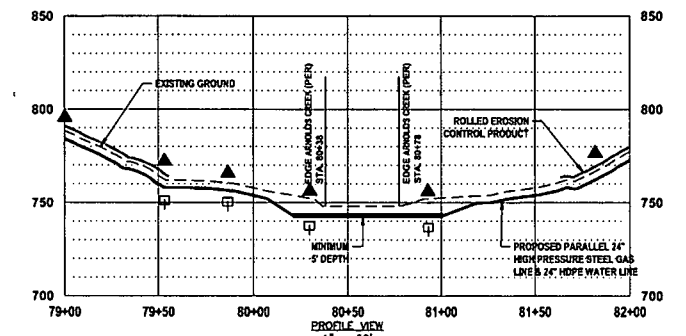
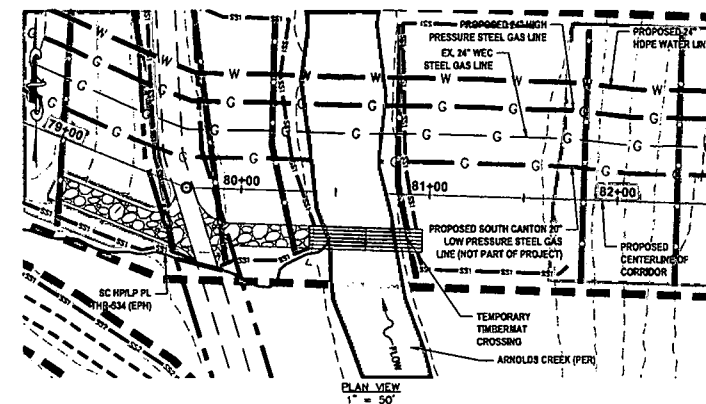
**STREAM CROSSING 22
SC HP/LP PL THR-S34 (EPH) (CROSSING #2)**



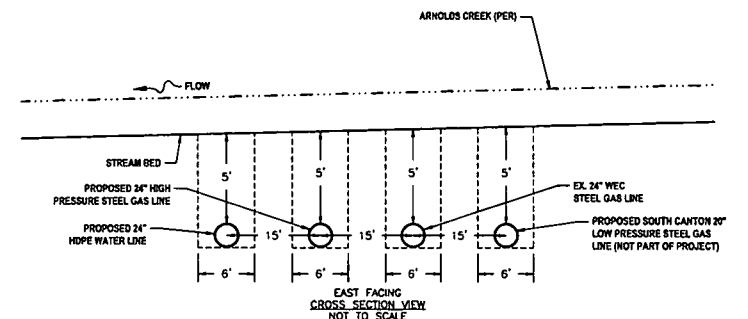
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 3.4'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
 LAT: 39°18'39.89" N
 LONG: 80°45'43.24" W
 SHEET REF: SHEET 08
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



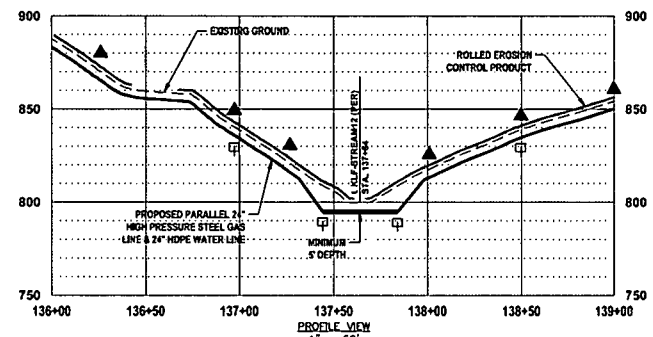
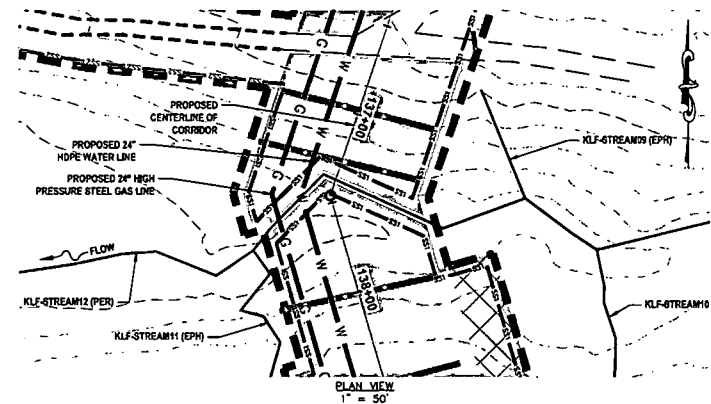
**STREAM CROSSING 23
SC HP/LP PL ARNOLDS CREEK (PER)**



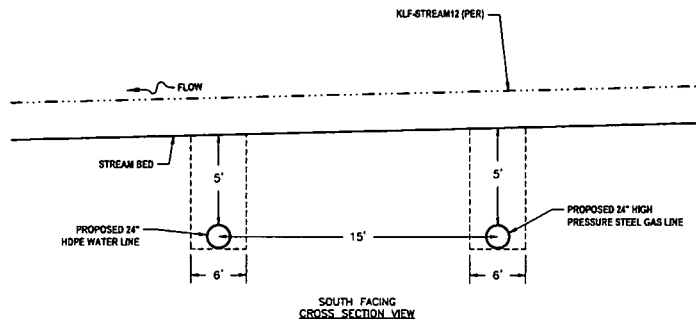
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: PERENNIAL
 STREAM WIDTH: 48.0'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
 LAT: 39°19'00.22" N
 LONG: 80°45'43.87" W
 SHEET REF: SHEET 08
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



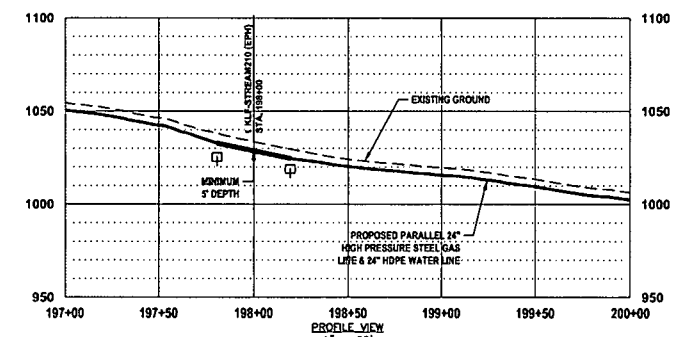
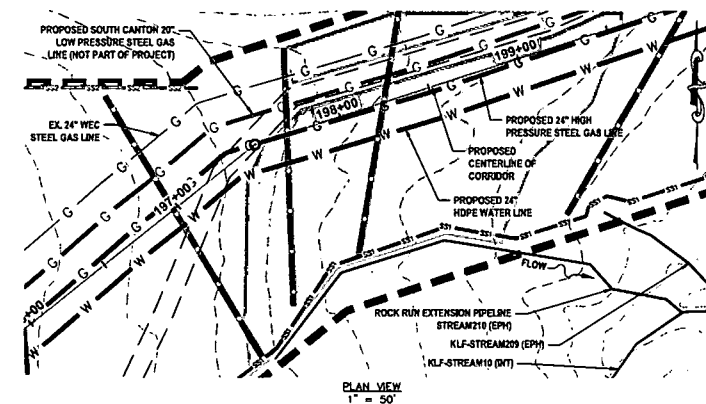
**STREAM CROSSING 24
KLF-STREAM12 (PER)**



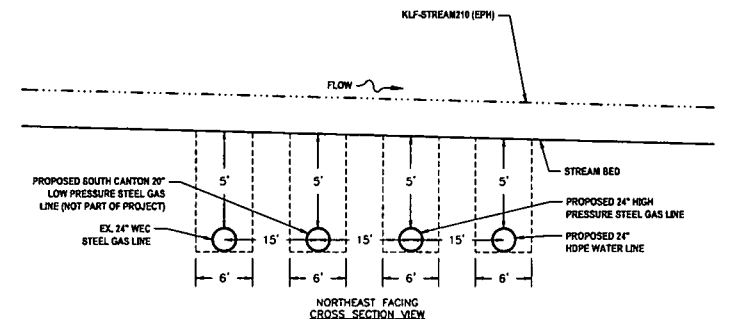
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: PERENNIAL
 STREAM WIDTH: 20.0'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
 LAT: 39°18'48.28" N
 LONG: 80°49'11.40" W
 SHEET REF: SHEET 10
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



**STREAM CROSSING 25
ROCK RUN EXTENSION PIPELINE KLF-STREAM210 (EPH)**



- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 4.0'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- REFERENCES:**
 LAT: 39°19'05.45" N
 LONG: 80°48'24.22" W
 SHEET REF: SHEET 13
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.



THRASHER

IFP

ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
 HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
 VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
 Midstream Partners LP

**CRYSTAL LAKE PIPELINE
 STREAM & WETLAND CROSSINGS**

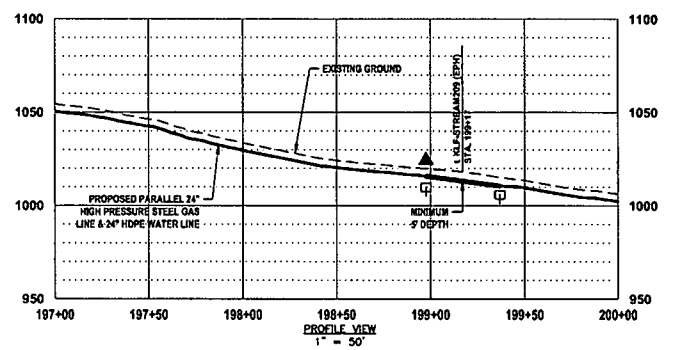
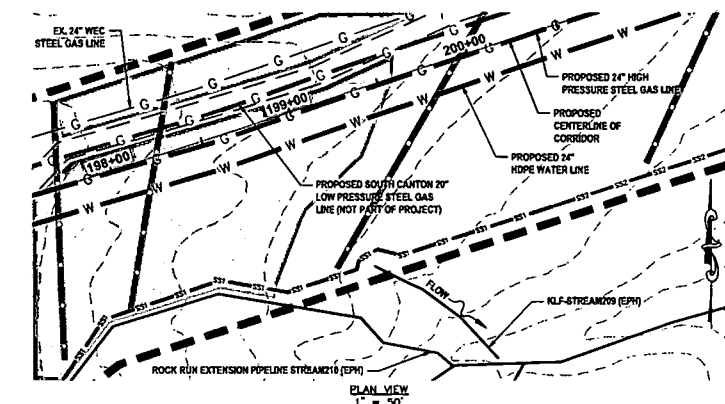
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIEGE COUNTY, WEST VIRGINIA

DATE: 5/20/2017 AFE No.: A05924
 SCALE: AS SHOWN
 DRAWN BY: R.A. (TIG)
 CHECKED: A.R. (TIG)
 SHEET 31
 SHT. NAME: 050-6196\CRYSTAL\S&WC7 REV. 2

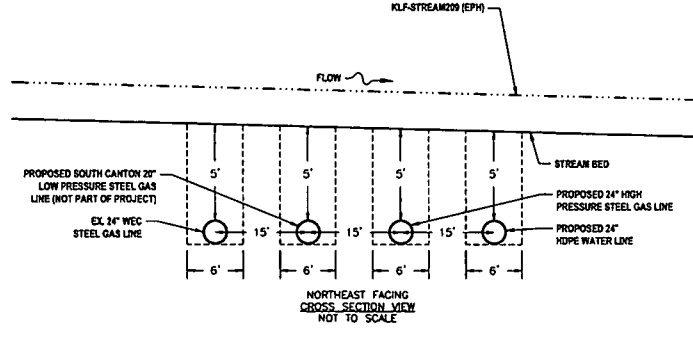
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 PLOT DATE/TIME: 5/20/2017 3:52 PM
 USER: robert.j.luczak

LAYOUT TAB: SA\WC8 CAD FILE: R:\050-6196-WEC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg PLOT DATE/TIME: 5/21/2017 5:52 AM USER: robert.j.lucero

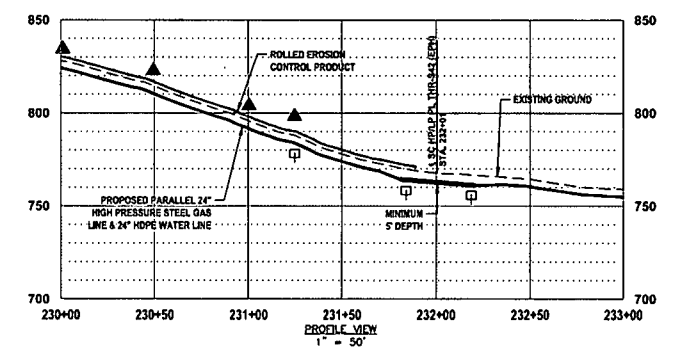
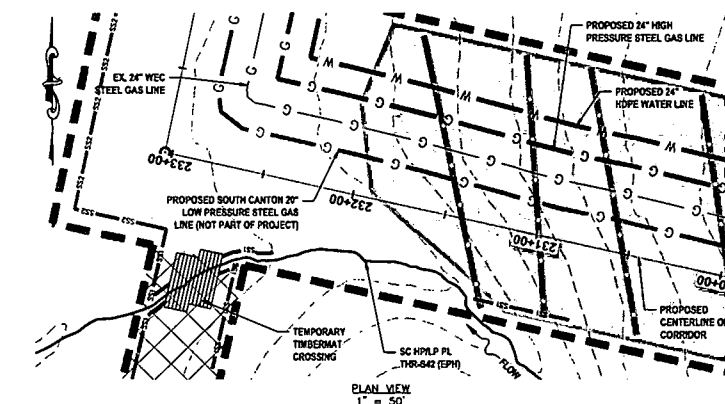
STREAM CROSSING 26 KLF-STREAM209 (EPH)



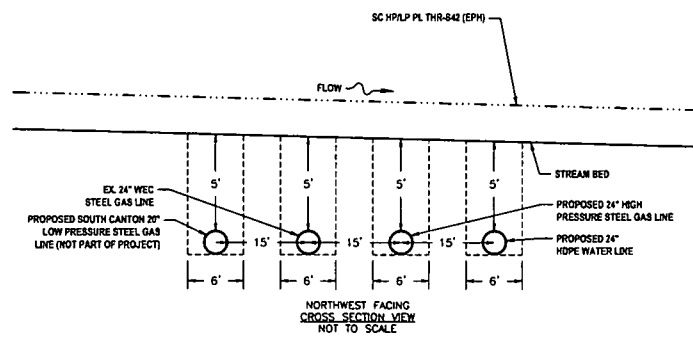
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 ± OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 4.0'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.
- COORDINATES:**
 LAT: 39°19'05.72" N
 LONG: 80°42'22.14" W
 SHEET REF: SHEET 13



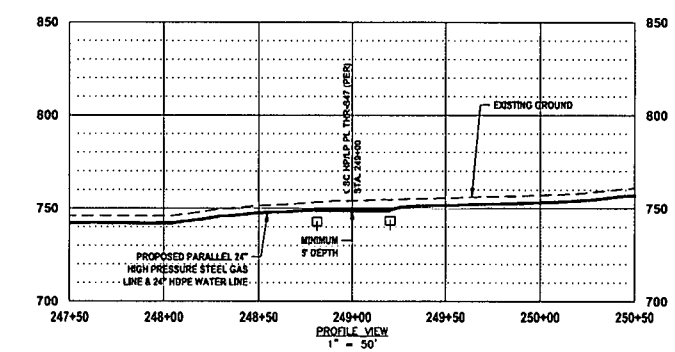
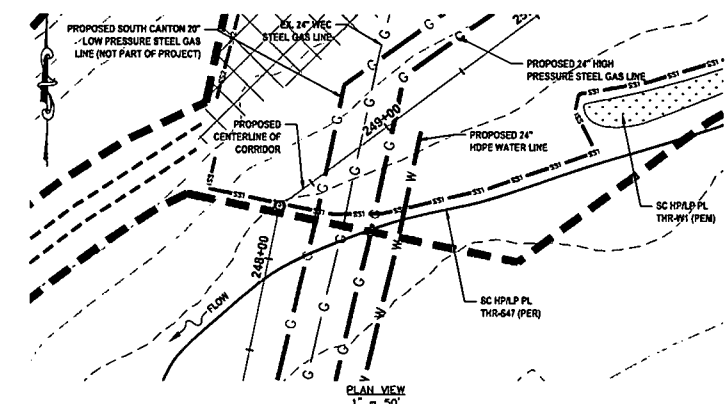
STREAM CROSSING 28 SC HP/LP PL THR-S42 (EPH)



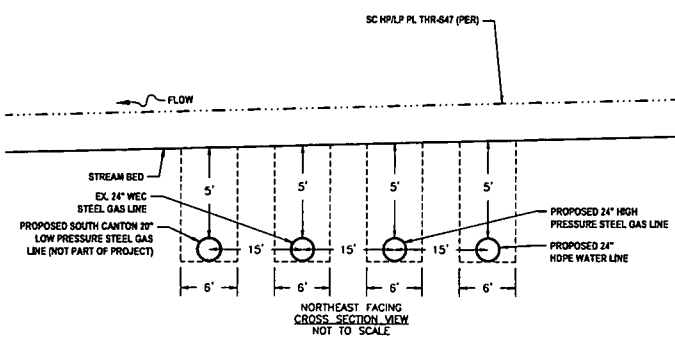
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 ± OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 5.5'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.
- COORDINATES:**
 LAT: 39°18'24.17" N
 LONG: 80°48'10.42" W
 SHEET REF: SHEET 15



STREAM CROSSING 29 SC HP/LP PL THR-S47 (PER)



- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - SS1 SALT SAVER BSRP-P1
 - SS2 SALT SAVER BSRP-P2
 - ▭ ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - ▨ DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 ± OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: PERENNIAL
 STREAM WIDTH: 5.0'
 PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
 3. ANY SLOPES GREATER THAN 30% SHALL HAVE ROLLED EROSION CONTROL MATTING INSTALLED DURING FINAL RESTORATION.
- COORDINATES:**
 LAT: 39°19'30.48" N
 LONG: 80°40'08.85" W
 SHEET REF: SHEET 15



IFP
 ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

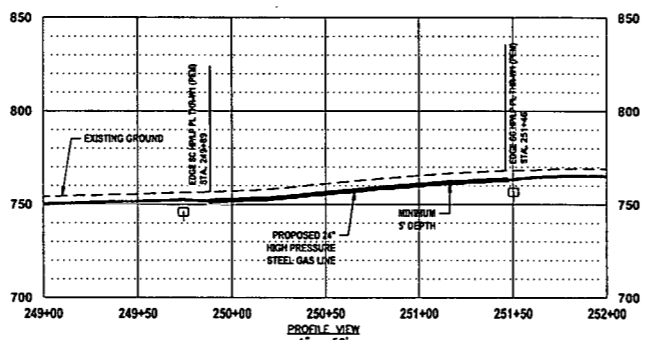
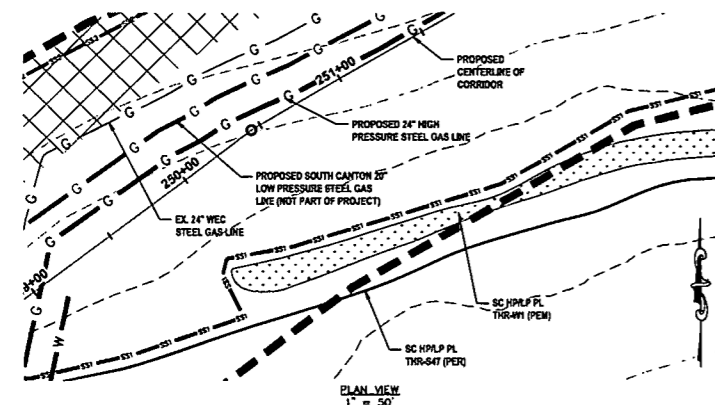
SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION		
NO.	DESCRIPTION	DATE
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17 R.J.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/18/17 J.D.J.

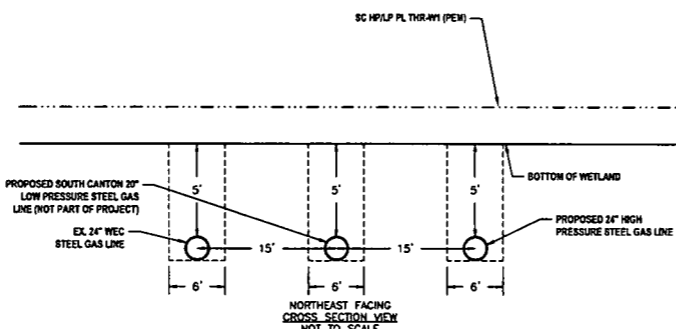
Antero
 Midstream Partners LP
**CRYSTAL LAKE PIPELINE
 STREAM & WETLAND CROSSINGS**
 PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017 AFE No: A05924
 SCALE: AS SHOWN
 DRAWN BY: AD (TIC) SHEET 32
 CHECKED: AD (TIC)
 SHT. NAME: 050-6196\CRYSTAL\S&WCB REV. 2

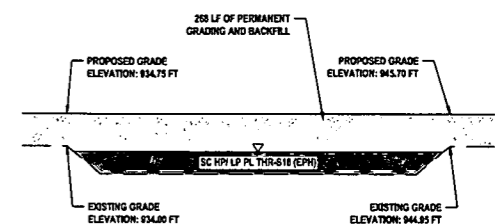
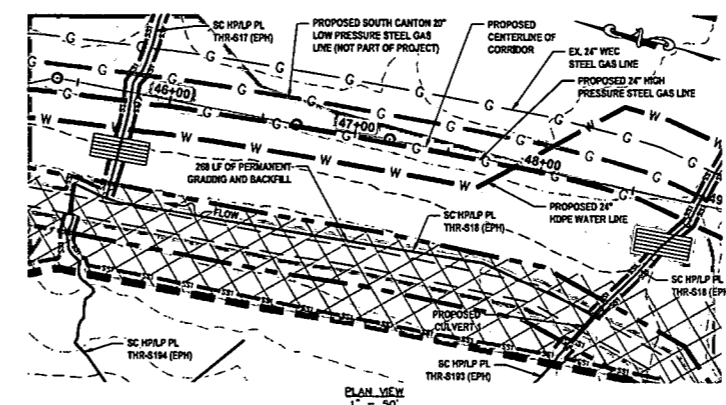
**WETLAND CROSSING 2
SC HP/LP PL THR-W1 (PEM)**



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- WETLAND INFORMATION:**
WETLAND CLASSIFICATION: PALUSTRINE EMERGENT
WETLAND WIDTH: 157.2'
PROPOSED METHOD OF CONSTRUCTION: OPEN CUT
- COORDINATES:**
LAT: 39°18'40.16" N
LONG: 80°49'05.94" W
SHEET REF: SHEET 15
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.
3. ANY SLOPES GREATER THAN 3:1 SHALL HAVE ROLLED EROSION CONTROL MATING INSTALLED DURING FINAL RESTORATION.

