



## 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 #: 24-645**

**Date Approved: February 26, 2024**

**Expires: February 26, 2025**

**Issued to: Antero Midstream**

**POC: Anthony Ludovici**

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

**Project Address: 2424 Rt. 23N Salem, WV 26426**

**Firm: 54017C0160C**

**Lat/Long: 39.334243, -80.577049**

**Purpose of development: New 6" High Pressure Pipeline**

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

**Date: February 26, 2024**

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For additional information regarding this permit, please contact  
Doddridge County Floodplain Manager at 304.873.1343, or via email at  
doddridgecountyfpm@gmail.com  
101 Church Street Suite 102; West Union, WV 26456

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## Doddridge County Floodplain Permits

(Week of February 5, 2024)

Please take notice that on the (1<sup>st</sup>) of (February), 2024, (Antero Midstream) filed an application for a Floodplain Permit (#24-645) to develop land located at or about (2424 Route 23 North); Coordinates: 39.334243, -80.577049. The Application is on file with the Floodplain Manager of the County and may be inspected or copied during regular business hours in accordance with WV Code Chapter 29B Freedom of Information, Article 1 Public Records and county policy and procedures. Any interested persons who desire to comment shall present the same in writing by (February 6, 2024) (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Floodplain Manager of the County at 101 Church Street, Suite #102, West Union, WV 26456. This project is for a new 6 inch high pressure pipeline.

A handwritten signature in blue ink, appearing to read "George C. Eidel".

GEORGE C. EIDEL, CFM

Doddridge County Floodplain Manager

## FLOODPLAIN PERMIT #24-645

Antero Midstream, 2424 RT 23N, New 6" High Pressure Pipeline, 93.334243, -80.577049

TASK	COMPLETE (DATE)	NOTES
<i>CHECK RECEIVED</i>	<i>2/2/24</i>	
<i>US ARMY CORP. ENGINEERS (USACE)</i>		See Attached Sheet
<i>US FISH &amp; WILDLIFE SERVICES (USFWS)</i>		See Attached Sheet
<i>WV DEPT. NATURAL RESOURCES (WVDNR)</i>		See Attached Sheet
<i>WV DEPT. ENVIROMENTAL PROTECTION (WVDEP)</i>		See Attached Sheet
<i>STATE HISTORIC &amp; PRESERVATION OFFICE (SHPO)</i>		See Attached Sheet
<i>OFFICE of LAND &amp; STREAM (OLS)</i>		See Attached Sheet
<i>WVDOH</i>		N/A
<i>Elevation Certificate</i>		N/A
<i>DATE OF COMMISSION READING</i>	2/6/2024	
<i>DATE AVAILABLE TO BE GRANTED</i>	2/26/2024	
<i>PERMIT GRANTED</i>		
<i>COMPLETE</i>		

7021 1970 0001 7228 0070

7021 1970 0001 7228 0087

7021 1970 0001 7228 0063

7021 1970 0001 7228 0049

7021 1970 0001 7228 0056

7021 1970 0001 7228 0032



# TRANSMITTAL

To: Mr. George Eidel  
Floodplain Manager  
101 Church Street, Suite #102  
West Union, WV 26456-2095

Date: February 1, 2024

cc: Project File

Subject: Doddridge County Floodplain Permit Application  
Antero Midstream  
Salem HP Discharge  
Doddridge and Harrison Counties, West Virginia

Attached  Under separate cover

Via:

- Messenger/Courier
- First Class Mail
- FedEx
- United Parcel
- DHL
- Lone Star Overnight
- Freight
- Other

Transmitted:

- As Requested
- For Approval
- For Your Use
- For Review & Comment

Remarks:

Enclosed please find the following documents to facilitate your review of the above referenced application:

Attachment A – Floodplain Application

Attachment B – Table of Adjacent Property Owners

Attachment C – No-Rise Certificate

Appendix A - WV Flood Tool Map

Appendix B - Conceptual Plans

Appendix C – National Streamflow Statistics – Drainage Area

Appendix D - Comparison for Calculated Flows - HEC-RAS Excel Data

Attachment D – Permitting & Coordination Table

The attached check for fee is \$250.00. The site budget within the Floodplain is less than \$50,000 bringing the permit fee to \$250.00.

Coordination with the Harrison County Floodplain Coordinator will be performed under separate cover.

By: **Matt Albright**  
Project Manager  
51 Dutilh Rd., Suite 240  
Cranberry Township, PA 16066  
[MAlbright@Kleinfelder.com](mailto:MAlbright@Kleinfelder.com)  
m| 609.947.5296



# ATTACHMENT A FLOODPLAIN APPLICATION



Permit# 24-645  
Project Salem HP Discharge Pipeline  
Name: \_\_\_\_\_  
Permittees Name: Antero  
Midstream

FEB 1 24 8:30AM

## ***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. The permit will expire if no work is commenced within six months of issuance.
5. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal requirements.
6. Applicant hereby gives consent to the Floodplain Administrator/Manager or his/her representative to make inspections to verify compliance.
7. 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 Anthony Ludovici

DATE 1/31/2024

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Applicant Information:**

*Please provide all pertinent data.*

Applicant Information		
Responsible Company Name: Antero Midstream		
Corporate Mailing Address: 1615 Wynkoop Street		
City: Denver	State: CO	Zip: 80202
Corporate Point of Contact (POC): N/A		
Corporate POC Title: N/A		
Corporate POC Primary Phone: N/A		
Corporate POC Primary Email: N/A		
Corporate FEIN: N/A	Corporate DUNS: N/A	
Corporate Website: <a href="http://www.anteroresources.com">www.anteroresources.com</a>		
Local Mailing Address: 535 White Oaks Blvd		
City: Bridgeport	State: WV	Zip: 26330
Local Project Manager (PM): Anthony Ludovici		
Local PM Primary Phone: (304) 627-9120		
Local PM Secondary Phone: N/A		
Local PM Primary Email: <a href="mailto:aludovici@anteroresources.com">aludovici@anteroresources.com</a>		
Person Filing Application: Anthony Ludovici		
Applicant Title: Environmental Specialist II		
Applicant Primary Phone: (304) 627-9120		
Applicant Secondary Phone: N/A		
Applicant Primary Email: <a href="mailto:aludovici@anteroresources.com">aludovici@anteroresources.com</a>		



Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

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*Please provide all pertinent data.*

Applicant Information		
Responsible Company Name: Antero Midstream		
Corporate Mailing Address: 1615 Wynkoop Street		
City: Denver	State: CO	Zip: 80202
Corporate Point of Contact (POC): N/A		
Corporate POC Title: N/A		
Corporate POC Primary Phone: N/A		
Corporate POC Primary Email: N/A		
Corporate FEIN: N/A	Corporate DUNS: N/A	
Corporate Website: <a href="http://www.anteroresources.com">www.anteroresources.com</a>		
Local Mailing Address: 535 White Oaks Blvd		
City: Bridgeport	State: WV	Zip: 26330
Local Project Manager (PM): Anthony Ludovici		
Local PM Primary Phone: (304) 627-9120		
Local PM Secondary Phone: N/A		
Local PM Primary Email: <a href="mailto:aludovici@anteroresources.com">aludovici@anteroresources.com</a>		
Person Filing Application: Anthony Ludovici		
Applicant Title: Environmental Specialist II		
Applicant Primary Phone: (304) 627-9120		
Applicant Secondary Phone: N/A		
Applicant Primary Email: <a href="mailto:aludovici@anteroresources.com">aludovici@anteroresources.com</a>		

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Project Narrative:**

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

<b>Project Narrative:</b>
<p>Antero Midstream (Antero) is proposing to construct approximately 3.2 miles of one 6-inch diameter high pressure (HP) gas pipeline known as the Salem HP Discharge (Pipeline) in Doddridge and Harrison Counties, West Virginia (WV). The southeastern terminus occurs at 39.324483, -80.540477, while the northwestern terminus occurs at 39.335492, -80.583096.</p> <p>The proposed Pipeline will result in a limit of disturbance of approximately 43.2 acres, of which 0.6 acres (1.4%) is located within the limits of the Robinson Fork regulated floodplain. The West Virginia Flood Tool Map is included in Appendix A of Attachment C and depicts the approximate location where work associated the proposed Pipeline will encroach upon the floodplain. The methods of pipeline installation within the floodplain are proposed to include conventional bore as the primary crossing method, and open cut trenching as an alternative crossing installation method if necessary per site conditions.</p> <p>The proposed Pipeline conceptual plans are included in Appendix B of Attachment C.</p> <p>A No-Rise Certification has been prepared and is included as Attachment C, which indicates that the proposed temporary construction activities will not affect the base flood elevation. The focus of the Hydrologic Engineering Center-River Analysis System (HEC-RAS) analysis was the potential use of temporary timber matting over the Robinson Fork crossing, and a temporary dam for trench installation of the pipeline within Flood Zone A, as this was anticipated to be a more impactful method of construction within the floodplain than the conventional bore installation.</p> <p>A permitting and coordination table is included in Attachment D that outlines all necessary permits and current status.</p>

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Proposed Development:**

*Please check all elements of the proposed project that apply.*

**DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)**

**A. STRUCTURAL DEVELOPMENT**

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

**B. OTHER DEVELOPMENT ACTIVITIES:**

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

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Development Site/Property Information:**

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

Property Designation:   1   of   1  

<b>Site/Property Information:</b>		
Legal Description: Salem HP Discharge		
Physical Address/911 Address: WV RT 23, Salem, WV 26426		
Decimal Latitude/Longitude: 39.334174, -80.577080		
DMS Latitude/Longitude:		
District: 5 (McClellan)	Map: 29	Parcel: See Attachment B Property Owner Table
Land Book Description: N/A		
Deed Book Reference: N/A		
Tax Map Reference: N/A		
Existing Buildings/Use of Property: N/A		

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

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

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**Property Designation:**   1   of   1  

<b>Site/Property Information:</b>		
<b>Legal Description:</b> Salem HP Discharge		
<b>Physical Address/911 Address:</b> WV RT 23, Salem, WV 26426		
<b>Decimal Latitude/Longitude:</b> 39.334174, -80.577080		
<b>DMS Latitude/Longitude:</b>		
<b>District:</b> 5 (McClellan)	<b>Map:</b> 29	<b>Parcel:</b> See Attachment B Property Owner Table
<b>Land Book Description:</b> N/A		
<b>Deed Book Reference:</b> N/A		
<b>Tax Map Reference:</b> N/A		
<b>Existing Buildings/Use of Property:</b> N/A		

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

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Property Owner Data:**

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

<b>Property Designation:</b> __1__ of __2__
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<b>Property Owner Data:</b>		
Name of Primary Owner (PO): MILLER WAYLON & QUINN L (SURV)		
PO Address: 138 CASCARA RD		
City: SALEM	State: WV	Zip: 26426
PO Primary Phone: N/A		
PO Secondary Phone: N/A		
PO Primary Email: N/A		

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

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

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Property Owner Data:**

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

Property Designation:   2   of   2  

Property Owner Data:		
Name of Primary Owner (PO): UNDERWOOD DUSTIN N		
PO Address: 1434 WV RT 23		
City: SALEM	State: WV	Zip: 26426
PO Primary Phone: N/A		
PO Secondary Phone: N/A		
PO Primary Email: N/A		

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

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

Doddridge County Commercial/Industrial  
Floodplain Development Permit Application

**Contractor Data:**

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

**Property Designation:   1 of 1**

**Contractor/Sub--Contractor (C/SC) Information:**

**C/SC Company Name: One contractor to be selected from the following: ACE Pipeline (#WV049594), Apex Pipeline Services, Inc. (WV040540), Integrity Kokosing Pipeline Services LLC (#WV050096), Momentum Pipeline LLC (#WV057216).**

**C/SC Company Name: See Above**

**C/SC WV License Number: See Above**

**C/SC FEIN: TBD**

**C/SC DUNS: TBD**

**Local C/SC Point of Contact (POC): TBD**

**Local C/SC POC Title: TBD**

**C/SC Mailing Address: TBD**

**City: TBD**

**State: TBD**

**Zip--Code: TBD**

**Local C/SC Office Phone: TBD**

**Local C/SC POC Phone: TBD**

**Local C/SC POC E--Mail: TBD**

**Engineer Firm Information:**

**Engineer Firm Name: Kleinfelder, Inc. (No-Rise Cert Only)**

**Engineer WV License Number: 25121**

**Engineer Firm FEIN: N/A**

**Engineer Firm DUNS: N/A**

**Engineer Firm Primary Point of Contact (POC): Matt Albright**

**Engineer Firm Primary POC Title: Project Manager**

**Engineer Firm Mailing Address: 51 Dutilh Road, Suite 240**

**City: Cranberry Twp.**

**State: PA**

**Zip--Code: 16066**

**Engineer Firm Office Phone: 724-772-7072**

**Engineer Firm Primary POC Phone: 609-947-5296**

**Engineer Firm Primary POC E--Mail: [MAlbright@kleinfelder.com](mailto:MAlbright@kleinfelder.com)**



## Adjacent and/or Affected Landowners Data

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

Adjacent Property Owner Data: Upstream		
Name of Primary Owner (PO): See Table of Property Owners (Attachment B)		
Physical Address: N/A		
City: N/A	State: N/A	Zip: N/A
PO Primary Phone: N/A		
PO Secondary Phone: N/A		
PO Primary Email: N/A		

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

Adjacent Property Owner Data: Downstream		
Name of Primary Owner (PO): See Table of Property Owners (Attachment B)		
Physical Address: N/A		
City: N/A	State: N/A	Zip: N/A
PO Primary Phone: N/A		
PO Secondary Phone: N/A		
PO Primary Email: N/A		

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

## 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 will be properly attained, are current and valid, and must be presented prior to a Doddridge County Floodplain Permit being issued.
- I understand that if in the course of the development project additional permits become required that were not needed during the initial proposal, the primary developer must notify the Doddridge County Floodplain Manager within 48 hours of such need, and that a "Stop Work" order may be issued for all project work directly impacting the floodplain or floodway, until such time the required additional permits are acquired.
- I understand that once the floodplain permit is submitted, the application will be entered into official public record at the next regularly scheduled Doddridge County Commission meeting after the date of submittal.
- I understand that from the date of submittal of the fully completed permit application, the Doddridge County Floodplain Manager has ninety (90) days to make a determination to either grant or deny said permit application. During this approval period, the Doddridge County Floodplain Manager may, at his or her discretion, conduct a review and/or additional study of provided documentation by means of an independent engineering firm. All costs associated with said review and/or study must be reimbursed to the County before issuance of approved permit.
- I understand that during the approval period, the Doddridge County Floodplain Manager or designee may at his or her discretion conduct site visits and document conditions of proposed development pursuant to the permit application.
- I understand that once the Floodplain Permit is granted, the permit will be entered into official public record. 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.**
- 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 Doddridge County Floodplain Manager and that I must stop all construction immediately until discrepancies of actual work vs. proposed work is resolved.

Applicant Signature: Anthony Ludovici Date: 1/31/2024

Applicant Printed Name: Anthony Ludovici



# ATTACHMENT B

## TABLE OF PROPERTY OWNERS

\_\_\_\_\_  
Date: 12/15/2024

\_\_\_\_\_  
Signature: Anthony J. [unclear]

\_\_\_\_\_  
Title: [unclear]

## Table of Property Owners

PROPERTY OWNER	PARCEL ID NUMBER	E-911 ADDRESS	PROPERTY OWNER ADDRESS	IN FLOODPLAIN
MILLER WAYLON & QUINN L (SURV)	09-05-0029-0039-0000	138 CASCARA RD, SALEM, WV, 26426 152 CASCARA RD, SALEM, WV, 26426	138 CASCARA RD, SALEM, WV 26426	YES
UNDERWOOD DUSTIN N	09-05-0029-0035-0000	NO E-911 ADDRESS FOUND FOR THIS PARCEL	1434 WV RT 23, SALEM, WV 26426	YES
UNDERWOOD DUSTIN N	09-05-0029-0043-0000	NO E-911 ADDRESS FOUND FOR THIS PARCEL	1434 WV RT 23, SALEM, WV 26426	YES (UPSTREAM)
UNDERWOOD DUSTIN N	09-05-0029-0034-0000	135 FANE HOLW, SALEM, WV, 26426	1434 WV RT 23, SALEM, WV 26426	YES (UPSTREAM)
TRUSTEES OF M E CHURCH	09-05-0029-0036-0000	2424 WV RT 23 N, SALEM, WV, 26426	NOT AVAILABLE	YES (DOWNSTREAM)
WILT LISA RENEE	09-05-0029-0037-0002	2463 WV RT 23 N, SALEM, WV, 26426	%LERETA LLC, 901 CORPORATE CENTER DR, POMONA, CA 91768	YES (DOWNSTREAM)
RICHARDS EZRA G & ARTICE	09-05-0029-0035-0001	NO E-911 ADDRESS FOUND FOR THIS PARCEL	2018 WV RT 23, SALEM, WV 26426	YES (UPSTREAM)
CHIPPS ALBERTA	09-05-0029-0037-0000	2458 WV RT 23 N, SALEM, WV, 26426	2458 WV RT 23 N, SALEM, WV 26426	YES (DOWNSTREAM)

MEMPHIS  
 COMMUNITY DEVELOPMENT  
 333 N MAIN ST  
 MEMPHIS, TN 38102

MEMPHIS  
 COMMUNITY DEVELOPMENT  
 333 N MAIN ST  
 MEMPHIS, TN 38102





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 based on the information provided to me, and the attached technical data supports the fact that the proposed Salem HP Discharge (Pipeline) – Robinson Fork Crossing (Site) will not impact the 100-year flood elevation of Robinson Fork at the published sections in the Flood Insurance Study for Doddridge County (Community ID 540024) effective 10/04/2011 and will not impact the 100-year flood elevation at unpublished cross-sections in the vicinity of the Site.


Work to be performed at the Robinson Fork crossing involves temporary disturbances associated with staging areas, temporary stream and wetland crossings with timber matting, temporary crossing materials, and pipeline installation activities.

The methods of pipeline installation are proposed to include conventional bore as the primary crossing method, and open cut trenching as an alternative crossing installation method if necessary per site conditions. The focus of this Hydrologic Engineering Center-River Analysis System (HEC-RAS) analysis is the potential use of temporary timber matting over the Robinson Fork crossing, and a temporary dam for trench installation of the pipeline within Flood Zone A, as this is anticipated to be a more impactful method of construction within the floodplain than the conventional bore installation. The extent of the work is shown on the attached conceptual plans. The total watershed (drainage basin) for the crossing area was shown to be 2.488 square miles. Peak flow from this area was calculated utilizing the National Streamflow Statistics application available online. A HEC-RAS analysis was completed, based on the drainage area above and associated flows, to verify that no influence will occur due to the proposed activities within the floodplain of Robinson Fork. The flows compared for the affected area are attached.

Attached are the following documents that support my findings:

- West Virginia Flood Tool Map
- Conceptual Plans
- National Streamflow Statistics – Drainage Area
- Comparison for Calculated Flows – HEC-RAS Excel Data

Date: 01/30/2024

Signature: 

Title: Senior Professional





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 based on the information provided to me, and the attached technical data, I support the fact that the proposed 20-year Flood Elevation (FE) - Robinson Fork Crossing (S18) will not impact the 100-year Flood Elevation of Robinson Fork at the published section in the Flood Insurance Study for Doddridge County (County ID: 240024) effective 10/01/2017 and will not impact the 100-year flood elevation established cross sections in the vicinity of the S18.

# APPENDIX A West Virginia Flood Tool Map

The method of pipeline installation and pipeline is to include conventional data as the primary crossing method, an open cut trenching as an alternative crossing installation method necessary for any condition. The focus of the Hydrologic Engineering Center - River Analysis System (HEC-RAS) analysis is the potential use of temporary timber trestles over the Robinson Fork crossing and a temporary dam for trench installation of the pipeline within Flood Zone A, as this is anticipated to be a more practical method of construction within the floodplain than the conventional pipe installation. The extent of the work is shown on the attached conceptual plan. The total watershed drainage basin for the crossing area was shown to be 2,438 square miles. Peak flow from this area was calculated during the National Streamflow Statistics application available online. A HEC-RAS analysis was completed based on the drainage area above and associated flows to verify that no inundation would occur due to the proposed activities within the floodplain of Robinson Fork. The flows computed for the affected area are attached.

Attached are the following documents that support my findings:

- West Virginia Flood Tool Map
- Conceptual Plan
- National Streamflow Statistics - Drainage Area
- Computed for Submitted Flow - HEC-RAS Excel Data

Date: 10/18/2017

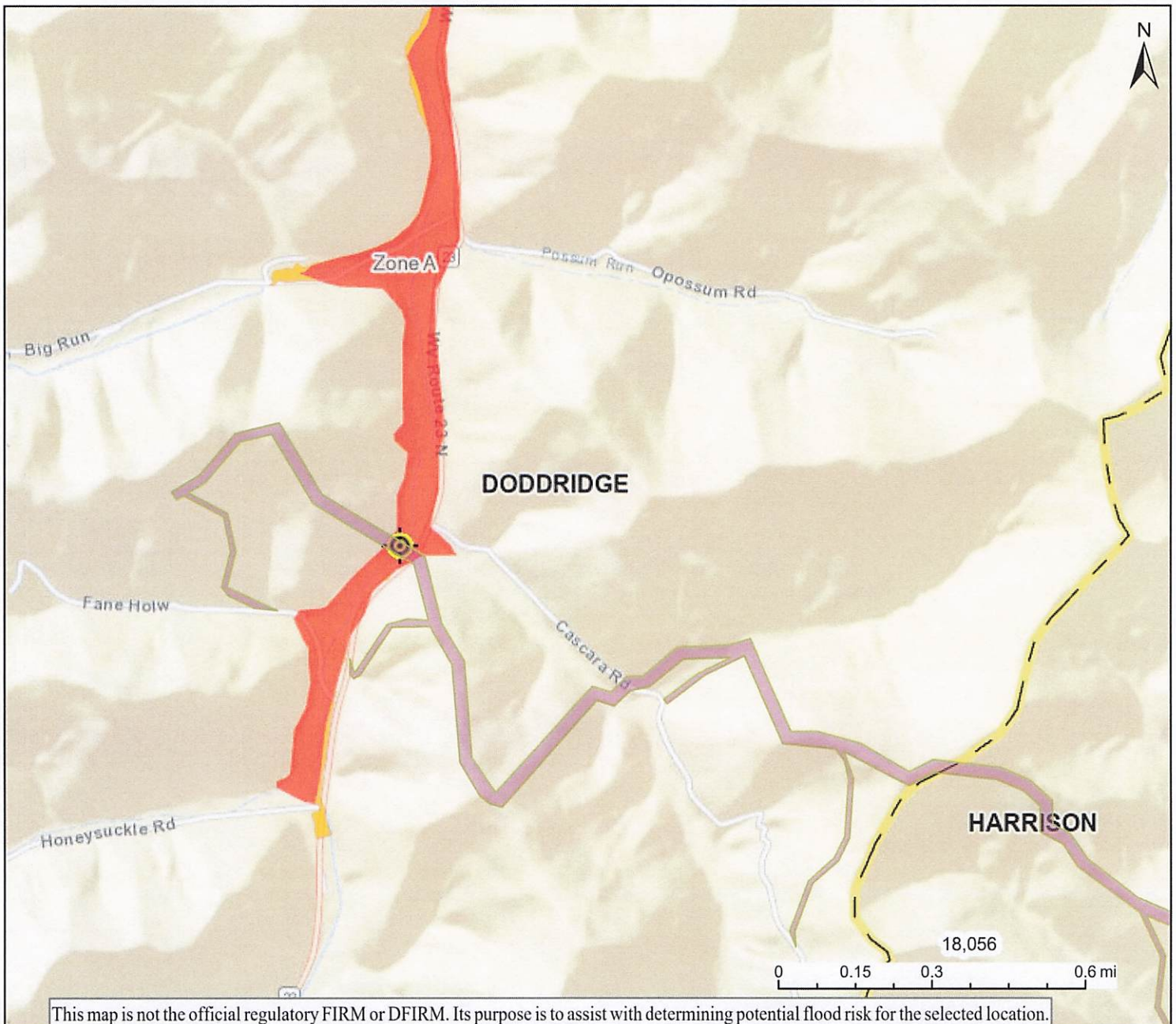
\_\_\_\_\_  
Signature

Title: Senior Professional


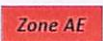
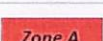





# WV Flood Map-Salem HP Discharge



This map is not the official regulatory FIRM or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

H I G H  R I S K	 Regulatory Floodway	Flood Info Location <span style="float: right;">Map created on 1/19/2024</span>	
		1-Percent-Annual-Chance Flood Hazard Area <b>With Base Flood Elevation (BFE)</b>	<b>User Notes</b>
		1-Percent-Annual-Chance Flood Hazard Area <b>Without BFE (may have Advisory Flood Heights)</b>	<b>Flood Hazard Area</b> Location is <b>WITHIN</b> the FEMA 100-year floodplain. Advisory Flood Heights available.
		1-Percent-Annual-Chance Future Conditions (High Risk Advisory Flood Zones)	<b>Flood Zone</b> A (Advisory Flood Heights available)
Download the Full Legend for all flood tool symbols <a href="https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf">https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf</a>		<b>Stream</b> Robinson Fork	<b>Watershed (HUC8)</b> Little Musringum-Middle Island (5030201)
<b>Disclaimer:</b> 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. Refer to the official Flood Insurance Study (FIS) for detailed flood elevation data in flood profiles and data tables. WV Flood Tool ( <a href="https://www.MapWV.gov/flood">https://www.MapWV.gov/flood</a> ) is supported by FEMA, WV NFIP Office, and WV GIS Technical Center.		<b>Flood Height</b> Flood Height 4 About 895.8 ft (Source: AFH) NAVD88	<b>Water Depth</b> About 0.3 ft (Source: HEC-RAS)
		<b>Elevation</b> 892.0 ft (Source: FEMA 2018-20) (NAVD88)	<b>Community &amp; ID</b> Doddridge County (ID: 540024)
		<b>FEMA Map &amp; Date</b> 54017C0155C; Effective Date: 10/4/2011	<b>Location (lat, long)</b> (39.334243, -80.577049) (WGS84)
		<b>Parcel ID</b> 09-05-0029-0035-0000	<b>E-911 Address</b>

# WV Flood Map



This map is not the official regulatory FIRM or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

Flood Info Location <span style="float: right;">Map created on 2/1/2024</span>	
<b>H I G H</b> 1-Percent-Annual-Chance Flood Hazard Area <b>With Base Flood Elevation (BFE)</b> Regulatory <b>Floodway in AE Zone</b>	<b>User Notes</b>
	<b>Flood Hazard Area</b> Location is <b>WITHIN</b> the FEMA 100-year floodplain. Advisory Flood Heights available.
<b>R I S K</b> 1-Percent-Annual-Chance Flood Hazard Area <b>Without BFE</b> (may have Advisory Flood Heights) 1-Percent-Annual-Chance <b>High Risk Advisory</b>	<b>Flood Zone</b> A (Advisory Flood Heights available) <b>Stream</b> Robinson Fork <b>Watershed (HUC8)</b> West Fork (5020002)
Download the Full Legend for all flood tool symbols <a href="https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf">https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf</a>	<b>Flood Height</b> Flood Height 4 About 895.8 ft (Source: AFH) NAVD88 <b>Water Depth</b> About 0.3 ft (Source: HEC-RAS) <b>Elevation</b> 892.0 ft (Source: FEMA 2018-20) (NAVD88)
<b>Disclaimer:</b> 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. Refer to the official Flood Insurance Study (FIS) for detailed flood elevation data in flood profiles and data tables. WV Flood Tool ( <a href="https://www.mapwv.gov/flood">https://www.mapwv.gov/flood</a> ) is supported by FEMA, WV NFIP Office, and WV GIS Technical Center.	<b>Community &amp; ID</b> Harrison County (ID: 540053) <b>FEMA Map &amp; Date</b> 54017C0160C; Effective Date: 10/2/2012 <b>Location (lat, long)</b> (39.334243, -80.577049) (WGS84) <b>Parcel ID</b> 09-05-0029-0044-0000 <b>E-911 Address</b> 2081 WV RT 23 N, SALEM, WV, 26426

# WV Flood Map



This map is not the official regulatory FIRM or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

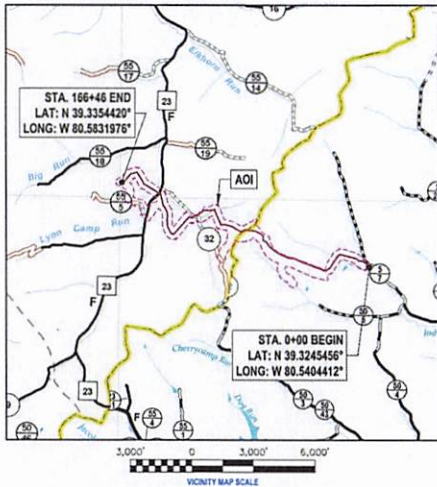
<p>H I G H  R I S K</p> <p><b>Zone AE</b> 1-Percent-Annual-Chance Flood Hazard Area With Base Flood Elevation (BFE)</p> <p><b>Floodway</b> Regulatory Floodway in AE Zone</p> <p><b>Zone A</b> 1-Percent-Annual-Chance Flood Hazard Area Without BFE (may have Advisory Flood Heights)</p> <p><b>Advisory</b> 1-Percent-Annual-Chance High Risk Advisory</p> <p>Download the Full Legend for all flood tool symbols  <a href="https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf">https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf</a></p> <p><b>Disclaimer:</b>          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. Refer to the official Flood Insurance Study (FIS) for detailed flood elevation data in flood profiles and data tables. WV Flood Tool (<a href="https://www.mapwv.gov/flood">https://www.mapwv.gov/flood</a>) is supported by FEMA, WV NFIP Office, and WV GIS Technical Center.</p>		<p> Flood Info Location <span style="float: right;">Map created on 2/1/2024</span></p> <p><b>User Notes</b></p>
<p><b>Flood Hazard Area</b></p> <p><b>Flood Zone</b></p> <p><b>Stream</b></p> <p><b>Watershed (HUC8)</b></p>	<p>Location is <b>WITHIN</b> the FEMA 100-year floodplain. Advisory Flood Heights available.</p> <p>A (Advisory Flood Heights available)</p> <p>Robinson Fork</p> <p>West Fork (5020002)</p>	
<p><b>Flood Height</b></p> <p><b>Water Depth</b></p> <p><b>Elevation</b></p> <p><b>Community &amp; ID</b></p> <p><b>FEMA Map &amp; Date</b></p> <p><b>Location (lat, long)</b></p> <p><b>Parcel ID</b></p> <p><b>E-911 Address</b></p>	<p>Flood Height 4 About 895.8 ft (Source: AFH) NAVD88</p> <p>About 0.3 ft (Source: HEC-RAS)</p> <p>892.0 ft (Source: FEMA 2018-20) (NAVD88)</p> <p>Harrison County (ID: 540053)</p> <p>54017C0160C; Effective Date: 10/2/2012</p> <p>(39.334243, -80.577049) (WGS84)</p> <p>09-05-0029-0044-0000</p> <p>2081 WV RT 23 N, SALEM, WV, 26426</p>	



## APPENDIX B Conceptual Plans

# ANTERO MIDSTREAM ISSUED FOR PERMITTING PLANS FOR THE SALEM HP DISCHARGE PIPELINE PROPOSED 6" STEEL GAS LINE AFE # A12878

101-T50-11556  
HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
JANUARY 2024



TOTAL AREA AND TREE CLEARING	AREA	UNITS
PERMITTED LIMITS-OF-DISTURBANCE	43.2	ACRES
TREE CLEARING	22.3	ACRES

**EXISTING INFORMATION SOURCES**  
BASE CONTOUR DATA PROVIDED BY OTHERS.  
ROUTE INFORMATION AND LOCATION PROVIDED BY ANTERO.  
SUPPLEMENTAL SPOT ELEVATIONS AND ALIGNMENT PROVIDED BY:  
THE THRASHER GROUP  
600 WHITE OAKS BLVD., P.O. BOX 940  
BRIDGEPORT, WV 26330  
BENCHMARK  
HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, US SURVEY FOOT  
VERTICAL - NAVD 88 (GEOID18), US SURVEY FOOT  
ROAD DESIGNATIONS OBTAINED FROM WV-DOT  
(<http://www.transportation.wv.gov>)

1-800-245-4848  
TICKET # 2400397089, 2400598265, 2400598282, 2400598263, 2400598296



CONTRACTOR SHALL NOTIFY THE ONE-CALL SYSTEM OF THE INTENDED EXCAVATION OR DEMOLITION NOT LESS THAN FORTY-EIGHT (48) HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL FEDERAL OR STATE HOLIDAYS, NOR MORE THAN TEN (10) WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK.  
CALL 811 COME 811-IN-YOUR-STATE

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

ALIGNMENT SHEETS PREPARED BY  
**THE THRASHER GROUP**  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
(304) 624-4108  
PO BOX 940

**PLAN REPRODUCTION WARNING**  
THESE PLANS ARE INTENDED TO BE PLOTTED ON ANSI D (22" X 34") SHEETS. FOR REDUCTIONS, REFER TO GRAPHIC SCALE. THESE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THESE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.  
\*\*WARNING\*\* INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF THE THRASHER GROUP INC. REPRODUCTION OF THESE DOCUMENTS IN WHOLE OR IN PART, FOR ANY REASON WITHOUT PRIOR WRITTEN PERMISSION, IS STRICTLY PROHIBITED. COPYRIGHT © 2024 THE THRASHER GROUP INC.

