

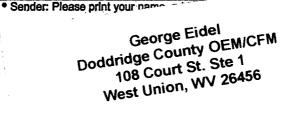
www.gor		
ENDER: COMPLETE THIS SEC 1997	HIS SECTION ON DEL	IVERY
Complete items 1,2, and 3	A. Signature	☐ Agent
Print your name and address on the reverse so that we can return the card to you.	B. Received by (Printed Name)	C. Date of Delivery
Attach this card to the back of the mailpiece, or on the front if space permits.		
	Is delivery address different from its if YES, enter deliver address below	m.12
Jason S. & Jennifer L. Powers	3 / 0.7 000	
3960 Salem Long Run Rd.	FEB 27 201	
Salem, WV 26426		
17-455	1000	
N M B 10 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	☐ Adult Signature ☐	Priority Mail Express® Registered Mail™
	☐ Certified Mail®	Registered Mail Restricted Delivery Return Receipt for
9590 9402 1000 0101 0000 01	☐ Collect on Delivery	Merchandise Signature Confirmation™
2. Article Number (Transfer from service label)	☐ Insured Mail	Signature Confirmation Restricted Delivery
	Insured Mail Restricted Delivery (over \$500)	
PS Form 3811, July 2015 PSN 7530-02-000-9053	Dor	nestic Return Receipt
The second secon		
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DE	LIVERY
Complete items 1, 2, and 3.	A. Signature	
■ Print your name and address on the reverse	X Culian & Ste	Agent Addresses
so that we can return the card to you.	B. Received by (Printed Name)	C. Date of Delivery
Attach this card to the back of the mailpiece, or on the front if space permits.	KICHARD FORMAN	
	D. Is delivery address different top; i	lem 12 Uyes low: 10 No
N Diama Stamm	/	. بينه
Nancy Dianne Stamm 104 George Street	(FEB 25	2017
Salam W/V 26426		منابع
		The state of the s
17-455	3. Service Type	Priority Mail Express®
8) B 9) B 10 10 10 10 10 10 10 10	☐ Adult Signature ☐ Adult Signature Restricted Delivery ☐	☐ Registered Mail ™ ☐ Registered Mail Restricts Delivery
9590 9402 1888 6104 9698 66	Im der mide liter i saka lattet a turt :	Return Receipt for Merchandise
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PS Form 3811, July 2015 PSN 7530-02-000-9053		omestic Return Receipt
PS Form COT 1, Daily 2010 1 Office CE Co.		
	COMPLETE THIS SECTION ON D	ELIVERY
SENDER: COMPLETE THIS SECTION		
Complete items 1, 2, and 3.	A. Signature X. Mary William	☐ Agent
Print your name and address on the reverse so that we can return the card to you.		C. Date of Delivery
Attach this card to the back of the mailpiece,	B. Received to (Printed Name) Mary Williams	C. Date of Delivery
or on the front if space permits.	D. Is delivery address different from	item 1? Yes
	If YES, enter delivery address b	elow: 🗆 No
Mary J. Williams	The state of the s	
4160 Salem Long Run Rd	/A / 7 201	
\$alem, WV 26426	MAR - 7 201	' <
17-455		(a)
ALE MINISTERNAL PROPERTY OF A PROPERTY OF A SECOND	3. Service Type □ Adult Signature	Priority Mail Express Registered Mail TM
\$1.6 \$161\$1 \$851 W. C.	☐ Adult Signature Restricted Delivery ☐ Certified Mail®	☐ Registered Mail Restrict Delivery ☐ Receipt for
9590 9402 1888 6104 9698 59	☐ Certified Mail Restricted Delivery	☐ Return Receipt for Merchandlee ☐ Signature Confirmation ¹
2. Article Number (Transfer from service label)	☐ Collect on Delivery Restricted Delivery ☐ Insured Mail ☐ Insured Mail Restricted Delivery	Signature Confirmation Signature Confirmation Restricted Delivery

COMPLETE THIS SECTION ON DELIVERY SENDER: COMPLETE THIS SECTION A. Signature ■ Complete items 1, 2, and 3. □ Agent Print your name and address on the reverse Addressee so that we can return the card to you. B. Received by (Printed Warne) C. Date of Delivery Attach this card to the back of the mailpiece. Cooper or on the front if space permits. address different from item 1? er delivery address below: WV Railroad Maintenance Authority PO Box 470 Moorefield, WV 26836 Service Type □ Priority Mail Express® ☐ Adult Signature ☐ Registered Mail™ □ Adult Signature Restricted Delivery □ Registered Mail Restricted □ Certified Mail® Delivery □ Return Receipt for 9590 9402 1888 6104 9698 28 □ Certified Mail Restricted Delivery Merchandise □ Collect on Delivery ☐ Signature Confirmation™ □ Collect on Delivery Restricted Delivery 2. Article Number (Transfer from service label) □ Signature Confirmation ☐ Insured Mail Restricted Delivery ☐ Insured Mail Restricted Delivery (over \$500) PS Form 3811, July 2015 PSN 7530-02-000-9053 **Domestic Return Receipt**





United States Postal Service



սկրիկայիկերիկիկերկունիրիներիներին

COMPLETE THIS SECTION ON DELIVERY SENDER: COMPLETE THIS SECTION Signatule Complete items 1, 2, and 3. ☐ Agent Print your name and address on the reverse Addressee so that we can return the card to you. Received by (Printed Name) C. Date of Delivery Attach this card to the back of the mailpiece, address different from item 12 er delivery address below: ᄓᄵ Mark Vincent & Mark Christopher Schumacher PO Box 1122 Bridgeport, WV 26330 17-455 3. Service Type □ Priority Mail Express® ☐ Adult Signature □ Registered Mail™ Adult Signature Restricted Delivery ☐ Registered Mail Restricted ☐ Certified Mail® Delivery 9590 9402 1888 6104 9698 73 □ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise Collect on Delivery ☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation™ 2. Article Number (Transfer from service label) ☐ Insured Mail □ Signature Confirmation Restricted Delivery ☐ Insured Mail Restricted Delivery (over \$500) PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt



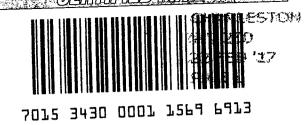


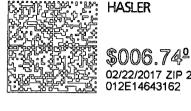
First-Class Mail Postage & Fees Paid USPS Permit No. G-10

George Eidel **Doddridge County OEM/CFM** 108 Court St. Ste 1 West Union, WV 26456

Postal Service

George Eidel
Doddridge County OEM/CFM
108 Court St. Ste 1
West Union, WV 26456





02/22/2017 ZIP 26456 012E14643162

Juanita Davis 4124 Salem Long Run Rd. Salem WV 26426

250 N7E 1 51510002/22/17 FORWARD TIME EXP RTN TO SEND DAVIS JUANITA R B BREEZY LN NEW CUMBERLND WV 26047-1888

SENDER: COMPLETE THIS SECTION

or on the front if space permits.

- 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,

Juanita Davis 4124 Salem Long Run Rd. Salem, WV 26426

17-455



9590 9402 1888 6104 9698 42 2. Article Number (Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY

A. Signature ☐ Agent ☐ Addressee

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

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

3. Service Type ☐ Adult Signature

☐ Collect on Delivery

☐ Insured Mail

(over \$500)

☐ Collect on Delivery Restricted Delivery

☐ Insured Mail Restricted Delivery

☐ Certified Mail® Certified Mail Restricted Delivery

□ Adult Signature Restricted Delivery

☐ Registered Mail™

☐ Registered Mail Restricted

□ Return Receipt for

Merchandise

□ Priority Mail Express®

□ Signature Confirmation™ ☐ Signature Confirmation

Restricted Delivery

Domestic Return Receipt

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

Doddridge County Office of Emergency Management/Floodplain Management 108 Court Street Suite 1 Tel 304-873-1343 doddridgecountyfpm@gmail.com



FEBRUARY 22, 2017

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,

Googe Claisse

George Eidel, CFM, OEM Director/Floodplain Manager



Doddridge County Floodplain Permits

(Week of March 6, 2017)

Please take notice that on the 17th day of February, 2017, Antero Midstream LLC filed an application for a Floodplain Permit #17-455 to develop land located at or about 39.276189N, 80.634111W to 39.279394N, 80.610814W. 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 March 26, 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 Bluestone Gathering Pipeline Reroute.



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: #17-455 Bluestone Gathering Pipeline Reroute

Date Approved: March 27, 2017 Expires: March 27, 2018

Issued to: Antero Midstream, LLC POC: Rachel Grzybek 304-842-4008

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

Project Address: South of US RT50 near Salem

Firm: 145C & 165C Lat/Long: 39.276189N, 80.634111W to

39.279394N, 80.610814W

Purpose of development: installation of HDPE gas line

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

Date: March 27,2017



Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	Mar-03-2017	106252	\$500.00
	·		10000	4000.0

INV # INV DATE DESCRIPTION AMOUNT DISCOUNTS NET AMOUNT MR030117 03/01/17 FLOODPLAIN PERMIT - BLUESTONE GATH 500.00 0.00 500.00

#17-455



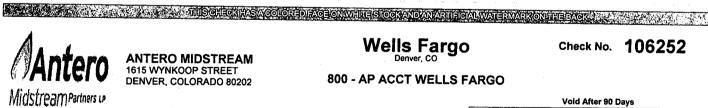
TOTAL INVOICES PAID

500.00

0.00

500.00

DETACH AND RETAIN FOR TAX PURPOSES



ANTERO MIDSTREAM 1615 WYNKOOP STREET **DENVER, COLORADO 80202**

Wells Fargo Denver, CO

Check No. 106252

800 - AP ACCT WELLS FARGO

EXACTIVE 500dols 00cts

Five Hundred Dollars and Zero Cents

Void After 90 Days

CHECK NUMBER DATE PAY EXACTLY 106252 Mar-03-2017 \$500.00

THE ORDER

DODDRIDGE COUNTY COMMISSION BETH A ROGERS, CLERK~118 EAST COURT STREET~ROOM 10 WEST UNION, WV 26456

FLOODPLAIN PERMIT #17-455

Antero/Bluestone Gathering PL Reroute

COMPLETE (DATE)	NOTES
x	500.00 ^{3/3} /17
X	
04-07-17	
04.07.47	
04-2/-1/	
	X X



Doddridge County Floodplain Permits

(Week of March 6, 2017)

Please take notice that on the 17th day of February, 2017, Antero Midstream LLC filed an application for a Floodplain Permit #17-455 to develop land located at or about 39.276189N, 80.634111W to 39.279394N, 80.610814W. 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 March 26, 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 Bluestone Gathering Pipeline Reroute.



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**

Culture and History

March 8, 2017

Mr. Seth Mitchell **Project Manager SWCA** Environmental Consultants 200 Bursca Drive, Suite 207 Bridgeville, Pennsylvania 15017

RE:

Bluestone Gathering Reroute Project - Antero Midstream, LLC

FR#:

17-352-DO

Dear Mr. Mitchell:

We have reviewed the above mentioned 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 to construct the Bluestone Gathering Reroute natural gas pipeline located west of Industrial, Doddridge County. The Bluestone Gathering Reroute pipeline will measure approximately 1.4 miles in length and will consist of a 3-inch-diameter, high-density polyethylene (HDPE) low-pressure (LP) line. The pipeline will tie into existing pipelines at the western and eastern termini and will be accessed via County Route 38. The excavation trench will measure approximately one-foot wide and 5.25-feet deep. No tree clearing or aboveground facilities will be required. The project's limit-of-disturbance, which equals the direct Area of Potential Effects, encompasses 4.2 acres. We understand that a permit from the US Army Corps of Engineers (USACE) will be required for this project.

Archaeological Resources:

As indicated in the submitted materials, our records indicate that no recorded archaeological sites are located within the project's APE. Furthermore, available and submitted information demonstrates that the APE has been previously disturbed, which makes it unlikely that significant archaeological resources would be encountered. We concur with the consultant's determination that the proposed project will have no effect on intact archaeological historic properties. No further consultation is necessary regarding archaeological resources. However, if intact cultural materials are encountered during proposed project activities, please cease all activity in the area of discovery and contact this office immediately.

Architectural Resources:

Submitted information indicates that this project consists of buried pipelines and that there will be no visible above ground or tree removal components to the project. It is our opinion that there are no architectural resources eligible for or included in the National Register of Historic Places that will be affected by the proposed project. No further consultation regarding architectural resources is necessary unless your project changes.

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 Ernest E. Blevins, Structural Historian, at (304) 558-0240.

Sincere

Deputy State Historic Preservation Officer

SMP/KMT/EEB

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

January 27, 2017

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

FEB21 17 1:29PM

Mr. Eidel:

Antero Midstream LLC would like to submit a Doddridge County Floodplain permit application for our *Bluestone Gathering Pipeline Reroute* project. Our project is located in Doddridge County beginning at coordinates 39.276189N, 80.634111W and continuing to coordinates 39.279394N, 80.610814W. Per the FIRM Maps #54017C0145C, and #54017C0165C this location is <u>in</u> 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

Floodplain Engineer

Antero Resources Corporation

Enclosures



February 8, 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.
Bluestone Gathering Reroute

No-Rise Certificate

Doddridge County, West Virginia

CEC Project 170-633

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 approximately 7,080 feet of 3" HDPE gas line. Proposed erosion and sediment control measures include orange safety fence, silt saver, trench breakers, permanent waterbars, stabilized construction entrances, and erosion control blankets. Portions of the proposed project are located within the Long Run Zone A/Zone AE flood hazard area, according to the Flood Insurance Rate Maps for Doddridge County, Map Panels 54017C0145C and 54017C0165C, both with a map revised date of October 4, 2011. Permanent waterbars will be placed in the floodplain; however, the material needed to construct the berm will be excavated from the up-gradient side of the berm. Therefore, a net loss of floodplain storage is not expected. All other disturbed areas will be returned to existing conditions at the conclusion of the work. 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 elevation of Long Run.

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 glinder@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,

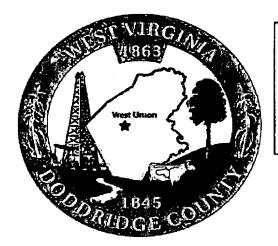
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Andrew P. Darnell, E.I.

Assistant Project Manager

Greg S. Linder, P.E.

Senior Project Manager



Permit# # 17-455	_
Project Name:	- .
Permittees Name:	_

FEB21 17 1:29PM

Doddridge County, WV

Floodplain Development Permit Application

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

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

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

APPLICANT'S SIGNATURE_	Brun I	Mon
DATE	2-14-17	

Applicant Information:

Please provide all pertinent data.

Applicant Information		
Responsible Company Name: Antero Midstream	n, LLC.	
Corporate Mailing Address: 1615 Wynkoop Str	eet	
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 DU	INS:
Corporate Website: www.anteroresources.com	i	
Local Mailing Address: 535 White Oaks Boulev	ard	
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@anterores	sources.com	

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 Bluestone Gathering Reroute project is located south of US Route 50, near Salem. The
project involves the installation of approximately 7,080 feet of 3" HDPE gas line. Proposed
erosion and sediment control measures include orange safety fence, silt saver, trench
breakers, permanent waterbars, stabilized construction entrances, and erosion control
blankets. Portions of the proposed project are located within the Long Run Zone A/Zone AE
flood hazard area according to the Flood Insurance Rate Maps for Doddridge County, Map Panels
54017C0145C and 54017C0165C, both with a map revised date of October 4, 2011.
Permanent waterbars will be placed in the floodplain; however, the material needed to construct
the berm will be excavated from the up-gradient side of the berm. Therefore, a net loss of
floodplain storage is not expected. All other disturbed areas will be returned to existing conditions
at the conclusion of the work. 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 elevation of Long Run.

Proposed Development:

Please check all elements of the proposed project that apply.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

	<u>AC</u>	TIVITY				STRUCTUE	RAL TYPE
[]	New Struct	ure			[]	Residential ((1 – 4 Family)
[]	Addition				[]	Residential	(more than 4 Family)
[]	Alteration				[]	Non-resider	itial (floodproofing)
[]	Relocation				[]	Combined L	Ise (res. & com.)
[]	Demolition	1			[]	Replacemen	nt
[]	Manufactu	ired/Mo	bil Home				
В.	OTHER DE	VELOPI	MENT ACT	IVITIES:			
[]	Fill	[]	Mining	[]	Drillin	g [X]	Pipelining
[]	Grading						
[]	Excavation	(except	for STRUCTUF	RAL DEVE	LOPMEN	IT checked ab	ove)
[]	Watercour	se Altera	ition (includin	g dredgir	ng and ch	nannel modific	cation)
[]	Drainage Ir	nproven	nents (includir	ng culver	t work)		
[]	Road, Stree	et, or Bri	dge Construct	ion			
[]	Subdivision	ı (includi	ng new expar	ision)			
[]	Individual \	Water or	Sewer Syster	n			
[]	Other (plea	ase speci	fy)				

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:	<u> of</u>			
		4		
Site/Property Information	:	<u> </u>		
Legal Description: 41.94 A	C Grant District			
Physical Address/911 Add	ress: Off C.R. 38			
Decimal Latitude/Longitud	ie: 39.278483° N, 80	0.612475° W		
DMS Latitude/Longitude:	39° 16′ 42.54″ N, 80°	36′ 44.91″ W		
District: 3 - Grant	Map: 21		Parcel:	34
Land Book Description:			1	
Deed Book Reference: Boo	ok 216, Page 166			
Tax Map Reference: 09-03	-0021-0034-0000			
Existing Buildings/Use of F	roperty: The North	Bend Rail Trail i	s located	on this property.
Physical Lands Date	(1-1			4
Floodplain Location Data:	T	T	er or aes	
Community:	Number:	Panel:		Suffix:
Location (Lat/Long):		Approximate l	Elevation	:
		Estimated BFF	ī.	
Is the development in the f		T T		the floodplain?
$\square_{\mathrm{Yes}} \square_{\mathrm{No}}$	<u>-</u> -	\Box_{Yes}	\square_{No}	Zone:
Notes:		1 23		
l				

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:	<u>. 01 _ Z </u>			
Site/Property Information	:	-		• • • • • • • • • • • • • • • • • • • •
Legal Description: 26.24 A	C Grant District			
Physical Address/911 Add	ress: Off C.R. 38			
Decimal Latitude/Longitud	le: 39.276150° N, 80	.633583° W		
DMS Latitude/Longitude:	39° 16′ 34.14″ N, 80°	38′ 00.90″ W		
District: 3 - Grant	Мар: 20		Parcel:	60
Land Book Description:				
Deed Book Reference: Boo	ok 216, Page 166			
Tax Map Reference: 09-03	-0020-0060-0000			
Existing Buildings/Use of F	roperty: The North	Bend Rail Trail is	s located	on this property.
Floodplain Location Data:	(to be completed by I	iloodniain Manaa	or or doc	ianee)
	Number:	Panel:	ei oi ues	<u> </u>
Community:	Number:	Panei:		Suffix:
Location (Lat/Long):		Approximate I	Elevation	:
		Estimated BFE	:	
Is the development in the f	loodway?	Is the develop		he floodplain?
□ _{Yes} □ _{No}		\square_{Yes}	\Box_{No}	Zone:
Notes:				

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>1 and 2</u> of	2		
Property Owner Data:			
Name of Primary Owner (PO): WV Railr	road Maintenance Aut	hority	
PO Address: P.O. Box 470			
City: Moorefield	State: WV	Zip: 26836	
PO Primary Phone:			
PO Secondary Phone:			
PO Primary Email: 7015 343	0 0001 1569 6°	737	
Surface Rights Owner Data:			
Name of Primary Owner (PO):			
PO Address:			
City:	State:	Zip:	
PO Primary Phone:	<u> </u>		
PO Secondary Phone:			
PO Primary Email:			_
Mineral Rights Owner Data: (As Applica	ble)		
Name of Primary Owner (PO):			
PO Address:	., .		
City:	State:	Zip:	
PO Primary Phone:		*	
PO Secondary Phone:			•
PO Primary Email:			<u> </u>

Contractor Data:

Property Designation:

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.