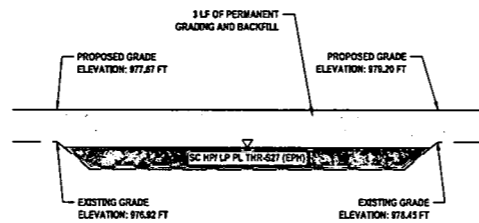
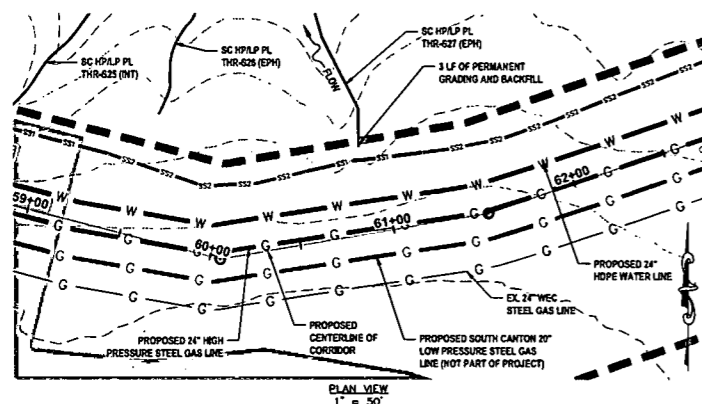


**PERMANENT FILL IMPACT 1
@ SC HP/LP PL THR-S18 (EPH)**



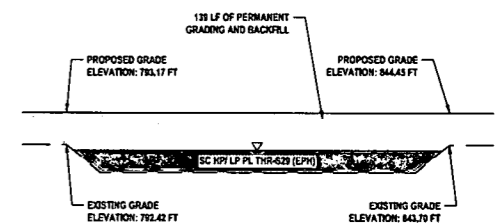
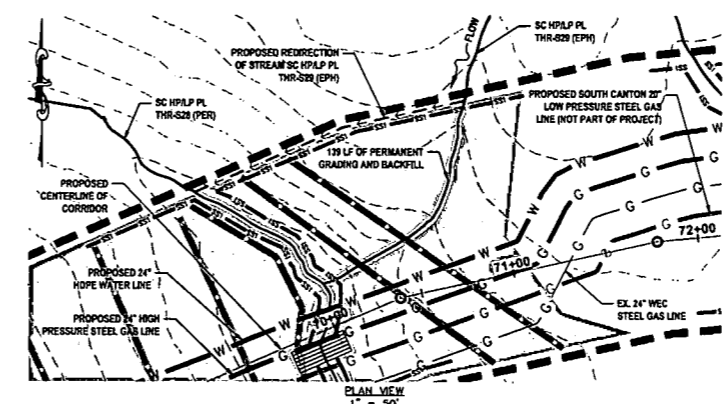
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.5'
- COORDINATES:**
LAT: 39°19'07.85" N
LONG: 80°50'11.07" W
SHEET REF: SHEET 06
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.

**PERMANENT FILL IMPACT 2
@ SC HP/LP PL THR-S27 (EPH)**



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.0'
- COORDINATES:**
LAT: 39°18'57.40" N
LONG: 80°50'07.84" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.

**PERMANENT FILL IMPACT 3
@ SC HP/LP PL THR-S29 (EPH)**



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSRF-P1
 - SS2 SALT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.5'
- COORDINATES:**
LAT: 39°19'00.87" N
LONG: 80°49'56.38" W
SHEET REF: SHEET 07
- NOTES:**
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.

LAYOUT TAB: SAWC9
CAD FILE: R:\050-6196-WEC-HP LOOP-ANTERO-SURVEY\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg
PLOT DATE/TIME: 5/21/2017 6:01 AM
USER: robert.j.mccro



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

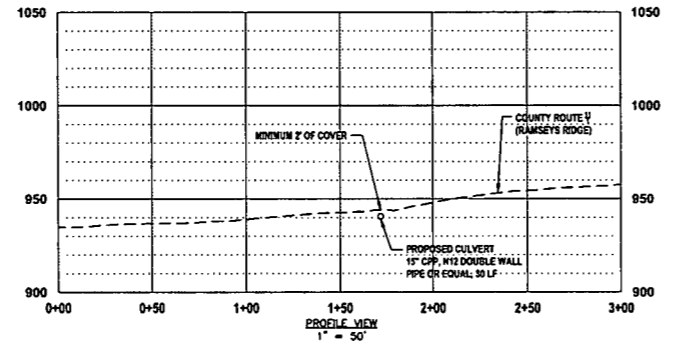
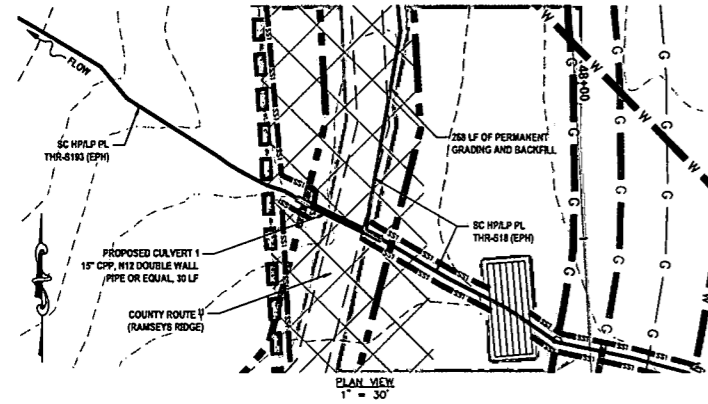
SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION		
1.	PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig	
2.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT	
3.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	
4.	ALL STATIONING SHOWN IS HORIZONTAL STATIONING.	
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.	
6.	FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.	

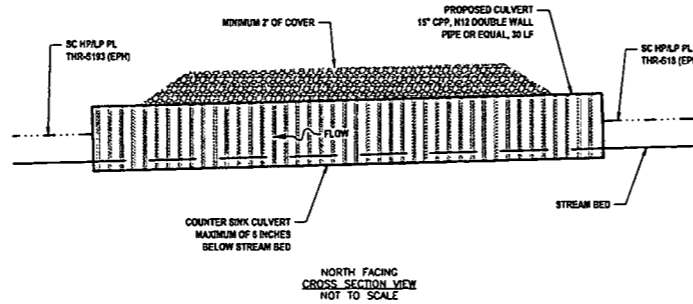
Antero
Midstream Partners LP
**CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS**
PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (TTC)
CHECKED: AR (TTC)
SHEET 33
SHT. NAME: 050-6196\CRYSTAL\S&WC9
REV. 2

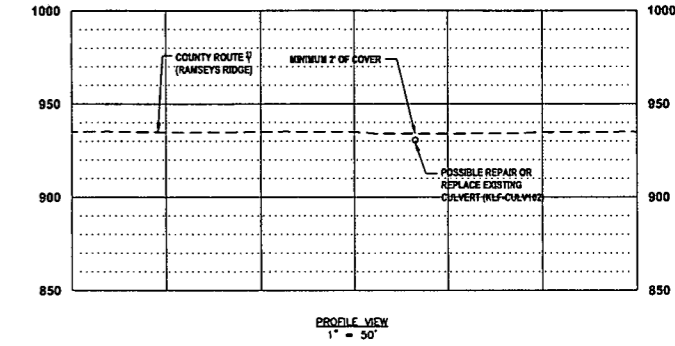
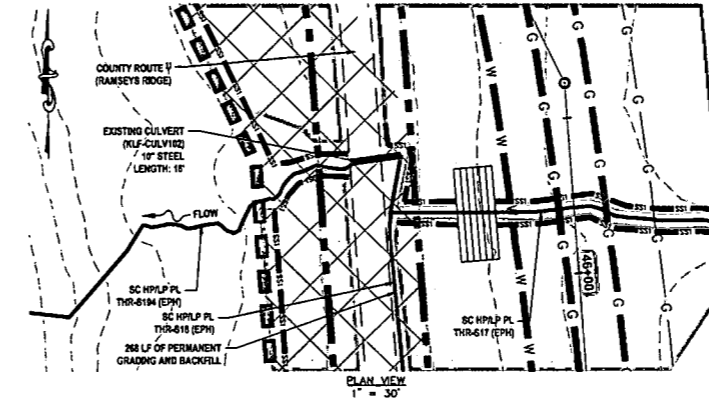
PROPOSED CULVERT INSTALLATION 1
@ SC HP/LP PL THR-S18 (EPH) & SC HP/LP PL THR-S193 (EPH)



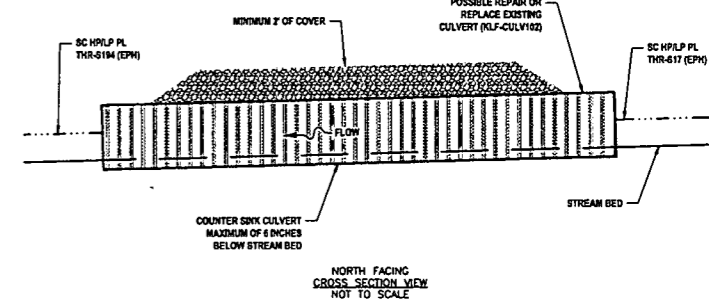
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSDF-P1
 - SS2 SALT SAVER BSDF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM SC HP/LP PL THR-S18 CLASSIFICATION: EPHEMERAL
 STREAM SC HP/LP PL THR-S18 WIDTH: 3.0'
 STREAM SC HP/LP PL THR-S193 CLASSIFICATION: EPHEMERAL
 STREAM SC HP/LP PL THR-S193 WIDTH: 3.0'
- REFERENCES:**
 LAT: 39°18'08.59" N
 LONG: 80°50'13.18" W
 SHEET REF: SHEET 08
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE MSHTD AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.



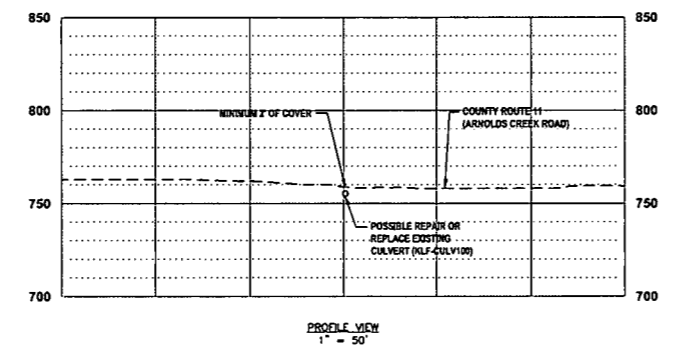
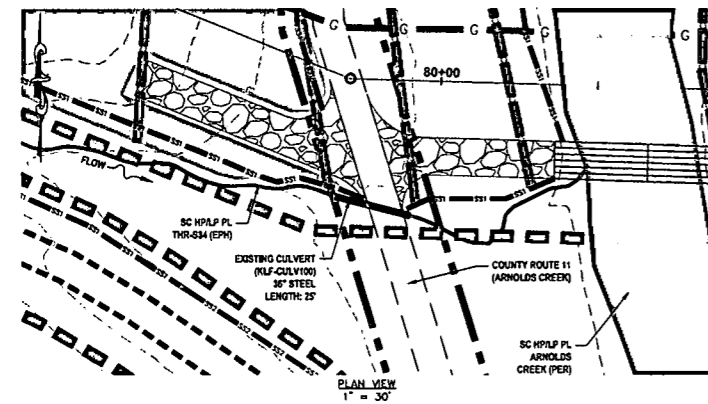
CULVERT REPAIRATION / REPLACEMENT 1
EXISTING CULVERT (KLF-CULV102) @ SC HP/LP PL THR-S17 (EPH) & SC HP/LP PL THR-S194 (EPH)



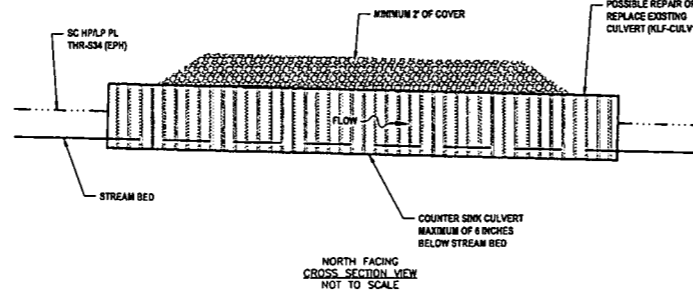
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSDF-P1
 - SS2 SALT SAVER BSDF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM SC HP/LP PL THR-S17 CLASSIFICATION: EPHEMERAL
 STREAM SC HP/LP PL THR-S17 WIDTH: 0.3'
 STREAM SC HP/LP PL THR-S194 CLASSIFICATION: EPHEMERAL
 STREAM SC HP/LP PL THR-S194 WIDTH: 4.0'
- REFERENCES:**
 LAT: 39°19'09.37" N
 LONG: 80°50'13.33" W
 SHEET REF: SHEET 08
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE MSHTD AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.



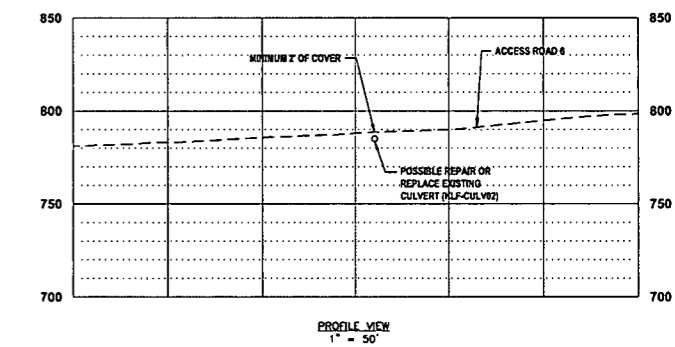
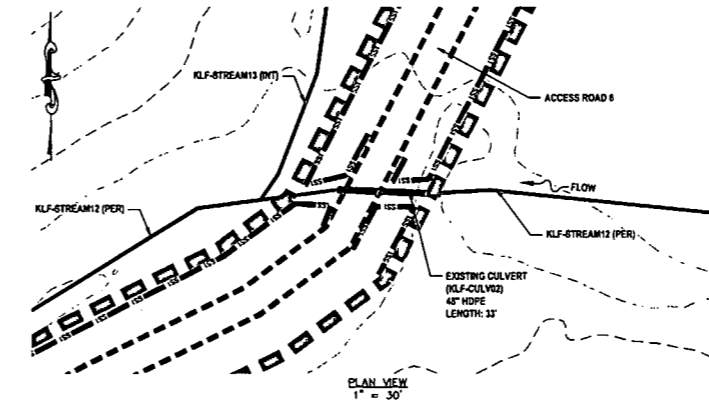
CULVERT REPAIRATION / REPLACEMENT 2
EXISTING CULVERT (KLF-CULV100) @ SC HP/LP PL THR-S34 (EPH)



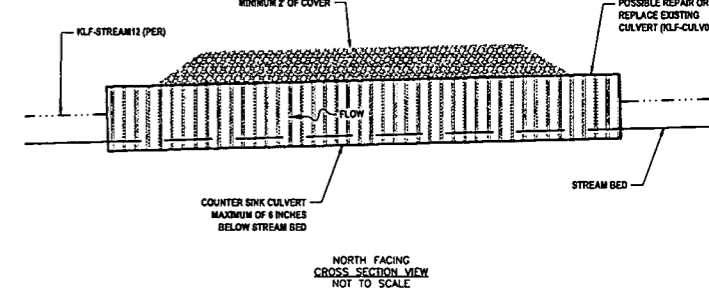
- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSDF-P1
 - SS2 SALT SAVER BSDF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 3.4'
- REFERENCES:**
 LAT: 39°18'59.82" N
 LONG: 80°49'54.83" W
 SHEET REF: SHEET 08
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE MSHTD AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.



CULVERT REPAIRATION / REPLACEMENT 3
EXISTING CULVERT (KLF-CULV02) @ KLF-STREAM12 (PER)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SALT SAVER BSDF-P1
 - SS2 SALT SAVER BSDF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - PROPOSED STEEL GAS LINE
 - PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING
- STREAM INFORMATION:**
 STREAM CLASSIFICATION: PERENNIAL
 STREAM WIDTH: 29.0'
- REFERENCES:**
 LAT: 39°18'47.86" N
 LONG: 80°49'16.18" W
 SHEET REF: SHEET 19
- NOTES:**
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE MSHTD AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.



IFP
 ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

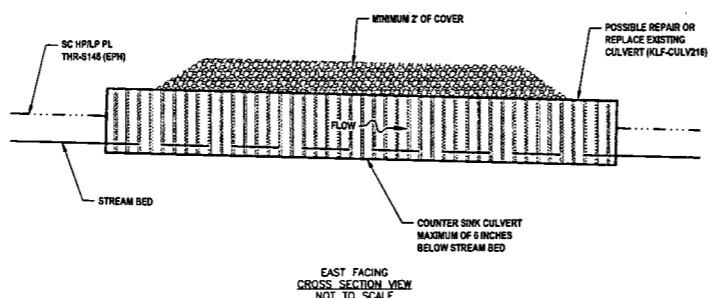
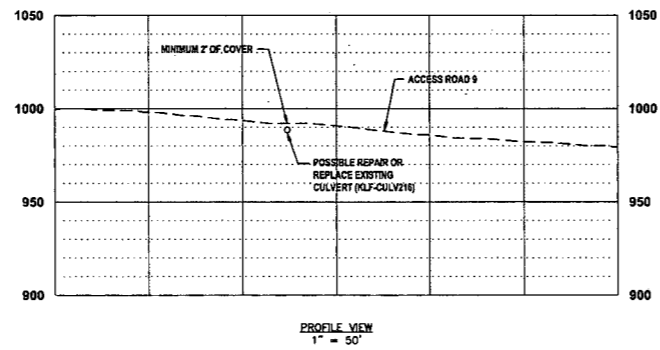
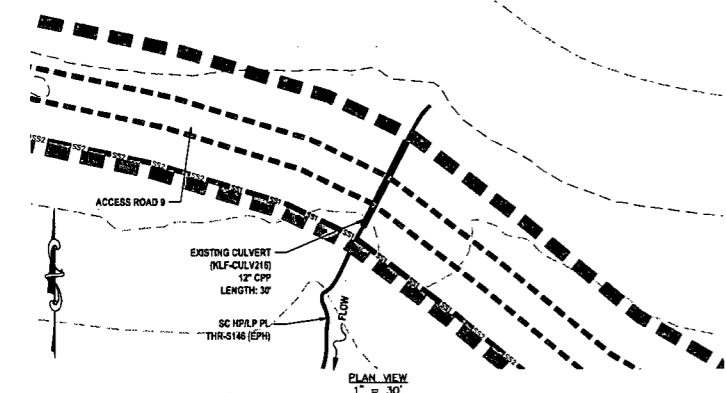
- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
 HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
 VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
 Midstream Partners LP
CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS
 PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 3/27/2017
 SCALE: AS SHOWN
 DRAWN BY: R.A. (TIC)
 CHECKED BY: AR. (TIC)
 SHEET 34
 SHT. NAME: 050-6196\CRYSTAL\S&WC10
 REV. 2

LAYOUT TAB: S&WC10
 CAD FILE: R:\050-6196-REC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg
 USER: robert.j.nucero
 PLOT DATE/TIME: 5/21/2017 6:19 AM

CULVERT REPARATION / REPLACEMENT 4
EXISTING CULVERT (KLF-CULV216) @ SC HP/LP PL THR-S146 (EPH)



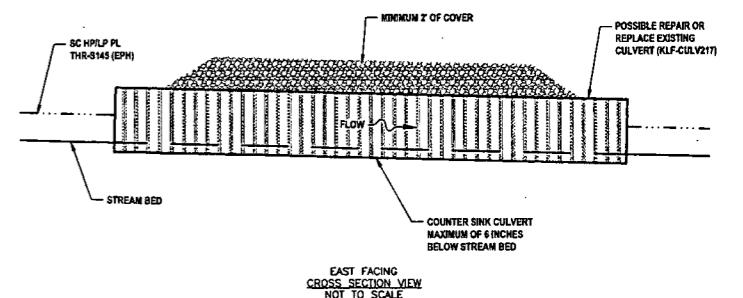
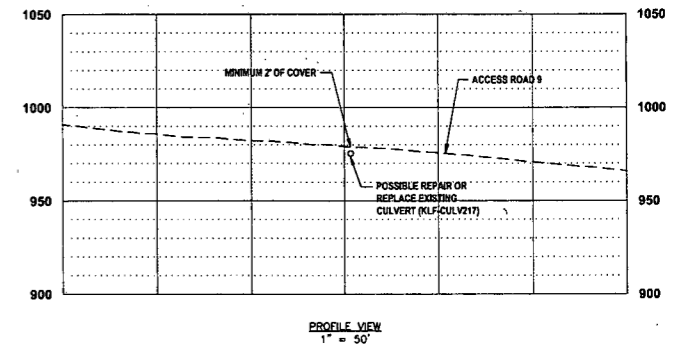
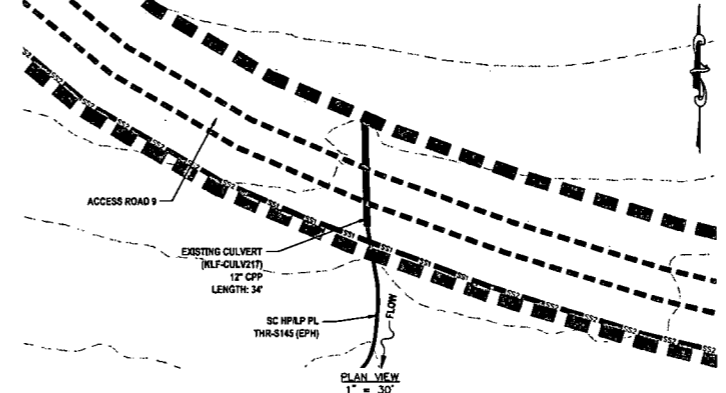
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/ LIMITS OF DISTURBANCE
 - C PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 3.5'

REFERENCES:
 LAT: 39°19'07.41" N
 LONG: 80°48'09.21" W
 SHEET REF: SHEET 22

NOTES:
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

CULVERT REPARATION / REPLACEMENT 5
EXISTING CULVERT (KLF-CULV217) @ SC HP/LP PL THR-S145 (EPH)



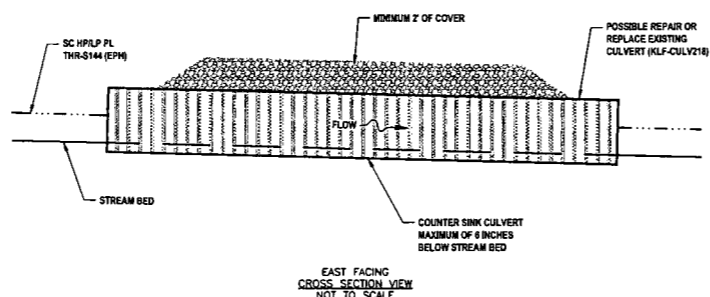
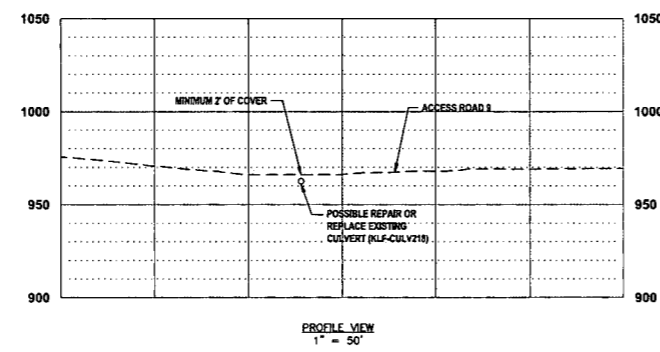
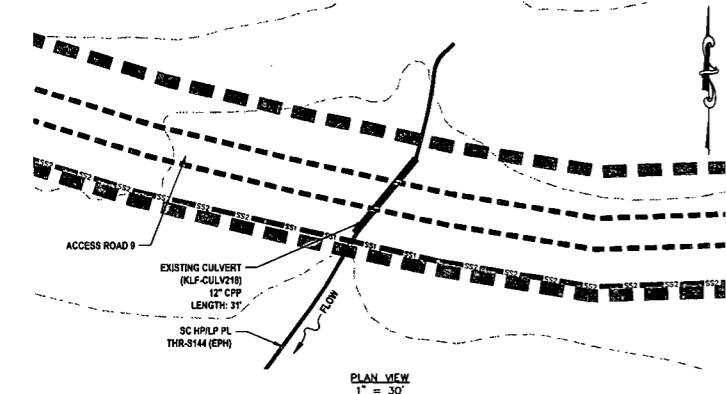
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/ LIMITS OF DISTURBANCE
 - C PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 2.5'

REFERENCES:
 LAT: 39°19'08.47" N
 LONG: 80°48'07.29" W
 SHEET REF: SHEET 22

NOTES:
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

CULVERT REPARATION / REPLACEMENT 6
EXISTING CULVERT (KLF-CULV218) @ SC HP/LP PL THR-S144 (EPH)



