	Y .
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
Complete items 1, 2, and 3.	A. Signature DS⊳Agent
Print your name and address on the reverse so that we can return the card to you.	X / / / / / / / / Addressee
Attach this card to the back of the mailpiece,	B. Received by (Printed Name) C. Date of Delivery Run (455 3-10-17)
or on the front if space permits.	idress different from item 1? Yes
	delivery address below:
Crystal Lake Club	
300 Crystal Lake Road	
West Union, WV 26456	<u>.</u>
	10 Partie Tree
	3. Service Type □ Priority Mail Express® □ Adult Signature □ Adult Signature Restricted Delivery □ Registered Mail Restricted
9590 9402 2016 6123 8101 16	☐ Adult Signature Restricted Delivery ☐ Registered Mail Restricted Delivery ☐ Certified Mail Restricted Delivery ☐ Return Receipt for
	☐ Collect on Delivery
2. Article Number (Transfer from service lahel) 7015 3430 0001 1569 728	Mail Signature Confirmation
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PS Form 3811, July 2015 PSN 7530-02-000-9053	Domestic Return Receipt
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
Complete items 1, 2, and 3.	A. Signature
Print your name and address on the reverse so that we can return the card to you.	X Ballan Suran Addressee
Attach this card to the back of the mailpiece,	B. Received by (Printed Name) 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 below: No
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14660 WV Route 23	
West Union, WV 26456	,
era grafier agerriae e eren eren eren eren 1980 i 1981 e 1980 i 1981	3. Service Type ☐ Priority Mail Express® ☐ Registered Mail™
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Die Billiel fiell imittel billet bi ibserimpe seuen en men	☐ Certified Mail® Delivery
9590 9402 2016 6123 8102 53	☐ Certifled Mail Restricted Delivery ☐ Return Receipt for Merchandise
9590 9402 2016 6123 8102 53 2. Article Number (<i>Transfer from service label</i>)	☐ Certifled Mail Restricted Delivery ☐ Collect on Delivery ☐ Collect on Delivery Restricted Delivery ☐ Insured Mail ☐ Signature Confirmation ☐ Signature Confirmation
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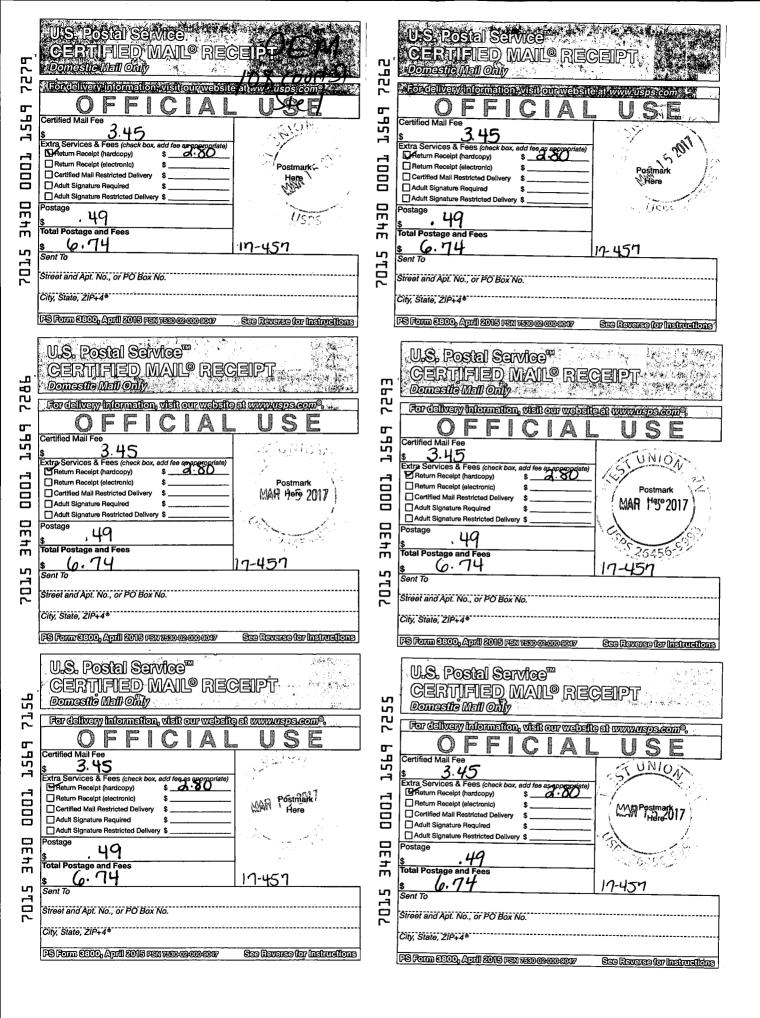
PS Form 3811, July 2015 PSN 7530-02-000-9053

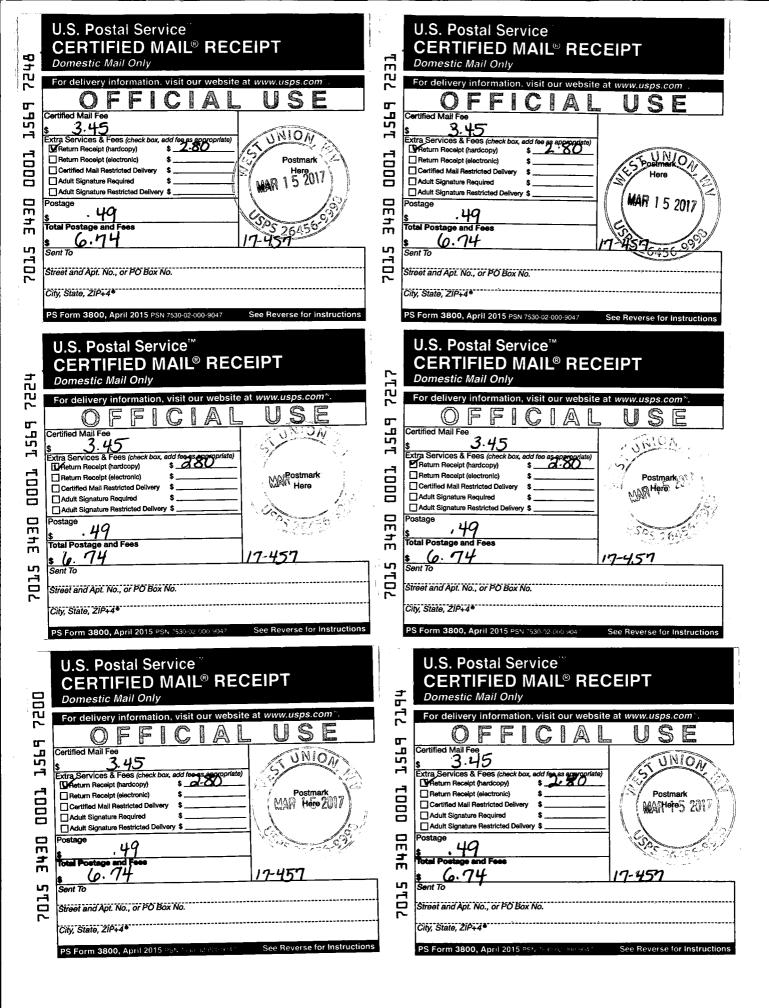
Domestic Return Receipt

SENDER: COMPLETE THIS SECTION	A PROPERTY SECTION ON DELIVERY
Complete items 1, 2, and 3.	A. Signature
Print your name and address on the reverse	Xarre Mose Agent
so that we can return the card to you. Attach this card to the back of the mailplece, or on the front if space permits.	B. Received by (Printed Name) C. Date of Delivery 3/1/2/17
of off the Bolt it space behinds.	D. Is delivery address different from item 1? Yes If YES, enter delivery address below: No
Forest C. Moore	
16562 WV Rt. 23N	
West Union, WV 26456	
	3. Service Type ☐ Priority Mail Express® ☐ Adult Signature ☐ Registered Mail™
	☐ Adult Signature Restricted Delivery ☐ Registered Mail Restricted ☐ Certified Mail® ☐ Delivery
9590 9402 2016 6123 8100 48	☐ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise
. Article Number (Transfer from service label)	☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation ☐ Signature Confirmation
7015 3430 0001 1569 716	
PS Form 3811, July 2015 PSN 7530-02-000-9053	Domestic Return Receipt
, , , , , , , , , , , , , , , , , , ,	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 so that we can return the card to you.	R. Received by (Printed Name) () C: Date of Delivery
Attach this card to the back of the mailpiece,	B. Received by (Printed Name) U.C. Date of Delivery
or on the front if space permits.	address different from item 1? Yes
	er delivery address below:
Randall Lynch & Dixie Cra	iig .
PO Box 100	
West Union, WV 26456	·
-	3. Service Type
	☐ Adult Signature Restricted Delivery ☐ Registered Mail Restricted
9590 9402 2016 6123 8101 30	☐ Certified Mail Restricted Delivery ☐ Return Receipt for
Article Number (Transfer from service label)	☐ Collect on Delivery Restricted Delivery
7015 3430 0001 1569 72	Restricted Delivery
	Domestic Return Receipt
PS Form 3811, July 2015 PSN 7530-02-000-9053	en e
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
■ Complete items 1, 2, and 3.	A. Signature
Print your name and address on the reverse so that we can return the card to you.	*Vary Nakans Addressee
Attach this card to the back of the mailpiece,	B. Received to (Pfinted Name) C. Date of Delivery
or on the front if space permits.	Larry Volumes different from them 13 Ves
A A A A A A A A A A A A A A A A A A A	r delivery address below:
Larry Williams	
393 Martin Lane	_
West Union, WV 26456	r-
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	3. Service Type
	3. Service Type
9590 9402 2016 6123 8101 47	3. Service Type

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

Domestic Return Receipt





A. Signature Complete items 1, 2, and 3. ☐ 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. address different from item er delivery address below: Ross H. & Carol S. Swiger 200 Robin Lane Harpers Ferry, WV 25425 Service Type □ Priority Mail Express® ☐ Adult Signature ☐ Registered Mail™ ☐ Adult Signature Restricted Delivery □ Registered Mail Restricted □ Certified Mail® Delivery 9590 9402 2016 6123 8101 85 ☐ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise □ Collect on Delivery ☐ Signature Confirmation™ ☐ Collect on Delivery Restricted Delivery 2. Article Number (Transfer from service label) ☐ Signature Confirmation I Mail Restricted Delivery I Mail Restricted Delivery (00cg 19vu) PS Form 3811, July 2015 PSN 7530-02-000-9053 **Domestic Return Receipt**

COMPLETE THIS SECTION ON DELIVERY

SENDER: COMPLETE THIS SECTION





United States Postal Service

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

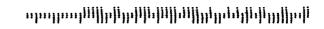
SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON DELIVERY A. Signature ■ Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. B. Received by (Printed Name) C. Date of Delivery Attach this card to the back of the mailpiece. or on the front if space permits. Autholia, Antalysia and Ass. ddress different from item 13 ir delivery address below: Allen Kendali Jones 3840 Hawks Bearda Sonoma, CA 95476 Service Type ☐ Priority Mail Express® Adult Signature □ Registered Mail™ ☐ Adult Signature Restricted Delivery □ Registered Mail Restricted □ Certified Mail® Delivery 9590 9402 2016 6123 8101 78 □ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise □ Collect on Delivery ☐ Signature Confirmation™ □ Collect on Delivery Restricted Delivery 2. Article Number (Transfer from service label) □ Signature Confirmation 7015 3430 0001 1569 7217 Restricted Delivery Mail Restricted Delivery PS Form 3811, July 2015 PSN 7530-02-000-9053 **Domestic Return Receipt**





United States Postal Service

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



Marie Company of the	
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
 Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature Agent Addressee B. Received by (Printed Name) C. Date of Delivery
Johnny Burgess Hooper III PO Box 105 Salvo, NC 27972	nddress different from Item 1? Yes. er delivery address below: No
9590 9402 1888 6104 9698 04 2. Article Number (Transfer from service label) 7015 3430 0001 1569 7248	3. Service Type ☐ Adult Signature ☐ Adult Signature Restricted Delivery ☐ Certified Mail® ☐ Collect on Delivery ☐ Collect on Delivery ☐ Mail Mail Restricted Delivery ☐ Mail Restricted Delivery ☐ Collect on Delivery ☐ Return Receipt for ☐ Signature Confirmation ☐ Signature Confirmation ☐ Restricted Delivery ☐ Collect on Delivery
PS Form 3811, July 2015 PSN 7530-02-000-9053	Domestic Return Receipt





United States
Postal Service

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

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SENDER: COMPLETE THIS SECTION A. Signature ■ Complete items 1, 2, and 3. 🗆 Acient Print your name and address on the reverse Addressee 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. address different from item 1? er delivery address below: Matthew Alexander & Linda Muhly MAR 20 2017 58 Overlook Dr. Bridgeport, WV 26330 3. Service Type □ Priority Mail Express® Aduit Signature ☐ Registered Mail™ ☐ Adult Signature Restricted Delivery □ Registered Mail Restricted □ Certified Mail® Delivery ☐ Certified Mail Restricted Delivery 9590 9402 2016 6123 8101 61 □ Return Receipt for Merchandise ☐ Collect on Delivery ☐ Signature Confirmation™ Anti-la Number (Transfer from service label) □ Collect on Delivery Restricted Delivery Signature Confirmation Mail 7015 3430 0001 1569 Restricted Delivery Mail Restricted Delivery PS Form 3811, July 2015 PSN 7530-02-000-9053 **Domestic Return Receipt**

COMPLETE THIS SECTION ON DELIVERY





United States
Postal Service

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

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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: #17-457 Yvonne to Middle Buried Waterline and Gasline

Date Approved: May 5, 2017 Expires: May 5, 2018

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

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

Project Address: Nutter Fork Road

Firm: Lat/Long: 39.351019N, 80.764131W to 39.323772N, 80.805144W

Purpose of development: buried waterline

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

Date: May 5,2017

No. of a Maria				
Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	May-03-2017	106865	\$250.00
				Ψ230.00

INV # INV DATE DESCRIPTION

AMOUNT

DISCOUNTS

NET AMOUNT

MR031017

03/10/17 FLOODPLAIN PRMT-YVONNE/MIDDLE BWL-P

250.00

0.00

250.00

#17-457

COPY



TOTAL INVOICES PAID ====>

250.00

0.00

250.00

DETACH AND RETAIN FOR TAX PURPOSES



ANTERO MIDSTREAM LLC 1615 WYNKOOP STREET DENVER, COLORADO 80202

Wells Fargo

Check No. 106865

11-24

800 - AP ACCT WELLS FARGO

EXACTLY 19250dols00cts

Two Hundred Fifty Dollars and Zero Cents

Void After 90 Days **CHECK NUMBER** PAY EXACTLY 106865 May-03-2017 \$250.00

TO THE ORDER

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

ALLISCHECKHASACOLORIEDIFACEIONWHITESTOCKANDANARTIFICIALWATERMARK ON THE BACK



Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	May-03-2017	106865	\$250.00

INV #	INV DATE	DESCRIPTION	AMOUNT	DISCOUNTS	NET AMOUNT
MR031017	03/10/17	FLOODPLAIN PRMT-YVONNE/MIDDLE BWL-P	250.00	0.00	250.00

#17-457

Doddridge County, West Virginia

RECEIPT NO:	90	68		DATE: 2017	//05/08		
	FROM:	ANTERO		AMOUNT: \$		250.00	
TWO HUNDR	ED FIF	TY DOLLARS ANI	0 00 CENTS				-
	FOR:	#17-457 YVONNE	E/MIDDLE BWL-P				
00000106	865 F	P-BUILDING PER	RMITS	020-318	3 TOT	AL : \$250	.00
MIC	HAEL H	EADLEY			MEC	_	
	SHERIF	F &TREASURER			CLERK		
			Cto-mon Co	-			

Customer Copy

TOTAL INVOICES PAID ====>

250.00

0.00

250.00

DETACH AND RETAIN FOR TAX PURPOSES



Vendor Name	Vendor No.	Date	Check Number	Check Total	
DODDRIDGE COUNTY COMMISSION	43312	May-03-2017	100026	\$250.00	

 INV #
 INV DATE
 DESCRIPTION
 AMOUNT
 DISCOUNTS
 NET AMOUNT

 MR05032017
 03/10/17
 FLOODPLAIN PRMT-YVONNE/MIDDLE BWL-P
 250.00
 0.00
 250.00

#19-457

COPY



TOTAL INVOICES PAID ===>

250.00

0.00

250.00

DETACH AND RETAIN FOR TAX PURPOSES

THIS CHECK HAS A COLORED FACE ON WHITE STOCK AND AN ARTIFICIAL WATER WARK ON THE BACK



ANTERO WATER 1615 WYNKOOP STREET DENVER, COLORADO 80202 Wells Fargo

Check No. 100026

26 11-24

810 - AP ACCT WELLS FARGO

EXACTIVE 1250dols00cts

Two Hundred Fifty Dollars and Zero Cents

COPY

 Void After 90 Days

 CHECK NUMBER
 DATE
 PAY EXACTLY

 100026
 May-03-2017
 \$250.00

TO THE ORDER DODDRIDGE COUNTY COMMISSION
BETH A ROGERS, CLERK~118 EAST COURT STREET~ROOM 10
2
WEST UNION, WV 26456



1000 26# # C4120 38 24#

9671451749#



ANTERO WATER 1615 WYNKOOP STREET DENVER, COLORADO 80202

Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	May-03-2017	100026	\$250.00

DISCOUNTS NET AMOUNT AMOUNT INV # INV DATE DESCRIPTION 250.00 03/10/17 FLOODPLAIN PRMT-YVONNE/MIDDLE BWL-P 0.00 250.00

MR05032017

#17-457

Doddridge County, West Virginia

DATE: 2017/05/08 9067 RECEIPT NO:

FROM: ANTERO

AMOUNT: \$

250.00

TWO HUNDRED FIFTY DOLLARS AND 00 CENTS

FOR: #17-457 YVONNE/MIDDLE BWL-P

00000100026 FP-BUILDING PERMITS

020-318

TOTAL:

\$250.00

MICHAEL HEADLEY

SHERIFF &TREASURER

MEC

CLERK

Customer Copy

TOTAL INVOICES PAID ====>

250.00

0.00

250.00

DETACH AND RETAIN FOR TAX PURPOSES

FLOODPLAIN PERMIT #17-457

ANTERO/Yvonne to Middle Buried Gasline

TASK	COMPLETE (DATE)	NOTES
CHECK RECEIVED		
US ARMY CORP. ENGINEERS (USACE)	×	
US FISH & WILDLIFE SERVICES (USFWS)	×	
WV DEPT. NATURAL RESOURCES (WVDNR)	×	
WV DEPT. ENVIROMENTAL PROTECTION (WVDEP)	X	
STATE HISTORIC & PRESERVATION OFFICE (SHPO)	×	
OFFICE of LAND & STREAM (OLS)	×	
DATE OF COMMISSION READING	03-21-17	
DATE AVAILABLE TO BE GRANTED	04-10-17	
PERMIT GRANTED	5-5-17	
COMPLETE	V	



Doddridge County Floodplain Permits

(Week of March 20, 2017)

Please take notice that on the 13th day of March, 2017, Antero Midsteam, LLC filed an application for a Floodplain Permit (#17-457) to develop land located at or about 39.351019N, 80.764131W TO 39.323772N, 80.805144W, Nutter Fork Rd. 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 April 10, 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 Yvonne to Middle Buried Waterline and Pipeline.



March 10, 2017

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

Mr. Eidel:

Antero Midstream LLC would like to submit a Doddridge County Floodplain permit application for our *Yvonne to Middle Buried Waterline and Pipeline* project. Our project is located in Doddridge County beginning at coordinates 39.351019 N, 80.764131W and continuing to coordinates 39.323772N, 80.805144W. Per the FIRM Map #54017C0110C 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 Map
- 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

"NO-RISE" CERTIFICATION

This is to certify that I am a duly qualified registered professional engineer licensed to practice in the State of West Virginia.

It is further to certify that the attached technical data supports the fact that proposed Yvonne to Middle Pipeline Project will not impact the 100-year flood elevations, floodway elevations, or floodway widths as shown in the Flood Insurance Rate Map Number 54017C0110C for Doddridge County, West Virginia last revised October 4, 2011.

The project proposes the installation of a buried water pipeline with restoration to existing grade and land cover. Thus, the proposed pipeline shall not impact the 100-year flood elevations, floodway elevations, or floodway widths in the vicinity of the project.

Attached are the following documents that support my findings:

Doddridge County Firm Map Number 54017C0110C showing the location of the proposed project.

Date: February 27, 2017

Signature: Se. Peotest MAWAGER

SEAL



Permit# 17-457

Project Name: <u>Yvonne to Middle</u>

Buried WL&PL

Permittees Name: Antero Midstream

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_	(Inlike	GM Cial Dyisa/Castu. L
DATE	3/9/2017	

Applicant Information:

Please provide all pertinent data.

Applicant Information					
Responsible Company Name: Antero Midstream, 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	JNS:			
Corporate Website: www.anteroresources.com					
Local Mailing Address: 535 White Oaks Bouleva	ırd				
City: Bridgeport	State: WV	Zip: 26330			
Local Project Manager (PM):					
Local PM Primary Phone:					
Local PM Secondary Phone:					
Local PM Primary Email:					
Person Filing Application: Rachel Grzybek					
Applicant Title: Environmental Specialist II					
Applicant Primary Phone: (304) 842-4008					
Applicant Secondary Phone: (304) 641-2396					
Applicant Primary Email: rgrzybek@anteroresources.com					

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 Yvonne to Middle Pipeline project begins at the Yvonne Pad, north of C.R. 28 (Nutter Fork Rd),
and runs southwest, crossing Nutter Fork and ending at the Middle Pad. Proposed erosion and
sediment control measures include silt fence, waterbars, stone construction entrances, and timber
mats. A portion of the work will cross the Middle Island Creek Zone A Flood Hazard Area as shown
on the Flood Insurance Rate Map for Doddridge County, Map #54017C0110C with a map revised
date of October 4, 2011. The waterline will be buried, and the existing ground and land cover
will be restored upon completion of the work. Therefore, the installation of the proposed pipeline
will not impact the 100-year flood elevations, floodway elevations, or floodway widths near the
project.

Proposed Development:

Please check all elements of the proposed project that apply.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

<u>ACTIVITY</u>					STRUCTURAL TYPE			
[]	New Struct	ture			[]	Residential (1 $-$ 4 Family)		
[]	Addition				[]	Residential (more than 4 Famil		
[]	Alteration		[] Non-residential (flo		Non-residential (floodproofing)			
[]	Relocation				[]	Combined Use (res. & com.)		
[]	Demolition	1			[]	Replacement		
[]	Manufact	ured/Mo	bil Home					
В.	OTHER DE	VELOPI	MENT ACTI	VITIES:	:			
()	Fill	[]	Mining	[]	Drillin	g [x]	Pipelining	
[]	Grading							
[x]	Excavation	(except	for STRUCTUF	RAL DEVE	ELOPMEN	NT checked a	bove)	
[]	Watercour	se Altera	ition (includin	g dredgii	ng and ch	nannel modif	ication)	
[]	Drainage II	mprovem	nents (includir	ng culver	t work)			
[]	Road, Stre	et, or Bri	dge Construct	ion				
[]	Subdivision	n (includi	ng new expan	sion)				
[]	Individual '	Water or	Sewer Systen	n				
[]	Other (plea	ase speci	fy)					

Development Site/Property Information:

Property Designation: 1 of 14						
for the						
Site/Property Information						
Legal Description: TWO TR	S M I CREEK 75.72 A	.C				
Physical Address/911 Add	ress: WV 18					
Decimal Latitude/Longitud	le: 39.326956° N, 80	.806125° W				
DMS Latitude/Longitude: 3	9° 19′ 37.04″ N, 80°	48′ 22.05″ W				
District: 8 – West Union		Parcel:	1			
Land Book Description:	1		·			
Deed Book Reference: Boo	k 258, Page 546					
Tax Map Reference: 09-08-	0006-0001-0000					
Existing Buildings/Use of F	Property: Antero Mid	stream, LLC's Yv	onne to	Middle Pipeline will be		
located on this property.						
Floodplain Location Data:	(to be completed by I	loodplain Manag	er or des	ignee)		
Community:	Number:	Panel:		Suffix:		
Location (Lat/Long):		Approximate Elevation:				
Is the development in the f	loodway?	Estimated BFE		the floodulain?		
	Is the development in the floodplain?					
U Yes UNo		Uyes	U _{No}	Zone:		
Notes:						

Development Site/Property Information:

Property Designation: 2 of 14						
Site/Property Information:						
Legal Description: M I CRE				<u>, a '</u>		
Degat Description. Fit deep						
Physical Address/911 Add	ress: WV 18					
Decimal Latitude/Longitud	le: 39.323772° N, 80.	805144° W				
DMS Latitude/Longitude: 3	19° 19′ 25.58″ N, 80° 4	18′ 18.52″ W		,		
District: 8 – West Union	District: 8 - West Union Map: 6 Parcel: 2					
Land Book Description:						
Deed Book Reference: Boo	k 214, Page 279					
Tax Map Reference: 09-08-	-0006-0002-0000	W				
Existing Buildings/Use of F	roperty: Antero Mid:	stream, LLC's Yv	onne to	Middle Pipeline will be		
located on this property.						
Floodplain Location Data:	(to be completed by E	loodulain Manaa	on on doe	signing)		
Community:	Number:	Panel:	er onues	Suffix:		
Community:	Number:	Panei:		Sumx:		
Location (Lat/Long):		Approximate E	Elevation	1:		
Estimated BFE:						
Is the development in the floodway?				the floodplain?		
□ Yes □ No Zone:						
Notes:						
			.			