THIS PLAN SET DEPICTS THE NECESSARY INFORMATION FOR EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED BY THE WVDEP FOR STORM WATER PERMITTING PURPOSES.  
THE PIPELINE MATERIALS, ASSOCIATED APPURTENANCES, MATERIAL STRENGTHS, MAOP CALCULATIONS, PIPELINE ROUTING, ETC. DEPICTED ON THESE DRAWINGS ARE AS PROVIDED TO THE THRASHER GROUP, INC. BY OTHERS. THRASHER WILL NOT ACCEPT ANY LIABILITY FOR THE APPROPRIATENESS, OR DESIGN, OR SAID MATERIAL DEPICTED IN THESE PLANS.  
THE AQUATIC RESOURCES DEPICTED ON THESE DRAWINGS ARE AS PROVIDED TO THE THRASHER GROUP, INC. BY OTHERS. THRASHER WILL NOT ACCEPT ANY LIABILITY FOR THE ACCURACY, OR COMPLETENESS, OF THE AQUATIC RESOURCES DEPICTED ON THESE PLANS.

CLAYTON C. WHITE, WV P.E. # 24495  
 ISSUED FOR PERMITS DATE: \_\_\_\_\_ BY: \_\_\_\_\_

LAYOUT THE COVER CAD FILE: A:\2024\101-T50-11556-00-ANTERO-MIDSTREAM\ANTERO-MIDSTREAM\SALEM HP DISCHARGE\COVER SHEET.dwg PLOT DATE/TIME: 1/27/2024 9:33 AM USER: jared.johns

**WVDOT GENERAL NOTES**

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

**UTILITY AGENCIES SERVING AREA**

**MISS UTILITY**  
1-800-245-4848  
TICKET # 2400357089, 2400598265, 2400598282, 2400598283, 2400598296

**WEST VIRGINIA DIVISION OF HIGHWAYS**  
WVDOT DIST #4  
P.O. BOX 4220  
CLARKSBURG, WV 26301-4220  
(304) 842-1500  
(304) 842-1564 FAX  
LACY PRATT - UTILITY SUPERVISOR - CROSSINGS  
TARA CARGER - PERMIT SUPERVISOR - TEMP. ACCESSES

**POWER**  
MON POWER  
1-800-686-0022

**CABLE**  
AT&T  
1-304-216-4100

**TELEPHONE**  
VERIZON TELECOMMUNICATIONS  
1-800-275-2355

**RESPONSE TEAMS:**  
**NATIONAL RESPONSE CENTER FOR REPORTING CHEMICAL OR OIL SPILLS**  
1-800-424-8502

**STATE EMERGENCY SPILL NOTIFICATION**  
1-800-642-3074

**EMERGENCY AMBULANCE, FIRE, LAW ENFORCEMENT**  
911

STATION	LAT	LONG	GAS LINE CROSSINGS	PLAN SHEET #
6+06	39.325423	-80.541884	EX. ETC 12" STEEL GAS LINE	06
11+66	39.325968	-80.541671	EX. MOUNTAINEER GAS LINE	06
16+66	39.326279	-80.543391	EX. HOPE GAS LINE	06
17+45	39.326463	-80.551226	EX. ANTERO STEEL GAS LINE	07
17+74	39.326970	-80.551221	EX. ETC 20" STEEL GAS LINE	07
18+02	39.326968	-80.551315	EX. HOPE GAS LINE (APPROX. LOCATION)	07
73+72	39.329383	-80.561769	EX. DIVERSIFIED 2" GAS LINE	09
108+50	39.330983	-80.571500	EX. HOPE GAS LINE (APPROX. LOCATION)	10
135+83	39.332514	-80.576032	EX. 2" POLY GAS LINE	11
143+05	39.334279	-80.577266	EX. HOPE H-15309 4" GAS LINE	11
153+79	39.336020	-80.579927	EX. HOPE H-15319 4" GAS LINE	12
159+84	39.336430	-80.581482	EX. HOPE H-15319 4" GAS LINE	12
159+98	39.336621	-80.581527	EX. ANTERO GAS LINE	12

**DRAWING INDEX**

01	COVER	COVER SHEET
02	GNOTS	GENERAL NOTES SHEET
03	SPECS	GENERAL CONSTRUCTION SPECS SHEET
04-05	PL-INDEX-AR-INDEX	INDEX SHEETS
06-12	PLANI-PLAN7	PROPOSED ALIGNMENT PLAN AND PROFILE SHEETS
13-18	ARPS1-ARPS6	ACCESS ROAD PLAN SHEETS
19	HSP	HYDROSTATIC PROFILE SHEET
20-26	S&WC1-S&WC7	STREAM & WETLAND CROSSING SHEETS
27-37	ESCP1-ESCP11	ESCP DETAIL SHEETS
38	CULV1	CULVERT & CHANNEL REPORT SHEETS

**GENERAL NOTES**

- EXISTING UTILITIES SHOWN ON PLANS WHERE EVIDENCE HAS BEEN FOUND OR PROVIDED BY LOCOT DEPTH AND LOCATION OF UTILITY LINES NOT KNOWN. CONTRACTOR TO VERIFY UTILITY LOCATIONS PRIOR TO CROSSING BY CONTACTING MISS UTILITY AT 1-800-245-4848 AND LOCAL UTILITY COMPANIES AS LISTED AND/OR NOT LISTED ON THIS SHEET. CONTRACTOR TO LOCATE WATER AND UTILITY SERVICES BEFORE BORING AND JACKING.
  - IN THE EVENT AN ERROR WITH THE PLANS SEEMS APPARENT, THE MATTER MUST BE TAKEN UP WITH THE ENGINEER FOR REVIEW BEFORE PROCEEDING WITH CONSTRUCTION.
  - ALL PERMITS MUST BE SECURED PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR SHALL COORDINATE ALL STREAM CROSSING INSTALLATIONS PROPOSED SO NOT TO DELAY THE CONSTRUCTION PROCESS. STREAM CROSSINGS ARE TO BE CONSTRUCTED USING AN OPEN CUT CROSSING METHOD UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  - ALL PROPOSED PERMANENT FILL TO BE FILLED WITH STONE, NATURAL ROCK, OR A 20" CULVERT TO BE INSTALLED TO MAINTAIN STREAM FLOW.
  - ALL WOOD ROAD CROSSINGS TO BE CONSTRUCTED USING AN OPEN CUT CROSSING METHOD UNLESS OTHERWISE SPECIFIED ON THE PLANS. WOOD TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY WORK WITHIN WVDOT R/W.
  - ALL CONSTRUCTION TO BE DONE IN THE PROPOSED PIPELINE LIMITS OF DISTURBANCE AS SHOWN.
  - ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE STANDARDS AND SPECIFICATIONS PROVIDED IN A SEPARATE BOUND VOLUME.
  - CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE TYPES AND Q.D. PRIOR TO CONNECTION.
  - PROPERTY LINES SHOWN ON PLANS WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE, A FULL PROPERTY SURVEY IS RECOMMENDED.
- EROSION & SEDIMENT CONTROL NOTES**
- ALL EROSION AND SEDIMENT MEASURES TO BE IN ACCORDANCE WITH WEST VIRGINIA ONLINE BMP MANUAL FOR STANDARD GUIDELINES AND SPECIFICATIONS AVAILABLE AT: [HTTPS://APPS.DEP.WV.GOV/DWMW/STORMWATER/BMP/INDEX.HTML](https://apps.dep.wv.gov/dwmw/stormwater/bmp/index.html)
  - EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN SHOWN ON PLANS AND DETAILED IN SPECIFICATIONS.
  - EXPOSED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM THE EROSION FORCES OF RAINFALL, FLOWING WATER, AND WIND.
  - CLEARING AND GRUBBING IS TO OCCUR IN THE NOTED LIMITS OF DISTURBANCE (L.O.D.) ONLY.
  - ALL GRADED AREAS THAT ARE AT FINAL GRADE MUST BE SEEDED AND MULCHED WITHIN 7 DAYS AND AREAS THAT WILL NOT BE WORKED AGAIN FOR 21 DAYS OR MORE MUST BE SEEDED AND MULCHED WITHIN 7 DAYS. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS CONDITIONS ALLOW. WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G., THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY HALTED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED.
  - AREAS WHERE THE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RE-SEED IMMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.
  - TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH BMPs.
  - EROSION AND SEDIMENT CONTROLS BMPs SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. ANY NECESSARY OR REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY. ANTERO HAS ONLINE ACCESS TO SEVERAL RAIN GAUGE LOCATIONS IN THE GENERAL AREA OF EACH WORK LOCATION. THIS DATA WILL BE MONITORED AND USED BY INSPECTION PERSONNEL. USE OF ONLINE WEATHER TRACKING TOOLS MAY BE UTILIZED. RAINFALL DATA WILL BE RECORDED ON INSPECTION RECORDS.

**LEGEND / ABBREVIATIONS**

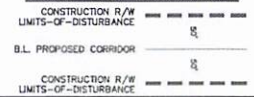
- EXISTING PIPELINE VENT
- EXISTING GAS WELL (AS NOTED)
- EXISTING GAS METER
- EXISTING PIPELINE MARKER
- EXISTING GAS VALVE
- EXISTING MONUMENT FOUND (AS NOTED)
- EXISTING UTILITY POLE
- EXISTING GATE / FENCE POST
- EXISTING PIPELINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD UTILITY
- EXISTING UNDERGROUND UTILITY
- EXISTING TELEPHONE
- EXISTING GROUNDWATER
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING DITCH
- EXISTING TREELINE
- PROPERTY LINE
- DEM RIGHT-OF-WAY LINE
- PROPOSED PERMANENT RIGHT-OF-WAY
- PROPOSED CONSTRUCTION RIGHT-OF-WAY / LIMITS-OF-DISTURBANCE
- CONTOUR
- COMPRESSOR/WELL PAD LIMITS-OF-DISTURBANCE
- PROPOSED ANTERO BASELINE
- PROPOSED ANTERO GAS LINE
- PROPOSED ANTERO BURIED WATER LINE
- PROPOSED ANTERO SURFACE WATER LINE
- EXISTING GROUND PROFILE
- PROPOSED PIPELINE PROFILE
- AREA-OF-INTEREST
- PROPOSED TYPE A BMP (SEE TABLE ON SHEET 28)
- PROPOSED TYPE B BMP (SEE TABLE ON SHEET 28)
- PROPOSED TYPE C BMP (SEE TABLE ON SHEET 28)
- PROPOSED ORANGE SAFETY FENCE
- PROPOSED RIGHT-OF-WAY DIVERSION (PLAN)
- PROPOSED ACCESS ROAD DITCH
- PROPOSED CULVERT (AS NOTED)
- PROPOSED CPP, N-12 DUAL WALL PIPE OR EQUAL
- TEMPORARY CULVERT FOR CONSTRUCTION ACCESS. DIAMETER BETWEEN 12" - 36" WILL BE DETERMINED TO MAINTAIN STREAM FLOW.
- DELINEATED CULVERT
- DELINEATED STREAMS
- DELINEATED WETLANDS (PROPOSED PERMANENT FILL)
- DELINEATED WETLANDS (PROPOSED PERMANENT FILL)
- DELINEATED GROUNDWATER SEEP/SPRING
- ROLLED EROSION CONTROL PRODUCT (INDICATES AREAS WHERE SLOPE IS 3:1 OR GREATER)
- ADDITIONAL TEMPORARY WORKSPACE
- STONE CONSTRUCTION ENTRANCE
- TEMPORARY TIMBERNAT CROSSING
- PROPOSED ACCESS ROAD
- PIPELINE MILE POST
- PROPOSED RIGHT-OF-WAY DIVERSION (PROFILE)
- PROPOSED TRENCH TROUGH BREAKER (PROFILE)
- PROPOSED EARTH PUNCH DRAIN (PROFILE)
- PROPOSED GAS LINE MARKER
- PROPOSED TEST STATION

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

**CONSTRUCTION SEQUENCE OF EVENTS**

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

**PROPOSED 10' CONSTRUCTION RIGHT-OF-WAY LIMITS-OF-DISTURBANCE**



**THRASHER**

**IFP**

ISSUED FOR PERMITTING

DATE:

AFE # A12878

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**GENERAL INFORMATION**

- ALL DESIGN, STRENGTH OF PIPELINE AND MARK CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVIEW ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
- FIELD DELINEATION PERFORMED AND APPROVED BY KLEINFELDER, INC.
- THIS SHEET IS INTENDED TO BE PLOTTED ON A8.5 (24" x 36") FOR REDUCTION, REFER TO GRAPHIC SCALE.

**REVISION**

NO.	DESCRIPTION	DATE	BY

**Antero Midstream**

**SALEM HP DISCHARGE PIPELINE GENERAL NOTES**

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JLU (TIG) DATE: 1/31/2024  
CHECKED BY: JBU (TIG) DATE: 1/31/24  
SCALE: AS SHOWN  
REVISION No.: 0 SHEET: 02-GNOTS

DATE: 1/31/24 TIME: 10:24:43 AM USER: jand baugh

**GENERAL CONSTRUCTION SPECIFICATIONS**

**1. GRADING**

THE CONTRACTOR SHALL GRADE AS NECESSARY TO MITIGATE THE NECESSITY OF ABRUPT OVER-BENDS OR SAG-BENDS. CONTRACTOR SHALL MINIMIZE THE GRADING WHERE PRACTICAL TO PREVENT UNNECESSARY DISTURBANCE AND MINIMIZE WORK REQUIRED TO RETURN THE RIGHT-OF-WAY TO ITS ORIGINAL ELEVATIONS, SLOPES, AND PROFILE AS CLOSELY AS PRACTICAL, BUT CONSISTENT WITH MINIMIZING ABRUPT OVER-BENDS AND SAG-BENDS. GRADED SUBSOIL MATERIALS SHALL BE STOCK PILED SO IT CAN BE RETURNED TO ITS ORIGINAL DEPTH AND LOCATION AS OPPOSED TO SPREAD ALONG THE RIGHT-OF-WAY. THE CONTRACTOR SHALL GRUB, OR OTHERWISE REMOVE AND DISPOSED OF ALL STUMPS, ROOTS AND DEBRIS FOUND TO BE IN THE WAY OF CONSTRUCTION WITH PERMANENT RIGHT-OF-WAY LIMITS. WHEN THE CONTRACTOR IS CUTTING GRADE ALONG OR ACROSS EXISTING PIPELINES, SPOIL OR MATS SHALL BE PLACED OVER THE EXISTING LINES PER THE REQUIREMENTS OF THE OPERATING COMPANY OF THE FOREIGN PIPELINE.

**2. COMPANY FOREIGN LINE AND UTILITY CROSSINGS**

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

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

**3. DITCH SPECIFICATIONS**

**DITCH WIDTH AND DEPTH** - UNLESS OTHERWISE STATED ON THE DRAWINGS OR RIGHT-OF-WAY LINE LIST, THE DITCH SHALL BE 18 IN. WIDER FOR PIPE DIAMETERS 12 IN. AND GREATER AND 24 IN. DEEPER THAN THE PIPE. THE PIPE SHALL HAVE 48 IN. MINIMUM COVER IN SOIL AND 36 IN. IN CONSOLIDATED ROCK, MEASURED FROM THE TOP OF THE PIPE TO THE AVERAGE LEVEL OF THE ORIGINAL OR RESTORED GROUND ON THE TWO SIDES OF THE DITCH, WHICHEVER IS LOWER.

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

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

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

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

**4. SPOIL BANK**

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

**5. TEMPORARY BRIDGES**

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

**6. EXCAVATING NEAR IN-SERVICE PIPELINES**

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

**7. HAULING AND STRINGING**

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

**8. BENDING**

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

**8. BENDING (CONT'D)**

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

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

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

**9. SWABBING AND CLOSING OPEN ENDS**

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

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

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

**10. POSITIONING OF LONGITUDINAL SEAM**

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

**11. LOWERING-IN PIPE**

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

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

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

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

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

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

**12. BACKFILLING**

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

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

**13. TRENCH BREAKER**

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

- BREAKER MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, DECOMPOSABLE BAGS, SAND AND ANY OTHER MATERIALS REQUIRED TO FACILITATE THE PROPER PLACEMENT OF THE BREAKER MATERIAL IN THE DITCH.
- BREAKER INSTALLATIONS MAY BE COMPRISED OF EITHER A MULTIPLE SANDBAG CONFIGURATION OR BY OTHER APPROVED METHODS. ALL BREAKER INSTALLATIONS SHALL MEET WITH THE APPROVAL OF THE COMPANY.
- BREAKER SIZE IS DEPENDENT ON THE EXTENT AND CONDITION OF THE DITCH IN DEPTH, WIDTH, SLOPE AND GRADE. AT A MINIMUM, BREAKERS SHALL EXTEND THE WIDTH AND DEPTH OF THE DITCH.
- BREAKERS SHALL BE SPACED ALONG THE DITCH IN ACCORDANCE WITH THE COMPANY'S ENVIRONMENTAL STANDARDS.

**14. DIRT PADDING**

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

**15. CLEAN-UP**

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

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

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

**SUMMARY OF MATERIALS (3D)**

**SUMMARY OF MATERIALS (3D)**

**GENERAL INFORMATION**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE	BY

NO.	DESCRIPTION	QTY

**SALEM HP DISCHARGE PIPELINE GENERAL CONSTRUCTION SPECS**  
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

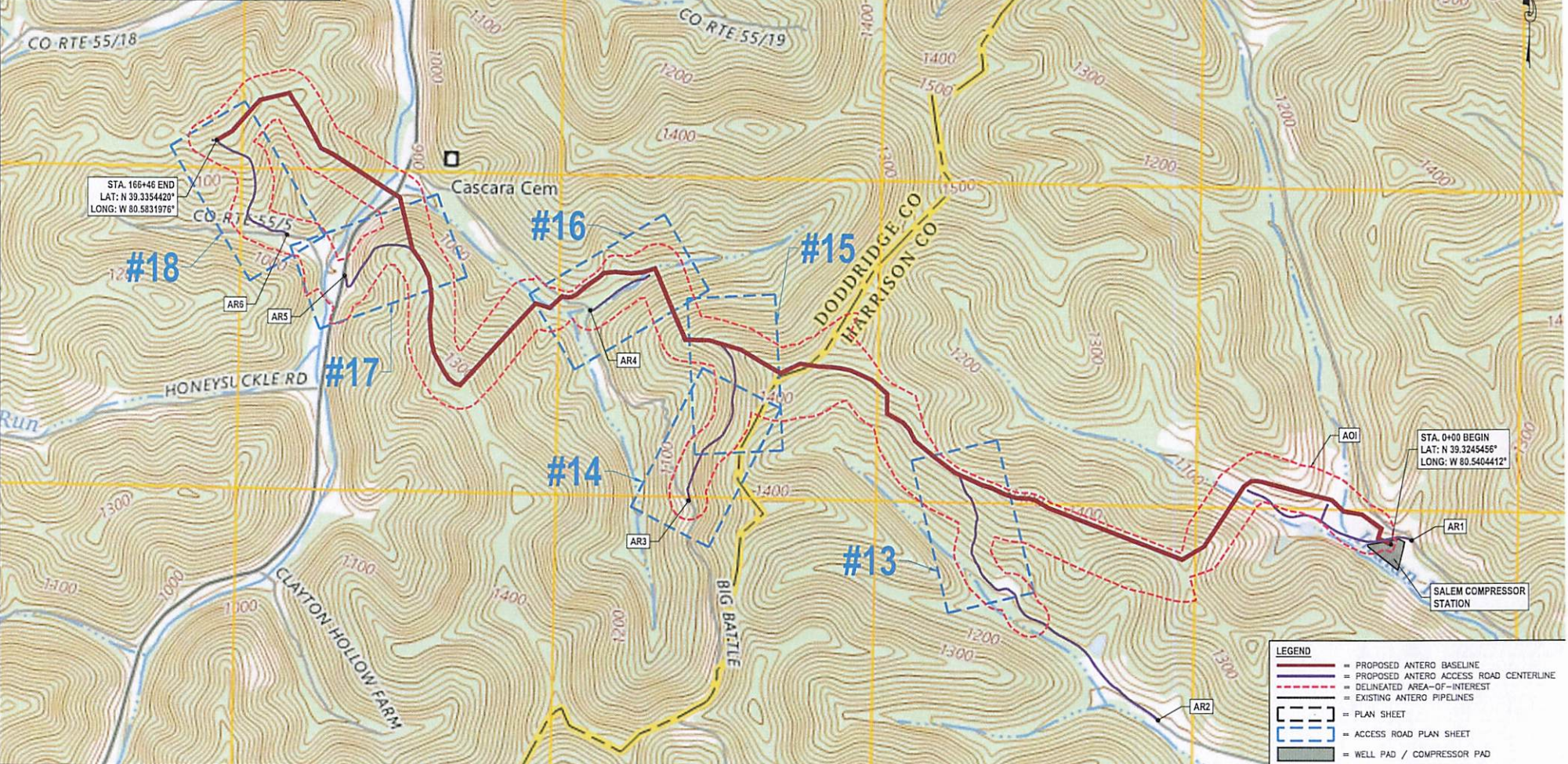
DRAWN BY: JLI (TTC) DATE: 1/31/2024  
CHECKED BY: JRH (TTC) AFE No.: A12878  
SCALE: AS SHOWN  
REVISION No.: g SHEET: 03-SPECS

LAYOUT DATE: 01/31/2024; CAD FILE: R:\VOLUME-1058-00-INTRO-SALEM TO BRUIS-GLASSBORO-ATP-HP-6\"/>





ROAD #	TYPE	ACCESS ROADS	LAT	LONG	LENGTH (FT)
AR1	PERMANENT		N 39.3248578°	W 80.5396927°	2,033
AR2	TEMPORARY		N 39.3195002°	W 80.5487983°	3,504
AR3	TEMPORARY		N 39.3254871°	W 80.5658880°	1,820
AR4	TEMPORARY		N 39.3308092°	W 80.5695563°	721
AR5	TEMPORARY		N 39.3316898°	W 80.5784726°	1,037
AR6	PERMANENT		N 39.3328149°	W 80.5806088°	1,502



STA. 166+46 END  
LAT: N 39.3354420°  
LONG: W 80.5831976°

STA. 0+00 BEGIN  
LAT: N 39.3245456°  
LONG: W 80.5404412°

LEGEND	
	= PROPOSED ANTERO BASELINE
	= PROPOSED ANTERO ACCESS ROAD CENTERLINE
	= DELINEATED AREA-OF-INTEREST
	= EXISTING ANTERO PIPELINES
	= PLAN SHEET
	= ACCESS ROAD PLAN SHEET
	= WELL PAD / COMPRESSOR PAD

ISSUED FOR PERMITTING

DATE: \_\_\_\_\_

AFE # A12878

0 500 1000  
HORIZ. SCALE IN FEET

**IFP**

ISSUED FOR PERMITTING

DATE: \_\_\_\_\_

AFE # A12878

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION	
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
2.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
3.	MAPPING SOURCE: SALEM, WV USGS 7.5 MINUTE QUADRANGLE DATED 2023
4.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLUMB NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 88 (GEOID28), U.S. SURVEY FOOT
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON A110 D (24" x 36"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
6.	FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

**SALEM HP DISCHARGE PIPELINE  
ACCESS ROAD INDEX SHEET**

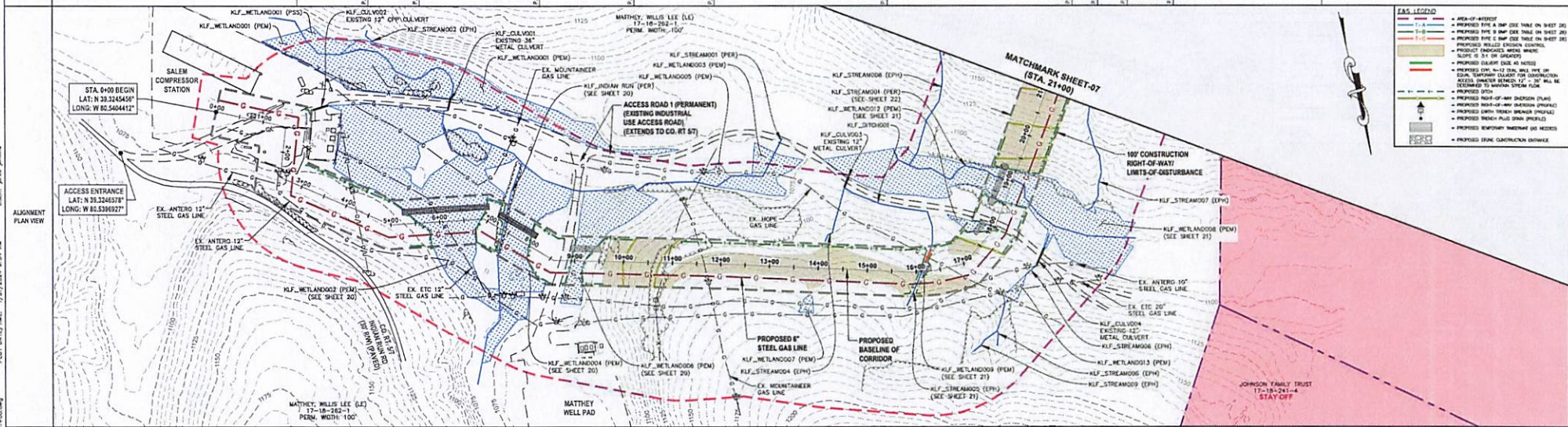
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JJJ (TTC) DATE: 1/31/2024  
CHECKED BY: JRN (TTC) AFE No.: A12878  
SCALE: AS SHOWN SHEET: 05-AR-INDEX  
REVISION No.: 0

LAYOUT TAB: AR-INDEX  
CAD FILE: E:\0501700-11508-00-ANTERO-SALEM TO BALD-COUNIES A12878\Drawings\INDEX\SHEETS\INDEX SHEETS.dwg  
PLOT DATE/TIME: 1/31/2024 8:33 AM  
USER: Brad Jenkins

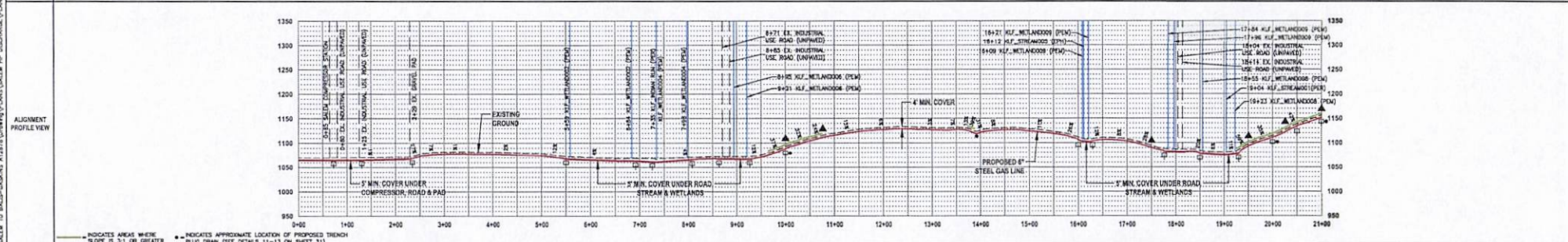
OWNER/HP A PARCEL NO.	0400	MATTHEY, WILLIS LEE (LE) 17-18-262-1 CONST. WIDTH: 100' PERM. WIDTH: 100'										2100
P.I. DEFLECTION ANGLES	0400	P.I. 1147 ANGLE: 96 RT	P.I. 2433 ANGLE: 72 LT	P.I. 3400 ANGLE: 27 LT	P.I. 6431 ANGLE: 36 RT	P.I. 8437 ANGLE: 27 LT	P.I. 12111 ANGLE: 67 RT	P.I. 13929 ANGLE: 108 LT	P.I. 16443 ANGLE: 109 LT	P.I. 17402 ANGLE: 38 LT	P.I. 17498 ANGLE: 27 LT	2100