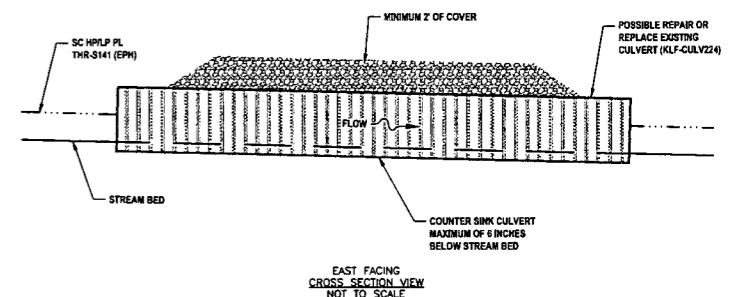
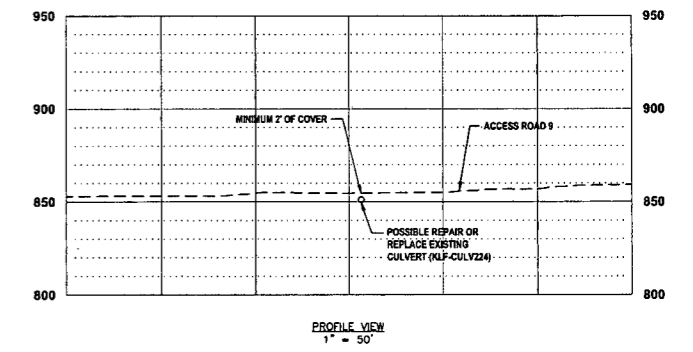
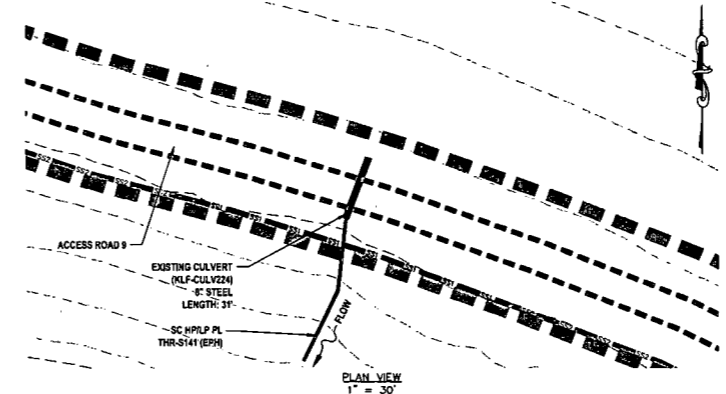
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/ LIMITS OF DISTURBANCE
 - C PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 2.0'

REFERENCES:
 LAT: 39°19'08.01" N
 LONG: 80°48'05.15" W
 SHEET REF: SHEET 22

NOTES:
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

CULVERT REPARATION / REPLACEMENT 7
EXISTING CULVERT (KLF-CULV224) @ SC HP/LP PL THR-S141 (EPH)



- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRF-P1
 - SS2 SILT SAVER BSRF-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/ LIMITS OF DISTURBANCE
 - C PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 2.5'

REFERENCES:
 LAT: 39°19'04.16" N
 LONG: 80°47'43.74" W
 SHEET REF: SHEET 22

NOTES:
 1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
 2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
 3. CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

THRASHER

IFP
 ISSUED FOR PERMITTING

DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
 HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
 VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
 Midstream Partners LP

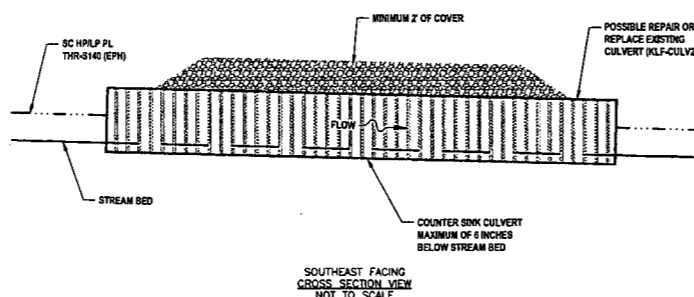
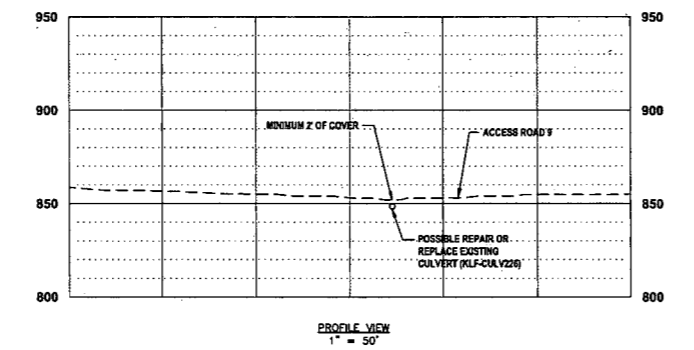
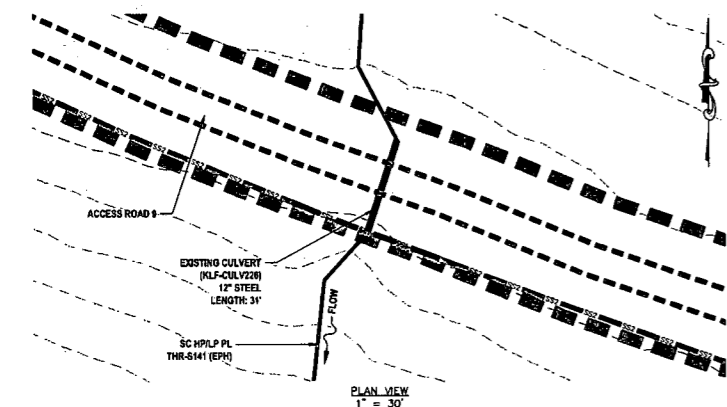
**CRYSTAL LAKE PIPELINE
 STREAM & WETLAND CROSSINGS**

PROPOSED 24" HIGH PRESSURE STEEL
 GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017 AFE No: A05924
 SCALE: AS SHOWN
 DRAWN BY: R.A. (TTC) SHEET 35
 CHECKED: A.R. (TTC)
 SHT. NAME: 050-6196\CRYSTAL\S&WC11 REV. 2

LAYOUT TAB: S\WC11
 CAD FILE: R:\050-6196-REC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg
 PLOT DATE/TIME: 5/21/2017 6:28 AM
 USER: robert.j.lucsko

CULVERT REPARATION / REPLACEMENT 8
EXISTING CULVERT (KLF-CULV226) @ SC HP/LP PL THR-S140 (EPH)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BS9F-P1
 - SS2 SILT SAVER BS9F-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING

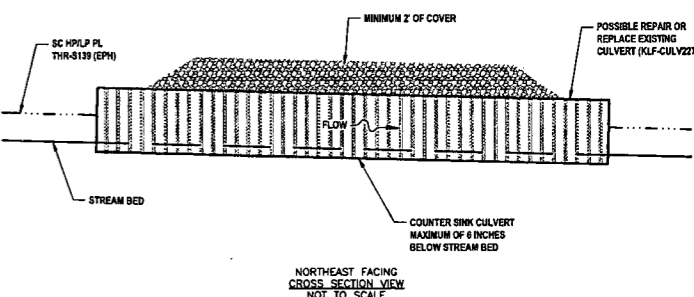
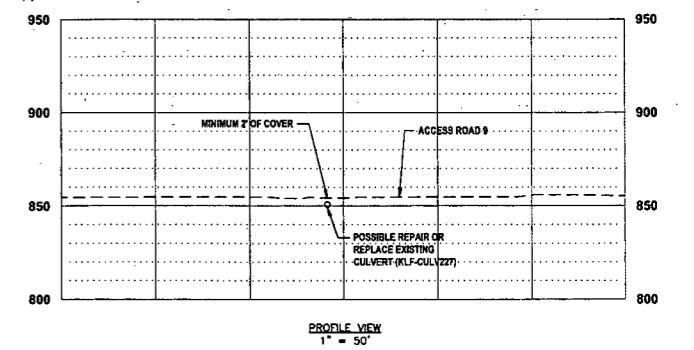
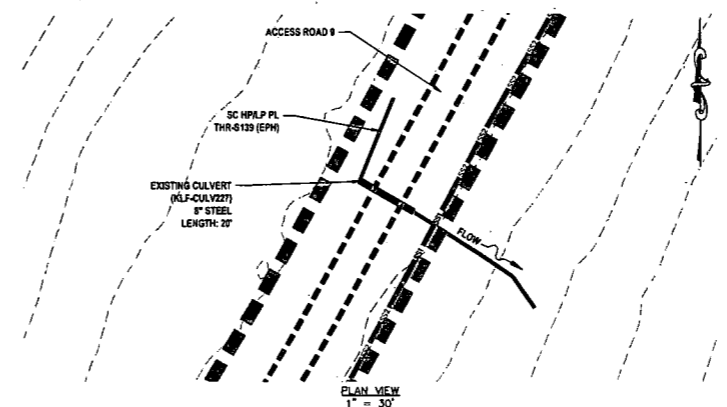
STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 5.0'

REFERENCES:
 LAT: 39°19'01.38" N
 LONG: 80°47'36.85" W
 SHEET REF: SHEET 22

NOTES:

- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
- CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

CULVERT REPARATION / REPLACEMENT 9
EXISTING CULVERT (KLF-CULV227) @ SC HP/LP PL THR-S139 (EPH)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BS9F-P1
 - SS2 SILT SAVER BS9F-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING

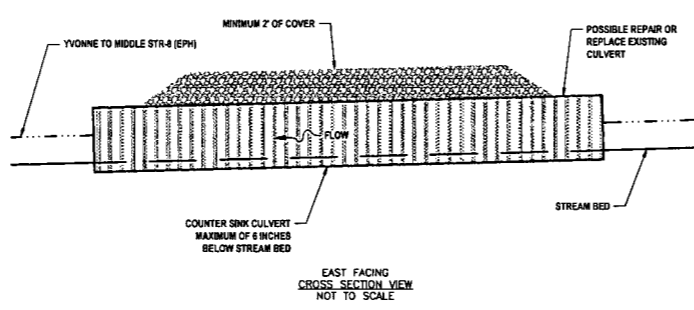
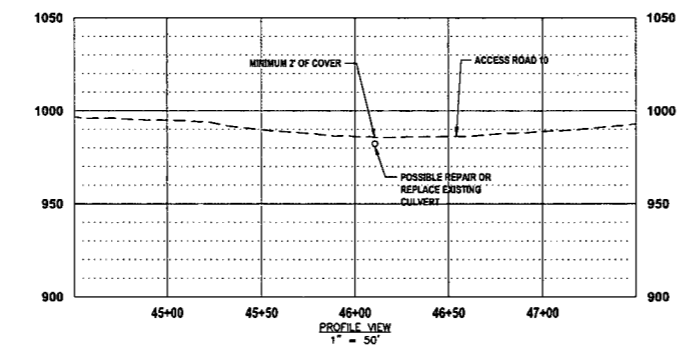
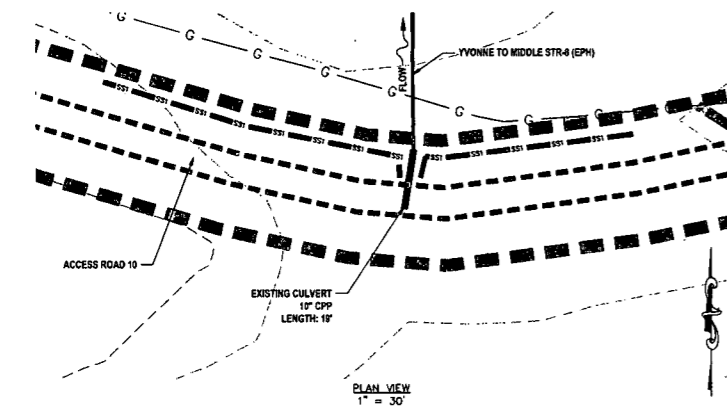
STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 2.5'

REFERENCES:
 LAT: 39°19'06.47" N
 LONG: 80°48'07.39" W
 SHEET REF: SHEET 22

NOTES:

- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
- CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

CULVERT REPARATION / REPLACEMENT 10
EXISTING CULVERT @ YVONNE TO MIDDLE STR-8 (EPH)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BS9F-P1
 - SS2 SILT SAVER BS9F-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING

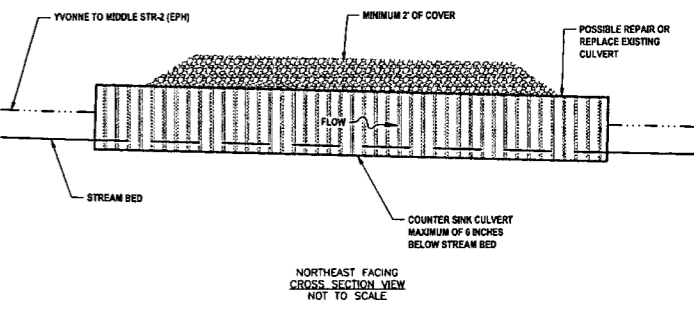
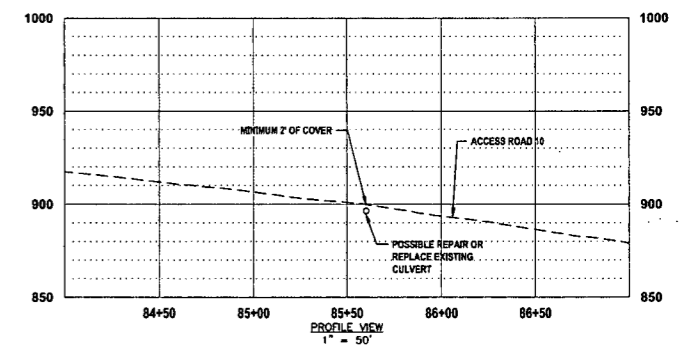
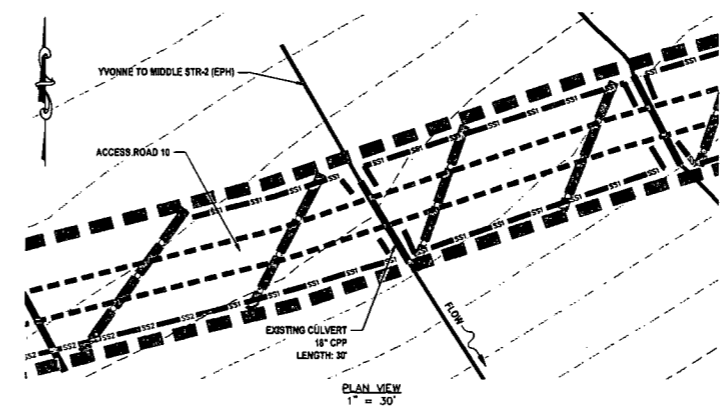
STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 2.0'

REFERENCES:
 LAT: 39°19'58.14" N
 LONG: 80°47'30.72" W
 SHEET REF: SHEET 23

NOTES:

- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
- CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

CULVERT REPARATION / REPLACEMENT 11
EXISTING CULVERT @ YVONNE TO MIDDLE STR-2 (EPH)



- LEGEND**
- PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BS9F-P1
 - SS2 SILT SAVER BS9F-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 § OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
 STREAM CLASSIFICATION: EPHEMERAL
 STREAM WIDTH: 3.0'

REFERENCES:
 LAT: 39°19'49.19" N
 LONG: 80°48'51.04" W
 SHEET REF: SHEET 23

NOTES:

- ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
- CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
- CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.



IFP
 ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

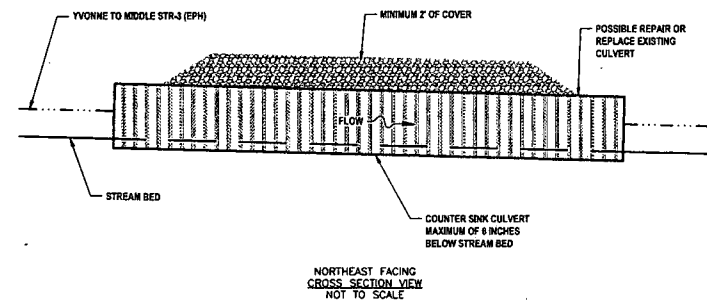
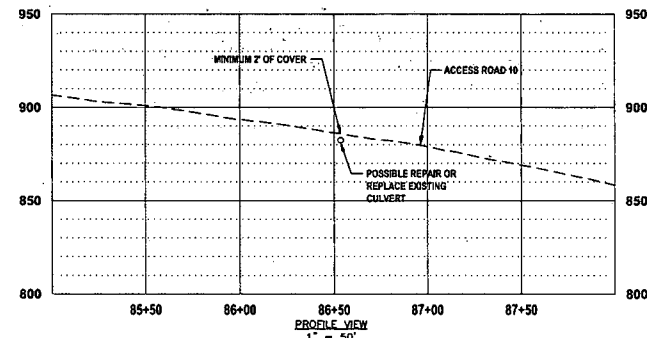
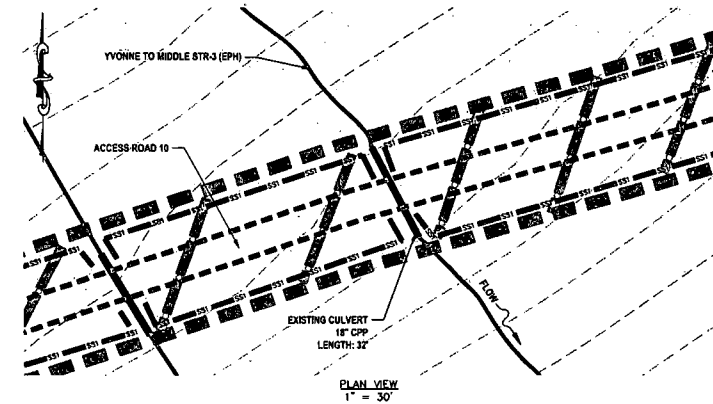
- PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:
 HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
 VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- ALL STATIONING SHOWN IS HORIZONTAL STATIONING.
- THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

Antero
 Midstream Partners LP
CRYSTAL LAKE PIPELINE
STREAM & WETLAND CROSSINGS
 PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
 SCALE: AS SHOWN
 DRAWN BY: R.A. (TTO) SHEET 36
 CHECKED: AR (TTO)
 SHT. NAME: 050-6196\CRYSTAL\S&WC12 REV. 2

USER: robert.j.lucsko
 PLOT DATE/TIME: 5/21/2017 6:34 AM
 LAYOUT TAB: SAWC12
 CAD FILE: R:\050-6196-WEC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg

**CULVERT REPARATION / REPLACEMENT 12
EXISTING CULVERT @ YVONNE TO MIDDLE STR-3 (EPH)**



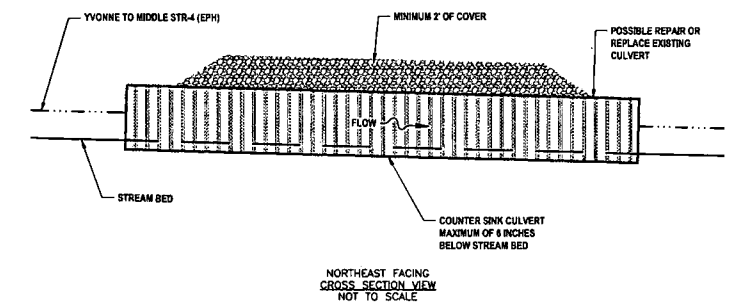
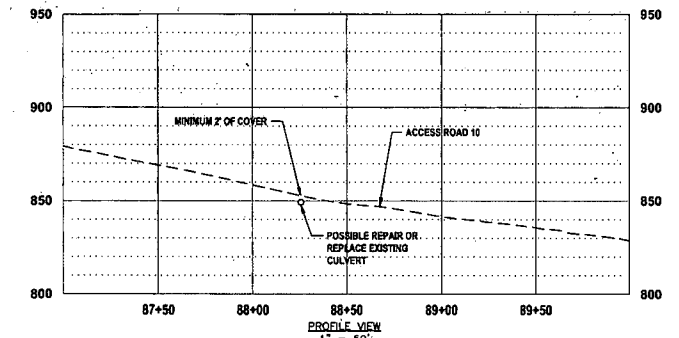
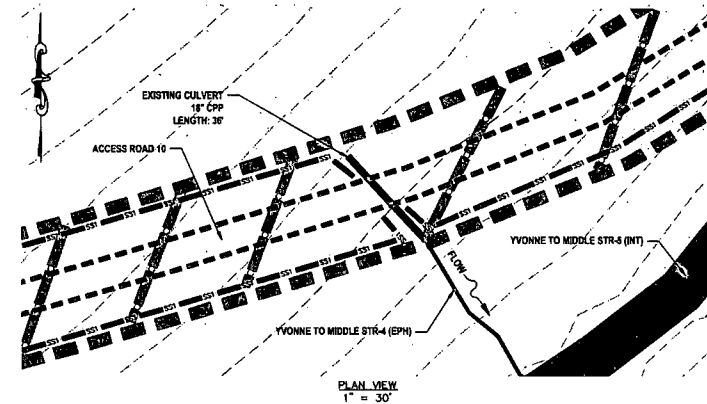
- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRP-P1
 - SS2 SILT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/ LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.0'

REFERENCES:
LAT: 38°19'49.49" N
LONG: 80°48'49.92" W
SHEET REF: SHEET 23

NOTES:
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
3. CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

**CULVERT REPARATION / REPLACEMENT 13
EXISTING CULVERT @ YVONNE TO MIDDLE STR-4 (EPH)**



- LEGEND**
- ▲ PERMANENT WATER BAR (PROFILE)
 - EARTH TRENCH BREAKER (PROFILE)
 - PERMANENT WATER BAR (PLAN)
 - SS1 SILT SAVER BSRP-P1
 - SS2 SILT SAVER BSRP-P2
 - ROLLED EROSION CONTROL PRODUCT
 - DELINEATED STREAM
 - DELINEATED WETLAND
 - EDGE OF ACCESS ROAD
 - EDGE OF DIRT/GRAVEL ROAD
 - CONSTRUCTION RIGHT-OF-WAY/ LIMITS OF DISTURBANCE
 - G PROPOSED STEEL GAS LINE
 - W PROPOSED HDPE WATER LINE
 - 21+00 E OF PROPOSED CORRIDOR WITH STATIONING

STREAM INFORMATION:
STREAM CLASSIFICATION: EPHEMERAL
STREAM WIDTH: 2.0'

REFERENCES:
LAT: 38°19'50.00" N
LONG: 80°48'47.83" W
SHEET REF: SHEET 23

NOTES:
1. ORANGE SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.
2. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE INSTALLING CULVERT WITH A MINIMUM COVER OF 2'.
3. CULVERT SHALL MEET ALL APPLICABLE AASHTO AND/OR ASTM REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

LAYOUT TAB: S&W13
CAD FILE: R:\050-6196-WEC HP LOOP-ANTERO-Survey\PLANS\STREAM AND WETLAND CROSSING SHEETS.dwg
PLOT DATE/TIME: 5/21/2017 6:40 AM
USER: robert.j.lucsko

	<p>IFP ISSUED FOR PERMITTING</p> <p>DATE: 04/26/2017</p> <p>AFE # A05924</p>	<p>SUMMARY OF MATERIALS (3D)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>NO.</td><td>DESCRIPTION</td><td>QTY</td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	NO.	DESCRIPTION	QTY										<p>SUMMARY OF MATERIALS (3D)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>NO.</td><td>DESCRIPTION</td><td>QTY</td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	NO.	DESCRIPTION	QTY										<p>GENERAL INFORMATION</p> <ol style="list-style-type: none"> 1. PROPOSED HIGH PRESSURE GAS LINE MAOP = 1,440 psig 2. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID12B), U.S. SURVEY FOOT 3. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC. 4. ALL STATIONING SHOWN IS HORIZONTAL STATIONING. 5. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE. 6. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET. 	<p>CRYSTAL LAKE PIPELINE STREAM & WETLAND CROSSINGS</p> <p>PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE DODDRIDGE COUNTY, WEST VIRGINIA</p> <p>DATE: 5/21/2017 AFE No.: A05924 SCALE: AS SHOWN DRAWN BY: R.J. (TJD) CHECKED BY: AR (TJD) SHEET 37 SHT. NAME: 050-6196\CRYSTAL\S&W13 REV. 2</p>											
		NO.	DESCRIPTION	QTY																																				
NO.	DESCRIPTION	QTY																																						
<p>REVISION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>NO.</th><th>DESCRIPTION</th><th>DATE</th><th>BY</th></tr> <tr><td>1</td><td>REVISED PER COMMENTS FROM KLEINFELDER, INC.</td><td>04/26/17</td><td>R.A.</td></tr> <tr><td>2</td><td>REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY</td><td>05/19/17</td><td>J.D.J.</td></tr> </table>		NO.	DESCRIPTION	DATE	BY	1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.A.	2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.D.J.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>NO.</th><th>DESCRIPTION</th><th>QTY</th><th>NO.</th><th>DESCRIPTION</th><th>QTY</th></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>		NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY																			
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1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.A.																																					
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.D.J.																																					
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY																																			

GENERAL NOTES

- 1. ANTERO WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE PROJECT MANAGER...
3. WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DWMW) EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE HANDBOOK...