Development Site/Property Information:

Property Designation: 3 of	14		· · · · ·	-				
Site/Property Information								
	Legal Description: M I CREEK 357.75 AC							
Physical Address/911 Add	ress: CR 28							
Decimal Latitude/Longitud	le: 39.331325° N, 80.	791464° W 						
DMS Latitude/Longitude: 3	39° 19′ 52.77″ N, 80° 4	47′ 29.27″ W						
District: 8 - West Union Map: 4 Parcel: 28								
Land Book Description:			•					
·								
Deed Book Reference: Boo	k WB28, Page 314							
Tax Map Reference: 09-08-	-0004-0028-0000							
Existing Buildings/Use of F	'roperty: Antero Mid	stream, LLC's Yv	onne to	Middle Pipeline will be				
located on this property.								
Territoria de la compansión de la compan	Co. I		. .	2.5				
Floodplain Location Data:	i i i i i i i i i i i i i i i i i i i	T	er or aes					
Community:	Number:	Panel:		Suffix:				
Location (Lat/Long):		Approximate l	Elevation	1:				
Estimated BFE:								
Is the development in the floodway? Is the development in the floodplain?								
O _{Yes} O _{No} O _{Yes} O _{No} Zone:								
Notes:								
				. "				

Development Site/Property Information:

Property Designation: 4 of	14						
Site/Property Information:							
Legal Description: NUTTER		1					
	• • •						
Physical Address/911 Add	ress: CR 28						
Decimal Latitude/Longitud	 le: 39.332939° N, 80.	779211° W					
DMS Latitude/Longitude: 3							
		10 10.10	<u> </u>				
District: 8 – West Union	Map: 4	• •	Parcel:	29			
Land Book Description:							
Deed Book Reference: Boo	k WB51, Page 709						
Tax Map Reference: 09-08-	0004-0029-0000						
Existing Buildings/Use of F	roperty: Antero Mid	stream, LLC's Yv	onne to	Middle Pipeline will be			
located on this property.							
[- 8			
Floodplain Location Data:		1	er or des	I			
Community:	Number:	Panel:		Suffix:			
Location (Lat/Long):		Approximate I	Elevation	1:			
Estimated BFE:							
Is the development in the f	loodway?	†		the floodplain?			
$\square_{\mathrm{Yes}} \square_{\mathrm{No}}$	•	□ _{Yes}	\square_{No}	Zone:			
Notes:							

Development Site/Property Information:

Property Designation: 5 of	14					
Site/Property Information	•		· · · · · ·			
Legal Description: NUTTER				<u> </u>		
Physical Address/911 Add	ress: CR 28					
Decimal Latitude/Longitud	le: 39.328992° N, 80.	775881° W				
DMS Latitude/Longitude: 3		46′ 33.17″ W				
District: 8 – West Union	Map: 4		Parcel:	36		
Land Book Description:			<u> </u>			
Deed Book Reference: Boo	k WB28, Page 314					
Tax Map Reference: 09-08-	-0004-0036-0000					
Existing Buildings/Use of F	'roperty: Antero Mid	stream, LLC's Yv	onne to	Middle Pipeline will be		
located on this property.						
Floodplain Location Data:	(to be computated by E	desidalain Manas	ملاهات والاما			
	I	T	jer or aes	1 1		
Community:	Number:	Panel:		Suffix:		
Location (Lat/Long):		Approximate I	Elevation	1:		
Estimated BFE:						
Is the development in the f	Is the develop	ment in t	the floodplain?			
□ _{Yes} □ _{No}	\square_{Yes}	\Box_{No}	Zone:			
Notes:						

Development Site/Property Information:

Property Designation: 6 of	14				
Site/Property Information					
Legal Description: NUTTER	RS FK 5.89 AC				
Physical Address/911 Add	ress: CR 28				
Decimal Latitude/Longitud	le: 39.331953° N, 80.	776786° W			
DMS Latitude/Longitude: 3	39° 19′ 55.03″ N, 80° 4	16′ 36.43″ W			
District: 8 - West Union	Map: 4		Parcel:	35	
Land Book Description:					
Deed Book Reference: Boo	k 276, Page 01				
Tax Map Reference: 09-08-	0004-0035-0000				
Existing Buildings/Use of F	roperty: Antero Mid:	stream, LLC's Yv	onne to	Middle Pipeline will be	
located on this property.					
production of the second of th					
Floodplain Location Data:	I	T	er or des	T	
Community:	Number:	Panel:		Suffix:	
Location (Lat/Long):		Approximate I	Elevation	1:	
Estimated BFE:					
Is the development in the f	Is the development in the floodplain?				
U _{Yes} U _{No} Zone:					
Notes:					
				•••	

Development Site/Property Information:

Property Designation: 7 of	14					
Site/Property Information				,		
Legal Description: NUTTER				<u> </u>		
Legal Description. No. 1 E.						
Physical Address/911 Add	ress: CR 28					
Decimal Latitude/Longitud	le: 39.333964° N, 80	0.774844° W				
DMS Latitude/Longitude: 3	9° 20′ 02.27″ N, 80°	' 46' 29.44" W				
District: 8 – West Union	Map: 4		Parcel:	32		
Land Book Description:						
Deed Book Reference: Boo	k 241, Page 412					
Tax Map Reference: 09-08-	-0004-0032-0000					
Existing Buildings/Use of P	roperty: Antero Mi	dstream, LLC's Yv	onne to l	Middle Pipeline will be		
located on this property.						
				- 4.6.0		
Floodplain Location Data:	(to be completed by	Floodplain Manag	ger or des	ignee)		
Community:	Number:	Panel:		Suffix:		
Location (Lat/Long):		Approximate	Elevation	1:		
Estimated BFE:						
Is the development in the floodway? Is the development in the floodplain?				the floodplain?		
Yes O _{No} O _{Yes} O _{No} Zone:				Zone:		
Notes:						
				<u>, ,</u>		
		<u> </u>				

Development Site/Property Information:

Property Designation: 8 of	14						
Site/Property Information				· .			
Legal Description: 49.5 AC	NUTTERS FORK						
Physical Address/911 Add	ress: CR 28	, , , , , , , , , , , , , , , , , , , ,					
Decimal Latitude/Longitud	le: 39.335078° N, 8	0.771467° W					
DMS Latitude/Longitude: 3	9° 20′ 06.28″ N, 80	° 46′ 17.28″ W					
District: 8 – West Union Map: 4 Parcel: 34.3							
Land Book Description:	1						
Deed Book Reference: Boo	k 320, Page 629						
Tax Map Reference: 09-08-	0004-0034-0003						
Existing Buildings/Use of P	roperty: Antero Mi	idstream, LLC's Yv	onne to	Middle Pipeline will be			
located on this property.							
			e en sat signi	region to the second of the s			
Floodplain Location Data:			er or des	I .			
Community:	Number:	Panel:		Suffix:			
Location (Lat/Long):		Approximate l	Elevation	1:			
Estimated BFE:							
Is the development in the floodway? Is the development in the floodplain?							
O _{Yes} O _{No} O _{Yes} O _{No} Zone:							
Notes:							

Development Site/Property Information:

Property Designation: 9 o	of 14			
Site/Property Information	n:		1.0	
Legal Description: WOLFE	E PEN RUN NUTTI	ERS FK 48.36 AC		
Physical Address/911 Add	dress: CR 22			
Decimal Latitude/Longitu	ide: 39.337950° N	N, 80.775753° W		
DMS Latitude/Longitude:	39° 20′ 16.62″ N,	80° 46′ 32.71″ W		
District: 8 – West Union Map: 4 Parcel: 25				
Land Book Description:				
Deed Book Reference: Boo	ok 260, Page 612			
Tax Map Reference: 09-08	3-0004-0025-000	90		
Existing Buildings/Use of	Property: Antero	Midstream, LLC's Y	vonne to	Middle Pipeline will be
located on this property.				
Floodplain Location Data:	(to be completed	l by Floodniain Mana	aer or des	ianee)
Community:	Number:	Panel:	9	Suffix:
Location (Lat/Long):		Approximate	Elevation	1:
		Estimated BF	Е:	
Is the development in the	Is the develop	Is the development in the floodplain?		
□ _{Yes} □ _{No}	□ _{Yes}	\square_{No}	Zone:	
Notes:				

Development Site/Property Information:

Property Designation: 10 c)f 14 			
Site/Property Information				
Legal Description: NUTTER	S FK 38.65 AC			
Physical Address/911 Add	ress: CR 28			
Decimal Latitude/Longitud	le: 39.339278° N, 80	.767328° W		
DMS Latitude/Longitude: 3		46′ 02.38″ W		
District: 8 – West Union	Map: 4		Parcel:	26
Land Book Description:			<u> </u>	
Deed Book Reference: Boo	k 260, Page 226			
Tax Map Reference: 09-08-	0004-0026-0000			
Existing Buildings/Use of F	roperty: Antero Mic	lstream, LLC's Yv	onne to	Middle Pipeline will be
located on this property.				
Floodplain Location Data:	(to be completed by)	Floodniain Manac	ier or des	ianee)
Community:	Number:	Panel:	jer or ues	Suffix:
Location (Lat/Long):		Approximate	Flovation	
Location (Lat/Long).		Approximate	Lievatioi	•
		Estimated BFI	E:	
Is the development in the f	Is the develop	ment in t	the floodplain?	
O _{Yes} O _{No} O _{Yes} O _{No} Zone:				
Notes:				

Development Site/Property Information:

Property Designation:	11 of 14					
Site/Property Information	tion:		2			
Legal Description: NUTTERS FK 39 AC						
Physical Address/911 Address: CR 28						
Decimal Latitude/Longitude: 39.340664° N, 80.762958° W						
DMS Latitude/Longitude: 39° 20′ 26.39″ N, 80° 45′ 46.65″ W						
District: 8 – West Union	n ·	Map: 4			Parcel: 27	
Land Book Description:						
Deed Book Reference: Book 321, Page 30						
Tax Map Reference: 09-08-0004-0027-0000						
Existing Buildings/Use	of Prone	rty: Antero Mid	stream II <i>C's</i> Vv	onne to l	Middle Pineline will be	
located on this property		T ty : / / / / / / / / / / / / / / / / / /	——————————————————————————————————————		mune i ipenne win be	
Floodplain Location Da	ita: (to be	completed by F	loodplain Manag	er or des	ignee)	
Community:	Nun	nber:	Panel:		Suffix:	
Location (Lat/Long):			Approximate Elevation:			
			Estimated BFE	:		
Is the development in the floodway?			Is the development in the floodplain?			
$\square_{Yes} \square_{No}$			O _{Yes} O _{No Zone:}			
Notes:						
					<u></u>	

Development Site/Property Information:

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

Property Designation: 12 of	of 14			
Site/Property Information	:	·		· · · · · · · · · · · · · · · · · · ·
Legal Description: NUTTER	IS FK 31.5 AC			
Physical Address/911 Add	ress: CR 22			
Decimal Latitude/Longitud	le: 39.342986° l	N, 80.765567° W		
DMS Latitude/Longitude: 3	9° 20′ 34.75″ N	, 80° 45′ 56.04″ W		
District: 8 – West Union	Map: 4		Parcel:	20
Land Book Description:				
_				
Deed Book Reference: Boo	k 103, Page 53			
Tax Map Reference: 09-08-	0004-0020-000	00		
Existing Buildings/Use of P	roperty: Antero	o Midstream, LLC's Yv	onne to l	Middle Pipeline will be
located on this property.				
Floodplain Location Data:	(to be completed	l by Floodplain Manag	ger or des	ignee)
Community:	Number:	Panel:		Suffix:
Location (Lat/Long):		Approximate	Elevation	1:
		Estimated BFI	E:	
Is the development in the f	loodway?			the floodplain?
			Zone:	
Notes:				

Development Site/Property Information:

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

Property Designation: 13 o	of 14				
Site/Property Information					
Legal Description: NUTTER		40 PO	<u> </u>		
Physical Address/911 Add	 ress: CR 22				
Decimal Latitude/Longitud		1° N QO	74002° W		
DMS Latitude/Longitude: 3	i9° 20′ 34.84	·" N, 80° 4 ————	5′ 39.54″ W		
District: 8 – West Union	Map: 4	ŀ		Parcel:	21
Land Book Description:				•	
Deed Book Reference: Boo	k 217, Page	412			
Tax Map Reference: 09-08-	0004-0021-	0000	•		
	<u> </u>				
Existing Buildings/Use of F	'roperty: An	tero Mids	stream, LLC's	Yvonne to	Middle Pipeline will be
located on this property.					
Floodplain Location Data:	(to be compl	eted by Fi	loodplain Man	aaer or des	sianee)
Community:	Number:		Panel:		Suffix:
Location (Lat/Long):			Approximat	e Elevation	<u>l</u> 1:
Is the development in the			Estimated B		the floodplain?
Is the development in the floodway?					-
U _{Yes} U _{No}			UYes	U _{No}	Zone:
Notes:					<u> </u>

Development Site/Property Information:

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

Property Designation: 14	of 14				
Site/Property Information	1:	and the second	, , , , , , , , , , , , , , , , , , , ,	. 1 5-1	
Legal Description: NUTTE	RS FK	125.48 AC			
					-
Physical Address/911 Add	iress: (CR 22			
Decimal Latitude/Longitu	de: 39	.347692° N, 80.	764708° W		
DMS Latitude/Longitude:	39° 20	′ 51.69″ N, 80° ·	45′ 52.95″ W		
District: 8 – West Union		Мар: 4		Parcel:	5
Land Book Description:	. !			1	
Deed Book Reference: Boo	ok WB	40, Page 419	· · · · · · · · · · · · · · · · · · ·		
Tax Map Reference: 09-08	3-0004	-0005-0000			
Existing Buildings/Use of	Prope	rty: Antero Mid	stream, LLC's Yv	onne to l	Middle Pipeline will be
located on this property.					
Floodplain Location Data:	(to be	completed by F	loodplain Manad	er or des	ignee)
Community:	``	iber:	Panel:	<u> </u>	Suffix:
Location (Lat/Long):			Approximate	Elevation	ı:
In the dancel and and in the	G J	2	Estimated BFE		de e file e destado
Is the development in the floodway?		Is the development in the floodplain?			
U Yes UNo			U _{Yes}	UNo	Zone:
Notes:					
					_

Property Owner Data:

Property Designation: 1 of 14		
Property Owner Data:		
Name of Primary Owner (PO): LYNCH RANDA	LL & DIXIE CRA	IG (SURV)
PO Address: 5534 WV RT 18 N		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone: PO Box 100 仏	lest Doign	WN 26456
PO Primary Email:	7487 O.10.7	00 0 0 0
	-	
Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As Applicable)		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:	-	

Property Owner Data:

Property Designation: 2 of 14		
Property Owner Data:	P P	
Name of Primary Owner (PO): LYNCH WILLIA	M RANDALL & I	DIXIE JANET CRAIG (SURV)
PO Address: HC 69 BOX 35		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		<u> </u>
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As Applicable)		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		* * · · · · · · · · · · · · · · · · · ·
PO Primary Email:		

Property Owner Data:

Property Owner Data:		
Name of Primary Owner (PO): STRIC	CKLING JOHN PAUL ETAI	<u>L</u>
PO Address: 756 STRICKLING FARM	LN	
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		***
PO Primary Email:	· •···	
Surface Rights Owner Data:	*	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As App.	licable)	
Name of Primary Owner (PO):	· · · · · · · · · · · · · · · · · · ·	
PO Address:		
City:	State:	Zip:
	<u> </u>	
PO Primary Phone:		

Property Owner Data:

Property Designation: 4 of 14		
Property Owner Data:		
Name of Primary Owner (PO): UN	DERWOOD PHILLIP S ETAI	L
PO Address: 2018 NUTTERS FORI	K	
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:	-	
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As A	pplicable)	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		<u> </u>

Property Owner Data:

Property Designation: 5 of 14		
Property Owner Data:		
Name of Primary Owner (PO): STRICKLI	NG JOHN PAUL ETAL	
PO Address: 756 STRICKLING FARM LN		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:	,	
PO Secondary Phone:	. ,	
PO Primary Email:		
Surface Rights Owner Data:	· · · · · · · · · · · · · · · · · · ·	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:	<u>'</u>	
PO Secondary Phone:		
PO Primary Email:		
-		
Mineral Rights Owner Data: (As Applical	ble).	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
-	 	

Property Owner Data:

Property Owner Data:	·	
Name of Primary Owner (PO): A	LEXANDER MATTHEW	
PO Address: RT 1 BOX 310		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:	1	1
PO Secondary Phone: 58 OV	erlank De Bridge	nct NV 26230
PO Primary Email:	CHANGE CHANGE	DIT 144 44 550
Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:	-	1
PO Secondary Phone:		
PO Primary Email:		•
Mineral Rights Owner Data: (As	Applicable)	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
		t
PO Primary Phone:		

Property Owner Data:

Property Owner Data:		
Name of Primary Owner (PO): ALE	EXANDER MATTHEW W &	LINDA MARIE MUHLY (SURV)
PO Address: 58 OVERLOOK DR		
City: BRIDGEPORT	State: WV	Zip: 26330
PO Primary Phone:		I.
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		-
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
		· · · · · · · · · · · · · · · · · · ·
Mineral Rights Owner Data: <i>(As Ap</i>	oplicable)	76
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		

Property Owner Data:

Property Owner Data:		
Name of Primary Owner (PO): JON	ES ALLEN KENDALL	
PO Address: 3840 HAWKS BEARD		1
City: SONOMA	State: CA	Zip: 95476
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:	e e e e e e e e e e e e e e e e e e e	
Name of Primary Owner (PO):		
PO Address:		- "
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As Ap	plicable)	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
	<u> </u>	I

Property Owner Data:

D	 		
Property Owner Data:			<u> </u>
Name of Primary Owner (PO): SWIGER H ROS	S JR & CAROL S	S (SURV)	
PO Address: 200 ROBIN LN 879			
City: HARPERS FERRY	State: WV	Zip: 25425	
PO Primary Phone:			
PO Secondary Phone:			
PO Primary Email:			
Surface Rights Owner Data:			da a
Name of Primary Owner (PO):			
PO Address:			
City:	State:	Zip:	
PO Primary Phone:			-
PO Secondary Phone:			
PO Primary Email:			
Mineral Rights Owner Data: (As Applicable)			e e e e e e e e e e e e e e e e e e e
Name of Primary Owner (PO):			
PO Address:			
City:	State:	Zip:	
PO Primary Phone:			
PO Secondary Phone:			

Property Owner Data:

Property Designation: 10 of 14		
Property Owner Data:		
Name of Primary Owner (PO): WILLIAMS LA	RRY	
PO Address: 393 MARTIN LN		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:	a a a	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As Applicable)		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:	t	
PO Secondary Phone:		
PO Primary Email:		

Property Owner Data:

8

Property Designation: 11 of 14		
Property Owner Data:		
Name of Primary Owner (PO): HOOPER JOHN	NY BURGESS II	
PO Address: PO BOX 105		
City: SALVO	State: NC	Zip: 27972
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:	·	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		•
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As Applicable)		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:	•	
PO Secondary Phone:	117 (17 (17 (17 (17 (17 (17 (17 (17 (17	
PO Primary Email:		

Property Owner Data:

Designation: 12 of 14		
rimary Owner (PO): SPEN	CER STELLA E	
s: 6445 WYLIE RIDGE ROA	AD	
CUMBERLAND	State: WV	Zip: 26047
y Phone:		
lary Phone:		
y Email:	. ,	
ghts Owner Data:	· • · · · · · · · · · · · · · · · · · ·	
rimary Owner (PO):		
is:		
	State:	Zip:
y Phone:		•
lary Phone:		
y Email:		
ights Owner Data: (As Appl	licable)	
rimary Owner (PO):		
SS:		
	State:	Zip:
y Phone:	I	<u> </u>
lary Phone:		
	cumberland ry Phone: lary Phone: ry Email: ghts Owner Data: rimary Owner (PO): ss: ry Phone: lary Phone:	rimary Owner (PO): SPENCER STELLA E ss: 6445 WYLIE RIDGE ROAD CUMBERLAND State: WV ry Phone: dary Phone: ry Email: ghts Owner Data: rimary Owner (PO): ss: State: ry Phone: dary Phone: ry Email: sights Owner Data: (As Applicable) rimary Owner (PO): ss: State: ry Phone:

Property Owner Data:

Property Designation: 13 of 14

Property Owner Data:	the second secon	
Name of Primary Owner (PO): RAVENSCROF	T WAYNE C & ED	YTHE B (SURV)
PO Address: RR 2 BOX 306A		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone: 393 Bull To	NO RO	
PO Secondary Phone: 393 Bull To PO Primary Email: West Union,	WN 21045	76
14631 3111011	711 2015	
Surface Rights Owner Data:		
Name of Primary Owner (PO):	- All Anna - Anna Anna Anna Anna Anna Anna An	
PO Address:		
City:	State:	Zip:
PO Primary Phone:		·· · · · · · · · · · · · · · · · · · ·
PO Secondary Phone:		
PO Primary Email:		
Mineral Rights Owner Data: (As Applicable)	*.	
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:	,	
PO Secondary Phone:		

Property Owner Data:

Daniel and Commercia Data.		
Property Owner Data: Name of Primary Owner (PO): FOS	 	·
• • • • • • • • • • • • • • • • • • • •		
PO Address: 2395 TALLMANSVILLI	E RD	
City: BUCKHANNON	State: WV	Zip: 26201
PO Primary Phone:	·····	
PO Secondary Phone:		
PO Primary Email:		
Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:	·	
City:	State:	Zip:
PO Primary Phone:		
rorimary rnone.		
PO Secondary Phone:		
PO Secondary Phone:		
PO Secondary Phone:	plicable)	a
PO Secondary Phone: PO Primary Email:	plicable)	b
PO Secondary Phone: PO Primary Email: Mineral Rights Owner Data: (As Ap	plicable).	٥.
PO Secondary Phone: PO Primary Email: Mineral Rights Owner Data: (As Ap Name of Primary Owner (PO):	plicable) State:	Zip:
PO Secondary Phone: PO Primary Email: Mineral Rights Owner Data: (As Ap Name of Primary Owner (PO): PO Address:		Zip:

Contractor Data:

Property Designation:

of_

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

Adjacent and/or Affected Landowners Data

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

Adjacent Property Owner Data: Upstream	1	
Name of Primary Owner (PO): CRYSTAL LAKE	CLUB	, , , , , , , , , , , , , , , , , , , ,
Physical Address: 300 CRYSTAL LAKE ROAD		
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:	<u></u>	
PO Secondary Phone:		
PO Primary Email:		
Adjacent Property Owner Data: Upstream	4	
Name of Primary Owner (PO): N/A		
Physical Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		·
Adjacent Property Owner Data: Downstream Name of Primary Owner (PO): LYNCH RANDAL Physical Address: 5534 WV RT 18 N	L & DIXIE CRA	IG (SURV)
City: WEST UNION	State: WV	Zip: 26456
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		
Adjacent Property Owner Data: Downstream		The state of the s
Name of Primary Owner (PO): N/A		was a said of the transfer of the said of
Physical Address:		
City:	State:	Zip:
PO Primary Phone:	1	
PO Secondary Phone:		
PO Primary Email:	·· -	

Site Plan

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

A SITE PLAN MUST CONTAIN THE FOLLOWING INFORMATION:

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

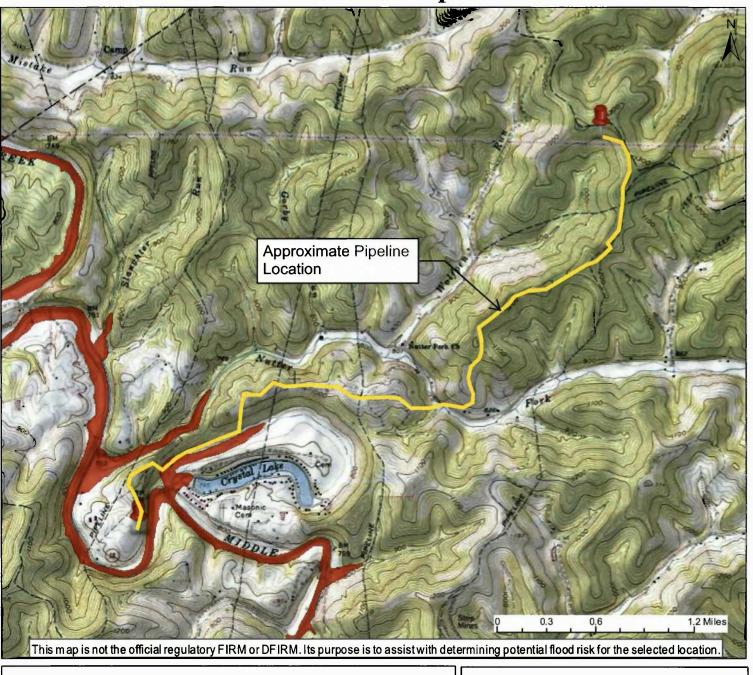
Applicant

Please read print name, sign and date below:

- I certify that I am authorized to submit this application for the primary project developer.
- I certify that the information included in this application is to the best of my knowledge true and complete.
- I certify that all required Federal, State, and local permits required by law and/or ordinance for the above described development of this project have been properly attained, are current and valid, and must be presented with this application before a Doddridge County Floodplain Permit may be issued.
- I understand that if in the course of the development project additional permits become
 required that were not needed during the initial proposal, the primary developer must notify the
 Doddridge County Floodplain Manager within 48 hours of such need, and that a "Stop Work"
 order may be issued for all project work directly impacting the floodplain or floodway, until such
 time the required additional permits are acquired.
- I understand that once the floodplain permit is submitted, the application will be entered into
 official public record at the next regularly scheduled Doddridge County Commission meeting
 after the date of submittal.
- I understand that from the date of submittal of the fully completed permit application, the
 Doddridge County Floodplain Manager has ninety (90) days to make a determination to either
 grant or deny said permit application. During this approval period, the Doddridge County
 Floodplain Manager may, at his or her discretion, conduct a review and/or additional study of
 provided documentation by means of an independent engineering firm. All costs associated with
 said review and/or study must be reimbursed to the County before issuance of approved permit.
- I understand that during the approval period, the Doddridge County Floodplain Manager 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 be final.
- I understand issuance of a Floodplain Permit authorizes me to proceed with construction as proposed. A Certificate of Compliance is required upon substantial completion of the project.
- In signing this application, the primary developer hereby grants the Doddridge County Floodplain Manager or designee the right to enter onto the above---described location to inspect the development work proposed, in progress, and/or completed.
- I understand that if I do not follow exactly the site---plan submitted and approved by this permit
 that a "Stop Work" order may be issued by the Wirt County Floodplain Manager and that I must
 stop all construction immediately until discrepancies of actual work vs. proposed work is
 resolved.