**PAS LEGEND**

- AREA OF DISTURBANCE
- PROPOSED PIPE A 6" (SEE TABLE ON SHEET 20)
- PROPOSED PIPE B 8" (SEE TABLE ON SHEET 20)
- PROPOSED PIPE C 10" (SEE TABLE ON SHEET 20)
- PROPOSED WELDED SECTION ENDINGS
- PRODUCT (INDICATES WELDED ENDING)
- PROPOSED DRAINAGE (SEE 40 NOTES)
- PROPOSED OPEN 6" (SEE TABLE ON SHEET 20) OF EQUAL TEMPORARY CALIBER FOR CONSTRUCTION ACCESS (WELDED ENDINGS 12" - 20" WILL BE DETERMINED TO MATCH STREAM FLOW)
- PROPOSED DITCH
- PROPOSED RIGHT-OF-WAY OVERLAP (PLANS)
- PROPOSED RIGHT-OF-WAY OVERLAP (PROFILES)
- PROPOSED DITCH TRENCH BRANCH (DITCHES)
- PROPOSED TRENCH PLUS DRAIN (DITCHES)
- PROPOSED REINFORCED CONCRETE (AS NEEDED)
- PROPOSED GRADE CONSTRUCTION ENTRANCE

DESIGN CLASS LOCATION	
PIPE DETAIL (SLOPE DOTT)	



**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
AFE # A12678

0 100 200  
HORIZ. SCALE IN FEET

0 100 200  
VERT. SCALE IN FEET

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

REVISION	
NO.	DESCRIPTION

**GENERAL INFORMATION**

- ALL DESIGN STRENGTHS OF PIPELINE AND MAP CALCULATIONS ALONG WITH THIS PLAN SHALL BE PROVIDED TO THE CONTRACTOR FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT AND AGENCIES.
- SEE SHEETS 20 & 21 REGARDING MATERIALS, DIMENSIONS AND NOTES TO BE USED FOR CONSTRUCTION.
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL = 8400 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL = 8400 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT.
- ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PROPOSED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WHERE THE PROPOSED CORRIDOR WILL BE COORDINATED BY THE FIELD BY AGENCY CONSTRUCTION REPRESENTATIVE.
- THE BOUNDARY ELEMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM AERIAL PHOTO SURVEY AND RESEARCHED COMPASSION. THESE FROM VARIOUS RECORDS ON FILE BY THE LOCAL COUNTY COURTHOUSE TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
- ALL EXISTING PERMITS AND RECORDS OBTAINED DURING CONSTRUCTION TO BE REVIEWED BY CONTRACTOR POST-CONSTRUCTION.
- SEE SHEETS 20 & 21 REGARDING MATERIALS, DIMENSIONS AND NOTES TO BE USED FOR CONSTRUCTION.
- ALL SHEET BOUNDS INCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
- THIS SHEET IS INTENDED TO BE PLOTTED ON AHS D (34" x 44") FOR INDICATIONS REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

**Antero Midstream**

**SALEM HP DISCHARGE PIPELINE  
STA. 0+00 TO STA. 21+00  
PROPOSED 6" STEEL GAS LINE**

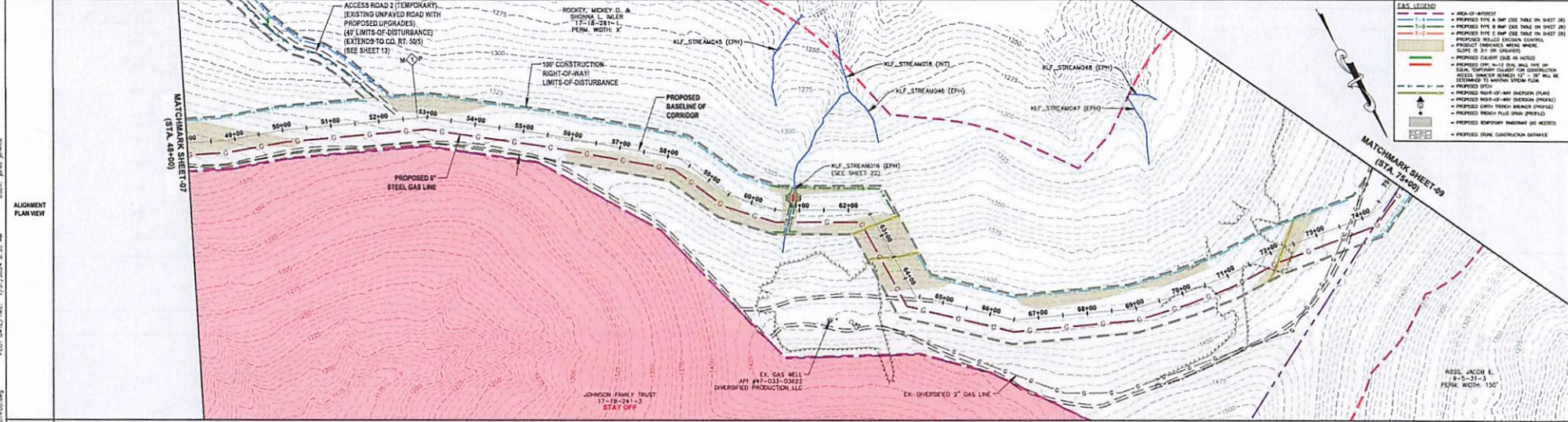
HARRISON & DODDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JLU (TIG) DATE: 1/31/2024  
CHECKED BY: JHN (TIG) AFE No.: A12678  
SCALE: AS SHOWN  
REVISION No.: 0 SHEET: 06-PLAN1

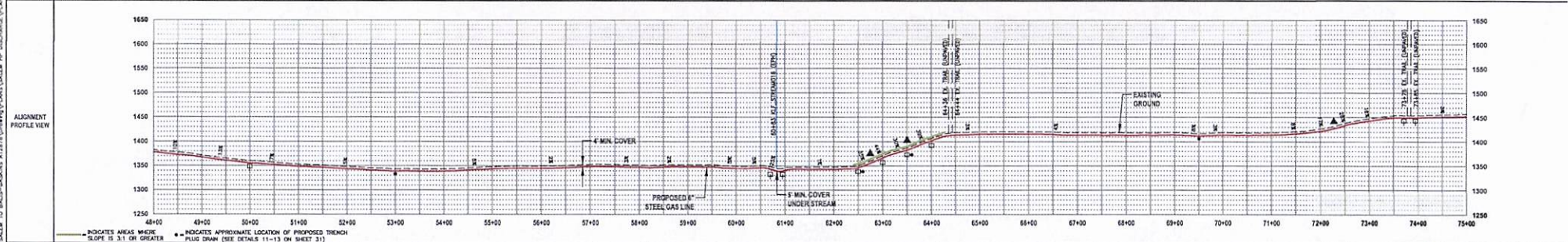
USER: jayd.johnson  
 PLOT DATE/TIME: 1/27/2024 9:34 AM  
 CAD FILE: W:\ASSETS\105-11558-00-ANTERO-SALEM TO BALS-CASING\_A12678\Drawings\PLANS\SALEM HP DISCHARGE\PLANS STA. 0+00 TO STA. 21+00.dwg



OWNER'SHIP & PARCEL NO.	ROCKEY, MICKEY D. & SHERRILL L. MILLER 17-18-281-1 CONST. WIDTH: 100' PERM. WIDTH: 8'																											
P.I. DEFLECTION ANGLES	48+00	49+00	50+00	51+00	52+00	53+00	54+00	55+00	56+00	57+00	58+00	59+00	60+00	61+00	62+00	63+00	64+00	65+00	66+00	67+00	68+00	69+00	70+00	71+00	72+00	73+00	74+00	75+00



DESIGN CLASS	LOCATION
PIPE DETAIL (SLOPE DIST.)	



**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: **AFE #12878**

0 100 200  
HORIZ. SCALE IN FEET

0 100 200  
VERT. SCALE IN FEET

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

REVISION		
NO.	DESCRIPTION	DATE BY

**GENERAL INFORMATION**

- ALL DESIGN, STRENGTH OF PIPELINE AND WADP CALCULATIONS ALONG WITH ROUTING MAPS PREPARED BY ANTARO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR MAPS PROVIDED BY ANTARO.
- FIELD DELINEATION PERFORMANCE AND PROVIDED BY KLEINFELDER, INC.
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: NAD83 - NAD 83 BEST AVAILABLE STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT
- ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A LIMITED REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION SHOULD BE PERMITTED CORRIDOR BOUNDARY COORDINATES IN THE FIELD BY ANTARO CONSTRUCTION.
- ALL EXISTING FENCES AND MARKS OBTAINED DURING CONSTRUCTION TO BE REMOVED BY CONTRACTOR POST-CONSTRUCTION.
- SEE SHEETS 08-1A THROUGH 08-1E FOR MATERIALS, DIMENSIONS AND OTHER TO BE INSTALLED ON ACCESS ROADS, DRIVEWAYS AND OTHER ROADS AND DRIVEWAYS. SHOWN ON ACCESS ROADS, DRIVEWAYS AND OTHER ROADS ARE BASED ON AVAILABLE MAPPING AND ASSUMED PROPOSED ROAD SURFACE ELEVATIONS.
- ALL SHEET BOUNDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.
- THIS SHEET IS REFERRED TO BE PLOTTED ON A85 D (24" X 36") FOR REVISIONS, REFER TO GRAPHIC SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

**Antero Midstream**

**SALEM HP DISCHARGE PIPELINE  
STA. 48+00 TO STA. 75+00**

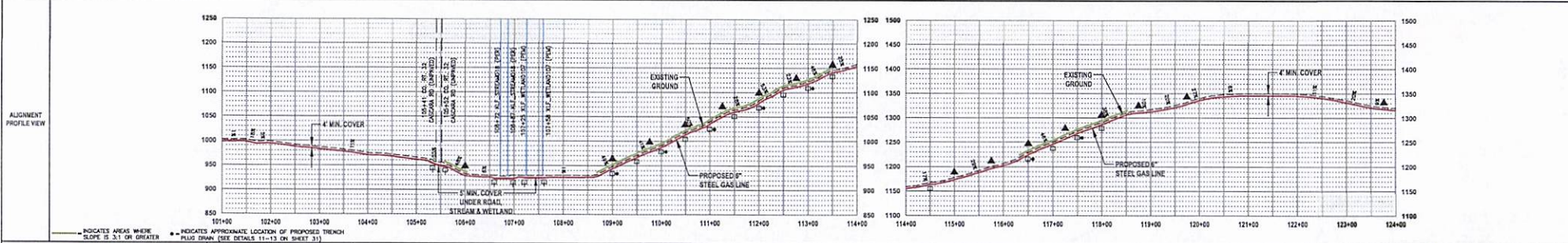
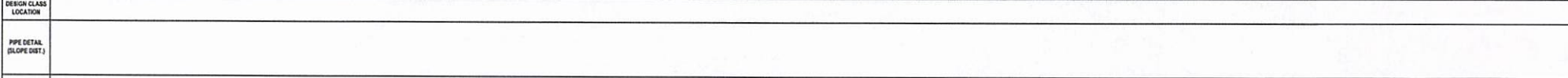
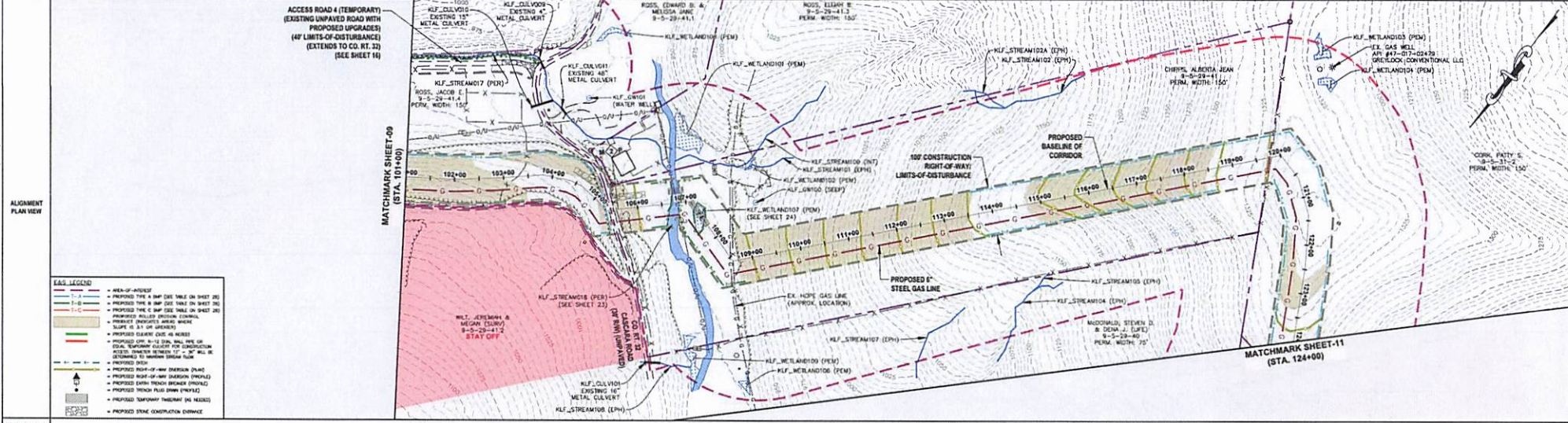
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JHU (TTO) DATE: 1/31/2024  
CHECKED BY: JHU (TTO) DATE: 1/31/2024  
SCALE: AS SHOWN  
REVISION No.: 0 SHEET: 08-PLAN3



OWNERSHIP & PARCEL NO.	101+00	ROSE, JACOB E. 9-5-29-41.4 CONST. WIDTH: 100' PERM. WIDTH: 150'	105+45	CHIPP, ALBERTA JEAN 9-5-29-41.4 CONST. WIDTH: 100' PERM. WIDTH: 100'	114+00	114+00	119+75	CORK, PATTY S. 9-5-31-2 CONST. WIDTH: 100' PERM. WIDTH: 150'	124+00
P.I. DEFLECTION ANGLES	101+00	P.I. 135+45 ANGLE: 29° LT	P.I. 132+45 ANGLE: 14° BT	P.I. 134+45 ANGLE: 18° BT	P.I. 135+45 ANGLE: 17° BT	P.I. 137+45 ANGLE: 52° LT	P.I. 135+45 ANGLE: 54° BT	P.I. 137+45 ANGLE: 27° BT	P.I. 137+45 ANGLE: 18° BT



**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: **AFE # A12878**

HORIZ. SCALE IN FEET: 1" = 100'

VERT. SCALE IN FEET: 1" = 200'

SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.

SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.

GENERAL INFORMATION			
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH BIDDING WERE PROVIDED BY ANTERO AND PROVIDED TO THASHER FOR INCLUSION IN THE PLANS. THASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR MAPS PROVIDED BY ANTERO.		
2.	FIELD DELINEATION PERFORMED AND PROVIDED BY KLEFFELER, INC.		
3.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTALS - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICALS - NAD 83 (BEGGINS), U.S. SURVEY FOOT.		
4.	ALL STATIONING SHOWN IS HORIZONTAL, AND PERTAINS TO THE BASELINE OF THE POINTED CORNER. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE POINTED CORNER WILL BE DETERMINED BY THE FIELD BY ANTERO CONSTRUCTION.		
5.	THE BOUNDARY MONUMENTS EXISTING AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCH INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.		
6.	ALL EXISTING FENCES AND ROADS DESTROYED DURING CONSTRUCTION TO BE REPLACED BY CONSTRUCTION POST-CONSTRUCTION.		
7.	SEE SHEETS 38 & 39 REGARDING WATERWAYS, CULVERTS AND OTHERS TO BE INSTALLED OR MODIFIED ALONG THE 6" DIA. STEEL GAS LINE. ALL OTHERS SHOWN ON ALLIEN RIGHTS CULVERT AND OTHER RECORDS ARE BASED ON AVAILABLE MAPPING AND RELATED PROPOSED ROAD SURFACE ELEVATIONS.		
8.	ALL SHEET BOUNDS EXCLUDING ALIGNMENT PLAN VIEW REFERENCE THE ALIGNMENT PROFILE VIEW.		
9.	THIS SHEET IS INTENDED TO BE PLOTTED ON A85 D (24" x 36") FOR REDUCTIONS. REFER TO GRAPHIC SCALE.		
10.	FOR LICENSE/AMMENDATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.		

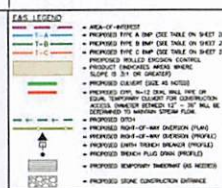
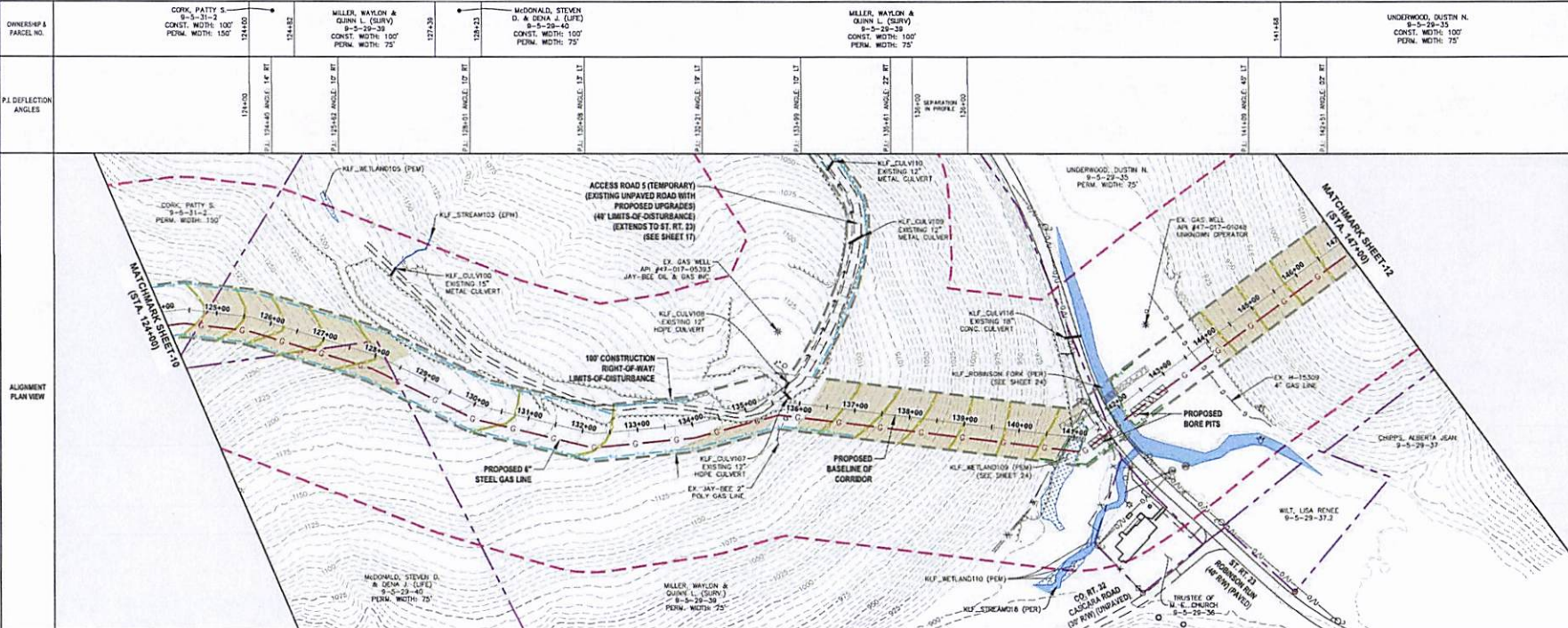
**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE**  
**STA. 101+00 TO STA. 124+00**  
**PROPOSED 6" STEEL GAS LINE**

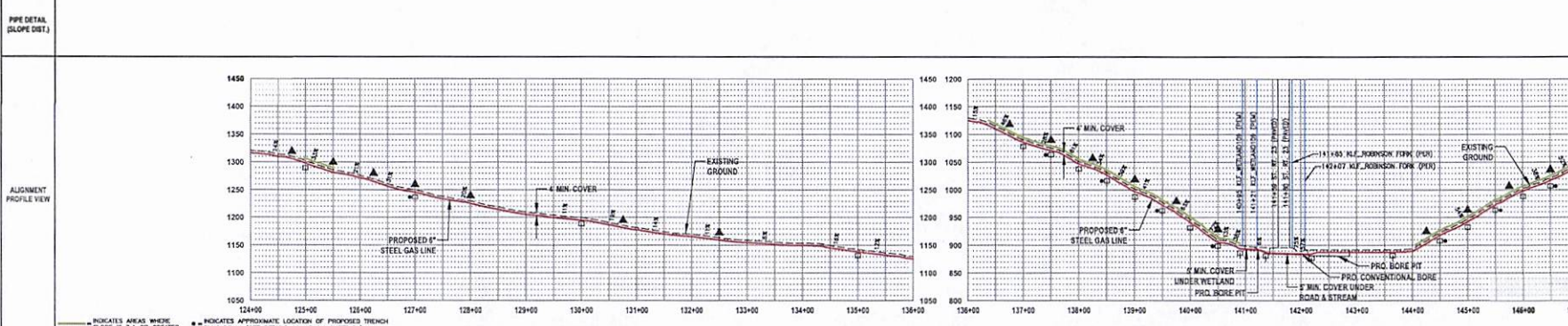
HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JLU (TTG) DATE: 1/31/2024  
CHECKED BY: JRI (TTG) AFE No: A12878  
SCALE: AS SHOWN  
REVISION No: 0 SHEET: 10-PLANS

LAYOUT DATE: 01/20/2024  
 DRAWN BY: JDI (TIG)  
 CHECKED BY: JSH (TIG)  
 SCALE: AS SHOWN  
 SHEET: 11-PLANG  
 DATE: 1/31/2024  
 AFE # A12878  
 HARRISON & DODDRIE COUNTY, WEST VIRGINIA  
 SALEM HP DISCHARGE PIPELINE STA. 124+00 TO STA. 147+00  
 PROPOSED 6" STEEL GAS LINE  
 THRASHER  
 IFF  
 ISSUED FOR PERMITTING  
 DATE: \_\_\_\_\_  
 AFE # A12878  
 HARRISON & DODDRIE COUNTY, WEST VIRGINIA  
 SALEM HP DISCHARGE PIPELINE STA. 124+00 TO STA. 147+00  
 PROPOSED 6" STEEL GAS LINE  
 THRASHER  
 IFF  
 ISSUED FOR PERMITTING  
 DATE: \_\_\_\_\_  
 AFE # A12878



ALIGNMENT PLAN VIEW



ALIGNMENT PROFILE VIEW

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

**GENERAL INFORMATION**

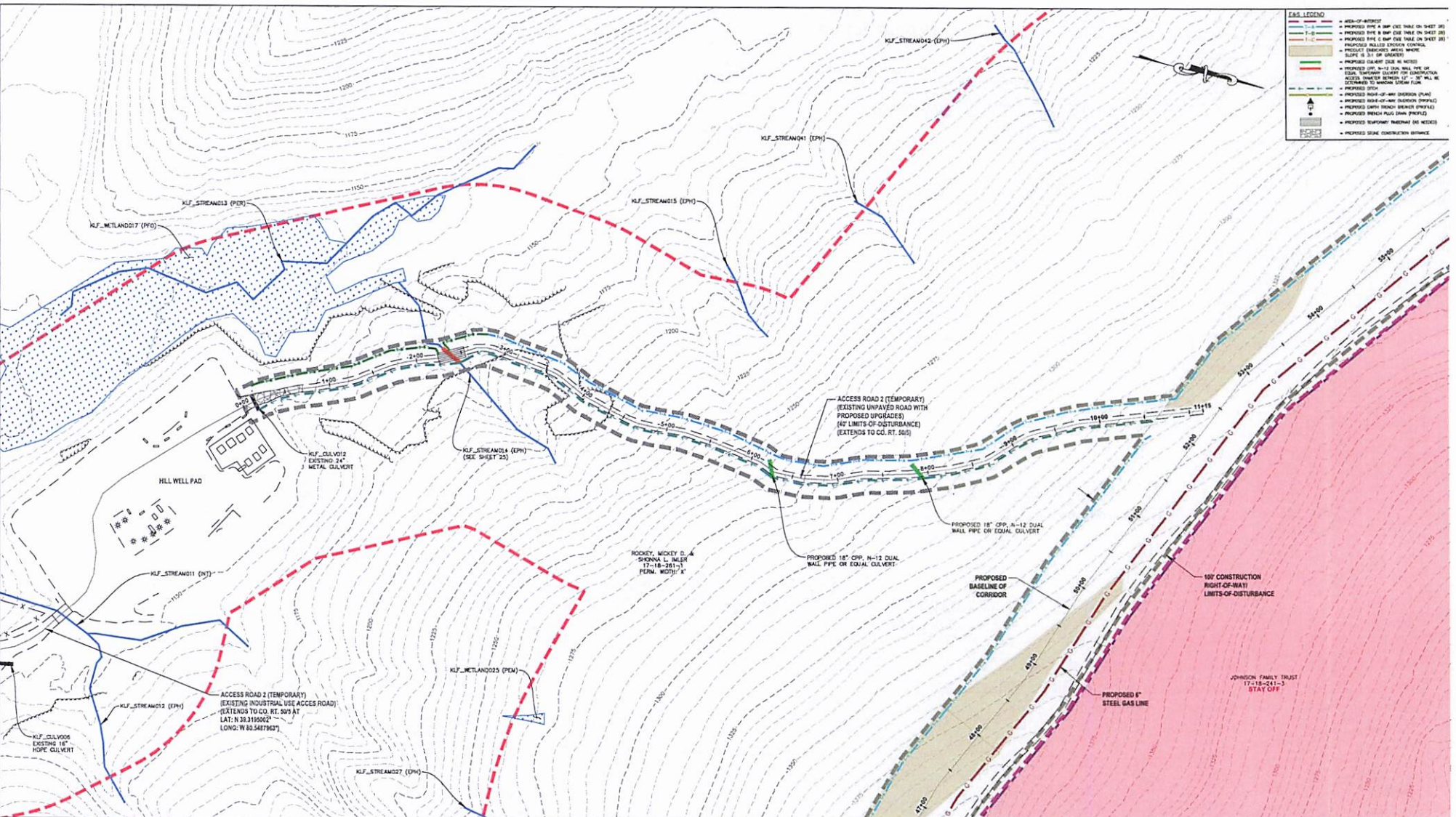
1. ALL DESIGN STRENGTH OF PIPELINE AND WAP CALCULATIONS ALONG WITH BUILDING WERE PREPARED BY ANTHERO AND PROVIDED TO THE CLIENT FOR REVIEW AND APPROVAL. ANTHERO HAS REVIEWED THE DESIGN AND APPROVED FOR CONSTRUCTION OF THIS PROJECT AND FOR THE PROPOSED 6" STEEL GAS LINE.
2. FIELD SURVEY INFORMATION AND PROVIDED BY ANTHERO FOR THE PROJECT.
3. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: NAD83 - 4800 METERS ABOVE MEAN SEA LEVEL, NORTH ZONE, U.S. SURVEY FOOT.
4. ALL ELEVATIONS GIVEN IN ELEVATIONS AND PERTAIN TO THE BENCHMARK OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED, INSTALLATION BEFORE THE PERMITTED CORRIDOR IS NECESSARY.
5. THE BENCHMARK POINTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PUBLIC FIELD SURVEY AND RECORDS. ANTHERO HAS REVIEWED THE SURVEY RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE TO OBTAIN A MORE ACCURATE BOUNDARY LOCATION. A FULL PROPERTY SURVEY IS RECOMMENDED.
6. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
7. SEE SHEETS 10-19 FOR PROPOSED MATERIALS, RELATIONS AND OTHERS TO BE INSTALLED ON ACCESS ROADS. SEE SHEET 10 FOR CLAYLINE AND OTHER USING OVERLAP RANGE CLAYLINE AND OTHERS ARE BASED ON AVAILABLE MAPPING AND ANTHERO PROPOSED ROAD SURFACE ELEVATIONS.
8. ALL SHEET BOUNDS EXCLUDING ALIGNMENT PLAN VIEW REFER TO THE ALIGNMENT PROFILE VIEW.
9. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (24" X 36") FOR PRODUCTION. REFER TO DRAWING SCALE.
10. FOR LEGENDS/ANNOTATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

**SALEM HP DISCHARGE PIPELINE STA. 124+00 TO STA. 147+00**  
 PROPOSED 6" STEEL GAS LINE  
 HARRISON & DODDRIE COUNTY, WEST VIRGINIA  
 DRAWN BY: JDI (TIG) DATE: 1/31/2024  
 CHECKED BY: JSH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 11-PLANG





LAYOUT FILE: ANPSI  
 CAD FILE: S:\05\1506-00-ANTHRO-SALEM TO BAUS-CADSWAY A12878\Drawings\PLAN\SHEETS\HP DISCHARGE ACCESS ROAD PLAN SHEETS.dwg  
 USER: jared.parkes  
 PLOT DATE/TIME: 1/31/2024 9:38 AM