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:	1		
Local C/SC POC Phone:			
		· · · · · · · · · · · · · · · · · · ·	
Local C/SC POC E-Mail:			
Local C/SC POC E-Mail: Engineer Firm Information:			
Engineer Firm Information:			
Engineer Firm Information: Engineer Firm Name:	Engineer F	· · · · · · · · · · · · · · · · · · ·	
Engineer Firm Information: Engineer Firm Name: Engineer WV License Number:	<u>_</u>	· · · · · · · · · · · · · · · · · · ·	
Engineer Firm Information: Engineer Firm Name: Engineer WV License Number: Engineer Firm FEIN:	<u>_</u>	· · · · · · · · · · · · · · · · · · ·	
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Engineer Firm Information: Engineer Firm Name: Engineer WV License Number: Engineer Firm FEIN: Engineer Firm Primary Point of Co	<u>_</u>	· · · · · · · · · · · · · · · · · · ·	
Engineer Firm Information: Engineer Firm Name: Engineer WV License Number: Engineer Firm FEIN: Engineer Firm Primary Point of Co Engineer Firm Primary POC Title: Engineer Firm Mailing Address:	ontact (POC):	irm DUNS:	
Engineer Firm Information: Engineer Firm Name: Engineer WV License Number: Engineer Firm FEIN: Engineer Firm Primary Point of Co Engineer Firm Primary POC Title: Engineer Firm Mailing Address: City:	ontact (POC): State:	irm DUNS:	

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.

hysical Address: 104 George Street				
City: Salem	State: WV	Zip: 26426		
PO Primary Phone:				
PO Secondary Phone:				
PO Primary Email: 7015 343	0 0001 12Pd Pa]44 		
Adjacent Property Owner Data: Upstream Name of Primary Owner (PO):				
Physical Address:				
·	Ch-h-	7:		
City:	State:	Zip:		
PO Primary Phone:				
PO Secondary Phone:				
PO Primary Email:				
djacent Property Owner Data: Downstream				
Name of Primary Owner (PO): Mark Vincent and Mark Christopher Schumacher				
Physical Address: Rt. 3 Box 233 H	0 Box 1122			
City: Bridgeport	State: WV	Zip: 26330		
PO Primary Phone:	-			
PO Secondary Phone:				
PO Primary Email: 7015 3430 0001 1569 6951				
Adjacent Property Owner Data: Downs	tream			
Name of Primary Owner (PO): Mary J. Williams				
Physical Address: 4160 Salem Long Run Rd				
···	State: WV	Zip: 26426		
City: Salem	552255 11 1			
	33200			
City: Salem PO Primary Phone: PO Secondary Phone:				

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):					
<u> </u>	Physical Address:					
(City:	State:	Zip:			
F	PO Primary Phone:					
F	PO Secondary Phone:					
F	PO Primary Email:					
_	Adjacent Property Owner Data: Upstream					
_	Name of Primary Owner (PO):					
F	Physical Address:					
(City:	State:	Zip:			
F	PO Primary Phone:					
F	PO Secondary Phone:					
F	PO Primary Email:					
_						
	Adjacent Property Owner Data: Downstream					
1	Name of Primary Owner (PO): Juanita Davis					
F	Physical Address: 4124 Salem Long Run Rd	l Address: 4124 Salem Long Run Rd				
(City: Salem	State: WV	Zip: 26426			
PO Primary Phone:						
F	PO Secondary Phone:					
		nns 1669 (.91.7			
	PO Primary Email: 7015 3430 01	ו מכת יוחר	· · · · · ·			
	PO Primary Email: 7015 3430 0		- 1			
F	Adjacent Property Owner Data: Downstream					
F						
F	Adjacent Property Owner Data: Downstream					
F N F	Adjacent Property Owner Data: Downstream Name of Primary Owner (PO): Jason S. and Je					
F N	Adjacent Property Owner Data: Downstream Name of Primary Owner (PO): Jason S. and Je Physical Address: 3960 Salem Long Run Rd	ennifer L. Power	rs (SURV)			
F C	Adjacent Property Owner Data: Downstream Name of Primary Owner (PO): Jason S. and Je Physical Address: 3960 Salem Long Run Rd City: Salem	ennifer L. Power	rs (SURV)			

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

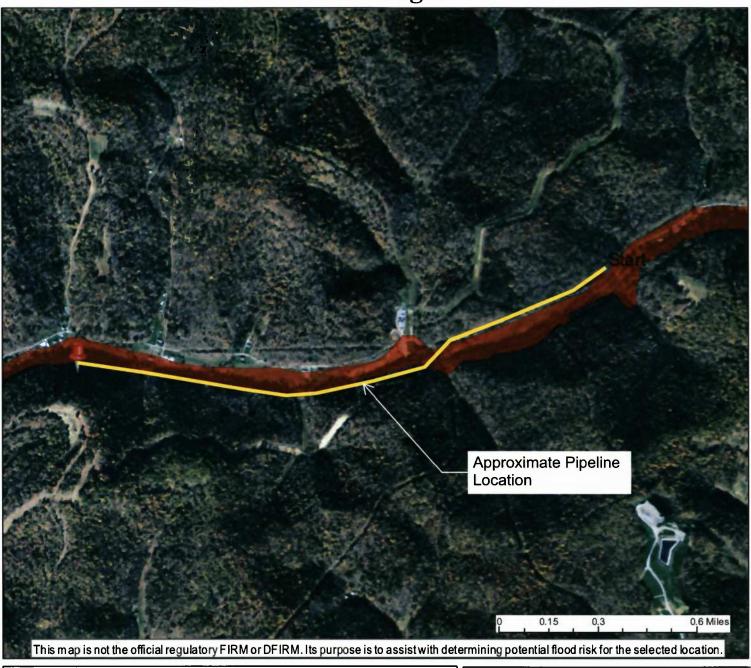
Please read print name, sign and date below:

- 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 of 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 befinal.
- 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: 6

Applicant Printed Name: Krian (Zuarnera)

Bluestone Gathering Reroute



User Notes:



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 February 8, 2017

Flood Hazard Area:

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

FEMA Issued Flood Map: 54017C0165C

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

Elevation: About 945 ft

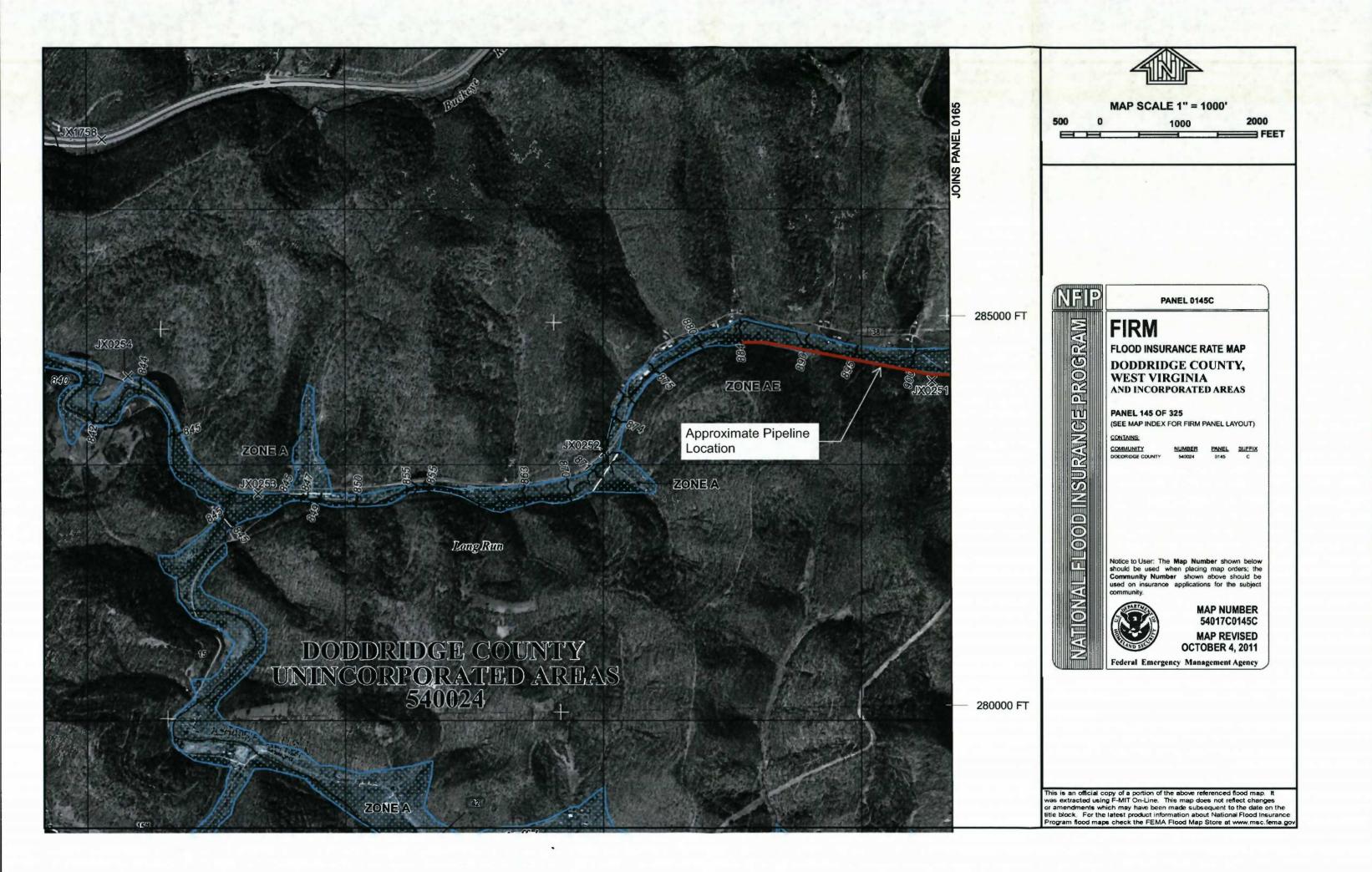
Location (long, lat): (80.618190 W,39.276302 N)

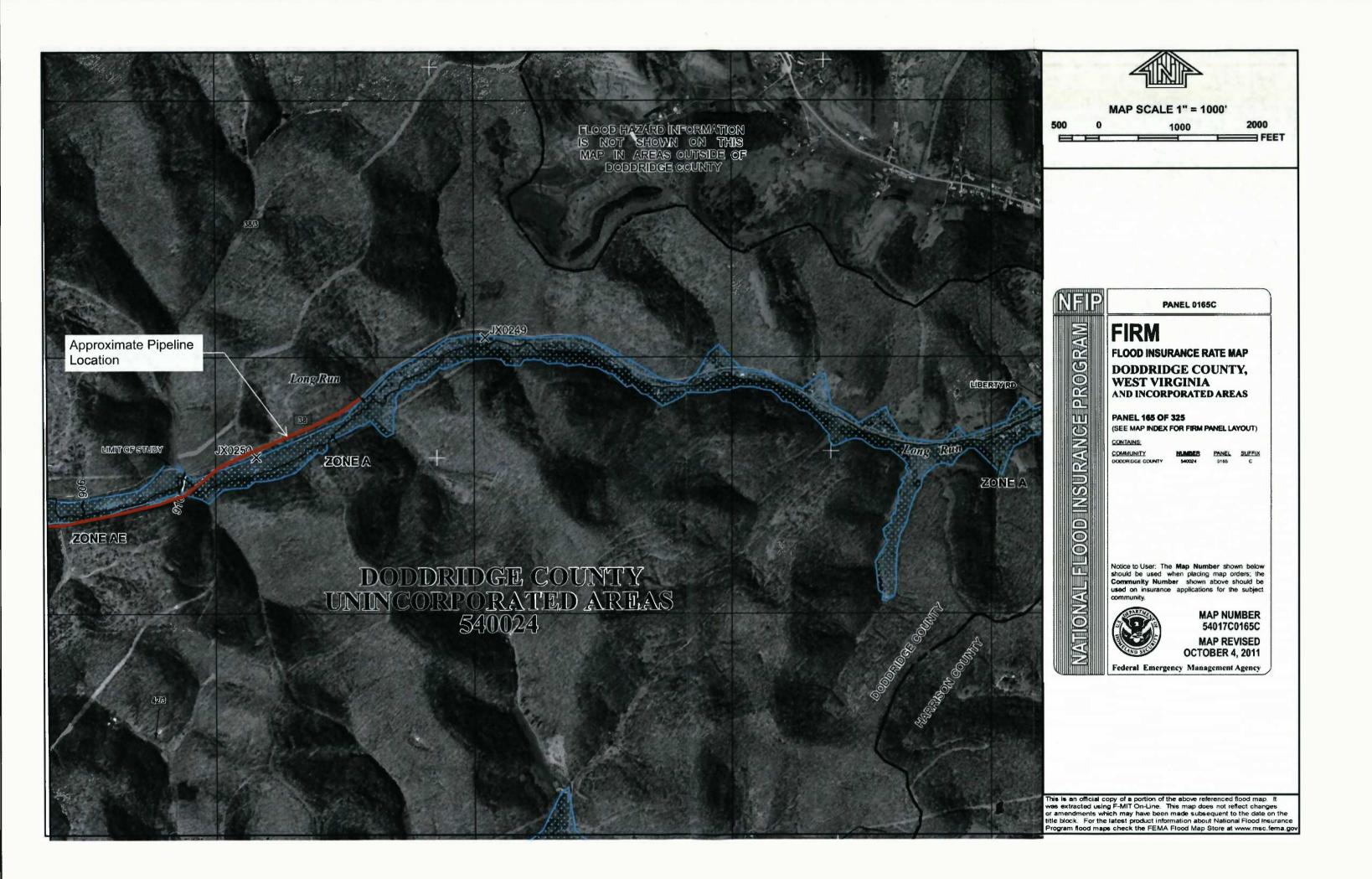
Location (UTM 17N): (532933, 4347507)

Contacts: Doddridge

CRS Information: N/A

Parcel Number:





ANTERO MIDSTREAM LLC ISSUED FOR PERMITTING PLANS FOR THE **BLUESTONE GATHERING REROUTE 3" HDPE GAS LINE AFE #A04635** 101-050-6138 **DODDRIDGE COUNTY, WEST VIRGINIA FEBRUARY 2017**

AERIAL MAP



VICINITY MAP FULL SCALE: 1"=2,000 HALF SCALE: 1"=4,000

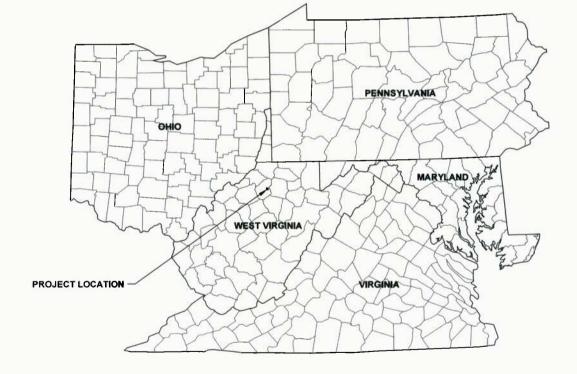
EXISTING INFORMATION SOURCES

BASE CONTOUR DATA PROVIDED BY BLUE MOUNTAIN, INC. AT TWO FOOT CONTOUR INTERVALS.

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

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

WARNING: INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING

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

ENGINEER OF RECORD

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



MATTHEW W. FLUHARTY, WV P.E. # 16375



ISSUED FOR PERMITS

DATE: 1/4/7 BY:

ISSUED FOR CONSTRUCTION

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.
- 4 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
- 5. 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
- 10. 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
- 11. MAGNETIC MARKING TAPE SHALL BE INSTALLED AT A DEPTH OF 12" TO 18" BELOW THE SURFACE AND DIRECTLY ABOVE ALL LINES OR PIPE.
- 12. 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.
- 13 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.
- 14. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN SEVEN DAYS OF COMPLETION OF BACK FILL OPERATION.
- 15. 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.
- 16. THE W.V.D.O.H. RESERVES THE RIGHT TO RELOCATE WATERLINES, FIRE HYDRANTS, AND VALVES AS DEEMED NECESSARY.
- 17. 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.
- 18. 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.
- 19. 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.
- 20. ALL ELEVATION GRADES AND DISTANCES SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE PRIOR TO CONSTRUCTION.
- 21. ALL CONSTRUCTION SHALL MAINTAIN 5' FROM EDGE OF PAVEMENT OR BOTTOM OF DITCH UNLESS NO OTHER PRACTICAL MEANS OF CONSTRUCTION EXISTS.
- 22. PERFORM ACCEPTABLE REPAIR OF ANY AND ALL SUB-BASE FAILURES THAT ARE CAUSED BY THE CONTRACTOR'S OPERATION ON A DAILY BASIS.
- 23. PERFORM TOTAL REPAIR AND/OR REPLACEMENT OF ANY DAMAGED ASPHALT SURFACE AS DETERMINED BY THE W.V.D.O.H REPRESENTATIVE.
- 24. 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 25. REMOVE DITCH-LINE OBSTACLES AND /OR RECONSTRUCTION OF THE DITCH-LINE.
- 26. 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. 27. 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.
- 28. 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.
- 29. 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 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 MON POWER

1-800-686-0022

CABLE 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

STATE EMERGENCY SPILL

NOTIFICATION

EMERGENCY AMBULANCE, FIRE, LAW ENFORCEMENT

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	нтр	HYDROSTATIC TEST PROFILE SHEET
19-20	S&WC1-S&WC2	STREAM & WETLAND CROSSING SHEETS
21-30	ESCP1-ESCP10	ESCP DETAIL SHEETS

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 LITHLITY COMPANIES AS LISTED AND OR NOT LISTED ON THIS SHEET. CONTRACTOR TO LOCATE WATER AND UTILITY SERVICES BEFORE BORING AND
- 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 WYDOH ROAD CROSSINGS TO BE CONSTRUCTED USING AN OPEN CUT CROSSING METHOD UNLESS OTHERWISE SPECIFIED ON THE PLANS. WYDOH TO RE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY WORK WITHIN WYDOH 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

- 1. ALL EROSION AND SEDIMENT MEASURES TO BE IN ACCORDANCE WITH WEST VIRGINIA ONLINE BMP MANUAL FOR STANDARD GUIDELINES AND SPECIFICATIONS
- HTTPS: //APPS.DEP.WV.GOV/DWWM/STORMWATER/BMP/INDEX.HTML 2. 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 EROSIVE FORCES OF RAINDROPS, FLOWING WATER AND WIND.
- CLEARING AND GRUBBING IS TO OCCUR IN THE NOTED LIMITS OF DISTURBANCE
- 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.
- PROJECT CLOSE-OUT, PUNCH LIST, CLEAN UP, REPAIRS, FINAL SEEDING AND MULCHING, FTC...

LEGEND / ABBREVIATIONS

= EXISTING PIPELINE VENT = EXISTING WELL (AS NOTED)

= FXISTING GAS METER = EXISTING RECTIFIERS

= EXISTING PIPELINE MARKER = EXISTING GAS VALVE

= EXISTING MONUMENT FOUND (AS NOTED) = EXISTING UTILITY POLE

G --- EXISTING PIPELINE

____ x ___ = EXISTING FENCE

---- UGC---- = EXISTING UNDERGROUND UTILITY

= PROPERTY LINE

- DOH RIGHT-OF-WAY LINE = PROPOSED PERMANENT RIGHT-OF-WAY

= PROPOSED CONSTRUCTION RIGHT-OF-WAY

- = PROPOSED ANTERO CENTERLINE

---- = EXISTING GROUND PROFILE

- = PROPOSED PIPELINE PROFILE -- 1250--- = CONTOUR - - - = PROJECT AREA-OF-INTEREST

- x = PROPOSED ORANGE SAFETY FENCE == PROPOSED SILT SAVER BSRF-P1 ssz == PROPOSED SILT SAVER BSRF-P2

---- OFS ---- = PROPOSED COMPOST FILTER SOCK = PROPOSED PERMANENT WATER BAR (PLAN) - = DELINEATED STREAMS

= DELINEATED WETLANDS 0 = DELINEATED GROUNDWATER SEEP/SPRING

= USFWS PROTECTIVE AQUATIC BUFFER

ROLLED EROSION CONTROL PRODUCT

= PERMANENT RIGHT-OF-WAY = CONSTRUCTION RIGHT-OF-WAY

= ADDITIONAL TEMPORARY WORKSPACE

= STONE CONSTRUCTION ENTRANCE

= TEMPORARY TIMBERMAT CROSSING

= PROPOSED ACCESS ROAD M**⟨1**⟩P = PIPELINE MILE POST

= PROPOSED PERMANENT WATER BAR (PROFILE)

= PROPOSED EARTH TRENCH BREAKER (PROFILE = PROPOSED GAS LINE MARKER

= PROPOSED TEST STATION

= PROPOSED ANODE = PROPOSED RECTIFIER

= PROPOSED INSULATION KIT = PROPOSED AC COUPON

43-3-4-31.1 = PARCEL IDENTIFICATION *LEGEND IS TYPICAL. NOT ALL ITEMS IN LEGEND APPEAR IN DRAWING

PROPOSED CONSTRUCTION RIGHT-OF-WAY

CONSTRUCTION R/W LIMITS-OF-DISTURBANCE C.L. PROPOSED PIPELINE

CONSTRUCTION R/W

THRASHER



ISSUED FOR PERMITTING

01/06/2017 AFE # A04635

SUMMARY OF MATERIALS (3D) SUMMARY OF MATERIALS (3D) ① 3" HDPE SDR-7 3408 2,228 LF SS1 SILT SAVER BSRF-F SS2 SILT SAVER BSRF-P2 6.066 LF 2,428 LF TB EARTH TRENCH BREAKERS DESCRIPTION WB PERMANENT WATERBAR:
GM GAS UNE MARKERS
TS TEST STATIONS REVISION REVISED PER COMMENTS FROM KLEINFELDER, IN REVISED DUE TO PROJECT NAME CHANG

GENERAL INFORMATION

FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC. THIS SHEET IS INTENDED TO BE PLOTTED ON ARCH D (24° X 36"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

*©*Antero Midstream Partners u **BLUESTONE GATHERING REROUTE GENERAL NOTES**

PROPOSED 3" HDPE GAS LINE

DODDRIDGE COUNTY, WEST VIRGINIA SHEET 02

T. NAME: 050-6138\BGR\GNOTS

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2. COMPANY FOREIGN LINE AND UTILITY CROSSINGS

CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SUCH CROSSINGS AND NOTIFY THE OWNER PRIOR TO ANY DITCHING ACTIVITY IN THE VICINITY OF THE CROSSINGS. A MINIMUM CLEARANCE OF 12 in., OR AS REQUIRED BY THE OWNER/OPERATOR, SHALL BE MAINTAINED FROM THE FOREIGN CROSSING. THE CONTRACTOR SHALL MAKE ALL REQUIRED "ONE-CALL" NOTIFICATIONS AND KEEP DOCUMENTATION OF NOTIFICATIONS. THE CONTRACTOR SHALL KEEP THE MARKINGS REFRESHED AS NECESSARY DURING THE LENGTH OF THE CONSTRUCTION ACTIVITIES,
MAKING NECESSARY RE-NOTIFICATIONS AS REQUIRED, COMPANY WILL LOCATE AND MARK LOCATIONS OF KNOWN COMPANY-OWNED FACILITIES WITHIN EXISTING OPERATING LOCATIONS

IN AREAS WHERE UNDERGROUND FACILITIES, SUCH AS PIPELINES, ELECTRICAL LINES, FIBER OPTIC CABLES, ETC. EXISTING. EXCAVATION BY MACHINE SHALL BE LIMITED TO NO CLOSER THAN 2 FEET (IN ANY DIRECTION) TO THE FACILITY THE FACILITY SHALL THEN BE EXPOSED AND POSITIVELY LOCATED BY HAND EXCAVATION. AFTER THE FACILITY IS EXPOSED, AND ONLY WHILE A COMPANY REPRESENTATIVE IS ON-SITE, EXCAVATION BY MACHINE IS PERMITTED TO WITHIN 1 FOOT (IN ANY DIRECTION) OF THE FACILITY. THE REMAINING EXCAVATION MUST BE HAND

3. DITCH SPECIFICATIONS

DITCH WIDTH AND DEPTH - UNLESS OTHERWISE STATED ON THE DRAWINGS OR RIGHT-OF-WAY LINE LIST, THE DITCH SHALL BE A MINIMUM OF 12 in. WIDER THAN THE PIPE BEING LAID FOR PIPE DIAMETERS LESS THAN 12 in. AND A MINIMUM OF 18 in. WIDER FOR PIPE DIAMETERS 12 in. AND GREATER AND OF SUCH DEPTH THAT THE PIPE SHALL HAVE 36 in MINIMUM COVER IN SOIL AND 24 in IN CONSOLIDATED ROCK, MEASURED FROM THE TOP THE PIPE TO THE AVERAGE LEVEL OF THE ORIGINAL OR RESTORED GROUND ON THE TWO SIDES OF THE

CONSOLIDATED ROCK - CONSOLIDATED ROCK IS DEFINED AS ROCK LAYERS WHERE THE UPPERMOST SURFACE EXISTS AT A HIGHER ELEVATION THAN THE ELEVATION OF THE TOP OF THE PIPE. THIS CONDITION PROVIDES PROTECTION AGAINST DAMAGE FROM EXTERNAL FORCES AND JUSTIFIES COVER.

<u>DITCH GRADING</u> - THE BOTTOM OF THE DITCH SHALL BE CUT TO A UNIFORM GRADE SO THAT THE FULL WIDTH OF THE DITCH SHALL BE AVAILABLE FOR PROVIDING SLACK IN THE LINE WHEN LAID.

BEND EXCAVATIONS - AT OVER-BENDS AND SIDE-BENDS, THE CONTRACTOR SHALL EXCAVATE THE DITCH TO ALLOW PROPER CLEARANCE BETWEEN THE INSIDE BEND OF THE PIPE AND THE BOTTOM OR SIDE OF THE DITCH TO MAINTAIN THE MINIMUM COVER.

ROCK - IN ALL CASES WHERE ROCK, OR ANY BOULDER LARGER THAN TWO IN. IN DIAMETER IS ENCOUNTERED IN THE BOTTOM OF THE DITCH, THE DITCH SHALL BE EVENLY PADDED WITH SOIL, SAND OR OTHER PADDING MATERIAL IN ORDER TO PREVENT THE ROCK OR BOULDERS FROM COMING INTO CONTACT WITH THE PIPE

4. SPOIL BANK

THE SPOIL BANK FROM THE DITCHING OPERATIONS SHALL NOT BE PLACED ON ANY LOOSE DEBRIS OR FOREIGN MATTER WHICH MIGHT BECOME MIXED DURING PADDING AND BACKFILLING OPERATIONS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN GAPS OR OPENINGS IN THE SPOIL BANK ACROSS CULTIVATED FIELDS, SO THAT EXCESSIVE RAINS DO NOT CAUSE WATER TO BACK UP AND FLOOD CULTIVATED SECTIONS. EXTREME CARE SHALL BE EXERCISED TO KEEP ALL DRAIN DITCHES AND WATER COURSES OPEN AND USEFUL.