Applicant Signature:	ll nell	No		3/9	7/2017	
·	-					
Applicant Printed Name:	(ohre	Kyssell	150 km 617 0	Cinl	Voign/Constone	. , , , _

Yvonne to Middle Pipeline



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 March 6, 2017

Flood Hazard Area:

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

FEMA Issued Flood Map: 54017C0110C

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

Elevation: About 750 ft

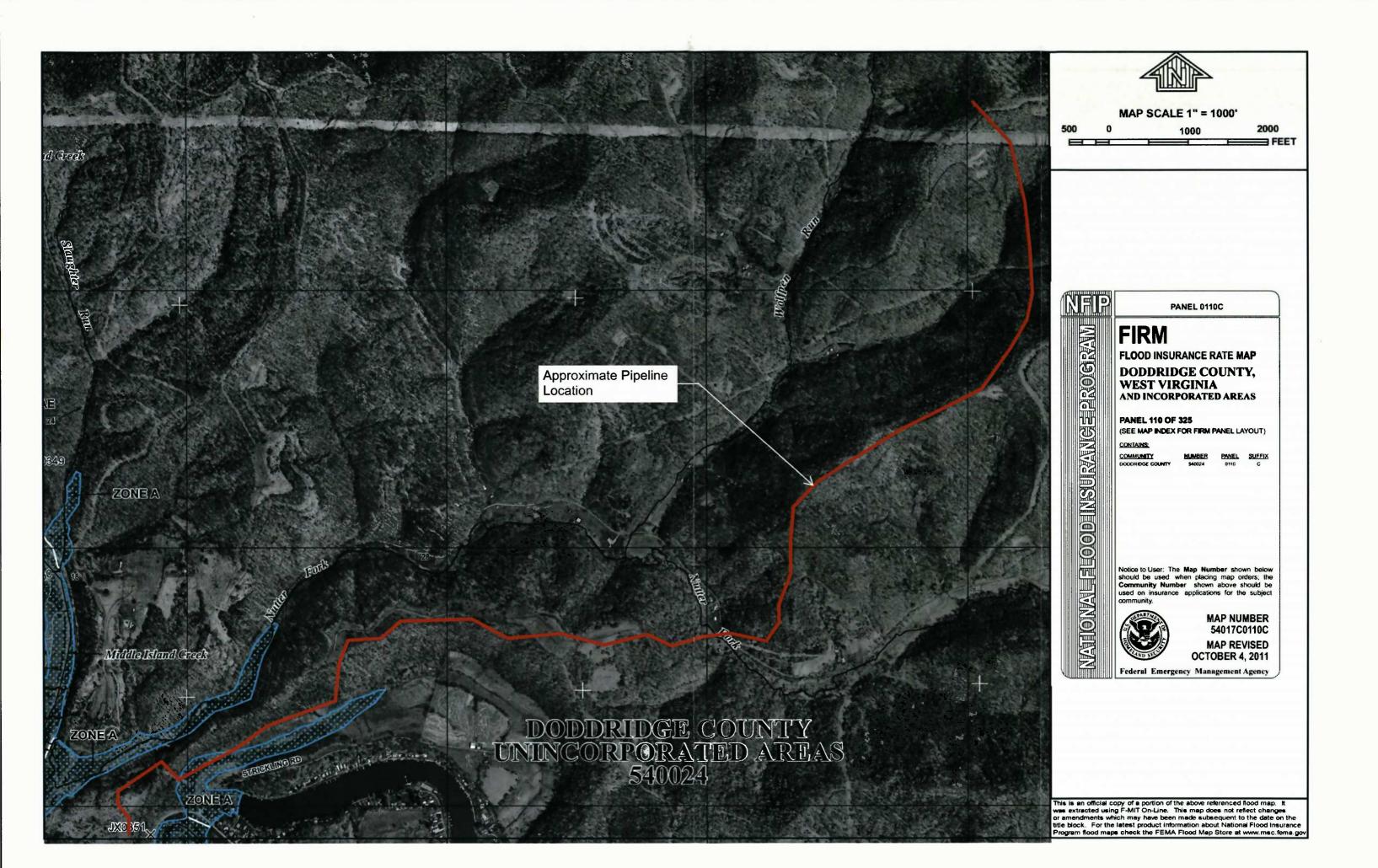
Location (long, lat): (80.802386 W,39.327513 N)

Location (UTM 17N): (517033, 4353140)

Contacts: Doddridge

CRS Information: N/A

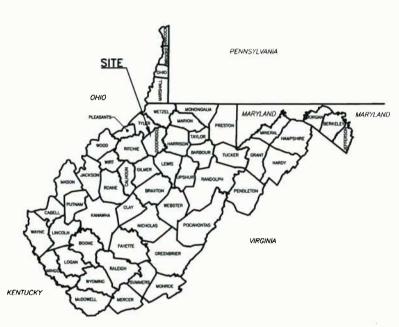
Parcel Number: No Parcel



EROSION & SEDIMENT CONTROL PLANS FOR

YVONNE TO MIDDLE PIPELINE

GRANT & WEST UNION TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA



LOCATION MAP

GENERAL NOTES

- THE TOPOGRAPHIC DATA UTILIZED FOR THIS BASE MAPPING IS A COMBINATION OF FIELD RUN TOPOGRAPHY CONSOLIDATED BY RETTEW ASSOCIATES, NIC IN AUGUST 2016 AND BEST AVAILABLE THREE (3) METER DATA FROM WEST VIRGINIA GIS TECHNICAL CENTER (WORSTC), AND THE STATE ADDRESSING AND MAPPING BOARD (SAMB). PROPERTY BOUNDARIES, AND LANDOWNER INFORMATION SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY GIS PARCEL

- DATA AND DEED REFERENCES.

 EXISTING STRUCTURES, TIERE LINES AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE ONLINE AERIAL PHOTOGRAPHY.

 THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1985 (NAD 83), NORTH ZONE.

 THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (NADV 88).

 THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERRY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY NOTIFYING MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.

 A WETLANDS PRESENCE, SAPENCE SURVEY WAS PERFORMED BY KUNFFELDER IN AUGUST 2016.

 ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.

 THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES AND MILL BE RESPONSHBLE FOR THE PROTECTION OF THESE UTILITIES AND STRUCTURES AT ALL TIMES.

 THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AND ANY DAMAGE DUE TO THE CONTRACTOR SHALL FOR PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AND ANY DAMAGE DUE TO THE CONTRACTOR SHALL FOR PROTECT THE EXISTING UTILITIES AND COMPLETELY AT HIS SERVICE AND ANY DAMAGE DUE TO THE CONTRACTORS NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY AND COMPLETELY AT HIS
- EXPENSE.

 11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF DAMAGED OR DESTROYED LANDSCAPE AND LAWNS.

 12. CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON THE PROJECT SITE PRIOR TO THE START OF CONSTRUCTION.

 13. CONTRACTOR TO RELOCATE UTILITIES AS REQUIRED.

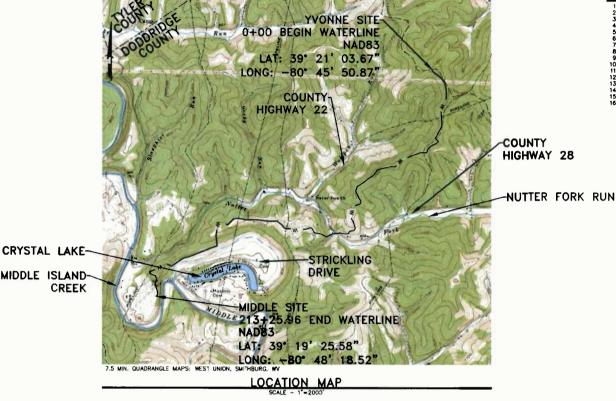
- CONTRACTOR MAY WIDEN ACCESS ROAD DUE TO STEEP SLOPES IF DEEMED NECESSARY.

 PROPOSED ROCK CONSTRUCTION ENTRANCE TO BE BUILT SUCH THAT RUNOFF FROM PROPOSED ACCESS WILL NOT SHEET FLOW O TO PUBLIC ROAD.

 6. SEED AND MULCH ALL DISTURBED AREAS PER DETAILS.
- 10. SEED AND MUCHAEL DISTURBED AREAS PER DETAILS.
 17. ALL CLEARED TREE GRINDINGS SHOULD BE PLACED ON UPHILL SIDE OF COMPOST FILTER SOCKS AND NOT STOCKPILED ON—SITE.
 18. CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONTACT ANTERO AND APPROPRIATE RESPONSIBLE AUTHORITIES SHOULD ANY HISTORICAL ARTHRACTS (I.E. BONES, POTTERY, ETC.) ARE ENCOUNTERED DURING CONSTRUCTION.
 20. WATERBARS AND TRENCH PLUG LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD. TRENCH PLUGS SHOULD BE INSTALLED ON BOTH SIDES OF BORE PITS AND STREAM CROSSINGS.

- 21. OWNER OF PIPELINE TO BE CROSSED MUST BE CONTACTED PRIOR TO BEGINNING OF CONSTRUCTION OF CROSSING 22. PIPELINE SHALL BE BURIED TO PROVIDE A MINIMUM OF 3' COVER BELOW EXISTING GRADE.
- 23. MAINTAIN ACCESS ROADS WITH GRAVEL AS NEEDED. INSTALL APPROPRIATE BMPS (FILTER SOCK, BROAD BASED DIPS) FOR AREAS WHERE UPGRADE OF ROADS REQUIRES EARTH DISTURBANCE. SEE DETAIL SHEETS FOR BMP SPACING.

 24. CONSTRUCTION TRAFFIC SHALL USE ONLY ROADS WITHIN THE LIMITS OF DISTURBANCE MARKED ON THIS PLAN. ALL ACCESS
- ROADS (AR) ARE EXISTING AND WILL HAVE MINIMAL WIDENING AND MAINTENANCE 25. CONTRACTOR TO REPLACE ACCESS ROAD CULVERTS AS NEEDED, CULVERTS THAT ARE CRUSHED, SILTED, DETERIORATING, AN BEYOND MAINTENANCE SHALL BE REPLACED ACCORDING TO THE DETAILS WITHIN THIS PLAN.
- 26. GENERAL PERMITS FOR STREAM & WETLAND CROSSINGS ARE REQUIRED PRIOR TO CONSTRUCTION AND ARE BEING SUBMITTED
- 27. THESE PLANS ARE A SUB-SET TO THE CONSTRUCTION PLANS AND SHOULD NOT BE USED FOR ANY PURPOSE OTHER THAN
- 28. THE PERIMETER CONTROLS ON THIS PLAN ARE INTERCHANGABLE FILTER SOCK, SILT FENCE, SUPER SILT FENCE AS REQUESTED BY THE CONTRACTOR.



LOCAL ANTERO OFFICE

535 WHITE OAKS BLVD BRIDGEPORT, WV 26330 PHONE (304) 842-4100

LOCAL CONTACTS: PARKE BONGIORNO -ENVIROMENTAL COORDINATOR CELL: (304) 719-74300

SHAWN BENNETT-CONSTRUCTION SUPERVISOR CELL: (304) 641-0070

CALL BEFORE Dial 811 or YOU DIG!

SOILS CLASSIFICATION

- COTACO SILT LOAM - CAPIN-PEABOOY SILT LOAMS, 25 TO 35 % SLOPES, VERY STONY - CAPIN-PEABOOY SILT LOAMS, 35 TO 70 % SLOPES, VERY STONY - CALPIN-UPSAUR SILT LOAMS, 15 TO 25 % SLOPES - MELVIN SILT LOAM, 0 TO 3 % SLOPES, ARRELY FLOODED

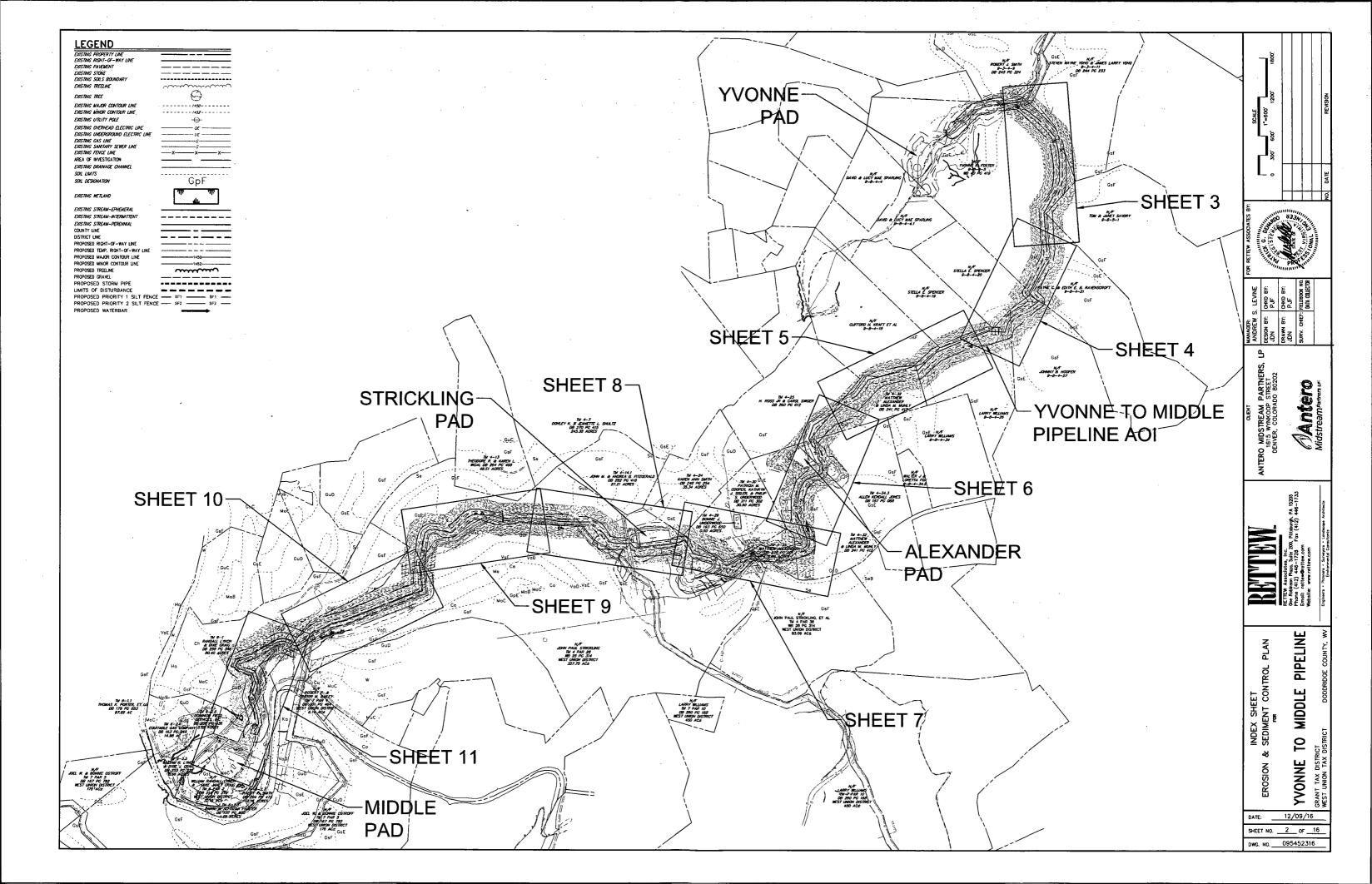


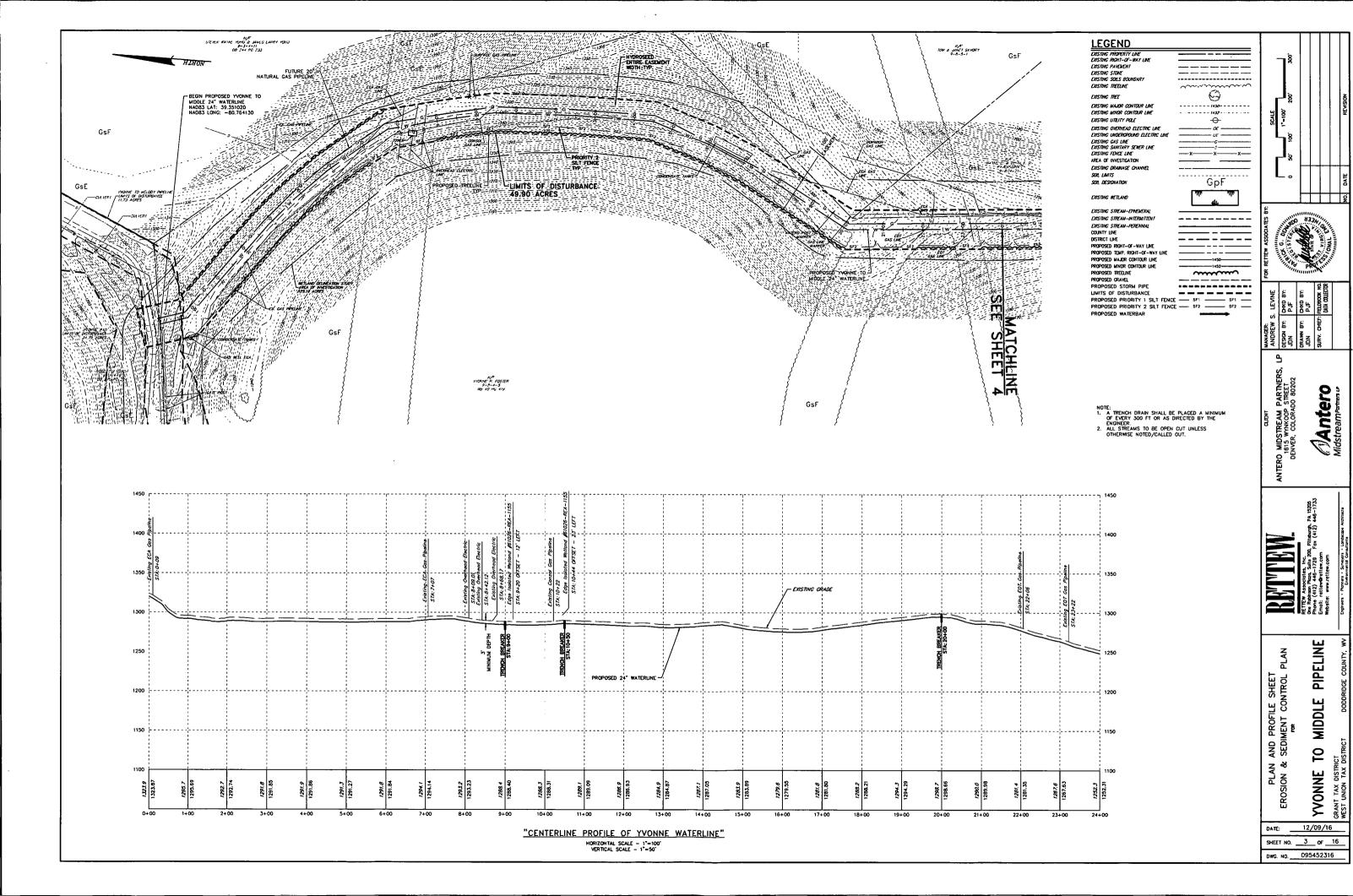
MIDDLE

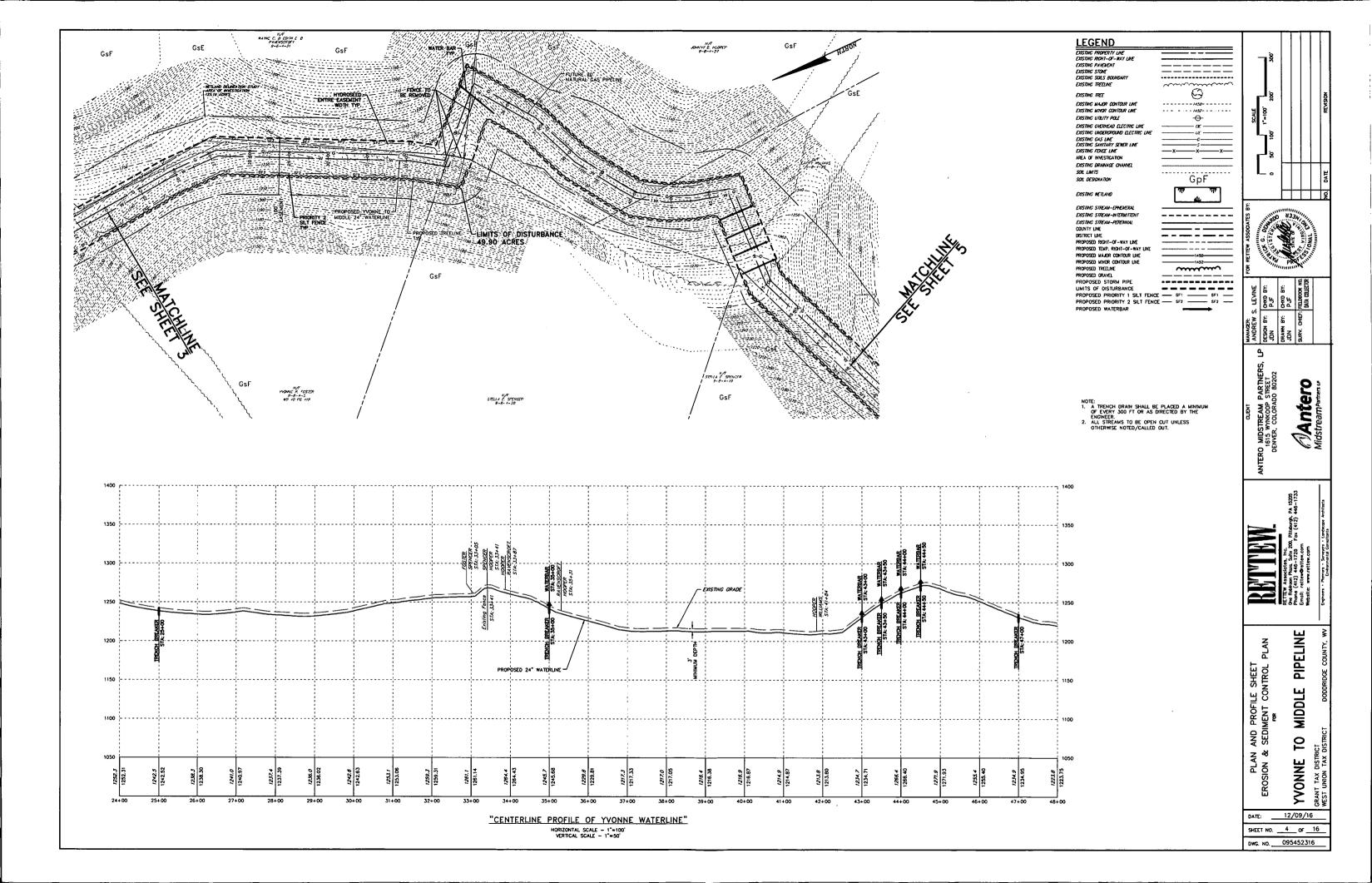
YVONNE

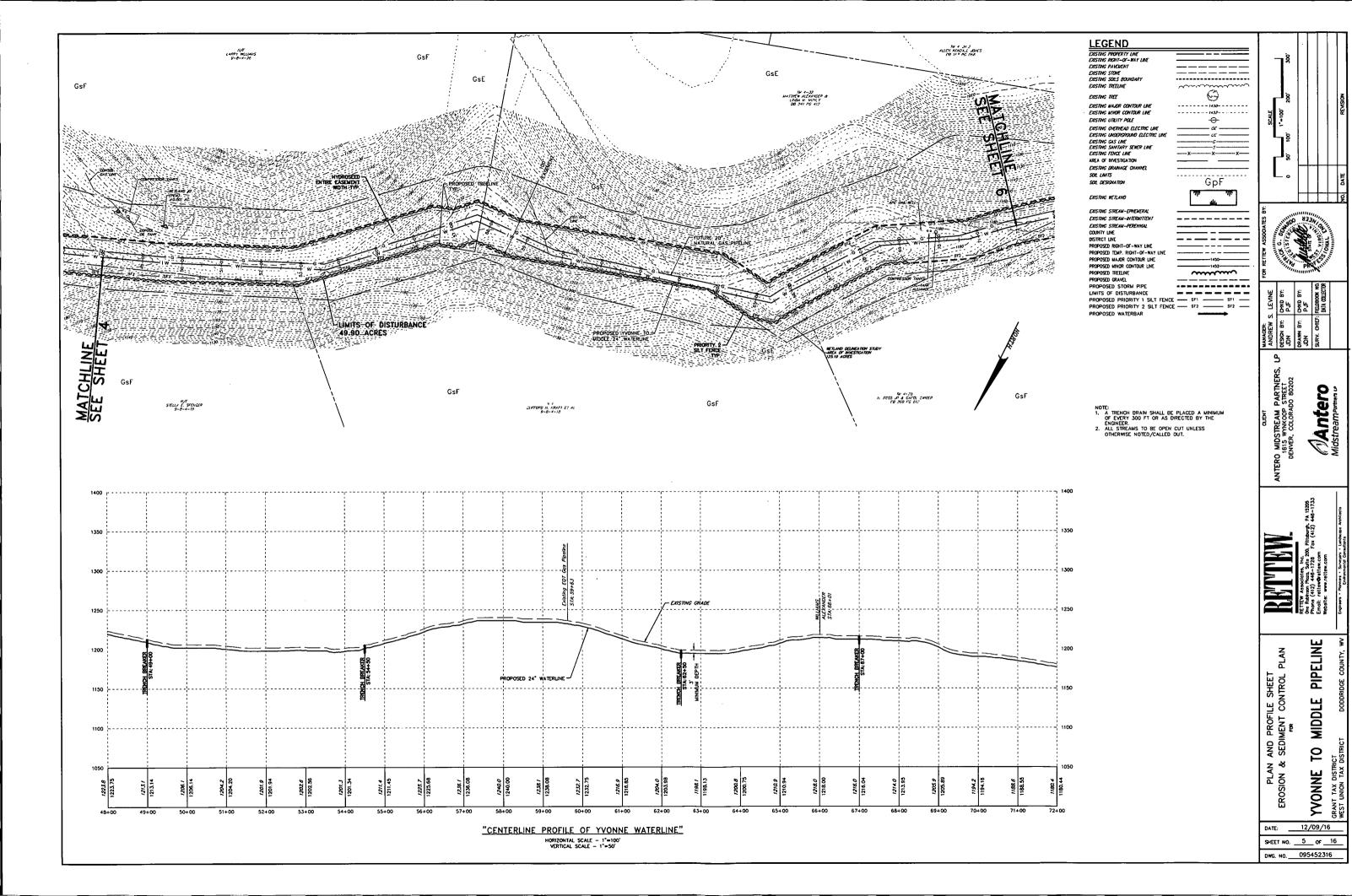
12/09/16 DATE:

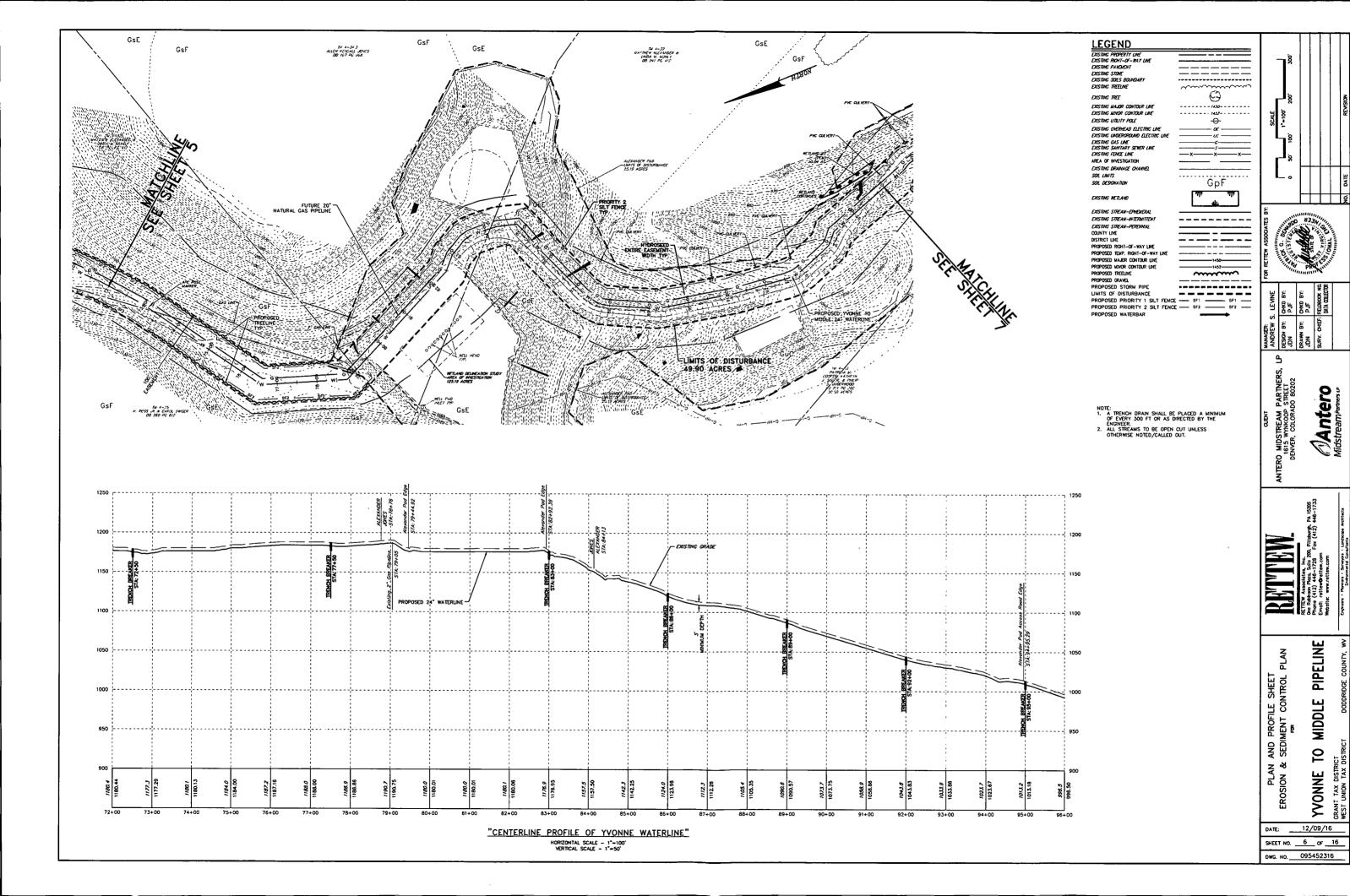
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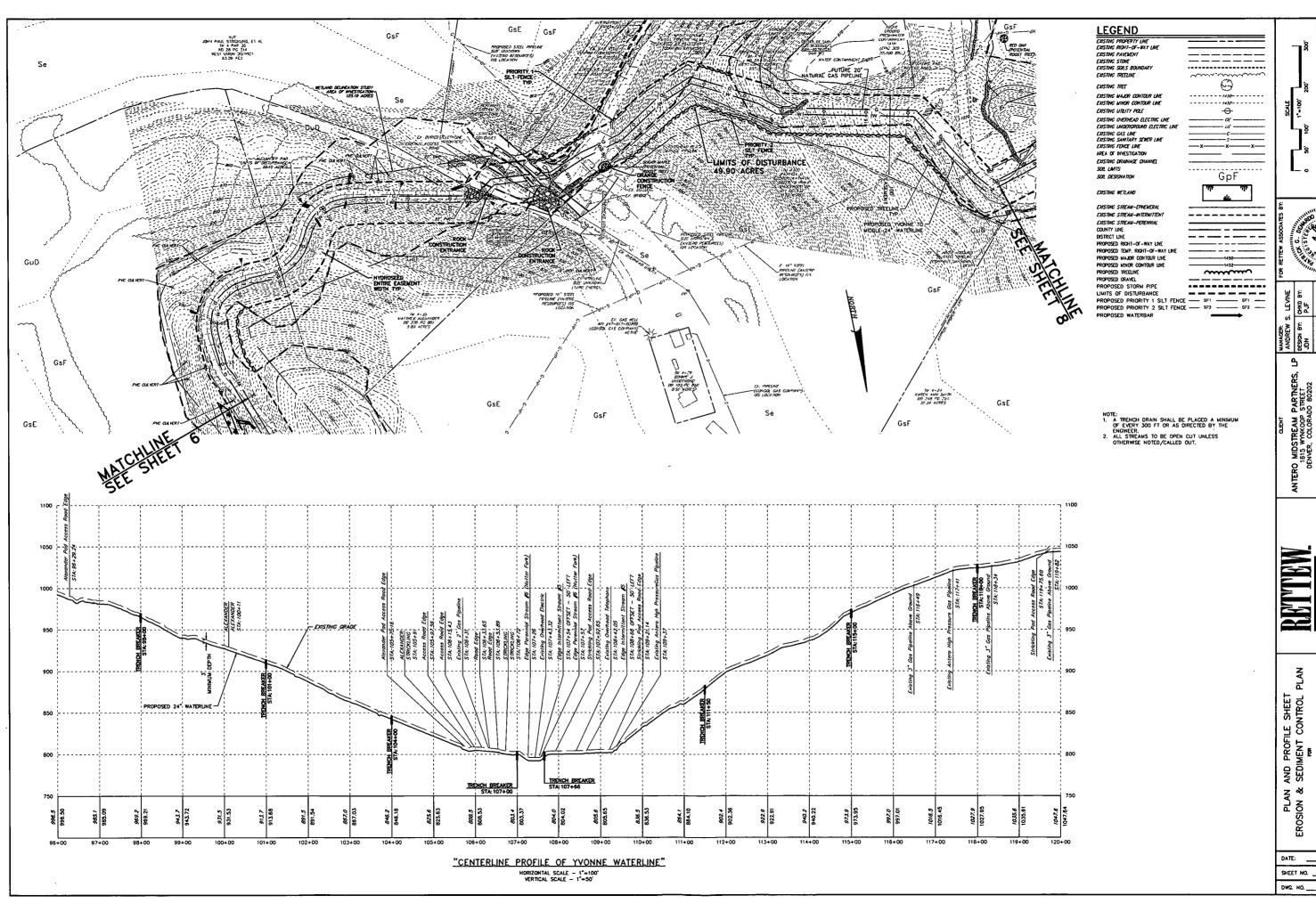












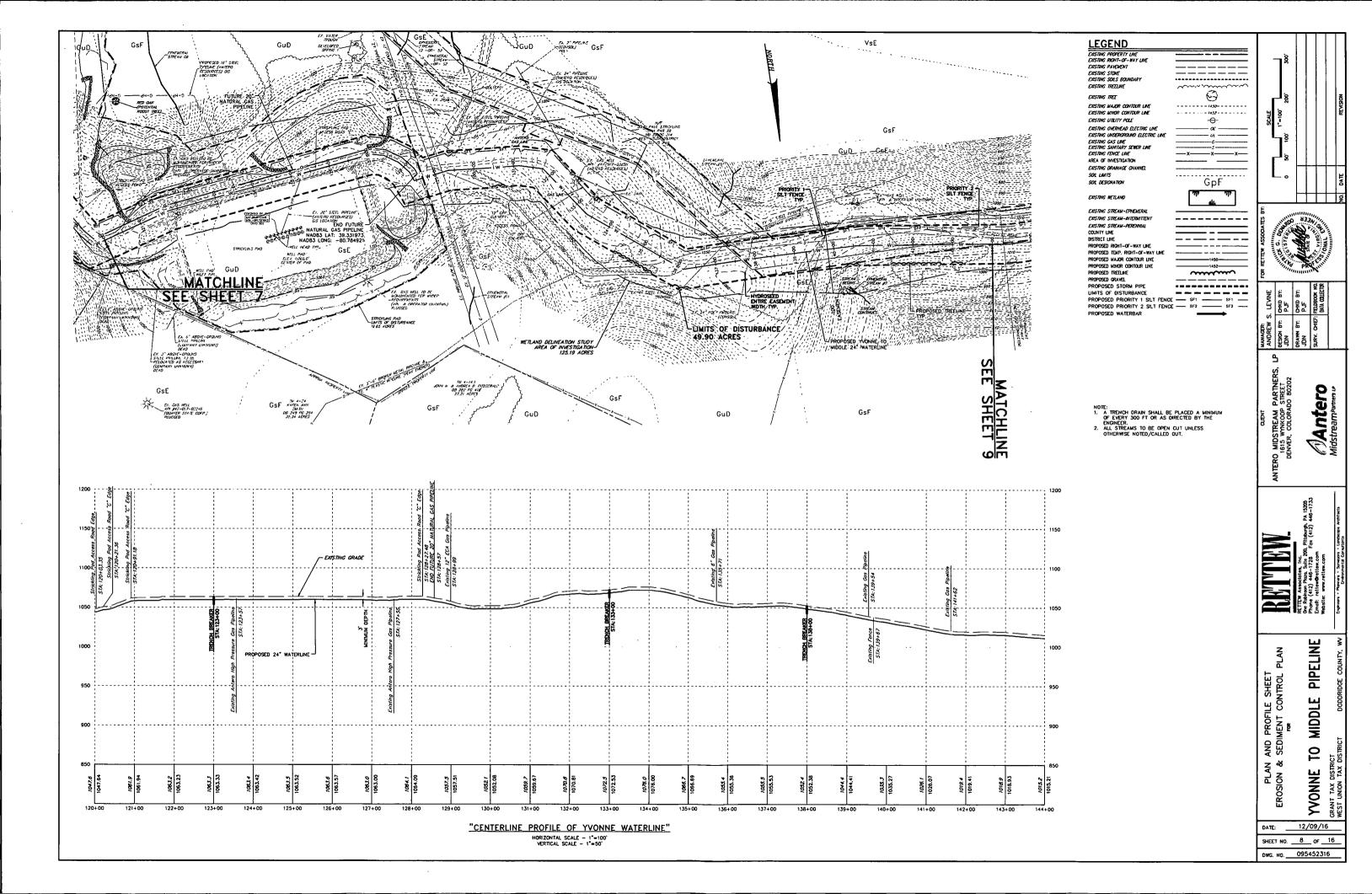
PIPELINE

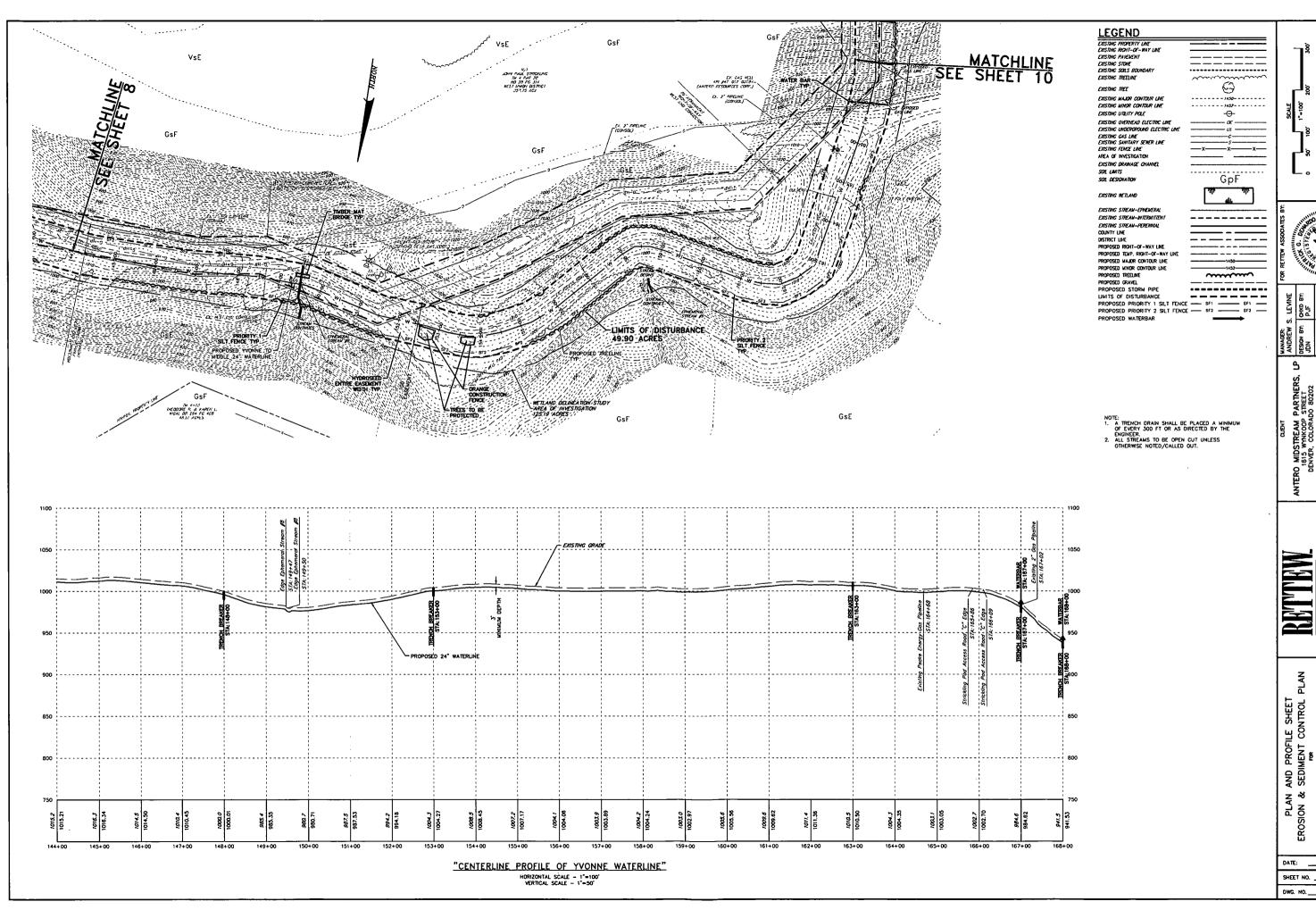
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ANTERO MIDSTREAM PARTNERS, 1615 WYNKOOP STREET DENVER, COLORADO 80202

Antero Midstreaments

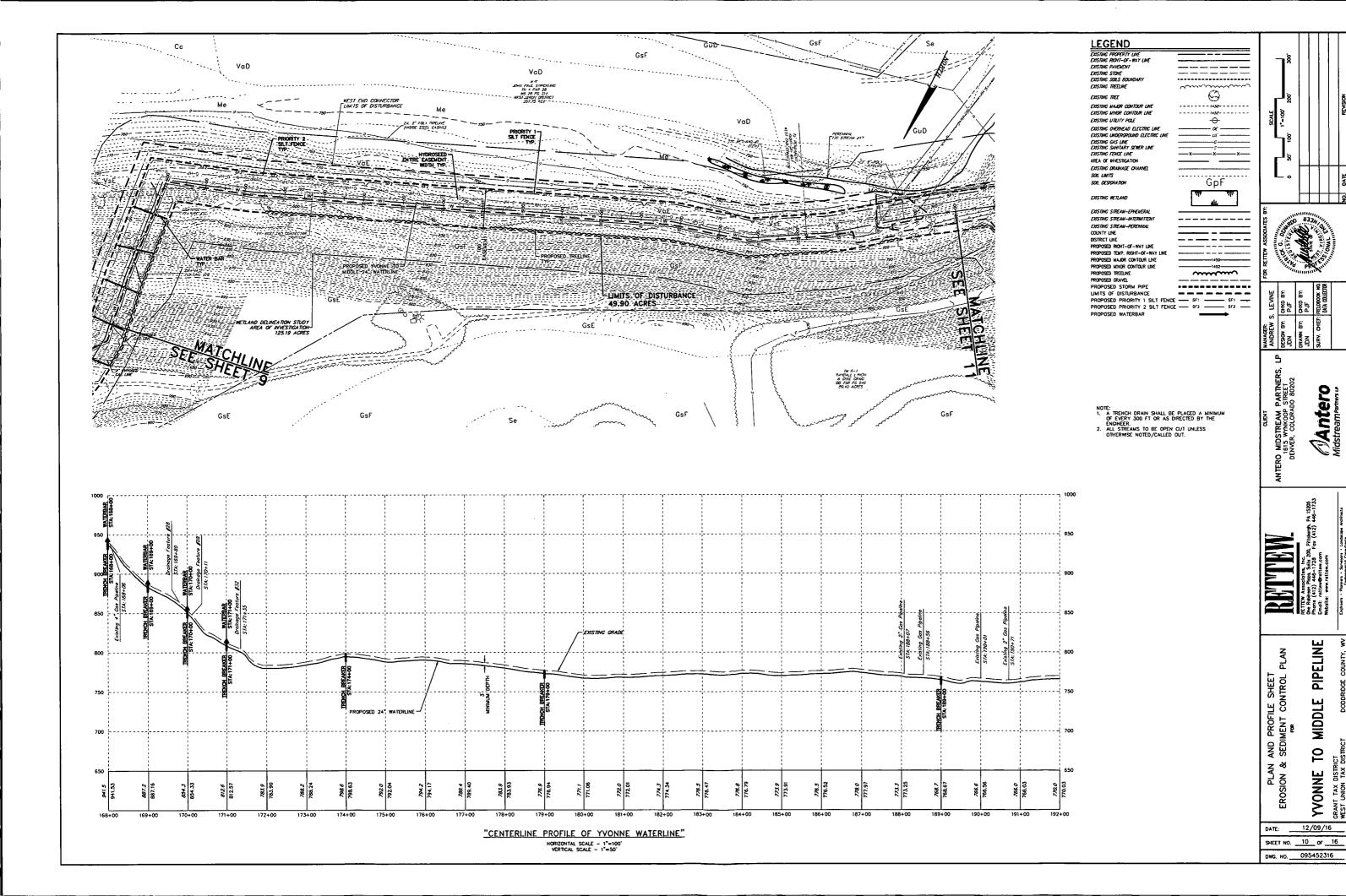
PIPELINE

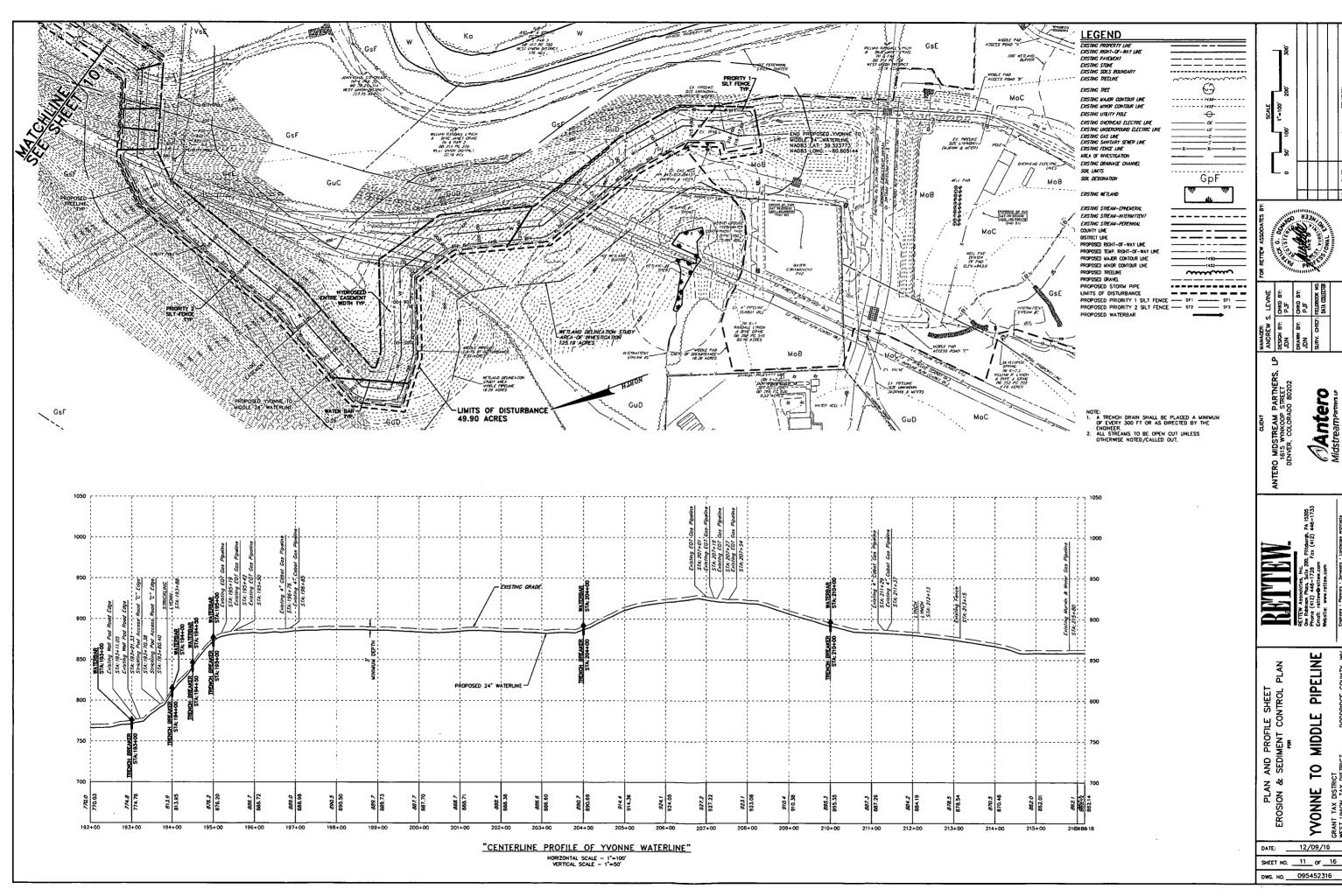
MIDDLE

2 YVONNE

12/09/16

DWG. NO. 095452316





PA 15205 446-1733

PIPELINE

MIDDLE

2

YVONNE

12/09/16

SHEET NO. ____11__ OF ___16__ DWG. NO. 095452316

GENERAL NOTES

- ANTERO WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRG DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- 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 PROJETLY ADDRESS
 SUCH PROBLEMS, WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH
 DISCREPANCES, INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTORS RISK.
- WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DVVVM) EROSION AND SEDIMENT CONTROL B MANAGEMENT PRACTICE HANDBOOK. IN THE EVENT OF CONFLICT BETWEEN THE DESIGN, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT WILL GOVERN. T CONTROL BEST
- 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
- INSTALLATION OF CONCRETE, CORRUGATED METAL OR HDPE STORM PIPE SHALL BE IN CONFORMANCE WITH THESE DRAWINGS.
- 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.
- 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 OUT OR CUT SLOPE PIPE TRENCH, IMMEDIATELY INFORM THE ON-SITE INSPECTIOR 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 GROMING 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 ANTEND ENVIRONMENTAL PRIOR TO HYDROSTAL

EROSION AND SEDIMENT CONTROL PLAN NARRATIVE/CONSTRUCTION SEQUENCE

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 (PLUSS), AND TEMPORARY AND FERMANENT SEEDING AND MULCHING, BUY SPECIFICATIONS FOR THE E&S CONTROL PLAN (E&SCP) AREA TO BE UTILIZED BY THE CONSTRUCTION CONTRACTOR ACCORDING TO THE PROVIDED PLAN. STRAW/HAY BALES WILL NOT BE USED AS AN E&S CONTROL, HOWEVER, THEY MAY BE ACCEPTABLE TO USE AS A VELOCITY DISSIPATER.

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 ROADWAY.
- INSTALL TEMPORARY E&S CONTROLS (SILT FENCE, ROW DIVERSIONS, ETC.) PRIOR TO ANY EARTH DISTURBING ACTIVITY, WHICH INCLUDES GRUDBING AND EXCAVATION, TO ENDURE, TO THE MAXIMUM EXTENT PRACTICABLE, THAT NO SIGNIFICANT EROSION OR SEDIMENTATION OCCURS.
- 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 WOTH SPECIFIED IN THE EAS PLANS. TREES SHALL BE WINDROWED ON LOW SIDE OF RIGHT-OF-WAY. ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLTION DEBITS, THAT DOCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATERS. WOODY DEBITS 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 BUPS WILL BE INSTALLED PROMPTLY. TEE STUMPS, AND LARGE ROCKS AND BOULDERS WILL ALSO BE REMOVED FOR SAFETY AT THIS TIME.
- 7. EXCAVATE PIPELINE TRENCH. PIPELINE TRENCH SHALL BE EXCAVATED TO A WIDTH OF APPROXIMATELY 5' AND A MINIMUM COVER OF 3' SHALL BE PROVIDED ABOVE PIPELINE AT ALL LOCATIONS EXCEPT FOR WEILANDS AND STREAMS. A MINIMUM COVER OF 5' SHALL BE PROVIDED ALONG PIPELINE AT WEILAND 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 SALVACE AND SEGREGATE TOPSOIL WHERE APPLICABLE.
- TEMPORARY E&S CONTROLS FOR STREAM CROSSINGS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE E&SCP AND ASSOCIATED DETAIL SHEETS.
- 11. STREAM AND RIVER PIPELINE CROSSING CONSTRUCTION METHODS WILL BE INSTALLED AT LOCATIONS SHOWN ON THE EAS PLAN SHEETS AND AS SPECIFIED ON THE DETAIL SHEETS. WATERBOOKS WILL BE CROSSED WITH TEMPORARY BRIDGES, SUCH AS TIMBER MATS OR APPROVED EQUAL CROSSING, PRIOR TO CROSSING THE CONVEYANCE. STREAMBANK STABILIZATION WILL BE PERFORMED IMPEDIATELY FOLLOWING COMPLETION OF THE PIPELINE INSTALLATION.
- 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 (CECTICET FABRIC) SHOULD BE USED TO PREVENT MISTING OF SOLE.
- 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 INCESSARY. THE PIPE SECTION WILL BE LOWERED INTO THE TRENCH AND PLACED ON PADDING MATERIAL LAID ON THE TRENCH BOTTOM TO PROTECT THE PIPE COATING, ANY WETNESS ENCOUNTREED DURING CONSTRUCTION WORK WILL BE DEWATERED BY USING PUMPS, HOSES, AND DEWATERING BAGS, AND WILL BE DISCHARGED 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 SUGHTLY CROWNED IN UPLAND AREAS TO ALLOW FOR SETTLEMENT THAT MAY OCCUR. CROWNING THE SOIL SUGHTLY OVER THE PIPELINE WILL HELP PREVENT TULL STORNWATER-RELATED PROBLEMS FROM THE SETTLING OF THE BACKFILLED AREA. NO CROWNING OF THE BOLS WILL TAKE PLACE IN WELLANDS, STREAMS, OR FLOODPLAINS, DISTURBED AREAS WILL BE RESTORED TO THEIR ORIGINAL TOPOGRAPHIC CONTOURS.
- 16. 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 3:1 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 THEY PROPARRY/PREMANENT SEEDING AND MULCH TABLE ON THE DETAIL SHEETS CONSIST OF THE TYPE OF SEED AND APPLICATION RATE THAT SHALL BE APPLIED, MULDING THE MORSE CROP THAT SHALL BE USED DURING CERTAIN TIME OF THE YEAR TO PROMOTE STABILIZATION OF THE SOIL UNTIL THE PERRONNIAL SEEDLINGS ESTABLIAS.