**THRASHER**

**IFP**  
 ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
 AFE # A12878

0 50 100  
 HORIZ. SCALE IN FEET

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

- GENERAL INFORMATION**
1. ALL DESIGN, STRENGTH OF PIPELINE AND WAMP CALCULATIONS ALONG WITH RIGHTS WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVIEW ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR RIGHTS PROVIDED BY ANTERO.
  2. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLENFELDER, INC.
  3. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 METRIC STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAVD 83 (GEODESIC), U.S. SURVEY FOOT.
  4. ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE IDENTIFIED CORRIDOR. IT IS NOT A SHEET REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
  5. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM RECORDS ON FILE IN THE LOCAL COUNTY COMPTROLLER, TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
  6. ALL EXISTING FENCES AND ROADS DESTROYED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
  7. SEE SHEETS 24 & 25 REGARDING MATERIALS, CLAMENTS AND SHOES TO BE INSTALLED ON ACCESS ROADS. SEE SHEET 28 FOR CULVERT AND DITCH SIZES ON ACCESS ROADS. CULVERT AND DITCH DESIGN ARE BASED ON AVAILABLE MAPPING AND ASSUMED PROPOSED ROAD SURFACE ELEVATIONS.
  8. THIS SHEET IS INTENDED TO BE PLOTTED ON A82 D (24" X 36"), FOR REDUCTIONS, REFER TO DRAWING SCALE.
  9. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

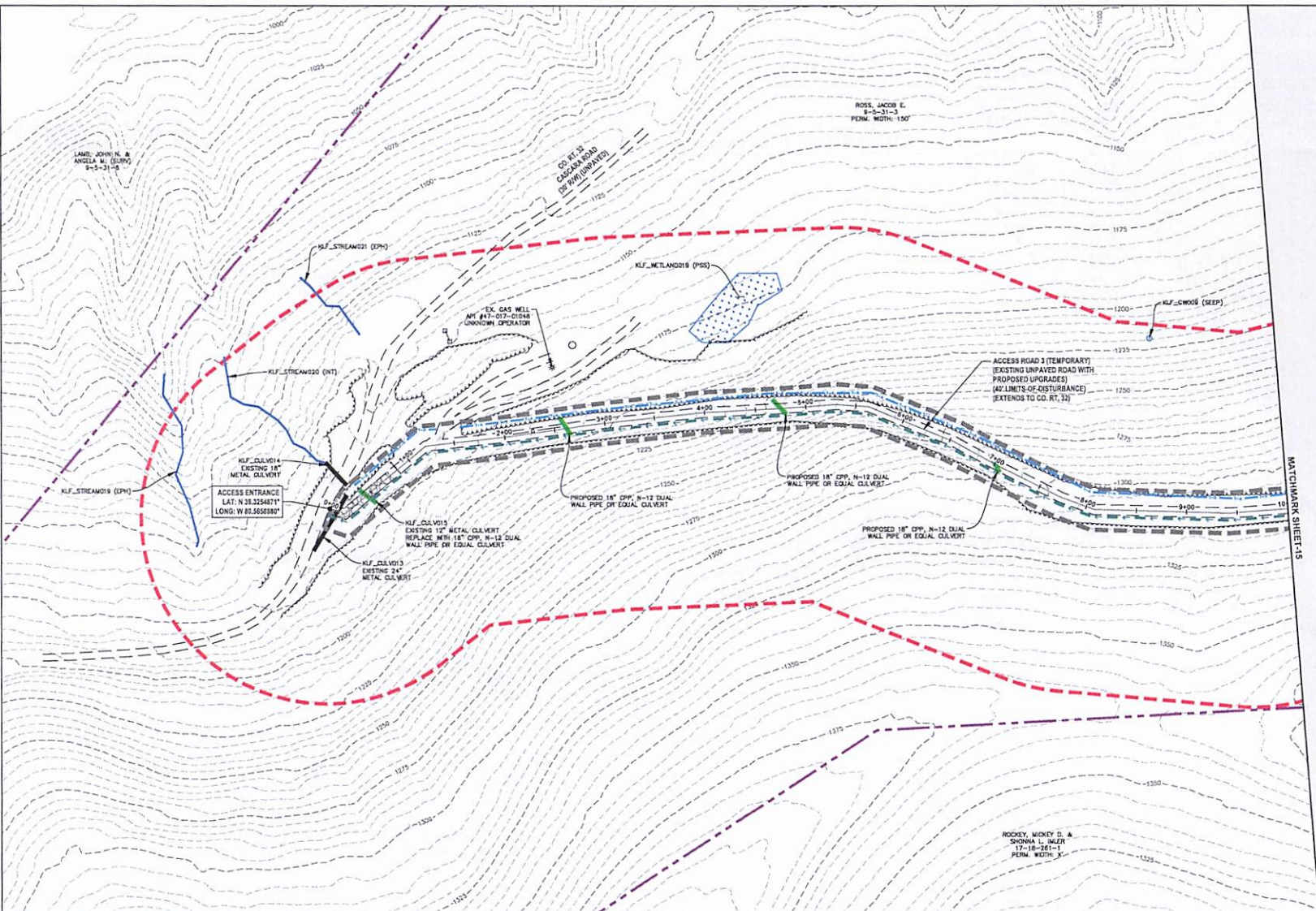
**Antero**  
 Midstream

**SALEM HP DISCHARGE PIPELINE ACCESS ROAD PLAN SHEET**  
 PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JEU (TTO) DATE: 1/31/2024  
 CHECKED BY: JRN (TTO) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 13-ARPS1

USER: jared.johnson  
 PLOT DATE/TIME: 1/31/2024 9:38 AM  
 CADD FILE: \\s:\1505130-115568-00-ANTHRD-SALEM TO HALE-CAROLINA A12878\Drawings\SALEM HP DISCHARGE\_ACCESS ROAD PLAN SHEETS.dwg  
 LAYOUT SIZE: A8822



**EAS LEGEND**

- AREA OF INTEREST
- PROPOSED PIPE & BMP USE TABLE ON SHEET 03
- PROPOSED PIPE & BMP USE TABLE ON SHEET 02
- PROPOSED PIPE & BMP USE TABLE ON SHEET 01
- PROPOSED ROLLER EXCAVATION CONTROL
- PROPOSED EROSION CONTROL
- PROPOSED SLOPE (SEE AS NOTED)
- PROPOSED 18\"/>



**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_

AFE # A12878

HORIZ. SCALE IN FEET  
0 50 100

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE	BY
<b>REVISION</b>						

SUMMARY OF MATERIALS (3D)						
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE	BY

SUMMARY OF MATERIALS (3D)						
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE	BY

- GENERAL INFORMATION**
- ALL DESIGN, STRENGTH OF PIPELINE AND MASON CALCULATIONS ALONG WITH RESULTS WERE PROVIDED BY ANTRO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTRO.
  - FIELD DELINEATION PERFORMED AND PROVIDED BY KLEINFELDER, INC.
  - COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT
  - ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTRO CONSTRUCTION REPRESENTATIVE.
  - THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM WATER, FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
  - ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
  - SEE SHEETS 01 & 02 REGARDING MATERIALS, CULVERTS AND DITCHES TO BE INSTALLED ON ACCESS ROADS. SEE SHEET 03 FOR CULVERT AND DITCH SIZES ON ACCESS ROADS, CULVERT AND DITCH DESIGNS AND SURFACE ELEVATIONS.
  - THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (24" X 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
  - FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

**Antero**  
Midstream

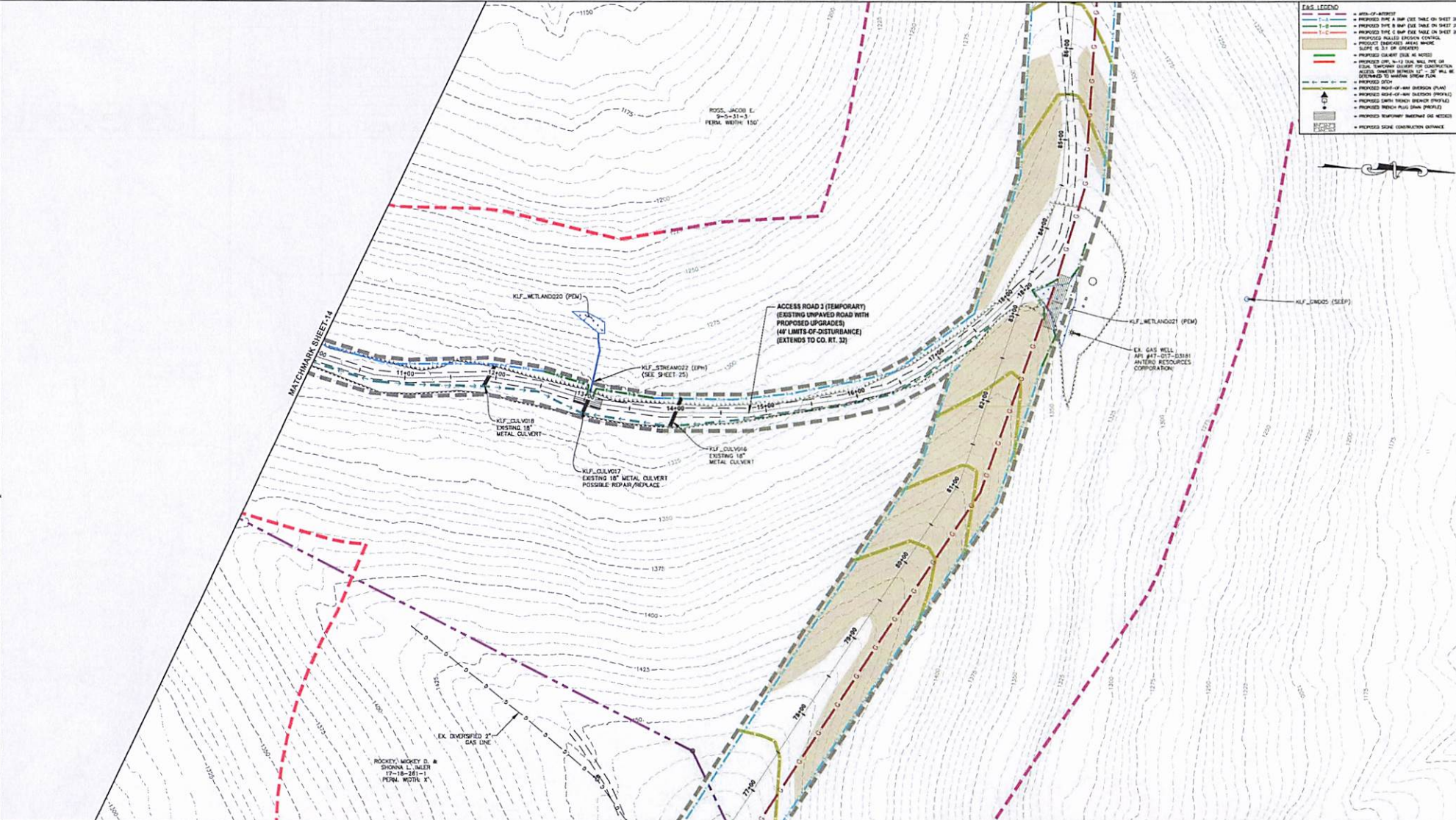
**SALEM HP DISCHARGE PIPELINE  
ACCESS ROAD PLAN SHEET**  
PROPOSED 6" STEEL CULVERT LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JBJ (TIG) DATE: 1/31/2024  
 CHECKED BY: JBJ (TIG) DATE: N/A  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 14-ARPS2

ROCKEY, MCKEY  
SHONNA L. INER  
17-16-261-1  
PERM. WIDTH: X

LAYOUT DATE: A12878 CAD FILE: A:\12878\12878-15550-00-AR2200-SALIM TO BAUS-GASLINE A12878\12878\SALEM HP DISCHARGE\ACCESS ROAD PLAN SHEETS\443 USER: jrfm.jrh



**ENG. LEGEND**

- 1-1 --- PROPOSED PIPE & HWP (SEE TABLE ON SHEET 30)
- 1-2 --- PROPOSED PIPE & HWP (SEE TABLE ON SHEET 30)
- 1-3 --- PROPOSED PIPE & HWP (SEE TABLE ON SHEET 30)
- 1-4 --- PROPOSED MANHOLE BRANCH (SEE SHEET 30)
- 1-5 --- PROPOSED BRANCH (SEE SHEET 30)
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- 1-100 --- PROPOSED BRANCH (SEE SHEET 30)

**THRASHER**

**IFP**

ISSUED FOR PERMITTING

DATE: \_\_\_\_\_

AFE # A12878

0 50 100  
HORIZ. SCALE IN FEET

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

**REVISION**

NO.	DESCRIPTION	DATE	BY

- GENERAL INFORMATION**
1. ALL DESIGN, STRENGTH OF PIPELINE AND MAWP CALCULATIONS ALONG WITH RIGHTING MOMENT PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVIEW ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR MAWP PROVIDED BY ANTERO.
  2. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLENFELDER, INC.
  3. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 (NAD 83) NORTH STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAD 83 (GEOIDAL) U.S. SURVEY FOOT.
  4. ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A STREET REPRESENTATION UNLESS WHERE THE PIPELINE WILL BE INSTALLED WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
  5. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM AERIAL FIELD SURVEY AND FIELD-GROUND PHOTOGRAPHS TAKEN FROM AERIAL RECORDS OR FILED IN THE LOCAL COUNTY COURTHOUSE TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION. A FULL PROPERTY SURVEY IS RECOMMENDED.
  6. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
  7. SEE SHEETS 28 & 29 REGARDING WATERBARS, CULVERTS AND DITCHES TO BE INSTALLED ON ACCESS ROADS. SEE SHEET 30 FOR CULVERT AND DITCH STATIONING ON ACCESS ROADS. CULVERT AND DITCH DESIGN ARE BASED ON AVAILABLE MAPPING AND ASSUMED PROPOSED ROAD SURFACE ELEVATIONS.
  8. THIS SHEET IS INTENDED TO BE PLOTTED ON AN 8 1/2" X 11" SHEET FOR REDUCTIONS. REFER TO SHEET 30 FOR THE ORIGINAL SCALE.
  9. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

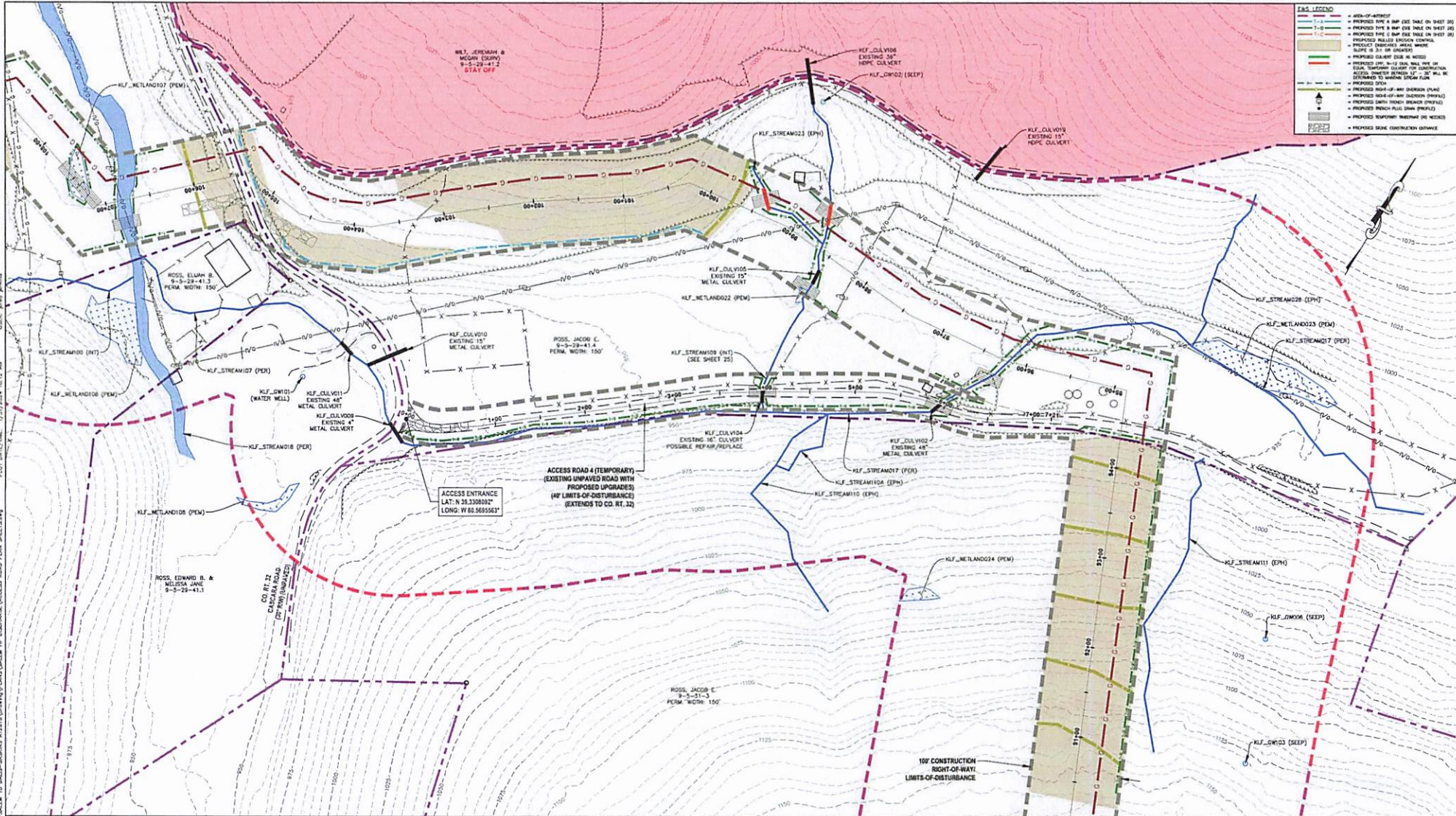
**Antero Midstream**

**SALEM HP DISCHARGE PIPELINE ACCESS ROAD PLAN SHEET**

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JJA (TTC) DATE: 1/31/2024  
 CHECKED BY: JRH (TTC) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 15-ARPS3



**EAS LEGEND**

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DRAWN BY: JCU  
 CHECKED BY: JCU  
 DATE: 1/23/2024  
 SCALE: AS SHOWN  
 REVISION No.: 0  
 SHEET: 16-ARPS4

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: **AFE # A12878**

0 50 100  
HORIZ. SCALE IN FEET

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**REVISION**

NO.	DESCRIPTION	DATE	BY

**GENERAL INFORMATION**

- ALL DESIGN, STRENGTH OF PIPELINE AND MAJOR CALCULATIONS ALONG WITH EXISTING METEOROLOGICAL DATA PROVIDED TO THRASHER FOR INCLUSION ON THE PLAN. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
- FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT
- ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED WITHIN THE PERMITTED CORRIDOR. THE CORRIDOR IS THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
- THE BOUNDARY MONUMENTS (FIND) AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM AERIAL PHOTO SURVEY AND RESEARCHED INFORMATION TAKEN FROM RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
- ALL EXISTING FENCES AND BORDERS DESTROYED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
- SEE SHEETS 16-8 TO 16-15 REGARDING WATERBARS, CULVERTS AND DITCHES TO BE INSTALLED ON ACCESS ROADS. SEE SHEET 16-15 FOR CULVERT AND DITCH SIZING ON ACCESS BARRIER CULVERT AND DITCH SECTIONS AND BASED ON AVAILABLE MAPPING AND ASSUMED PROPOSED ROAD SURFACE ELEVATIONS.
- THIS SHEET IS INTENDED TO BE PLOTTED ON A8D 9 (24" X 36") FOR REDUCING, REFER TO DRAWING SCALE.
- FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

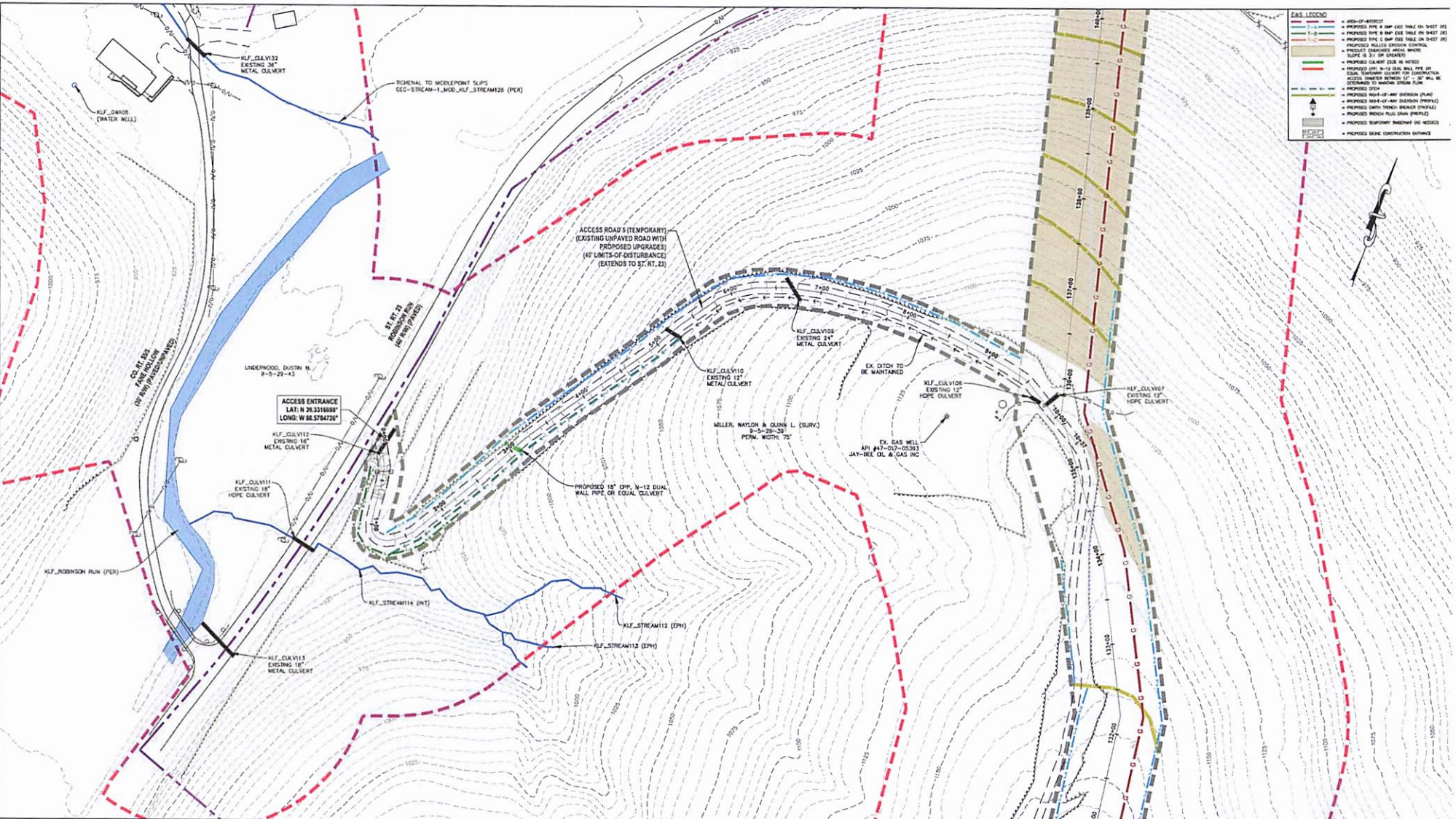
**Antero Midstream**

**SALEM HP DISCHARGE PIPELINE ACCESS ROAD PLAN SHEET**  
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JCU (TIG) DATE: 1/23/2024  
 CHECKED BY: JCU (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 16-ARPS4

LAYOUT TAB: ARPS5  
 CAD FILE: R:\050150-11056-00-ANTHO-SALEM TO HARRIS-DODDRIDGE A12878\050150\11056\ARPS5\SALEM HP DISCHARGE PIPELINE ACCESS ROAD PLAN SHEETS.dwg  
 PLOT DATE/TIME: 1/31/2024 8:38 AM  
 USER: jared.jordan



**EXP. LEGEND**

- AREA OF INTEREST
- PROPOSED 6" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 8" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 10" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED PULLED EXPOSURE CONTROL
- PROPOSED EXISTING BEARS NOTE
- PROPOSED SLOPE 1:1 (SHP SLOPES)
- PROPOSED SLOPE 2:1 (SHP SLOPES)
- PROPOSED 18" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 24" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 30" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 36" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 42" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 48" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 54" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 60" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 66" SAMP EXH EXH TUBE ON SHEET 181
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- PROPOSED 270" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 276" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 282" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 288" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 294" SAMP EXH EXH TUBE ON SHEET 181
- PROPOSED 300" SAMP EXH EXH TUBE ON SHEET 181

**THRASHER**

**IFP**  
 ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
 AFE # A12878

0 50 100  
 HORIZ. SCALE IN FEET

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

**REVISION**

NO.	DESCRIPTION	DATE	BY

- GENERAL INFORMATION**
1. ALL DESIGN, STRENGTH OF PIPELINE AND WADP CALCULATIONS ALONG WITH NOTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR NOTES PROVIDED BY ANTERO.
  2. FIELD DELINEATION PERFORMED AND PROVIDED BY KLENFELDER, INC.
  3. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT; VERTICAL - NAVD 83 (GEOIDAL) U.S. SURVEY FOOT.
  4. ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
  5. THE BOUNDARY MONUMENTS FOUND AND PROPERTY LINES SHOWN ON THIS DRAWING WERE OBTAINED FROM PARTIAL FIELD SURVEY AND RESEARCHED INFORMATION TAKEN FROM VARIOUS RECORDS ON FILE IN THE LOCAL COUNTY COURTHOUSE. TO OBTAIN A MORE ACCURATE BOUNDARY LINE LOCATION, A FULL PROPERTY SURVEY IS RECOMMENDED.
  6. ALL EXISTING FENCES AND ROADS DISTURBED DURING CONSTRUCTION TO BE REPLACED BY CONTRACTOR POST-CONSTRUCTION.
  7. SEE SHEETS 28 & 29 REGARDING WATERBARS, CULVERTS AND DITCHES TO BE INSTALLED ON ACCESS ROADS. SEE SHEET 38 FOR CULVERT AND DITCH SIZES ON ACCESS ROADS. CULVERTS AND DITCH SIZES ARE BASED ON AVAILABLE MAPPING AND ASSUMED PROPOSED ROAD SURFACE ELEVATIONS.
  8. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (24" X 36") FOR RESOLUTIONS REFER TO DRAWING SCALE.
  9. FOR LEGEND/ABBREVIATION INFORMATION, REFER TO THE GENERAL NOTES SHEET.

**Antero Midstream**

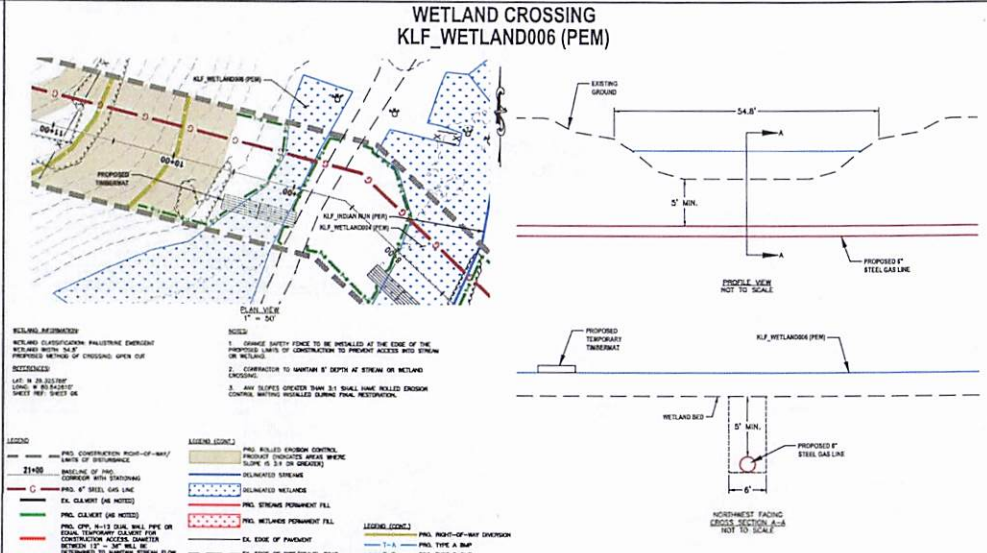
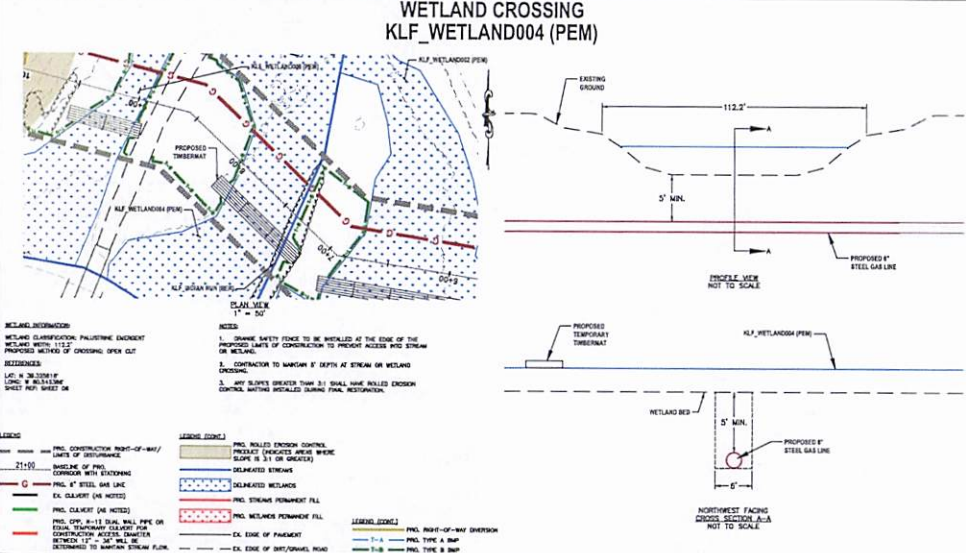
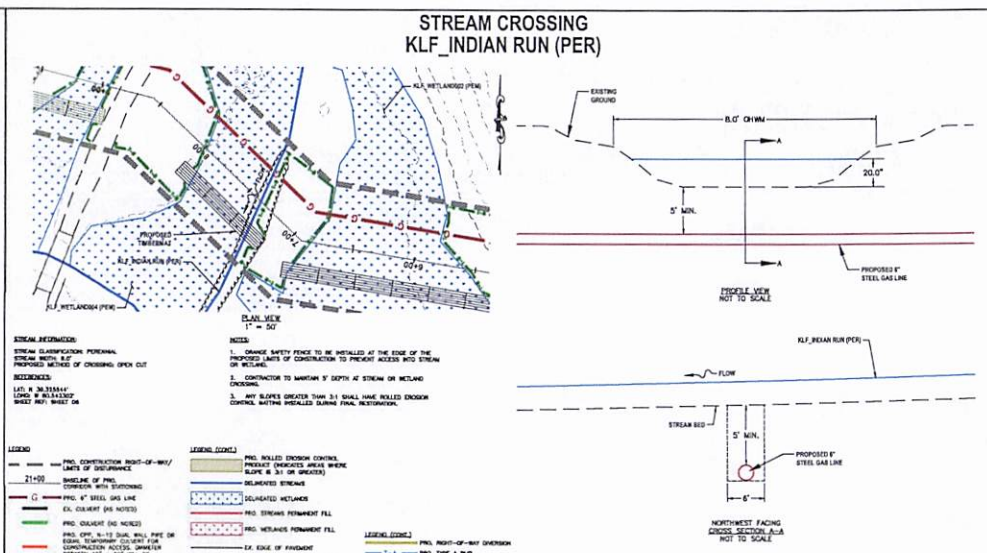
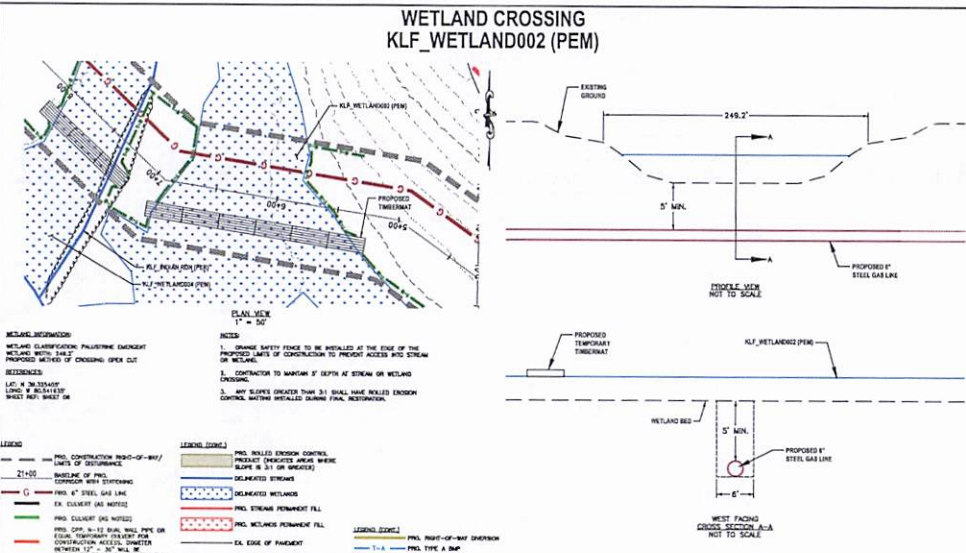
**SALEM HP DISCHARGE PIPELINE ACCESS ROAD PLAN SHEET**  
 PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JEL (TIG) DATE: 1/31/2024  
 CHECKED BY: JSH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 17-ARPS5



LAYOUT DATE: 5/20/2024  
 CAD FILE: I:\03\1530-1550-00-ANTHRO-SALEM HP DISCHARGE PIPELINE AND WETLAND CROSSING SHEETS.dwg  
 PLOT DATE/TIME: 1/31/2024 9:45 AM  
 USER: James Johnson



IFP

ISSUED FOR PERMITTING

DATE: \_\_\_\_\_

AFE # A12878

SUMMARY OF MATERIALS (3D)		
DESCRIPTION	QTY	NO.