EROSION AND SEDIMENT CONTROL PLAN NARRATIVE/CONSTRUCTION SEQUENCES

THE EROSION AND SEDIMENT (E&S) CONTROL MEASURES FOR THE PIPELINE CONSTRUCTION ACTIVITIES CONSIST OF COMPOST FILTER SOCK, SILT FENCE, RIGHT-OF-WAY (ROW) DIVERSIONS, TRENCH BREAKERS (PLUGS), AND TEMPORARY AND PERMANENT SEEDING AND MULCHING BMP SPECIFICATIONS FOR THE E&S CONTROL PLAN (E&SCP) AREA TO BE UTILIZED BY THE CONSTRUCTION CONTRACTOR...

GENERAL CONSTRUCTION SEQUENCE PER PIPELINE SEQUENCE:

- 1. PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, CLEARLY MARK ALL CLEARING LIMITS, SENSITIVE AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA...
2. INSTALL STONE CONSTRUCTION ENTRANCES AT ALL LOCATIONS WHERE TEMPORARY ACCESS ROADS WILL BE ACCESSING A PAVED ROADWAY...
3. INSTALL TEMPORARY E&S CONTROLS (SILT FENCE, ROW DIVERSIONS, ETC.) PRIOR TO ANY EARTH DISTURBING ACTIVITY...

- 16. EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM EROSION...
17. IN THE UNLIKELY EVENT THAT THERE ARE EXCESS EXCAVATED MATERIALS REMAINING AFTER THE TRENCH HAS BEEN BACKFILLED...
18. ALL E&S CONTROLS WILL BE INSPECTED, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT...

PIPELINE BMPs INSTALLATION AND REMOVAL SEQUENCE

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

INSPECTIONS OF ALL E&S CONTROLS SHALL BE CONDUCTED, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5-INCH PER 24-HOUR PERIOD...

- TEMPORARY EROSION AND SEDIMENT CONTROL BMPs SHOULD BE REMOVED FOLLOWING CONFIRMATION THAT 70 PERCENT PERENNIAL VEGETATIVE COVERAGE IS ESTABLISHED...
WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMPs IDENTIFIED IN THE E&SCP ARE INADEQUATE...
MAINTENANCE OF THE E&SCP - THE E&SCP SHALL BE RETAINED ON-SITE...

THE FOLLOWING IS A GENERAL BMP INSTALLATION SEQUENCE FOR PIPELINE CONSTRUCTION ACTIVITIES:

- A STONE CONSTRUCTION ENTRANCE 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 WILL BE PLACED DOWN SLOPE OF WORK AREAS...
APPROPRIATELY SIZED FENCING WILL BE PLACED AROUND WETLANDS AND WATERBODIES ADJACENT TO THE WORK AREA...

- FOR THREE TO ONE OR STEEPER SLOPES THE DISTURBED AREA WILL BE VERTICALLY TRACKED. EROSION CONTROL FABRIC WILL BE INSTALLED...
TEMPORARY SEDIMENT BARRIERS WILL BE MAINTAINED, UNTIL VEGETATION HAS BECOME ESTABLISHED WITH A UNIFORM COVERAGE OF DENSITY OF 70 PERCENT OR MORE...
ALL WASTE MATERIAL WILL BE TRANSPORTED OFF-SITE FOR RECYCLING AND/OR DISPOSAL...

MAINTENANCE SCHEDULE

AFTER CONSTRUCTION IS COMPLETED, ALL BMPs WILL BE REMOVED AND ANY LAND DISTURBED BY REMOVAL WILL BE PERMANENTLY STABILIZED, UNLESS OTHERWISE SPECIFIED. ALL MAINTENANCE MUST BE COMPLETED IMMEDIATELY AFTER AN INSPECTION IDENTIFIES THAT A BMP IS NOT FUNCTIONING AS REQUIRED.

- IF DURING CONSTRUCTION, CONCENTRATED FLOW AREAS FORM DUE TO A STORM EVENT AND ANY AREA BECOMES UNSTABLE, THE AREA WILL BE STABILIZED BY PLACING SIZE D50 (FOUR-INCH DIAMETER) STONE IN THE CONCENTRATED FLOW AREAS...
ALL E&S CONTROLS WILL BE INSPECTED, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT...
LOGS OF SEDIMENT CONTROL INSPECTION MUST BE KEPT WITH THE INSPECTORS CONSTRUCTION RECORDS AND INCLUDE DATE, TIME, AND CONDITION OF BMPs AND ANY NECESSARY MAINTENANCE...

MATERIAL WASTE HANDLING AND RECYCLING

- GARBAGE DISPOSAL IS HANDLED THROUGH ONE OF THE LOCAL WASTE MANAGEMENT PROVIDERS/FACILITIES. THE CONTRACTOR WILL LEASE A DUMPSTER FOR THE DURATION OF THE PROJECT WHICH WILL BE DISPOSED OF AT A LICENSED/PERMITTED MUNICIPAL LANDFILL...
THE CONTRACTOR WILL DISPOSE OF ALL SCRAP MATERIAL. THE SCRAP MATERIAL MUST BE REMOVED FROM THE SITE AND DISPOSED OF OR RECYCLED AT A PROPERLY LICENSED/PERMITTED FACILITY...
CONSTRUCTION WASTE MATERIALS, INCLUDING BUT NOT LIMITED TO BENTONITE, POLY PIPE SHAVINGS, AND SANDBAGS, WILL BE RECYCLED OR WILL BE TAKEN TO THE NEAREST APPROVED FACILITY FOR DISPOSAL...

SEEDING

- SEE DETAILS 25-27 FOR TEMPORARY SEEDING, PERMANENT SEEDING, AND MULCHING REQUIREMENTS.

POLLUTANT CONTROLS

- ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ON SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATER...
COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-INERT WASTES PRESENT ON THE SITE...
MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING OPERATIONS...

USER: robert.j.wicko

PLOT DATE/TIME: 5/21/2017 7:03 AM

LAYOUT TAB: E&SCP1 CAD FILE: R:\050-6196-WEC-HP LOOP-ANTERO-Survey\PLANS\E&SCP DETAIL SHEETS.dwg



ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)

Table with 3 columns: NO., DESCRIPTION, QTY. Includes a REVISION table with 2 entries.

SUMMARY OF MATERIALS (3D)

Table with 3 columns: NO., DESCRIPTION, QTY.

GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.



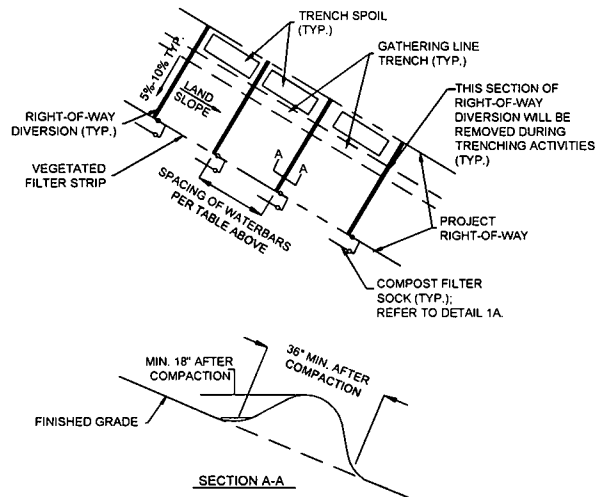
CRYSTAL LAKE PIPELINE ESCP DETAILS

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE DODDRIDGE COUNTY, WEST VIRGINIA

Table with 4 columns: DATE, SCALE, DRAWN BY, CHECKED. Includes SHEET 38 and SHT. NAME: 050-6196\CRYSTAL\ESCP1 REV. 2

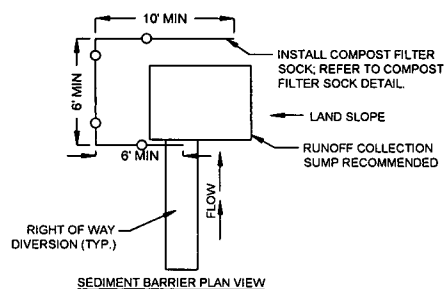
RIGHT-OF-WAY DIVERSION SPACING IN FEET		
PIPELINE GRADE	> 200' FROM STREAM	< 200' FROM STREAM
2-5 %	400	200
6-12 %	300	150
13-21 %	200	100
22-34 %	100	50
35-50 %	50	25

* IT IS DIFFICULT TO INSTALL DIVERSIONS ON SLOPES STEEPER THAN 35%. THE DIVISION OF WATER AND WASTE MANAGEMENT WILL ALLOW GREATER DISTANCES BETWEEN DIVERSIONS ON EXTREME SLOPES



NOTE: SUMPS TO BE USED DURING CONSTRUCTION (TEMPORARY)

1 RIGHT OF WAY DIVERSION OUTLET (WATERBAR)
NTS



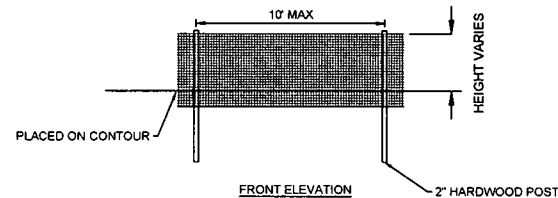
NOTES:

- RIGHT-OF-WAY DIVERSIONS SHOULD BE INSTALLED ACROSS THE ENTIRE RIGHT-OF-WAY ON ALL SLOPES GREATER THAN 5%.
- RIGHT-OF-WAY DIVERSIONS SHALL BE PLACED AT 5% TO 10% SLOPE DOWNHILL. THEY SHALL BE SPACED AT THE INCREMENTS AS SHOWN IN DETAIL 1, AND IN ACCORDANCE WITH W/DEP EAS STANDARDS.
- RIGHT-OF-WAY DIVERSIONS SHOULD BE CONSTRUCTED TO DISCHARGE TO A WELL-VEGETATED AREA. RIGHT-OF-WAY DIVERSIONS SHOULD NOT DISCHARGE INTO AN OPEN TRENCH. RIGHT-OF-WAY DIVERSIONS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK INTO THE RIGHT-OF-WAY. 12" COMPOST FILTER SOCK SHOULD BE LOCATED BELOW THE DISCHARGE END OF THE RIGHT-OF-WAY DIVERSIONS.
- BSRF CAN BE SUBSTITUTED IN PLACE OF CFS WITH APPROVAL FROM ANTERO.
- SUMPS TO BE USED DURING CONSTRUCTION (TEMPORARY).

MAINTENANCE:

- RIGHT-OF-WAY DIVERSIONS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED RIGHT-OF-WAY DIVERSIONS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
- MAINTENANCE OF RIGHT-OF-WAY DIVERSIONS SHALL BE PROVIDED UNTIL RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.
- RIGHT-OF-WAY DIVERSIONS ON RETIRED SLOPE SHOULD BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.

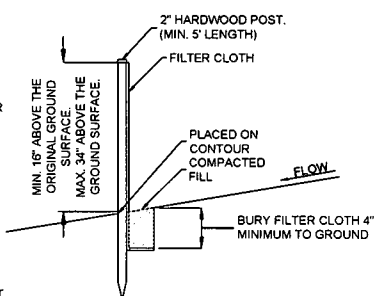
1A RIGHT OF WAY DIVERSION OUTLET (WATERBAR)
NTS



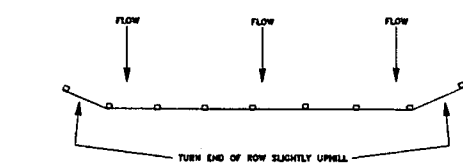
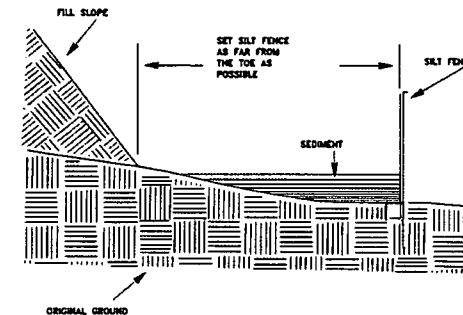
NOTE: STANDARD FILTER FABRIC MUST BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UP SLOPE 45 DEGREES TO MAIN BARRIER ALIGNMENT.

THE MAXIMUM LENGTH OF SLOPE ABOVE A ROW OF SILT FENCE IS 110'.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

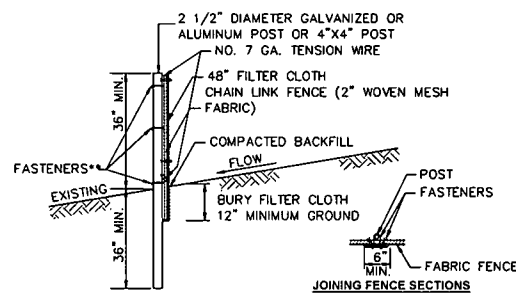


2 SILT FENCE
NTS



Slope - Percent	Maximum Slope Length (ft) Above Fence		
	Standard (18" High) Silt Fence	Reinforced (30" High) Silt Fence	Super Silt Fence
5	100	250	500
10	50	130	250
15	35	90	175
20	25	70	125
25	20	55	100
30	15	45	80
35	12	35	65
40	10	30	55
45	8	25	45
50	6	20	35

2A SILT FENCE PLACEMENT
NTS



* POSTS SPACED @ 10' MAX. USE 2 1/2" DIA. GALVANIZED OR ALUMINUM POSTS OR 4" x 4" POST.

** CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POST WITH WIRE TIES OR STAPLES. GEOTEXTILE FABRIC SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID-SECTIONS.

NO. 7 GA. TENSION WIRE INSTALLED HORIZONTALLY AT TOP AND BOTTOM OF CHAIN-LINK FENCE.

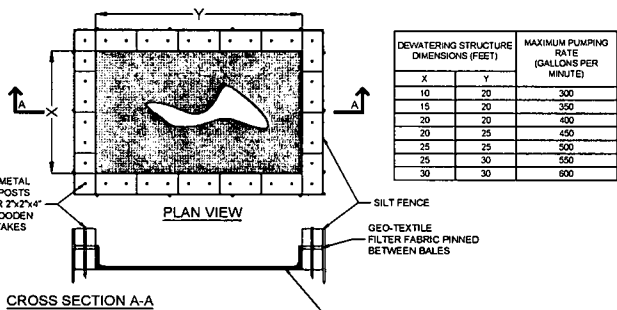
FILTER FABRIC FENCE SHOULD BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.

THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER.

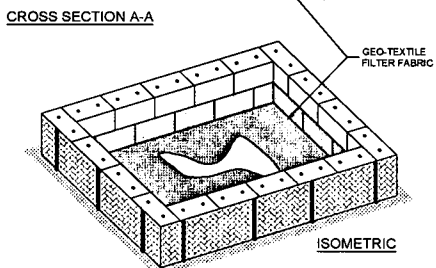
NO SECTION OF SILT FENCE SHOULD EXCEED A GRADE OF 5% FOR MORE THAN A DISTANCE OF 20 FEET.

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

3 SUPER SILT FENCE
NTS



DEWATERING STRUCTURE 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



4 STRAW BALE DEWATERING
NTS

- STRAW BALES SHOULD BE PLACED ON THEIR SIDES WITH THE TWINE FACING OUT.
- STRAW BALES SHOULD BE STACKED TWO HIGH WITH GEO-TEXTILE FABRIC PINNED BETWEEN BALES.
- SEAMS OF GEOTEXTILE FABRIC SHOULD BE SEWN TOGETHER.
- 6 FOOT METAL T-POSTS ARE RECOMMENDED. DRIVEN THROUGH BOTH STRAW BALES. IF METAL T-POSTS ARE NOT AVAILABLE, WOODEN STAKES SHOULD BE A MINIMUM OF 2"x2"x4". STAKES SHOULD BE DRIVEN AROUND THE PERIMETER OF THE STRAW BALES AS STRUCTURAL SUPPORT AS WELL AS THROUGH THE BALES TO HELP PIN THE GEO-TEXTILE FABRIC IN PLACE.
- DEWATERING STRUCTURE DIMENSIONS SHOULD BE DESIGNED TO ACCOMMODATE THE SIZE OF THE WATER PUMP BEING UTILIZED.
- DEWATERING STRUCTURE DIMENSIONS MAY NEED TO BE ADJUSTED TO SUIT THE VARIOUS SIZES OF FILTER BAGS. THOUGH SQUARE FOOTAGE SPECIFICATIONS SHOULD STILL BE MAINTAINED. THE STRUCTURE SHOULD COMPLETELY ENCOMPASS THE BAG BEING UTILIZED.
- WHEN PUMPING LARGE AMOUNTS OF WATER FOR AN EXTENDED PERIOD OF TIME, (LARGE BELL HOLES, ETC.) INTERVAL PUMPING MAY BE NECESSARY TO AVOID OVERPOWERING THE DEWATERING STRUCTURE.
- USE OF MULTIPLE DEWATERING STRUCTURES MAY BE NECESSARY UNDER SPECIAL CIRCUMSTANCES.
- FOR STREAM CROSSINGS, WHEN PUMPING OUT THE TRENCH WITH A 2 INCH TRASH PUMP AT 1/4 THROTTLE, A STANDARD 10' BY 10' DEWATERING STRUCTURE WITH A COMPARABLE FILTER BAG SHOULD BE ADEQUATE. FIELD ADJUSTMENTS WILL BE MADE IF FLOW IS OVERPOWERING THE STRUCTURE.
- ADDITIONAL EROSION CONTROLS MAY BE UTILIZED DOWNSLOPE OF DEWATERING STRUCTURES WHERE NEEDED.
- DEWATERING STRUCTURE WILL BE PLACED TO MAXIMIZE AVAILABLE VEGETATIVE STRIP.

4A STRAW BALE DEWATERING
NTS

THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

REVISION

NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLENFELDER, INC.	04/28/17	R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	JDJ

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
ESCP DETAILS

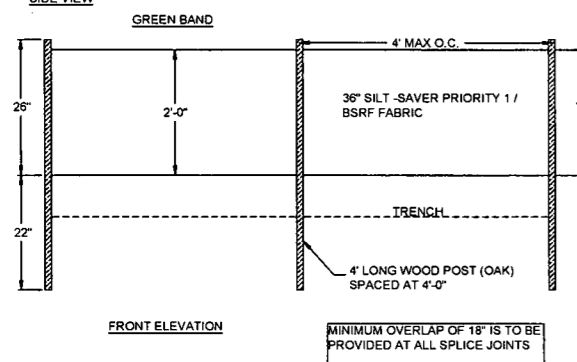
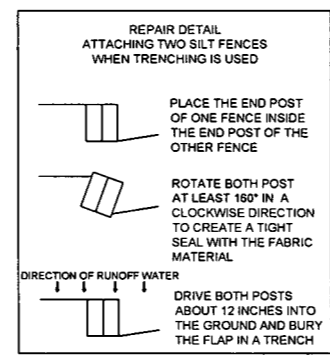
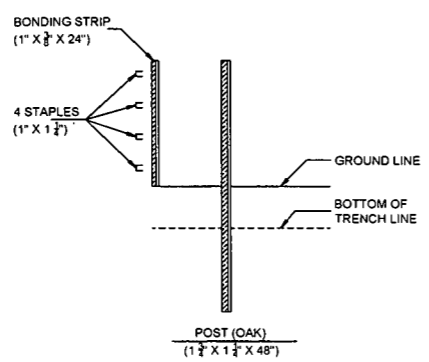
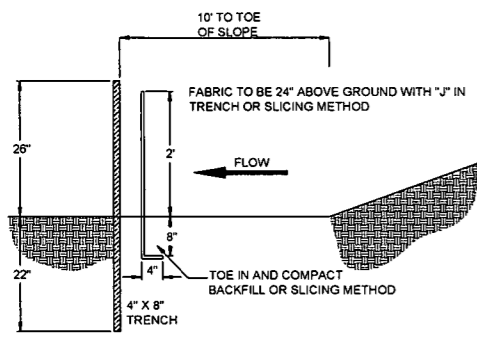
PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
ODDORIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017	AFE No.: A05924
SCALE: AS SHOWN	
DRAWN BY: R.A. (TTC)	SHEET 39
CHECKED: AR (TTC)	
SHT. NAME: 050-6196 CRYSTAL ESCP2	REV. 2

USER: robert.j.lucsko

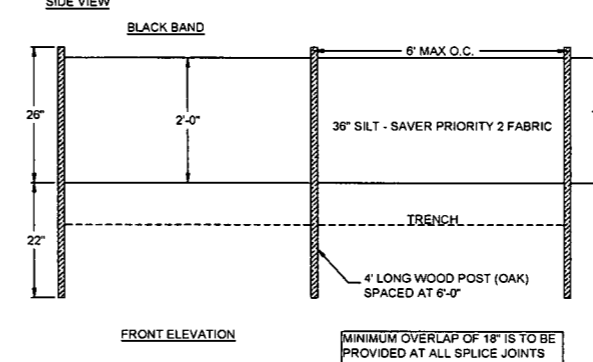
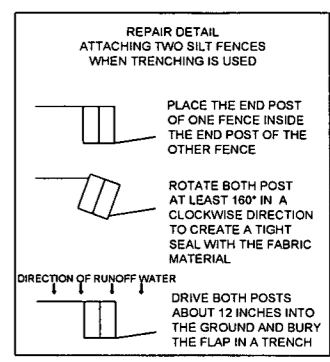
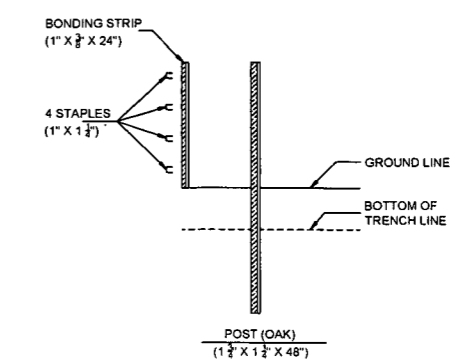
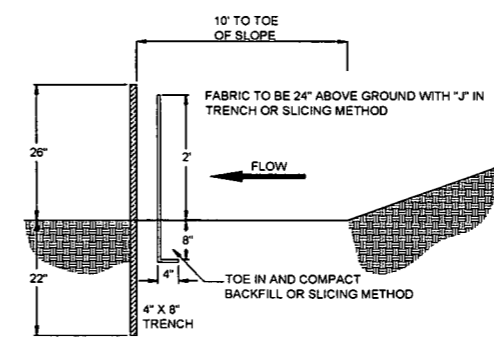
PLOT DATE/TIME: 5/21/2017 7:05 AM

LAYOUT TAB: ESCP2
CAD FILE: R:\050-6196-REC-HP-LOOP-ANTERO-Survey\PLANS\ESCP DETAIL SHEETS.dwg



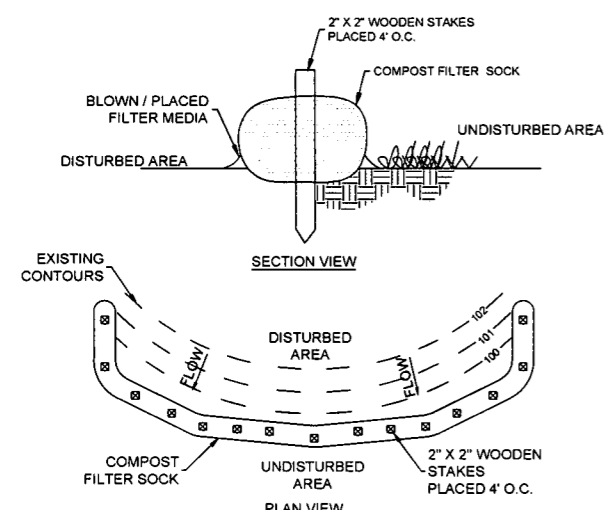
NOTE: POST HOLES MAY NEED TO BE DRILLED IN ROCKY SOIL OR AREAS WHERE CONVENTIONAL INSTALLATION IS DIFFICULT TO ACHIEVE REQUIRED DEPTH.