- 17. 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 LAVER AND TIED INTO EXISTING CONTOURS TO CREATE POSITIVE DRAINAGE FOR STORMWATER RUNDFF.
- 18. 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 UNTIL THERE IS A UNIFORM, PERDNIAL 70 PERCENT VECETATIVE COVERAGE ESTABLISHED. TEMPORARY BMIDS WILL BE REMOVED UPON ACHIEVING VECETATIVE STABILIZATION. THE 70 PERCENT REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT A PERCENT OF THE SITE.
- 19. 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 SYSTEMS IN STORT ALLOWED. IF STREET WASHING OF SEDIMENTS TO THE STORM DRAIN SYSTEMS IN SOT AT LICENT STREET WASHING CAN BE CONTROLLED FROM THERING THE STORM DRAINAGE SYSTEM, THEN IT SHALL BE PUMPED BACK ONTO THE STE, CONTAINED AND DISPOSED OF PROPERTY.
- 20. 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 DRAINAGE PATTERNS.
- 21. APPLICABLE PRACTICES INCLUDE. BUT ARE NOT LIMITED TO, TEMPORARY AND PERMANENT SEEDING, SOUDING, MULCHING, EROSION CONTROL FABRICS AND MATTING, THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL.
- 22. SELECTED SOIL STABILIZATION MEASURES SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED DURATION OF USE.
- 23. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- 24. LIMEAR 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 TIMEFRAUE 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.
- EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS.

PIPELINE BMPS INSTALLATION AND REMOVAL SEQUENCE

TEMPORARY AND PERMANENT BMP5 WILL BE USED DURING CONSTRUCTION ACTIVITIES TO AVOID AND/OR MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS OF CONSTRUCTION ACTIVITIES.

INSPECTIONS OF ALL EAS CONTROLS SHALL BE CONDUCTED, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5—INCH PER 24—HOUR PERIOD. ALL NECESSARY CLEANING, REPAIR AND/OR MAINTENANCE SHALL BE MADE AS SOON AS POSSIBLE AFTER THE INSPECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OF ENGLINE HAT INSPECTIONS AND REPAIRS ARE MADE AS OUTLINED HEREIN. ALL SEDMENT COLLECTED FROM THE MAINTENANCE OF EAS CONTROL MEASURES SHALL BE SPEED ON-SIE AND SECOLD AND MULCHED. OR DISPOSED OF PROPERLY AT A WW DEPARTMENT OF ENVIRONMENTAL PROTECTION (WINDEY)—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 ESTABUSHED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABULEZED ON-SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.
- WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMP8 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 MEED 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 EAS PLAN SHEETS AND AS PER THE EAS DETAIL SHEETS. FOR ALL OTHER SURFACE OR STORMWATER CONVEYNACES THAT ARE NOT IDENTIFIED ON THE PLAN SHEETS AS STREAMS DUE TO THE LACK OF DEFINED BED AND BANK CONDITIONS, A TEMPORARY BRIDGE 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 CONSTRUCTION IN THAT AREA.
- 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 REQUIRE RUNDET 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 SEGRECATED, 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.
- IMMEDIATELY FOLLOWING BACKFILLING, ALL DISTURBED AREAS WILL BE GRADED IN PREPARATION
 FOR SEEDING AND MULCHING. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS
 POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL COVER MUST BE INITIATED NO LATER THAN
 SEVEN DAYS AFTER REACHING FINAL GRADE.
- FOR THREE TO ONE OR STEEPER SLOPES THE DISTURBED AREA WILL BE VERTICALLY TRACKED.
 EROSION CONTROL FABRIC WILL BE INSTALLED.
- TEMPORARY SEDIMENT BARRIERS WILL BE MAINTAINED, UNTIL VEGETATION HAS BECOME ESTABLISHED WITH A UNIFORM COVERAGE OF DENSITY OF 70 PERCENT OR MORE WITHIN THE DISTURBED ROW, ONCE THIS COVERAGE HAS BEEN OBTAINED, APPROPRIATE CONTROLS WILL BE REMOVED FROM THE WORK AREA AREAS DISTURBED DURING THE REMOVAL OF THE EROSION CONTROLS WILL BE STREBUIZED 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 REVOETATED 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 ADDICANTE 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 STABULZED. UNICESS OTHERWISE SPECIFIED, ALL MAINTENANCE MUST BE COMPLETED IMMEDIATELY AFTER AN INSPECTION DENTRIES THAT A BMP IS NOT PUNCTIONING AS

- 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 DSO (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 INCLUDED IN APPENDIX I.
- 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 PERENNAL VECETATIVE COVERAGE IS ESTABLISHED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILUZED ON-STE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILUZED.

MATERIAL WASTE HANDLING AND RECYCLING

- CARBAGE DISPOSAL IS HANDLED THROUGH ONE OF THE LOCAL WASTE MANAGEMENT PROMDERS/FACILITIES. THE CONTRACTOR WAIL LEASE A DUMPSTER FOR THE DURATION OF THE PROJECT WHICH WILL BE DISPOSED OF AT A LICENSED/PERMITTED MUNICIPAL LANDFILL.
- 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 ANY PERMITS 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.
- CONSTRUCTION WASTE MATERIALS, INCLUDING BUT NOT LIMITED TO BENTONITE, POLY PIPE SHAWNES, AND SANDBACS, WILL BE RECYCLED OR WILL BE TAKEN TO THE NEAREST APPROVED FACILITY FOR DISPOSAL EXCESS SOIL MATERIAL, IF ANY, WILL BE SPREAD AND REVECETATED WITHIN THE ROW. OFF-SITE SPOIL AND/OR BORROW SITES MUST BE OPERATED UNDER A CURRENT

SEE DETAILS 23-25 ON SHEET 7 FOR TEMPORARY SEEDING, PERMANENT SEEDING, AND MULCHING REQUIREMENTS.

POLLUTANT CONTROLS

- ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ON SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATER. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON SITE.
- COVER, CONTAINMENT, AND PROTECTION FROM VANDAUSM SHALL BE PROVIDED FOR ALL
 CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-INERT WASTES PRESENT ON THE
 SITE.
- MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES,
 HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING OPERATIONS, TUBL TANK
 DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR
 SPILLAGE OF POLLUTANIS TO THE GROUND OR INTO SURFACE WATER RUNOFF MUST BE
 CONDUCTED USING SPILL PREVENTION MEASURES, SUCH AS DRIP PAIS, CONTAINANTED SURFACES
 SPILL BE CLEAKED MADERIATELY FOLLOWING ANY DISCHARGE OR SPILL INDIDNIT. DAERGENCY
 SPILL BE CREATED MADERIATELY FOLLOWING ANY DISCHARGE OR SPILL INDIDNIT. DAERGENCY
 SPILL BE OVER THE VISITED ON-STIE USING TEMPORARY PLASTIC PLACED BERKEATH AND, IT 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 FOLLOWED.
- BMPS SHALL BE USED TO PREVENT OR TREAT CONTAMINATION OF SURFACE WATER RUNOFF BY PH MODIFING SOURCES. THESE SOURCES INCLIDE BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CRINGO WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, AND CONCRETE PUMPING AND MIXER WASHOUT
- . REPORT SPILLAGE OR DISCHARGE OF POLLUTANTS WITHIN 24-HOURS.



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E&S NOTES SEDIMENT CONTROL

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12/09/16 DATE:

SHEET NO. 12 OF 16 DWG. NO. 095452316

A. GENERAL

1. OBJECTIVES PROVIDE SUFFICIENT VEGETATION TO CONTROL EROSION AND SEDIMENTATION ON AND OFF THE SITE — A VEGETATIVE COVER OF 70% OR OREATER IS REQUIRED. THE STANDARDS REQUIRED BY THESE PLANS MAY BE MODIFIED ONLY WITH PRIOR AND DOCUMENTED APPROVAL.

2. ACREAGE CALCULATION A. AMERINE LOCALIZATION
APPLICATION RATES LISTED ON THESE PLANS ARE ON A PER ACRE'BASIS. TO CALCULATE ACREAGE
MEASURE THE AVERAGE LENGTH AND MOTH IN FEET OF EACH AREA TO BE TREATED. ACREAGE IS
DETERMINED BY MULTIPLYING THE LENGTH BY THE WORTH, THEN DIVIDING THE TOTAL BY 43,560.

B. SITE PREPARATION

1. WATER CONTROL

INSTALL NEEDED SURFACE WATER CONTROL MEASURES, DIVERSION DITCHES, WATER BARS, SEDIMENT CONTROLS PRIOR TO SEEDING AND MULCHING.

CONTROLS PRIOR TO SECUING AND MULCHING.

2. SECIDIED. PREPARATION.

THE SECUING PREPARATION.

THE SECUING SECUING AND MULCHING.

2. SECIDIED. PREPARATION THE SECUING APPLICATIONS OF SEED ON HARD GROUND WILL RESULT IN A POOR STAND OF VEGETATION. THE SOLD SURFACE MUST BE LOOSENED (MINIMUM OF J SINCHES) BY DISKING ON THE CONTOUR, OR BY BUILLDOZER TRACKING UP AND DOWN THE SLOPES BACKBLADING IS ACCEPTABLE ON CENTRE SLOPES SUCH AS THE BENCH OR ROAD BED. IF SLOPES SUCH AS THE BENCH OR ROAD BED. IF SECUING PREPARATION IS NO. FEASIBLE, SOKE FROM THE PREPARATION OF THE PREPARATION WAS PERFORMED. APPLY ALL NUTRIENT REQUIRELENTS IN MEDIATELY PRIOR TO SEEDING, SOIL FERTILITY AND PH LEVEL SHOULD BE TESTED AND AUJUSTED ACCORDING TO SEED SPECIES PLANTED. WHERE SAMPLING IS IMPRACTICAL OR NOT FEASIBLE, AN ALL-INCLUSVE FERTILIZER RECOMMENDATION MAY BE USED AS SHOWN IN THE TABLE. APPLY LIME TO BRING SOIL PH TO A RANGE SUITABLE (PH 6.0) FOR THE PLANNED SPECIES. IN ABSENCE OF A SOILS TEST, 2 TONS/ACRE OF LIME MAY BE APPLIED (90 IBS, 1/100 S.O. F.1.). INCORPORATE THE APPROPRIATE AMOUNT OF LIME AND/OR FERTILIZER IN THE SLURRY MIX WHEN HYDROSEEDING.

C. SEEDING

1. TEMPORARY SEEDING

1. TEMPORARY SECONG

3. TEMPORARY SECONG APPLES WHERE EXPOSED SOIL SURFACES ARE NOT TO BE FINE-GRADED OR WORKED FOR PERIODS LONGER THAN 14 DAYS. TEMPORARY VEGETATIVE COVER WITH SEDIMENT CONTROLS MUST BE ESTABLISHED WHERE RUNOFF WILL GO DIRECTLY INTO A STREAM IMMEDIATELY UPON CONSTRUCTION OF THE SITE (SITE INCLUDES ROAD AND LOCATION). VEGETATION MUST BE ESTABLISHED ON ROAD BAIN AND LOCATION SLOPES. A PERMANENT VEGETATIVE COVER SHALL BE APPLIED TO AREAS THAT MILL BE LETT UNWORKED FOR A PERMON OF MORE THAN 6 MONTHS.

b. SEED MIXTURES AND PLANTING DATES REFER TO THE TABLES FOR RECOMMENDED DATES TO ESTABLISH VEGETATIVE COVER AND THE APPROVED LISTS OF TEMPORARY AND PERMANENT PLANT SPECIES, AND PLANTING RATES. THE TABLE GIVES RECOMMENDED TYPES OF TEMPORARY VEGETATION RATES OF APPLICATION, AND OPTIMUM SEEDING DATES. IN SITUATIONS WHERE ANOTHER COVER IS DESIRED CONTACT THE LOCAL SOIL CONSERVATION DISTRICT FOR SEEDING RECOMMENDATIONS. c. SEED APPLICATION

APPLY SEED BY BROADCASTING, DRILLING, OR BY HYDROSEEDING ACCORDING TO THE RATES INDICATED IN THE TABLE, PERFORM ALL PLANTING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. NECESSARY SITE PREPARATION, ROUGHENING OF THE SOIL SUFFACE, SHOULD BE DONE JUST PRIOR TO SEEDING. SEEDBED PREPARATION MAY NOT BE REQUIRED ON NEWLY DISTURBED AREAS.

2. PERMANENT SEEDING

__EERMANENT_SEEDING

0_SENERAL

PERMANENT_VECETATIVE COVER WILL BE ESTABUSHED WHERE NO FURTHER SOIL DISTURBANCE IS
ANTICHAED OF NEEDED, SOIL FERTILITY AND PH LEVEL SHOULD BE TESTED AND ADJASTED
ACCORDING TO SEED SPECIES PLANTED, PLANTING OF PERMANENT VECETATIVE COVERS MUST BE
PERFORMED ON ALL DISTURBED AREA SAFTER THE COMPLETION OF THE DRILLING PROCESS. ANY
SITE THAT CONTAINS SIGNIFICANT AMOUNTS OF TOPSOIL SHALL HAVE THE TOPSOIL REMOVED AND
STOCKPILED WHEN FEASIBLE TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEPPER THAN 2:1
UNLESS A GOOD BONDING TO THE SUB-LAYER CAN BE ACHIEVED. AFTER PROPER GRADING AND
SEEDBED PREPARATION, THE VECETATION WILL REESTABLISH GROUND COVER FOR THE CONTROL OF
SURFACE WATER RUNOFF AND EROSION.

SECURED CHARACTURIN. THE VESTIGATION THE RESISTANCE OF GROUND COVER FOR THE CONTROL OF SUIFFACE WHERE RUNDER AND EROSION.

ALL REQUIRED SECREDED PREPARATION, LOOSENING OF SOIL BY DISKING OR DOZER TRACKING, SOME OF THE RECOMMENDED RIFE SECOND PREPARATION IS NOT FEASIBLE, 50% MORE SEED SHALL BE ADDED TO THE RECOMMENDED RATES SHOWN IN THE TABLES.

WHEN HYDROSEEDING, SECONDED PREPARATION MAY NOT BE NECESSARY IF ADEQUATE SITE PREPARATION WAS PERFORMED. INCORPORATE THE APPROPRIATE AMOUNT OF LIME AND/OR FERTILIZER IN THE SLUBRY WILL WILL WHOROSEEDING. AND HYDRO-MULCH IN THE RECOMMENDED AMOUNT OF WATER. MIX THE SEED AND INCOLURNT TOGETHER WITHIN ONE HOUR PRIOR TO PLANTING, AND ADD TO THE SEED AND INCOLURNT TOGETHER WITHIN ONE HOUR PRIOR TO PLANTING, AND ADD TO THE SUDRRY JUST BEFORE SEEDING. APPLY THE SLUBRY UNIFORMLY OVER THE PREPARED SITE. ASSURE THAT AGAITATION IS CONTINUOUS THROUGHOUT THE SEEDING OPERATION AND THAT THE MIX IS APPLIED WITHIN ONE HOUR OF INITIAL MIXING.

D. LIME AND FERTILIZER

b. LIME AND FERTILIZER LIME SHALL BE APPLIED TO ALL PERMANENT SEEDINGS. THE PH OF THE SOIL IS TO BE DETERMINED AND LIME APPLIED ACCORDINGLY. ONCE THE PH IS KNOWN, SELECT THE AMOUNT OF LIME TO BE APPLIED FROM THE TABLE.

II. FERTILIZER SHALL BE APPLIED IN ALL PERMANENT SEEDINGS. APPLY THE EQUIVALENT OF 200 LBS. MINIMUM 19-20-20 FERTILIZER PER ACRE OR USE THE AMOUNT OF FERTILIZER AND LIME RECOMMENDED BY A CERTIFIED SOIL TEST.

iii. APPLICATION: FOR BEST RESULTS AND MAXIMUM BENEFITS THE LIME AND FERTILIZER ARE TO BE APPLIED AT THE TIME OF SEEDBED PREPARATION. c. PERMANENT SEED MIXTURES

CONTRACTOR SHOULD TAKE INTO CONSIDERATION THE SPECIES MAKEUP OF THE EXISTING PASTURE AND THE LANDOWNER'S FUTURE PASTURE MANAGEMENT PLANS WHEN SELECTING SEED MIXTURES. SELECTION: IF NOT SPECIFIED BY LANDOWNER, SELECT FROM THE PERMANENT SEEDING TABLE.

NOTES: ALL LEGUMES MUST BE PLANTED WITH THE PROPER INOCULANT PRIOR TO SEEDING.

ii. 'LATHCO' FLATPEA IS POTENTIALLY POISONOUS TO SOME LIVESTOCK.

III. ONLY ENDOPHYTE FREE VARIETIES OF TALL FESCUE SHOULD BE USED. TALL FESCUE AND CROWNVETCH ARE ALSO A VERY INVASIVE SPECIES NON-NATIVE TO WV.

iii. FOR UNPREPARED SEEDBEDS OR SEEDING OUTSIDE THE OPTIMUM TIMEFRAMES, ADD 50% MORE SEED TO THE SPECIFIED RATE.

SEED TO THE SPECIFIED RATE.

(<u>SEEDING FOR MIDLIFE HABITAT</u>

CONSIDER THE USE OF NATIVE PLANTS OR LOCALLY ADAPTED PLANTS WHEN SELECTING COVER
TYPES AND SPECIES FOR WILDLIFE HABITAT. WILDLIFE FRIENDLY SPECIES OR MIXES THAT HAVE
MULTIPLE VALUES SHOULD BE CONSIDERED. SEE WILDLIFE FRIENDLY SPECIS/MIXTURES IN TABLE
V-4B. CONSIDER SELECTING NO OR LOW MAINTENANCE LIN-LIVED PLANTS ADAPTABLE TO
SITES WHICH MAY BE DIFFICULT TO MAINTAIN WITH EQUIPMENT.

1. GENERAL ORGANIC MULCHES

CENERAL ORGANIC MULCHES

THE APPLICATION OF STRAW, HAY OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE TO PREVENT EROSION. STRAW MADE FROM MHEAT OR OATS IS THE PREFERRED MULCH. THE USE OF HAY IS PERMISSIBLE, BUT NOT ENCOURAGED DUE TO THE RISK OF SPREADING INVASIVE SPECIES. MULCH MUST BE APPLIED TO ALL TEMPORARY AND PERMANENT SECENDIG ON ALL DISTURVED AREAS. DEPENDING ON SITE CONDITIONS, IN CRITICAL RAFAS SUCH AS WATERWAYS, OR STEEP SLOPES, ADDITIONAL OR SUBSTITUTE SOIL PROTECTIVE MEASURES MAY BE USED IF DEEMED NECESSARY. EXAMPLES INCLUDE JUTE MESH, AND SOIL STABILIZATION BLANKETS OR EROSION CONTROL MATTHIC.

AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SECEDE SHOULD BE MULCHED IMMEDIATELY FOLLOWING SECDING, MULCHES CONSERVE DESTRABLE SOIL PROPERTIES, REDUCE SOIL MOISTURE LOSS, PREVENT CRUSTING AND SEALING OF THE SOILS SURFACE AND PROVIDE A SUITABLE MICROCLIMATE FOR SEED GERMINATION.

SEED GERMINATION.
AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASON SHOULD BE MULCHED TO PROVIDE SOME PROTECTION TO THE SOIL SURFACE. AN ORGANIC MULCH, STRAW OR HAY, SHOULD BE USED AND THE AREA THEN SEEDED AS SOON AS WEATHER OR SEASONAL CONDITIONS PERMIT, DO NOT USE FIRE MULCH (CELLULOSE—HYDROSEED) ALONE FOR THIS PRACTICE: AT NORMAL APPLICATION RATES IT WILL NOT GIVE THE SOIL PROTECTION OF OTHER TYPES OF MULCH.

WOOD CELLULOSE FIBER MUICH, IS USED IN HYDROSEEDING OPERATIONS AND APPLIED AS PART OF THE SLURRY, IT CREATES THE BEST SEE—SOIL CONTACT WHEN APPLIED OVER TOP OF (AS A SEPARATE OPPERATOR) NEWLY SEEDED AREAS, FIBER MUICH DESS NOT ALONE PROVIDE SIFTICIENT PROTECTION ON HIGHLY SERDINGLE SOILS, OR DURING LESS THAN FAVORABLE GROWNIC CONDITIONS, FIBER MUICH SHOULD NOT BE USED, ALONE DURING THE DRY SUMMER MONTHS OR WHEN USED FOR LATE TALL WALCH COVER. USE STRAW MUICH DURING THESE PERIODS, AND FIBER MUICH MAY BE USED TO TACK (ANCHOR) THE STRAW MUICH SIEBER MUICH IS WELL SUITED FOR STEEP SLOPES, CRITICAL AREAS, AND AREAS SUSCEPTIBLE TO WIND.

2. CHEMICAL MULCHES, SOIL BINDERS AND TACKIFIERS A WIDE RANGE OF SYNTHEID, SPRAY-ON MATERIALS IS MARKETED TO STABILIZE AND PROTECT THE SOIL SURFACE. THESE ARE MIXED WITH WATER AND SPRAYED OVER THE MULCH AND TO THE SOIL. THEY MUST BE USED ALONE IN SOME CASES AS TEMPORARY STABILIZERS, OR IN CONJUNCTION WITH FIBER MULCH, STRAW OR HAY.

MEN USED ALONE MOST CHEMICAL MULCHES DO NOT HAVE THE CAPABILITY TO INSULATE THE SOIL OR RETAIN SOIL MOISTURE THAT ORGANIC MULCHES HAVE.

S. SPECIFICATIONS:

FROM THE TABLE SELECT THE TYPE OF MULCH AND RATE OF APPLICATION THAT WILL BEST SUIT THE CONDITIONS AT THE STE.

DEPENDING ON THE FIELD SITUATION, MULCH MAY NOT STAY IN PLACE BECAUSE OF WIND ACTION OR RAPID WATER RUNOFF. IN SUCH CASES, MULCH IS TO BE ANCHORED MECHANICALLY OR WITH MULCH NETTING. a. MECHANICAL ANCHORING

APPLY MULCH AND PULL A MULCH ANCHORING TOOL OVER THE MULCH. WHEN A DISK IS USED, SET THE DISK STRAIGHT AND PULL ACROSS THE SLOPE. MULCH MATERIAL SHOULD BE TUCKED INTO THE SOIL ABOUT HIREE INCHES b. MULCH NETTING

FOLLOW MANUFACTURER'S RECOMMENDATIONS WHEN POSITIONING AND STAPLING THE MULCH NETTING IN THE SOIL.

UVESTOCK SHALL BE CONTROLLED OR EXCLUDED AS NECESSARY TO ALLOW FOR ESTABLISHMENT AND MAINTENANCE OF THE DESIRED VECETATIVE COVER. WHERE LIVESTOCK ARE PRESENT, THE OPERATOR SHOULD CONSULT WITH THE AFFECTED LANDOWNER TO COORDINATE THE FENCE TYPE AND LAYOUT. ALSO, PERMANENT FENCING MAY NEED INSTALLED AS A PROTECTIVE MEASURE AROUND WELL SITE FIXTURES, SENSITIVE AREAS OR AREAS PROME TO RECURRING DISTURBANCE AND EROSION (o.g. SLIPS).

MINIMUM STANDARDS FOR INSTREAM CONSTRUCTION ACTIVITIES GENERAL REQUIREMENTS FOR ALL INSTREAM ACTIVITIES:

ALL APPROPRIATE PERMITS SHOULD BE OBTAINED PRIOR TO BEGINNING INSTREAM CONSTRUCTION ACTIVITIES SUCH AS CREATING A RESTRICTION OR IMPEDIMENT OF FLOW.

2. ISOLATING THE WORK AREA AND "WORKING IN THE DRY" IS THE ONLY EFFECTIVE WAY OF CONTROLLING SEDIMENT.

5. ALL INSTREAM CONSTRUCTION SHOULD BE SCHEDULED TO OCCUR DURING LOW FLOW PERIODS, TYPICALLY DURING THE SUMMER AND FALL MONTHS. IF CONSTRUCTION MUST BE ACCOMPUSHED DURING HIGHER FLOWS, THE WORK AREA MUST BE ISOLATED FROM THE STREAM BY A STRUCTURAL MEASURE SUCH AS A NON-ERODIBLE COFFERDAM OR SHEET PILING. EMERGENCY REPAIRS OF PUBLIC UTILITIES OR PUBLIC ROADS ARE EXEMPTED.

ALL STREAMBANKS ARE TO BE STABILIZED WITH AN APPROPRIATE PROTECTIVE MATERIAL SUCH AS RIPRAP, REVEGETATION, GEOTEXTILES, REVETMENTS, ETC. IMMEDIATELY UPON COMPLETION OF THE FINAL GRADING.

THE CHOICE OF STABILIZATION MATERIALS (VEGETATIVE OR STRUCTURAL) SHOULD BE BASED ON SOUND ENGINEERING PRACTICES AND MILL INCLUDE INVESTIGATIONS OF THE SOIL'S ERODIBILTY AND THE ANTICIPATED VELOCITES OF THE STREAM.