SUMMARY OF MATERIALS (3D)		
DESCRIPTION	QTY	NO.

REVISION	
DESCRIPTION	DATE BY

GENERAL INFORMATION

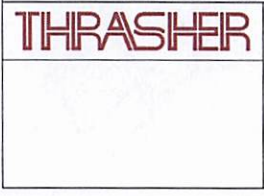
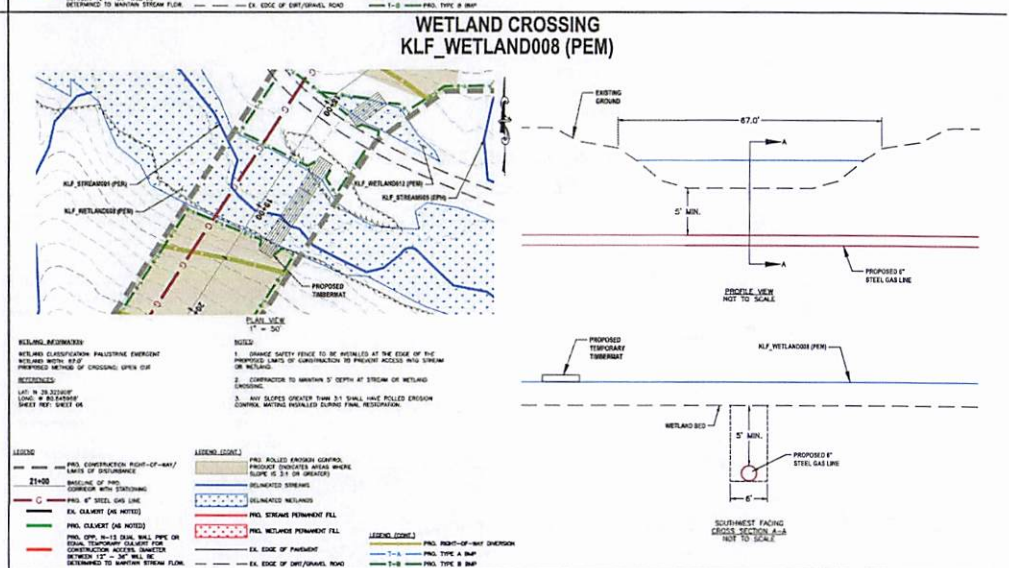
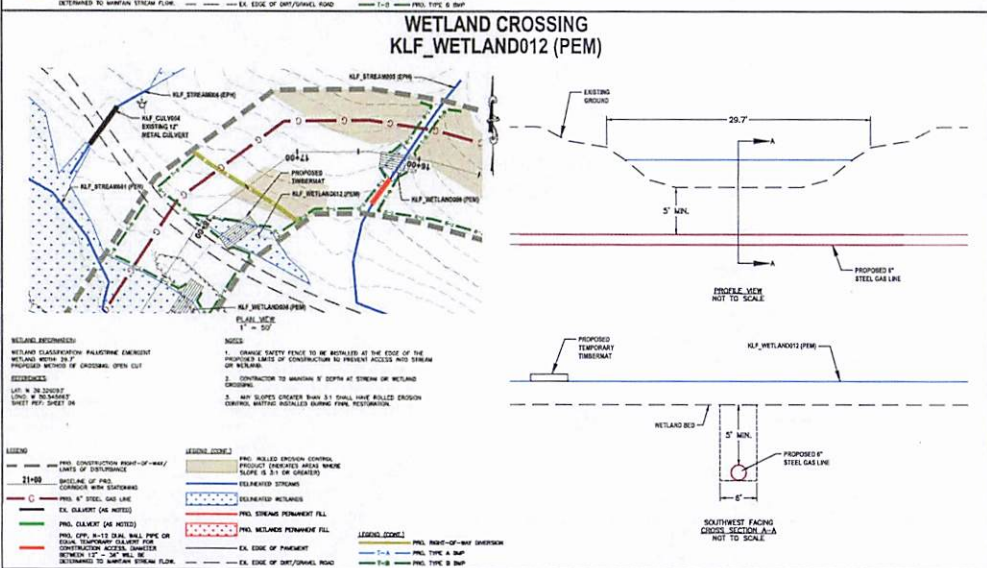
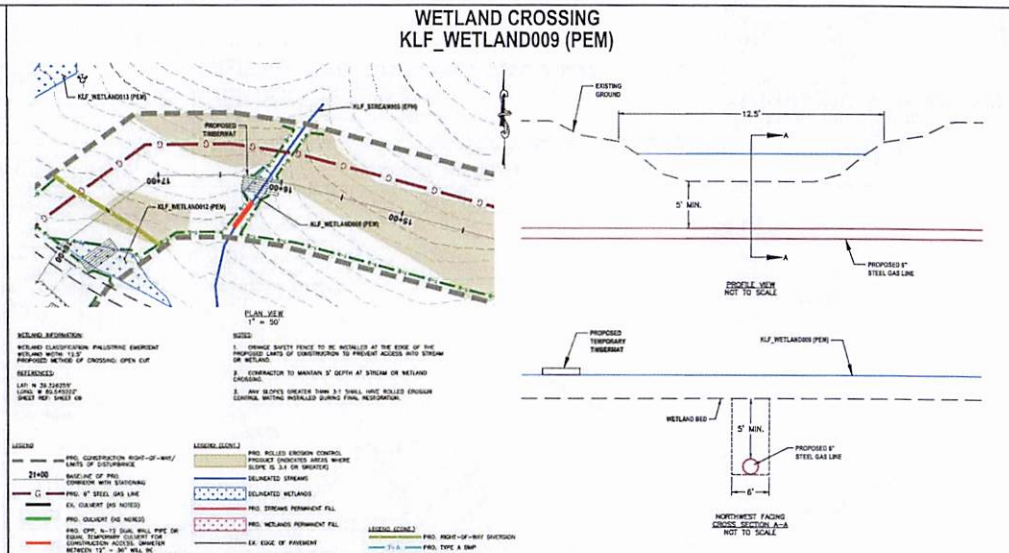
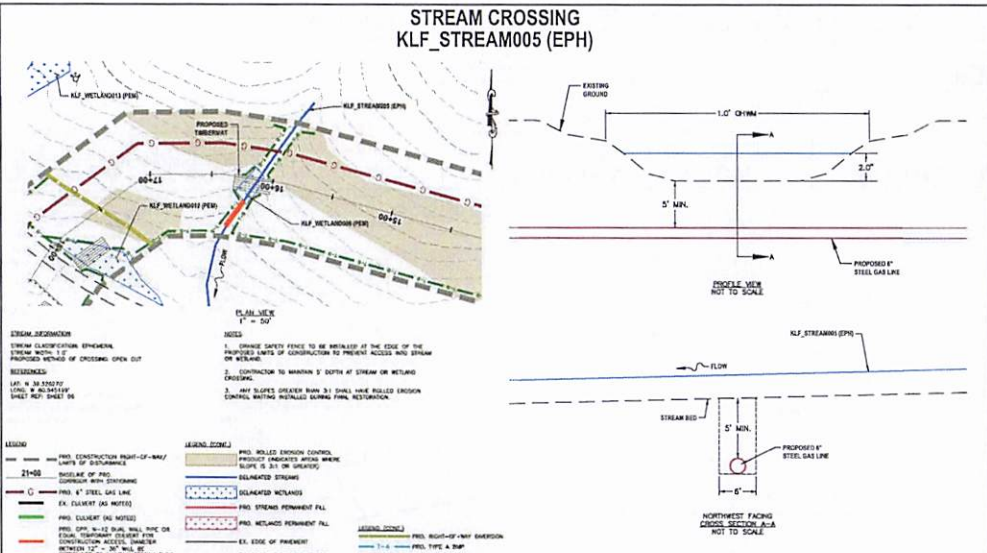
- ALL DESIGN, STRENGTH OF PIPELINE AND MAOP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
- FIELD DELINEATION PERFORMED AND PROVIDED BY KLEINFELDER, INC.
- COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - 8400 85 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT  
VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT
- ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
- THIS SHEET IS INTENDED TO BE PLOTTED ON AHS D (22" x 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

SALEM HP DISCHARGE PIPELINE  
STREAM & WETLAND CROSSINGS

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JED (TIG) DATE: 1/31/2024  
 CHECKED BY: JKH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 20-S&WC1

USER: jared.johnson  
 PLOT DATE/TIME: 1/27/2024 8:40 AM  
 PLOT DATE/TIME: 1/27/2024 8:40 AM  
 LAYOUT TAG: S&WC  
 CAD FILE: R:\05011506-11506-00-INTRO-S&WC TO B&W-C&D&E\21-S&WC\STREAM AND WETLAND CROSSINGS\STREAM AND WETLAND CROSSINGS\21-S&WC\S&WC21.dwg



**IFP**  
 ISSUED FOR PERMITTING  
 DATE: **AFE # A12878**

SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.

SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.

GENERAL INFORMATION			
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAJOR CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVIEW. ON THE PLANS THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.		
2.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.		
3.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANS; NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT		
4.	ALL STATINGS SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IF IT IS NOT A DIRECT REPRESENTATION OF MEANS, THE PIPELINE WILL BE INSTALLED PER THE PERMITTED CORRIDOR WILL BE CORRELATED BY THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.		
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON A85 D (22" X 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.		

**Antero**  
Midstream

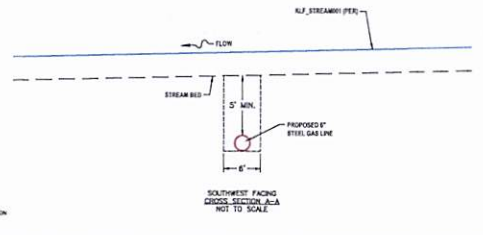
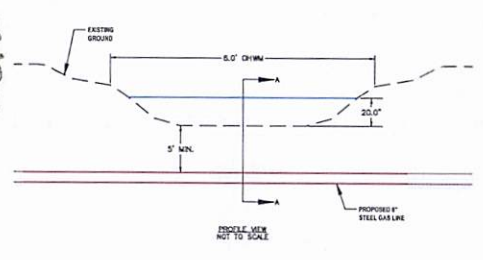
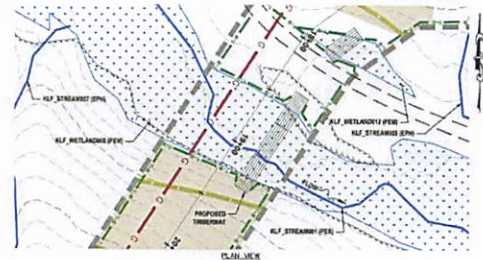
**SALEM HP DISCHARGE PIPELINE  
STREAM & WETLAND CROSSINGS**  
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JEU (TTC) | DATE: 1/31/2024  
 CHECKED BY: JEU (TTC) | AFE No.: A12878  
 SCALE: AS SHOWN | SHEET: 21-S&WC2  
 REVISION No.: 0

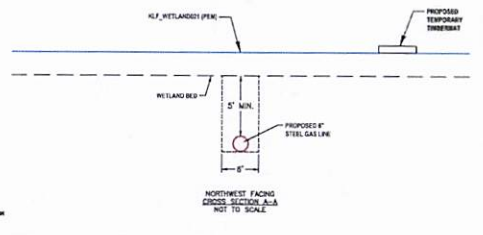
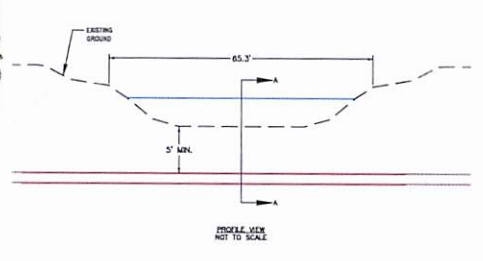
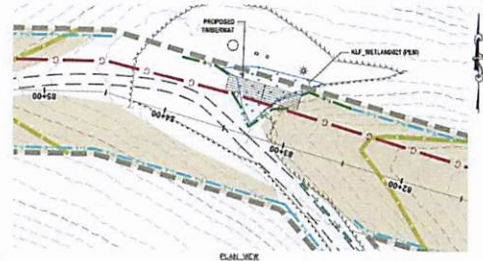


USER: JARED JAMISON  
 PLOT DATE/TIME: 1/27/2024 9:40 AM  
 LAYOUT MAN: SAMKIS  
 CAD FILE: K:\2023\115506-00-INTSR-03-01\SUMMARY OF MATERIALS\STREAM AND WETLAND CROSSING SHEETS.dwg

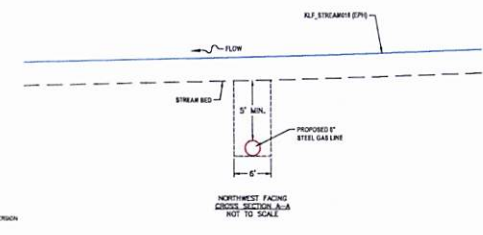
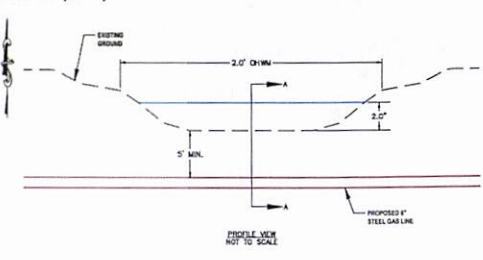
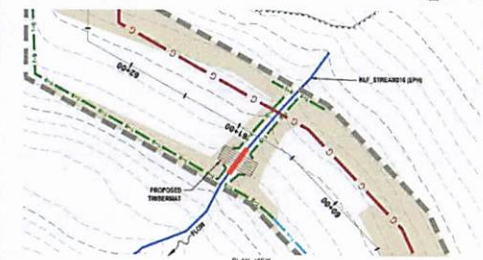
### STREAM CROSSING KLF\_STREAM001 (PER)



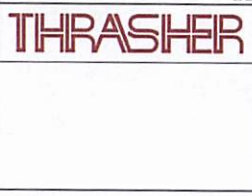
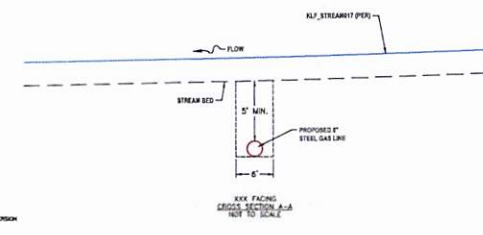
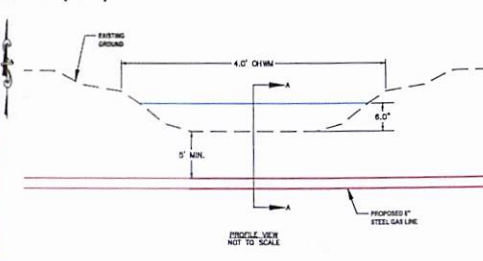
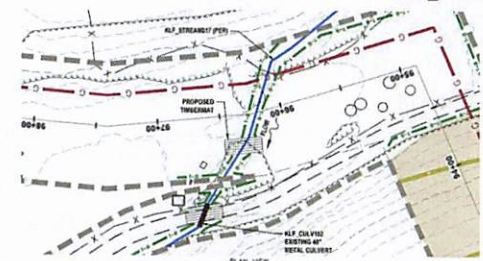
### WETLAND CROSSING KLF\_WETLAND021 (PEM)



### STREAM CROSSING KLF\_STREAM016 (EPH)



### STREAM CROSSING KLF\_STREAM017 (PER)



**IFP**  
 ISSUED FOR PERMITTING  
 DATE: \_\_\_\_\_  
 AFE # A12878

#### SUMMARY OF MATERIALS (3D)

#### SUMMARY OF MATERIALS (3D)

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

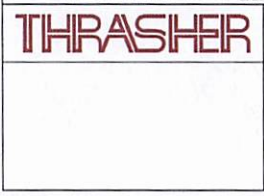
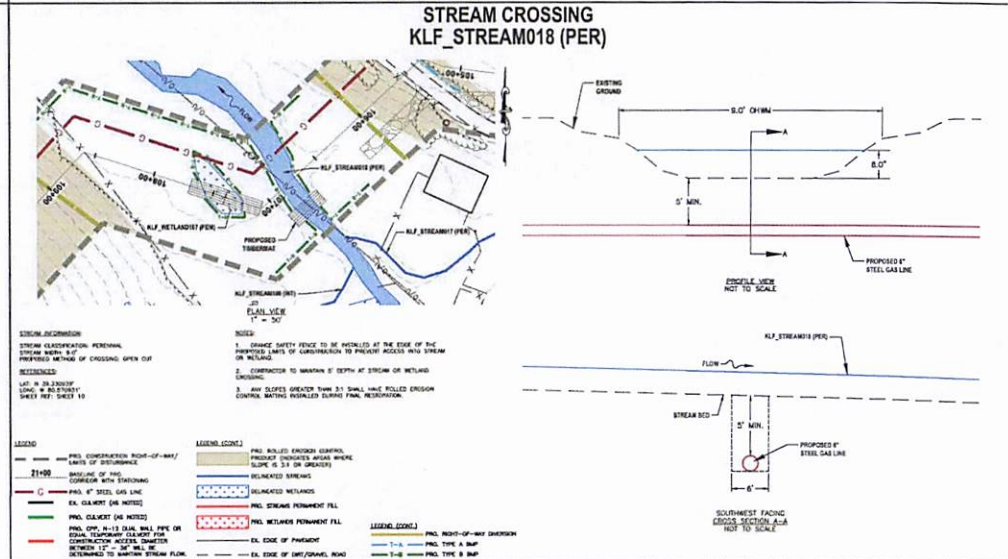
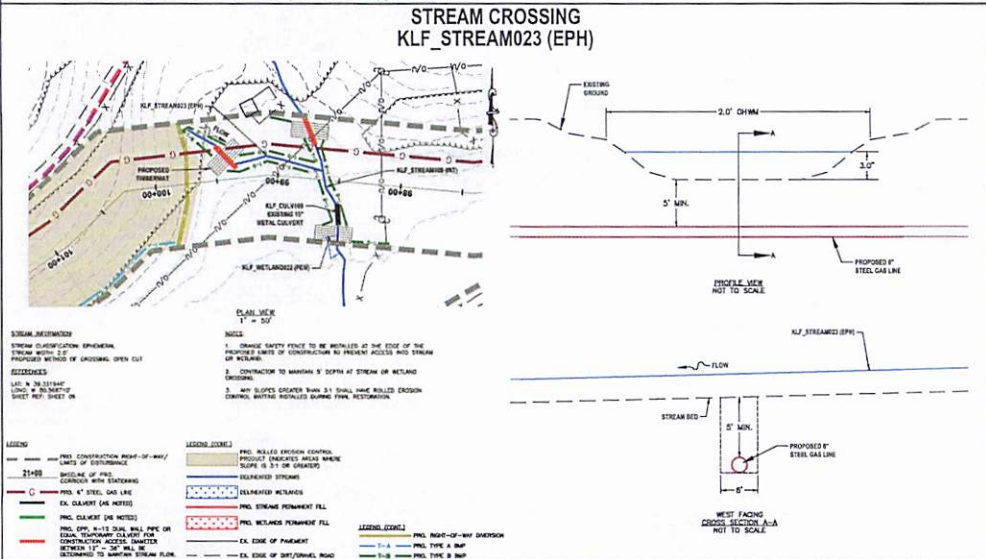
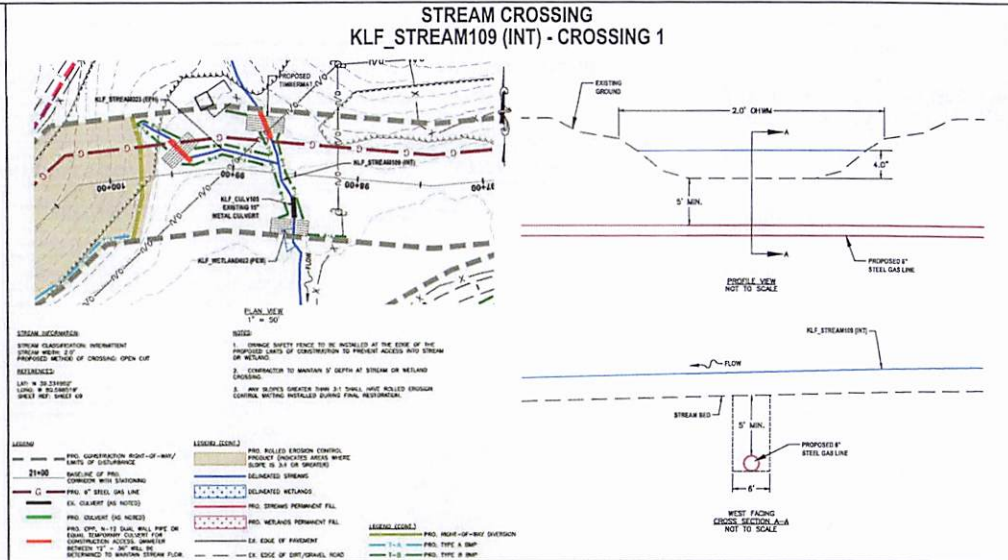
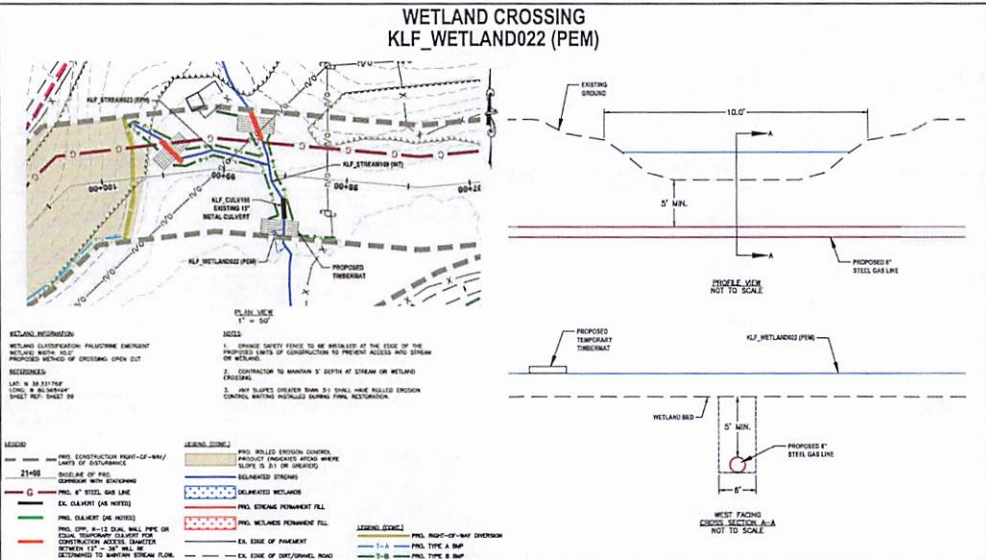
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

#### GENERAL INFORMATION

1. ALL DESIGN, STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
2. FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.
3. COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY:  
 HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT  
 VERTICAL - NAVD 83 CATALOGUE, U.S. SURVEY FOOT
4. ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.
5. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (36" X 48") FOR PRODUCTIONS. REFER TO GRAPHIC SCALE.