5A SILT SAVER SILT FENCE PRIORITY 1
NTS



NOTE: POST HOLES MAY NEED TO BE DRILLED IN ROCKY SOIL OR AREAS WHERE CONVENTIONAL INSTALLATION IS DIFFICULT TO ACHIEVE REQUIRED DEPTH.

5B SILT SAVER SILT FENCE PRIORITY 2
NTS



6 COMPOST FILTER SOCK
NTS

- CONDITIONS WHERE PRACTICE APPLIES:**
- INSTALL ON DISTURBED AREAS THAT REQUIRE IMMEDIATE EROSION PROTECTION.
 - USE ON SLOPES REQUIRING STABILIZATION UNTIL PERMANENT VEGETATION CAN BE ESTABLISHED.
 - CAN BE USED ALONG THE PERIMETER OF A PROJECT, AS A CHECK DAM IN UNLINED DITCHES AND AROUND TEMPORARY STOCKPILES.
 - SOCK CAN BE STAKED TO THE GROUND USING WILLOW CUTTINGS FOR ADDED REVEGETATION.
 - EROSION CAN OCCUR BENEATH AND BETWEEN SOCK IF NOT PROPERLY ENTRENCHED, ALLOWING WATER TO PASS BELOW AND BETWEEN SOCKS. IT IS THEREFORE VERY IMPORTANT TO INSTALL SOCKS CORRECTLY.
 - THEY CAN REPLACE SEDIMENT FENCE ON STEEP SLOPES.
 - ROLLS ARE A SHORT-TERM SOLUTION TO HELP ESTABLISH NATIVE VEGETATION.
 - ROLLS STORE MOISTURE FOR VEGETATION PLANTED IMMEDIATELY UPSLOPE.
 - PLASTIC NETTING WILL EVENTUALLY PHOTO-DEGRADE, ELIMINATING THE NEED FOR RETRIEVAL OF MATERIALS AFTER THE FIBER OR STRAW HAS BROKEN DOWN.

- CONSTRUCTION SPECIFICATIONS:**
- IT IS CRITICAL THAT SOCK IS INSTALLED PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE CONTOUR.
 - NARROW TRENCHES SHOULD BE DUG ACROSS THE SLOPE, ON CONTOUR, TO A DEPTH OF 3 TO 5 INCHES ON CLAY SOILS AND SOILS WITH GRADUAL SLOPES. ON LOOSE SOILS, STEEP SLOPES, AND DURING HIGH RAINFALL EVENTS, THE TRENCHES SHOULD BE DUG TO A DEPTH OF 5 TO 7 INCHES, OR 1/2 TO 2/3 OF THE THICKNESS OF THE SOCK.
 - START CONSTRUCTION OF TRENCHES AND INSTALLING SOCK FROM THE BASE OF THE SLOPE AND WORK UPHILL. EXCAVATED MATERIAL SHOULD BE SPREAD EVENLY ALONG THE UPHILL SLOPE AND COMPACTED USING HAND TAMPING OR OTHER METHOD. CONSTRUCT TRENCHES AT CONTOUR INTERVALS OF 3 TO 30 FEET APART DEPENDING ON THE STEEPNESS OF THE SLOPE, SOIL TYPE, AND RAINFALL. THE STEEPER THE SLOPE THE CLOSER TOGETHER THE TRENCHES SHOULD BE CONSTRUCTED.
 - INSTALL THE SOCK SNUGLY INTO THE TRENCHES AND ABUT TIGHTLY END TO END. DO NOT OVERLAP THE ENDS.
 - INSTALL STAKES AT EACH END OF THE SOCK, AND AT 4-FOOT CENTERS ALONG THE ENTIRE LENGTH OF THE SOCK.
 - IF REQUIRED, INSTALL PILOT HOLES FOR THE STAKES USING A STRAIGHT BAR TO DRIVE HOLES THROUGH THE SOCK AND INTO THE SOIL.
 - AT A MINIMUM, WOODEN STAKES SHOULD BE APPROXIMATELY 2 X 2 X 24 INCHES. WILLOW CUTTINGS OR 3/8-INCH REBAR CAN ALSO BE USED FOR STAKES.
 - STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK, LEAVING 2 TO 3 INCHES OF THE STAKE PROTRUDING ABOVE THE SOCK.

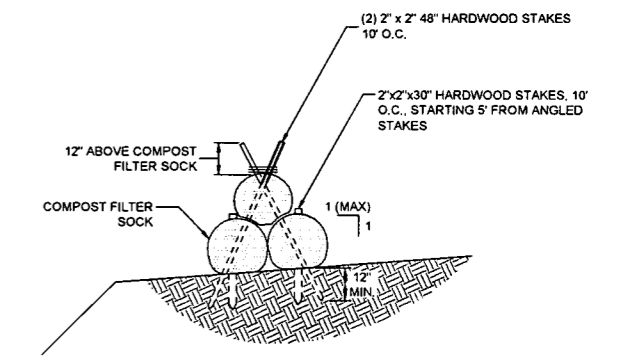
6A COMPOST FILTER SOCK
NTS

- MAINTENANCE:**
- INSPECT SOCK AT LEAST ONCE A WEEK AND AFTER EACH RAIN EVENT GREATER THAN 0.5 INCH.
 - REPAIR OR REPLACE SPLIT, TORN, RAVELING, OR SLUMPING SOCK.
 - REMOVE SEDIMENT ACCUMULATIONS WHEN EXCEEDING 1/2 THE HEIGHT BETWEEN THE TOP OF THE SOCK AND THE GROUND SURFACE.
 - REPAIR ANY RILLS OR GULLIES PROMPTLY.
 - RESEED OR REPLANT VEGETATION IF NECESSARY UNTIL THE SLOPE IS STABILIZED.

Slope Percent	Maximum Slope Length Along Sediment Control in Feet (meters)*				
	8 in (203 mm) Sediment control	12 in (305 mm) Sediment control	18 in (457 mm) Sediment control	24 in (610 mm) Sediment control	32 in (813 mm) Sediment control
2 (or less)	800 (244)	750 (229)	1000 (305)	1300 (400)	1850 (564)
5	400 (122)	500 (152)	550 (168)	650 (200)	750 (229)
10	200 (61)	250 (76)	300 (91)	400 (122)	500 (152)
15	140 (43)	170 (52)	200 (61)	250 (76)	300 (91)
20	100 (30)	125 (38)	140 (43)	180 (55)	220 (67)
25	80 (24)	100 (30)	110 (33)	140 (43)	170 (52)
30	60 (18)	75 (23)	80 (24)	100 (30)	120 (37)
35	50 (15)	60 (18)	65 (20)	80 (24)	100 (30)
40	40 (12)	50 (15)	55 (17)	70 (21)	85 (26)
45	30 (9)	40 (12)	45 (14)	60 (18)	75 (23)
50	20 (6)	30 (9)	35 (11)	50 (15)	65 (20)

* Based on a failure point of 36 in (914 mm) super silt fence (wire reinforced) at 1000 ft (305 m) of slope, watershed width equivalent to receiving length of sediment control device, 1 in 24 hr (75 mm/24 hr) rain event.
** Effective height of Sediment control after installation and with constant head from runoff as determined by Ohio State University.

6B COMPOST FILTER SOCK
NTS



6C TRIPLE STACK FILTER SOCK
NTS

THRASHER

IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

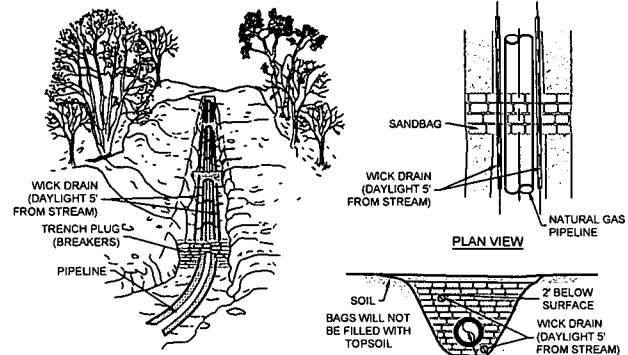
GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

Antero
Midstream Partners LP
CRYSTAL LAKE PIPELINE ESCP DETAILS
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: AS (TIC)
CHECKED BY: AR (TIC)
SHEET 40
SHT. NAME: 050-6196\CRYSTAL\ESCP3 REV. 2

LAYOUT TAB: ESCP3
CAD FILE: R:\050-6196-WEC HP LOOP-ANTERO-Survey\PLANS\ESCP DETAIL SHEETS.dwg
PLOT DATE/TIME: 5/21/2017 7:05 AM
USER: robert.j.luczko

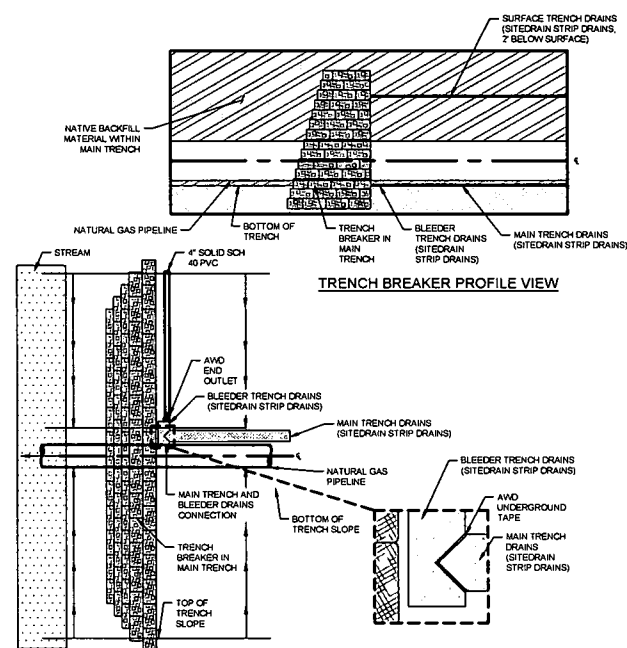


TRENCH BREAKER (PLUG) SPACING (FEET)

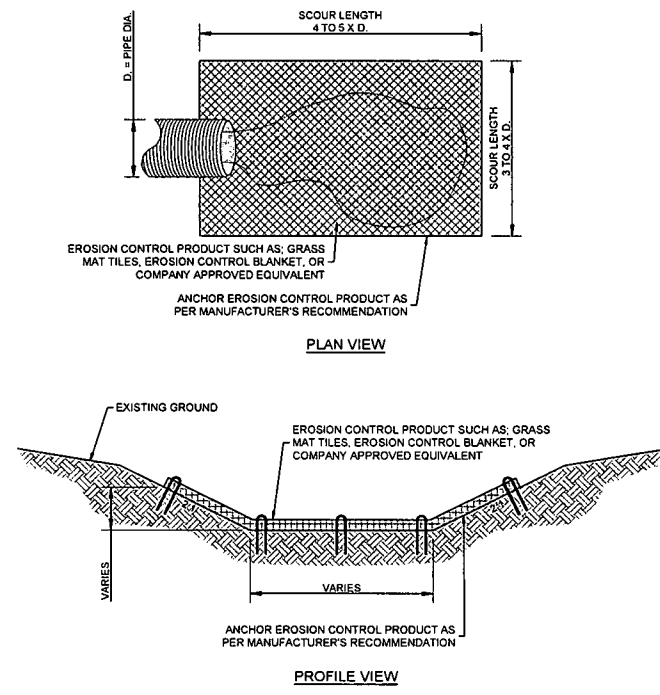
ALIGNMENT SLOPE %	SPACING L (FT)	PLUG MATERIAL
< 5 %	1,000	** EARTH FILLED SACKS
5-15 %	500	** EARTH FILLED SACKS
15-25 %	300	** EARTH FILLED SACKS
25-35 %	200	** EARTH FILLED SACKS
35-100 %	100	** EARTH FILLED SACKS
> 100 %	50	** USE CEMENT FILLED SACKS (RETICED) OR MORTARED STONE

* TRENCH BREAKERS (PLUGS) ARE REQUIRED AT ALL STREAM, RIVER, OR WATER-BODY CROSSINGS REGARDLESS OF TRENCH SLOPE.
 ** TOP SOIL MAY NOT BE USED TO FILL SACKS. TRENCH BREAKERS (PLUGS) WITH CEMENT FILLED SACKS SHALL BE INSTALLED AND ALLOWED TO CURE WITHOUT ANY SURFACE WATER COMING INTO CONTACT WITH THEM. CONTRACTOR SHALL VERIFY CEMENT HAS CURED AND HARDENED PRIOR TO REMOVING ANY BMPs AROUND THE TRENCH BREAKER (PLUG) AREA.
 *** TRENCH BREAKERS WITH CEMENT FILLED SACKS SHALL BE INSTALLED AND ALLOWED TO CURE WITHOUT ANY SURFACE WATER COMING INTO CONTACT WITH THEM. CONTRACTOR SHALL VERIFY CEMENT HAS CURED AND HARDENED PRIOR TO REMOVING ANY BMPs AROUND THE TRENCH BREAKER AREA.

7 PERMANENT TRENCH BREAKER
NTS

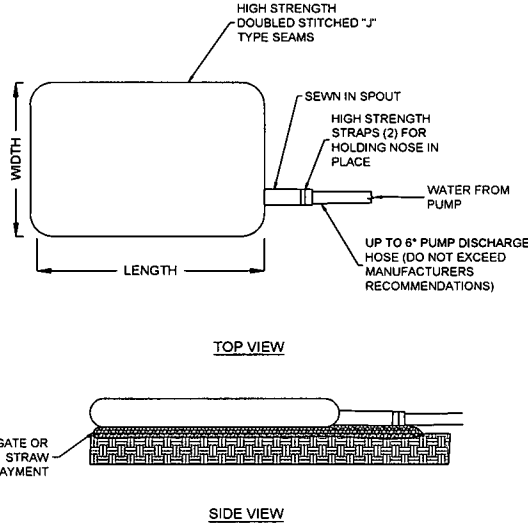


8 AMERICAN WICK DRAIN DETAIL
NTS



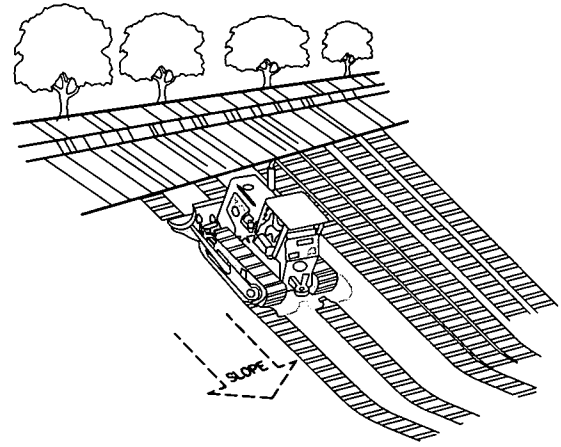
9 TRENCH PLUG DRAIN OUTFALL EROSION PROTECTION DETAIL
NTS

NOTES:
 1) PREPARE SOIL BEFORE INSTALLING EROSION CONTROL PRODUCTS. INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
 2) FOR CULVERT AND OUTFALL APPLICATIONS, SCOUR PROTECTION SHOULD EXTEND A MINIMUM WIDTH OF 3-4 TIMES THE PIPE DIAMETER AND A MINIMUM LENGTH OF 4-5 TIMES THE PIPE DIAMETER (SEE PLAN VIEW). WITH STEEPER CHANNEL GRADIENTS, THE LENGTH OF SCOUR PROTECTION MAY NEED TO BE EXTENDED.
 3) PLACE STAPLES/ANCHORS IN THE APPROPRIATE PATTERN. IN SOFT OR HIGHLY ERODIBLE SOILS, PERCUSSION EARTH ANCHORS MAY BE REQUIRED.
 (SEE MANUFACTURERS RECOMMENDATIONS FOR ADDITIONAL INSTALLATION INSTRUCTIONS).



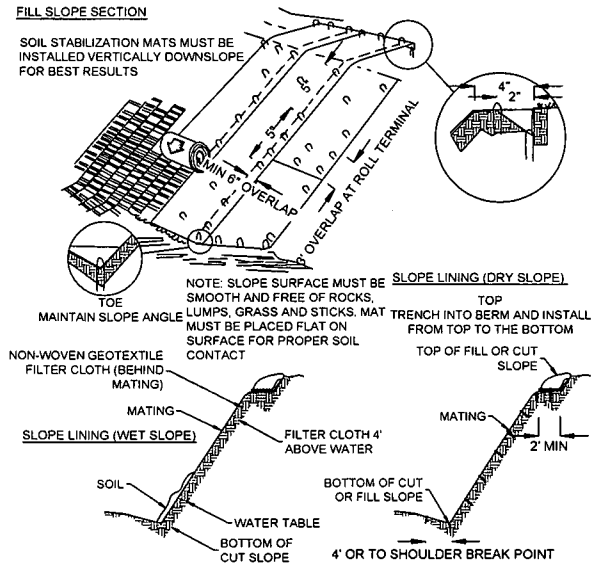
NOTES:
 1. UTILIZE VEGETATED STRIP WHERE APPLICABLE.
 2. MAXIMIZE DISTANCE BETWEEN LOCATION OF FILTER BAG AND AQUATIC FEATURE.
 3. FILTER BAG MUST BE PLACED ON FLAT SURFACE.

10 FILTER BAG
NTS



TRACKING SLOPE IS DONE BY RUNNING TRACKED MACHINERY UP AND DOWN THE SLOPE, LEAVING TREAD MARKS PARALLEL TO THE CONTOUR. (NOTE: IF A BULLDOZER IS USED, THE BLADE SHOULD BE UP, CARE SHOULD BE EXERCISED ON SOILS HAVING A HIGH CLAY CONTENT TO AVOID OVER-COMPACTION.)

11 TRACKING
NTS



12 ROLLED EROSION CONTROL PRODUCTS
NTS

LAYOUT TAB: ESCP4
CAD FILE: R:\050-6196-WC HP LOOP-ANTERO-Survey\PLANS\ESCP DETAIL SHEETS.dwg
USER: robert.j.nickro
PLOT DATE/TIME: 5/21/2017 7:07 AM



IFP
 ISSUED FOR PERMITTING
 DATE: 04/26/2017
 AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

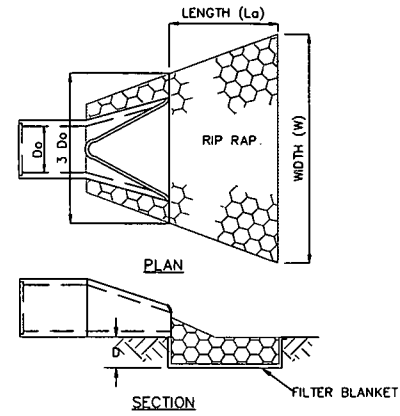
1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

REVISION			
NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.A.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/16/17	DJ

Antero
 Midstream Partners LP
**CRYSTAL LAKE PIPELINE
 ESCP DETAILS**

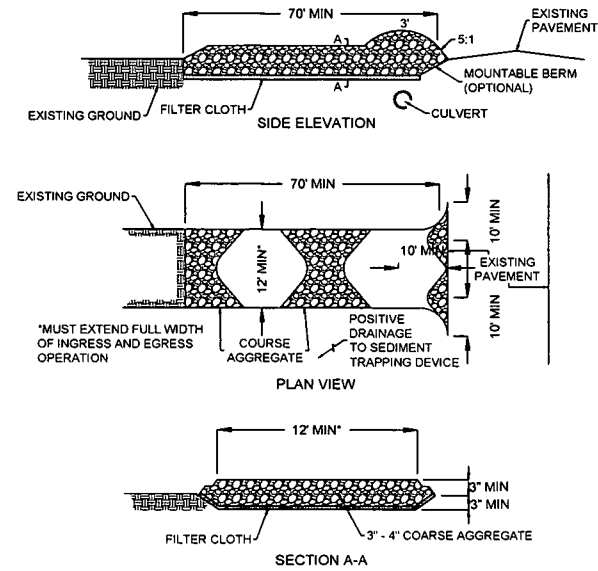
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
 SCALE: AS SHOWN
 DRAWN BY: R.A. (T10)
 CHECKED: AR (T10)
 SHEET 41
 SHT. NAME: 050-6196\CRYSTAL\ESCP4
 REV. 2



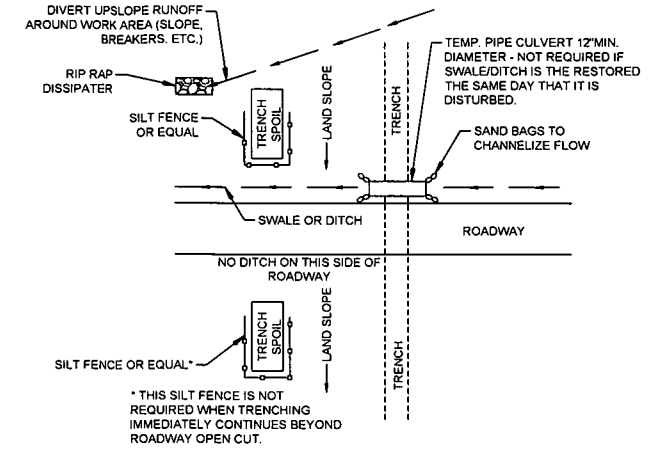
- NOTES:**
- IF FLARED END SECTION IS DISCHARGING INTO DITCH FROM THE SIDE, EXTEND RIP RAP UP DITCH BANK ON OFF-SIDE A MINIMUM OF 4 FEET.
 - USE W/DEEP RIP RAP GRADATION AND FILTER BLANKET REQUIREMENTS PER SECTION 3.17 OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL.
 - A SUITABLE NON-WOVEN GEOTEXTILE FABRIC, USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, MAY BE SUBSTITUTED FOR FILTER BLANKET STONE UNDER THE RIPRAP.
 - $d = 1.5$ TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".

13 RIP RAP APRON
NTS

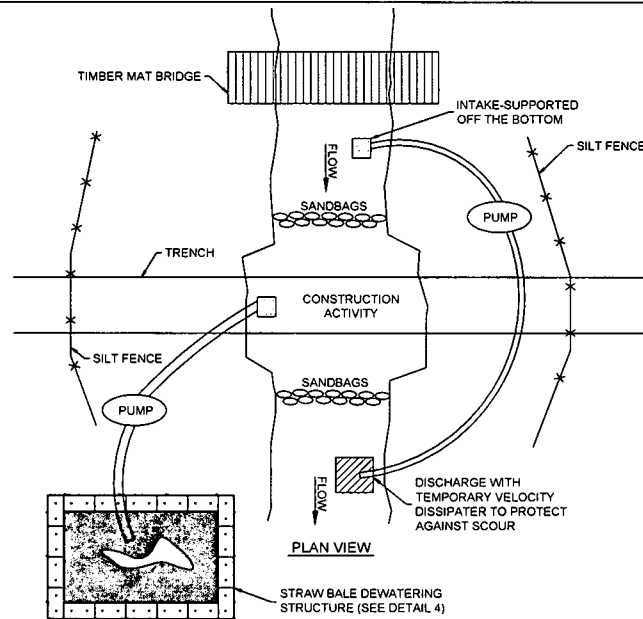


- CONSTRUCTION SPECIFICATIONS:**
- CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
 - PLACE THE 3 INCH CRUSHED ROCK TO MATCH FINISHED GRADE AT THE ROADWAY AND SMOOTH IT.
 - PROVIDE DRAINAGE WHERE NEEDED TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
 - IT IS RECOMMENDED TO HAVE A STOCKPILE OF STONE ON-SITE.
- MAINTENANCE:**
- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP-DRESSING WITH ADDITIONAL 3 INCH CRUSHED ROCK. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS. MAINTENANCE SHOULD BE PROVIDED DAILY, BUT AT A MINIMUM EVERY SEVEN DAYS AND AFTER EVERY RAIN OF 0.5 INCH OR GREATER.