5. TEMPORARY BRIDGES

WHEN THE DITCH IS EXCAVATED THROUGH LANDS WHERE LIVESTOCK/WILDLIFE IS CONFINED OR THROUGH AGRICULTURAL FIELDS WHERE THE COMPANY DETERMINES IT IS DESIRABLE FOR THE LANDOWNER OR TENANT TO HAVE A PASSAGEWAY ACROSS THE DITCH, THE CONTRACTOR SHALL PLUG THE DITCH OR PROVIDE SAFE, TEMPORARY BRIDGES FOR CROSSING THE DITCH AND LEAVE AN OPENING IN THE SPOIL BANK.

6. EXCAVATING NEAR IN-SERVICE PIPELINES

WHEN DITCHING PARALLEL TO AN EXISTING PIPELINE IN THE SAME RIGHTS-OF-WAY, NEAR THE EXISTING LINE AND DEEPER THAN THE EXISTING LINE, CARE SHOULD BE TAKEN TO LEAVE SUFFICIENT DISTANCE AND SUPPORT TO ENSURE SAID LINE DOES NOT SLOUGH OFF INTO NEW EXCAVATION. IF PARALLEL LINE IS A COUPLED HIGH PRESSURE LINE, IT IS NOT PERMITTED TO EXPOSE MORE THAN ONE COUPLING AT A TIME. IN ALL INSTANCES, THE WORK SHOULD BE PLANNED SUCH THAT THE EXCAVATION IS OPEN A MINIMUM AMOUNT OF TIME.

7. HAULING AND STRINGING

THE CONTRACTOR SHALL HAUL AND STRING PIPE, CASING AND OTHER MATERIALS TO THE RIGHT-OF- WAY OR WORK AREA. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRUCKS AND EQUIPMENT FOR THE HAULING AND SPOTTING OF ALL MATERIALS. THE CONTRACTOR SHALL FURNISH SKIDS AND PLACE PIPE ON SKIDS ON THE RIGHT-OF-WAY IN A MANNER WHICH KEEPS BOTH ENDS FREE OF DIRT AND DEBRIS.

8. BENDING

FIELD BENDING - WHERE IT IS NECESSARY TO BEND PIPE, ONLY COLD BENDS SHALL BE EMPLOYED. THE BENDS SHALL BE FROM BUCKLING, FLATTENING, CRACKS OR OTHER EVIDENCE OF MECHANICAL DAMAGE AND ALL BENDS SHALL NOT HAVE A DIFFERENCE BETWEEN THE MAXIMUM AND MINIMUM DIAMETERS IN EXCESS OF 2.5 % OF THE NOMINAL DIAMETER. ALL BENDS SHALL MEET THE CRITERIA SET FORTH IN DOT PART 192.

GENERAL CONSTRUCTION SPECIFICATIONS

8. BENDING (CONT'D)

SLACK AND LONGITUDINAL WELDS — ALL OVER-BENDS, SAGS AND SIDE-BENDS SHALL BE MADE TO PROVIDE AN ADEQUATE AMOUNT OF SLACK IN THE PIPELINE. ON PIPE HAVING A LONGITUDINAL WELD, THE LONGITUDINAL WELD MUST BE LOCATED AS NEAR AS PRACTICABLE TO THE NEUTRAL AXIS OF THE BEND.

RENDING MACHINE - EACH REND SHALL BE MADE LISING A COMPANY APPROVED BENDING MACHINE HAVING A FULL CIRCLE BENDING SHOE WITH A NEOPRENE OR URETHANE LINING TO PRODUCE A SMOOTH, SYMMETRICAL BEND, UNLESS SPECIFIED OTHERWISE BY THE COMPANY. ON PIPE CONTAINING A LONGITUDINAL WELD, THE LONGITUDINAL SEAM MUST BE AS NEAR AS PRACTICAL TO NEUTRAL AXIS OF THE BEND UNLESS THE BEND IS MADE WITH AN INTERNAL BENDING MANDREL OR THE PIPE IS 12 in. OR LESS IN OUTSIDE DIAMETER OR HAS A DIAMETER-TO-WALL THICKNESS RATIO LESS THAN 70. IF THE PIPE IS INTERNALLY COATED, THE BEARING SURFACES OF THE MANDREL SHALL BE CONSTRUCTED TO AVOID PERMANENTLY MARKING OR DAMAGING THE INTERNAL COATING, NO APPRECIABLE STRETCHING OR THINNING OF THE PIPE WALL THICKNESS SHALL BE

BENDING LIMITATION - DEFLECTION SHALL BE LIMITED TO A MAXIMUM OF ONE AND ONE-HALF DEGREES PER PIPE DIAMETER MEASURED LONGITUDINALLY ALONG THE PIPE. A COMPANY ACCEPTED METHOD OF MEASUREMENT SHALL BE USED BY THE CONTRACTOR WHEN MARKING THE PIPE IN PREPARATION FOR MAKING FIELD BENDS. BENDING SHALL NOT BE ALLOWED IN A CIRCUMFERENTAL WELD AND NOT CLOSER THAN 6 ft. TO

9. SWABBING AND CLOSING OPEN ENDS

SWABBING — EACH PIPE JOINT SHALL BE SWABBED AS NECESSARY TO REMOVE ALL DIRT AND FOREIGN MATTER FROM THE INSIDE OF THE PIPE BEFORE THE JOINTS ARE ALIGNED AND WELDED. THE SWABBING OPERATION SHALL NOT BE CARRIED ON MORE THAN FOUR JOINTS AHEAD OF THE FIRING LINE WELDERS OR

CLOSING OF PIPE ENDS - WHERE THE LINE IS WELDED IN LONG SECTIONS BY THE FIRING LINE METHOD. THE ENDS OF THE LONG SECTIONS SHALL BE CLOSED AND KEPT CLOSED IN A MANNER APPROVED BY THE COMPANY UNTIL THE LONG SECTIONS ARE FINALLY JOINED. DURING THE LAYING OPERATIONS, CLOSE ATTENTION SHALL BE GIVEN TO OPEN ENDS TO ENSURE A COMPLETELY OPEN AND CLEAN LINE FREE OF ANY OBSTRUCTIONS. ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT WATER FROM ENTERING THE LINE

PREVENTION OF FOREIGN MATTER IN THE PIPELINE - THE OPEN END OF THE LINE SHALL BE SECURELY CLOSED AT THE END OF EACH DAY'S WORK TO PREVENT ENTRANCE OF SMALL ANIMALS OR THE INTRODUCTION OF FOREIGN MATTER OF ANY NATURE AND SHALL NOT BE REOPENED UNTIL WORK IS RESUMED. ANY OBSTRUCTIONS REMAINING IN THE LINE AFTER THE COMPLETION THEREOF SHALL BE REMOVED.

10. POSITING OF LONGITUDINAL SEAM

IN INSTANCES WHERE PIPE OTHER THAN SEAMLESS IS FURNISHED BY THE COMPANY. THE LONGITUDINAL SEAMS OF SUCH PIPE SHALL BE STAGGERED BY NOT MORE THAN 45'. LONGITUDINAL WELD SEAMS SHALL HAVE A MINIMUM FOUR-INCH CIRCUMFERENTIAL OFFSET BETWEEN ABUTTING JOINTS. UNLESS OTHERWISE SPECIFIED, THE LONGITUDINAL SEAMS ON ADJACENT PIPE SHALL BE STAGGERED, PLACING ONE APPROXIMATELY IN THE 10 O'CLOCK POSITION AND THE OTHER APPROXIMATELY IN THE 2 O'CLOCK POSITION.

11. LOWERING-IN PIPE

OVER-BENDS, SIDE-BENDS AND SAG-BENDS - ALL OVER-BENDS SHALL BE MADE AND INSTALLED TO CLEAR THE HIGH POINT OF THE BOTTOM OF THE DITCH BY AT LEAST 12 IN. AT THE POINT OF BEND. AT SIDE-BENDS, THE PIPE SHALL BE BENT AND LOWERED TO LAY AGAINST THE OUTSIDE WALL AT THE BOTTOM OF THE DITCH ALL SAG- BENDS SHALL CONTINUOUSLY LIE ON FIRM GROUND AT THE BOTTOM OF THE DITCH.

PIPE SLINGS AND CRADLES - THE CONTRACTOR SHALL PROVIDE PADDED SLINGS FOR HANDLING COATED AND WRAPPED PIPE. THE USE OF BELTING REINFORCED WITH WIRE CABLE SHALL NOT BE PERMITTED. ANY METHOD OF LOWERING-IN WHICH PREVENTS DAMAGE TO THE COATING SHALL BE ACCEPTABLE; HOWEVER, THE USE OF

CONDITION OF DITCH - PRIOR TO LOWERING-IN THE CONTRACTOR SHALL PROVIDE, TO THE SATISFACTION OF THE COMPANY, A DITCH WHICH IS FREE FROM EXCESS DEBRIS, LARGE ROCKS AND ROOTS, WELDING RODS, SKIDS OR OTHER SUCH OBJECTS WHICH CAN CAUSE DAMAGE TO THE PIPE AND ITS PROTECTIVE COATING DURING LOWERING-IN OPERATIONS. THE CONTRACTOR SHALL PUMP WATER FROM THE DITCH, BELL HOLES OR OTHER TIE-IN EXCAVATIONS PRIOR TO LOWERING-IN.

ROCK DITCH PADDING - IN ALL CASES WHERE ROCKS 2 in. AND LARGER ARE ENCOUNTERED IN THE BOTTOM OF THE DITCH AND NO ADDITIONAL PIPE COATING PROTECTION IS PROVIDED, THE CONTRACTOR SHALL PROVIDE PADDING MATERIAL PLACED EVENLY AND CONTINUOUSLY TO A MINIMUM DEPTH OF 8 in. ALONG THE BOTTOM OF THE DITCH AS APPROVED BY THE COMPANY.

SUPPORTS - THE CONTRACTOR SHALL CONSTRUCT THE PIPELINE TO LIE ON THE BOTTOM OF THE PIPE TRENCH. ALL BENDS SHALL BE MADE TO FIT THE PIPE DITCH. WHERE PIPE CANNOT BE DIRECTLY SUPPORTED BY THE BOTTOM OF THE TRENCH, SUPPORT SHALL BE PROVIDED BY SANDBAGS OR OTHER COMPANY APPROVED MATERIALS. SANDBAGS SHALL BE PLACED AT POINTS TO PROVIDE STRESS-FREE SUPPORT FOR THE PIPELINE SUBSEQUENT TO BACKFILLING, SPACING INTERVALS FOR SANDBAG SUPPORTS SHALL BE 15 FT. OR LESS AS REQUIRED BY THE COMPANY. SUPPORTS COMPRISED OF MATERIALS OTHER THAN SANDBAGS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND AT SPACING INTERVALS NO GREATER THAN THE APPROPRIATE MAXIMUM INTERVAL RECOMMENDED BY THE MANUFACTURER. SUPPORT SHALL BE PLACED AT POINTS TO PROVIDE A STRESS-FREE INSTALLATION SUBSEQUENT TO BACKFILL. THE CONTRACTOR SHALL NOT USE ANY SUPPORT METHOD WITHOUT THE PRIOR APPROVAL OF THE COMPANY AND WITHOUT PROVIDING THE COMPANY WITH THE MANUFACTURER'S RECOMMENDED INSTALLATION DIRECTIONS FOR THE SPECIFIC METHOD BEING USED.

TIE-INS - SECTIONS OF THE PIPELINE EXCAVATED FOR TIE-INS SHALL BE SUPPORTED WITH SANDBAGS OR OTHER APPROVED MATERIALS AT INTERVALS INDICATED ABOVE. SUPPORTS SHALL BE PLACED IMMEDIATELY AFTER FINAL TIE-IN TO PROVIDE A STRESS-FREE INSTALLATION SUBSEQUENT TO THE BACKFILLING OPERATION.

12. BACKFILLING

AFTER LOWERING-IN HAS BEEN COMPLETED, BUT BEFORE BACKFILLING, THE DITCH SHALL BE PUMPED DRY IN UPLAND AREAS AND THE LINE SHALL BE INSPECTED TO ENSURE THAT NO SKIDS, BRUSH, STUMPS, TREES, BOULDERS OR DEBRIS ARE IN THE DITCH. NO SUCH MATERIALS OR DEBRIS ARE TO BE BACKFILLED INTO THE DITCH. AFTER THE PIPE HAS BEEN INSPECTED AND APPROVED BY THE COMPANY, AFTER ALL DAMAGE TO THE PROTECTIVE COATING HAS BEEN REPAIRED AND AFTER THE COATING ON THE PIPE HAS HAD SUFFICIENT TIME TO CURE, THEN THE CONTRACTOR SHALL BACKFILL THE DITCH SUFFICIENTLY TO PREVENT FLOATING. THE CONTRACTOR SHALL COMPLETE THE FILLING OF THE DITCH TO PRODUCE A TRIM BACKFILL. EXCAVATED MATERIAL SHALL BE PLACED IN THE DITCH. TOPSOIL, WHERE IT HAS BEEN SEGREGATED, SHALL BE BACKFILLED AS CLOSE AS POSSIBLE TO ITS ORIGINAL LOCATION.

ROCK, TWO INCHES IN DIAMETER AND LARGER, OR LIKE MATERIALS SHALL NOT BE BACKFILLED DIRECTLY ONTO THE PIPE. WHERE SUCH MATERIALS ARE ENCOUNTERED. THE CONTRACTOR SHALL HAUL. IF NECESSARY. SUFFICIENT EARTH OR SAND TO BE BACKFILLED AROUND AND OVER THE PIPE TO FORM A PROTECTIVE PADDING OR CUSHION TO A MINIMUM OF EIGHT INCHES OR, AS OTHERWISE SPECIFIED IN THE SCOPE OF WORK, IN DEPTH BETWEEN THE PIPE AND ANY GRAVEL OR SMALL BROKEN ROCK TO BE BACKFILLED. LARGE ROCK OR BOULDERS IN EXCESS OF 24 In. IN DIAMETER, WIDTH OR LENGTH, SHALL NOT BE BACKFILLED INTO THE DITCH. SUCH ROCK SHALL BE DISPOSED OF PROPERLY.

13. TRENCH BREAKER

THE CONTRACTOR SHALL INSTALL EROSION BREAKERS IN THE DITCH OVER, UNDER AND AROUND THE PIPE TO PROVIDE FULL PROTECTION AGAINST BACKFILL WASHING AT VARIOUS POINTS ALONG THE PIPELINE. BREAKER INSTALLATIONS AND SPACING SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS AS WELL AS COMPANY, LOCAL, STATE, AND FEDERAL REQUIREMENTS.

- BREAKER MATERIALS SHALL INCLUDE, BUT ARE NOT BE LIMITED TO, DECOMPOSABLE BAGS, SAND AND ANY OTHER MATERIALS REQUIRED TO FACILITATE THE PROPER PLACEMENT OF THE BREAKER MATERIAL IN THE
- . BREAKER INSTALLATIONS MAY BE COMPRISED OF EITHER A MULTIPLE SANDBAG CONFIGURATION OR BY OTHER APPROVED METHODS. ALL BREAKER INSTALLATIONS SHALL MEET WITH THE APPROVAL OF THE COMPANY.

 BREAKER SIZE IS DEPENDENT ON THE EXTENT AND CONDITION OF THE DITCH IN DEPTH, WIDTH, SLOPE AND
- CRADE. AT A MINIMUM, BREAKERS SHALL EXTEND THE WIDTH AND DEPTH OF THE DITCH.
- BREAKERS, SHALL BE SPACED ALONG THE DITCH IN ACCORDANCE WITH THE COMPANY'S ENVIRONMENTAL

14. DIRT PADDING

THE CONTRACTOR SHALL INSTALL ROCK-FREE DIRT PADDING IN AREAS DESIGNATED BY THE COMPANY. TOPSOIL SHALL NOT BE USED FOR PADDING THE DITCH. DIRT PADDING SHALL BE INSTALLED IN THE BOTTOM OF THE DITCH TO A MINIMUM DEPTH OF 8 IN., PRIOR TO LOWERING-IN THE PIPELINE, IF OTHER ACCEPTABLE SUPPORT FOR PROTECTING THE BOTTOM OF THE PIPE IS NOT UTILIZED. A MINIMUM OF 8 in. OF DIRT PADDING SHALL BE INSTALLED AS COVER ON TOP OF THE LINE AS PROTECTION PRIOR TO BACKFILLING. ACCEPTABLE ROCK-FREE PADDING MATERIAL MAY BE OBTAINED DIRECTLY FROM THE SPOIL, OR BY USING A PADDING MACHINE WITH MATERIAL TAKEN DIRECTLY FROM THE SPOIL OR ROCK-FREE PADDING MATERIAL CAN BE HAULED IN BY THE

15. CLEAN-UP

THE CONTRACTOR SHALL KEEP THE RIGHT-OF-WAY CLEAR OF LITTER, SKIDS, DEFECTIVE MATERIALS, AND ALL OTHER CONSTRUCTION DEBRIS IMMEDIATELY BEHIND ITS OPERATIONS, TO THE SATISFACTION OF THE COMPANY. UPON COMPLETION OF THE BACKFILL, THE CONTRACTOR WILL CLEAN THE RIGHT-OF-WAY IN A NEAT AND ACCEPTABLE CONDITION. SURPLUS MATERIALS SHALL BE ASSEMBLED AND DELIVERED BY CONTRACTOR TO A LOCATION DESIGNATED BY THE COMPANY. FENCES SHALL BE RECONSTRUCTED TO THE ORIGINAL LINE AND GATES INSTALLED AS INDICATED BY THE COMPANY, THE CONTRACTOR SHALL FURNISH GATES, FENCING AND

THE RIGHT-OF-WAY SHALL BE DISKED, LIMED, SEEDED AND FERTILIZED DURING THE CLEAN-UP OPERATION. THE CONTRACTOR SHALL FURNISH THE LIME, SEED AND FERTILIZER. SEEDING, FERTILIZING AND MULCHING MUST BE DONE WITHIN 6 DAYS OF FINAL CLEAN UP OR IN ACCORDANCE WITH COMPANY ENVIRONMENTAL REQUIREMENTS.

PIPELINE MARKERS SHALL BE INSTALLED AT POINTS DESIGNATED BY THE COMPANY DURING CLEAN-UP OPERATIONS. THE COMPANY SHALL FURNISH LINE AND AERIAL MARKERS.

THRASHER



IFP ISSUED FOR PERMITTING

01/06/2017

AFE # A04635

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GENERAL INFORMATION

THIS SHEET IS INTENDED TO BE PLOTTED ON ARCH D (24" X 36"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

OAntero Midstream Partners L BLUESTONE GATHERING REROUTE GENERAL CONSTRUCTION SPECS