**SALEM HP DISCHARGE PIPELINE  
 STREAM & WETLAND CROSSINGS**  
 PROPOSED 6" STEEL GAS LINE  
 HARRISON & DODDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JDI (TIG) DATE: 1/27/2024  
 CHECKED BY: JSH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN SHEET: 22-S&WC3  
 REVISION No.: 0

LAYOUT VAN: SAHVC; CAD FILE: H:\000105-11556-00-ANTHR-D\SUM-DISCHARGE\STREAM AND WETLAND CROSSING SHEETS.dwg; PLOT DATE/TIME: 1/31/2024 8:41 AM; USER: jared.johns



**IFP**  
 ISSUED FOR PERMITTING  
 DATE:  
 AFE # A12878

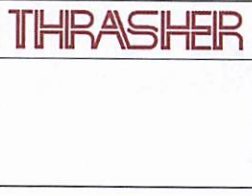
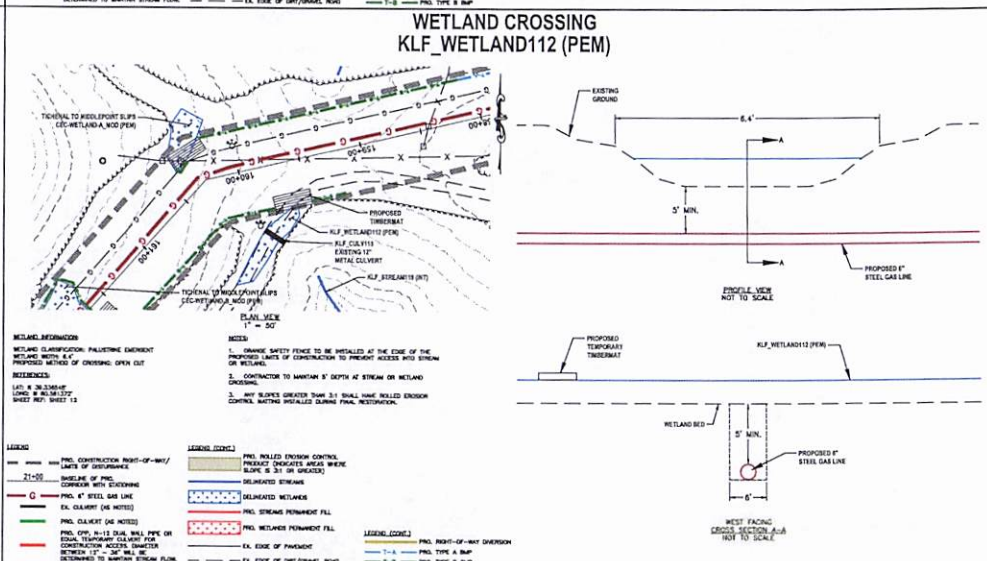
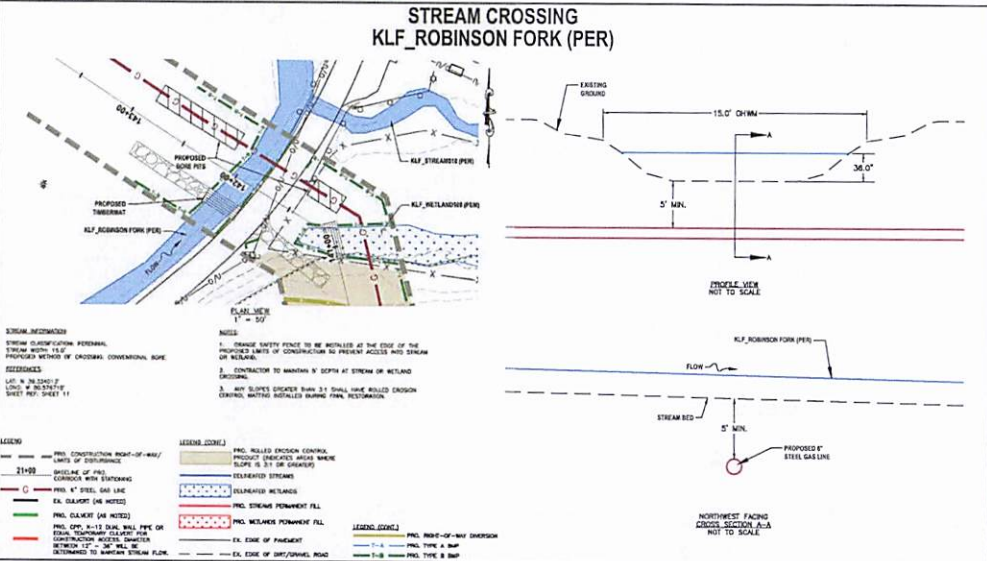
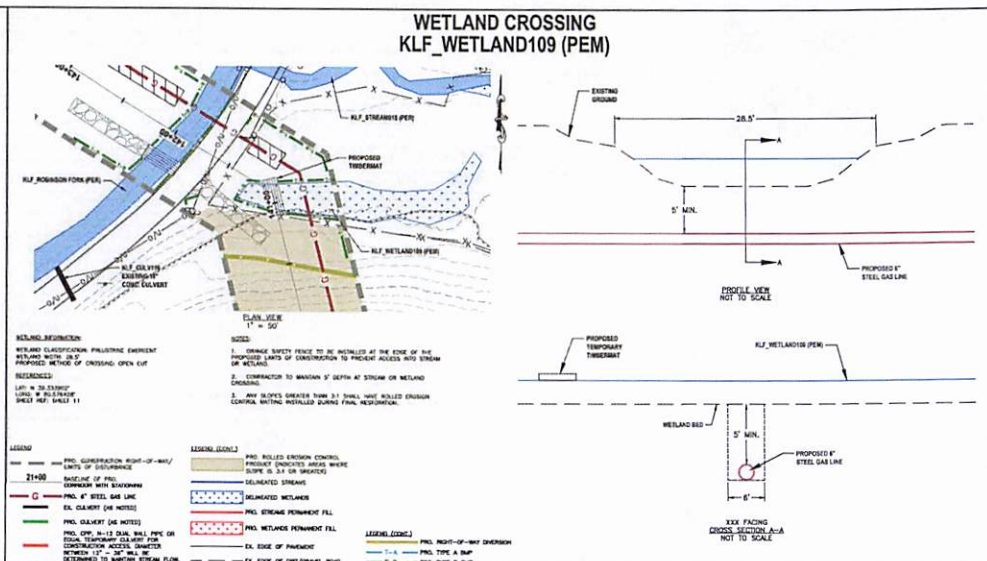
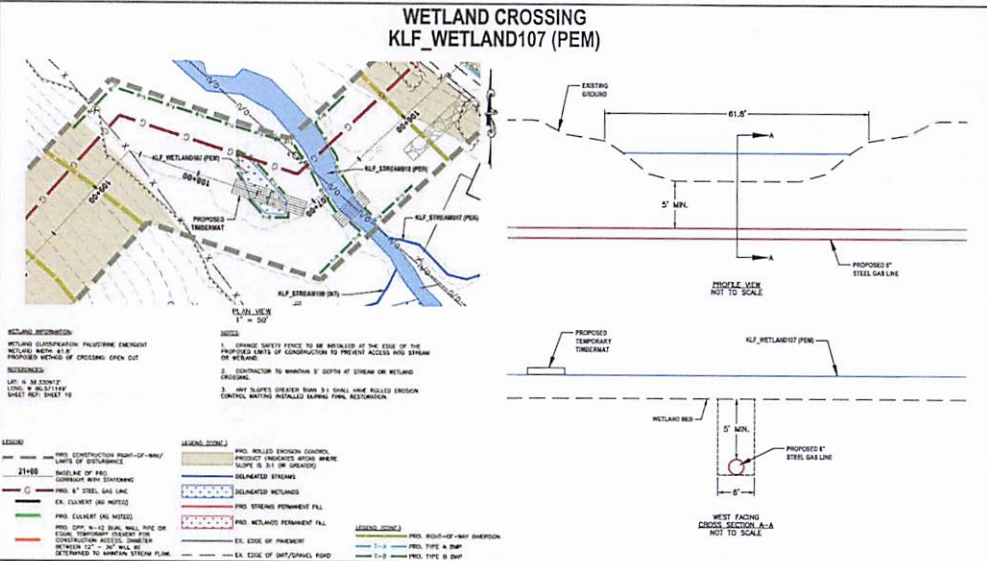
SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION		
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAWP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVIEW ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.	
2.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.	
3.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT	
4.	ALL STATING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.	
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI Z 39.1 (24" x 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.	

**SALEM HP DISCHARGE PIPELINE  
 STREAM & WETLAND CROSSINGS**  
 PROPOSED 6" STEEL GAS LINE  
 HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JSH (TIG) DATE: 1/31/2024  
 CHECKED BY: JSH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 6 SHEET: 23-S&W4

LAYOUT TAB: SALEM CD: 1051330-11056-00-ANTDIS-3A2EM-1212787-DENNY/STANLEY/SALAM HP DISCHARGE/STREAM AND WETLAND CROSSINGS SHEETS 11/27/2024 9:41 AM  
 PLOT DATE/TIME: 1/27/2024 9:41 AM  
 PLOT SCALE: 1"=50'  
 LAYOUT TAB: SALEM CD: 1051330-11056-00-ANTDIS-3A2EM-1212787-DENNY/STANLEY/SALAM HP DISCHARGE/STREAM AND WETLAND CROSSINGS SHEETS 11/27/2024 9:41 AM  
 PLOT DATE/TIME: 1/27/2024 9:41 AM  
 PLOT SCALE: 1"=50'



**IFP**  
 ISSUED FOR PERMITTING  
 DATE: \_\_\_\_\_  
 AFE # A12878

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

GENERAL INFORMATION		
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAAP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTENGO AND PROVIDED TO THRASHER. FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTENGO.	
2.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLENFELDER, INC.	
3.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT	
4.	ALL STATIONING SHOWN IS HORIZONTAL AND PERTAINS TO THE BASELINE OF THE PERMITTED CORRIDOR. IT IS NOT A DIRECT REPRESENTATION OF WHERE THE PIPELINE WILL BE INSTALLED. INSTALLATION WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTENGO CONSTRUCTION REPRESENTATIVE.	
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON AN 11" X 17" (297 x 425) FOR REDUCTIONS, REFER TO GRAPHIC SCALE.	

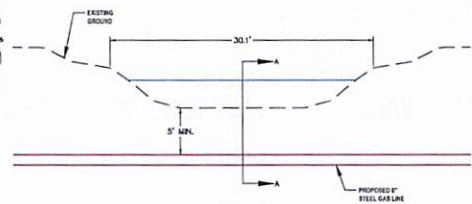
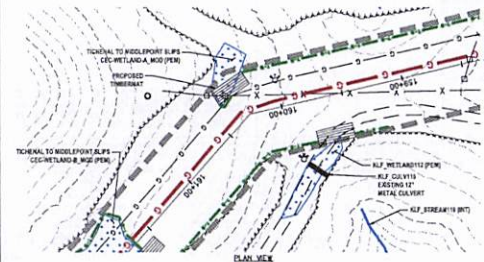
**Antero**  
 Midstream

**SALEM HP DISCHARGE PIPELINE  
 STREAM & WETLAND CROSSINGS**  
 PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIEGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: AJJ (TIG) DATE: 1/31/2024  
 CHECKED BY: JEH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN SHEET: 24-S&WC5  
 REVISION No.: 0

USER: jwpf-jawha  
 PLOT DATE/TIME: 1/17/2024 8:41 AM  
 PLOT FILE: A:\0510150-1058-00-ANTHO-DALEH-GASLINE\1058-00-ANTHO-DALEH-HP DISCHARGE\STREAM AND WETLAND CROSSING SHEETS.dwg  
 LAYOUT NAME: S&WC6  
 DTD FILE: A:\0510150-1058-00-ANTHO-DALEH-GASLINE\1058-00-ANTHO-DALEH-HP DISCHARGE\STREAM AND WETLAND CROSSING SHEETS.dwg

### WETLAND CROSSING TICHENAL TO MIDDLEPOINT SLIPS CEC-WETLAND-A\_MOD (PEM)



**WETLAND INFORMATION**  
 WETLAND CLASSIFICATION: PALUSTRINE EMERGENT  
 STREAM WIDTH: 30.1'  
 PROPOSED METHOD OF CROSSING: OPEN CUT

**REVISIONS:**  
 L&I: 10/2/2023  
 LINES 8 & 9 REVISION  
 SHEET NO. SHEET 13

**NOTES:**  
 1. DRAWING SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.  
 2. CONSTRUCTION TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.  
 3. ANY SLOPES GREATER THAN 3:1 SHALL HAVE SOILED EXPOSED CONTROL MEASURES INSTALLED DURING FINAL RESTORATION.

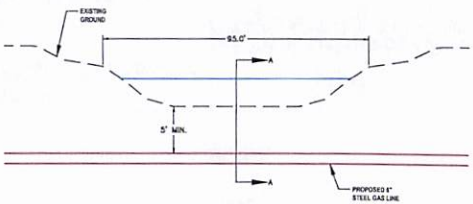
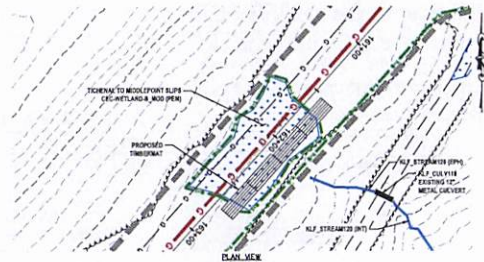
**LEGEND:**  
 PRO. CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE  
 21+00 BASELINE OF PRO. CORRIDOR WITH EXISTING  
 PRO. 6" STEEL GAS LINE  
 EX. CULVERT (AS NOTED)  
 PRO. STREAM PERMANENT FILL  
 EX. CULVERT (AS NOTED)  
 PRO. 4'-12" DIAM. WALL PIPE OR EQUAL TEMPORARY CULVERT FOR CONSTRUCTION ACCESS (LIMITED BETWEEN 17' - 36" WILL BE DETERMINED TO MAINTAIN STREAM FLOW)  
 EX. EDGE OF PAVEMENT  
 EX. EDGE OF DRIVE/RAMP/ROAD

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

### WETLAND CROSSING TICHENAL TO MIDDLEPOINT SLIPS CEC-WETLAND-B\_MOD (PEM)



**WETLAND INFORMATION**  
 WETLAND CLASSIFICATION: PALUSTRINE EMERGENT  
 STREAM WIDTH: 30.1'  
 PROPOSED METHOD OF CROSSING: OPEN CUT

**REVISIONS:**  
 L&I: 10/2/2023  
 LINES 8 & 9 REVISION  
 SHEET NO. SHEET 13

**NOTES:**  
 1. DRAWING SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.  
 2. CONSTRUCTION TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.  
 3. ANY SLOPES GREATER THAN 3:1 SHALL HAVE SOILED EXPOSED CONTROL MEASURES INSTALLED DURING FINAL RESTORATION.

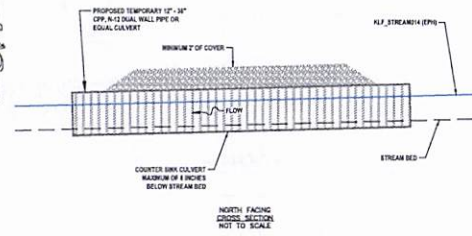
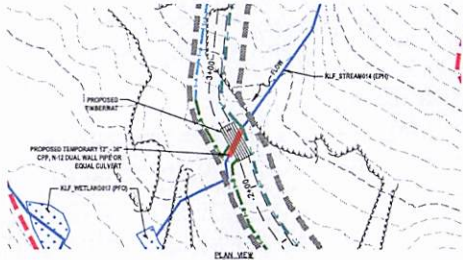
**LEGEND:**  
 PRO. CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE  
 21+00 BASELINE OF PRO. CORRIDOR WITH EXISTING  
 PRO. 6" STEEL GAS LINE  
 EX. CULVERT (AS NOTED)  
 PRO. STREAM PERMANENT FILL  
 EX. CULVERT (AS NOTED)  
 PRO. 4'-12" DIAM. WALL PIPE OR EQUAL TEMPORARY CULVERT FOR CONSTRUCTION ACCESS (LIMITED BETWEEN 17' - 36" WILL BE DETERMINED TO MAINTAIN STREAM FLOW)  
 EX. EDGE OF PAVEMENT  
 EX. EDGE OF DRIVE/RAMP/ROAD

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

### STREAM CROSSING KLF\_STREAM014 (EPH)



**STREAM INFORMATION**  
 STREAM CLASSIFICATION: EPHEMERAL  
 STREAM WIDTH: 2.0'  
 PROPOSED METHOD OF CROSSING: TEMPORARY CULVERT INSTALLATION

**REVISIONS:**  
 L&I: 10/2/2023  
 LINES 9 & 10 REVISION  
 SHEET NO. SHEET 13

**NOTES:**  
 1. DRAWING SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.  
 2. CONSTRUCTION TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.  
 3. CULVERT SHALL MEET APPLICABLE AASHTO AND/OR REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

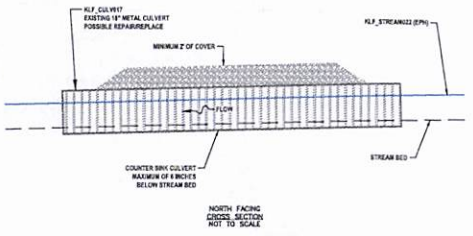
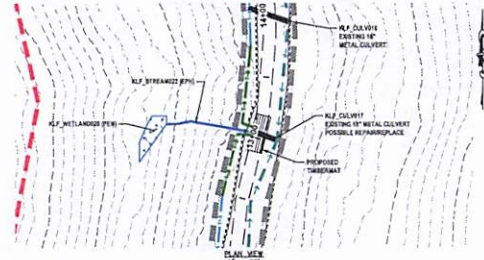
**LEGEND:**  
 PRO. CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE  
 21+00 BASELINE OF PRO. CORRIDOR WITH EXISTING  
 PRO. 6" STEEL GAS LINE  
 EX. CULVERT (AS NOTED)  
 PRO. STREAM PERMANENT FILL  
 EX. CULVERT (AS NOTED)  
 PRO. 4'-12" DIAM. WALL PIPE OR EQUAL TEMPORARY CULVERT FOR CONSTRUCTION ACCESS (LIMITED BETWEEN 17' - 36" WILL BE DETERMINED TO MAINTAIN STREAM FLOW)  
 EX. EDGE OF PAVEMENT  
 EX. EDGE OF DRIVE/RAMP/ROAD

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
 DELINEATED STREAM  
 DELINEATED WETLAND  
 PRO. STREAM PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
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 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

### STREAM CROSSING KLF\_STREAM022 (EPH)



**STREAM INFORMATION**  
 STREAM CLASSIFICATION: EPHEMERAL  
 STREAM WIDTH: 2.0'  
 PROPOSED METHOD OF CROSSING: TEMPORARY CULVERT INSTALLATION

**REVISIONS:**  
 L&I: 10/2/2023  
 LINES 9 & 10 REVISION  
 SHEET NO. SHEET 13

**NOTES:**  
 1. DRAWING SAFETY FENCE TO BE INSTALLED AT THE EDGE OF THE PROPOSED LIMITS OF CONSTRUCTION TO PREVENT ACCESS INTO STREAM OR WETLAND.  
 2. CONSTRUCTION TO MAINTAIN 5' DEPTH AT STREAM OR WETLAND CROSSING.  
 3. CULVERT SHALL MEET APPLICABLE AASHTO AND/OR REQUIREMENTS FOR THE SPECIFIED CULVERT TYPE.

**LEGEND:**  
 PRO. CONSTRUCTION RIGHT-OF-WAY/LIMITS OF DISTURBANCE  
 21+00 BASELINE OF PRO. CORRIDOR WITH EXISTING  
 PRO. 6" STEEL GAS LINE  
 EX. CULVERT (AS NOTED)  
 PRO. STREAM PERMANENT FILL  
 EX. CULVERT (AS NOTED)  
 PRO. 4'-12" DIAM. WALL PIPE OR EQUAL TEMPORARY CULVERT FOR CONSTRUCTION ACCESS (LIMITED BETWEEN 17' - 36" WILL BE DETERMINED TO MAINTAIN STREAM FLOW)  
 EX. EDGE OF PAVEMENT  
 EX. EDGE OF DRIVE/RAMP/ROAD

**LEGEND (CONT.):**  
 PRO. WELDED ENDORF CONTROLS (PRODUCT CHANGES AREAS WHERE SLOPE IS 3:1 OR GREATER)  
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**LEGEND (CONT.):**  
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 PRO. WETLAND PERMANENT FILL  
 PRO. WETLAND PERMANENT FILL  
 PRO. 1'-4" PRO. RIGHT-OF-WAY DIMENSION  
 PRO. TYPE A RUP  
 PRO. TYPE B RUP

**THRASHER**

**IFP**  
 ISSUED FOR PERMITTING

DATE: **AFE # A12878**

SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.

SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY	NO.

GENERAL INFORMATION			
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH ROUTINGS WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.		
2.	FIELD DELINEATION PERFORMED AND PROVIDED BY: KLEINFELDER, INC.		
3.	COORDINATE SYSTEM USED FOR MAPPING AND TOPOGRAPHY: HORIZONTAL - NAD 83 WEST VIRGINIA STATE PLANE, NORTH ZONE, U.S. SURVEY FOOT VERTICAL - NAVD 83 (GEOID), U.S. SURVEY FOOT		
4.	ALL DISTURBED SHORES BE HORIZONTAL AND PREPARED TO THE BASELINE OF THE PERMITTED CORRIDOR. IF IT IS NOT A DIRECT REPRESENTATION OF BASIC THE PIPELINE WILL BE INSTALLED WITHIN THE PERMITTED CORRIDOR WILL BE COORDINATED IN THE FIELD BY ANTERO CONSTRUCTION REPRESENTATIVE.		
5.	THIS SHEET IS INTENDED TO BE PLOTTED ON AHS D (24" X 36") FOR REDUCTIONS. REFER TO GRAPHIC SCALE.		

**Antero**  
 Midstream

**SALEM HP DISCHARGE PIPELINE  
 STREAM & WETLAND CROSSINGS**  
 PROPOSED 6" STEEL GAS LINE

HARRISON & DODDridge COUNTIES, WEST VIRGINIA  
 DRAWN BY: JEU (TGT) DATE: 1/31/2024  
 CHECKED BY: JEU (TGT) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 25-S&WC6



**GENERAL NOTES**

- ANTERO WILL OBTAIN AN ENCROACHMENT PERMIT (FORM 800-105) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- ANY DISCREPANCIES FOUND BY THE CONTRACTOR BETWEEN THE DRAWINGS AND SURVEY DATA AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE MANAGER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH MATTERS. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- WORK SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS, DETAILS AND TYPICALS. ANY DEVIATIONS OR ADDITIONS MUST BE APPROVED BY ANTERO PROJECT MANAGEMENT OR DESIGNATED PROJECT REPRESENTATIVE.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AT HIS OR HER EXPENSE, OF ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL CALL WEST VIRGINIA 811.
- ALL MATERIALS TO BE FILL OR BACK FILL SHALL BE FREE OF ROOTS, ROCKS, Boulders, ORGANIC MATERIAL, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIALS. UNSATISFACTORY MATERIALS ALSO INCLUDE UNAPPROVED MAN MADE FILLS AND DEBRIS DERIVED FROM ANY SOURCE.
- A PRE-CONSTRUCTION ROCK-OFF MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.
- IF SPRINGS OR SEEPS AND/OR AN ACCUMULATION OF GROUND WATER IS OBSERVED ON A SIDE CUT OR CUT SLOPE PIPE TRENCH, IMMEDIATELY NOTIFY THE ON-SITE INSPECTOR FOR AN EVALUATION AND CONSIDERATION OF THE INSTALLATION OF A DRAINAGE SYSTEM.
- EROSION CONTROL, BLANKETS ARE REQUIRED FOR SLOPES OF 3:1 OR GREATER.
- HYDROMULCH (BONDED FIBER MATRAN) CAN BE UTILIZED AS A SUBSTITUTE TO EROSION CONTROL, BLANKETS WITH APPROVAL FROM ANTERO, EXCEPT FOR ON RESTORED STREAM BANKS AND ROAD BANKS. HYDROMULCH (BONDED FIBER MATRAN) SHALL ONLY BE A VALID SUBSTITUTE FOR EROSION CONTROL, BLANKETS DURING GRASS GROWING SEASONS.
- HYDROTASTIC PRESSURE TEST - WATER FROM ANTERO APPROVED SOURCES ONLY TO BE USED FOR HYDROTAST. NO DEWATERING IS PERMITTED WITHOUT PRIOR ANTERO APPROVAL. AND APPLICABLE PERMITS. NOTIFICATION REQUIRED TO ANTERO ENVIRONMENTAL PRIOR TO HYDROTAST.

**EROSION AND SEDIMENT CONTROL PLAN NARRATIVE/CONSTRUCTION SEQUENCES**

- THE EROSION AND SEDIMENT (EAS) CONTROL MEASURES FOR THE PIPELINE CONSTRUCTION ACTIVITIES CONSIST OF COMPOST FILTER SOCK, SILT FENCE, HEIGHT-OF-WAY ROW DIVERSIONS, TRENCH BREAKERS (PLUGS), AND TEMPORARY AND PERMANENT SEEDING AND MULCHING OR ANY OTHER APPROVED BMPs. AREAS LOCATED WITHIN TOTAL MAINTENANCE LINES (TML) WATERBODIES MAY SUBSTITUTE SILT FENCE AND COMPOST FILTER SOCK WITH AN ENHANCED BMP. BMP SPECIFICATIONS FOR THE EAS CONTROL PLAN (EASCP) AREA TO BE UTILIZED BY THE CONTRACTOR CONSTRUCTION ACCORDING TO THE PROVIDED PLAN. STRAHMAYER SALES WILL NOT BE USED AS AN EAS CONTROL MEASURE. EROSION CONTROL MEASURES WILL BE SPREAD ON-SITE AND SEEDED AND MULCHED. ON DISPOSD OF PROJECT AT A NEW DEVELOPMENT ENVIRONMENTAL PROTECTION (EPA) APPROVED LOCATION. THE FOLLOWING MAINTENANCE WILL BE PERFORMED UNTIL STABILIZATION HAS BEEN ACHIEVED.
- PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, CLEARLY MARK ALL CLEARANCE LIMITS, SENSITIVE AREAS, 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 O/SITE IMPACTS.
  - INSTALL STONE CONSTRUCTION ENTRANCES AT ALL LOCATIONS WHERE ACCESS ROADS WILL BE ACCESSING A PUBLIC ROADWAY.
  - INSTALL TEMPORARY EAS CONTROLS (SILT FENCE, ROW DIVERSIONS, ETC.) PRIOR TO ANY EARTH DISTURBING ACTIVITY, WHICH INCLUDES GRUBBING AND EXCAVATION, TO ENSURE, TO THE MAXIMUM EXTENT PRACTICABLE, THAT MINIMAL EROSION OR SEDIMENTATION OCCURS.
  - ROW DIVERSIONS AND/OR OTHER EROSION AND SEDIMENT CONTROL DEVICES WILL BE INSTALLED AS DICTATED ON THE PLANS SHEETS AND SPECIFIED IN THE DETAIL SHEETS. IF CLEANING AND GROOMING IS REQUIRED, SEE BELOW REGARDING THE MANAGEMENT AND DISPOSAL OF DEBRIS.
  - AFTER ACCESS TO AND AROUND THE PROPOSED UTILITY LINE HAS BEEN PROVIDED, THE GENERAL GRUBBING AND GRUBBING OF THE TREES AND BRUSH ALONG THE ROW FOR PIPE TRENCHING MAY COMMENCE TO THE WIDTH SPECIFIED IN THE EAS PLANS. ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEVIATION DEBRIS, THAT FLOW ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND REMOVED IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATERS, WATERBODIES, TREES AND CREEPS SHALL HAVE A CAP/SHEAR, WITH A MINIMUM OF A 1" OPENING AT EVERY MANHOLE OUTLET, LANDOWNER ACCESS POINT/RAIL, AND AN MINIMUM OF EVERY SIX FEET. EXCESS DEBRIS SHALL BE DISPOSED OF PROPERLY AND/OR COLLECTED AND REMOVED FROM THE SITE BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED. AREAS WHERE THE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RESEED IMMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.
  - MAJOR GRADING WITHIN THE ROW WILL BE CONDUCTED WHERE NECESSARY TO PROVIDE AN EVEN SURFACE FOR SAFE AND EFFICIENT OPERATION OF CONSTRUCTION EQUIPMENT. GRADING WILL BE THE MINIMUM AMOUNT NECESSARY AND BMPs WILL BE INSTALLED PROMPTLY. TREE STAMPS AND LARGE ROCKS AND Boulders WILL EITHER BE RELOCATED FOR SAFETY CONCERNS OR LAND APPLIED AS PER LANDOWNER STIPULATIONS.
  - EXCAVATE PIPELINE TRENCH. A MINIMUM COVER AS SPECIFIED IN THE MAINSTREAM CONSTRUCTION SPECIFICATIONS SHALL BE PROVIDED ABOVE PIPELINE AT ALL WELLS, STREAMS AND ROADWAYS.
  - 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 UNPAVED. 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 SAVE AND SEGREGATE TOPSOIL, WHERE APPLICABLE.
  - TEMPORARY EAS CONTROLS FOR STREAM CROSSINGS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE EASCP AND ASSOCIATED DETAIL SHEETS.
  - STREAM AND RIVER PIPELINE CROSSING CONSTRUCTION METHODS WILL BE INSTALLED AT LOCATIONS SHOWN ON THE EAS PLAN SHEETS AND AS SPECIFIED ON THE CONFORMANCE SHEETS. WATERBODIES WILL BE CROSSED WITH TEMPORARY BRIDGES, SUCH AS TRIMMER MATS OR APPROVED EQUAL CROSSINGS. PRIOR TO CROSSING THE CONFORMANCE, STREAM/RIVER STABILIZATION WILL BE COMPLETED IMMEDIATELY FOLLOWING COMPLETION OF THE PIPELINE INSTALLATION.
  - WETLAND CROSSING NOTHS FOR UTILITY CROSSINGS WILL BE KEPT TO A MINIMUM AND WILL BE STABILIZED BY PLACING TRIMMER MATS, BIOMAT, OR FINE FIBERED 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 SHEAR (OR OTHER DEVICE) SHOULD BE USED TO PREVENT WASH OF SOILS.
  - PIPELINE SECTIONS WILL BE TRANSPORTED TO THE WORK AREA AND STRUNG ALONG THE WORKING SIDE OF THE ROW PARALLEL TO THE TRENCHLINE. THE USUALLY WILL BE INSTALLED TO CONFORM TO THE TRENCH CONTOUR, ALIGNED, WELDED AND PLACED ON TEMPORARY SUPPORTS ALONGSIDE THE TRENCH. WELDS WILL BE VISUALLY AND RADIOGRAPHICALLY INSPECTED AND REPAIRED AS NECESSARY. THE PIPE TRENCH WILL BE COVERED WITH THE TRENCH AND PLACED ON APPROVED MATERIAL, LAND ON THE TRENCH BOTTOM TO PROTECT THE PIPE COATING. ANY WEEDS PROTRUDING FROM THE TRENCH WILL BE CONTROLLED USING A PUMP AND HOSE. WATER WILL BE RELEASED INTO A FILTER BAG AND/OR DEWATERING STRUCTURE. FLAT, WELL-VEGETATED AREAS WILL BE UTILIZED FOR DEWATERING LOCATIONS, WHEN AVAILABLE. VISUALLY OBSERVABLE SINK HOLES, IDENTIFIED AHEAD OF DEWATERING ACTIVITY, WILL BE AVOIDED WHERE POSSIBLE.
  - INSTALL TRENCH BREAKERS AT LOCATIONS AS SHOWN ON THE EAS PLAN SHEETS AND AS SPECIFIED ON THE DETAIL SHEETS.
  - THE TRENCH WILL BE SUBSEQUENTLY BACKFILLED WITH SUITABLE EXCAVATED MATERIAL. THE BACKFILL MATERIAL WILL BE SLIGHTLY CROWDED IN UPLAND AREAS TO ALLOW FOR SETTLEMENT THAT MAY OCCUR. CROWDING THE SOIL SLIGHTLY OVER THE PIPELINE WILL HELP PREVENT FUTURE STORMWATER RELATED PROBLEMS FROM THE SETTLING OF THE BACKFILLED AREA. NO DRAINING OF THE SOIL IS WILL TAKE PLACE IN WETLANDS, STREAMS, OR FLOODPLAIN. DISTURBED AREAS WILL BE RESTORED TO THEIR ORIGINAL TOPOGRAPHIC CONTOUR, WHEN APPLICABLE.
  - EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM EROSIONIC FORCES OF RAINFALL, FLOWING WATER AND WIND.
  - ALL DISTURBED AREAS THAT ARE AT FINAL GRADE MUST BE SEEDED AND MULCHED WITH 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 AT THE END OF ROW DIVERSIONS AND WRAPPED WITH 18 INCH DIAMETER OR LARGER COMPOST FILTER SOCK AND/OR A ROW OF SILT FENCING OR EQUIVALENT. IN VERY STEEP SLOPES, EROSION AND SLOUMENT CONTROLS MUST BE INSTALLED AS DICTATED ON THE EAS PLAN SHEETS AND ACCORDING TO DETAIL SPECIFICATIONS.
  - IMMEDIATELY FOLLOWING BACKFILLING, ALL DISTURBED AREAS WILL BE GRABBED 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 AS SOON AS CONDITIONS ALLOW.
  - 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 STABILIZED IMMEDIATELY TO 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 REVEGETATED WITH THE ROW. OFF-SITE SPILL AND ANOTHER BORROW SITES MUST BE OPERATED UNDER A CURRENT POLLUTANT DISCHARGE ELIMINATION SYSTEM (PDES PLAN).
  - TEMPORARY STOCKPILES NEED BMPs SUCH AS SILT FENCE / SOCK OR ENHANCED BMP PLACED ADJACENT TO ROW.
  - CONTRACTOR IS EXPECTED TO MINIMIZE DISTURBANCE WITHIN THE ROW.