INLET AND OUTLET PROTECTION IS REQUIRED FOR ALL CULVERTS (BOTH TEMPORARY AND PERMANENT). OUTLET PROTECTION CAN CONSIST OF RIPRAP, GABION BASKETS, OR OTHER APPROVED MATERIALS.

EVERY EFFORT SHOULD BE MADE TO LIMIT THE AMOUNT OF INSTREAM WORK. UTILITY LINES SHOULD NOT BE INSTALLED WITHIN THE STREAM, WITH THE EXCEPTION OF STREAM CROSSING, WITHOUT IRREFUTABLE PROOF THAT ALTERNATE AVENUES OF ALIGNMENT ARE NOT AVAILABLE. CONVENIENCE IS NOT A JUSTIFIABLE REASON TO INSTALL A UTILITY LINE DOWN A STREAM.

8. UTILITY LINES AND ROADWAYS SHOULD CROSS THE STREAM AT RIGHT ANGLES (± 15') TO THE FLOW OF THE WATER.

EACH STREAM CROSSING SHOULD BE TREATED AS A SEPARATE PROJECT AND WORK SHOULD PROGRESS UNTIL THE APPROACHES AND STREAM BANKS ARE COMPLETELY STABILIZED. IN NO CASE SHOULD STABILIZATION OF THE STREAM BANK EXCEED 24 HOURS FROM COMPLETION OF THE BACKFILL.

10. STREAM SIDE VEGETATION SHOULD BE LEFT INTACT TO THE GREATEST EXTENT POSSIBLE. RIPARIAN BUFFER ZONES ARE TO BE ENHANCED WHENEVER POSSIBLE.

. WHEN WORK IS PERFORMED IN A FLOWING STREAM, PRECAUTIONS SHOULD BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL, SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. USE ONLY NON-EROBILE MATERIAL FOR THE CONSTRUCTION OF CAUSEWAYS, STREAM DIVERSONS AND BERMS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR COFFERDAMS IF ARMORED BY NON- ERODIBLE COVER MATERIALS SUCH AS FILTER FABRIC AND APPROPRIATELY SIZED STONE.

12. ALL WATER PUMPED FROM A WORK AREA ALONG, IN OR NEAR A STREAM MUST BE TREATED IN AN APPROVED SETTLING STRUCTURE LOCATED OUTSIDE THE WATERWAY BEFORE BEING DISCHARGED INTO A WATERWAY.

13. GREEN CONCRETE IS TOXIC TO AQUATIC LIFE AND MUST NOT BE PLACED IN CONTACT WITH FLOWING WATER

14. STREAMBED EXCAVATION SHOULD BE UNDERTAKEN FROM THE TOP OF STREAM BANKS WHENEVER POSSIBLE.

15. WHEN INSTREAM WORK IS REQUIRED, THE USE OF RUBBER-TIRED VEHICLES AND EXCAVATORS IS RECOMMENDED.

16. EXCAYATED MATERIAL TO BE REUSED FOR TRENCH BACKFILL SHOULD BE STOCKPILED OUTSIDE THE STREAM CHANNEL. SURROUND THE STORAGE AREA BY SILT FENCE OR SIMILAR BARRIER TO PREVENT SEDIMENT AND MUD FROM RUNNING BACK INTO THE STREAM, MATERIAL NOT USED FOR BACKFILL SHOULD BE REMOVED TO AN APPROPRIATE SOIL DISPOSAL AREA LOCATED OUTSIDE THE FLOODPLAIN AND PROPERLY STABILIZED.

17. TEMPORARY ACCESS ROADS IN CLOSE PROXIMITY TO A STREAM SHOULD BE STABILIZED USING THE SAME REQUIREMENTS FOR A STABILIZED CONSTRUCTION ENTRANCE.

18. DO NOT USE THE STREAM AS A VEHICULAR RIGHT-OF-WAY, DO NOT USE THE STREAM TO DELIVER MATERIALS OR TO MOVE CONSTRUCTION EQUIPMENT FROM ONE SECTION TO ANOTHER.

19. SPILL CONTAINMENT KITS SHOULD BE READILY AVAILABLE ONSITE.

LIME AND FERTILIZER APPLICATION TABLE

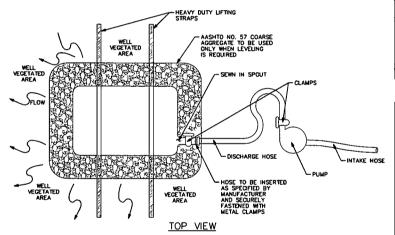
FERTILIZER	UME
10/20/20	PELLETIZED
200 LBS PER ACRE	1.5 TON PER ACRE

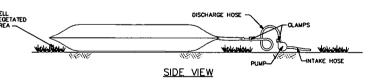
TABLE 3.10.1 TEMPORARY STABILIZATION SEEDING

SEED	RATES IN LBS PER ACRE	RECOMMENDED DATA
ANNUAL RYEGRASS	250-350	MAR. 15 TO SEPT. 15
ANNUAL WINTER WHEAT	100-125	SEPT. 15 TO MAR. 15

TABLE 3121 MULCH MATERIALS RATES AND USES

MULCH MATERIAL	MINIMUM RATES PER ACRE
STRAW	2 TONS





LOCATE BAG IN LEVEL AREAS (LESS THAN 5% GRADE). WHEN LEVEL AREAS ARE NOT AVAILABLE, PLACE AASH10 NO. 57 COARSE AGGREGATE TO LEVEL THE BAG.

2. LOCATE BAG IN A WELL VEGETATED AREA. DISCHARGE ONTO A STABLE, EROSION RESISTANT AREA. WHEN VEGETATED AREA IS NOT AVAILABLE, PROVIDE A GEOTEXTLE (CLASS 4. TYPE A) LINED FLOW PATH TO A STABLE EROSION RESISTANT RECEIVING WATER COURSE OR A WELL VEGETATED AREA.

3. LOCATE BAG IN AN AREA ACCESSIBLE BY EQUIPMENT FOR MAINTENANCE AND REMOVAL PURPOSES.

4. DO NOT INSERT MORE THAN ONE HOSE INTO A BAG.

5. REPLACE THE BAG WHEN 50% OF THE SEDIMENT CAPACITY HAS BEEN FILLED AND/OR WHEN THERE IS A FAILURE. THE ADDITIONAL BAGS WILL BE PAID AS EACH.

6. REMOVE AND PROPERLY DISPOSE OF THE PUMPED WATER FILTER BAGS AND RESTORE THE AREA. DO NOT CUT FILTER BAG OR DISTRIBUTE AND SEED STRINGTH

DO NOT PERMIT DISCHARGE FROM THE BAG TO DRAIN BACK INTO WORK OR ACCESS AREAS OF THE PROJECT.

8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESES.

PLACE AND CONNECT SEDIMENT FILTER BAGS AS PER MANUFACTURER'S RECOMMENDATIONS FOR FOUNDATION EXCAVATION DEWATERING PURPOSES. PROVIDE A BAG THAT MILL HANDLE 1000 GALLONS/MINUTE OF CLEAN WATER DISCHARGE, FILTER PARTICLES DOWN TO 150 MICRONS.

PUMPED WATER FILTER BAG

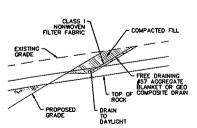
PERMANENT SEEDING

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

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

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

* All seed mixes require double inoculation



TYPICAL SLOPE PROTECTION DETAIL E&S NOTE SEDIMENT ဥ શ્ર **EROSION**

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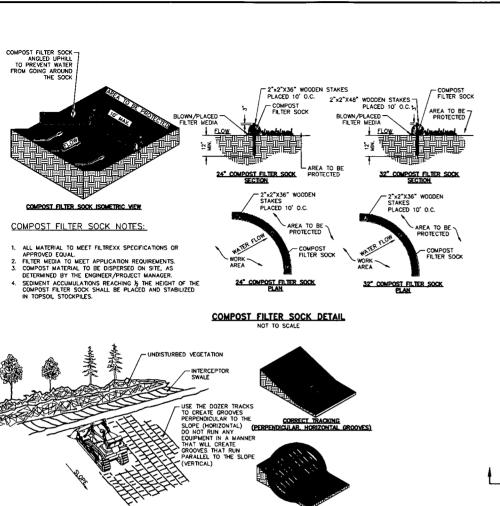
MIDSTREAM F 1615 WYNKOOP ENVER, COLORAD

PLAN

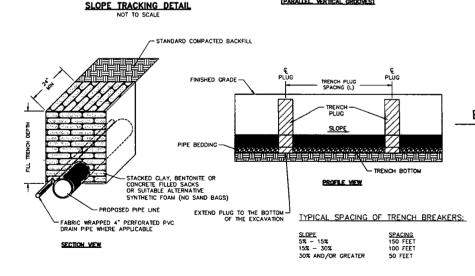
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YVONN GRAN 12/09/16

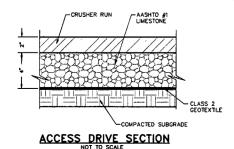
DATE: SHEET NO. 13 OF 16 DWG. NO. 095452316



INCORRECT TRACKING (PARALLEL, VERTICAL GR



TYPICAL IMPERVIOUS TRENCH BREAKER/PLUG NOT TO SCALE



EXISTING ROADWAY (GRAVEL) MOUNTABLE -

SUITABLE APPLICATIONS:

WHERE DIRT OR MUD CAN BE TRACKED ONTO PUBLIC ROADS.
ADJACENT TO WATER BODIES.
WERE POOR SOILS ARE ENCOUNTERED.
WHERE DUST IS A PROBLEM DURING DRY WEATHER CONDITIONS.

DESIGN AND LAYOUT:

CONSTRUCT ON LEVEL GROUND WHERE POSSIBLE.
SELECT 3 TO 6 INCH DIAMETER STONES.
USE MINIMUM DEPTH OF 12" OR AS RECOMMENDED BY SOILS ENGINEER.

SUBJECT.

SEGMENT.

SEGMENT OF THE FOR THE STATE OF THE ENTRANCE.

LIMITSPEED OF VEHICLES TO CONTROL DUST.

PROPERLY GRADE EACH CONSTRUCTION ENTRANCE/EXIT TO

PREVENT CONSTRUCTION SITE.

ROUTE RUNDET FROM STABILIZED ENTRANCES/EXITS THRU A

SEDMENT TRAPPING DEVICE BEFORE DISCHARGE.

DESIGNATE COMBINATION OF SINGLE PURPOSE ENTRANCES AND

EXITS TO THE CONSTRUCTION SITE.

REQUIRE THAT ALL EMPLOYEES, SUBCONTRACTORS AND

SUPPLIERS UTILIZE STABILIZED CONSTRUCTION ENTRANCE/EXIT.

INSPECTION AND MAINTENANCE:

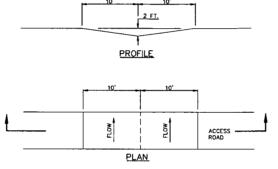
INSPECT AND WERIET THAT ACTIVITY BASED BMP'S ARE IN PLACE PRIOR TO THE COMMENCEMENT OF ASSOCIATED ACTIVITIES. WHILE ACTIVITIES ASSOCIATED WITH THE BMP'S ARE UNDER WAY, INSPECT WERLY DURING THE RAINY SEASON AND TWO—WEEK INTERVALS IN THE NON-RAINY SEASON TO VERIEY CONTINUED BNP IMPLEMENTATION.
INSPECT LOCAL ROADS ADJACENT TO THE SITE DAILY.
REMOVE AGGREGATE, SEPARATE AND DISPOSE OF SEDIMENT IF CONSTRUCTION ENTRANCE/EXIT IS CLOCGED WITH SEDIMENT. KEEP ALL TEMPORARY ROADWAY DICTIES CLEAR.
CHECK FOR DAMAGE AND REPAIR AS NEEDED.
REMOVE GRAVEL MATERIAL WHEN SURFACE VOIDS ARE VISIBLE.
REMOVE GRAVEL MATERIAL WHEN SURFACE VOIDS ARE VISIBLE.

-2A STONE, COMPACTED IN 4" - 6" LAYERS 12" COMPARABLE AGGREGATE 2' FLOWABLE FILL 2' NATIVE BACKFILL 2'-0" | 16" | 2'-0" TRENCH WIDTH

TRENCH RESTORATION DETAIL FOR ROAD CROSSINGS

NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE DETAIL NOT TO SCALE



NOTE: CONSTRUCT SEDIMENT BARRIER AND CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE.

FILTER FABRIC

WIDTH AS REQUIRED TO ACCOMODATE ANTICIPATED TRAFFIC

- MOUNTABLE BERM

- 20' RADIUS MIN.

PLAN VIEW

PROFILE VIEW

12" MINIMUM UNLESS OTHERWISE SPECIFIED BY A SOILS ENGINEER

SECTION AA

5:1

CULVERT

BROAD-BASED DIPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN AND AT THE LOCATIONS SHOWN ON THE PLAN DRAWINGS.

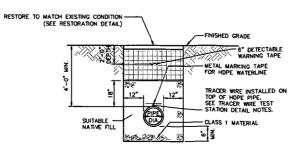
DIPS SHALL BE ORIENTED SO AS TO DISCHARGE TO THE LOW SIDE OF THE ROADWAY. DIPS SHALL BE INSPECTED DAILY. DAMAGED OR NON-FUNCTIONING DIPS SHALL BE REPAIRED BY THE END OF THE WORKDAY.

USE OUTLET PROTECTION AS DEPICTED IN WATERBAR/BROAD BASED DIP OUTLET PROTECTION DETAIL.

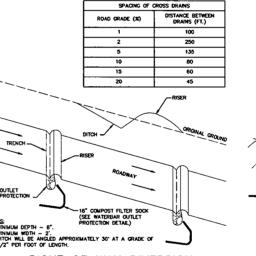
BROAD BASED DIP - LOW GRADIENT (<5%) ROADWAYS NOT TO SCALE

CLASSIFICATION OF MATERIALS:

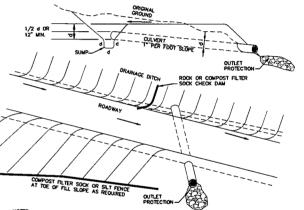
CLASS 2 — THIS MATERIAL SHALL CONSIST OF EXCAVATED MATERIAL FREE FROM CINDERS, ASHES, REFUSE, VECETABLE OR ORGANIC MATERIAL, BOULDERS, ROCKS NO LARGER THAN FOUR (4) MICHES IN DIMENSION, STONE OR OTHER MATERIAL WHICH IN THE OPINION OF THE ENGINEER IS UNSUITABLE.



TYPICAL TRENCH DETAIL-WATERLINE



RIGHT OF WAY DIVERSION /WATERBAR



NOTES

1. CULVERTS WILL BE INSTALLED TO SPECIFIED LINE AND GRADE.

2. OITCH SHALL BE EXCAVATED TO A DEPTH AND GRADE TO ENSURE PROPER COVER FOR THE CULVERT.

3. DITCH BOTTOM WILL HAVE A FRIM FOUNDATION FOR THE CULVERT, GRAVEL MAY BE USED TO STABILIZE THE BOTTOM BOTTOM.

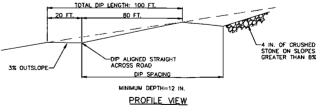
5. STABILIZE THE BOTTOM STATE AND SHACKFLLED WITH MATERIAL FREE OF LARGE ROCKS, WHICH MAY CAUSE DAMAGE TO IT.

5. STONE MAY BE NEEDED FOR FURTHER SURFACE STABILIZATION.

6. RECOMMENDED INSTALLAND IS WITH A BOACHOE RATHER THAN A DOZER.

7. CULVERTS WILL HAVE CULTET PROTECTION (LE. FIELD ROCK OR RIPRAP, AND SEDIMENT BARRIERS) AS WELL AS NATURAL FILTER STIPS AREAS.

DITCH RELIEF CULVERT



NOTES: BROAD-BASED DIPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN AND AT THE LOCATIONS SHOWN ON THE PLAN DRAWNOS.

MAXIMUM SPACING OF BROAD-BASED DIPS SHALL BE EQUAL TO 400' / % GRADE + 75'.

USE OUTLET PROTECTION AS DEPICTED IN WATERBAR/BROAD BASED DIP OUTLET PROTECTION DETAIL.

BROAD BASED DIP FOR HIGH GRADIENT (5%-10%) ROADWAYS

E&S SEDIN ဥ ચ TAX DISTR YVONNE EROSION 12/09/16 SHEET NO. ____14__ OF ___16__

DWG. NO. 095452316

MAntero Midstreamparmers to

PA 15205 446-1733

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MIDDLE

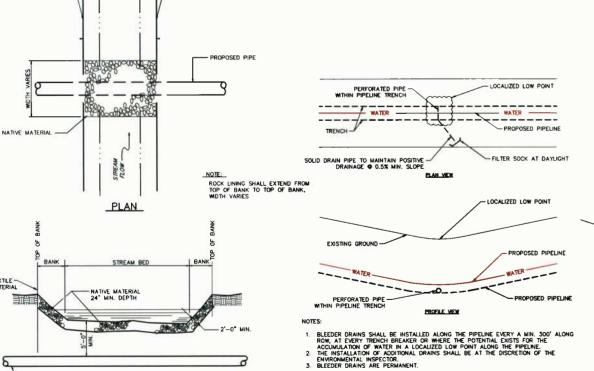
PLAN

DETAILS MENT CONTROL

DATE:

9

STREAM CROSSING DETAIL -COFFERDAM & PUMP-AROUND



SECTION

OPEN CUT STREAM CROSSING

SPECIFICATION: 31 25 14.13 - HIGH PERFORMANCE-FLEXIBLE GROWTH MEDIUM

GROWTH MEDIUM
THIS SECTION SPECIFIES A HYDRAUUCALLY-APPLIED, 100X
BIODEGRADABLE, HIGH PERFORMANCE-FLEXIBLE GROWTH MEDIUM
(HH-FGM) THAT IS MANUFACTURED IN THE UNITED STATES AND IS
COMPOSED OF 100X RECYCLED THERMALLY REFINED (WITHIN A
PRESSURE VESSEL) WOOD FIBERS, CRIMPED INTERLOCKING
MAN-MADE BIODEGRADABLE FIBERS, MICHOE-POBE GRANULES,
MASSINGENTS, THE HH-FGM IS BYTGGANITIZED, REE FROM
PLASTIC RETTING, REQUIRES NO CURRING PERIOD AND UPON
APPLICATION FORMS AN INTIMATE BOND WITH THE SOLL SURFACE
TO CREATE A CONTINUOUS, POROUS, ABSORBENT AND FLEXIBLE
EROSION RESISTANT BLANKET THAT ALLOWS FOR RAPID
GERMINATION AND ACCELERATED PLANT GROWTH. ALL COMPONENTS
OF THE FGM SHALL BE PRE-PACKAGED BY THE MANUFACTURER
TO ASSURE BOTH MATERIAL PERFORMANCE AND COMPLIANCE WITH
THE FOLLOWING VALUES, NO CHEMICAL ADDITIVES WITH THE
EXCEPTION OF FERTILIZER, LIMING AND BIOSTIMULANT MATERIALS
SHOULD BE ADDED TO THIS PRODUCT.

1. THERMALLY PROCESSED (WITHIN A PRESSURE VESSEL) WOOD FIBER T BOX \$ 38 MERSATURE GREATER THAN 380 DEGREES HEART THAN 380 DEGREES CELSUS TOX \$ MINUTES AT A PRESSURE GREATER THAN 50 PS JAS KPA) CROSSLINKED BIOPOLYMERS AND WATER ABSORBENTS - 10% \$ 13 MERSATURE GREATER THAN 50 PS JAS KPA) CROSSLINKED BIOPOLYMERS AND WATER ABSORBENTS - 10% \$ 13 MERSATURE GREATER THAN 50 PS JAS KPA) TO THE STATE OF THE STATE O 1% CRIMPED, MAN-MADE BIODEGRADABLE INTERLOCKING FIBERS -5% ± 1% MICRO-PORE GRANULES - 5 % ± 1%

MIN EXTENSION

NOTES:
1. STREAMBED MATERIAL IS NOT TO BE USED FOR FILL.
2. THE STRUCTURE SHALL BE LARGE ENOUGH TO HANDLE A 10-YEAR FREQUENCY STORM, 24 HOUR DURATION.
3. DEPTH OF COMER OMER QUICKETTS SHALL BE 1/2 THE DAMAFTER OF THE QUICKETS USED OR 12", WHICHEVER US ORFAITER.
4. MULTI-CLUVERTS SHOULD BE INSTALLED WITH SPACES BETWEEN THEM, EQUAL TO 1/2 THE PIPE DIAMAFTER.
5. CHOSS CHEBBING OF THE DOWNSTREAM SIDE OF CULVERT INSTALLATIONS MAY BE MEDDED TO AND IN REDUCING STRUCTURAL DAMAGE QUINGH GHICH VELOCITY WATER OVERTION PRICKOS.
6. IF COLVENTS OR BRIDGES AND NOT USED AND A STONE BASE DOES NOT EXIST, STONE SHALL BE INSTALLED.
WITH THE ENTRANCE AND EXT BEING STONED APPROXIMATELY TOO.
7. DITCH LINE DIT POINTS AT STREAM CROSSINGS MUST HAVE SEDMENT CONTROLS.

STREAM CROSSING WITH CULVERT

REJIDIALIZIES.

STRICTLY COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMPORTIONS. USE APPROVED HYDRO-SPRAYING MACHINES WITH FAN-TYPE NOZZEE (50-DEGREE TIP). TO ACHIEVE OPTIMUM SOIL SURFACE COVERAGE, APPLY-FOM FROM OPPOSING DIRECTIONS TO SOIL SURFACE, ROQUELY SURFACES, ROCKYY TERRAIN, CAT HACKS AND REPEB SOILS MICHIGATED HE FOR APPLICATION METERS. PROVIDED TO STRICK THE PROVIDED HE FOR APPLICATION OF THE SOIL SURFACE STRICKYY TERRAIN, CAT HACKS AND REPEB SOILS MICHIGANED HE FOR APPLICATION OF THE SOIL SOIL SURFACE STRICKY TERRAIN, CAT HOST SOIL SURFACE STRICKY TO STRICKY THE SOIL SURFACE STRICKY TO STRICKY THE SOIL SURFACE STRICKY TO STRICKY THE SOIL SURFACE STRICKY TO STRICKY TO STRICKY THE SOIL SURFACE STRICKY TO STRICKY THE SOIL SURFACE STRICKY TO STRICKY THE SOIL SURFACE STRICKY TO STRICKY THE STRICKY THE SOIL SURFACE STRICKY TO STRICKY THE S

AMOUNT OF HE-FOR FOR VISUAL MELEKING.

2. STEP TWO: MIX BALANCE OF SEED AND APPLY HP-FGM AT A RATE OF 50 LB PER 125 GALLONS (23 KG/475 LITERS) OF WATER OVER FRESHLY SEEDED SURFACES. CONFIRM LOADING RATES WITH EQUIPMENT MANUFACTURER. DO NOT LEAVE SEEDED SURFACES UNPROTECTED, ESPECIALLY IF PRECIPITATION IS IMMINENT.

APPLICATION RATES: THESE APPLICATION RATES ARE FOR STANDARD CONDITIONS. DESIGNERS MAY WISH TO REDUCE RATES TO ENCOURAGE FASTER VEGETATION ESTABLISHMENT OR MAY NEED TO WICKEASE APPLICATION RATES ON ROLDH SURFACES.

CONSILLT APPLICATION AND LOADING CHARTS TO DETERMINE NUMBER OF BAGS TO BE ADDED FOR DESIRED AREA AND

SLOPE GRADIENT / CONDITION	ENGLISH	21	
< 4H TO 1V	2500 LB/AC	2800 KG/HA	
> 4H TO 1V AND < 3H TO 1V	3000 LB/AC	3400 KG/HA	
> 3H TO 1V AND < 2H TO 1V	3500 LB/AC	3900 KG/HA	
> 2H TO 1V AND < 1H TO 1V	4000 LB/AC	4500 KG/HA	
> 1H TO 1V	4500 LB/AC	5100 KG/HA	
BELOW ECB OR TRM	1500 LB/AC	1700 KG/HA	

LOW LYING AREA BLEEDER DRAIN
NOT TO SCALE

AS INFILL FOR TRM

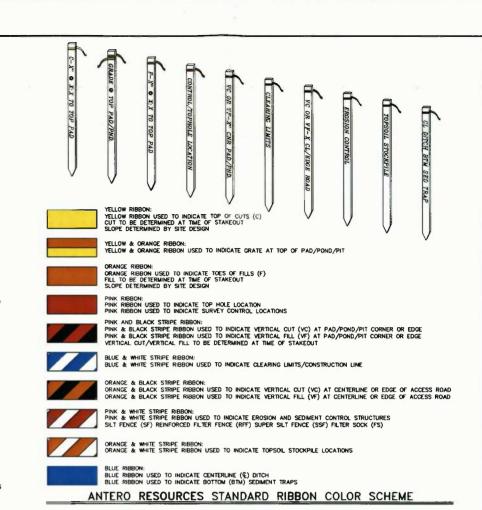
1. PLEASE NOTE THAT THE INFORMATION PRESENTED HEREIN IS GENERAL INFORMATION ONLY. IT IS FOR CONCEPTUAL USE ONLY AND NOT INTENDED TO BE USED FOR CONSTRUCTION. WHILE EVERY EFFORT HAS BEEN MADE TO ENSURE ITS ACCURACY, THIS INFORMATION SHOULD NOT BE USED FOR A SPECIFIC APPLICATION WITHOUT INDEPENDENT PROFESSIONAL EXAMINATION AND VERRICATION OF ITS SUITABILITY, APPLICABILITY AND ACCURACY.