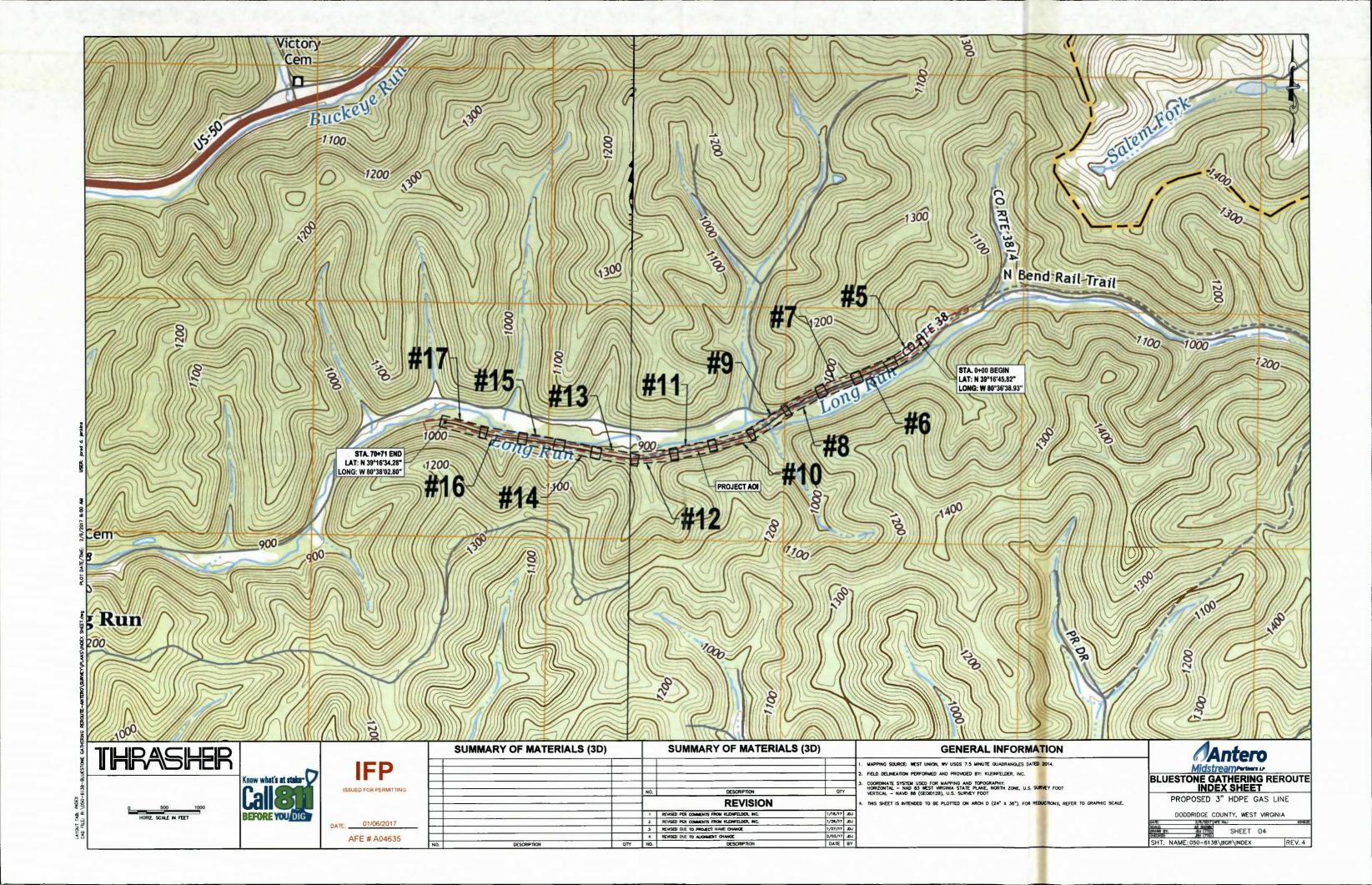
PROPOSED 3" HDPE GAS LINE

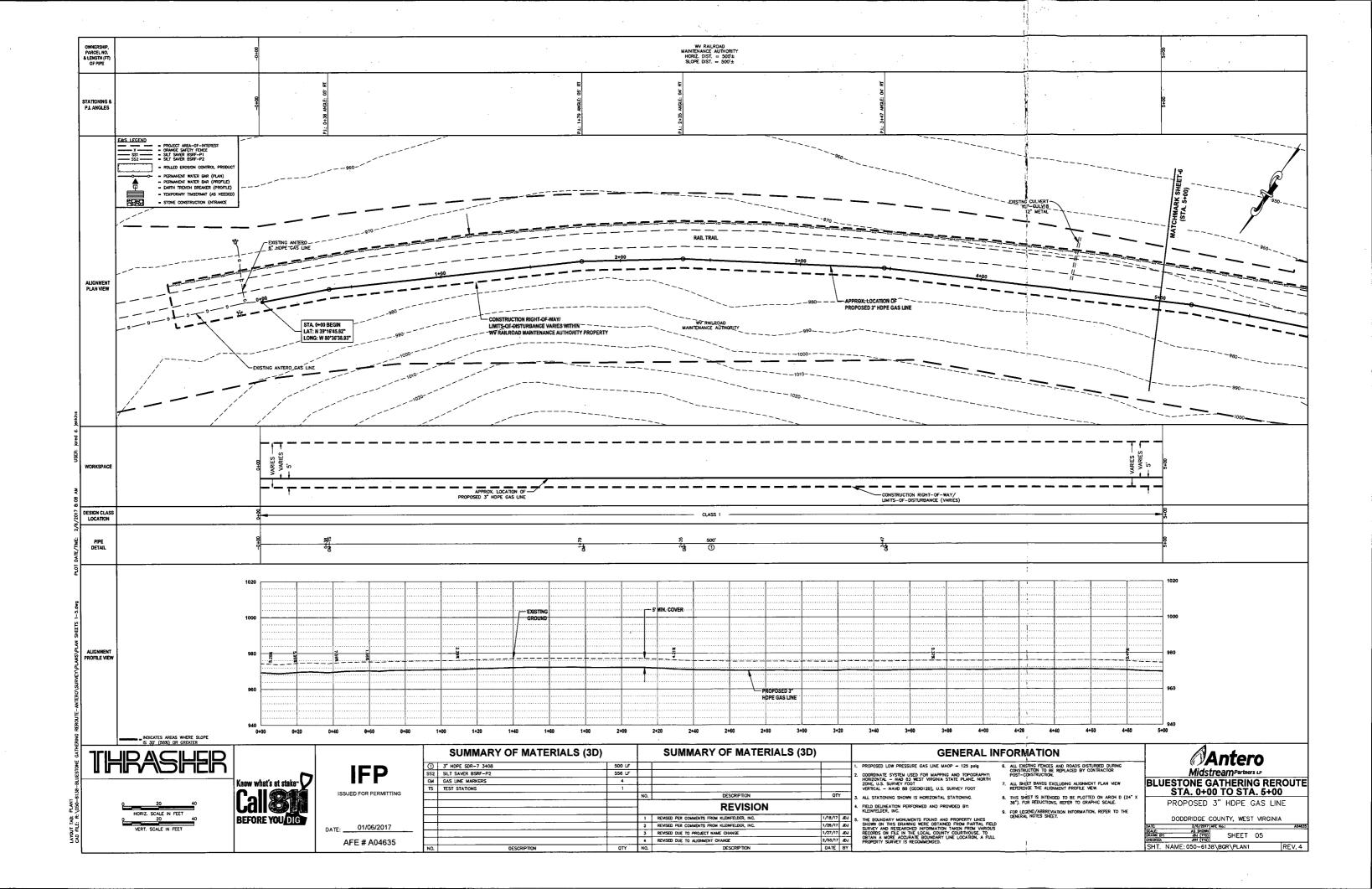
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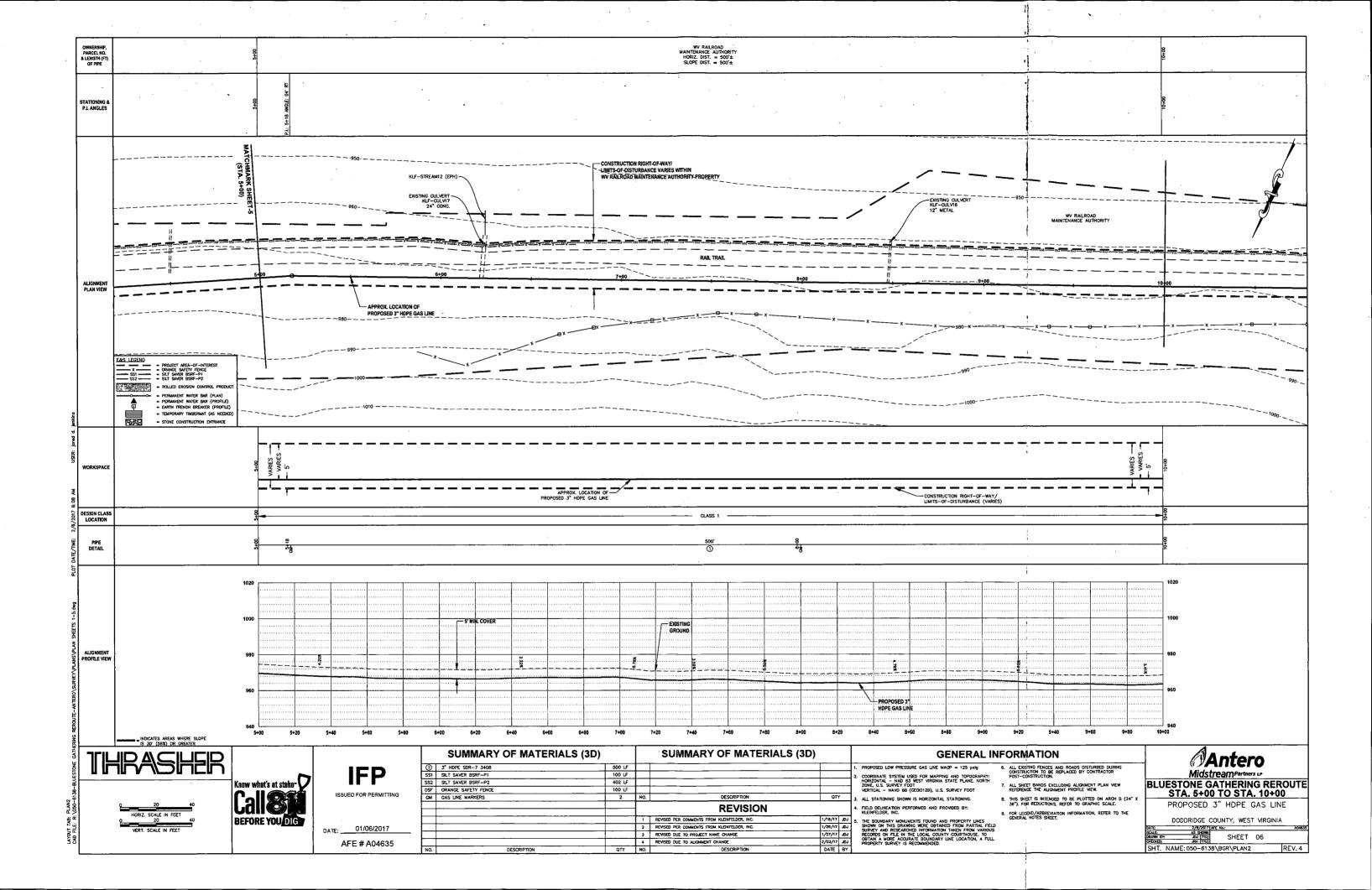
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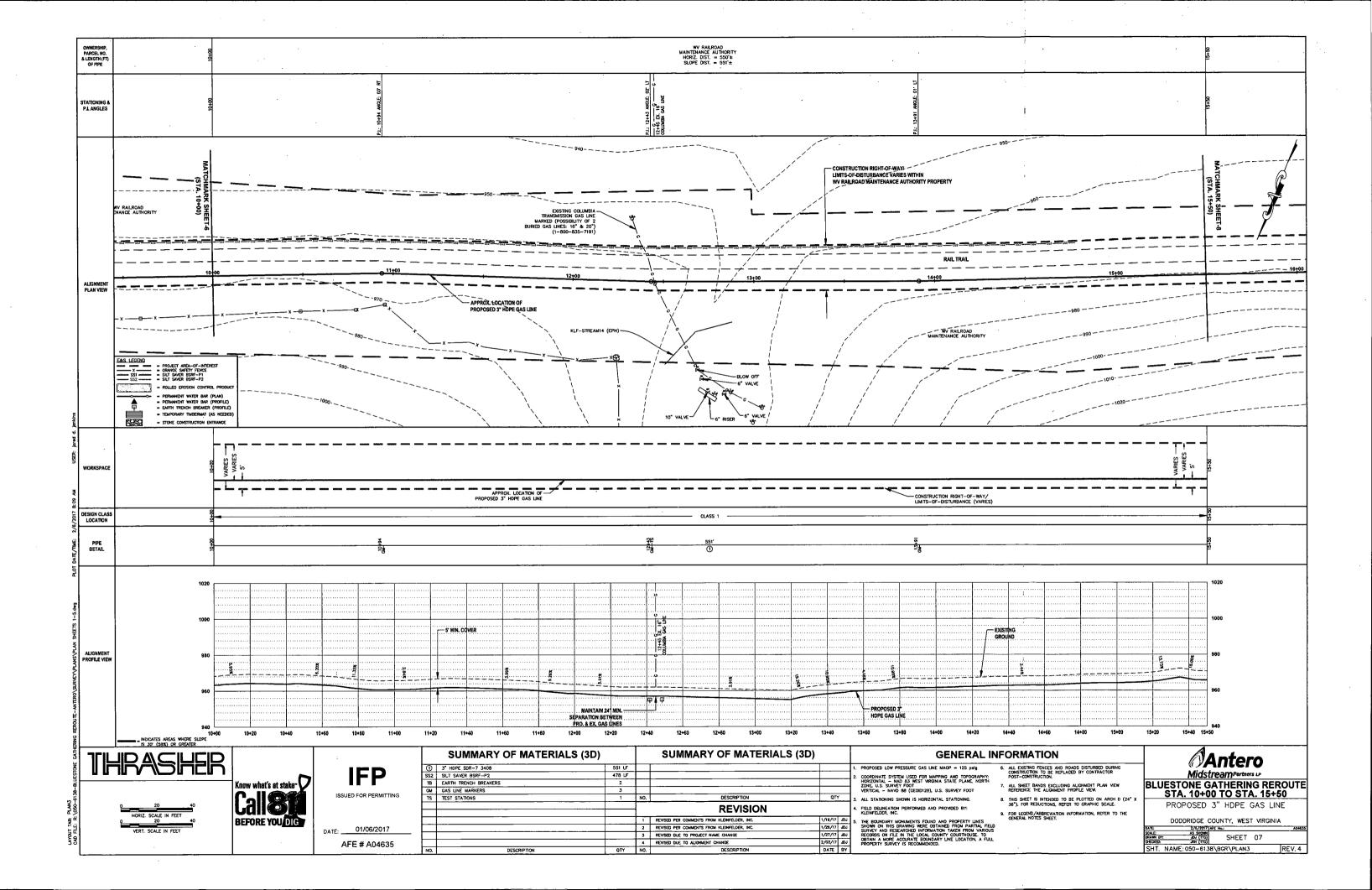
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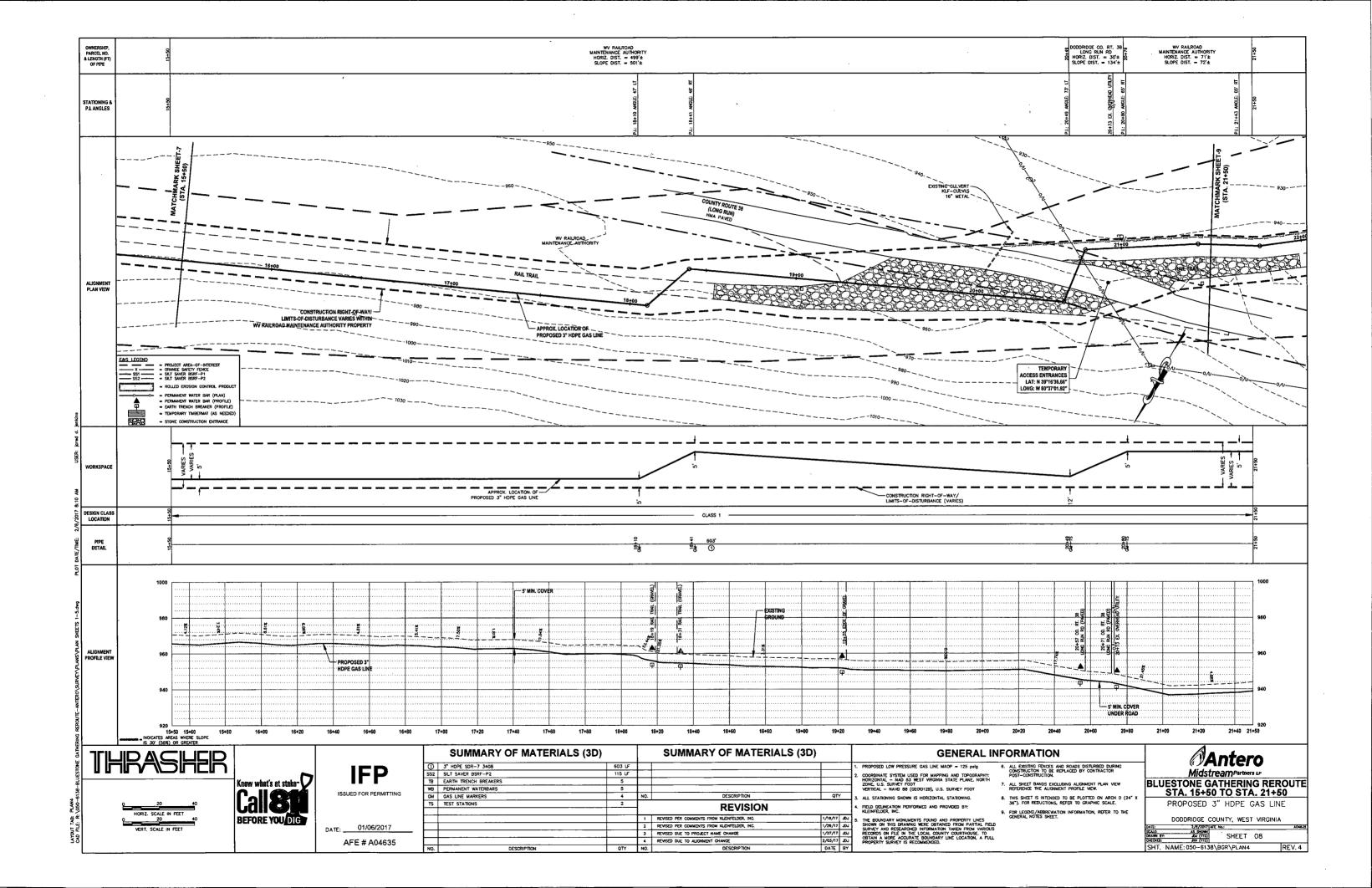
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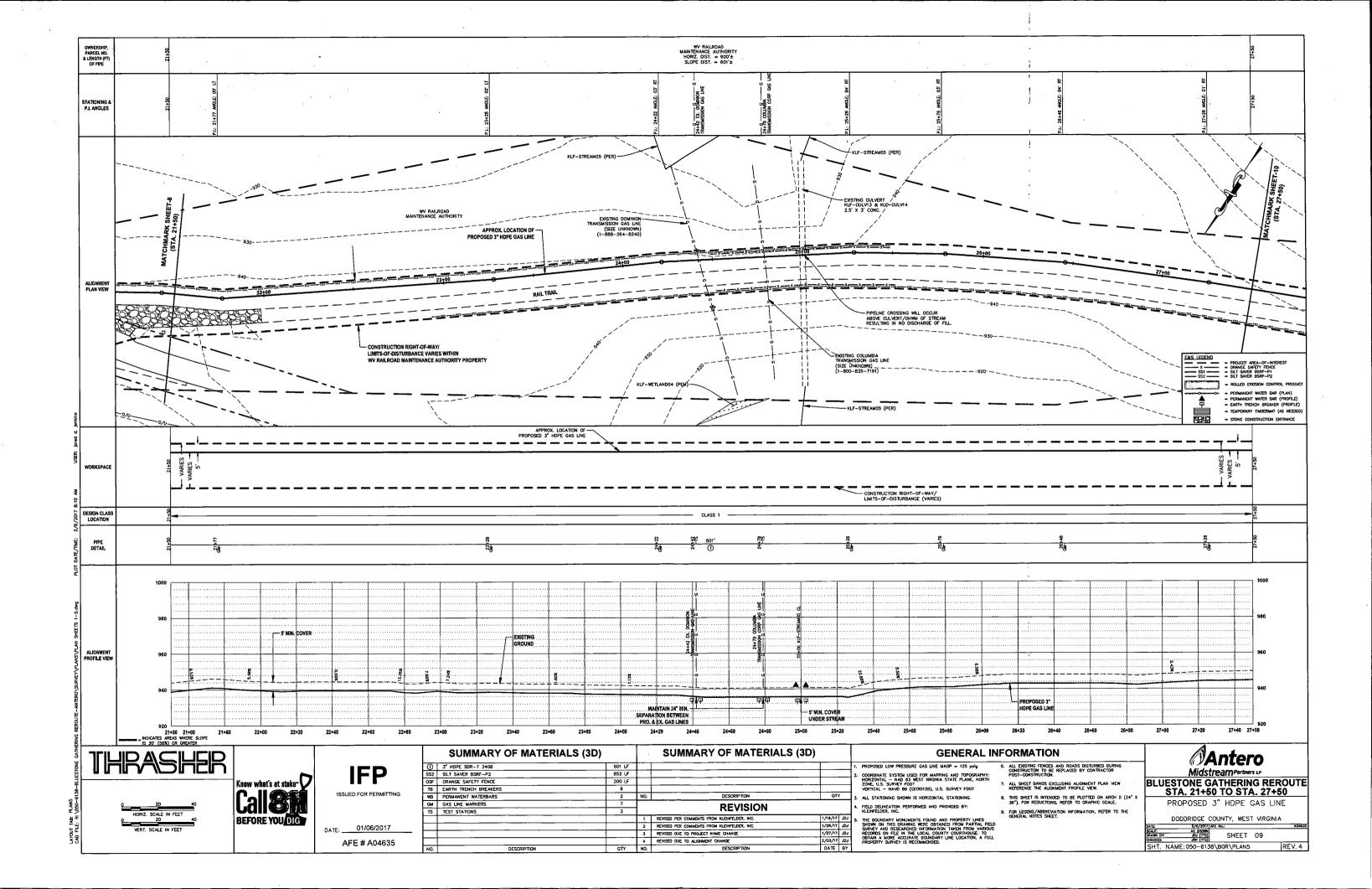