- CONSTRUCTION ACCESS RESTORATION SHALL BE EQUAL OR BETTER THAN THE PRE-CONSTRUCTION CONDITION.
  - APPLICABLE STABILIZATION PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY AND PERMANENT SEEDING, BODDING, MULCHING, EROSION CONTROL, FABRICS AND MATTING, THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL.
  - SELECTED SOIL STABILIZATION MEASURES SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED DURATION OF USE.
  - SOIL STOCKPILES MUST BE TEMPORARILY STABILIZED.
  - ALL SOLE SLOP REPAIRS, ROW MAINTENANCE ITEMS, LANDOWNER DISTURBANCES, PUNCH LIST ITEMS, AND ANY OTHER POST CONSTRUCTION ACTIVITIES WILL BE CONSIDERED PART OF THE STABILIZATION PHASE AND NOT THE GRADING PHASE. UPON REACHING FINAL GRADE, ANTERO CONSIDERS THE GRADING PHASE TO BE COMPLETE AND THE SITE TRANSITIONED TO THE STABILIZATION PHASE. THESE POST CONSTRUCTION ACTIVITIES MAY BE REQUIRED DURING STABILIZATION FOLLOWING THE COMPLETION OF THE CONSTRUCTION SEQUENCE ITEMS 1-24 ABOVE.
  - EAS CONTROL, RE-INSTALLATION MAY REQUIRE FIELD ADJUSTMENT FROM THE ORIGINAL EAS PLAN, SO AS TO ALIGN WITH THE POST CONSTRUCTION ACTIVITY AND ASSOCIATED DISTURBANCE.
- THE CONSTRUCTION SEQUENCE FOR THE SURFACE INSTALLATION OF THE WATER PIPELINE WILL FOLLOW THE ABOVE REFERENCED GENERAL CONSTRUCTION SEQUENCE (ITEMS 1-25) ABOVE. THE CONSTRUCTION SEQUENCE FOR THE SURFACE INSTALLATION OF THE WATER PIPELINE CONSISTS OF THE FOLLOWING:
- ACCESS THE ROW HAS STABILIZED CONSTRUCTION ENTRANCES, GROUND DISTURBANCE THROUGHOUT THE ROW IS NOT EXPECTED SINCE THE WATER PIPELINE(S) ARE PLACED ON THE GROUND SURFACE EXCEPT WHERE LANDOWNER STIPULATIONS / ACCESS MAY REQUIRE THE SURFACE WATER PIPELINE(S) TO BE BURIED. IN WHICH CASE THE ABOVE REFERENCED GENERAL CONSTRUCTION SEQUENCE WOULD BE FOLLOWED.
  - STRING OUT THE SURFACE WATER PIPELINE(S) ALONG THE ENTIRE ROW AND FUSE TOGETHER.
  - IF STREAM AND/OR WETLAND CROSSINGS ARE REQUIRED, THEY WILL BE PERFORMED AS AERIAL CROSSINGS VIA BEAMS / AIR BRIDGES, WHICH WILL BE SITUATED OUTSIDE THE LIMITS OF EACH WETLAND AND THE ORDINARY HIGH WATER MARK OF EACH STREAM. WIDER STREAM AND / OR WETLAND CROSSINGS MAY REQUIRE THE SURFACE WATER PIPELINE(S) TO BE INSTALLED SUBSURFACE AND WOULD FOLLOW THE ABOVE REFERENCED GENERAL CONSTRUCTION SEQUENCE.

**PIPELINE BMPs INSTALLATION AND REMOVAL SEQUENCE**

- TEMPORARY AND PERMANENT BMPs WILL BE USED DURING CONSTRUCTION ACTIVITIES TO AVOID AND/OR MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS OF CONSTRUCTION ACTIVITIES.
- INSPECTIONS OF ALL 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 MAINTENANCE SHALL BE MADE AS SOON AS POSSIBLE AFTER THE INSPECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPORT THAT INSPECTIONS AND REPAIRS ARE MADE AS OUTLINED HEREIN. ALL SEDIMENT COLLECTED FROM THE MAINTENANCE OF EAS CONTROLS, MEASURES SHALL BE SPREAD ON-SITE AND SEEDED AND MULCHED. ON DISPOSD OF PROJECT AT A NEW DEVELOPMENT ENVIRONMENTAL PROTECTION (EPA) 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 COVER HAS ESTABLISHED. DISTURBED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL, RESULTING FROM REMOVAL, OF BMPs OR WHICH INSPECTION SHALL BE STABILIZED.
  - WHenever INSPECTION AND/OR MONITORING REVEALS THAT THE BMPs IDENTIFIED IN THE EASCP ARE INADEQUATE, THE EASCP SHALL BE ADJUSTED TO MAINTAIN EFFECTIVENESS, AS APPROPRIATE, IN A TIMELY MANNER.
  - MANAGEMENT OF THE EASCP - THE EASCP SHALL BE RETAINED ON-SITE. THE EASCP SHALL BE MODIFIED WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE CONSTRUCTION, CONSTRUCTION OPERATION OR MAINTENANCE OF ANY BMP. THE CHANGES MUST BE NOTICED OF CERTAIN CHANGES TO THE CONSTRUCTION SWPPP, AS IDENTIFIED IN THE CONSTRUCTION SWPPP, DEPENDING ON THE SIGNIFICANCE OF THE REVISION, A PERMIT MODIFICATION MAY NEED TO BE SUBMITTED TO THE DEP.
  - THE FOLLOWING IS A GENERAL BMP INSTALLATION SEQUENCE FOR PIPELINE CONSTRUCTION ACTIVITIES:
    - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL BE ACCESSING A PUBLIC ROAD DIRECTLY FROM A DISTURBED AREA.
    - TEMPORARY SEDIMENT BARRIERS, SUCH AS APPROPRIATELY SIZED SILT FENCE OR ENHANCED BMPs WILL BE PLACED DOWN SLOPE OF WORK AREAS AND ANOTHER SOIL STOCKPILES, AS NEEDED.
    - APPROPRIATELY SIZED FENCING WILL BE PLACED AROUND WETLANDS AND WATERBODIES ADJACENT TO THE WORK AREA PRIOR TO ANY TRENCHING ACTIVITIES.
    - 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 CONVEYANCES THAT ARE NOT IDENTIFIED ON THE PLAN SHEETS AS STREAMS DUE TO LACK OF DEFINED BED AND BANK CONDITIONS, A TEMPORARY BRIDGE SUCH AS A TRIMMER 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.
    - ROW DIVERSIONS WILL BE INSTALLED IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE SOIL IN ACCORDANCE WITH THE DETAILS AND SPACING ZONE REQUIREMENTS AS DICTATED IN THE RIGHT-OF-WAY DIVERSION OUTLET (WATERWAYS) DETAIL. ROW DIVERSIONS WILL BE CONSTRUCTED OF SOIL, TO REDUCE RUNOFF VELOCITY AND DIVERT WATER OFF OF THE PIPELINE ROW.
    - TRENCH DEWATERING, IF NEEDED, WILL BE CONDUCTED USING A PUMP AND HOSE. WATER WILL BE RELEASED INTO A FILTER BAG AND / OR DEWATERING STRUCTURE. FLAT WELL-VEGETATED AREAS WILL BE UTILIZED FOR DEWATERING LOCATIONS, WHEN AVAILABLE. VISUALLY OBSERVABLE SINK HOLES, IDENTIFIED AHEAD OF DEWATERING ACTIVITY, WILL BE AVOIDED WHEN POSSIBLE.
    - TRENCH BREAKERS 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 WILL BE INSTALLED IN ACCORDANCE WITH THE SPACING REQUIREMENTS.
    - THE WORK AREA WILL BE BACKFILLED FOLLOWING PIPELINE INSTALLATION OR OTHER EXCAVATION WORK. AREAS WHERE TOPSOIL HAS BEEN SEGREGATED, THE SUBSOIL WILL BE REPLACED FIRST, AND THEN THE TOPSOIL WILL BE SPREAD OVER THE AREA FROM WHICH IT WAS REMOVED. DISTURBED AREAS WILL BE RESTORED TO THEIR ORIGINAL TOPOGRAPHIC CONTOURS.
    - ROW DIVERSIONS WILL BE INSTALLED AT INCREMENTS ACROSS SLOPES ABOVE OF CONSTRUCTION ROW TO REDUCE EROSION AND FLOW LENGTH OF RUNOFF. PUMPS WILL BE INSTALLED AT THE END OF ROW DIVERSIONS AND WRAPPED WITH 18 INCH DIAMETER OR LARGER COMPOST FILTER SOCK AND/OR A ROW OF SILT FENCING OR EQUIVALENT. IN VERY STEEP SLOPES, EROSION AND SLOUMENT CONTROLS MUST BE INSTALLED AS DICTATED ON THE EAS PLAN SHEETS AND ACCORDING TO DETAIL SPECIFICATIONS.
    - IMMEDIATELY FOLLOWING BACKFILLING, ALL DISTURBED AREAS WILL BE GRABBED 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 AS SOON AS CONDITIONS ALLOW.
    - 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 STABILIZED IMMEDIATELY TO 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 REVEGETATED WITH THE ROW. OFF-SITE SPILL AND ANOTHER BORROW SITES MUST BE OPERATED UNDER A CURRENT POLLUTANT DISCHARGE ELIMINATION SYSTEM (PDES PLAN).
    - TEMPORARY STOCKPILES NEED BMPs SUCH AS SILT FENCE / SOCK OR ENHANCED BMP PLACED ADJACENT TO ROW.
    - CONTRACTOR IS EXPECTED TO MINIMIZE DISTURBANCE WITHIN THE ROW.

**MAINTENANCE SCHEDULE**

- AFTER CONSTRUCTION IS COMPLETED AND 75% UNIFORM PERENNIAL VEGETATION HAS BEEN ACHIEVED, ALL BMPs WILL BE REMOVED AND ANY LAND DISTURBED BY REMOVAL WILL BE STABILIZED. UNLESS OTHERWISE SPECIFIED, ALL MAINTENANCE MUST BE COMPLETED AS SOON AS CONDITIONS ALLOW AFTER AN INSPECTION INDICATES THAT A BMP IS NOT FUNCTIONING AS REQUIRED.
- INSPECTION OF ALL EROSION AND SEDIMENTATION CONTROLS WILL BE, AT A MINIMUM, PERFORMED ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5-INCH PER 24-HOUR PERIOD UNTIL THERE IS A UNIFORM PERENNIAL, TO 70 PERCENT VEGETATIVE COVERAGE ESTABLISHED. TEMPORARY BMPs WILL BE REMOVED UPON ACHIEVING VEGETATIVE STABILIZATION. THE 70 PERCENT REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT A PERCENT OF THE SITE. THESE INSPECTIONS WILL COMMENCE AT THE START OF EARTH DISTURBING ACTIVITY (GRUBBING). ANTERO HAS ONLINE ACCESS TO REAL-TIME RAIN GAUGE LOCATIONS IN THE GENERAL AREA OF EACH WORK LOCATION. THIS DATA WILL BE MONITORED AND USED BY INSPECTION PERSONNEL. USE OF ONLINE WEATHER TRACKING TOOLS MAY BE UTILIZED. RAINFALL DATA WILL BE RECORDED ON INSPECTION RECORDS.
  - SEDIMENT MUST BE REMOVED WHERE ACCUMULATION REACHES ONE-HALF THE ABOVE GROUND HEIGHT OF A BMP (ALL TYPES).
  - BMPs (ALL TYPES), WHICH HAVE BEEN UNDERMINED OR TOPPED, SHOULD IMMEDIATELY BE REPAIRED.
  - REQUIRED REPAIRS OR MAINTENANCE SHALL BE MADE.
  - 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.
  - TEMPORARY AND PERMANENT EAS 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 EAS CONTROL, BMPs SHOULD BE REMOVED FOLLOWING CONFIRMATION THAT 70 PERCENT PERENNIAL VEGETATIVE COVERAGE IS ESTABLISHED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL, RESULTING FROM REMOVAL, OF BMPs OR VEGETATION SHALL BE STABILIZED.

**MATERIAL WASTE HANDLING AND RECYCLING**

- GARBAGE DISPOSAL IS HANDLED THROUGH ONE OF THE LOCAL WASTE MANAGEMENT PROVIDERS/FACILITIES. IF NECESSARY, THE CONTRACTOR WILL OBTAIN A DUMPSTER FOR THE DURATION OF THE WORK WHICH WILL BE DISPOSAL OF AT A LICENSED/PERMITTED MUNICIPAL LANDFILL.
- THE CONTRACTOR WILL DISPOSE OF ALL WASTE MATERIAL. THE SCRAP MATERIAL MUST BE REMOVED FROM THE SITE AND DISPOSED OF OR RECYCLED AT A PROPERLY LICENSED/OPERATED 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 DISPOSAL OF IN ACCORDANCE WITH APPLICABLE LAWS, RULES, AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THOSE ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY, WVDG, AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
- CONSTRUCTION WASTE MATERIALS, INCLUDING BUT NOT LIMITED TO BENTONITE, POLY PIPE SHAVINGS, AND SANDBAGS, WILL BE RECYCLED OR WILL BE TAKEN TO THE NEAREST APPROVED FACILITY FOR DISPOSAL. EXCESS SOIL MATERIAL, IF ANY, WILL BE SPREAD AND REVEGETATED WITH THE ROW. OFF-SITE SPILL AND/OR BORROW SITES MUST BE OPERATED UNDER A CURRENT PERMIT.

**SEEDING**

- SEE DETAILS 29-31 FOR TEMPORARY SEEDING, PERMANENT SEEDING, AND MULCHING REQUIREMENTS.
- EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM EROSIONIC FORCES OF RAINFALL, FLOWING WATER AND WIND.

**PERMANENT SEEDING/MULCHING**


- ALL DISTURBED AREAS THAT ARE AT FINAL GRADE OR AREAS THAT WILL NOT BE WORKED AGAIN FOR 21 DAYS OR MORE MUST BE SEEDED AND MULCHED WITHIN SEVEN DAYS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED IS PRECEDED BY SNOW COVER. STABILIZATION MEASURES SHALL BE INSTALLED AS SOON AS CONDITIONS ALLOW. AREAS WHERE THE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RESEED IMMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.

**TEMPORARY SEEDING/MULCHING**

- ALL DISTURBED AREAS THAT ARE NOT AT FINAL GRADE OR AREAS THAT WILL NOT BE WORKED AGAIN FOR 21 DAYS OR MORE MUST BE SEEDED AND MULCHED WITHIN SEVEN DAYS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED IS PRECEDED BY SNOW COVER. STABILIZATION MEASURES SHALL BE INSTALLED AS SOON AS CONDITIONS ALLOW. WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, I.E., THE TOTAL PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY HALTED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INSTALLED ON THAT PORTION OF THE SITE BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED. AREAS WHERE THE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATION COVER WITH A DENSITY OF 70% WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RESEED IMMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.

**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. WOOD DEBRIS MAY BE CHIPPED AND SPREAD ON-SITE.
- COVER, CONTAMINANT, AND PROTECTION FROM VANDELSAM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-HAZARDOUS WASTES PRESENT ON THE SITE.
- MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL, CHANGES, HYDRAULIC SYSTEM DRAM DOWN, SOLVENT AND DE-ICE/CLEANING CLEANING OPERATIONS, FUEL TANK DRAIN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO SURFACE WATER, MUST BE CONDUCTED USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS, CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL. URGENT EMERGENCY REPAIRS MAY BE PERFORMED ON-SITE USING TEMPORARY PLASTIC PLACED BENEATH AND, IF NEEDED, UNDER 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 LIMIT CONTAMINATION OF SURFACE WATER RUNOFF BY PM MOONRYNG SOURCES. THESE SOURCES INCLUDE BULK CEMENT, GYPSUM, GYPSUM, READY-MIX CONCRETE WASHING AND CURING WATER, WASTE WATER GENERATED FROM CONCRETE GRABBING AND SAWING, EXPOSED AGGREGATE PROCESSES, AND CONCRETE PUMPER AND MIXER WASHOUT WATER.
- REPORT SPILLAGE OR DISCHARGE OF POLLUTANTS THAT IMPACT SURFACE OR GROUNDWATER TO ANTERO PERSONNEL IMMEDIATELY.



**THRASHER IFP**  
ISSUED FOR PERMITTING  
DATE: AFE # A12870


SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
<b>REVISION</b>					

**GENERAL INFORMATION**

1. ALL DESIGN STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH ROUTING NOTES PREPARED BY THRASHER FOR ANTERO ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.

2. INSTALLATION / SPECIFICATIONS / PLACEMENT OF BMPs MAY VARY BASED ON FIELD CONDITIONS TO MAINTAIN EFFECTIVENESS.

3. THIS SHEET IS INTENDED TO BE PLOTTED ON A8.5 (24" x 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.



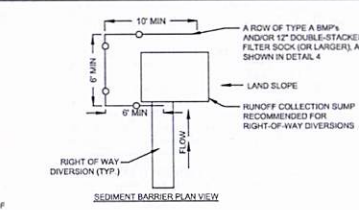
**SALEM HP DISCHARGE PIPELINE ECP DETAILS**  
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIEGE LOCATIONS, WEST VIRGINIA

DRAWN BY: JEL (TIG) DATE: 1/31/2024  
CHECKED BY: JEL (TIG) DATE: N/A  
SCALE: AS SHOWN  
REVISION No.: 0 SHEET: 27-ESCP1

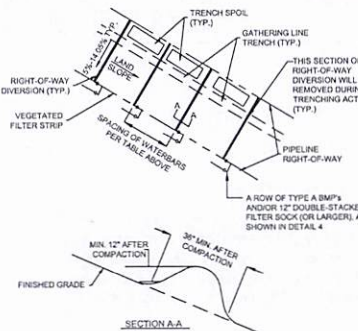
**RIGHT-OF-WAY DIVERSION SPACING**

PERCENT SLOPE	SPACING IN FEET
5.0%	300
10.14%	175
15.19%	125
20.24%	100
>2.5%	75



- CONSTRUCTION SPECIFICATIONS**
1. DRAINAGE AREA: THE MAXIMUM ALLOWABLE DRAINAGE AREA IS 1 ACRE.
  2. SPACING: USE THE TABLE SHOWN IN THIS DETAIL WHEN CHOOSING THE PLACEMENT OF THE DIVERSION. USE THIS CHART FOR BOTH PERMANENT AND TEMPORARY DIVERSIONS.
  3. HEIGHT: THE MINIMUM ALLOWABLE HEIGHT MEASURED FROM THE UPSLOPE SIDE OF THE DIKE IS 12 INCHES.
  4. GRADE: THE CHANNEL BEHIND THE DIKE SHALL HAVE A POSITIVE GRADE TO A STABILIZED OUTLET. THE DIVERSION MUST BE ANGLED AT LEAST 3 OR 4 DEGREES RELATIVE TO THE FALL LINE OF THE SLOPE AND SHOULD NOT EXCEED A DEGREE (0% TO 14.05% SLOPE) AND IN ACCORDANCE WITH WVDEP EAS BMP MANUAL.
  5. OUTLET: RIGHT-OF-WAY DIVERSIONS SHOULD NOT DISCHARGE INTO AN OPEN TRENCH WHEN AVAILABLE. RIGHT-OF-WAY DIVERSIONS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK INTO THE RIGHT-OF-WAY. A ROW OF TYPE A BMP'S AND/OR 12\"/>

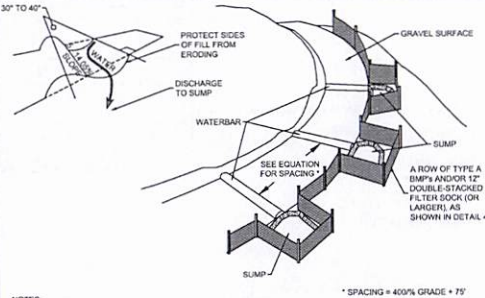
- MAINTENANCE**
1. RIGHT-OF-WAY DIVERSIONS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED RIGHT-OF-WAY DIVERSIONS SHALL BE RESTORED TO ORIGINAL DIMENSIONS AS SOON AS CONDITIONS ALLOW.
  2. MAINTENANCE OF RIGHT-OF-WAY DIVERSIONS SHALL BE PROVIDED UNTIL RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.
  3. RIGHT-OF-WAY DIVERSIONS ON RESTORED RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.
  4. CONTRACTOR SHALL RESTORE ALL WATERBARS AT THE END OF EACH WORKDAY AND PRIOR TO A RAIN EVENT.



NOTE: SUMP'S TO BE USED DURING CONSTRUCTION (TEMPORARY) PER SEDIMENT BARRIER PLAN VIEW.

1 RIGHT OF WAY DIVERSION OUTLET (WATERBAR)  
NTS

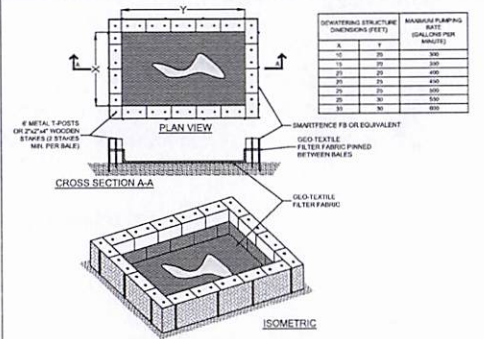
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  3. HEIGHT: THE MINIMUM ALLOWABLE HEIGHT MEASURED FROM THE UPSLOPE SIDE OF THE DIKE IS 12 INCHES.
  4. GRADE: THE CHANNEL BEHIND THE DIKE SHALL HAVE A POSITIVE GRADE TO A STABILIZED OUTLET. THE DIVERSION MUST BE ANGLED AT LEAST 3 OR 4 DEGREES RELATIVE TO THE FALL LINE OF THE SLOPE AND SHOULD NOT EXCEED A DEGREE (0% TO 14.05% SLOPE) AND IN ACCORDANCE WITH WVDEP EAS BMP MANUAL.
  5. OUTLET: RIGHT-OF-WAY DIVERSIONS SHOULD NOT DISCHARGE INTO AN OPEN TRENCH WHEN AVAILABLE. RIGHT-OF-WAY DIVERSIONS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK INTO THE RIGHT-OF-WAY. A ROW OF TYPE A BMP'S AND/OR 12\"/>



- NOTES**
1. WATERBARS SHOULD BE INSTALLED ACROSS THE ENTIRE ROADWAY ON ALL SLOPES GREATER THAN 5%.
  2. WATERBARS SHALL BE PLACED AT 5% TO 14.05% SLOPE DOWNHILL. THEY SHALL BE SPACED AT THE INCREMENTS AS SHOWN ON THE PLANS, AND IN ACCORDANCE WITH WVDEP EAS STANDARDS.
  3. WATERBARS SHOULD BE CONSTRUCTED TO DISCHARGE TO A SUMP. WATERBARS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK INTO THE ROADWAY. SMARTFENCE FB OR EQUIVALENT SHOULD BE LOCATED BELOW THE DISCHARGE END OF THE WATERBARS.
  4. REFER TO WVDEP MANUAL SECTIONS 3.03-1, 3.35-6, & 3.35-7 FOR MORE INFORMATION.

- MAINTENANCE**
1. WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS AS SOON AS CONDITIONS ALLOW.
  2. MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.
  3. WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED, UNLESS OTHERWISE SPECIFIED BY LANDOWNER STIPULATIONS.

2 ACCESS ROAD WATERBARS  
NTS



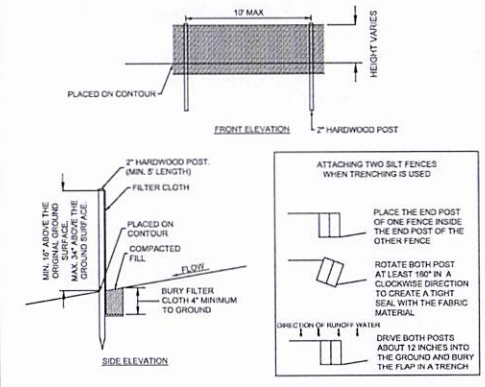
1. STRAW BALES SHOULD BE PLACED ON THEIR SIDES WITH THE THIN SIDE TO THE FLOW.
2. STRAW BALES SHOULD BE STAKED TO HIGH WITH GEO TEXTILE FABRIC PILED BETWEEN BALES.
3. USE OF GEOTEXTILE FABRIC SHOULD BE INTERLOCKING.
4. EXPOSED METAL POSTS AND SECONDARY CHAINS THROUGH BOTH STRAW BALES. A METAL T-POSTS ARE NOT AVAILABLE, WOODEN STAKES SHOULD BE A MINIMUM OF 2\"/>

3 STRAW BALE DEWATERING  
NTS

CATEGORY	PRODUCT
TYPE A	1 - SILT SAVER SILT FENCE PRIORITY 2 (BELTED)
	2 - ACF ENVIRONMENTAL FILTRATION BARRIER (SMART FENCE FB) WITH WOOD POSTS
	3 - MEDIUM DUTY WOVEN BELTED WBSF25-6 SILT FENCE 2 STAGE
TYPE B	1 - SILT SAVER SILT FENCE PRIORITY 1 (BELTED)
	2 - ACF ENVIRONMENTAL FILTRATION BARRIER SMART FENCE 36 (SD) WITH WOOD POSTS
	3 - ACF ENVIRONMENTAL FILTRATION BARRIER (SMART FENCE FB) ORANGE WITH WOOD POSTS
	4 - HEAVY DUTY WOVEN BELTED WBSF25-4 SILT FENCE 2 STAGE
TYPE C	1 - ACF ENVIRONMENTAL SMARTFENCE 42
	2 - SUPER SILT FENCE

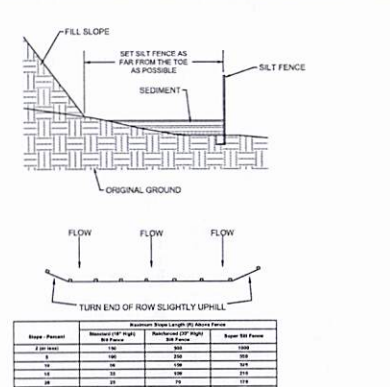
\* ADDITIONAL BMPs NOT LISTED IN THE ABOVE CATEGORIES MAY BE UTILIZED.

4 BMP CATEGORIES  
NTS



NOTE: STANDARD FILTER FABRIC MUST BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UP SLOPE AS 45 DEGREES TO MAIN BARBER ALIGNMENT. THE MAXIMUM LENGTH OF SLOPE ABOVE A ROW OF SILT FENCE IS 110'. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

5 SILT FENCE  
NTS



Height (Feet)	Minimum (10' High)	Maximum (10' High)	Minimum (12' High)	Maximum (12' High)
1	100	100	100	100
2	100	100	100	100
3	100	100	100	100
4	100	100	100	100
5	100	100	100	100
6	100	100	100	100
7	100	100	100	100
8	100	100	100	100
9	100	100	100	100
10	100	100	100	100

6 SUPER SILT FENCE  
NTS

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: **AFE # A12878**

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
<b>REVISION</b>					
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	DATE

- GENERAL INFORMATION**
1. ALL DESIGN, STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERS AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERS.
  2. INSTALLATION / SPECIFICATIONS / PLACEMENT OF BMPs MAY VARY BASED ON FIELD CONDITIONS TO MAXIMIZE EFFECTIVENESS.
  3. THIS SHEET IS INTENDED TO BE PLOTTED ON AHS D (24" x 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

**Antero**  
Midstream

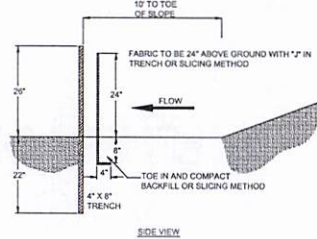
**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**

PROPOSED 6" STEEL GAS LINE

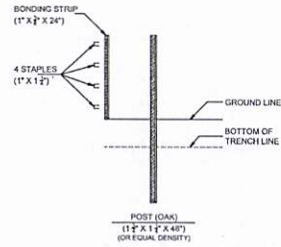
HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
DRAWN BY: JLI (TJD) DATE: 1/31/2024  
CHECKED BY: JLI (TJD) AFE No.: A12878  
SCALE: AS SHOWN  
REVISION No.: 0

SHEET: 28-ESCP2

USER: jared.johnson  
 PLOT DATE/TIME: 1/31/2024 8:42 AM  
 DRAWING NO: 2929  
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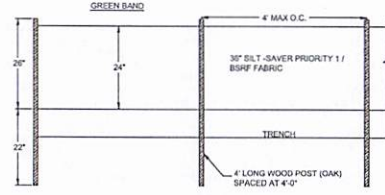


SIDE VIEW



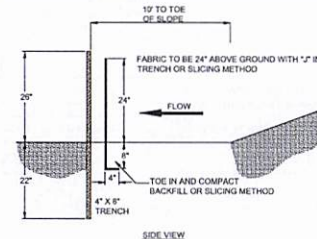
**ATTACHING TWO SILT FENCES WHEN TRENCHING IS USED**

- PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
- ROTATE BOTH POST AT LEAST 180° IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- DIRECTION OF RUNOFF WATER
- DRIVE BOTH POSTS ABOUT 12 INCHES INTO THE GROUND AND BURY THE FLAP IN A TRENCH.