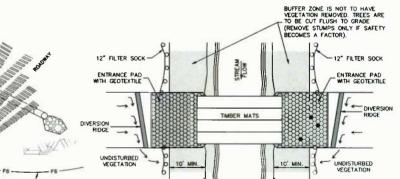
HENSIVE CSI FORMATTED SPECIFICATION FOR FURTHER DETAILS

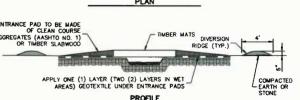
3500 LB/AC

FLEXTERRA HP-FGM SLOPE LINING NOT TO SCALE ES/ES038

3900 KG/HA







STREAM MAT/TEMPORARY ROAD CROSSING DETAIL

PA 15205 446-1733

CHKD PJF PJF PJF PJF PJF

5

O MIDSTREAM PARTNERS, 1615 WYNKOOP STREET DENVER, COLORADO 80202

OAntero Midstream

PIPELINE

TROL NILS CONJ MIDDLE E&S DETAI SEDIMENT 2

YVONNE

DATE: 12/09/16 SHEET NO. 15 OF 16 DWG. NO. 095452316

ENTRANCE PAD TO BE MADE OF CLEAN COURSE AGGREGATES (AASHTO NO. 1) OR TIMBER SLABWOOD

NOTES:

1. ONLY CLEARING EQUIPMENT AND EQUIPMENT NECESSARY FOR INSTALLATION OF EQUIPMENT BRIDGES MAY CROSS WATERBODIES PRIOR TO BRIDGE INSTALLATION. LIMIT THE CROSSING OF EACH WATERBODY TO ONE PER PIECE OF CLEARING EQUIPMENT.

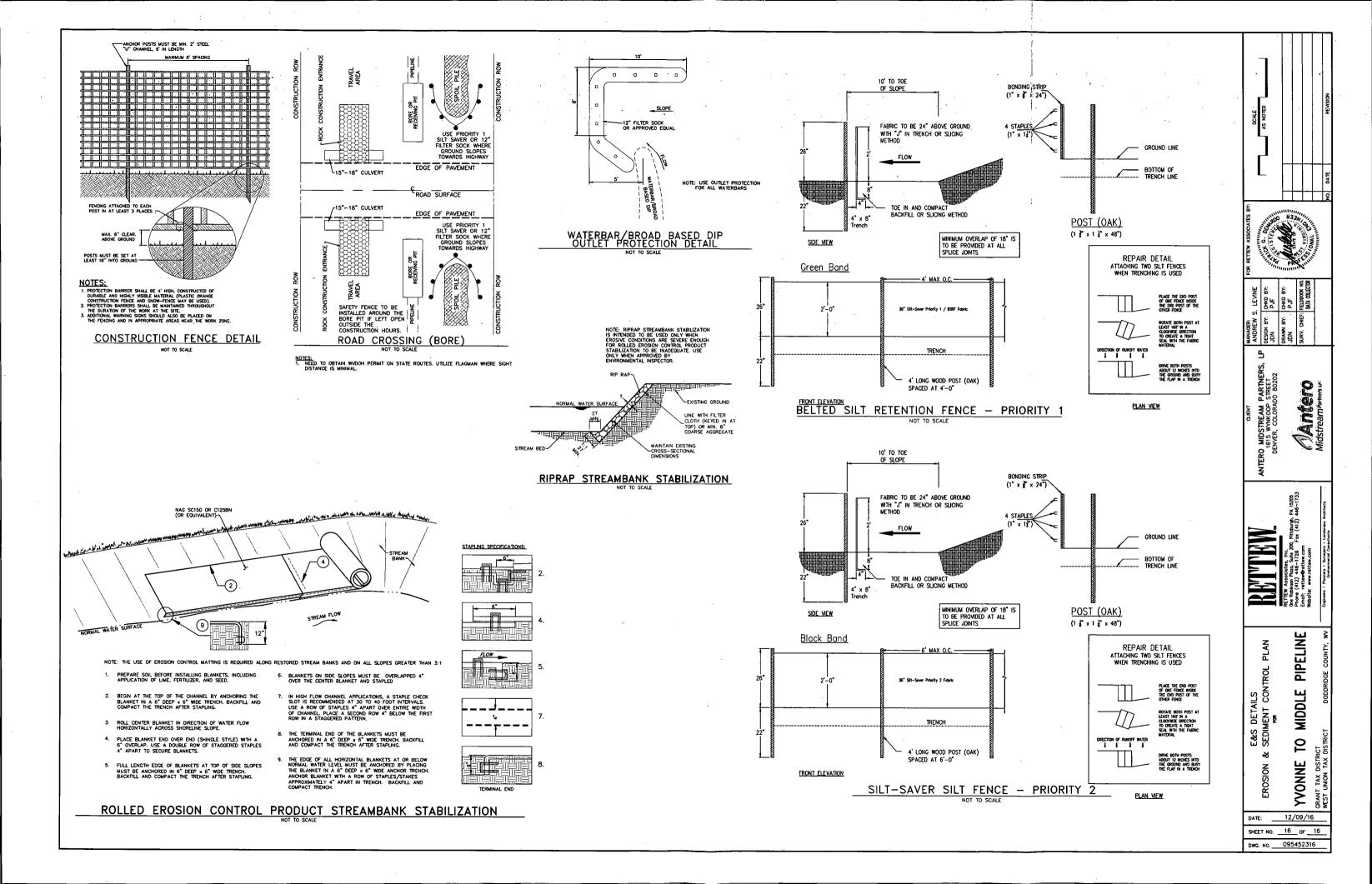
2. INSTALL 12" FILTER SOCK ACROSS THE DISTURBED AREA OF THE R.O.W.

3. APPLY GEOTESTILE UNDER ENTRANCE PADS.

4. EXCESS MUD IS TO BE REMOVED FROM THE ENTRANCE PADS AND MATS DURING CONSTRUCTION, MUD WILL BE DISPOSED OF IN AN UPUND AREA WITHIN THE R.O.W.

5. SECURE GEOTESTILE TO UNDERSIDE OF THISBER MATS AND WRAP/SECURE TO SIDES TO PREVENT SEDIMENT/MUD FROM MIGRATION THRU MATS TO PROTECTED AREA BELOW.

5. DIRING FINAL CLEAN UP WHEN MATS, CULVERT, CLEAN ROCK FILL ETC. APER REMOVED, INSTALL FILTER SOCK ACROSS THE ENTIRE R.O.W. ON BOTH SIDES OF STREAM. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED.



From:

Luz Slauter

To:

Sally Ebeling; Parke Bongiorno

Cc:

Wyatt Webster

Subject:

Finally!: Modification Approval for WVR310451-D, West End Connector Pipeline, Doddridge County, Acres

Date:

Monday, March 20, 2017 3:57:58 PM

Yvonne to Middle Project Stormwater Permit approval.

Luz C. Slauter

Midstream Environmental & Regulatory Manager

Direct: 303-357-6834 Cell: 720-519-3806

Email: Islauter@anteroresources.com

From: DEP NPDESEP [mailto:DEP.NPDESEP@wv.gov]

Sent: Monday, March 20, 2017 1:57 PM

To: Luz Slauter; DEP NPDESEP

Cc: Casto, Timothy J; McGee, James L; Cochran, Joseph W

Subject: RE: Modification Approval for WVR310451-D, West End Connector Pipeline, Doddridge County,

Acres (324.74)

Resending due to incorrect email address.

From: DEP NPDESEP

Sent: Monday, March 20, 2017 3:55 PM

To: LSLauter@aneroresources.com; DEP NPDESEP < DEP.NPDESEP@wv.gov>

Cc: Casto, Timothy J <Tim.J.Casto@wv.gov>; McGee, James L <James.L.McGee@wv.gov>; Cochran,

Joseph W < Joseph.W.Cochran@wv.gov>

Subject: Modification Approval for WVR310451-D, West End Connector Pipeline, Doddridge County,

Acres (324.74)

Luz Slauter, Env Supvr Antero Midstream LLC 1615 Wynkoop St Denver, CO 80202

Physical Site Location: County Route 26 (Long Run Road), West Union

Please be advised that this e-mail constitutes approval and serves as Modification No. 4 of your existing General Permit Registration No. WVR310451, dated the 29th day of April, 2015.

Md20121 21 028844 After review of your existing General Permit Registration and Permit Modification Application No. WVR310451-D, the subject general permit registration is hereby modified to add approximately 4.1 miles of 24 and 20inch diameter pipeline called the Yvonne to Middle Pipeline. The disturbed acres for the project have increased from 274.84 to 324.74 acres, an increase of 49.9 acres.

All other terms and conditions of the subject registration shall remain in effect and unchanged.

If you have any questions relative to this approval, please do not hesitate to contact **Joseph Cochran** at (304) 926-0499 Ext. **1069** or by email at **joseph.w.cochran@wv.gov**.

Scott G. Mandirola, Director WV DEP-Division of Water & Waste Mgt. 601 57th St. SE Charleston, WV 25304-2345 Phone: (304) 926-0495

Fax: (304) 926-0496



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

February 2, 2017

Mr. Justin McKissick Rettew Associates, Inc. One Robinson Plaza, Suite 200 Pittsburg, Pennsylvania 15205

and

Ms. Christine Miller Cruiess RETTEW Associates, Inc. 3020 Columbia Avenue Lancaster, Pennsylvania 17603

RE: Yvonne to Middle Pipeline

Doddridge County, West Virginia RETTEW Project No.: 095452316

FR#: 17-262-DO

Dear Mr. McKissick and Ms. Cruiess:

We have reviewed the technical reports that were prepared by Rettew and submitted for the above-referenced project. 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 Water, LLC proposes to construct a 4.1-mile buried waterline between the existing Yvonne Well Pad and the existing Middle Well Pad and a 2.4-mile buried gas pipeline between the Yvonne Well Pad and the existing West End Connector Pipeline. The proposed project is located on terrain located north of Crystal Lake in Doddridge County, WV. It is our understanding that the proposed project will require a permit from the US Army Corps of Engineers.

Archaeological Resources:

We have reviewed the abbreviated technical report documenting the Phase I archaeological survey that was conducted for the proposed pipeline project. According to the report, Antero defined the Area of Potential Effect (APE) to consist of the proposed project's entire limits of disturbance (LOD), which totals 49.89 acres and includes the proposed corridors for the waterline, pipeline and access roads as well as any additional work spaces needed. Systematic archaeological survey of the APE included pedestrian reconnaissance and shovel probe excavation. Approximately 6.64 acres of the APE were previously surveyed for a separate project. That portion of the APE was not reexamined during the current field effort.

February 2, 2017 Mr. McKissick and Ms. Cruiess FR# 17-262-DO Page 2

The report satisfactorily addresses our concerns regarding the presence of cultural resources within the proposed project area. Approximately 5.13 acres of the proposed APE were determined to have a moderate to high archaeological potential. The remainder of the APE was observed to consist of steep terrain, severely eroded ridge tops and areas of previous disturbance. Stream crossings were also previously disturbed or bordered by steep terrain. A total of 82 shovel probes were excavated. No archaeological resources were identified. We concur with the report's recommendation that no further archaeological investigations are necessary. We also concur that the proposed project will have no effect on archaeological historic properties.

Architectural Resources:

We have reviewed the submitted information, and while there are no built resources within the APE for direct effects, we approve of the use of 0.5-mile buffer for the APE for potential indirect effects caused by tree cuts required for the proposed project. We agree that additional survey would be required to determine the eligibility of the Wayne C. Ravenscroft Parcel, Clarence L. and Pauline Dye Parcel, and Larry Williams Parcel for the National Register of Historic Places. We also agree that the remaining built resources included in this survey are not eligible for the National Register. We concur with the recommendation that the proposed project will have no effect on the three properties identified as potentially eligible for the National Register because intervening topography and vegetation will block any potential views from these resources. No further consultation is necessary regarding architectural resources; however, we ask that you contact our office if your project should change.

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

Sincerely,

Susan M. Pierce

Deputy State Historic Preservation Officer

SMP/LLD/BMR



United States Department of the Interior



FISH AND WILDLIFE SERVICE

West Virginia Field Office 694 Beverly Pike Elkins, West Virginia 26241

February 1, 2017

Wyatt Webster Antero Resources Corporation 1615 Wynkoop Street Denver, Colorado 80202

Re: Antero Resources Corporation, Yvonne to Middle Pipeline Project, Doddridge County,

West Virginia (FWS File # 2017-I-0227)

Dear Mr. Webster:

This responds to your request of January 13, 2017, for information regarding the potential occurrence of federally listed threatened and endangered species and their designated critical habitats. Antero Resources Corporation (Antero) proposes to install a buried waterline and gasline in Doddridge County, West Virginia. Antero proposes to clear approximately 20 forested acres for project construction and operation. These comments are provided pursuant to the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) (ESA).

The U.S. Fish and Wildlife Service (Service) has determined that three federally endangered species and one threatened species are known to occur within the area, and may be affected by the construction and operation of the project. They are the endangered Indiana bat (*Myotis sodalis*), snuffbox mussel (*Epioblasma triquetra*), clubshell mussel (*Pleurobema clava*), and the threatened northern long-eared bat (*Myotis septentrionalis*) (NLEB).

Federally Listed Bats

The Service has received your Indiana Bat Conservation Plan dated January 13, 2017. The following comments and recommendations serve as technical assistance towards fulfilling the requirements for consultation under section 7 of the ESA.

This plan was developed because you have chosen to assume that the federally listed Indiana bat is present within your project area. Habitat assessments were conducted within the proposed project area in November 2016. The results of the habitat assessment for the proposed project are as follows:

1. An estimated 20 acres of forest would be cleared for the project, which leaves an estimated 1,015.1 acres or 74.82 percent of forested habitat within the ¼ - mile buffer

- area after project clearing has been completed. The total number of acres in the buffer area is 1,356.8.
- 2. One potential bat roost tree was identified within the project area and will be avoided during project construction.
- 3. No portals or caves were observed within the project area.

In the Indiana Bat Conservation Plan, the project proponent stated their commitment to the avoidance, minimization, and conservation measures listed on the attached summary sheet.

These measures are designed to address the potential direct and indirect effects that may occur as a result of the project, and will ensure that no Indiana bats will be directly killed by the removal of trees, and that roosting and foraging habitat will remain within the project area after project construction. Based on the commitment to implement these measures, the Service does not anticipate that this project is likely to adversely affect the Indiana bat.

The Service has determined that the NLEB is within the range of the proposed project, and may be affected by the proposed construction and operation of this project. Any take of NLEB occurring in conjunction with these activities that complies with the conservation measures (as outlined in the 4(d) rule), as necessary, is exempted from section 9 prohibitions by the 4(d) rule and does not require site specific incidental take authorization. Note that the 4(d) rule does not exempt take that may occur as a result of adverse effects to hibernacula and that no conservation measures are required as part of the 4(d) rule unless the proposed project (1) involves tree removal within 0.25 miles of known NLEB hibernacula; or (2) cuts or destroys known, occupied maternity roost trees or any other trees within a 150-foot radius around known, occupied maternity tree during the pup season (June 1 to July 31). This proposed project is not located within any of these radii around known hibernacula or roost trees and will not affect any known NLEB hibernacula, therefore any take of NLEB associated with this project is exempted under the 4(d) rule and no conservation measures are required.

Freshwater Mussels

The project occurs within a ¼ mile of Middle Island Creek, which provides habitat for snuffbox and clubshell mussels, which are listed as endangered under the ESA. Freshwater mussels feed by filtering food particles from the water column. Juvenile and adult freshwater mussels have been documented to feed on detritus, diatoms, phytoplankton, and zooplankton. Freshwater mussels rely on fish to complete their life histories. When mussel larvae (glochidia) are released into the water by adult females, they must attach themselves within a few days to an appropriate fish host, which they then parasitize for a short time while developing into juvenile mussels. The loss of many historic populations and the continuing degradation of current populations are due to the impacts of impoundments, navigation projects, water quality degradation from agricultural and industrial wastes, deforestation and other forms of habitat alteration, including gravel and sand dredging. Impacts that directly affect the species also include reduction or elimination of fish hosts.

Freshwater mussels play a key role in the health of aquatic environments by helping to maintain water quality, cycle nutrients, stabilize substrates, remove suspended sediments, and create habitat complexity (Anderson and Kreeger, 2012). Mussels remove suspended particulates from water by filter-feeding, which involves straining water over gills to remove microscopic food

particles. Filter-feeding makes mussels very sensitive to excessive sedimentation caused by runoff from streambank and upland activities. Excessive sedimentation into a stream reduces suitable habitat for mussels and can smother them, causing death. Excessive suspended sediments can also impair feeding processes of mussels, leading to acute short-term or chronic long-term stress. Both excessive sedimentation and excessive suspended sediments can lead to reduced populations of mussels and therefore reduced benefits to the ecosystem (Anderson and Kreeger, 2010; Box and Mossa, 1999; Ellis, 1931; Ellis, 1936; Houp, 1993).

Due to the proximity of the project to Middle Island Creek, the project could cause increased sedimentation that could adversely affect mussels. In correspondence dated January 13, 2017, Antero stated their commitment to the erosion and sedimentation best management practices listed on the attached summary sheet. These best management practices will help minimize adverse effects of sedimentation and erosion to waterways that provide habitat to federally listed mussels near the action area. In addition, the project proponent will comply with the requirements set forth in the West Virginia Department of Environmental Protection's 2006 Best Management Protection Manual and the 2012 Erosion and Sediment Control Field Oil and Gas Manual.

Conclusion

This letter provides technical assistance only and does not serve as a completed section 7 consultation document. If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing or any project construction activities on any portion of the parcel should occur until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. Section 7 consultation is not complete until the federal action agency submits a determination of effects to this office, the Service concurs with the federal action agency's determination, and the federal action agency agrees to incorporate all the proposed conservation measures as mandatory conditions for any permit decision rendered for this project. All measures must be implemented as proposed. If there is no federal nexus associated with this project, then no further coordination with this office is required.

Should project plans change or amendments be proposed that we have not considered in your proposed action, or if additional information on listed and proposed species becomes available, or if new species become listed or critical habitat is designated, this determination may be reconsidered.

If you have any questions regarding this letter, please contact Tiernan Lennon of my staff at (304) 636-6586, Ext. 12, or at the letterhead address.

Sincerely,

John E. Schmidt Field Supervisor

Thur Showell

Literature Cited

- Anderson, R. M. and D. A. Kreeger. 2010. Potential for impairment of freshwater mussel populations in DRBC special protection waters as a consequence of natural gas exploratory well development. Unpublished report prepared for U.S. Fish and Wildlife Service and the Partnership for the Delaware Estuary. State College, Pennsylvania.
- Box, J. M. and J. Mossa. 1999. Sediment, land use, and freshwater mussels: prospects and problems. *Journal of the North American Benthological Society*. 18:99-117.
- Ellis, M. M. 1931. Some factors affecting the replacement of the commercial fresh-water mussels. U.S. Department of Commerce Bureau of Fisheries. Fishery Circular. 7:1-10.
- Ellis, M. M.. 1936. Erosion silt as a factor in aquatic environments. Ecology. 17:29-42.
- Houp, R. E.. 1993. Observations on long-term effects of sedimentation on freshwater mussels (Molusca: Unionidae) in the North Fork of Red River, Kentucky. Transactions of the Kentucky Academy of Science. 54:93-97.

Avoidance and Minimization Measures to be Applied on Project

✓ Rolled erosion control product streambank stabilization ✓ Seeding and mulching of disturbed areas for stabilization

	✓ Seasonal tree clearing (all trees greater than 5" DBH) REQUIRED
	⊀Avoid cutting potential roost trees
	☐ Avoid high quality foraging areas
	✓ Minimize limits of disturbance (narrowed LOD or ROW)
	✓ Minimize impacts (clearing) around suitable swarming and summer habitat and
	wetland/riparian zones
	□ 50-foot or greater forested buffer left along both sides of streams
	✓ Collocate project features with previously disturbed or cleared areas
	☐ Phase tree clearing over multiple years
	□ Reforest disturbed areas
	☐ Restore or enhanced riparian/wetland areas
	✓ Strong erosion and sedimentation best management practices
	☐ Suitable habitat acreage permanently preserved within or adjacent to the project site
	Pollution control plan in place
Coı	nservation Measures to be Applied on Project
	☐ Girdling trees on a 1:1 ratio for each potential roost tree that is lost during project development
	☐ Erecting artificial roosting structures on a 1:1 ratio for each potential primary roost tree that is lost during project development (a 2-year minimum monitoring plan of artificial structures)
	☐ Erecting artificial bark, bat boxes, or other artificial roosting structures (a 2-year minimum monitoring plan of artificial structures)
	☐ Preservation of suitable Indiana bat habitat off-site
	☐ Creation of watering areas, wetlands, or ponds
Erc	osion and Sedimentation Best Management Practice
	✓Compost filter sock
	✓ Super silt fence/belted silt retention fence



DIVISION OF NATURAL RESOURCES

324 Fourth Avenue, Room 200 South Charleston WV 25303-1228 TDD (304) 558-1439 TDD 1-800-354-6087 Fax (304) 558-6048 Telephone (304) 558-3225

Robert A. Fala Director

January 18, 2017

Division of Natural Resources RIGHT OF ENTRY

Re:

LS-17-VI/09-271

Antero Water LLC Wyatt Webster c/o RETTEW Associates, Inc. Attention: Tom Eby 3020 Columbia Ave. Lancaster, PA 17603-

Dear Mr. Webster:

Earl Ray Tomblin

Governor

The Division of Natural Resources hereby grants to you for a period of ten (10) years from the date hereof, a Right of Entry to install, use and maintain a timber mat crossing (The Yvonne to Middle Pipeline) at two (2) separate locations along Nutter Fork and an unnamed tributary of Nutter Fork near West Union in Doddridge County, West Virginia.

This Right of Entry is subject to the following terms and conditions:

- 1. No in stream work during the fish-spawning season (April 1-June 30).
- Work should be completed as quickly as possible during low flows in designated work areas only.
- Any streambed disturbance should be restricted to the immediate area. In stream use of equipment should be kept to a minimum.
- 4. All shore areas disturbed by this operation must be reshaped, seeded and mulched immediately upon completion of work. The prompt establishment of vegetative cover will reduce future damage from high water levels.
- 5. Green concrete must not be put in the stream (highly toxic to aquatic life).
- Guidance should be obtained from NRCS (formerly SCS) and a registered engineer for the design and construction. Must allow for passage of at least ten-year year flood flow.
- Best management practices should be followed; measures such as hay bales must be used to reduce downstream siltation.

Antero Water LLC LS-17-VI/09-271 Page 2 January 18, 2017

- Applicant is responsible for removing debris from in and around the installation periodically to prevent stream flow obstruction.
- Durable head walls of logs, crossties, rock, or concrete shall be constructed at both the upstream and downstream ends of crossing to prevent erosion of fill material into the stream.
- 10. The State's issuance of this Right-of-Entry does not provide for the applicant to work outside the requested boundaries nor does the State assume any liability for the applicant's/landowner's construction activities. By accepting this Right-of-Entry, the applicant/landowner assumes liability for any/all damages caused by this activity to both upstream and downstream landowners.

Guidelines of Best Management Practices for Sediment and Erosion Control as outlined by the Section of Water Resources, Division of Environmental Protection must be followed. Copies of those quidelines are available from the Section of Water Resources, Telephone No. (304) 926-0440.

The issuance of this Right of Entry by the Division of Natural Resources does not preclude the necessity for you to obtain a permit from the U.S. Corps of Engineers District Office, Permit Section, or any other state or federal permits which may be required by law, nor does this Right of Entry negate the need to comply with the West Virginia Water Pollution Control Act and/or the State Environmental Quality Board's administrative regulations, applicant is also responsible for determining if the proposed activity is located within an identified flood plain and it is the applicant's responsibility for contacting the local governmental agency in charge of that program and obtaining a flood plain development permit for it. This Right of Entry does not grant any rights or privileges, or permission to enter upon or to cross the property of any other person, nor is permission granted to remove any material that lies upon the property of any other persons. Work should be completed in as brief a period as possible and within one year from the date of this letter. In the event you fail or refuse to comply with any of the terms or conditions herein, this Right of Entry will be canceled and considered null and void and the Division will reject further applications.

Your payment is now due and payable in the amount of \$200.00 to the Division of Natural Resources covering the first year's annual fee of this agreement. Your agreement will be effective upon receipt of your payment in full. You must notify this office in writing when this installation has been removed.