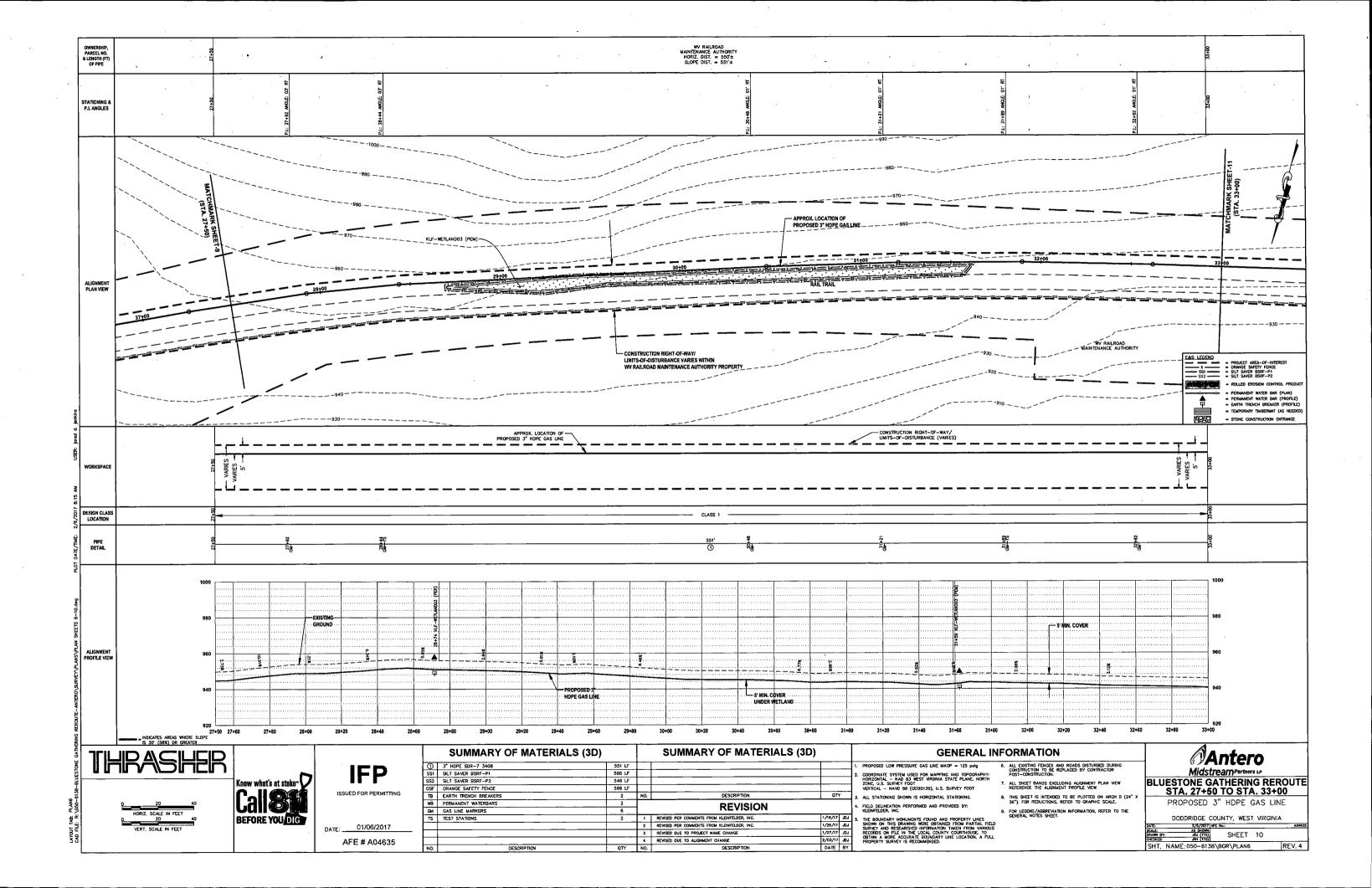


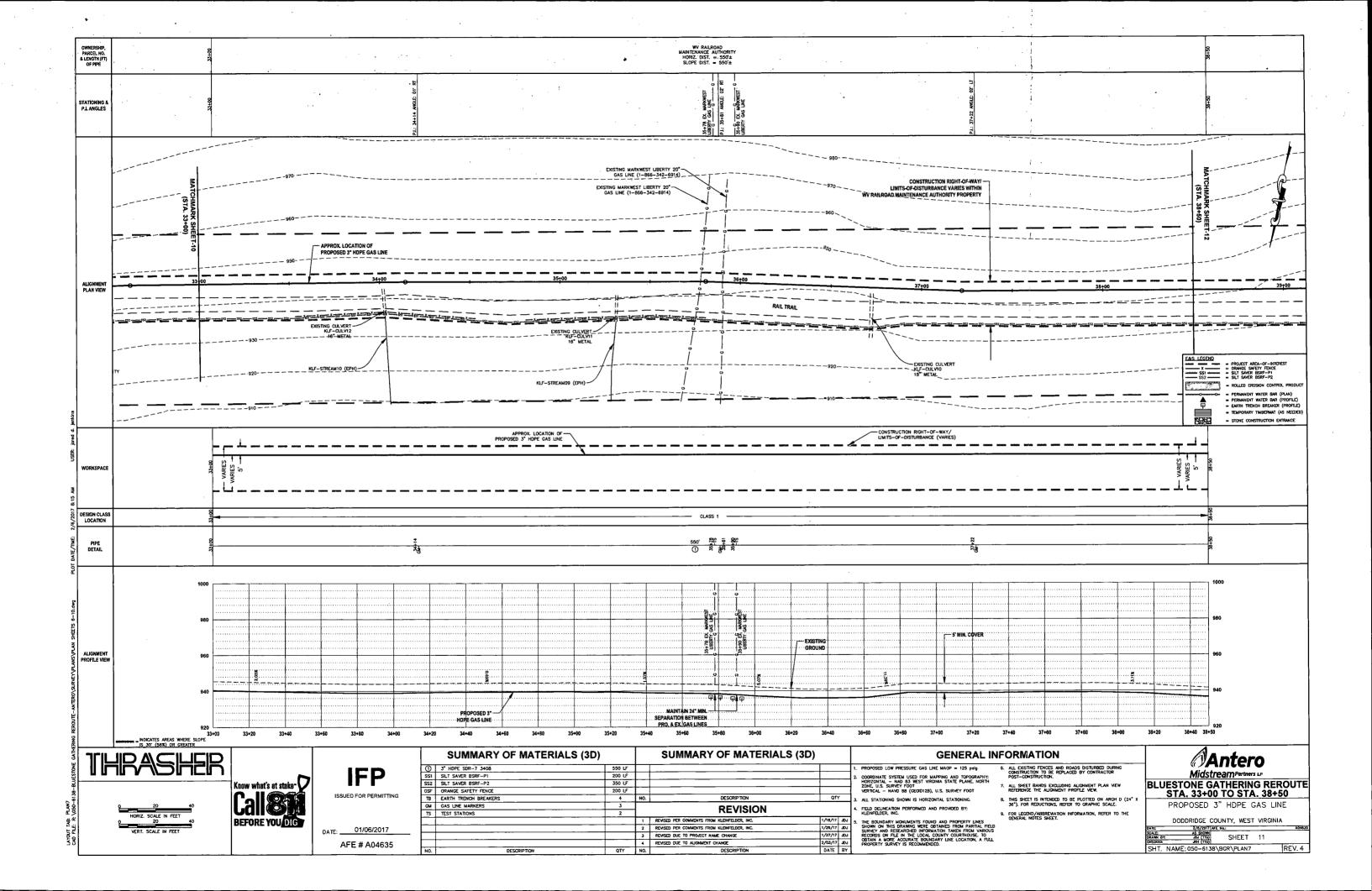


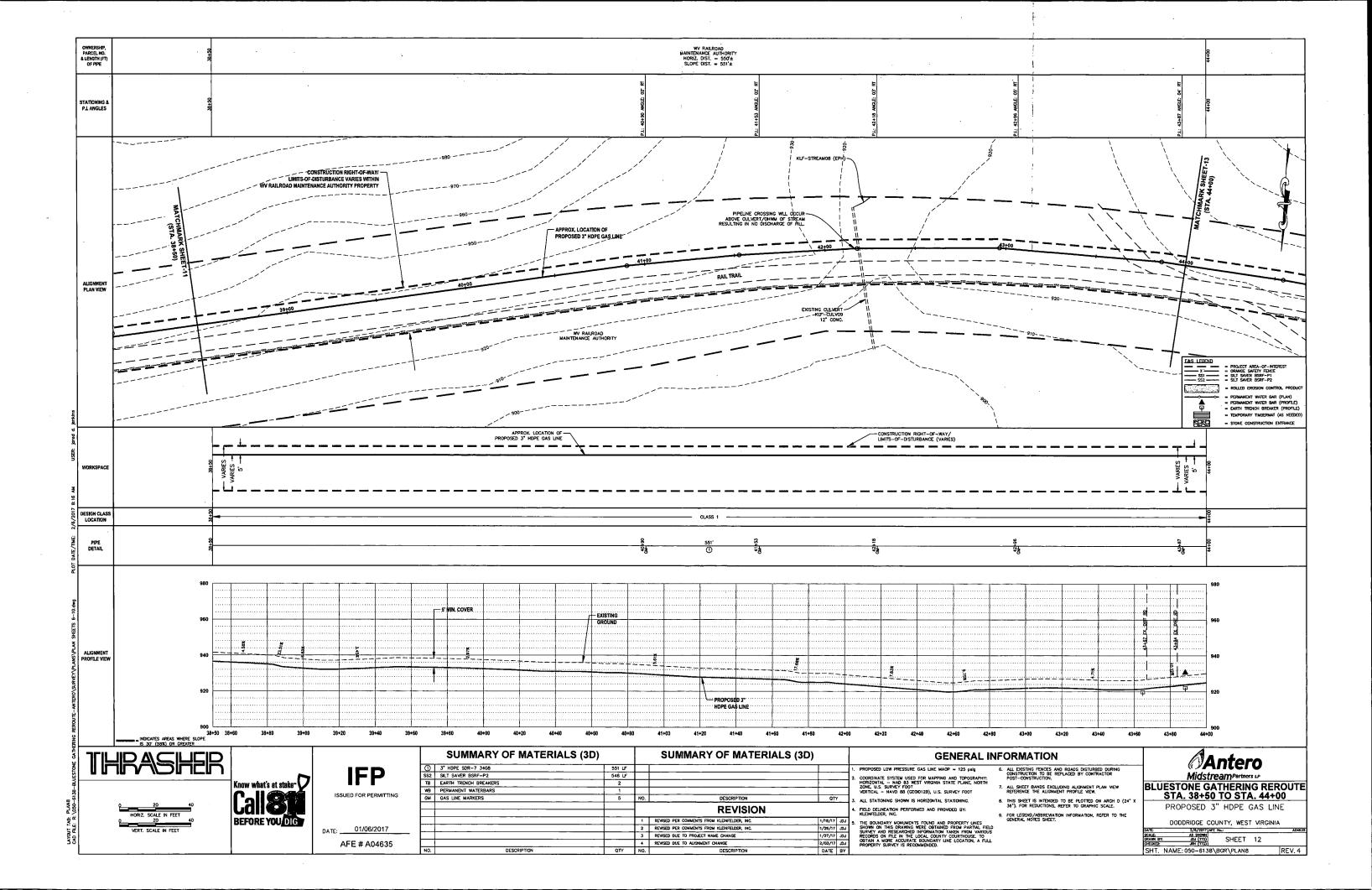


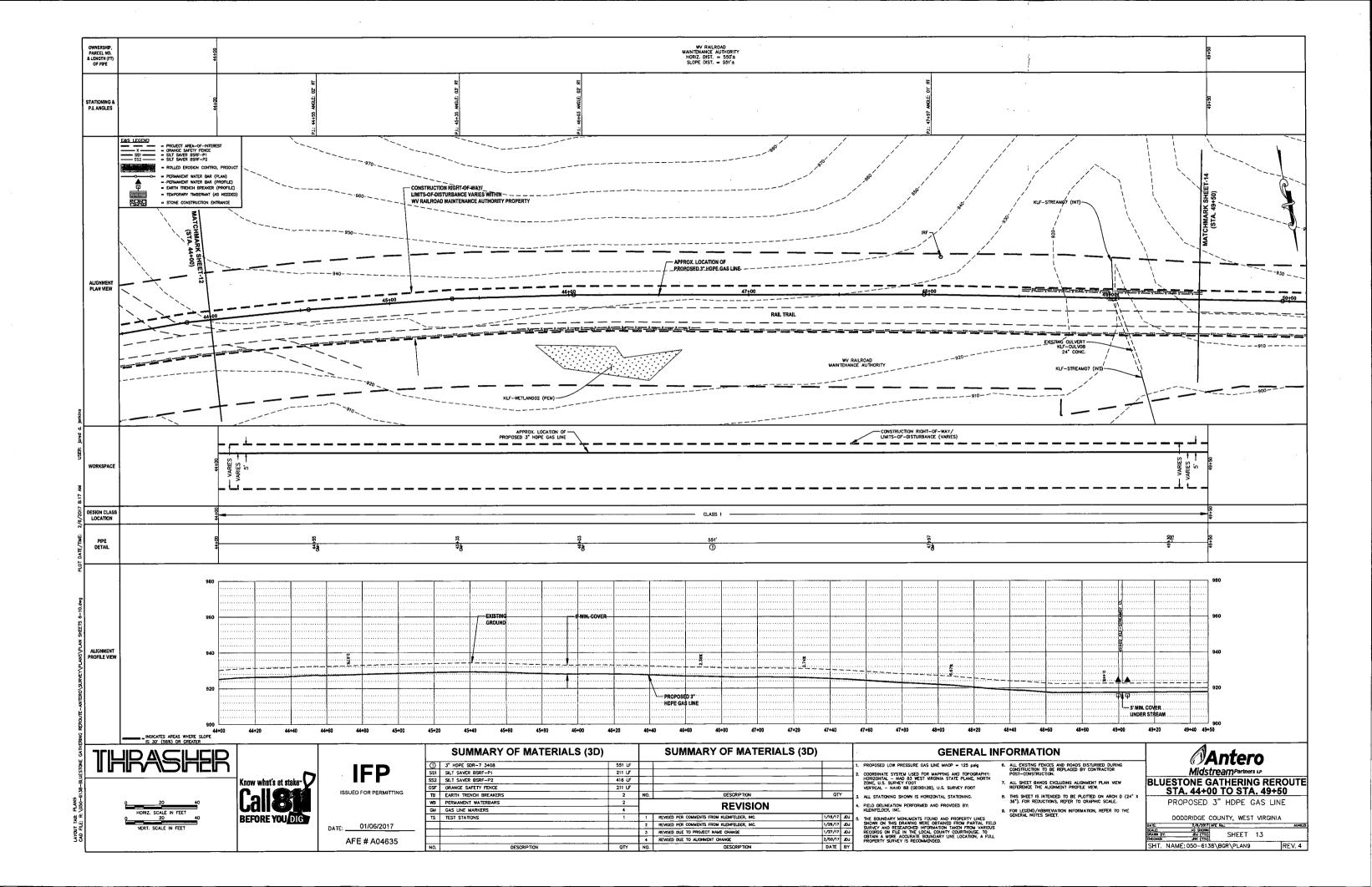


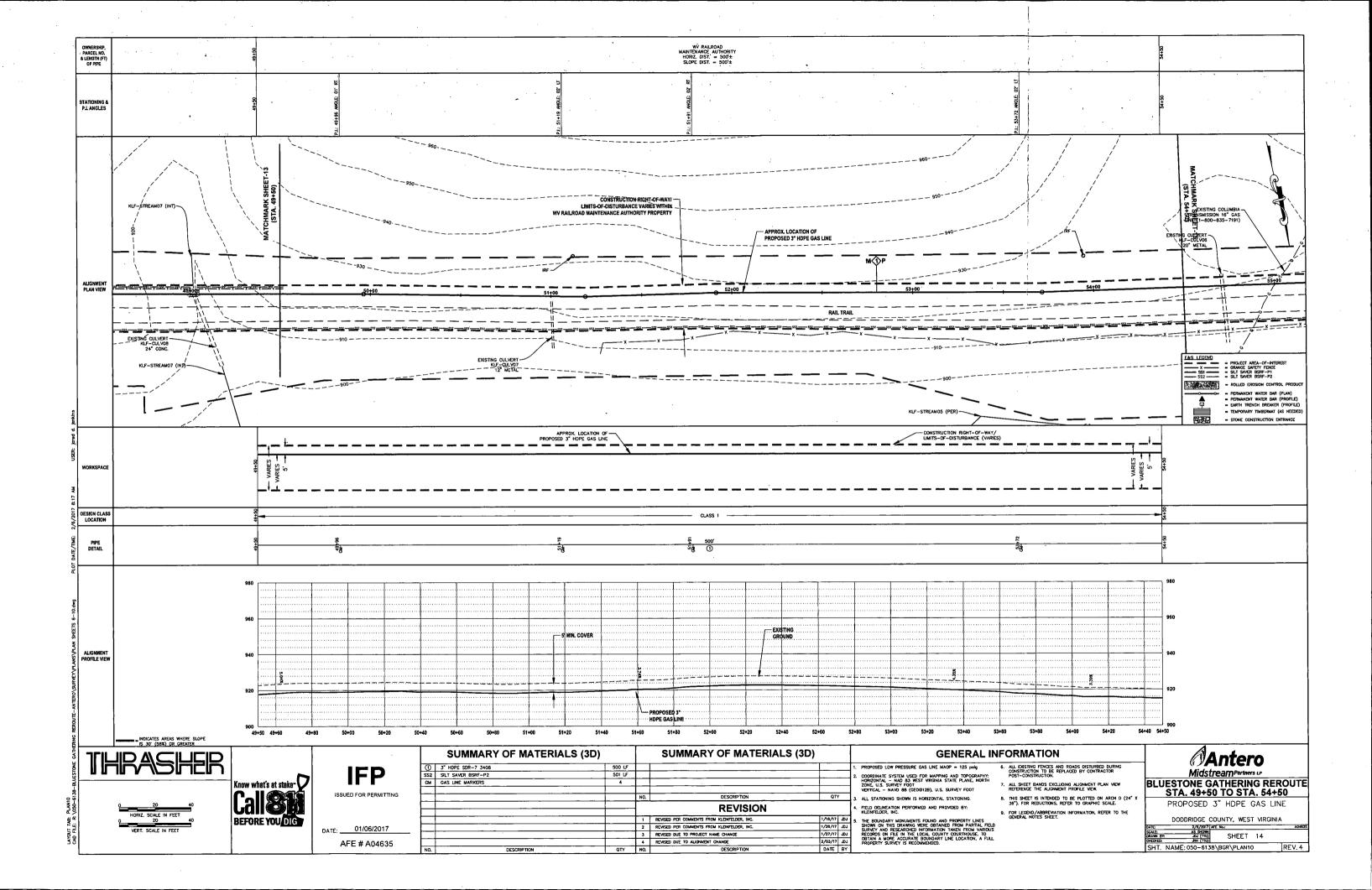


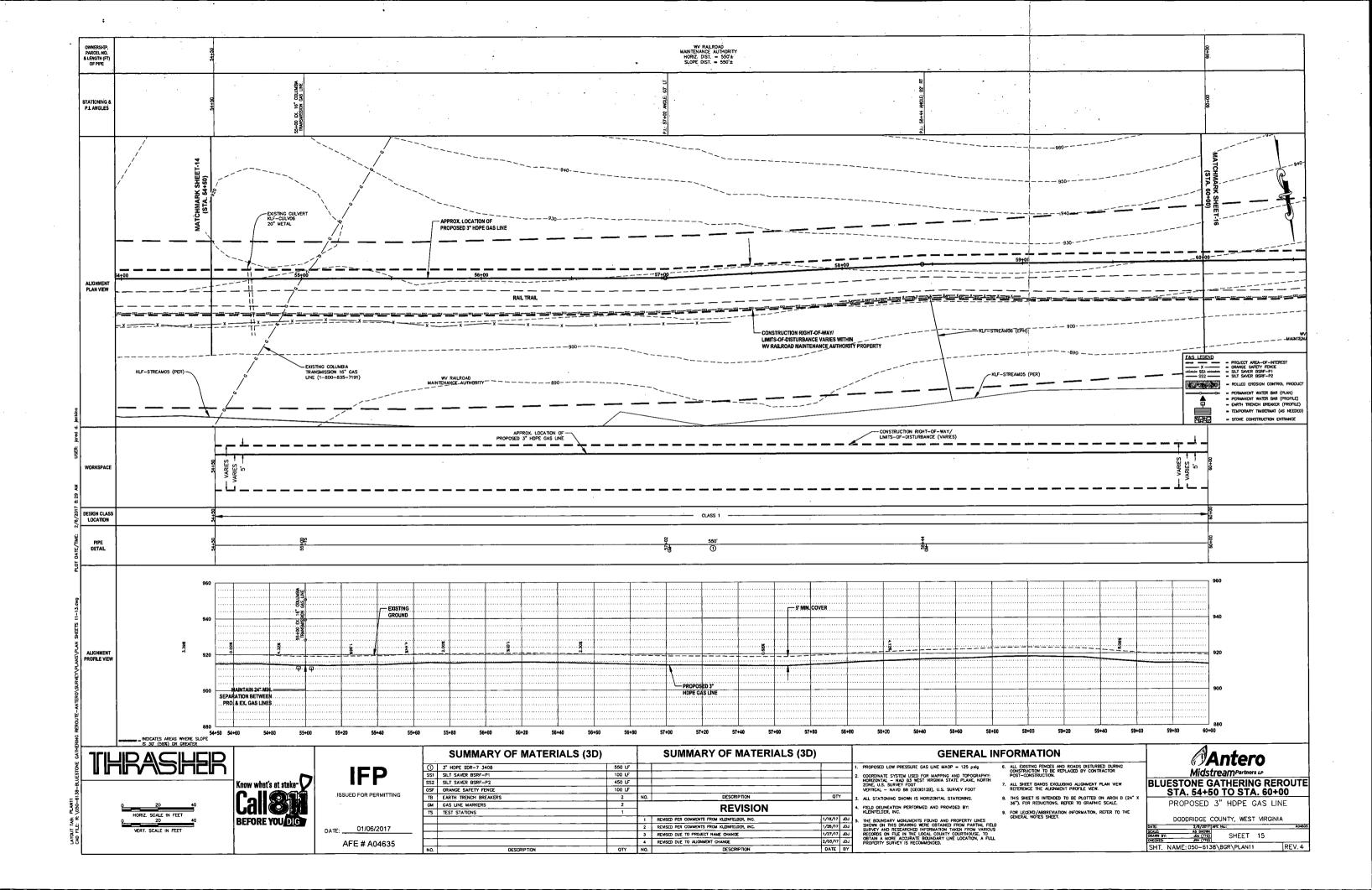


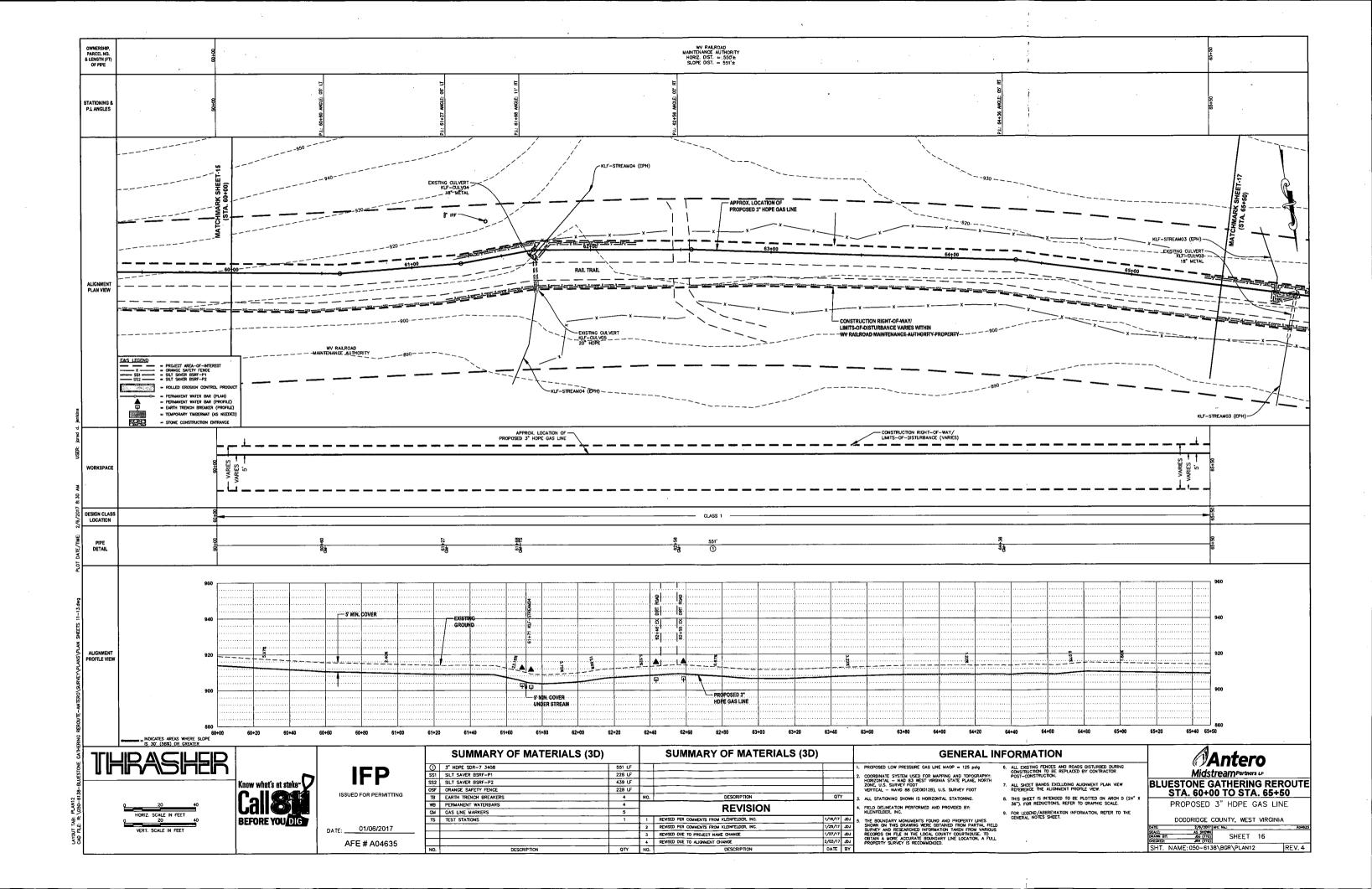


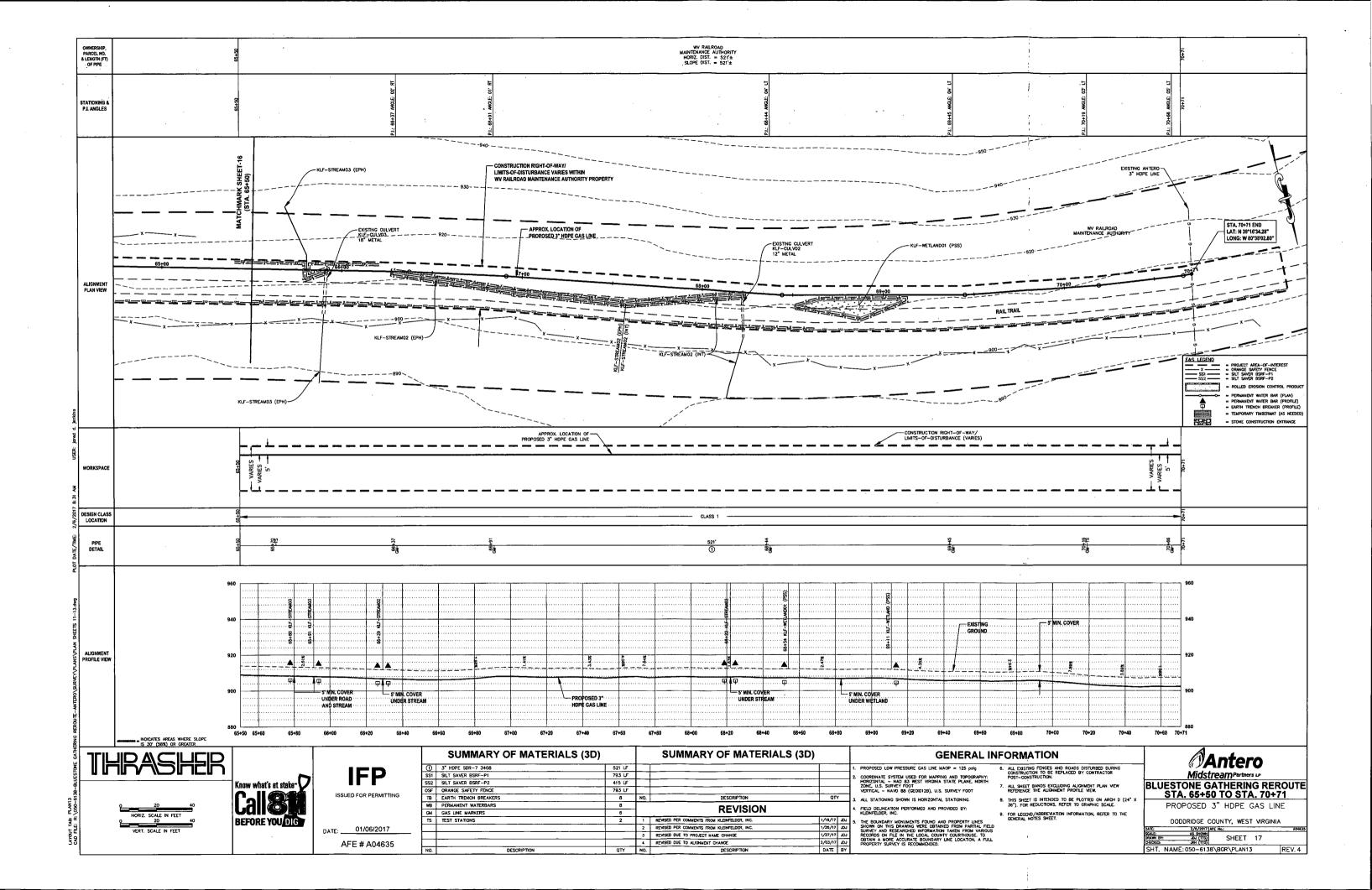


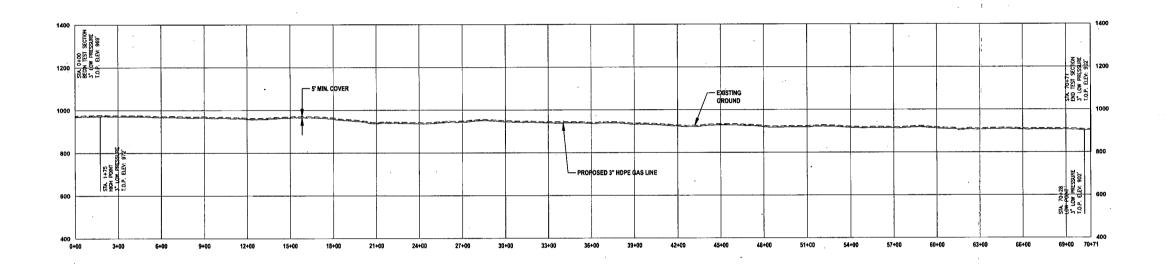












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AFE # A04635

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			3	REVISED DUE TO PROJECT NAME CHANGE	1/27/17	161	
			4	REVISED DUE TO ALIGNMENT CHANGE	2/03/17	JDJ	
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE	BY.	

GENERAL INFORMATION

1. PROPOSED LOW PRESSURE GAS LINE MAOP = X,XXX psig

2. REFER TO ANTERO MIDSTREAM PRESSURE TESTING PROCEDURE.

DORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL – NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT

4. ALL STATIONING SHOWN IS HORIZONTAL STATIONING.

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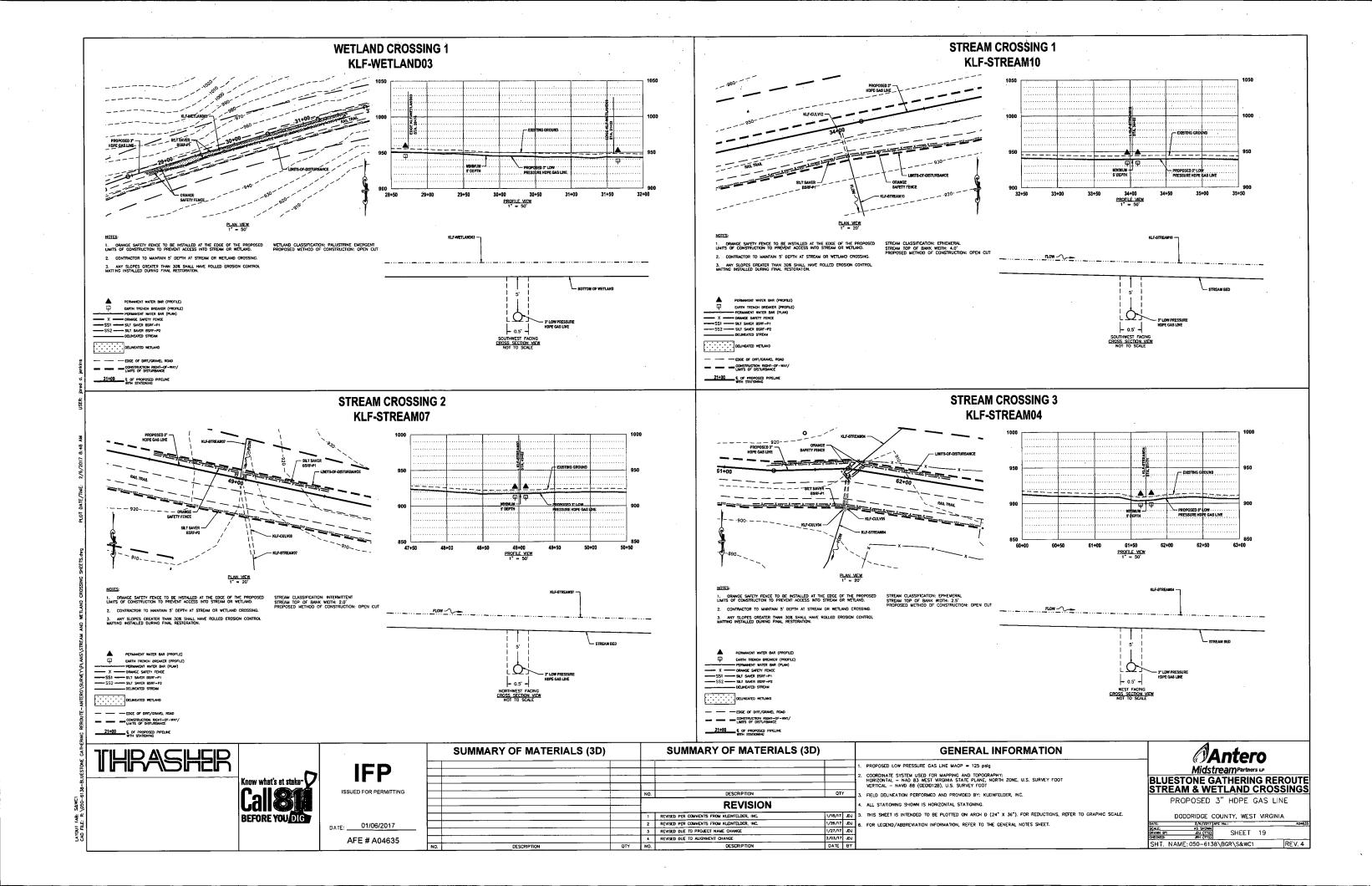
Midstream Partners LP
BLUESTONE GATHERING REROUTE
HYDROSTATIC TEST PROFILE

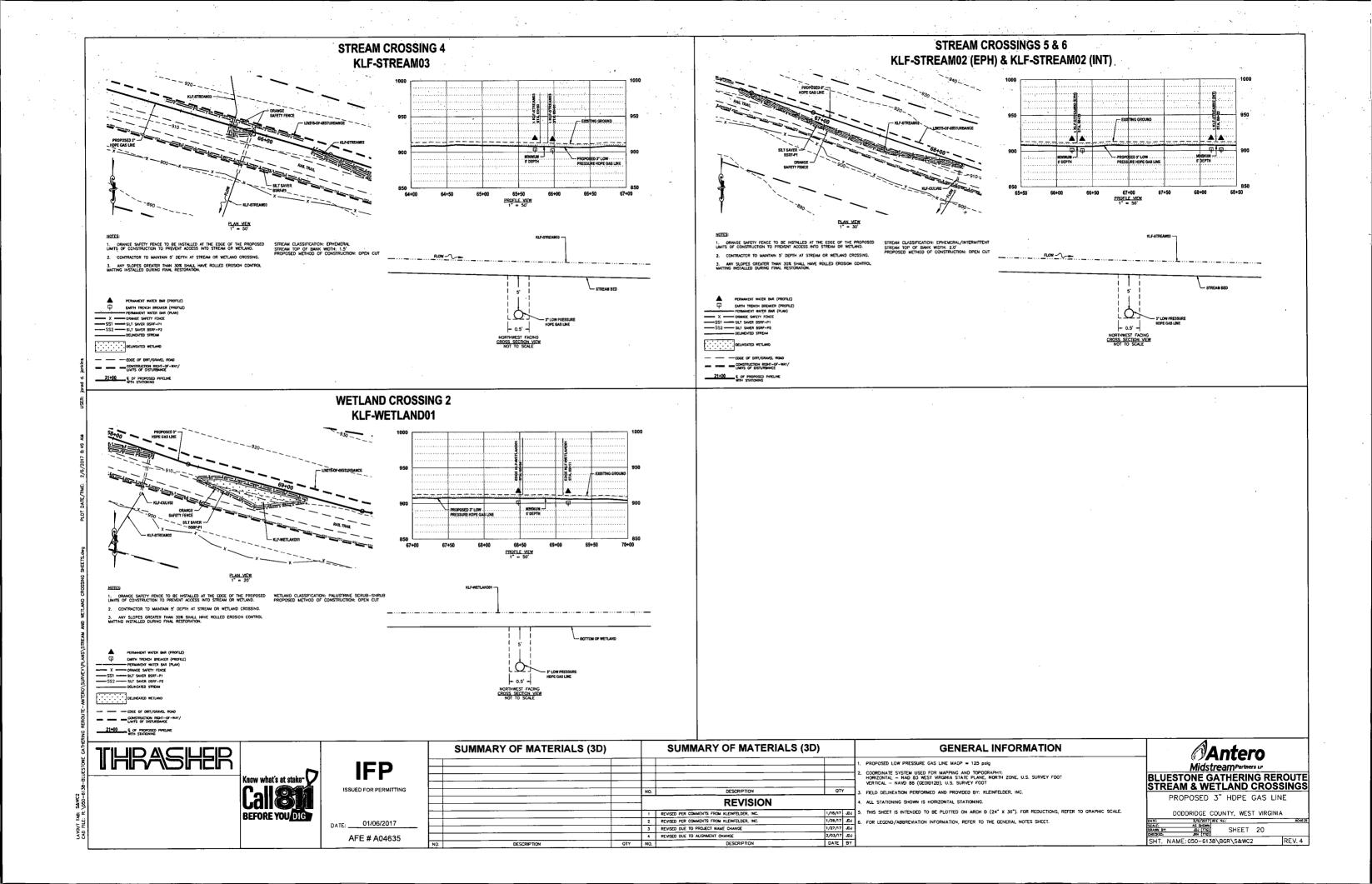
PROPOSED 3" HDPE GAS LINE

DODDRIDGE COUNTY, WEST VIRGINIA

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- 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, IN WRITING, WHO SHALL PROMPTLY
 ADDRESS SUCH PROBLEMS. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DWWM) EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE HANDBOOK. IN THE EVENT OF CONFLICT BETWEEN THE DESIGN, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT WILL GOVERN.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE.
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR, AT HIS OR HER EXPENSE, OF ALL EXISTING UTILITIES DAMAGED DURING
 CONSTRUCTION. FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL CALL WEST VIRGINIA 811.
- 5. INSTALLATION OF CONCRETE. CORRUGATED METAL OR HDPE STORM PIPE SHALL BE IN CONFORMANCE WITH THESE DRAWINGS
- 6. ALL MATERIALS USED FOR FILL OR BACK FILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, ORGANIC MATERIAL, OR ANY OTHER NON-COMPACTABLE SOIL TYPE MATERIALS. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
- 7. A PRE-CONSTRUCTION KICK-OFF MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.
- 8. IF SPRINGS OR SEEPS AND/OR AN ACCUMULATION OF GROUND WATER IS OBSERVED ON A SIDE CUT OR CUT SLOPE PIPE TRENCH, IMMEDIATELY INFORM THE ON-SITE INSPECTOR FOR AN EVALUATION AND CONSIDERATION OF THE INSTALLATION OF A FRENCH DRAIN.
- 9. EROSION CONTROL BLANKETS ARE REQUIRED FOR SLOPES OF 30 PERCENT OR GREATER.
- 10. HYDROMULCH CAN BE UTILIZED AS A SUBSTITUTE TO EROSION CONTROL BLANKETS WITH APPROVAL FROM ANTERO, EXCEPT FOR ON RESTORED STREAM BANKS AND ROAD BANKS, HYDROMULCH SHALL ONLY BE A VALID SUBSTITUTE FOR EROSION CONTROL BLANKETS DURING GRASS GROWING SEASONS.
- 11. HYDROSTATIC PRESSURE TEST POTABLE WATER FROM ANTERO APPROVED SOURCES ONLY TO BE USED FOR HYDROTEST. NO DEWATERING IS PERMITTED WITHOUT PRIOR ANTERO APPROVAL AND APPLICABLE PERMITS. NOTIFICATION REQUIRED TO ANTERO ENVIRONMENTAL PRIOR

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 ACCORDING TO THE PROVIDED PLAN, STRAWMAY BALES WILL NOT BE USED AS AN EAS CONTROL, HOWEVER, THEY MAY BE ACCEPTABLE TO USE AS A VELOCITY

GENERAL CONSTRUCTION SEQUENCE PER PIPELINE SEQUENCE:

- 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. THESE SHALL BE CLEARLY MARKED, BOTH IN THE FIELD AND ON THE PLANS, TO PREVENT DAMAGE AND OFFSITE IMPACTS.
- 2. INSTALL STONE CONSTRUCTION ENTRANCES AT ALL LOCATIONS WHERE TEMPORARY ACCESS ROADS WILL BE ACCESSING A PAVED BOADWAY
- 3. INSTALL TEMPORARY E&S CONTROLS (SILT FENCE, ROW DIVERSIONS, ETC.) PRIOR TO ANY EARTH DISTURBING ACTIVITY, WHICH INCLUDES GRUBBING AND EXCAVATION, TO ENSURE, TO THE MAXIMUM EXTENT PRACTICABLE, THAT NO SIGNIFICANT EROSION OR SEDIMENTATION
- 4. ROW DIVERSIONS AND/OR OTHER EROSION AND SEDIMENT CONTROL DEVICES WILL BE INSTALLED AS NEEDED. IF CLEARING AND GRUBBING IS REQUIRED, SEE BELOW REGARDING THE MANAGEMENT AND DISPOSAL OF DEBRIS.
- 5. AFTER ACCESS TO AND ALONG THE PROPOSED UTILITY LINE HAS BEEN PROVIDED, THE GENERAL CLEARING AND GRUBBING OF THE TREES AND BRUSH ALONG THE ROW FOR PIPE TRENCHING MAY COMMENCE TO THE WIDTH SPECIFIED IN THE E&S PLANS. TREES SHALL BE WINDROWED ON LOW SIDE OF RIGHT-OF-WAY, 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 WATERS. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON-SITE, UNLESS LANDOWNER STIPULATIONS SPECIFY OTHERWISE.
- 6. MINOR GRADING WITHIN THE ROW WILL BE CONDUCTED WHERE NECESSARY TO PROVIDE AN EVEN SURFACE FOR SAFE AND EFFICIENT OPERATION OF CONSTRUCTION EQUIPMENT, GRADING WILL BE THE MINIMUM AMOUNT NECESSARY AND BMPS WILL BE INSTALLED PROMPTLY TREE STUMPS, AND LARGE ROCKS AND BOULDERS WILL ALSO BE REMOVED FOR SAFETY AT THIS TIME.
- EXCAVATE PIPELINE TRENCH, A MINIMUM COVER OF 3' SHALL BE PROVIDED ABOVE PIPELINE AT ALL LOCATIONS EXCEPT FOR WETLANDS AND STREAMS. A MINIMUM COVER OF 5' SHALL BE PROVIDED ALONG PIPELINE AT WETLAND AND STREAM CROSSINGS.
- 8. THE PROPOSED CONSTRUCTION ROW WILL BE USED AS A WORK AREA FOR TRENCH EXCAVATION, EQUIPMENT MOVEMENT, AND THE STORAGE OF SOIL STOCKPILES, AS NEEDED, EQUIPMENT SOIL STOCKPILES, AND OTHER MATERIALS AREA TO REMAIN UPSLOPE OF BMPS DURING CONSTRUCTION ACTIVITIES.