14 STABILIZED CONSTRUCTION ENTRANCE
NTS

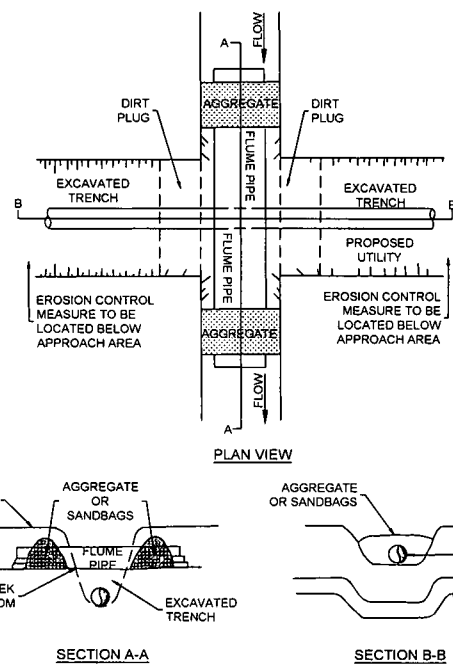


15 OPEN CUT ROAD CROSSING
NTS

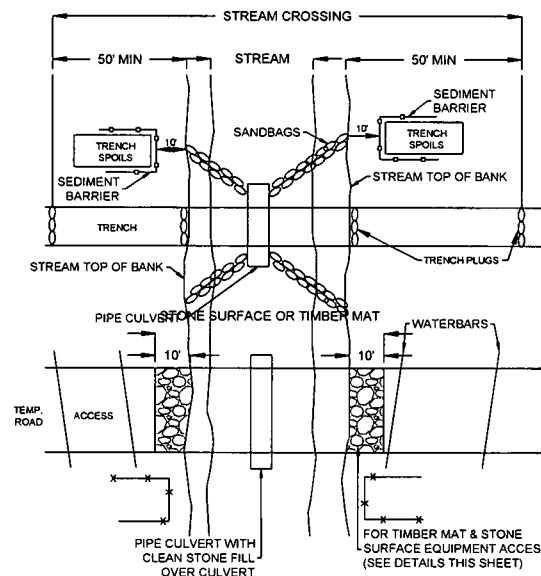


- NOTES:**
- DEWATERING STRUCTURE SHOULD BE PLACED IN WELL VEGETATED STRIP.
 - TOP 6"-12" OF NATURAL STREAM SUBSTRATE SHOULD BE ISOLATED DURING IN-STREAM TRENCHING AND RESTORED UPON COMPLETION OF FINAL STREAM STABILIZATION.
 - ENVIRONMENTAL INSPECTOR MUST VERIFY DAM AND PUMP AROUND SETUP.
 - MUST BE A MINIMUM OF 5 FEET OF COVER FROM TOP OF PIPE TO NATURAL GROUND.
 - PIPE SAG SECTION SHOULD BE WELDED PRIOR TO TRENCHING ACTIVITY COMMENCES.
 - ACCUMULATION OF TRENCH WATER MUST BE PUMPED TO DEWATERING STRUCTURE.
 - IN-STREAM WORK MUST BE COMPLETED WITHIN 24 HOURS (HIGH WATER MARK TO HIGH WATER MARK).
 - STREAM BUFFER AREA MUST BE RESTORED WITHIN 72 HOURS.

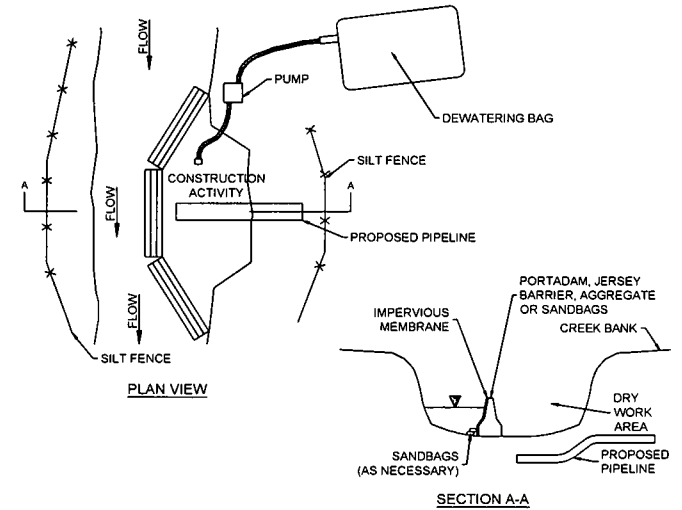
16 OPEN CUT STREAM CROSSING
NTS



17 FLUME PIPE CROSSING
NTS



18 FLUMED STREAM CROSSING WITH ACCESS ROAD
NTS



19 COFFERDAM CROSSING
NTS

THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

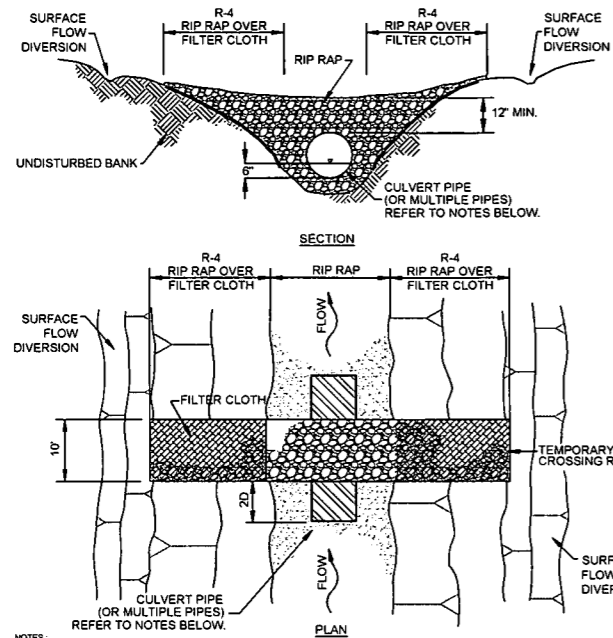
1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

Antero
Midstream Partners LP

**CRYSTAL LAKE PIPELINE
ESCP DETAILS**

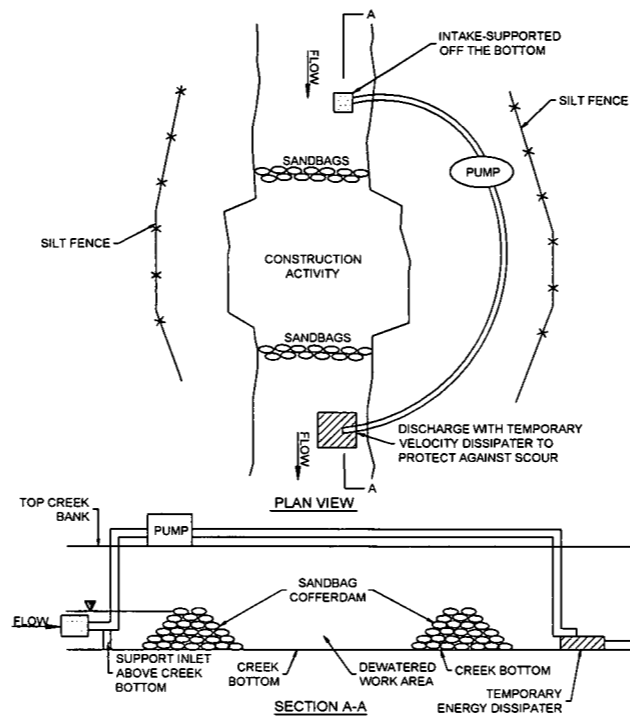
PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: R.L. (TTC)
CHECKED: J.D. (TTC)
SHEET 42
SHT. NAME: 050-6196\CRYSTAL\ESCP5 REV. 2

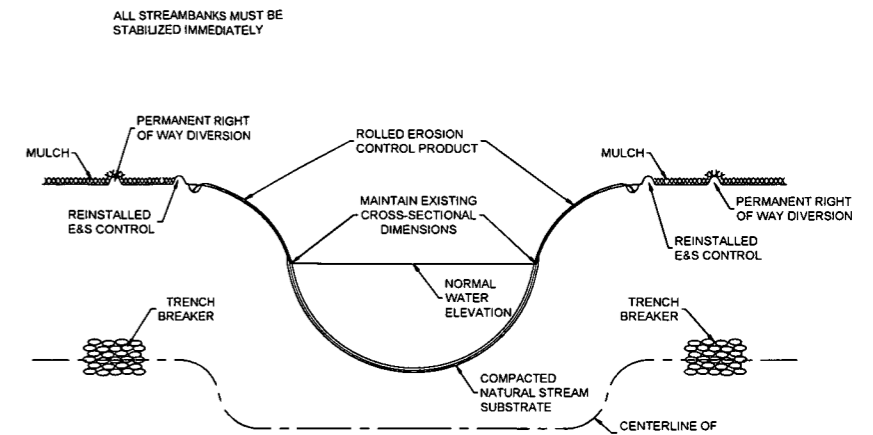


- NOTES:
1. PIPE SHOULD EXTEND BEYOND TOE OF ROADWAY
 2. ROADWAY SHOULD BE DERESSED OVER CULVERT TO ALLOW FOR OVERFLOW
 3. CLEAN ROCK FILL SHALL BE USED TO CLAMP AGAINST EROSION AND SEDIMENTATION. STREAMBED MATERIAL IS NOT TO BE USED
 4. MINIMUM SIZE DIAMETER CULVERT TO BE INSTALLED IS 12 INCHES
 5. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE
 6. PROPER EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE INSTALLED

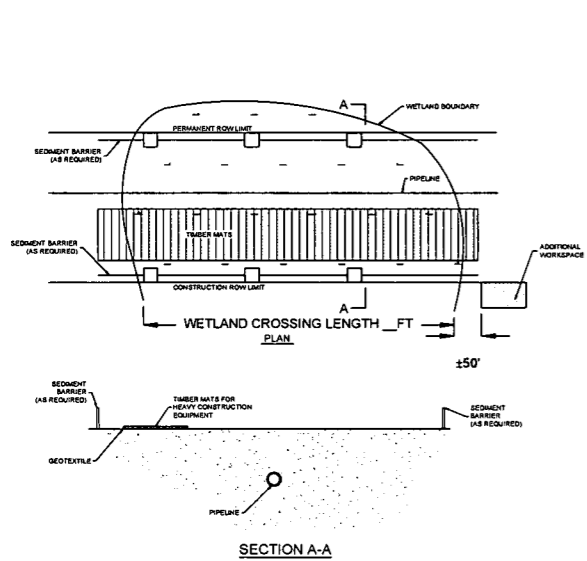
20 ROCK FLUME BRIDGE
NTS



21 DAM & PUMP AROUND
NTS

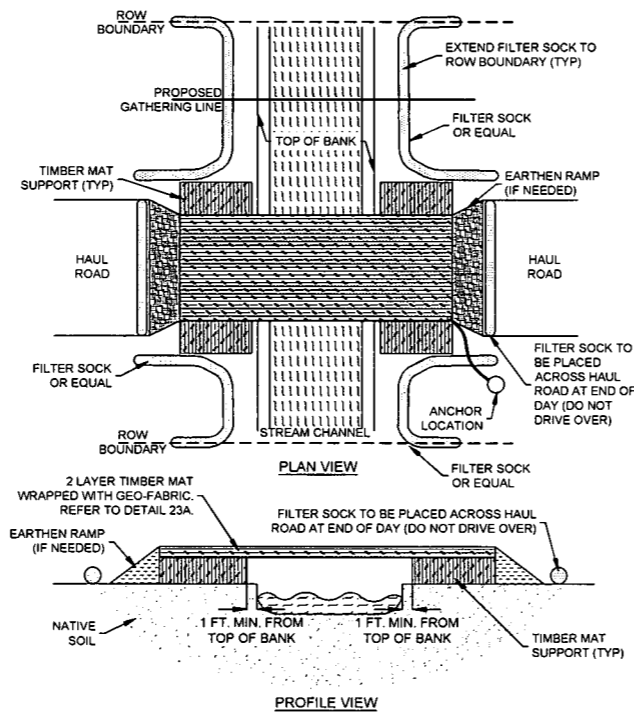


22 STREAM BANK STABILIZATION
NTS

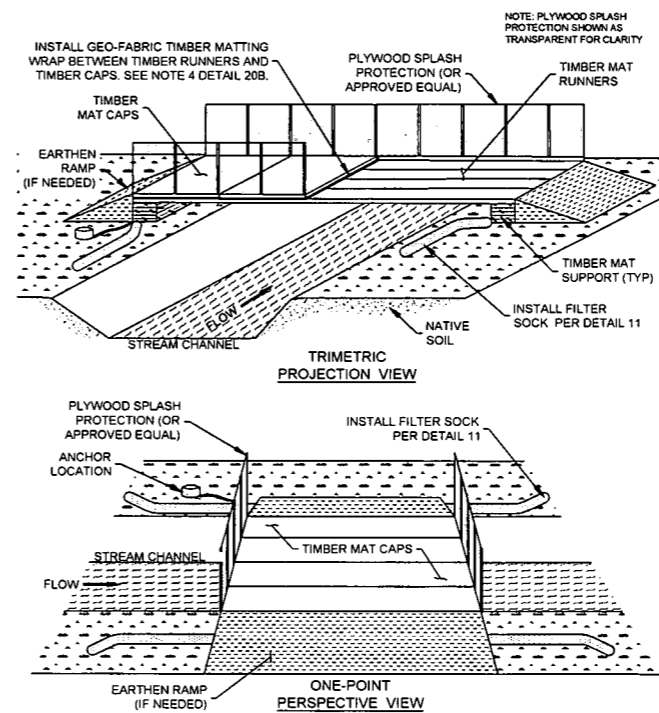


- GENERAL CONSTRUCTION SEQUENCE NOTES:
1. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS PRIOR TO EARTH DISTURBANCE
 2. SEDIMENT BARRIERS WILL BE INSTALLED AT THE EDGE OF THE ROW
 3. WORKING SIDE WILL BE STABILIZED WITH PRE-FABRICATED MATS, AS NEEDED TO PROVIDE A FIRM SURFACE FOR CONSTRUCTION EQUIPMENT. FOR ALL DELINEATED WETLAND AREAS, GEOTEXTILE SHALL BE PLACED UNDER THE MATS TO PREVENT MOVEMENT OR PUMPING OF THE SOIL THROUGH THE MATS
 4. WETLAND MATERIAL WILL BE STRIPPED, SEGREGATED, AND RESTORED UPON COMPLETION OF THE CROSSING

23 TYPICAL EROSION AND SEDIMENT CONTROL FOR WETLAND CROSSINGS
NTS



24 TYPICAL EROSION AND SEDIMENT CONTROL FOR STREAM CROSSINGS
NTS



24A TYPICAL EROSION AND SEDIMENT CONTROL FOR STREAM CROSSINGS
NTS

CONSTRUCTION SPECIFICATIONS AND GENERAL SPECIFICATIONS:

1. CROSSING ALIGNMENT SHALL BE AT RIGHT ANGLE TO THE STREAM. WHERE THE APPROACH CONDITIONS DICTATE, THE CROSSING MAY VARY 15 DEGREES FROM THE LINE DRAWN PERPENDICULAR TO THE CENTERLINE OF THE STREAM.
2. TIMBER MATTING RUNNERS SHALL BE PLACED PERPENDICULAR TO STREAM AND ADJACENT TO ONE ANOTHER.
3. TIMBER MATTING CAPS SHALL BE PLACED PARALLEL TO STREAM AND ADJACENT TO ONE ANOTHER FOR THE ENTIRE SPAN OF THE BRIDGE.
4. TIMBER MATTING CAPS SHALL BE WRAPPED UNDERNEATH AND ALONG THE SIDES OF TIMBER MAT WITH GEO-FABRIC MATERIAL OR APPROVED EQUAL. EXTEND GEO-FABRIC MATERIAL AT MINIMUM 5 FEET ON EITHER SIDE TO ALLOW ENOUGH MATERIAL TO WRAP UP AND TIE INTO PLYWOOD SPLASH PROTECTION FENCING (OR APPROVED EQUAL) TO CONTROL SEDIMENT FROM ENTERING STREAM.
5. PLYWOOD SPLASH PROTECTION FENCING (OR APPROVED EQUAL) SHALL BE SECURELY ATTACHED ALONG THE OUTER SIDES OF TIMBER MATTING TO CONTROL SEDIMENT COLLECTION AND ALLOW GEO-FABRIC MATERIAL TO BE STAPLED TO OUTSIDE OF PLYWOOD.
6. BRIDGE SHALL BE CONSTRUCTED MINIMUM 1 FOOT OUTSIDE TOP OF BANK.
7. BRIDGE SHALL BE SECURELY ANCHORED AT ONLY ONE END USING STEEL CABLE OR CHAIN. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL ANCHORS. ANCHORING SHALL BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM.
8. ALL AREAS DISTURBED DURING BRIDGE INSTALLATION SHALL BE STABILIZED IMMEDIATELY.
9. PLYWOOD SPLASH PROTECTION (OR APPROVED EQUAL) SHALL BE WELL MAINTAINED, CLEARING SEDIMENT WHEN NECESSARY.
10. FILTER SOCK SHALL BE PLACED ALONG BOTH ENTRANCES OF THE BRIDGE WHEN NOT IN USE FOR MORE THAN 24 HOURS AND/OR PRIOR TO PRECIPITATION EVENTS. DO NOT DRIVE OVER FILTER SOCK.

THRASHER

IFP

ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

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NO.	DESCRIPTION	QTY

GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" x 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

REVISION

NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.J.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/19/17	J.D.J.

Antero
Midstream Partners LP

**CRYSTAL LAKE PIPELINE
ESCP DETAILS**

PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE:	5/21/2017	AFE No.:	A05924
SCALE:	AS SHOWN	R.D. (TIT)	
DRAWN BY:			
CHECKED:			
SHEET 43		SHT. NAME: 050-6196\CRYSTAL_ESCP6	
		REV. 2	

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CAD FILE: R:\050-6196-REC HP LOOP-ANTERO-Survey\PLANS\ESCP DETAIL SHEETS.dwg
PLOT DATE/TIME: 5/21/2017 7:10 AM
USER: robert.f.luciano

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 USER: robert.i.luczo
 PLOT DATE/TIME: 5/21/2017 7:14 AM

Temporary Stabilization Seeding		
March 15 - September 15	Annual Rye	250 - 350 lbs per acre
September 15 - March 15	Annual Winter Wheat	100 - 125 lbs per acre

25 TEMPORARY SEEDING CHART
NTS

Antero Midstream Default Pasture Mix (200 - 225 LBS per Acre)	
Named Variety of Forage Perennial Ryegrass	20%
Named Variety of Forage Tall Fescue (not Fawn)	20%
Climax Timothy	15%
Orchardgrass	10%
Birdsfoot Trefoil	10%
Medium Red Clover	5%
Ladino Clover	5%
Kentucky Bluegrass VNS	5%
Alsike Clover	5%
Alfalfa	5%

Antero Midstream Default Wildlife Mix (150 - 175 LBS per Acre)	
Medium Red Clover	20%
Buckwheat	10%
Oats (Spring & Summer) or Wheat (Fall & Winter)	10%
Ladino White Clover	20%
Birdsfoot Trefoil	10%
Alfalfa	10%
Named Variety of Forage Perennial Ryegrass	10%
Annual Ryegrass	10%

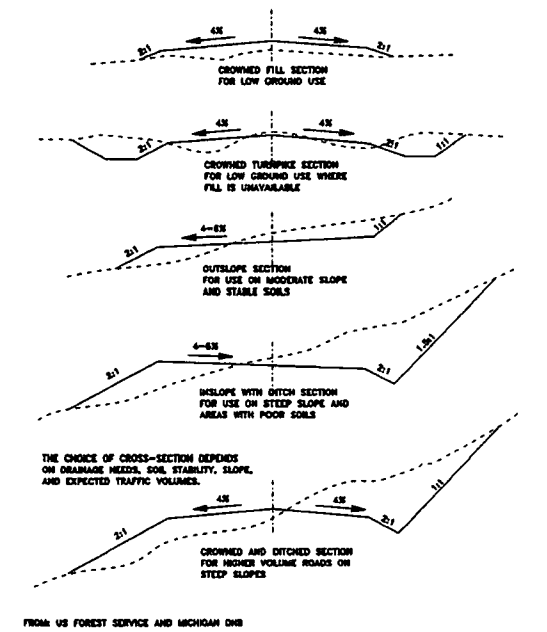
Antero Midstream General Contractor Mix (200 - 250 LBS per Acre)	
Named Variety of Forage Tall Fescue (not Fawn)	50%
Named Variety of Forage Perennial Ryegrass	20%
Annual Ryegrass	15%
Ladino Clover	5%
Alsike Clover	5%
Birdsfoot Trefoil	5%

26 PERMANENT SEEDING CHART
NTS

- | |
|-------------------|
| Lime |
| Pelletized |
| 1.5 tons per acre |
- | |
|------------------|
| Fertilizer |
| 10/20/20 |
| 200 lbs per acre |
- | |
|-----------------|
| Straw Mulching |
| 2 tons per acre |

27 LIME, FERTILIZER, AND MULCH CHARTS
NTS

TYPES OF ROAD CROSS-SECTIONS



28 TYPES OF ROAD CROSS-SECTIONS
NTS



ISSUED FOR PERMITTING

 DATE: 04/26/2017

 AFE # A05924

SUMMARY OF MATERIALS (3D)		
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NO.	DESCRIPTION	QTY

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REVISION		
NO.	DESCRIPTION	DATE BY
1	REVISED PER COMMENTS FROM KLENFELDER, INC.	04/26/17 R.L.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/11/17 J.D.J.