Sincerely,

Joe T. Scarberry, Supervisor Office of Land and Streams

JTS:cb

pc: DNR Fish Biologist

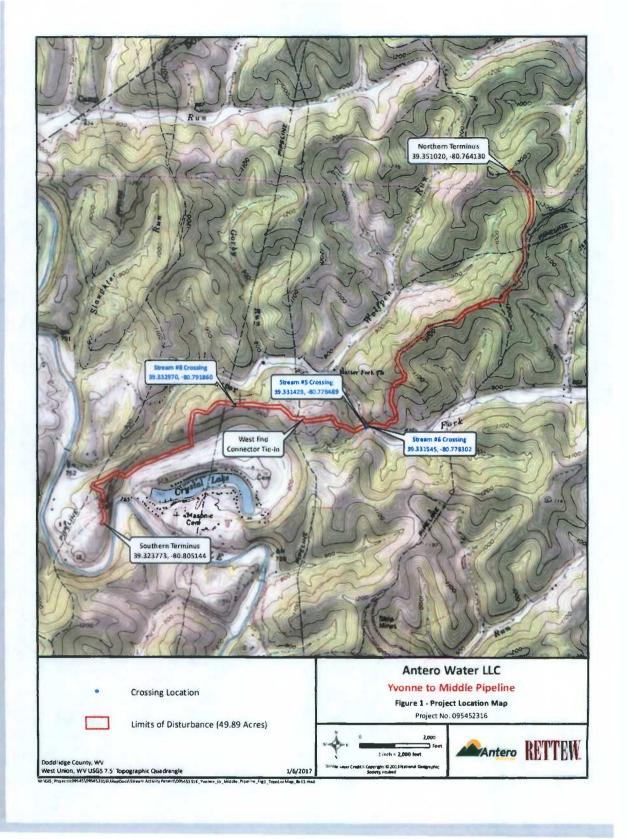
Jeremy Bandy, Environmental Enforcement

DNR Conservation Officers

OFFICE OF LAND AND STREAMS STREAM ACTIVITY APPLICATION

Name of Applicant: Antero Water LLC (Attn: Wya (Landowner)	tt Webster)				
2. Date: January 6, 2017					
3. Complete mailing address of applicant: 1615 W	ynkoop Street, Denver, CO 80202				
Telephone Number: (303) 357-6734	Fax Number:				
E-Mail Address: wwebster@anteroresources.c	om				
Tom Eby, RETTEW Associates, Inc.,	f applicant's authorized agent (i.e. contractor employed by landowner): 3020 Columbia Ave, Lancaster, PA 17603				
stream, amount of material to be dredged (if any), worked or type and size of structure to be placed i culvert). One copy of a map (topographical or other copy)	at dintended use after completion, type of equipment to be used in the plan for disposing of dredged materials, length of stream/bank to be in the stream (i.e. length and width of bridge, diameter and length of detailed, hand-drawn) showing exact location of the work site any this application, and all other information that may be important				
	ludes the construction of a buried waterline and gas				
pipeline to facilitate oil and gas transfer between well pads and gathering lines for Antero. Nutter Fork and two unnamed tributaries (UNT) to Nutter Fork are proposed to be open-cut for placement of the pipelines. Equipment to be used during construction of the project would include excavators and heavy trucks. There will be no dredging associated with the project and any affected resources would be restored to existing grade once construction is complete. Please refer to the attached					
Project Location Map for project location a	and specific stream crossing locations.				
•					
	`				
	15-1741/09-271				
	LS#17				
(if additional space is OLS Form 1 (08/07)	s required, continue on a separate sheet)				

6. Please √ the proposed use: Private:	Public: Commerical:
(person use)	(Government Agency) (Business)
7. Location where proposed ac	IVITY EXISTS OF WILL OCCUR.
Nutter Fork, two UNTs to Nutte	
1	or unknown tributery, provide the stream that is flows into)
Doddridge	West Union West Union, WV District (texable) Closest City or Town
County	
8. Date activity is proposed to	commence: Spring 2017
Date activity is expected to be	se complete: Summer 2017
	for which authorization is sought now complete? Yes No Section 5 including month and year the activity was completed)
Below is a fist of entities that Agencies for the above-desc	may require permits. Please list all approvals or certifications required by other Government ribed activity:
Issuing agency: Corps of Engineers -	(412) 395-7170
Identification No.:	(412) 395-7157 Date of approval: TBD
Issuing agency: County Commission	Type of approval: Floodplain Permit
Flood Plain Coordina Identification No.:	Date of approval: TBD
issuing agency: City Government (if in City Limits the County isn't needs	Type of approval:
Identification No.:	Date of approval:
(if "Yes", explain in Section 5 a	roval for the activity described herein? Yes No
Size of Pipeline: waterine-24*; gastine-20*	
Maximum pressure of the pipeline: wi	storline-250 pat; gestine-1,440 psi
Please provide the appropriate line nu	mber and if a Gathering or Well Line provide the A.P.I. Well Number:
	r authorization to conduct the activities described herein. I certify that I am familiar with the to the best of my knowledge and belief such information is true, complete and accurate. I further
	Signature of Applicant or Agent
	Office of Land and Streams Building 74, Room 200 324 Fourth Avenue South Charleston, WV 25303
	Phone Number 304-558-3225 Fax Number 304-558-6048
OLS Form 1 (08/07)	I de Mariadi 007-000-0070



ANTERO WATER LLC YVONNE TO MIDDLE PIPELINE CROSSING INFORMATION

The Antero Yvonne to Middle Pipeline project includes the installation of a buried waterline extending from the existing Yvonne Well Pad at approximately 39.351020, -80.764130 (NAD83) to the existing Middle Well Pad at approximately 39.323773, -80.805144 (NAD83), as well as a buried gas pipeline extending from the Yvonne Well Pad to the West End Connector. The route will extend for approximately 4.1 miles; only existing access roads will be used. The project is located in the West Union Tax District, Doddridge County, WV as shown on the attached USGS Topographic map. The route generally runs northeast to southwest along hillslopes and ridgetops and crosses three streams.

Table 1: Summary of Stream Crossing Information

Stream ID#	Resource Type	Crossing Type	Crossing Details	Latitude	Longitude	Stream Meander Length in LOD (feet)	LOD Width (feet)	Acres in LOD
Stream #5	Stream	Open Cut	1 waterline; 1 gasline; 1 timbermat bridge	39.331429	-80.778489	102	100	0.010
Stream #6	Stream	Open Cut	1 waterline; 1 gasline; 1 existing bridge	39.331545	-80.778302	130	100	0.060
Stream #8	Stream	Open Cut	1 waterline; 1 timbermat bridge	39.332970	-80.791860	103	100	0.007

West Virginia Division of Natural Resources

Invoice

Pay on-line at http://wvdnr.gov/REM

Invoice#:

26785

Comp. ID#:

6332

Bill Date:

01/19/2017

In Acct With Antero Water 1615 Wynkoop Street Denver , CO 80202

AGREEMENT	INVOICE PERIOD	AMOUNT PAID	AMOUNT DUE
AGREEMENT DATED 1/18/2017 P-17-VI/09-270 Waterlines and a gas pipeline (The Yvonne to Middle Pipeline) along Nutter Fork and unnamed tribs of same, Doddridge Co., WV	For 1/18/2017 to 1/18/2027 Land and Streams/DNR	\$0.00	\$1525.00
AGREEMENT DATED 1/18/2017 LS-17-VI/09-271 Timber mat crossing (The Yvonne to Middle Pipeline) along Nutter Fork and an unnamed trib of same, Doddridge Co., WV	For 1/18/2017 to 1/18/2018 Land and Streams/DNR	\$0.00	\$200.00

TOTAL INVOICE:

\$1725.00

NUMBER OF AGREEMENTS:

2

Please Reference Either Invoice Number or Agreement Re: on Payment

WV Division of Natural Resources Office of Land & Streams 324 Fourth Avenue, Room 200 South Charleston, WV 25303

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT

Brian Eid (304) 558-3225 brian.n.eid@wv.gov

0.00

1,725.00



26785

Vendor Name		Vendor No.	Date	Check Number	Check Total
WEST VIRGINIA DIVI	SION OF NATURAL	26872	Jan-24-2017	103499	\$1,725.00
INV #	INV DATE DESCRIPTION		AMO	OUNT DISCO	OUNTS NET AMOUNT

01/19/17 AGREEMENTS P-17-VI/09-270 FOR 1/18/

TOTAL INVOICES PAID ====>

1,725.00

1,725.00

0.00

1,725.00

DETACH AND RETAIN FOR TAX PURPOSES

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

Antero MidstreamPartners u

ANTERO WATER 1615 WYNKOOP STREET DENVER, COLORADO 80202 WELLS FARGO

Check No. 103499

Void After 90 Days

11-24 1210

810 - AP ACCT WELLS FARGO

EXACTIVED 1,725 dols 00cts

 CHECK NUMBER
 DATE
 PAY EXACTLY

 103499
 Jan-24-2017
 \$1,725.00

One Thousand Seven Hundred Twenty Five Dollars and Zero Cents

TO THE ORDER

WEST VIRGINIA DIVISION OF NATURAL RESOURCES - OFFICE OF LAND AND STREAMS~324 FOURTH AVENUE~ROOM 200 SOUTH CHARLESTON, WV 25303

De Commb.



DIVISION OF NATURAL RESOURCES

324 Fourth Avenue, Room 200 South Charleston WV 25303-1228 TDD (304) 558-1439 TDD 1-800-354-6087 Fax (304) 558-6048 Telephone (304) 558-3225

Robert A. Fala Director

Earl Ray Tomblin Governor

January 18, 2017

Division of Natural Resources
LICENSE AND RIGHT OF ENTRY

Re: P-17-VI/09-270

Antero Water LLC Wyatt Webster c/o RETTEW Associates, Inc. Attention: Tom Eby 3020 Columbia Ave. Lancaster, PA 17603-

Dear Mr. Webster:

The Division of Natural Resources hereby grants to you for a term of ten (10) years, from the date hereof, a License and Right of Entry to construct, replace, cover, repair, operate, maintain, use and remove a twenty-four inch (24") waterline and a twenty inch (20") gas pipeline at two (2) separate locations and a twenty-four inch (24") waterline at one (1) separate location (The Yvonne to Middle Pipeline) along Nutter Fork and unnamed tributaries of Nutter Fork, West Union District in Doddridge County, West Virginia, as shown located and highlighted in red on the map attached hereto as Exhibit A.

This License and Right of Entry is subject to the following terms and conditions:

High Quality Streams (HQS) as listed in the West Virginia Division of Natural Resources High Quality Stream Sixth Edition published in 2001 and for any trout streams and direct tributaries of trout streams:

- Directional boring is the only method permitted during the fish spawning season.
 Fish spawning season for warmwater streams runs from April 1st through June 30th.
 Trout spawning season runs from October 1st through April 30th.
- Other dry ditch methods (pump around, flume or cofferdam) as described in WVDEP water resources manual (published 2006) on page 3.21-4 may be used outside of spawning seasons.
- Each crossing that utilizes dry ditch methods must be completed in 2 consecutive work days.

Non-high quality stream:

 Directional boring or other dry ditch methods (pump around, flume or cofferdam) as described in WVDEP water resources manual (published 2006) on page 3.21-4 may be used at all times during fish spawning season from April 1st through June 30th. This eliminates the need for spawning season restrictions.

Antero Water LLC P-17-VI/09-270 Page 2 January 18, 2017

- Crossings using methods other than directional boring. Must be completed in 1 work day.
- Only ephemeral/intermittent streams that are dry can be trenched.

Bank Stabilization

All bank stabilization projects must begin immediately upon completion of utility line crossing and be completed within 24 hours of completion of utility line crossing.

Freshwater Mussels

Mussel surveys on streams with known US Fish and Wildlife listed or candidate endangered species will be required if directional boring is not an option. Contact Janet Clayton of the WVDNR Wildlife Diversity Program for information concerning mussels at 304-637-0245.

For further assistance, contact the appropriate WVDNR District Fisheries Biologist.

District 1 304-825-6787 District 2 304-822-3551 District 3 304-924-6211

District 4 304-256-6947 District 5 304-675-0871 District 6 304-420-4550

The issuance of this License and Right of Entry by the Division of Natural Resources does not preclude the necessity to obtain a permit from the Corps of Engineers or any other state or federal permits which may be required by law, nor does this License and Right of Entry negate the need to comply with the West Virginia Water Pollution Control Act and/or the State Environmental Quality Board's administrative regulations, applicant is also responsible for determining if the proposed activity is located within an identified flood plain and it is the applicant's responsibility for contacting the local governmental agency in charge of that program and obtaining a flood plain development permit for it. This License and Right of Entry does not grant any rights or privileges, or permission to enter upon or to cross the property of any other person, nor is permission granted to remove any material that lies upon the property of any other persons. Work should be completed in as brief a period as possible and within one year from the date of this letter. In the event you fail or refuse to comply with any of the terms or conditions herein, this License and Right of Entry will be canceled and considered null and void and the Division will reject further applications.

Your check in the amount of \$1525.00 is now due and payable to the Division of Natural Resources covering the (10) ten-year fee of this agreement. Your agreement will be effective upon receipt of your payment in full.

Sincerely,

Joe T. Scarberry, Superviso Office of Land and Streams

JTS:cb

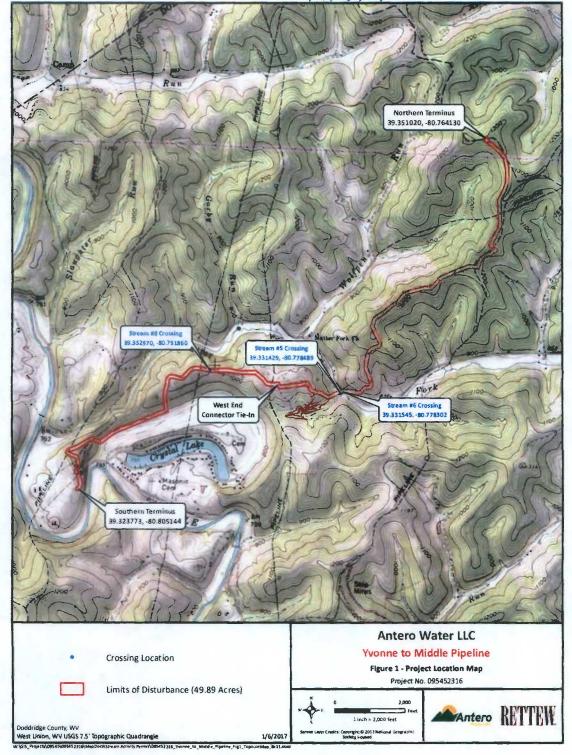
attachment

c: DNR Fish Biologist

Jeremy Bandy, Environmental Enforcement

DNR Conservation Officers

P-17-VI/09-270



OFFICE OF LAND AND STREAMS STREAM ACTIVITY APPLICATION

Name of Applicant: Antero Water LLC (Attn: Wyatt Webster) (Landowner)					
2. Date: January 6, 2017					
3. Complete mailing address of applicant: 1615 Wynkoop Street, Denver, C	0 80202				
Telephone Number: (303) 357-6734 Fax Number	or:				
E-Mail Address: wwebster@antercrescurces.com					
Name, address, telephone number, and title of applicant's authorized at Tom Eby, RETTEW Associates, Inc., 3020 Columbia Ave, Columbia Columbia					
Please \(\si \) if you want the approval sent to the agent \(\si \) 5. Describe the proposed activity, its purpose and intended use after comstream, amount of material to be dredged (if any), plan for disposing of dreworked or type and size of structure to be placed in the stream (i.e. length culvert). One copy of a map (topographical or detailed, hand-drawn) seems (enabling Officials to locate site) must accompany this application, and to this application.	dged materials, length of stream/bank to be and width of bridge, diameter and length of howing exact location of the work site				
The Yvonne to Middle Pipeline project includes the construction	•				
pipeline to facilitate oil and gas transfer between well pads and	-				
Fork and two unnamed tributaries (UNT) to Nutter Fork are pro the pipelines. Equipment to be used during construction of the	•				
heavy trucks. There will be no dredging associated with the pr					
would be restored to existing grade once construction is complete. Please refer to the attached					
Project Location Map for project location and specific stream crossing locations.					
	•				
•					
P-17-V1/09-270					
LSW					
(if additional space is required, continue on a	separate sheet)				
OLS Form 1 (08/07)					

 Please √ the proposed to Private: 	Public: Commerical:
(person use) 7. Location where propose	(Government Agency) (Business) ad activity exists or will occur:
	· ·
Nutter Fork, two UNTs to N	
Name of Water Way (if unnar	med or unknown tributary, provide the stream that is flows into)
Doddridge	West Union West Union, WV
County	District (taxable) Closest City or Town
8. Date activity is propose	ed to commence: Spring 2017
	· · · · · · · · · · · · · · · · · · ·
Date activity is expected	d to be complete: Summer 2017
	tivity for which authorization is sought now complete? YesNoNo ons in Section 5 including month and year the activity was completed)
 Below is a list of entities Agencies for the above- 	s that may require permits. Please list all approvals or certifications required by other Government described activity:
Issuing agency: Corps of Engine	(412) 395-7170
Identification No.:	(412) 395-7157 Date of approval: TBD
identification (40	
Issuing agency: County Commis	
Flood Plain Cooldentification No.:	Date of approval: TBD
Issuing agency: City Governmen	
(if In City Limits the County isn't n	iseded)
Identification No.:	Date of approval:
(if "Yes", explain in Section	approval for the activity described herein? Yes No
Size of Pipeline: waterline-24*; gaztle	ne-20'
Maximum pressure of the pipeline	waterline,250 nai rossline,1 440 nsi
	į
Please provide the appropriate lin	ne number and if a Gathering or Well Line provide the A.P.I. Well Number:
 Application is hereby ma information in this application, and 	bution: Gathering: Well Line: A.P.I Well Number: ude for authorization to conduct the activities described herein. I certify that I am familiar with the d that to the best of my knowledge and belief such information is true, complete and accurate. I further y to undertake the proposed activities.
	Signature of Applicant or Agent
	Office of Land and Streams Building 74, Room 200 324 Fourth Avenue South Charleston, WV 25303
	Phone Number 304-558-3225 Fax Number 304-558-6048
OLS Form 1 (08/07)	

ANTERO WATER LLC YVONNE TO MIDDLE PIPELINE CROSSING INFORMATION

The Antero Yvonne to Middle Pipeline project includes the Installation of a buried waterline extending from the existing Yvonne Well Pad at approximately 39.351020, -80.764130 (NAD83) to the existing Middle Well Pad at approximately 39.323773, -80.805144 (NAD83), as well as a buried gas pipeline extending from the Yvonne Well Pad to the West End Connector. The route will extend for approximately 4.1 miles; only existing access roads will be used. The project is located in the West Union Tax District, Doddridge County, WV as shown on the attached USGS Topographic map. The route generally runs northeast to southwest along hillslopes and ridgetops and crosses three streams.

Table 1: Summary of Stream Crossing Information

Stream ID #	Resource Type	Crossing Type	Crossing Details	Latitude	Longitude	Stream Meander Length in LOD (feet)	LOD Width (feet)	Acres in LOD
Stream #5	Stream	Open Cut	1 waterline; 1 gasline; 1 timbermat bridge	39.331429	-80.778489	102	100	0.010
Stream #6	Stream	Open Cut	1 waterline; 1 gasline; 1 existing bridge	39.331545	-80.778302	130	100	0.060
Stream #8	Stream	Open Cut	1 waterline; 1 timbermat bridge	39.332970	-80.791860	103	100	0.007

West Virginia Division of Natural Resources

Invoice

Pay on-line at http://wvdnr.gov/REM

Invoice#:

26785

Comp. ID#:

6332

Bill Date:

01/19/2017

In Acct With Antero Water 1615 Wynkoop Street Denver, CO 80202

AGREEMENT	INVOICE PERIOD	AMOUNT PAID	AMOUNT DUE
AGREEMENT DATED 1/18/2017 P-17-VI/09-270 Waterlines and a gas pipeline (The Yvonne to Middle Pipeline) along Nutter Fork and unnamed tribs of same, Doddridge Co., WV	For 1/18/2017 to 1/18/2027 Land and Streams/DNR	\$0.00	\$1525.00
AGREEMENT DATED 1/18/2017 LS-17-VI/09-271 Timber mat crossing (The Yvonne to Middle Pipeline) along Nutter Fork and an unnamed trib of same, Doddridge Co., WV	For 1/18/2017 to 1/18/2018 Land and Streams/DNR	\$0.00	\$200.00

TOTAL INVOICE:

\$1725.00

NUMBER OF AGREEMENTS:

2

Please Reference Either Invoice Number or Agreement Re: on Payment

WV Division of Natural Resources Office of Land & Streams 324 Fourth Avenue, Room 200 South Charleston, WV 25303

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT

Brian Eid (304) 558-3225 brian.n.eid@wv.gov



Vendor Name	Vendor No.	Date	Check Number	Check Total
WEST VIRGINIA DIVISION OF NATURAL	26872	Jan-24-2017	103499	\$1,725.00

INV # INV DATE DESCRIPTION AMOUNT DISCOUNTS NET AMOUNT
26785 01/19/17 AGREEMENTS P-17-VI/09-270 FOR 1/18/ 1,725.00 0.00 1,725.00



TOTAL INVOICES PAID --->

1,725.00

0.00

1,725.00

DETACH AND RETAIN FOR TAX PURPOSES

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

Antero MidstreamPartners u

ANTERO WATER
1615 WYNKOOP STREET
DENVER, COLORADO 80202

WELLS FARGO

Check No. 103499

11-24 1210

810 - AP ACCT WELLS FARGO

EXACTIVED 1,725 dols 00cts

 CHECK NUMBER
 DATE
 PAY EXACTLY

 103499
 Jan-24-2017
 \$1,725.00

Void After 90 Days

One Thousand Seven Hundred Twenty Five Dollars and Zero Cents

TO THE ORDER OF WEST VIRGINIA DIVISION OF NATURAL RESOURCES - OFFICE OF LAND AND STREAMS~324 FOURTH AVENUE~ROOM 200 SOUTH CHARLESTON, WV 25303

De Chunh.

From:

DEP NPDESEP

To: Cc: Luz Slauter; pfish@rettew.com; DEP NPDESEP Hendley, John H; McGee, James L; Cochran, Joseph W

Subject:

Approval for WVR310785, Heaster Water Line Pipeline Project, Tyler County, Acres (50.2)

Date:

Wednesday, February 01, 2017 7:04:08 AM

Attachments:

WVR310785 Approval Letter.pdf

Dear Permittee:

The Division of Water and Waste Management has reviewed your General Permit Site Registration Application for the coverage of your activity. Based on the information you submitted on this registration form, you are now authorized to operate under WV Water Pollution Control Permit No. WV0116815. Please find attached your permit approval with your registration number assigned to your facility.

If you have any questions relative to this approval, please do not hesitate to contact **Joseph** Cochran at (304) 926-0499 Ext. 1069 or by email at <u>joseph.w.cochran@wv.gov</u>.

Scott G. Mandirola, Director WV DEP-Division of Water & Waste Mgt. 601 57th St. SE Charleston, WV 25304-2345

Phone: (304) 926-0495 Fax: (304) 926-0496



DEPARTMENT OF THE ARMY

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

February 24, 2017

REPLY TO ATTENTION OF

Regulatory Division North Branch LRH-2017-00072-OHR

NATIONWIDE PERMIT NO. 12 VERIFICATION

Mr. Wyatt Webster Antero Resources Corporation 1615 Wynkoop Corporation Denver, Colorado 80202

Dear Mr. Webster:

I refer to your pre-construction notification (PCN) received in this office on January 17, 2017 regarding the Yvonne to Middle Pipeline Project. The proposed northern terminus originates at coordinates 39.351020N° -80.764130°W and terminates at the southern terminus located at coordinates 39.323773°N -80.805144°W. On-site waters flow into an unnamed tributary of Nutter Fork, which is an indirect tributary of the Ohio River, a traditional navigable water of the United States. The project site is located in Doddridge County, West Virginia. The PCN has been assigned the following number: LRH-2017-00072-OHR. Please reference this number on all future correspondence related to this project.

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

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

In the submitted PCN materials received in this office on January 17 2017, and with additional information provided on February 10 2017, you have requested a Department of the Army authorization to temporarily discharge approximately 54.7 cubic yards of dredged and/or fill material into 335 linear feet (0.077 acre) of one (1) perennial stream (Nutter Fork), one (1) intermittent stream (UNT to Nutter Fork) and one (1) ephemeral stream (UNT to Nutter Fork) in association with the Yvonne to Middle pipeline Project. All temporarily affected streams will be

restored to pre-existing conditions following the construction activities. Excess material will be removed to upland areas, in a manner to prevent its reentry into waters of the United States, immediately following the construction activities. All work will be conducted in accordance with drawings and plans, as submitted with the PCN materials dated January 13, 2017 and February 10, 2017.

Based on your description of the proposed work, and other information available to us, it has been determined the regulated activities associated with the proposed Yvonne to Middle pipeline Project meets the criteria for Nationwide Permit (NWP) 12 under the February 21, 2012 Federal Register, Notice of Reissuance of NWPs (77 FR 10184) provided you comply with all terms and conditions of the enclosed material, the enclosed special conditions, and the Section 401 Water Quality Certification issued by the West Virginia Department of Environmental Protection. Please be aware this NWP verification does not obviate the requirement to obtain any state or local assent required by law for the activities.

This verification is valid until the expiration date of the NWPs, unless the NWP authorization is modified, suspended, or revoked. The verification will remain valid if the NWP authorization is reissued without modification or the activity complies with any subsequent modification of the NWP authorization. All of the existing NWPs are scheduled to be modified, reissued, or revoked on March 18, 2017. Prior to this date, it is not necessary to contact this office for re-verification of your project unless the plans for the proposed activity are modified. Furthermore, if you commence or under contract to commence this activity before March 18, 2017, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

Upon completion of the work, the enclosed certification must be signed and returned to this office. If you have any questions concerning the above, please contact Mr. Zack Abbott of the North Branch at 304-399-5867, by mail at the above address, or by email at: jonathan.z.abbott@usace.army.mil.

Sincerely,

Teresa D. Spagna Chief, North Branch

Enclosures

Special Conditions for Nationwide Permit 12 Verification Yvonne to Middle Pipeline Project LRH-2017-00072-OHR

- 1. All work will be conducted in accordance with the final plans provided by Antero Resources Corporation in the Pre-Construction Notification (PCN) dated January 13, 2017.
- 2. Enclosed is a copy of Nationwide Permit 12, which will be kept at the site during construction. A copy of the nationwide permit verification, special conditions, and the submitted construction plans must be kept at the site during construction. The permittee will supply a copy of these documents to their project engineer responsible for construction activities.
- 3. Construction activities will be performed during low flow conditions to the greatest extent practicable. Additionally, appropriate site specific best management practices for sediment and erosion control will be fully implemented during construction activities at the site.
- 4. No area for which grading has been completed will be unseeded or un-mulched for longer than 14 days. All disturbed areas will be seeded and/or re-vegetated with native species and approved seed mixes (where practicable) after completion of construction activities for stabilization and to help preclude the establishment of non-native invasive species.
- 5. Should new information regarding the scope and/or impacts of the project become available that was not submitted to this office during our review of the proposal, the permittee will submit written information concerning proposed modification(s) to this office for review and evaluation, as soon as practicable.
- 6. In the event any previously unknown historic or archaeological sites or human remains are uncovered while accomplishing the activity authorized by this nationwide permit authorization, the permittee must cease all work in waters of the United States immediately and contact local, state and county law enforcement offices (only contact law enforcement on findings of human remains), the Corps at 304-399-5210 and West Virginia Division of Cultural and History Office at 304-558-0220. The Corps will initiate the Federal, state and tribal coordination required to comply with the National Historic Preservation Act and applicable state and local laws and regulations. Federally recognized tribes are afforded a government-to-government status as sovereign nations and consultation is required under Executive Order 13175 and 36 CFR Part 800.

Special Conditions for Nationwide Permit 12 Verification Yvonne to Middle Pipeline Project LRH-2017-00072-OHR 2 of 2

- 7. The proposed project lies within the range of the Indiana bat (*Myotis sodalis*), a federally-listed endangered species. Summer habitat for the Indiana bat includes live and/or dead trees with peeling (exfoliating) bark, cracks, or crevices. Indiana bats use cave or mine portals for winter hibernation between 15 November and 31 March. Indiana bat foraging habitat is generally defined as riparian, bottomland, or upland forest, as well as old fields or pastures with scattered tress. Roosting and maternity habitats consist primarily of live or dead hardwood trees which have exfoliating bark that provides space for bats to roost between the bark and the bole of the tree. Tree cavities, crevices, splits, or hollow portions of tree boles and limbs also provide roost sites. Based on information provided by the applicant and U.S. Fish and Wildlife Services (USFWS), the proposed project is not located within a USFWS terrestrial buffer area. The permittee must abide by measures, including the seasonal tree clearing restrictions, outlined in the proposed Indiana Bat Conservation Plan approved by the USFWS on February 1, 2017.
- 8. Section 7 obligations under Endangered Species Act must be reconsidered if new information reveals impacts of the project that may affect federally listed species or critical habitat in a manner not previously considered, the proposed project is subsequently modified to include activities which were not considered during Section 7 consultation with the United States Fish and Wildlife Service, or new species are listed or critical habitat designated that might be affected by the subject project.