- SEGREGATION OF TOPSOIL AND SUBSOIL WILL BE PERFORMED WHERE TRENCH EXCAVATION TAKES PLACE IN AN AGRICULTURAL, WETLAND, OR RESIDENTIAL AREA. IT IS BEST MANAGEMENT PRACTICE TO SALVAGE AND SEGREGATE TOPSOIL WHERE APPLICABLE.
- 10. TEMPORARY E&S CONTROLS FOR STREAM CROSSINGS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE E&SCP AND ASSOCIATED DETAIL
- 11. STREAM AND RIVER PIPELINE CROSSING CONSTRUCTION METHODS WILL BE INSTALLED AT LOCATIONS SHOWN ON THE E&S PLAN SHEETS AND AS SPECIFIED ON THE DETAIL SHEETS. WATERBODIES WILL BE CROSSISED WITH TEMPORARY BRIDGES, SUCH AS THIMBER MATS OR APPROVED EQUAL CROSSINGS, PRIOR TO CROSSINGS, PRIOR TO CROSSINGS, PRIOR TO CROSSING THE CONVEYANCE. STREAMBANK STABILIZATION WILL BE PERFORMED IMMEDIATELY FOLLOWING
- 12. WETLAND CROSSING WIDTHS FOR UTILITY CROSSINGS WILL BE KEPT TO A MINIMUM AND WILL BE STABILIZED BY PLACING TIMBER MATS, RIPRAP, OR PRE-FABRICATED SWAMP MATS, AS SHOWN ON THE DETAIL SHEETS, ALL MATERIALS USED TO STABILIZE ACCESS ROADS IN WETLAND AREAS WILL BE REMOVED FROM THE WETLAND UPON COMPLETION OF THE PIPELINE CONSTRUCTION. A BARRIER (GEOTECH IC) SHOULD BE USED TO PREVENT MIXING OF SOILS.
- 13. PIPELINE SECTIONS WILL BE TRANSPORTED TO THE WORK AREA AND STRUNG ALONG THE WORKING SIDE OF THE ROW PARALLEL TO THE TRENCH LINE. THE PIPELINE WILL BE BENT TO CONFORM TO THE TRENCH CONTOUR, ALIGNED, WELDED AND PLACED ON TEMPORARY SUPPORTS ALONGSIDE THE TRENCH, WELDS WILL BE VISUALLY AND RADIO-GRAPHICALLY INSPECTED AND REPAIRED AS NECESSARY. THE PIPE SECTION WILL BE LOWERED INTO THE TRENCH AND PLACED ON PADDING MATERIAL LAID ON THE TRENCH BOTTOM TO PROTECT THE PI COATING, ANY WETNESS ENCOUNTERED DURING CONSTRUCTION WORK WILL BE DEWATERED BY USING PUMPS, HOSES, AND DEWATERING BAGS, AND WILL BE DISCHARGED TO A WELL-VEGETATED UPLAND AREA.
- 14. INSTALL TRENCH BREAKERS (PLUGS) AT LOCATIONS AS SHOWN ON THE E&S PLAN SHEETS AND AS SPECIFIED ON THE DETAIL SHEETS.
- 15. THE TRENCH WILL BE SUBSEQUENTLY BACKFILLED WITH SUITABLE EXCAVATED MATERIAL. THE BACKFILL MATERIAL WILL BE SLIGHTLY CROWNED IN UPLAND AREAS TO ALLOW FOR SETTLEMENT THAT MAY OCCUR. CROWNING THE SOIL SLIGHTLY OVER THE PIPELINE WILL HELP PREVENT FUTURE STORMWATER-RELATED PROBLEMS FROM THE SETTLING OF THE BACKFILLED AREA, NO CROWNING OF THE SOILS WILL TAKE PLACE IN WETLANDS, STREAMS, OR FLOODPLAINS, DISTURBED AREAS WILL BE RESTORED TO THEIR ORIGINAL TOPOGRAPHIC

- EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPS THAT PROTECT THE SOIL FROM EROSIVE FORCES OF RAINDROPS, FLOWING WATER AND WIND. ALL DISTURBED AREAS THAT ARE AT FINAL GRADE MUST BE SEEDED AND MULCHED WITHIN SEVEN DAYS AND AREAS THAT WILL NOT BE WORKED AGAIN FOR 21 DAYS OR MORE MUST BE SEEDED AND MULCHED WITHIN SEVEN DAYS. FOR DISTURBED AREAS WITH SLOPES OF 31 OR GREATER, THE AREA WILL BE VERTICALLY TRACKED AND EROSION CONTROL FABRIC SHALL BE INSTALLED AFTER SEED, MULCH, AND SOIL SUPPLEMENTS HAVE BEEN APPLIED. THE TEMPORARY/PERMANENT SEEDING AND MULCH TABLE ON THE DETAIL SHEETS CONSIST OF THE TYPE OF SEED AND APPLICATION RATE THAT SHALL BE APPLIED, INCLUDING THE NURSE CROP THAT SHALL BE USED DURING CERTAIN TIME OF THE YEAR TO PROMOTE STABILIZATION OF THE SOIL UNTIL THE PERENNIAL SEEDLINGS ESTABLISH.
- IN THE UNLIKELY EVENT THAT THERE ARE EXCESS EXCAVATED MATERIALS REMAINING AFTER THE TRENCH HAS BEEN BACKFILLED, THE MATERIAL WILL BE DISPOSED OF WITHIN THE EXISTING ROW IN AN UPLAND AREA. MATERIAL WILL BE SPREAD IN A THIN LAYER AND TIED INTO EXISTING CONTOURS TO CREATE POSITIVE DRAINAGE FOR STORMWATER RUNOFF.
- ALL ESS CONTROLS WILL BE INSPECTED, 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 UNTIL THERE IS A UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE ESTABLISHED, TEMPORARY BMPS WILL BE REMOVED UPON ACHIEVING VEGETATIVE STABILIZATION, THE 70 PERCENT REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT A PERCENT OF THE SITE.
- NO SEDIMENT TRACKING ON THE ROADWAY IS ALLOWED. IN THE EVENT THAT SEDIMENT IS INADVERTENTLY TRACKED ONTO THE ROAD, THE ROAD SHALL BE CLEANED THOROUGHLY BY THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING OF SEDIMENTS TO THE STORM DRAIN SYSTEM IS NOT ALLOWED. IF STREET WASH WASTEWATER CAN BE CONTROLLED FROM ENTERING THE STORM DRAINAGE SYSTEM, THEN IT SHALL BE PUMPED BACK ONTO THE SITE, CONTAINED AND DISPOSED OF
- CONSTRUCTION ACCESS RESTORATION SHALL BE EQUAL OR BETTER THAN THE PRE-CONSTRUCTION CONDITION AND GRADES THAT WERE ALTERED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL GRADES AND MATCH EXISTING
- 21. APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, EROSION CONTROL FABRICS AND MATTING, THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST
- 22. SELECTED SOIL STABILIZATION MEASURES SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED
- SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- LINEAR CONSTRUCTION ACTIVITIES SUCH AS RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL BE CONDUCTED TO MEET THE SOIL STABILIZATION TIMEFRAME REQUIREMENTS. CONTRACTORS SHALL INSTALL THE BEDDING MATERIALS, ROADBEDS, STRUCTURES, PIPELINES, OR UTILITIES AND RE-STABILIZE THE DISTURBED SOILS SO THAT THE 7-DAY REQUIREMENTS ARE MET.
- 25. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE

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 FAS CONTROLS SHALL BE CONDUCTED AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 INSPECTIONS OF ALL ESS CONTROLS SHALL BE CONDUCTED, AT A MINIMUM, ONCE EVERTY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0,5-INCHE PER 24-HOUR PERIOD, ALL NECESSAY CLEANING, REPAIR AND/OR MAINTENANCE SHALL BE MADE AS SOON AS POSSIBLE AFTER THE INSPECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT INSPECTIONS AND REPAIRS ARE MADE AS OUTLINED HEREIN. ALL SEDIMENT COLLECTED FROM THE MAINTENANCE OF EAS CONTROL MEASURES SHALL BE SPREAD ON-SITE AND SECDED AND MULCHED, OR DISPOSED OF PROPERLY AT A WY DEPARTMENT OF ENVIRONMENTAL PROTECTION (WYDEP)-APPROVED LOCATION, THE FOLLOWING MAINTENANCE WILL BE PERFORMED UNTIL STABILIZATION HAS BEEN ACHIEVED:

- TEMPORARY EROSION AND SEDIMENT CONTROL BMPS SHOULD BE REMOVED FOLLOWING CONFIRMATION THAT 70 PERCENT PERENNIAL VEGETATIVE COVERAGE IS ESTABLISHED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.
- WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMPs IDENTIFIED IN THE E&SCP ARE INADEQUATE, THE E&SCP SHALL BE MODIFIED. AS APPROPRIATE, IN A TIMELY MANNER.
- MAINTENANCE OF THE E&SCP THE E&SCP SHALL BE RETAINED ON-SITE. THE E&SCP SHALL BE MODIFIED WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF ANY BMP. THE DEP MUST BE NOTIFIED OF ANY CHANGES TO THE CONSTRUCTION SWPPP, DEPENDING ON THE SIGNIFICANCE OF THE REVISION, A PERMIT MODIFICATION MAY NECE TO BE SUBMITTED TO THE DEEP. NEED TO BE SUBMITTED TO THE DEP.

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 AND AROUND SOIL STOCKPILES, AS NEEDED.
- APPROPRIATELY SIZED FENCING WILL BE PLACED AROUND WETLANDS AND WATERBODIES ADJACENT TO THE WORK AREA PRIOR TO ANY TRENCHING ACTIVITIES.
- STOCKPILE SLOPES WILL BE TWO TO ONE OR FLATTER, AND STOCKPILES WILL NOT EXCEED 35 FEET IN HEIGHT
- TEMPORARY STREAM AND WETLAND CROSSINGS SHALL BE INSTALLED AS INDICATED ON THE E&S PLAN SHEETS AND AS PER THE E&S DETAIL SHEETS. FOR ALL OTHER SURFACE OR STORMWATER CONVEYANCES THAT ARE NOT IDENTIFIED ON THE PLAN SHEETS AS STREAMS DUE TO THE LACK OF DEFINED BED AND BANK CONDITIONS, A TEMPORARY BRIDES SUCH AS A TIMBER MAT OR AN APPROVED EQUAL SHALL BE INSTALLED, PRIOR TO CROSSING THE CONVEYANCE IF THERE IS FLOWING WATER PRESENT AT TIME OF
- TEMPORARY ROW DIVERSIONS WILL BE INSTALLED IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE SOIL IN ACCORDANCE WITH
 THE DETAILS AND SPACING SIZING REQUIREMENTS. TEMPORARY ROW DIVERSIONS WILL BE CONSTRUCTED OF SOIL TO REDUCE
 RUNOFF VELOCITY AND DIVERT WATER OFF OF THE PIPELINE ROW. TEMPORARY ROW DIVERSIONS WILL BE MAINTAINED UNTIL PERMANENT ROW DIVERSIONS HAVE BEEN INSTALLED.
- . TRENCH DEWATERING, IF NEEDED, WILL BE CONDUCTED USING A PUMP AND HOSE. WATER WILL BE RELEASED INTO A FILTER BAG THAT WILL BE LOCATED IN A WELL-VEGETATED UPLAND AREA.
- TRENCH BREAKERS (PLUGS) WILL BE INSTALLED IN SLOPING AREAS GREATER THAN FIVE PERCENT AND ON SLOPES ADJACENT TO STREAMS, WETLANDS, AND ROADS CROSSINGS TO PREVENT SUBSURFACE EROSION, TRENCH BREAKERS (PLUGS) WILL BE INSTALLED IN ACCORDANCE WITH THE SPACING REQUIREMENTS.
- THE WORK AREA WILL BE BACKFILLED FOLLOWING PIPELINE INSTALLATION OR OTHER EXCAVATION WORK. IN AREAS WHERE
 TOPSOIL HAS BEEN SEGREGATED, THE SUBSOIL WILL BE REPLACED FIRST, AND THEN THE TOPSOIL WILL BE SPREAD OVER THE
 AREA FROM WHICH IT WAS REMOVED. DISTURBED AREAS WILL BE RESTORED TO THEIR ORIGINAL TOPOGRAPHIC CONTOURS.
- ROW DIVERSIONS, WHEN REQUIRED, WILL BE CONSTRUCTED WITH A 5 TO 10 PERCENT (TYPICAL) OUTSLOPE TO DIVERT SURFACE FLOW TO A WELL-VEGETATED STABLE AREA.
- IMMEDIATELY FOLLOWING BACKFILLING, ALL DISTURBED AREAS WILL BE GRADED IN PREPARATION FOR SEEDING AND MULCHING.
 THE CONSTRUCTION SITE SHOULD BE STABLIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL COVER
 MUST BE INITIATED NO LATER THAN SEVEN DAYS AFTER REACHING FINAL GRADE.

- FOR THREE TO ONE OR STEEPER SLOPES THE DISTURBED AREA WILL BE VERTICALLY TRACKED. EROSION CONTROL
- TEMPORARY SEDIMENT BARRIERS WILL BE MAINTAINED, UNTIL VEGETATION HAS BECOME ESTABLISHED WITH A UNIFORM COVERAGE OF DENSITY OF 70 PERCENT OR MORE WITHIN THE DISTURBED ROW. ONCE THIS COVERAGE HAS BEEN OSTAINED, APPROPRIATE CONTROLS WILL BE REMOVED FROM THE WORK AREA, AREAS DISTURDED DURING THE REMOVAL OF THE EROSION CONTROLS WILL BE STABILIZED IMMEDIATELY. THE 70 PERCENT REQUIREMENTS REFERS TO THE TOTAL AREA VEGETATED AND NOT A PERCENT OF THE SITE.
- ALL WASTE MATERIAL WILL BE TRANSPORTED OFF-SITE FOR RECYCLING AND/OR DISPOSAL, WHERE FEASIBLE, CONSTRUCTION WASTE MATERIALS WILL BE RECYCLED OR WILL BE TAKEN TO AN APPROVED FACILITY FOR DISPOSAL. AS STATED PREVIOUSLY, EXCESS SOIL MATERIAL, IF ANY, WILL BE SPREAD AND REVEOETATED WITHIN THE ROW, OFF-SITE SPOIL AND/OR BORROW SITES MUST BE OPERATED UNDER A CURRENT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT.
- EROSION CONTROL BLANKETS SHALL NOT BE INSTALLED ON AGRICULTURAL AREAS EVEN IF SLOPES ARE STEEPER THAN THREE TO ONE. THESE AREAS MAY REQUIRE SPECIAL ATTENTION/RESTORATION UNTIL ADEQUATE GROWTH IS ACHIEVED.
- . TEMPORARY STOCKPILES NEED SILT FENCE / SOCK PLACED ADJACENT TO ROW.
- CONTRACTOR IS EXPECTED TO MINIMIZE DISTURBANCE WITHIN THE ROW

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. ANY REQUIRED REPAIRS OR MAINTENANCE SHALL BE MADE IMMEDIATELY.
- ALL E&S CONTROLS WILL BE INSPECTED, 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 DURING THE ENTIRE PROJECT.
- SEDIMENT MUST BE REMOVED WERE ACCUMULATION REACHES ONE-HALF THE ABOVE GROUND HEIGHT OF A SILT FENCE (ALL TYPES).
- . SILT FENCE SECTIONS, WHICH HAVE BEEN UNDERMINED OR TOPPED, SHOULD IMMEDIATELY BE REPAIRED.
- REQUIRED REPAIRS OR MAINTENANCE SHALL BE MADE IMMEDIATELY.
- 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. A BMP INSPECTION REPORT IS
- TEMPORARY AND PERMANENT E&S CONTROL BMPS SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE
 CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION, MAINTENANCE AND REPAIR SHALL BE CONDUCTED AT LEAST
 ONCE EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT GREATER THAN 0.5-INCH OF RAIN PER 24-HOUR
 PERIOD.
- TEMPORARY E&S CONTROL BMPS SHOULD BE REMOVED FOLLOWING CONFIRMATION THAT 70 PERCENT PERENNIAL VEGETATIVE COVERAGE IS ESTABLISHED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE, DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.

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
- 2. 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. THE CONTRACTOR WILL BE RESPONSIBLE FOR AND/OR DISPOSAL FEES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ASSURE THAT ALL MATERIALS ARE HANDLED AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS, RULES, AND REGULATIONS, INCLUDING BUT NO LIMITED TO THOSE ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY, WYDEP, AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
- 3. 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, EXCESS SOIL MATERIAL, IF ANY, WILL BE SPREAD AND REVEGETATED WITHIN THE ROW. OFF-SITE SPOIL AND/OR BORROW SITES MUST BE

SEEDING

SEE DETAILS 24-26 FOR TEMPORARY SEEDING, PERMANENT SEEDING, AND MULCHING REQUIREMENTS.

POLLUTANT CONTROLS

- ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ON SITE DURING STRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATER, WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON SITE
- 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, SQLVENT AND DE-GREASING CLEANING OPERATIONS, FUEL TANK ORAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO SURFACE WATER RUNOFF MUST BE CONDUCTED USING SPILL PREVENTION MEASURES, S AS DRIP PANS, CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE SPILL INCIDENT, EMERGENCY REPAIRS MAY BE PERFORMED ON-SITE USING TEMPORARY PLASTIC PLACED BENEATH AND, IF RAINING, OVER THE VEHICLE.
- APPLICATION OF AGRICULTURAL CHEMICALS INCLUDING FERTILIZERS AND PESTICIDES SHALL BE CONDUCTED IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO SURFACE WATER RUNOFF, MANUFACTURERS' RECOMMENDATIONS FOR APPLICATION RATES AND PROCEDURES SHALL BE
- BMPS SHALL BE USED TO PREVENT OR TREAT CONTAMINATION OF SURFACE WATER RUNOFF BY PH MODIFYING SOURCES. THESE SOURCES INCLUDE BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CURING WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, AND CONCRETE PUMPING AND MIXER WASHOUT WATERS.
- REPORT SPILLAGE OR DISCHARGE OF POLLUTANTS WITHIN 24-HOURS

THRASHER



IFP ISSUED FOR PERMITTING

01/06/2017

AFF # A04635

SUMMARY OF MATERIALS (3D) SUMMARY OF MATERIALS (3D) DESCRIPTION REVISION REVISED PER COMMENTS FROM KLEINFELDER, REVISED DUE TO PROJECT NAME CHANGE DESCRIPTIO

GENERAL INFORMATION THIS SHEET IS INTENDED TO BE PLOTTED ON ARCH D (24" X 36"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

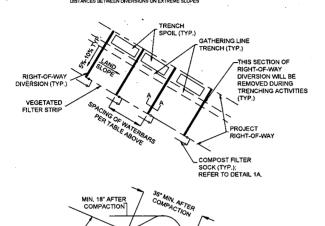
MAntero Midstream Partners L **BLUESTONE GATHERING REROUTE ESCP DETAILS** PROPOSED 3" HDPE GAS LINE

DODDRIDGE COUNTY, WEST VIRGINIA

SHEET 21

SHT. NAME: 050-6138\BGR\ESCP1

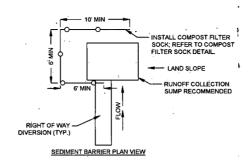




NOTE: SUMPS TO BE USED DURING CONSTRUCTION (TEMPORARY)



SECTION A-A



NOTES:

1. RIGHT-OF-WAY DIVERSIONS SHOULD BE INSTALLED ACROSS THE ENTIRE RIGHT-OF-WAY ON ALL SLOPES GREATER THAN 5%

2. 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 WYDEP E&S

3. RIGHT-OF-WAY DIVERSIONS SHOULD BE 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

4. BSRF CAN BE SUBSTITUTED IN PLACE OF CFS WITH APPROVAL FROM ANTERO.

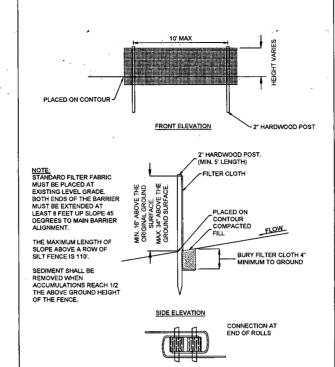
5. SUMPS TO BE USED DURING CONSTRUCTION (TEMPORARY).

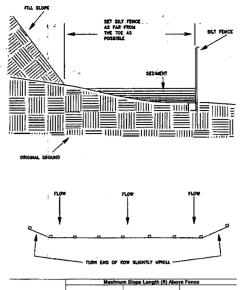
MAINTENANCE:

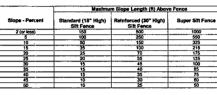
 RIGHT-OF-WAY DIVERSIONS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED RIGHT-OF-WAY DIVERSIONS SHALL BE RESTORED TO

2. MAINTENANCE OF RIGHT-OF-WAY DIVERSIONS SHALL BE PROVIDED UNTIL RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.

3 RIGHT-OF-WAY DIVERSIONS ON RETIRED RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN

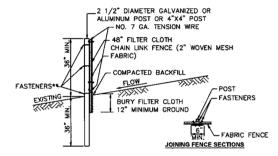






2A SILT FENCE PLACEMENT





* 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.

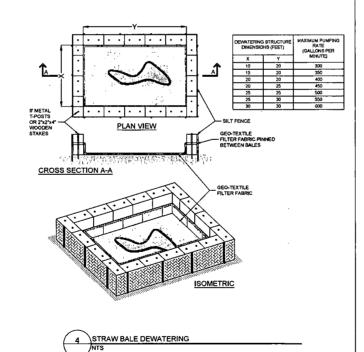
FILTER FABRIC FENCE SHOULD BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE.

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.





1. STRAW BALES SHOULD BE PLACED ON THEIR SIDES WITH THE TWINE FACING OUT.

TOP VIEW

SILT FENCE

- 2. STRAW BALES SHOULD BE STACKED TWO HIGH WITH GEO-TEXTILE FABRIC PINNED BETWEEN
- 3. 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"X 4', 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.
- 5. DEWATERING STRUCTURES 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 ½ 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.
- 10. ADDITIONAL EROSION CONTROLS MAY BE UTILIZED DOWNSLOPE OF DEWATERING STRUCTURES WHERE NEEDED.
- 11. DEWATERING STRUCTURE WILL BE PLACED TO MAXIMIZE AVAILABLE VEGETATIVE STRIP.

4A STRAW BALE DEWATERING

THRASHER



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ISSUED FOR PERMITTING

01/06/2017 AFE # A04635

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GENERAL INFORMATION

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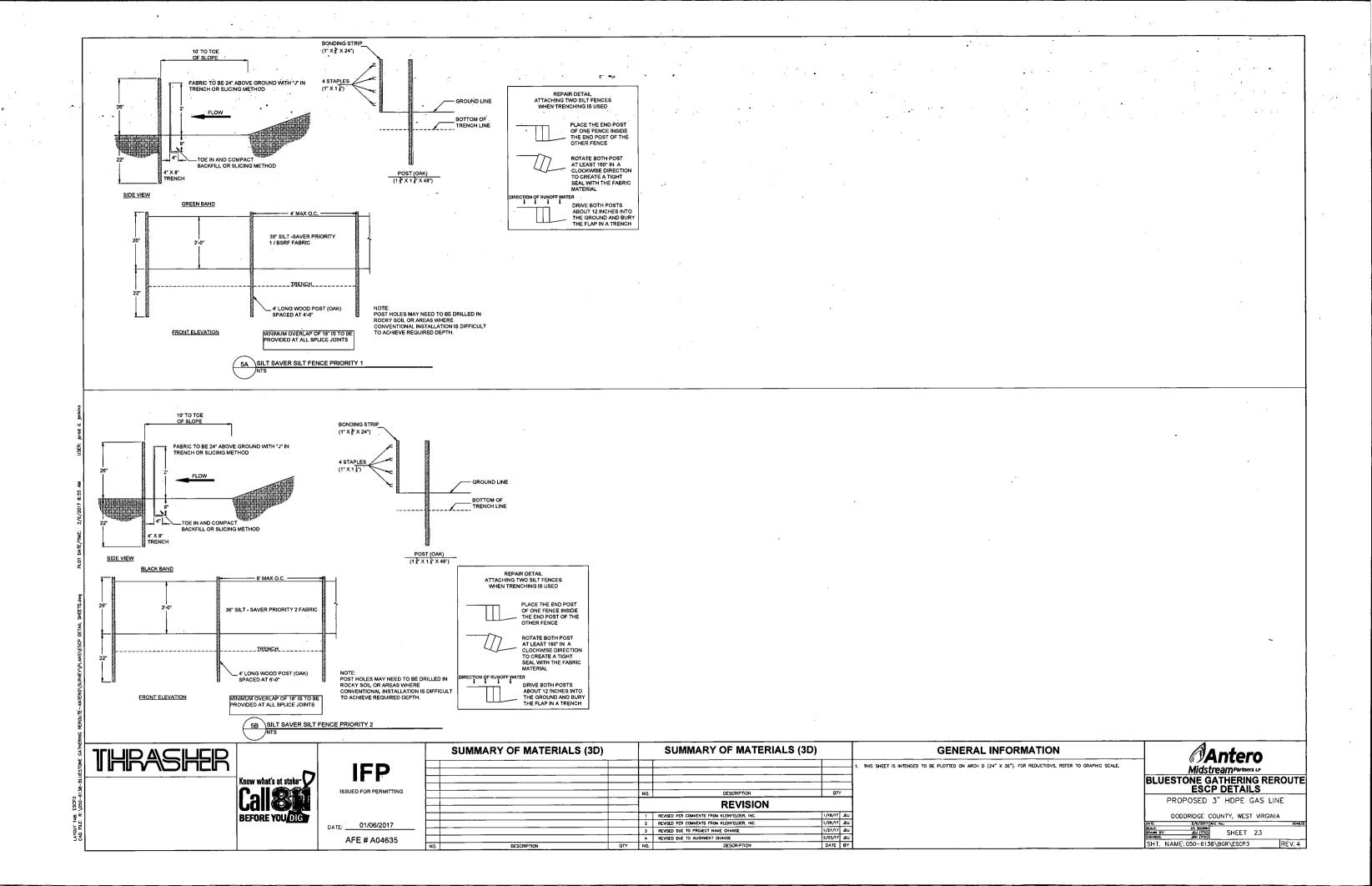