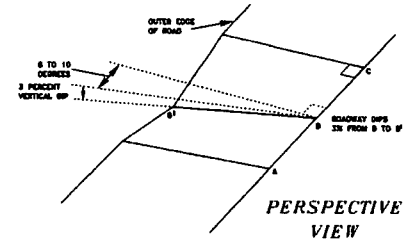
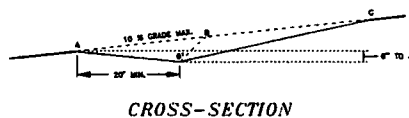
CRYSTAL LAKE PIPELINE

ESCP DETAILS

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017	AFE No.: A05924
SCALE: AS SHOWN	SHEET 44
DRAWN BY: R.L. (110)	
CHECKED: J.D.J. (110)	

SHT. NAME: 050-6196\CRYSTAL\ESCP7 REV. 2

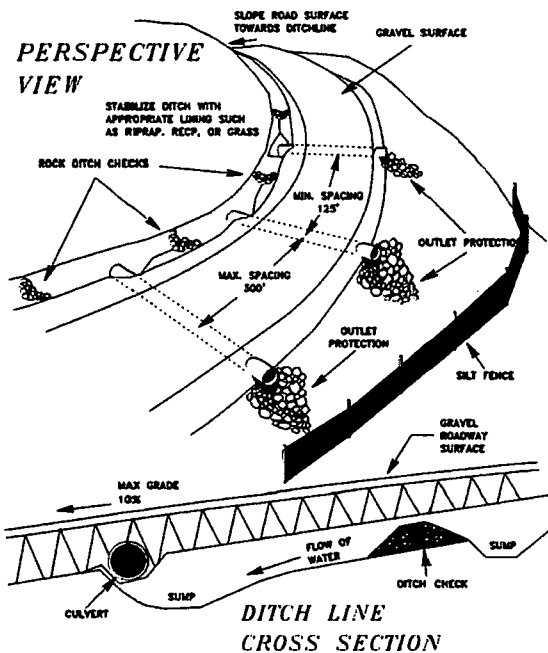


SPACING = 400/VE GRADE + 75'

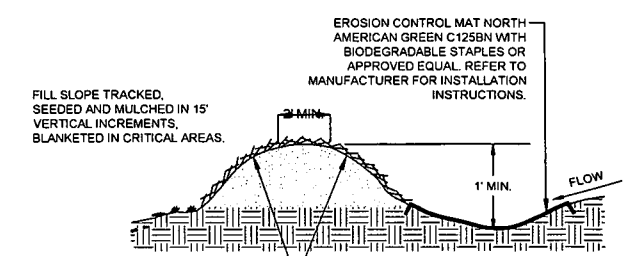
Table 3.35.1

Drainage Area (Acres)	Average Slope of Watershed			
	1%	4%	8%	16%
1-25	24	21	30	30
26-50	24	20	30	30
51-100	20	20	26	42
101-150	20	20	26	42
151-200	16	20	26	42
201-250	16	20	26	42
251-300	16	20	26	42
301-350	16	20	26	42
351-400	16	20	26	42
401-450	16	20	26	42
451-500	16	20	26	42
501-550	16	20	26	42
551-600	16	20	26	42
601-650	16	20	26	42

29 BROAD-BASE DIP
NTS

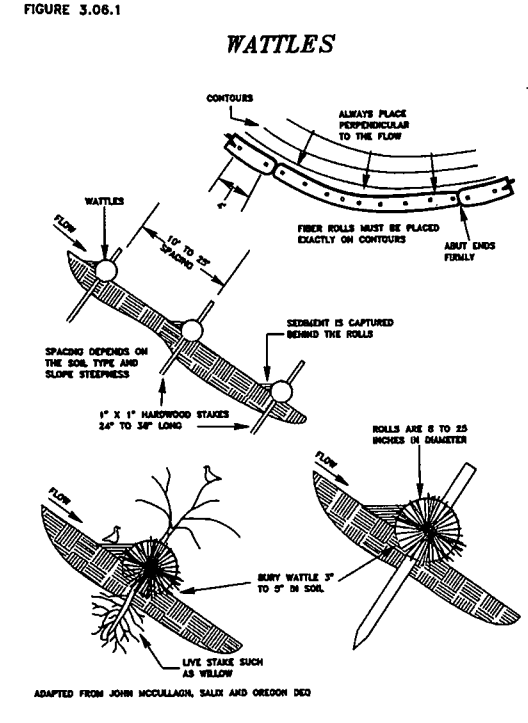


30 EROSION AND SEDIMENT CONTROL FOR ACCESS ROADS AND DRIVEWAYS
NTS

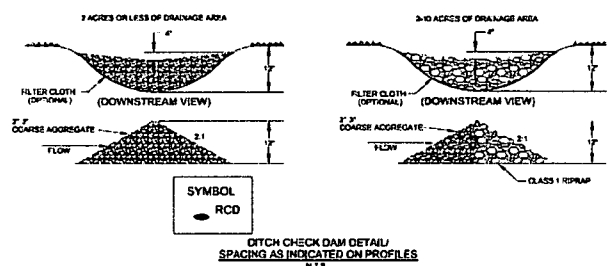


- INSTALLATION:**
- WHEN CLEARING THE LOCATION FOR THE DIVERSION, ONLY CLEAR ENOUGH ROOM FOR CONSTRUCTION AND MAINTENANCE EQUIPMENT ACCESS. DO NOT CLEAR ANY ADDITIONAL AREA UNTIL ALL EROSION CONTROL DEVICES ARE IN PLACE.
 - REMOVE ALL STUMPS, ROOTS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY.
 - INSTALL DIVERSIONS AND COMPACT AS SHOWN IN DETAIL. INSURE POSITIVE DRAINAGE DURING CONSTRUCTION OF BERM.
 - SCARIFY, SEED, MULCH AND TACK DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF BERM.
 - INSTALL EROSION CONTROL MAT NORTH AMERICAN GREEN C125N PER MANUFACTURER'S RECOMMENDATIONS AND KEY INTO SIDES OF CHANNEL TO PREVENT WATER FROM UNDERMINING OR DAMAGING CHANNEL LINER.
- NOTES:**
- TEMPORARY BERMS SHALL BE PLACED, MAINTAINED, AND ADJUSTED CONTINUOUSLY UNTIL 80% VEGETATIVE GROWTH IS ESTABLISHED ON THE EXTERIOR SLOPES WITH PERMANENT STORM DRAINAGE FACILITIES FUNCTIONING.
 - BERMS SHALL OUTLET TO SLOPE PIPES, CHANNELS, OR OTHER APPROVED MEANS OF CONVEYING RUNOFF TO A SEDIMENT TRAP, SEDIMENT BASIN, OR COLLECTOR CHANNEL.
 - CHANNEL BEHIND BERM SHALL HAVE POSITIVE GRADE TO OUTLET AND AN APPROPRIATE PROTECTIVE LINING.
 - BERM SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
 - AN ACCEPTABLE ALTERNATIVE TO TOP-OF-SLOPE BERM IS TO CONTINUOUSLY GRADE THE TOP OF FILL TO DIRECT RUNOFF AWAY FROM THE FILL/SLOPE TO A COLLECTOR CHANNEL, SEDIMENT TRAP, OR SEDIMENT BASIN.
- MAINTENANCE:**
- INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS. REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

31 TEMPORARY DIVERSION BERM FOR OFFSITE WATER
NTS

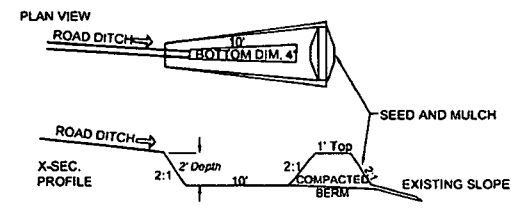


32 WATTLES
NTS



NOTES:
DITCH CHECKS WILL BE CONSTRUCTED IN CHANNELS TO MINIMIZE EROSION. THE CONSTRUCTION OF THE DITCH CHECK WILL FOLLOW THE GUIDELINES ABOVE. DITCH CHECKS WILL BE CONSTRUCTED SO THAT THE ELEVATION OF THE TOP OF THE DOWNSTREAM DITCH CHECK IS EQUAL TO THE ELEVATION OF THE BASE OF THE DITCH CHECK ABOVE. THIS CREATES A SITUATION WHERE THE CHANNEL HAS NO CHANNELIZED FLOW PER SAY, THE WATER FLOWING DOWN THE DITCH WILL CASCADE FROM THE POOL CREATED BY ONE DITCH CHECK INTO THE POOL CREATED BY THE DOWNSTREAM DITCH CHECK THIS DISSIPATES ENERGY AND SLOWS THE WATER FLOW REDUCING EROSION AND ALLOWING ANY SEDIMENT IN THE DRAINAGE TO FALL OUT.

33 CHECK DAM
NTS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC

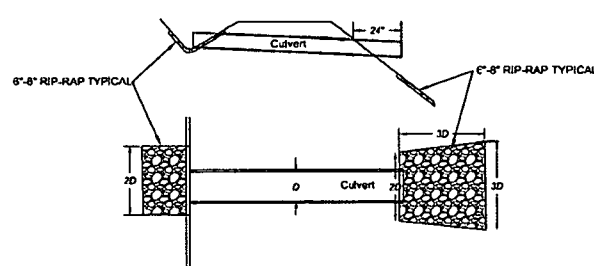


LEVEL SPREADER DETAIL
N.T.S.

NOTE: TO BE PLACED AT THE ENDS OF DITCHES CALLING FOR LEVEL SPREADERS LEVEL SPREADERS WILL BE CUT INTO THE CONTOUR OF THE EXISTING SLOPE.

NOTES:
LEVEL SPREADER TO BE CONSTRUCTED IN AREAS WHERE A CULVERT OR CHANNEL MUST EMPTY ONTO GROUND WITH NO ASSOCIATED CHANNELIZED FLOW. THE PURPOSE OF THE LEVEL SPREADER IS TO DISSIPATE ENERGY AND SPREAD THE FLOW OUT OVER A SIGNIFICANT AREA THIS WILL TAKE A CHANNELIZED FLOW AND ESSENTIALLY CONVERT IT BACK TO A SHEET FLOW OVER THE GROUND SURFACE. THE SHEET FLOW WILL HAVE LESS CHANCE FOR EROSION CONSIDERING THE LOWER VELOCITIES AND FLOW VOLUMES IN ANY PARTICULAR AREA. THEY MAY BE CONSTRUCTED MUCH LIKE A SUMP WHERE THE CHANNEL OR CULVERT EMPTIES INTO THE SUMP AND THEN OVERTOPS THE BERMED AREA, BUT THEY MAY OFTEN CONTAIN GRAVEL IN THE SUMPED AREA. THEY WILL ALLOW BE CONSTRUCTED ALONG THE GROUND CONTOUR.

34 LEVEL SPREADER
NTS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC



TYPICAL CULVERT & CULVERT INLET/OUTLET PROTECTION DETAIL
N.T.S.

NOTES:
INLET AND OUTLET PROTECTION IS ESSENTIALLY GRAVELS AND/OR RIP RAP PLACED AT BOTH THE INLET AND OUTLET SIDES OF CULVERTS. THE GRAVELS WILL HELP TO SLOW THE FLOW OF WATER, AND DISSIPATE ENERGY. THIS WILL IN TURN DECREASE THE CHANCES OF EROSION AND ALSO ALLOW ANY SEDIMENT IN THE WATER TO SETTLE OUT.

35 TYPICAL CULVERT & CULVERT INLET/OUTLET PROTECTION
NTS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC

LAYOUT TAB: ESCPB
CAD FILE: R:\050-6196-NEC HP LOOP-ANTERO-Survey\PLANS\ESCP DETAIL SHEETS.dwg
USER: robert.j.luczko
PLOT DATE/TIME: 5/21/2017 7:16 AM



IFP
ISSUED FOR PERMITTING
DATE: 04/26/2017
AFE # A05924

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

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NO.	DESCRIPTION	QTY

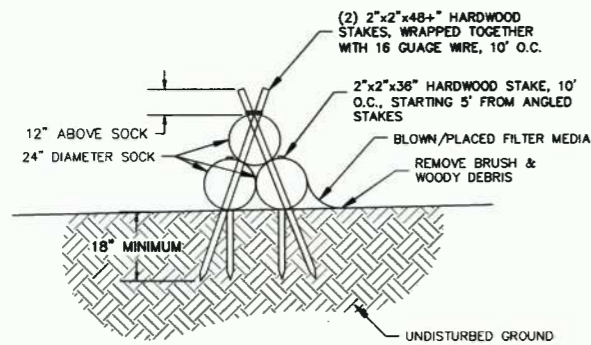
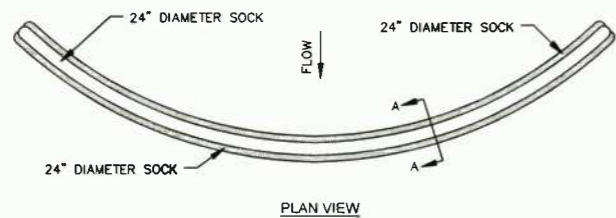
GENERAL INFORMATION			
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Antero
Midstream Partners LP
CRYSTAL LAKE PIPELINE ESCP DETAILS

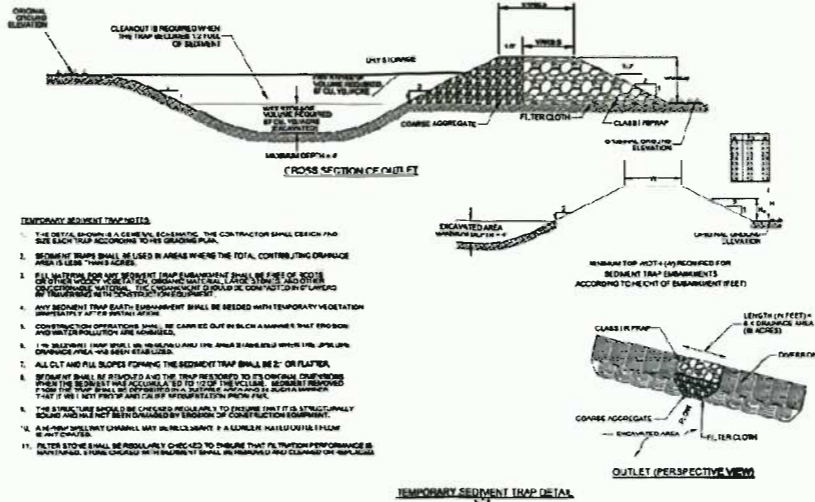
PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017 AFE No.: A05924
SCALE: AS SHOWN
DRAWN BY: RAL (TIG)
CHECKED: AR (TIG)

SHEET 45
SHT. NAME: 050-6196\CRYSTAL\ESCP8 REV. 2



36 TRIPLE STACK FILTER SOCK SEDIMENT TRAP
NTS



- TEMPORARY SEDIMENT TRAP DETAILS**
1. THE DETAIL SHOWN IS A GENERAL SCHEMATIC. THE CONTRACTOR SHALL DESIGN AND SIZE EACH TRAP ACCORDING TO THE GRADING PLAN.
 2. SEDIMENT TRAPS SHALL BE USED IN AREAS WHERE THE TOTAL CONTROLLING DRAINAGE AREA IS LESS THAN 5 ACRES.
 3. ALL MATERIALS FOR THE SEDIMENT TRAP EMBANKMENT SHALL BE FREE OF SOILS OR OTHER MATERIALS THAT COULD BE WASHED INTO THE TRAP. THE TRAP SHALL BE CONSTRUCTED WITH A MINIMUM OF 4% SLOPE ON ALL SIDES.
 4. ANY SEDIMENT TRAP EMBANKMENT SHALL BE SEED WITH TEMPORARY VEGETATION IMMEDIATELY AFTER INSTALLATION.
 5. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SOIL POLLUTION ARE MINIMIZED.
 6. THE SEDIMENT TRAP SHALL BE MAINTAINED FREE OF OBSTRUCTIONS AND DEBRIS. THE TRAP SHALL BE CLEANED OUT AS NECESSARY.
 7. ALL CUT AND FILL SLOPES FORMING THE SEDIMENT TRAP SHALL BE 2:1 OR FLATTER.
 8. SEDIMENT TRAPS SHALL BE SITUATED AND THE TRAP PROTECTED TO ITS ORIGINAL COMPOSITION. THE TRAP SHALL BE PROTECTED TO ITS ORIGINAL COMPOSITION. THE TRAP SHALL BE PROTECTED TO ITS ORIGINAL COMPOSITION.
 9. THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND NOT BE OVERLOADED BY EXCESSIVE CONCENTRATIONS OF SEDIMENT.
 10. A MAINTENANCE CHANNEL MAY BE NECESSARY TO ENSURE THAT THE TRAP PERFORMANCE IS MAINTAINED. IT SHALL BE CHECKED BY THE CONTRACTOR AND CLEANED AS NECESSARY.
 11. FILTER SOCKS SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTER PERFORMANCE IS MAINTAINED. IT SHALL BE CHECKED BY THE CONTRACTOR AND CLEANED AS NECESSARY.

NOTES:
TEMPORARY SEDIMENT TRAPS ARE ESSENTIALLY SMALL SEDIMENT PONDS. THEY GIVE THE WATER A PLACE TO POOL AND SLOW DOWN THIS REDUCES THE CHANCES OF ADDITIONAL EROSION WHILE ALLOWING ANY SEDIMENT IN THE WATER TO SETTLE OUT. THE OUTLET IS DESIGNED OUT OF GRAVELS OF DIFFERENT DIMENSIONS WHICH CREATES A FILTER AS WELL.

37 TEMPORARY SEDIMENT TRAP
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC

NOTES:
ON MOST LOCATIONS ANTERO WILL ALSO CONSTRUCT EROSION AND SEDIMENT (E&S) CONTROLS ABOVE AND BEYOND THE E&S CONTROLS LISTED ON THE PLAN SHEETS. THESE CONTROLS WILL BE CATEGORIZED AS PHASE I, PHASE II, AND PHASE III CONTROLS. THESE CONTROLS WILL BE INSTALLED TO BOTH PROVIDE EXTRA E&S PROTECTION, AND TO ELIMINATE THE CHANCES OF MATERIALS SUCH AS SOIL OR GRAVEL BEING PLACED IN A STREAM OR WETLAND. THE SITE PLANS AND DELINEATIONS ARE REVIEWED AND THESE CONTROLS ARE SPECIFIED IN ANTERO'S CONSTRUCTION RELEASE WHICH IS SENT OUT JUST PRIOR TO CONSTRUCTION BEGINNING. THE PHASE I, II, AND III CONTROLS WILL BE CONSTRUCTED AS FOLLOWS:



PHASE I:
THIS IS ESSENTIALLY ORANGE SAFETY FENCE LIKE SHOWN ABOVE. THIS MEASURE IS PUT IN PLACE TO LET CONTRACTORS KNOW THAT NO WORK IS TAKE PLACE BEYOND THIS POINT. THIS CONTROL IS TYPICALLY UTILIZED WHEN THERE IS A WETLAND OR STREAM LOCATED IN THE AREA BUT NOT WITHIN APPROXIMATELY 100 FEET OF THE DISTURBANCE.

38A SUPPLEMENTAL 404 CWA BMP CONTROLS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC



PHASE II:
THIS CONTROL CONSISTS OF TYPICAL SILT FENCE, SUPER SILT FENCE, OR FILTER SOCK. THIS CONTROL WILL BE INSTALLED AS DESCRIBED IN THE PREVIOUS SECTIONS. THIS CONTROL WILL TYPICALLY BE USED WHEN WETLANDS OR STREAMS ARE LOCATED WITHIN 100 FEET OF THE DISTURBED AREA.

38B SUPPLEMENTAL 404 CWA BMP CONTROLS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC



PHASE III:
THIS CONTROL CONSISTS OF METAL Q-DECKING WHICH IS STOOD ON ITS EDGE AND SECURED TO METAL POSTS. THIS CONTROL IS USED TO PREVENT SOILS OR GRAVELS FROM ENTERING STREAMS OR WETLANDS DURING CONSTRUCTION. THE DECKING CAN BE BURIED OR USED IN CONJUNCTION WITH OTHER E&S METHODS. THIS CONTROL IS USED IN AREAS WHERE STREAMS OR WETLANDS ARE WITHIN APPROXIMATELY 50 FEET OF THE DISTURBED AREA. IF THE METAL DECKING IS BURIED NO OTHER E&S CONTROLS ARE REQUIRED, BUT IF THE DECKING IS PLACED ON TOP OF THE GROUND SURFACE AND ADDITIONAL E&S CONTROL SUCH AS SILT FENCE OR SILT SOCK WILL BE USED TO PROTECT THE GAPS BETWEEN THE BOTTOM OF THE DECKING AND THE UNEVEN GROUND SURFACE.

*NOTE THAT THE DISTANCES MENTIONED IN THE PHASE I, II, AND III CONTROLS ARE A GUIDELINE NOT A RULE FOR THE DECISION OF WHEN AND WHERE TO USE THESE CONTROLS.

38C SUPPLEMENTAL 404 CWA BMP CONTROLS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC

DEFINITIONS:

RIP RAP - LOOSE STONE USED TO FORM A FOUNDATION FOR A BREAKWATER OR OTHER STRUCTURE. THIS STONE IS TYPICALLY 3 INCHES OR GREATER IN DIAMETER.

FILTER CLOTH - TYPICALLY TYPAR OR ANOTHER SUCH MATERIAL (USUALLY WOVEN) WHICH IS DESIGNED TO ALLOW WATER TO FLOW BUT RETAIN SEDIMENT.

AGGREGATE - TERM USED TO IDENTIFY ANY TYPE SOLID DENSE MATERIAL USED DURING CONSTRUCTION TYPICALLY GRAVELS, SANDS, AND STONES.

EMBANKMENT - A WALL OR BANK OF EARTH OR STONE.

CLASS 1 RIP RAP - TYPICAL RIP RAP WITH STONES OF A DIAMETER BETWEEN 8 AND 18 INCHES.

39 DEFINITIONS
DETAIL PROVIDED BY ANTERO MIDSTREAM LLC

LAYOUT TAB: ESCP9
CAD FILE: R:\050-6196-NEC HP LOOP-ANTERO-Survey\PLANS\ESCP DETAIL SHEETS.dwg
USER: robert.j.lucsko
PLOT DATE/TIME: 5/21/2017 7:17 AM

THRASHER

IFP
ISSUED FOR PERMITTING

DATE: 04/26/2017
AFE # A05924

NO.	DESCRIPTION	QTY

NO.	DESCRIPTION	QTY

NO.	DESCRIPTION	DATE	BY
1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	04/26/17	R.J.
2	REVISED PER COMMENTS FROM ANTERO & NATIONAL RIGHT-OF-WAY	05/18/17	J.D.J.

GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

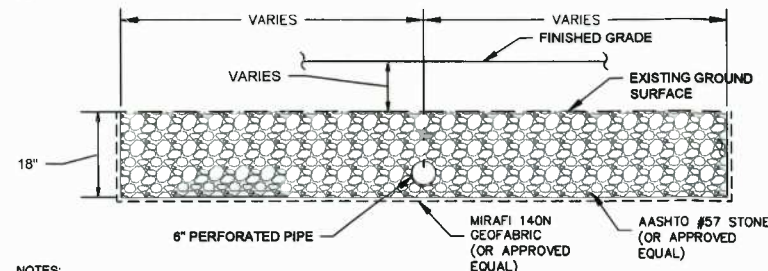
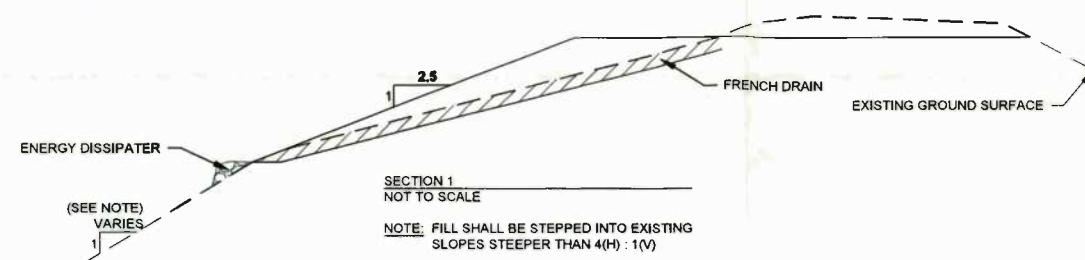
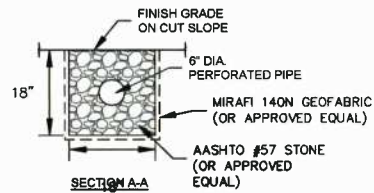
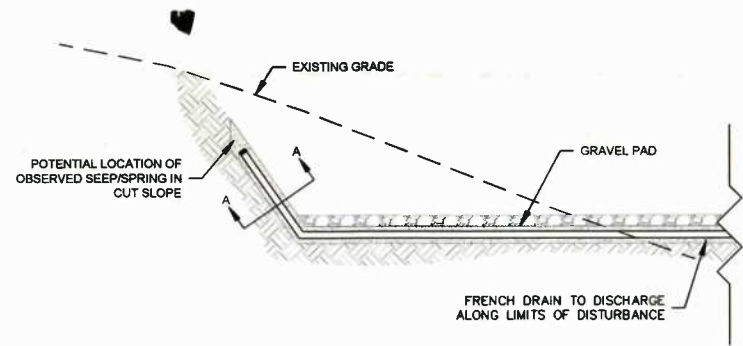
Antero
MidstreamPartners LP

**CRYSTAL LAKE PIPELINE
ESCP DETAILS**

PROPOSED 24" HIGH PRESSURE STEEL GAS LINE & 24" HDPE WATER LINE
DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/21/2017
SCALE: AS SHOWN
DRAWN BY: R.A. (RJA)
CHECKED BY: A.R. (ARJ)

SHEET 46
SHT. NAME: 050-6196\CRYSTAL\ESCP9
REV. 2



NOTES:

- WHERE SPRINGS OR SEEPS ARE ENCOUNTERED DURING CONSTRUCTION, DRAINABLE FILL AND PERFORATED PIPES (FRENCH DRAINS) SHOULD BE INSTALLED TO PROVIDE A DRAINAGE PATH FOR SEEPAGE FROM THE EXISTING SLOPE.
- THE FRENCH DRAIN SHOULD CONSIST OF A 6 INCH DIAMETER PERFORATED PIPE SURROUNDED BY DRAINABLE FILL, INSTALLED IN AN 18 INCH DEEP TRENCH ALONG THE EXISTING DRAINAGE FEATURE OR SEEP. PRIOR TO DRAINABLE FILL PLACEMENT, THE TRENCH SHOULD BE LINED WITH A LAYER OF GEOFABRIC SUCH AS MIRAFI 140N, OR APPROVED EQUAL, WITH SUFFICIENT OVERLAP TO PROVIDE AN ENVELOPE AROUND THE PIPE TRENCH TO PREVENT THE MIGRATION OF FINES INTO THE FRENCH DRAIN.
- THE FRENCH DRAIN SHOULD DAYLIGHT BEYOND THE TOE OR SIDE OF THE SLOPE AND EXTEND UP TO THE CREST OF THE SLOPE TO FACILITATE DRAINAGE THROUGH THE FILL SECTION. THE AS-BUILT WIDTH OF THE FRENCH DRAIN SHOULD BE A FUNCTION OF THE WIDTH OF THE SPRING, SEEP OR DRAINAGE FEATURE OBSERVED DURING CONSTRUCTION.
- THE FRENCH DRAIN SHOULD BE CONSTRUCTED TO SPAN THE ENTIRE WIDTH OF THE OBSERVED SPRING OR SEEP.