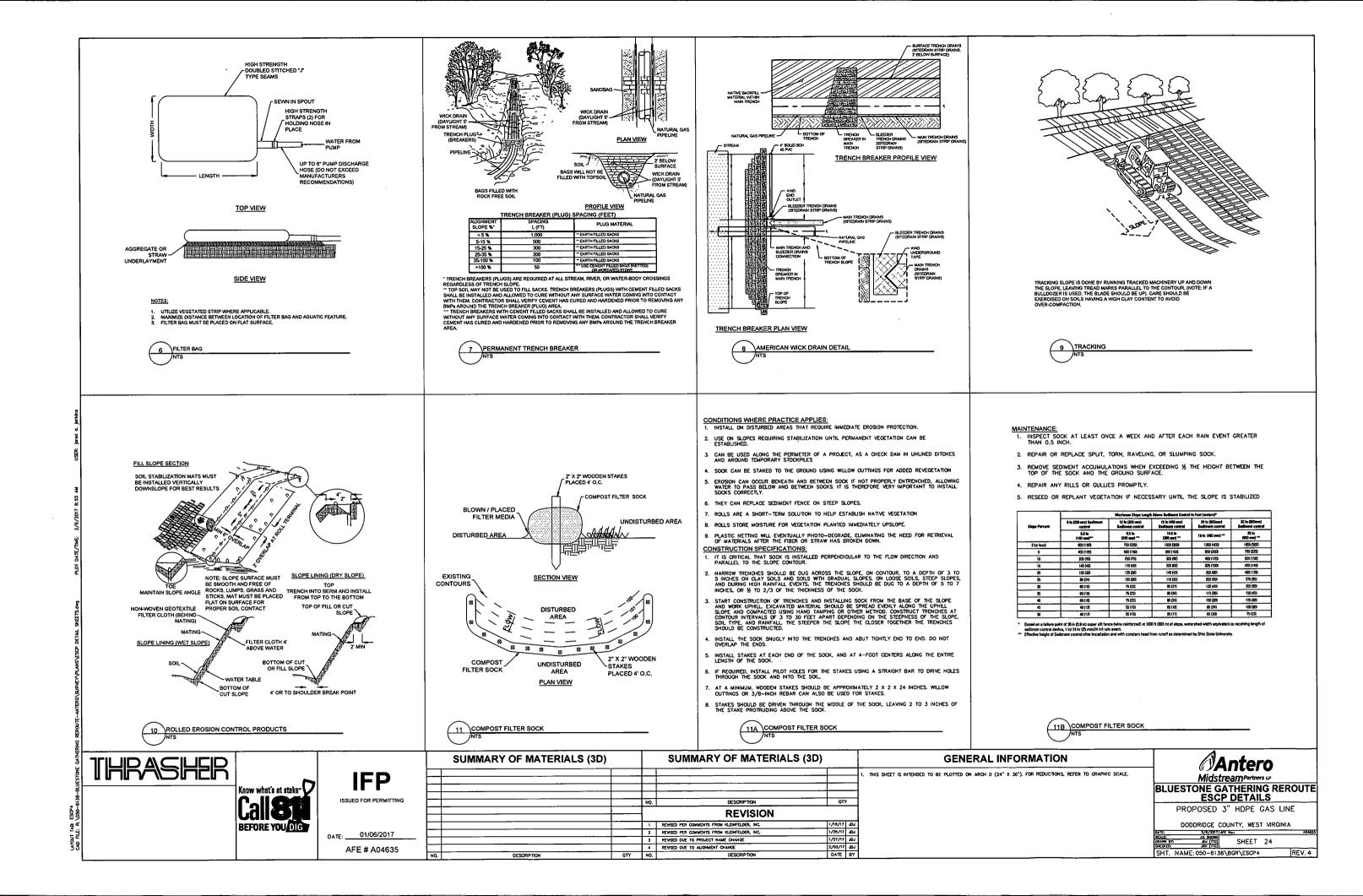
PROPOSED 3" HDPE GAS LINE

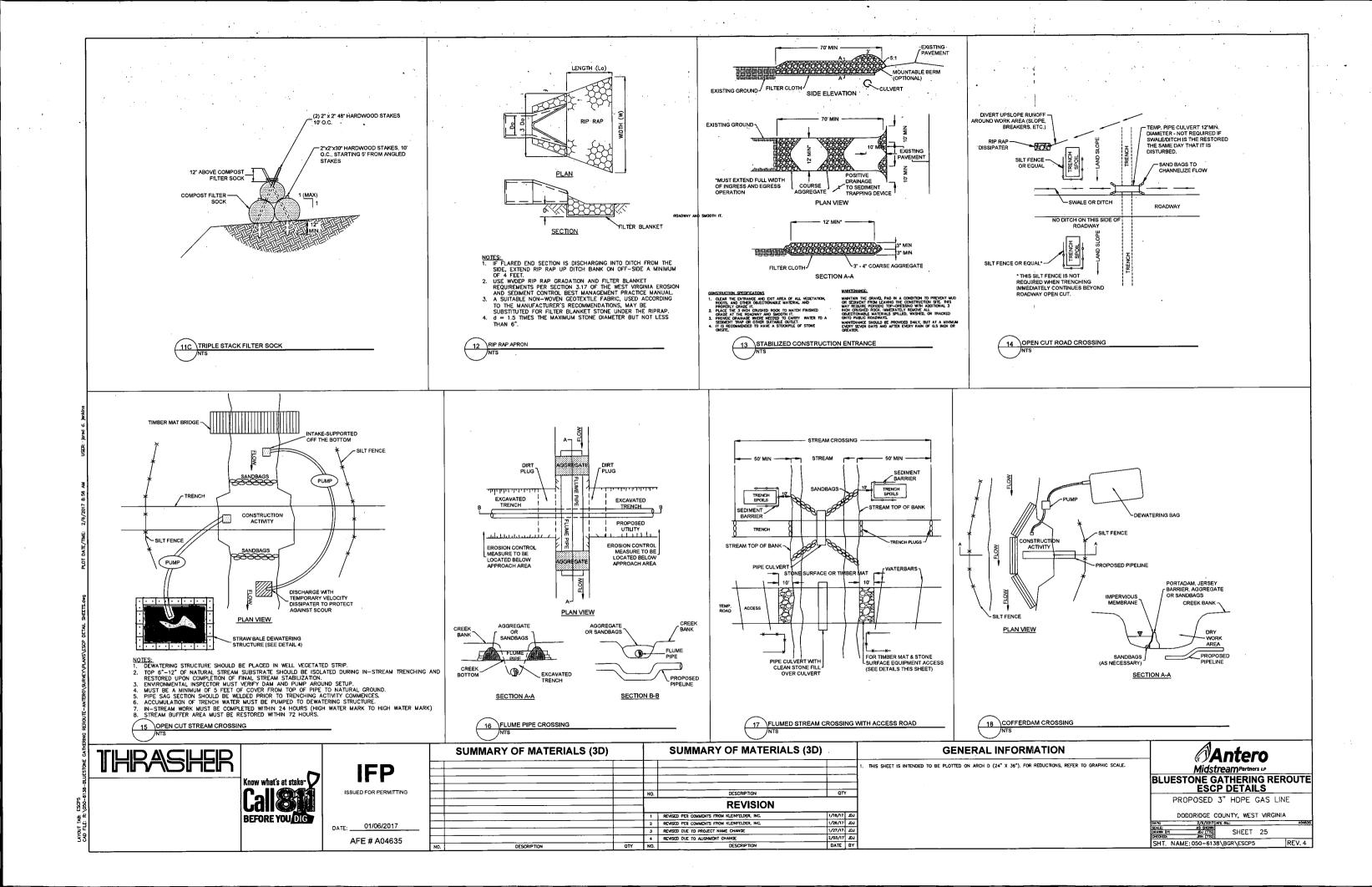
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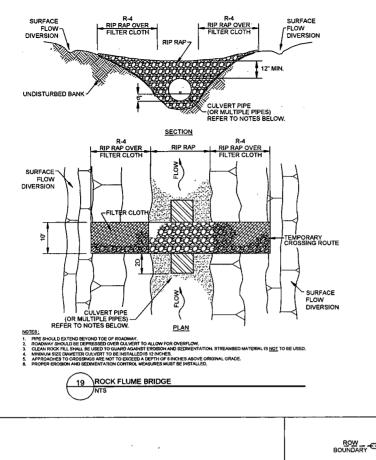
SHEET 22 SHT. NAME: 050-6138\BGR\ESCP2

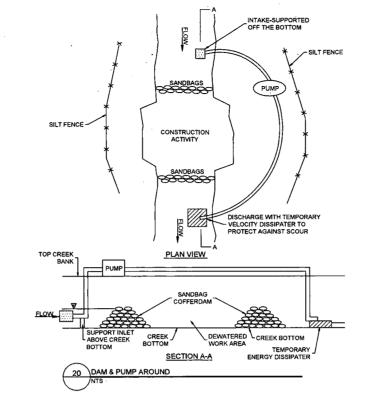
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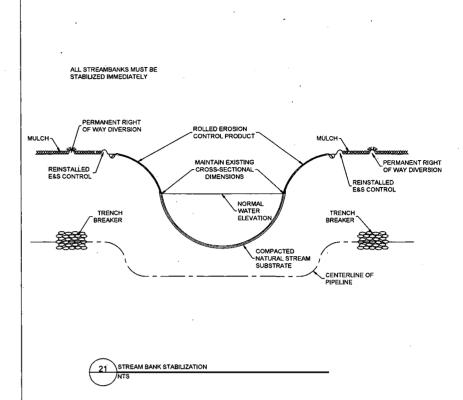


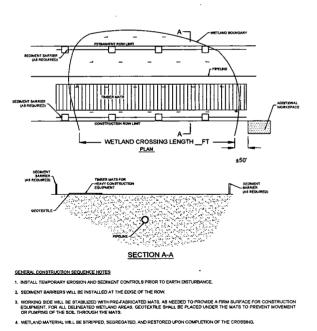




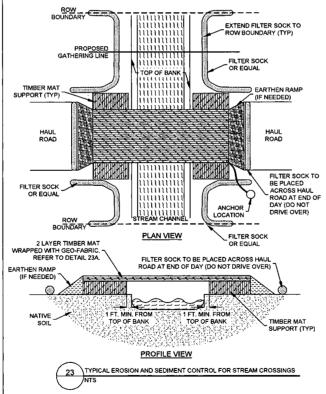


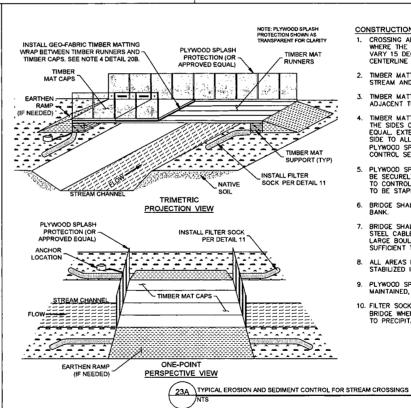






22 TYPICAL EROSION AND SEDIMENT CONTROL FOR WETLAND CROSSINGS





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.

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 MINIMIM 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 ENTERNIC STREAM.

 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

 BRIDGE SHALL BE SECURELY ANCHORED AT ONLY ONE END USING STEEL CABLE OR CHAIN. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR ORIVEN STEEL ANCHORS. ANCHORING SHALL E SLEETING TO PROPERT THE BRIDGE FORM FLOATING ONDESTREAM.

8. ALL AREAS DISTURBED DURING BRIDGE INSTALLATION SHALL BE STABILIZED IMMEDIATELY.

 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



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ATE: 01/06/2017 AFE # A04635

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GENERAL INFORMATION

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PROPOSED 3" HDPE GAS LINE

DODDRIDGE COUNTY, WEST VIRGINIA

2/6/2017 AFE No.:

AS SHOWN

SUD (TTG)

JEN (TTG)

NAME: 060 61 79 PCP) E

SHEET 26 BGR\ESCP6

LAYOUT TAB: ESCP6

SHT. NAME: 050-6138\BGR\ESCP6

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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% 5% Medium Red Clover Ladino Clover 5% Kentucky Bluegrass VNS 5% Alsike Clover 5% 5% * All seed mixes require double inoculation Antero Midstream Default Wildlife Mix (150 - 175 LBS per Acre) 20% Medium Red Clover 10% Buckwheat
Oats (Spring & Summer) or Wheat (Fall & Winter) 10% 20% Ladino White Clover 10% Birdsfoot Trefoil Alfafa 10% Named Variety of Forage Perennial Ryegrass 10% Annual Ryegrass 10% * All seed mixes require double inoculation 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% 15% Annual Ryegrass 5% Ladino Clover 5% Alsike Clover Birdsfoot Trefoil
* All seed mixes require double inoculation 5%

Pelletized 1.5 tons per acre

Fertilizer 10/20/20 200 lbs per acre

Straw Mulching 2 tons per acre

LIME, FERTILIZER, AND MULCH CHARTS

TYPES OF ROAD CROSS-SECTIONS

27 TYPES OF ROAD CROSS-SECTIONS

THRASHER



250 - 350 lbs per acre

Annual Winter 100 - 125 lbs per Wheat acre

Annual Rye

24 TEMPORARY SEEDING CHART

IFP

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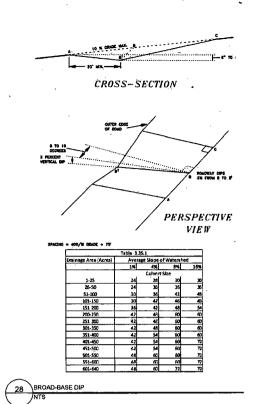
OAntero MidstreamPartners LP
BLUESTONE GATHERING REROUTE
ESCP DETAILS

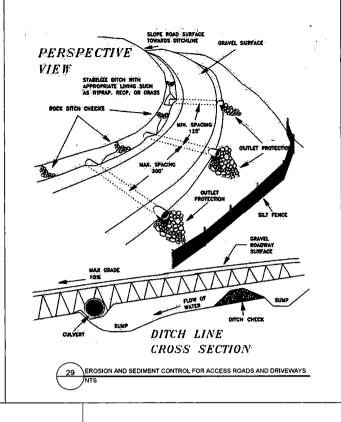
PROPOSED 3" HDPE GAS LINE

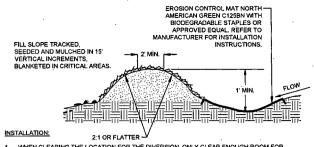
DODDRIDGE COUNTY, WEST VIRGINIA

2/6/2017 AFE No.: AS 59-0WN JOJ (TIG) SHEET 27 JRH (TIG)

PERMANENT SEEDING CHART







2.1 ON FLATTER 2

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

2. REMOVE ALL STUMPS, ROOTS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY.

3. INSTALL DIVERSION AND COMPACT AS SHOWN IN DETAIL INSURE POSITIVE DRAINAGE DURING

INSTALL DIVERSION AND COUNTY OF THE 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.

- TEMPORARY BERMS SHALL BE PLACED, MAINTAINED, AND ADJUSTED CONTINUOUSLY UNTIL 90% 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 BERMS SHALL HAVE POSITIVE GRADE TO OUTLET AND AN APPROPRIATE PROTECTIVE LINKING.

 BERM SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.

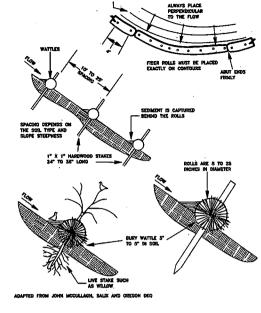
 AN ACCEPTABLE ALTERNATIVE TO TOP-OF-SLOPE BERM IS TO CONTINUOUSLY GRADE THE TOP OF FILL TO DIRECT PRUNOFF AWAY FROM THE FILLSLOPE TO A COLLECTOR CHANNEL, SEDIMENT TRAP, OR SEDIMENT BASIN.

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.

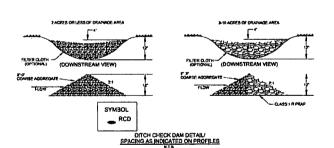


WATTLES

FIGURE 3.06:1

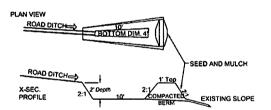






NOTES:
DITCH CHECKS WILL BE CONSTRUCTED IN CHANNELS TO MINIMIZE EROSION. THE CONSTRUCTION OF THE DITCH CHECK MILL FOLLOW THE QUIDELINES ABOVE. DITCH CHECKS WILL BE CONSTRUCTED SO THAT THE ELEVATION OF THE TOP OF THE DOWNSTREAM DITCH CHECK IS EQUAL TO THE ELEVATION OF THE BASE OF THE DITCH CHECK ABOVE. THIS GREATES A STUTATION WHERE THE CHANNEL HAS NO CHANNELEDE FLOW PRE 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 DISSIPRATES ENERGY AND SLOWS THE WATER FLOW REDUCING EROSION AND ALLOWING ANY SEDIMENT IN THE DRAINAGE TO FALL OUT.



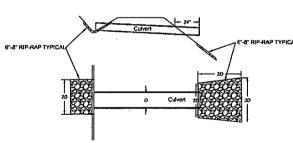


LEVEL SPREADER DETAIL

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 ASSOCIATES CHANNELIZED FLOW. THE PURPOSE OF THE LEVEL SPREADER IS TO DISSIPATE ENERGY AND SPREAD THE FLOW OUT OVER A SIGNIFICANT AREA
THIS MILL TAKE A CHANNEUZED FLOW AND ESSENTIALLY CONVERT IT BACK TO A SHEET FLOW
OVER THE GROUND SURFACE. THE SHEET FLOW MILL 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 ALLOWS BE CONSTRUCTED ALONG THE GROUND CONTOUR





TYPICAL CULVERT & CULVERT INLET/OUTLET PROTECTION DETAIL

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.



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ISSUED FOR PERMITTING

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AFE # A04635

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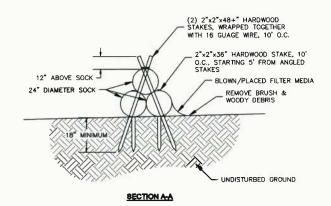


PROPOSED 3" HDPE GAS LINE

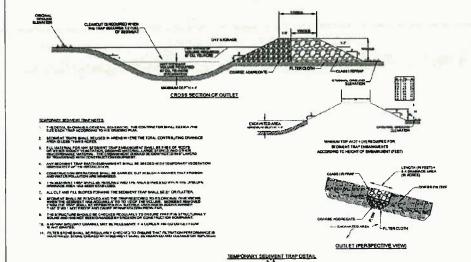
DODDRIDGE COUNTY, WEST VIRGINIA SHEET 28

SHT. NAME: 050-6138\BGR\ESCP8

PLAN VIEW



TRIPLE STACK FILTER SOCK SEDIMENT TRAP



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.

TEMPORARY SEDIMENT TRAP

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
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.

37A SUPPLEMENTAL 404 CWA BMP CONTROLS

OETAL PROVIDED BY ANTERO MIDSTREAM LLC



PHASE II:
THIS CONTROL CONSISTS OF TYPICAL SILT FENCE, SUPER SILT FENCE, OR FILTER SOXX. 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.

37B SUPPLEMENTAL 404 CWA BMP CONTROLS

NTS

DETAIL PROVIDED BY ANTERO MIGSTREAM LLC



<u>PHASE III:</u>
THIS CONTROL CONSISTS OF METAL Q-DECKING WHICH IS STOOD ON ITS EDGE AND SECURED TO METAL POSTS. THIS CONTROL IS USE 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 SO 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 SOXX 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



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

38	DEFINITIONS
	NTS

DETAIL PROVIDED BY ANTERO MIDSTREAM I.I.O.

THRASHER



IFP ISSUED FOR PERMITTING

01/06/2017 AFE # A04635

SUMMARY OF MATERIALS (3D) SUMMARY OF MATERIALS (3D) DESCRIPTION REVISION REVISED PER COMMENTS FROM KLEINFELDER, INC. 1/26/17 JDJ 2 REVISED PER COMMENTS FROM KLEINFELDER, INC. 4 REVISED DUE TO ALIGNMENT CHANGE

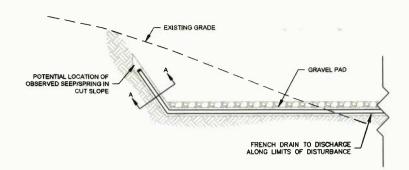
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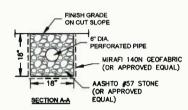
OAntero MidstreamPertners ur **BLUESTONE GATHERING REROUTE**

ESCP DETAILS PROPOSED 3" HDPE GAS LINE

DODDRIDGE COUNTY, WEST VIRGINIA

SHT. NAME: 050-6138\BGR\ESCP9

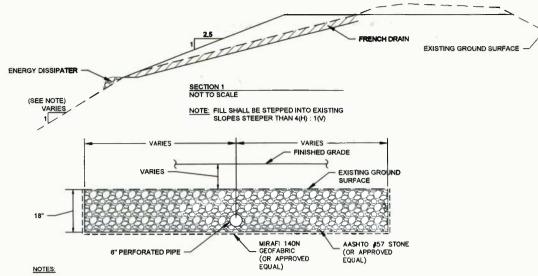




NOTE:

IF EVIDENCE OF A SEEP/SPRING IN A CUT SLOPE IS OBSERVED, THE CONTRACTOR SHOULD INSTALL A FRENCH DRAIN PER DETAIL 36 ABOVE.





- 1. 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.
- 2. 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 ENVELOP ARQUIND THE PIPE TRENCH TO PREVENT THE MIGRATION OF FINES INTO THE FRENCH DRAIN.
- 3. 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.
- 4.THE FRENCH DRAIN SHOULD BE CONSTRUCTED TO SPAN THE ENTIRE WIDTH OF THE OBSERVED SPRING OR SEEP.

FRENCH DRAIN AND DRAINABLE FILL SECTION AT OBSERVED 40 SEEP/SPRING OR EXISTING DRAINAGE FEATURE LOCATION



Typical Polymer Stabilized Fiber Matrix Applicat

SLOPE	6:1	5:1	4:1	3:1	2:1	1.5:1	1:1
Soll Stabilizer (gals/scre)	4	5	6	7	8	9	10
Fiber (lb/acre)	1,500	1,500	1,500	1,800	2,000	2,500	3,000

Maximum Rainfa and for Site Win				
SLOPE	≤5:1	4:1	≥3:1	
Soll Stabilizer (gals/acre)	6	8	10	
Fiber (lb/acre)	2,000	2,500	3,000	

NOTES:

A BONDED FIBER MATRIX (BMF) IS AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. BMFs 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 5FM SHOULD BE APPLIED AT A RATE OF 3,000 LB/ACRE. STEEPER SLOPES MAT NEED AS MUCH AS 4,000 LB/ACRE.

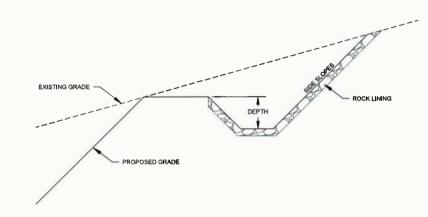
BFMs SHOULD ONLY BE USED WHEN NO RAIN IS FORECASTED FOR AT LEAST 48 HOURS FOLLOWING THE APPLICATION. THIS IS TO ALLOW THE TACKIFIER SUFFICIENT TIME TO CURE PROPERLY. ONCE PROPERLY APPLIED, A BFM IS TYPICALLY 90% EFFECTIVE IN PREVENTING ACCELERATED EROSION. BFMs SHOULD NOT BE APPLIED BETWEEN

A POLYMER STABILIZED FIBER MATRIX (PSFM) CAN ALSO BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERTY. PSFMs MAKE USE OF A LINEAR SOIL STABILIZING TACKFIER 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 MATURAL OR MECHANICALLY INDUCED IS PREFERABLE. HOWEVER, LARGE ROCKS, THOSE > 9 INCHES, AND EXISTING RILLS SHOULD BE REMOVED PRIOR TO APPLICATION. TRACKING OF GROOVING OF SLOPES SHOULD BE CONSIDERED TO SLOW WATER FLOWS DURING A STORM EVENT. SLOPE INTERRUPTION DEVICES SUCH AS STAIR STORM FOR GROOVING SHOULD 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 MAXING SUFFICIENT CONTACT WITH THE SOIL TO GERMINATE. AFTER THE SEED MIXTURE IS APPLIED, THE BERN, FGM, OR PSFM SHOULD BE SPRAYED OVER THE AREA AT THE REQUIRED APPLICATION RATE, (SEE ABOVE TABLES)



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

80NDED FIBER MATRIX (HYDROMULCH)







ISSUED FOR PERMITTING

01/06/2017 AFE # A04635

SUMMARY OF MATERIALS (3D)		(3D)	SUMMARY OF MATERIALS (31				
\pm						\exists	
			NO.	DESCRIPTION	QT)	<u> </u>	
			REVISION				
- 1			1	REVISED PER COMMENTS FROM KLEINFELDER, INC.	1/18/17	3DJ	
			2	REVISED PER COMMENTS FROM KLEINFELDER, INC.	1/28/17	JDJ	
			3	REVISED DUE TO PROJECT NAME CHANGE	1/27/17	JDJ	
			4	REVISED DUE TO ALIGNMENT CHANGE	2/03/17	JDJ	
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE	BY	

GENERAL INFORMATION

1. THIS SHEET IS INTENDED TO BE PLOTTED ON ARCH D (24" X 36"). FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

Midstream Pertners LP **BLUESTONE GATHERING REROUTE**

ESCP DETAILS

PROPOSED 3" HDPE GAS LINE DODDRIDGE COUNTY, WEST VIRGINIA

2/6/2017 AFE No.: AS 3HOWN JOJ (TTG) JRH (TTG)

SHEET 30 SHT. NAMF: 050-6138\BGR\ESCP10