40 FRENCH DRAIN AT OBSERVED SEEP/SPRING IN CUT SLOPES
NTS

41 FRENCH DRAIN AND DRAINABLE FILL SECTION AT OBSERVED SEEP/SPRING OR EXISTING DRAINAGE FEATURE LOCATION
NTS



Maximum Rainfall of $\leq 20"$	6:1	5:1	4:1	3:1	2:1	1.5:1	1:1
Soil Stabilizer (gals/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

SLOPE	$\leq 5:1$	4:1	3:1
Soil Stabilizer (gals/acre)	6	8	10
Fiber (lb/acre)	2,000	2,500	3,000

NOTES:

A BONDED FIBER MATRIX (BFM) IS AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. BFM_s MAKE USE OF A CROSS-LINKED HYDROCOLLOID TACKIFIER TO BOND THERMALLY PROCESSED WOOD FIBERS. APPLICATION RATES VARY ACCORDING TO SITE CONDITIONS. FOR SLOPES UP TO 3H:1V 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.

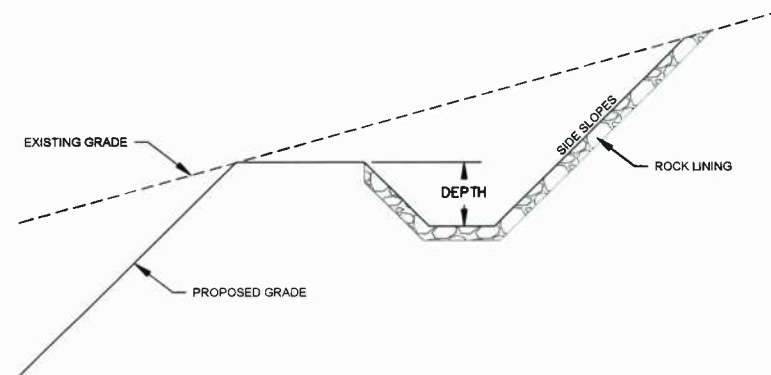
A POLYMER STABILIZED FIBER MATRIX (PSFM) CAN ALSO BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. PSFM_s MAKE USE OF A LINEAR SOIL STABILIZING TACKIFIER THAT WORKS DIRECTLY ON SOIL TO MAINTAIN SOIL STRUCTURE, MAINTAIN PORE SPACE CAPACITY AND FLOCCULATE DISLODGED SEDIMENT THAT WILL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

NOTES:

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

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

42 BONDED FIBER MATRIX (HYDROMULCH)
NTS



NOTE:
DRAINAGE CHANNEL DIMENSIONS AND LINING WILL BE DETERMINED BY ENGINEER AS APPLICABLE.

43 TYPICAL ROCK LINED CHANNEL
NTS

THRASHER

IFP

ISSUED FOR PERMITTING

DATE: 04/26/2017

AFE # A05924

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY

GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (22" X 34"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

Antero
Midstream Partners LP

CRYSTAL LAKE PIPELINE
ESCP DETAILS

PROPOSED 24" HIGH PRESSURE STEEL
GAS LINE & 24" HDPE WATER LINE
DODDRIIDGE COUNTY, WEST VIRGINIA

DATE:	04/26/2017	AFE No.:	A05924
DRAWN BY:	AR (TTO)	CHECKED:	AR (TTO)
SHEET 47		SHT. NAME: 050-6196\CRYSTAL\ESCP10	
REV. 2			



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701-2070

October 13, 2017

Regulatory Division
Energy Resource Branch
LRH-2017-00585-OHR-Long Run

NATIONWIDE PERMIT NO. 12 VERIFICATION

Corrin MacLuckie
Antero Midstream LLC
1615 Wynkoop Street
Denver, Colorado 80202

Dear Ms. MacLuckie:

I refer to the Pre-Construction Notification (PCN) received in this office on June 29, 2017, and additional information received August 7, 2017, concerning the Crystal Lake Pipeline project. The proposed project is located in the Long Run watershed approximately 7.8 miles northeast of Pennsboro in Doddridge County, West Virginia. Long Run is an indirect tributary to the Ohio River, a traditional navigable water of the United States. Your PCN has been assigned the following file number: LRH-2017-00585-OHR-Long Run. Please reference this number on all future correspondence related to this project.

The United States Army Corps of Engineers' (Corps) authority to regulate waters of the United States is based on the definitions and limits of jurisdiction contained in 33 CFR 328 and 33 CFR 329. Section 404 of the Clean Water Act (Section 404) requires a Department of the Army (DA) permit be obtained prior to discharging dredged or fill material into waters of the United States, including wetlands. Section 10 of the Rivers and Harbors Act of 1899 (Section 10) requires a DA permit be obtained for any work in, on, over or under a navigable water.

The proposed project, as described in the submitted information, has been reviewed in accordance with Section 404 and Section 10. Based on your description of the proposed work, and other information available to us, it has been determined that this project will not involve activities subject to the requirements of Section 10. However, this project will include the discharge of dredged or fill material into waters of the United States subject to the requirements of Section 404.

In the submitted PCN materials received in this office on June 29, 2017, and additional information received August 7, 2017, you have requested a DA authorization for the discharge dredged and/or fill material into approximately 4667.9 linear feet of forty (40) streams and 0.071 acre of two (2) wetlands, as listed on the enclosed Table 1, at 51 separate and distant locations, in association with the Crystal Lake Pipeline project. We have determined these proposed discharges of dredged and/or fill material into waters of the United States associated with the 51

single and complete projects meet the criteria for Nationwide Permit Number (NWP) No. 12 under the January 6, 2017, Federal Register, Issuance of NWPs (82 FR 1860) provided you comply with all terms and conditions of the enclosed material, the enclosed special conditions, and the 401 Water Quality Certification (401 WQC) issued by the West Virginia Department of Environmental Protection. Please be aware this NWP verification does not obviate the requirement to obtain any local, state or federal assent required by law for the activities.

This verification is valid until the expiration date of the NWPs, unless the NWP authorization is modified, suspended, or revoked. The verification will remain valid if the NWP authorization is reissued without modification or the activity complies with any subsequent modification of the NWP authorization. All of the existing NWPs are scheduled to be modified, reissued, or revoked on March 18, 2022. Prior to this date, it is not necessary to contact this office for re-verification of your project unless the plans for the proposed activity are modified. Furthermore, if you commence or under contract to commence this activity before March 18, 2022, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

Enclosed is a copy of the NWPs and the 401 WQC to be kept at the project site during construction. You shall supply a copy of these documents to your project engineer responsible for construction activities.

Upon completion of the work, the enclosed certification must be signed and returned to this office. If you have any questions concerning the above, please contact Rachel Klug of the Energy Resource Branch at 304-399-5858, by mail at the above address, or by email at: rachel.a.klug@usace.army.mil.

Sincerely,

SPAGNA.T
ERESA.D.1
229740519

Digitally signed by
SPAGNA.TERESA.D.122974051
9
DN: c=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USA,
cn=SPAGNA.TERESA.D.122974
0519
Date: 2017.10.13 08:41:51
-0400

Teresa D. Spagna
Chief, North Branch

Enclosures

**SPECIAL CONDITIONS FOR THE
NATIONWIDE PERMIT NO. 12 VERIFICATION FOR
Crystal Lake Pipeline Project
LRH-2017-00585-OHR-Long Run**

1 of 2

1. Enclosed is a copy of Nationwide Permit 12, which will be kept at the site during construction. A copy of the nationwide permit verification, special conditions, and the enclosed construction plans must be kept at the site during construction. The permittee will supply a copy of these documents to their project engineer responsible for construction activities.
2. Upon completion of the activity authorized by this nationwide permit verification, the enclosed certification must be signed and returned to this office along with as-built drawings showing the location and configuration, as well as all pertinent dimensions and elevations of the activity authorized under this nationwide permit verification.
3. Construction activities will be performed during low flow conditions to the greatest extent practicable. Additionally, appropriate site specific best management practices for sediment and erosion control will be fully implemented during construction activities at the site.
4. No area for which grading has been completed will be unseeded or unmulched for longer than 14 days. All disturbed areas will be seeded and/or revegetated with native species and approved seed mixes (where practicable) after completion of construction activities for stabilization and to help preclude the establishment of non-native invasive species
5. Should new information regarding the scope and/or impacts of the project become available that was not submitted to this office during our review of the proposal, the permittee must submit written information concerning proposed modification(s) to this office for review and evaluation, as soon as practicable.
6. In the event any previously unknown historic or archaeological sites or human remains are uncovered while accomplishing the activity authorized by this nationwide permit authorization, the permittee must cease all work in waters of the United States immediately and contact local, state and county law enforcement offices (only contact law enforcement on findings of human remains), the Corps at 304-399-5210 and West Virginia Historic Preservation Office at 304-558-0220. The Corps will initiate the Federal, state and tribal coordination required to comply with the National Historic Preservation Act and applicable state and local laws and regulations. Federally recognized tribes are afforded a government-to-government status as sovereign nations and consultation is required under Executive Order 13175 and 36 CFR Part 800.

**SPECIAL CONDITIONS FOR THE
NATIONWIDE PERMIT NO. 12 VERIFICATION FOR
Crystal Lake Pipeline Project
LRH-2017-00585-OHR-Long Run**

2 of 2

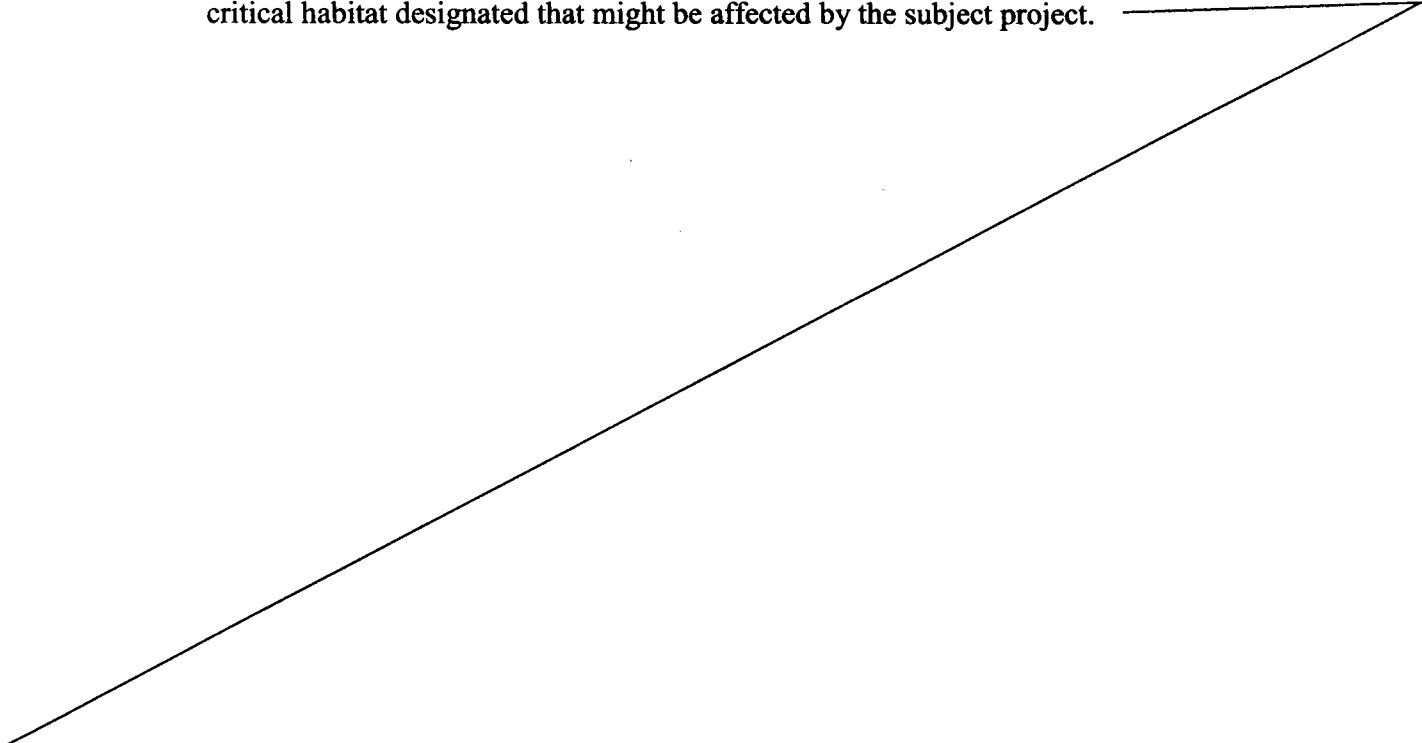
7. Based upon the results of the summer mist net survey titled "Strickling, Crystal Lake, and Potential Projects 1, 2, & 3 Pipeline Right-of-Ways Mist Netting Survey Report for the Indiana and Northern Long-Eared Bat, Doddridge County, West Virginia" and dated August 2017, no federally-listed endangered Indiana bats (*Myotis sodalis*) were detected, demonstrating probable absence of the Indiana bats in the project area. Thirty-eight (38) northern long-eared bats (*Myotis septentrionalis*) were captured and three (3) females were tracked during the bat mist net survey. Only one secondary roost tree will be removed as a result of the project; the tree would be cleared outside of the pup season (June 1- July 31). The 4(d) rule for the northern long-eared bat applies (<http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>). Tree clearing on the project site at any time of the year is unlikely to result in adverse impacts to the Indiana bats and will not result in any unauthorized incidental take of the northern long-eared bats. The survey will expire on May 15, 2022. If a significant amendment is proposed to change or expand this project, or if timber will be removed after that date, a new survey may be necessary and the United States Fish and Wildlife Service must be contacted. The United States Fish and Wildlife Service may be contacted by mail at 694 Beverly Pike, Elkins, West Virginia or by phone at (304) 636-6586.
 8. Section 7 obligations under Endangered Species Act must be reconsidered if new information reveals impacts of the project that may affect federally listed species or critical habitat in a manner not previously considered, the proposed project is subsequently modified to include activities which were not considered during Section 7 consultation with the United States Fish and Wildlife Service, or new species are listed or critical habitat designated that might be affected by the subject project.
- 

Table 1.
Impacts to Aquatic Resources

Feature	Impact Length (lf)	Impact Area (ac)	Type of Impact	Nature of Disturbance
South Canton HP/LP Pipelines THR-S7 (EPH)	12.4	0.004	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S12 (EPH)	29.9	0.0014	Temporary	Pipeline crossing
South Canton HP/LP Pipelines Long Run (PER)	154	0.0778	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S15 (INT)	230.2	0.0227	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S16 (EPH)	156.6	0.0047	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S17 (EPH) Crossing 1	150	0.0010	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S18 (EPH) Crossing 1	104	0.0055	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S20 (EPH)	34.7	0.0010	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S21 (EPH)	53.2	0.0013	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S22 (EPH)	167.9	0.0077	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S24 (INT)	166.8	0.0119	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S25 (EPH)	107.9	0.0069	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S25 (INT)	49.2	0.0032	Temporary	Pipeline crossing

Feature	Impact Length (lf)	Impact Area (ac)	Type of Impact	Nature of Disturbance
South Canton HP/LP Pipelines THR-S28 (EPH)	173.6	0.0052	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S30 (EPH)	282.4	0.0143	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S32 (EPH) Crossing 1	12	0.0004	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S32 (EPH) Crossing 2	51.8	0.0018	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S31 (EPH)	175.3	0.0137	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S33 (EPH)	73.4	0.0057	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S34 (EPH) Crossing 1	186	0.0154	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S34 (EPH) Crossing 2	104.5	0.0086	Temporary	Pipeline crossing
South Canton HP/LP Pipelines Arnolds Creek (PER)	151.9	0.1674	Temporary	Pipeline crossing
KLF-STREAM12 (PER) Crossing 1	112.1	0.0515	Temporary	Pipeline crossing
Rock Run Extension Pipeline KLF-STREAM210 (EPH)	158.3	0.0145	Temporary	Pipeline crossing
KLF-STREAM209 (EPH)	10.1	0.0009	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S42 (EPH)	149.7	0.0189	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S47 (PER)	178.3	0.0205	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-S18 (EPH) Crossing 2	268	0.0142	Permanent	Culvert installation

Feature	Impact Length (lf)	Impact Area (ac)	Type of Impact	Nature of Disturbance
South Canton HP/LP Pipelines THR-S27 (EPH)	3	0.0001	Permanent	Culvert installation
South Canton HP/LP Pipelines THR-S29 (EPH)	139	0.0080	Permanent	Culvert installation
South Canton HP/LP Pipelines THR-S18 (EPH) Crossing 3	30	0.0016	Permanent	Culvert installation
South Canton HP/LP Pipelines THR-S193 (EPH)	14.8	0.0010	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S17 (EPH) Crossing 2	39.1	0.0003	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S194 (EPH)	35.3	0.0032	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S34 (EPH) Crossing 3	35	0.0027	Permanent	Culvert reparation
KLF-STREAM12 (PER) Crossing 2	45.7	0.0210	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S146 (EPH)	71	0.0057	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S145 (EPH)	10.5	0.0006	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S144 (EPH)	43.4	0.0020	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S141 (EPH)	11.7	0.0007	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S140 (EPH)	43.6	0.0050	Permanent	Culvert reparation
South Canton HP/LP Pipelines THR-S139 (EPH)	59.2	0.0034	Permanent	Culvert reparation
Yvonne to Middle STR-8 (EPH)	22.9	0.0011	Permanent	Culvert reparation

Feature	Impact Length (lf)	Impact Area (ac)	Type of Impact	Nature of Disturbance
Yvonne to Middle STR-2 (EPH)	40.9	0.0028	Permanent	Culvert reparation
Yvonne to Middle STR-3 (EPH)	41.1	0.0019	Permanent	Culvert reparation
Yvonne to Middle STR-4 (EPH)	37.5	0.0017	Permanent	Culvert reparation
South Canton HP/LP Pipelines Middle Island Creek (PER)	150	0.3357	Temporary	Contingency pipeline crossing
South Canton HP/LP Pipelines THR-S47 (PER)	150	0.0172	Temporary	Contingency pipeline crossing
South Canton HP/LP Pipelines THR-S47 (PER) Crossing 2	150	0.0172	Temporary	Contingency pipeline crossing
South Canton HP/LP Pipelines ASE-W1 (PEM)	N/A	0.026	Temporary	Pipeline crossing
South Canton HP/LP Pipelines THR-W1 (PEM)	N/A	0.045	Temporary	Pipeline crossing
Total	4667.9	1.006		



The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300

Randall Reid-Smith, Commissioner

Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562

EEO/AA Employer

July 17, 2017

RECEIVED
JUL 24 2017

Ms. Karen Reed
Project Manager
SWCA Environmental Consultants
200 Bursca Drive, Suite 207
Bridgeville, Pennsylvania 15017

RE: Crystal Lake Pipeline Project
FR#: 17-825-DO

Dear Ms. Reed:

We have reviewed the information that was submitted for the above referenced project to determine its effects to cultural resources. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

According to the submitted information, Antero Midstream, LLC proposes the construction of two pipelines to connect the existing Tamela Compressor Station and the Strickling Valve Site located in Doddridge County. The project will include the construction of 5.4 miles of a 24-inch-diameter high pressure steel natural gas pipeline and 4.7 miles of a 24-inch-diameter high density polyethylene water pipeline. The proposed project will utilize existing and proposed access roads. The project's limit-of-disturbance (LOD), encompassing 110.6-acres, includes the construction corridor ranging from 30-meters wide to 60-meters wide. The project's Area of Potential Effects (APE) is defined as the project's LOD. We understand that the proposed project will require a permit from the US Army Corps of Engineers.

Archaeological Resources:

We have reviewed the technical report titled, *Phase I Archaeological Investigation of the Proposed Crystal Lake Pipeline Project, Doddridge County, West Virginia*, prepared by SWCA Environmental Consultants for the above referenced project. According to the report, a systematic Phase I archaeological survey was conducted within the APE. Archaeological survey methodology included visual inspection, shovel probe excavations and hand-augered probes. The visual inspection of the APE identified one historic-period site. Site 46DO119 is an oil well dating between 1920 and 1950. The site contains the remains of a walking beam oil well, a metal storage tank, band and bull wheels made of metal and wood, the remains of a metal derrick, a metal well head, and a powerhouse. It is our understanding that site 46DO119 is located outside of the project's APE. Therefore, it was not evaluated for its eligibility to be included in the National Register of Historic Places. As a result, we concur with your determination that the proposed project will have no effect to archaeological historic properties. If the proposed project's boundaries are changed, please notify this office so we may provide further comment.

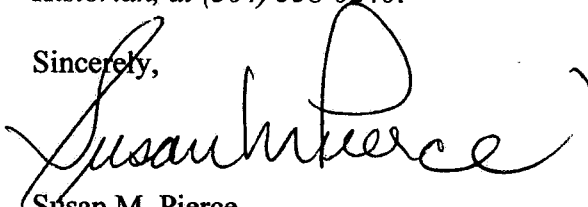
July 17, 2017
Ms. K. Reed
FR# 17-825-DO
Page 2

Architectural Resources:

We have reviewed the submitted information and appreciate that consideration was taken regarding the potential indirect effects to the viewshed, as well as possible direct effects. We concur with the consultant that the proposed project will affect no architectural properties eligible for or included in the National Register of Historic Places. The one structure identified within the potential viewshed is a vacant house in a deteriorated condition and lacks the integrity and significance necessary to be eligible for the National Register. However, we would like to note that the oil derrick and remains of the power house (46-DO-119), identified within the archaeological report, should have been documented and evaluated as an architectural resource as well. Although this resource appears to be within the viewshed of the proposed pipeline, the planned tree cut has no potential to adversely impact this resource because the included photographs show the trees to be removed are second growth and the area around the former oil derrick would have been clear cut while the oil producing facility was in operation. No further consultation is necessary regarding architectural resources; however, we ask that you contact our office if your project should change.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Katie M. Turner, Archaeologist, or Benjamin M. Riggle, Structural Historian, at (304) 558-0240.*

Sincerely,



Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/KMT/BMR