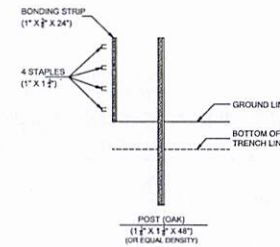


FRONT ELEVATION

7  
A  
SILT SAVER SILT FENCE PRIORITY 1

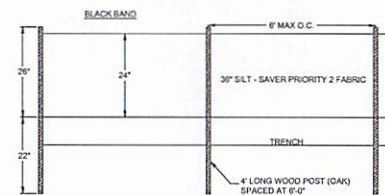


SIDE VIEW



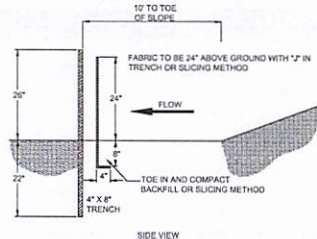
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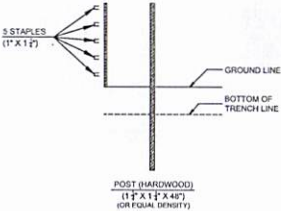


FRONT ELEVATION

7  
B  
SILT SAVER SILT FENCE PRIORITY 2

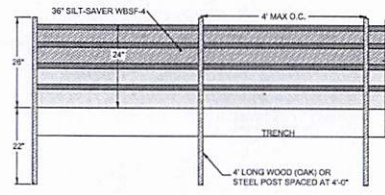


SIDE VIEW



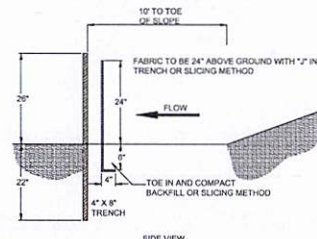
**ATTACHING TWO SILT FENCES WHEN TRENCHING IS USED**

- PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
- ROTATE BOTH POST AT LEAST 180° IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- DIRECTION OF RUNOFF WATER
- DRIVE BOTH POSTS ABOUT 12 INCHES INTO THE GROUND AND BURY THE FLAP IN A TRENCH.

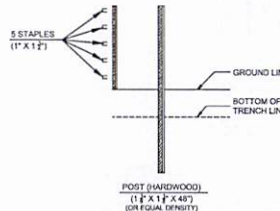


FRONT ELEVATION

8  
A  
HEAVY DUTY WOVEN BELTED WBSF2S-4 SILT FENCE 2 STAGE

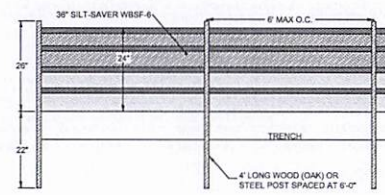


SIDE VIEW



**ATTACHING TWO SILT FENCES WHEN TRENCHING IS USED**

- PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
- ROTATE BOTH POST AT LEAST 180° IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- DIRECTION OF RUNOFF WATER
- DRIVE BOTH POSTS ABOUT 12 INCHES INTO THE GROUND AND BURY THE FLAP IN A TRENCH.



FRONT ELEVATION

8  
B  
MEDIUM DUTY WOVEN BELTED WBSF2S-6 SILT FENCE 2 STAGE

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
AFE # A12878

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**GENERAL INFORMATION**

- ALL DESIGN, STRENGTH OF PIPELINE AND MARK CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
- INSTALLATION / SPECIFICATIONS / PLACEMENT OF BMPs MAY VARY BASED ON FIELD CONDITIONS TO MAXIMIZE EFFECTIVENESS.
- THIS SHEET IS INTENDED TO BE PLOTTED ON A8.5 (24" X 36"), FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**

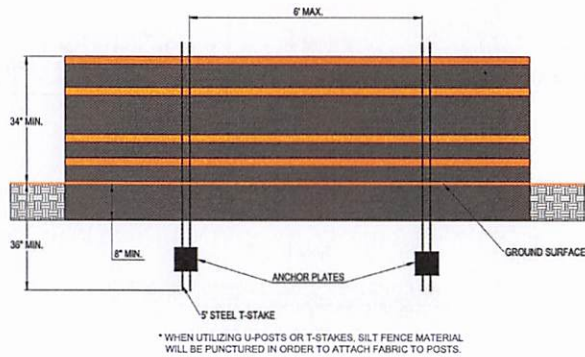
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JJJ (TIG) DATE: 1/31/2024  
 CHECKED BY: JJJ (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 29-ESCP3

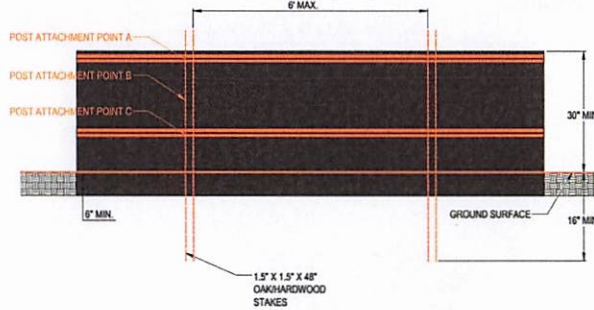


LAYOUT DATE: 02/27/24  
 CAD FILE: R:\000\105-11554-00-ANTERO-SALEM HP DISCHARGE ESCP DETAIL SHEETS.dwg  
 USER: jared.joshua  
 PLOT DATE/TIME: 1/31/2024 9:42 AM

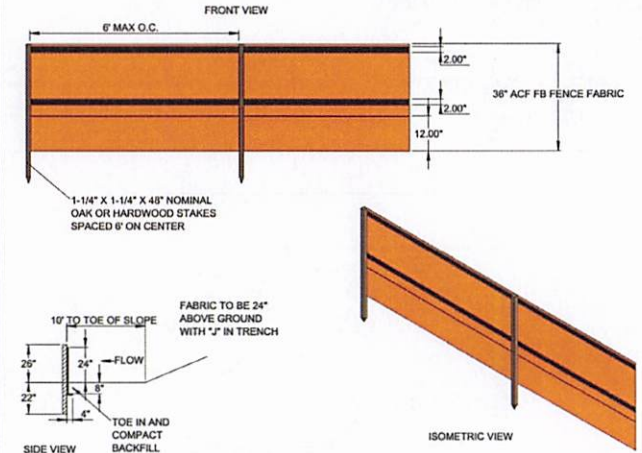


\* WHEN UTILIZING U-POSTS OR T-STAKES, SILT FENCE MATERIAL WILL BE PUNCTURED IN ORDER TO ATTACH FABRIC TO POSTS.

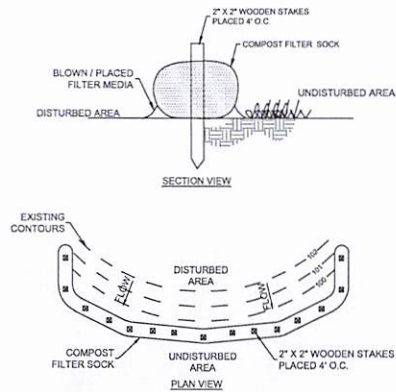
9 A ACF ENVIRONMENTAL SMARTFENCE 42  
NTS



9 B ACF ENVIRONMENTAL SMARTFENCE 36 (SD) WITH WOOD POSTS  
NTS



9 C ACF ENVIRONMENTAL FILTRATION BARRIER (SMARTFENCE FB) WITH WOOD POSTS  
NTS



\* STAKE SPACING MAY VARY DUE TO FIELD CONDITIONS AT TIME OF INSTALL.

10 A COMPOST FILTER SOCK  
NTS

**CONDITIONS WHERE PRACTICE APPLIES:**

1. INSTALL ON DISTURBED AREAS THAT REQUIRE IMMEDIATE EROSION PROTECTION.
2. USE ON SLOPES REQUIRING STABILIZATION UNTIL PERMANENT VEGETATION CAN BE ESTABLISHED.
3. CAN BE USED ALONG THE PERIMETER OF THE PIPELINE, AS A CHECK DAM IN UNLINED DITCHES AND AROUND TEMPORARY STOOPINGS.
4. ROLLS ARE A SHORT-TERM SOLUTION TO HELP ESTABLISH NATIVE VEGETATION.

**CONSTRUCTION SPECIFICATIONS:**

1. IT IS CRITICAL THAT SOCK IS INSTALLED PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE CONTOUR.
2. INSTALL STAKES AT EACH END OF THE SOCK, AND AT A MINIMUM OF 4-FOOT CENTERS ALONG THE ENTIRE LENGTH OF THE SOCK.
3. IF REQUIRED, INSTALL PILOT HOLES FOR THE STAKES USING A STRAIGHT BAR TO DRIVE HOLES THROUGH THE SOCK AND INTO THE SOIL.
4. AT A MINIMUM, WOODEN STAKES SHOULD BE APPROXIMATELY 2 X 2 X 24 INCHES. 3/8-INCH REBAR CAN ALSO BE USED FOR STAKES.
5. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK, LEAVING 2 TO 3 INCHES OF THE STAKE PROTRUDING ABOVE THE SOCK.

10 A COMPOST FILTER SOCK  
NTS

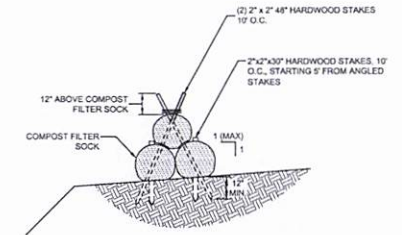
**MAINTENANCE:**

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

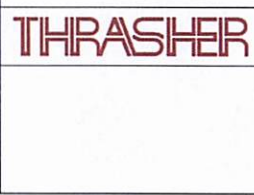
Slope Percent	Minimum Stone Length Above Substent Control on Four Sides*				
	4 to 10% and Substent control 4' to 6'	10 to 15% and Substent control 6' to 8'	15 to 20% and Substent control 8' to 10'	20 to 25% and Substent control 10' to 12'	25 to 30% and Substent control 12' to 14'
2 to 5% incl	400-1000	500-1250	600-1500	700-1750	800-2000
5	400-1000	500-1250	600-1500	700-1750	800-2000
10	300-750	350-875	400-1000	450-1125	500-1250
15	200-500	250-625	300-750	350-875	400-1000
20	150-375	175-437	200-500	225-562	250-625
25	100-250	125-312	150-375	175-437	200-500
30	75-187	93-234	112-281	131-328	150-375
35	60-150	75-187	93-234	112-281	131-328
40	45-112	56-140	68-172	81-203	93-234
45	30-75	37-93	45-112	53-131	62-156
50	15-37	18-47	22-56	26-65	31-78

\* Based on a fabric joint of 20 to 30 lbs per 48 inch line reinforced at 100 to 120 lbs of slope, assembled with 1/2 inch to 3/4 inch length of rebar and/or stakes. 1 to 2 ft or 20 to 30 ft run wide.  
 \*\* Stone length of Substent control after installation and each Laurent head head runoff as determined by Ohio State University.

10 B COMPOST FILTER SOCK  
NTS



10 C TRIPLE STACK FILTER SOCK  
NTS



**IFP**  
ISSUED FOR PERMITTING  
DATE: \_\_\_\_\_  
AFE # A12878

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

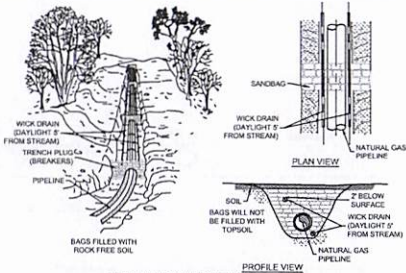
GENERAL INFORMATION			
1.	ALL DESIGN, STRENGTH OF PIPELINE AND WADP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.		
2.	INSTALLATION / SPECIFICATIONS / PLACEMENT OF BMPs MAY VARY BASED ON FIELD CONDITIONS TO MAXIMIZE EFFECTIVENESS.		
3.	THIS SHEET IS INTENDED TO BE PLOTTED ON A10 (24" x 36") FOR REVISIONS, REFER TO GRAPHIC SCALE.		
NO.	DESCRIPTION	DATE	BY

**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**  
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JJJ (TIG) DATE: 1/31/2024  
 CHECKED BY: JRI (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 30-ESCP4

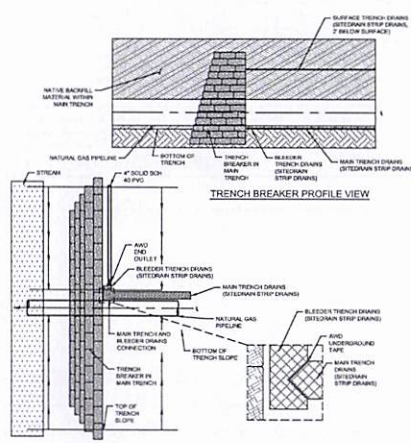
LAYOUT: MR. ESCPS; SALEM HP DISCHARGE PIPELINE ESCP DETAILS; DTD: 1/31/2024 8:42 AM



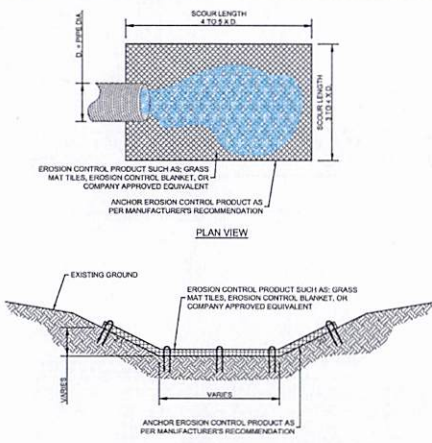
ALIGNMENT SLOPE %	SPACING S (FT)	PLUG MATERIAL
< 1%	100	2" EARTH-FILLED BAGS
1-5%	50	2" EARTH-FILLED BAGS
5-15%	30	2" EARTH-FILLED BAGS
15-25%	20	2" EARTH-FILLED BAGS
25-50%	15	2" EARTH-FILLED BAGS
50-100%	10	2" EARTH-FILLED BAGS
> 100%	5	2" EARTH-FILLED BAGS

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

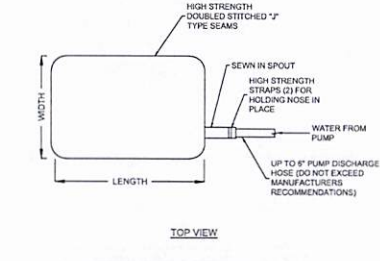
11 PERMANENT TRENCH BREAKER  
NTS



12 AMERICAN WICK DRAIN DETAIL  
NTS

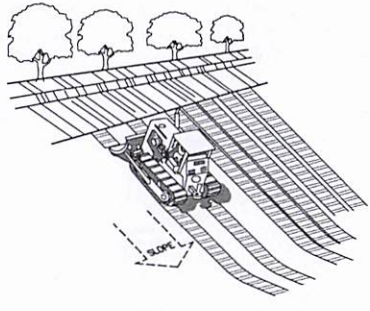


13 TRENCH PLUG DRAIN OUTFALL EROSION PROTECTION DETAIL  
NTS



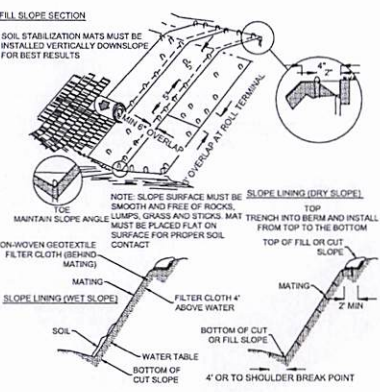
NOTES:  
1. UTILIZE VEGETATED STRIP WHERE APPLICABLE.  
2. MAINTAIN DISTANCE BETWEEN LOCATION OF FILTER BAG AND AQUATIC FEATURE.  
3. FILTER BAG MUST BE PLACED ON FLAT SURFACE.

14 FILTER BAG  
NTS



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

15 TRACKING  
NTS



16 ROLLED EROSION CONTROL PRODUCTS  
NTS

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING  
DATE: \_\_\_\_\_  
AFE # A12878

SUMMARY OF MATERIALS (3D)				SUMMARY OF MATERIALS (3D)			
NO.	DESCRIPTION	QTY		NO.	DESCRIPTION	QTY	

**GENERAL INFORMATION**

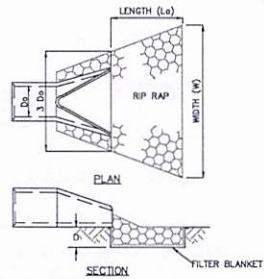
1. ALL DESIGN, STRENGTH OF PIPELINE AND MATH CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.  
2. INSTALLATION / SPECIFICATIONS / PLACEMENT OF BMPs MAY VARY BASED ON FIELD CONDITIONS TO MAXIMIZE EFFECTIVENESS.  
3. THIS SHEET IS INTENDED TO BE PLOTTED ON A12878 (24" x 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**  
PROPOSED 6" STEEL GAS LINE

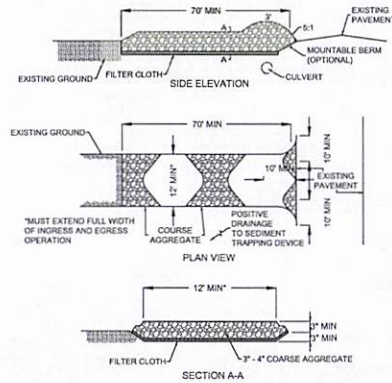
HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
DRAWN BY: JJJ (TIG) DATE: 1/31/2024  
CHECKED BY: JJJ (TIG) AFE No.: A12878  
SCALE: AS SHOWN SHEET: 31-ESCP5  
REVISION No.: 0

LAYOUT VAN, ESCP6  
 CAD FILE: N:\050100-11556-00-ANTEC-SALEM HP DISCHARGE\ESCP DETAIL SHEETS.dwg  
 PLOT DATE/TIME: 1/31/2024 9:42 AM  
 USER: jrrd.jr@antero.com



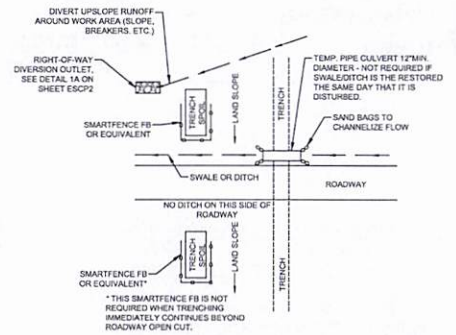
- NOTES:**
- IF FLARED END SECTION IS DISCHARGING INTO DITCH FROM THE SIDE, EXTEND RIP RAP UP DITCH BANK ON OFF-SIDE A MINIMUM OF 4 FEET.
  - USE WIDE RIP RAP GRADATION AND FILTER BLANKET REQUIREMENTS PER SECTION 3.17 OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL.
  - A SUITABLE NON-WOVEN GEOTEXTILE FABRIC, USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, MAY BE SUBSTITUTED FOR FILTER BLANKET STONE UNDER THE RIPRAP.
  - $\phi = 1.5$  TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN  $\phi^2$ .

17 RIP RAP APRON  
NTS

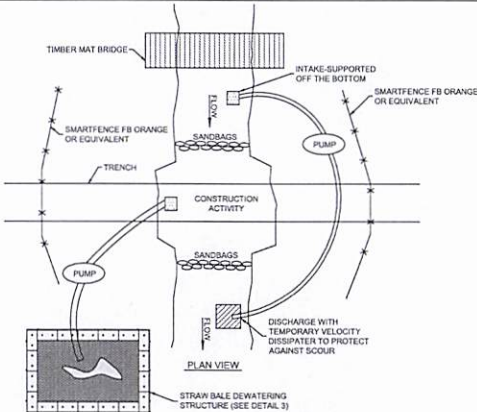


- CONSTRUCTION SPECIFICATIONS**
- CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROCKS, AND OTHER OBSTACLES TO TRAFFIC.
  - PLACE THE 3" MIN COARSE AGGREGATE TO MATCH FINISHED GRADE OF THE DRIVEWAY AND SURFACE TO BE PROTECTED FROM ROAD WATER INLET.
  - IF RECOMMENDED TO USE A STOCKPILE OF STONE GRADE.
- WARNING:**
- MAINTAIN THE DRIVEWAY AND IN A CONDITION TO PREVENT MUD OR OTHER POLLUTANTS FROM ENTERING THE CONSTRUCTION SITE. THE 3" MIN COARSE AGGREGATE SHOULD BE MAINTAINED AT ALL TIMES. UNDESIRABLE MATERIALS (SPILLS, WHEELS, OR TRACKS) SHOULD BE REMOVED IMMEDIATELY. MAINTENANCE SHOULD BE PROVIDED DAILY, BUT AT A MINIMUM EVERY OTHER DAY AND AFTER EVERY RAIN OF 0.5 INCH OR GREATER.

18 STABILIZED CONSTRUCTION ENTRANCE  
NTS

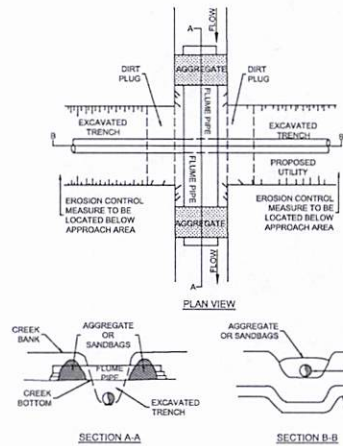


19 OPEN CUT ROAD CROSSING  
NTS

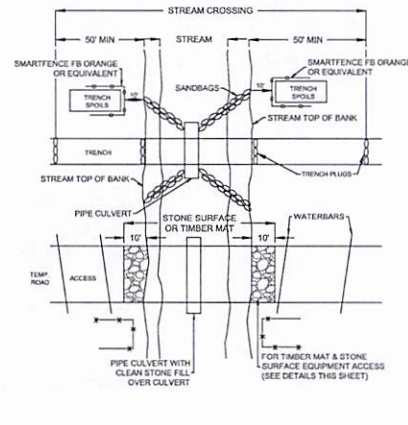


- NOTES:**
- DEWATERING STRUCTURE SHOULD BE PLACED IN WELL VEGETATED STRIP.
  - TOP 6"-12" OF NATURAL STREAM SUBSTRATE SHOULD BE ISOLATED DURING IN-STREAM TRENCHING AND RESTORED UPON COMPLETION OF FINAL STREAM STABILIZATION.
  - ENVIRONMENTAL INSPECTOR MUST VERIFY DAM AND PUMP AROUND SETUP.
  - MUST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

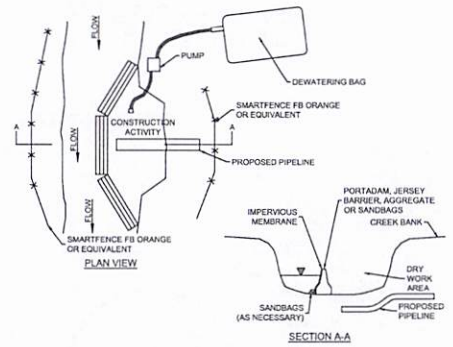
20 OPEN CUT STREAM CROSSING  
NTS



21 FLUME PIPE CROSSING  
NTS



22 FLUMED STREAM CROSSING WITH ACCESS ROAD  
NTS



23 COFFERDAM CROSSING  
NTS

**THRASHER**

**IFP**

ISSUED FOR PERMITTING

DATE:

AFE # A12878

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

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NO.	DESCRIPTION	QTY

**GENERAL INFORMATION**

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**Antero**  
Midstream

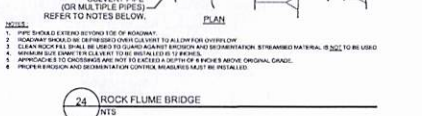
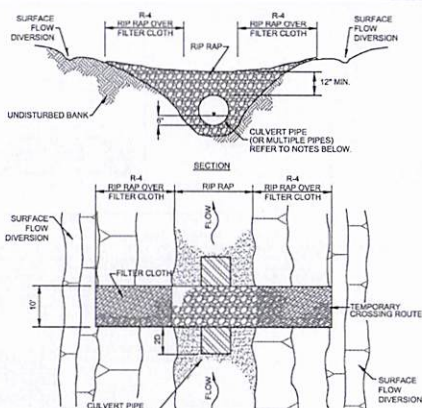
**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**

PROPOSED 6" STEEL GAS LINE

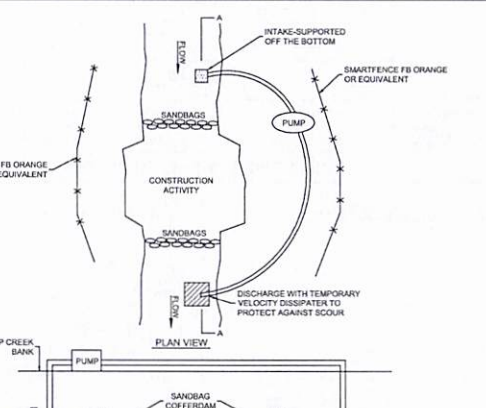
HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JJJ (TIG) DATE: 1/31/2024  
 CHECKED BY: JRM (TIG) A/E No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 32-ESCP6

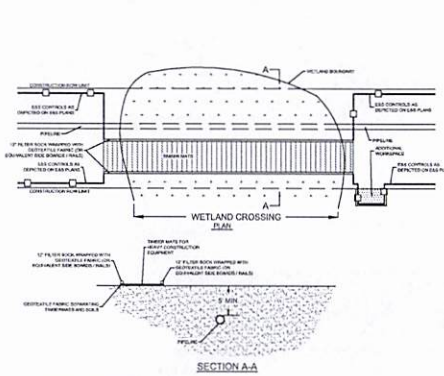
USER: jared.jordan  
 PLOT DATE/TIME: 1/31/2024 8:42 AM  
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 SHEET: 33-ESCP7



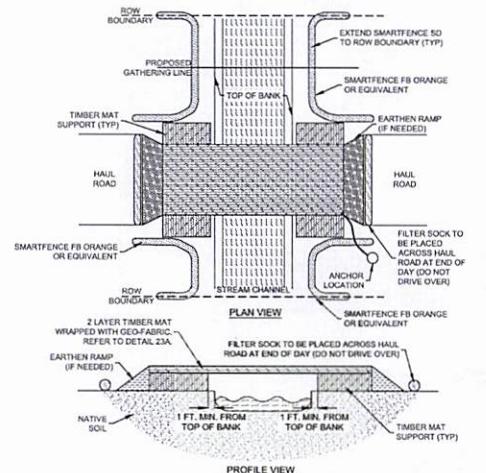
24 ROCK FLUME BRIDGE  
NTS



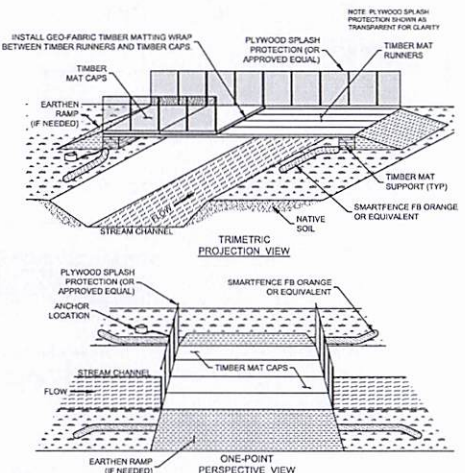
26 STREAM BANK STABILIZATION  
NTS



27 TYPICAL EROSION AND SEDIMENT CONTROL FOR WETLAND CROSSINGS  
NTS



28 TYPICAL EROSION AND SEDIMENT CONTROL FOR STREAM CROSSINGS  
NTS



29 CONSTRUCTION SPECIFICATIONS AND GENERAL SPECIFICATIONS  
NTS

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

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING  
DATE: \_\_\_\_\_  
AFE # A12878

SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY

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NO.	DESCRIPTION	QTY

GENERAL INFORMATION		
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAJOR CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR INCLUSION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.	
2.	INSTALLATION / SPECIFICATIONS / PLACEMENT OF BMPs MAY VARY BASED ON FIELD CONDITIONS TO MAXIMIZE EFFECTIVENESS.	
3.	THIS SHEET IS INTENDED TO BE PLOTTED ON A11 (24" x 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.	

**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

DRAWN BY: JLI (TIG) DATE: 1/31/2024  
 CHECKED BY: JPM (TIG) DATE: 1/31/2024  
 SCALE: AS SHOWN  
 REVISION No: 0

SHEET: 33-ESCP7

LAYOUT FILE: ESD3 CAD FILE: X:\001\100-1050-00-ANTERO-SALEM TO BLUE-GOONS A12878\Drawings\ESCP\DETAIL SHEETS.dwg  
 PLOT DATE/TIME: 1/31/2024 9:42 AM  
 USER: jrral.jack

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

29 TEMPORARY SEEDING CHART  
NTS

Antero Midstream Default Pasture Mix (200 - 225 LBS per Acre)	
Named Variety of Forage Perennial Ryegrass	20%
Named Variety of Forage Tall Fescue (not Fawn)	20%
Climax Timothy	15%
Orchardgrass	10%
Birdfoot Trefoil	10%
Medium Red Clover	5%
Ladino Clover	5%
Kentucky Bluegrass VNS	5%
Alsike Clover	5%
Alfalfa	5%
*All seed mixes require double inoculation	
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%
Birdfoot Trefoil	10%
Alfalfa	10%
Named Variety of Forage Perennial Ryegrass	10%
Annual Ryegrass	10%
*All seed mixes require double inoculation	
Antero Midstream General Contractor Mix (200 - 250 LBS per Acre)	
Named Variety of Forage Tall Fescue (not Fawn)	50%
Named Variety of Forage Perennial Ryegrass	20%
Annual Ryegrass	15%
Ladino Clover	5%
Alsike Clover	5%
Birdfoot Trefoil	5%
*All seed mixes require double inoculation	

30 PERMANENT SEEDING CHART  
A NTS

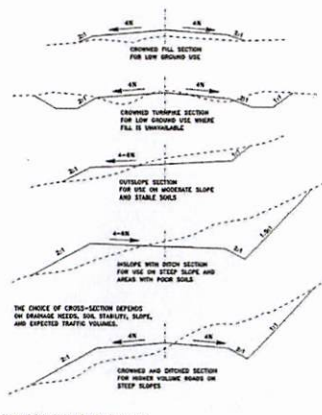
Alternative (Fescue-Free) Antero Midstream Default Pasture Mix (200 - 225 LBS per Acre)	
Named Variety of Forage Perennial Ryegrass	30%
Climax Timothy	20%
Orchardgrass	15%
Birdfoot Trefoil	10%
Medium Red Clover	5%
Ladino Clover	5%
Kentucky Bluegrass VNS	5%
Alsike Clover	5%
Alfalfa	5%
*All seed mixes require double inoculation	
Alternative (Fescue-Free) Antero Midstream Default Wildlife Mix (200 - 250 LBS per Acre)	
Named Variety of Forage Perennial Ryegrass	40%
Annual Ryegrass	15%
Climax Timothy	20%
Orchardgrass	10%
Ladino Clover	5%
Alsike Clover	5%
Birdfoot Trefoil	5%
*All seed mixes require double inoculation	

30 PERMANENT SEEDING CHART (CONT.)  
B NTS

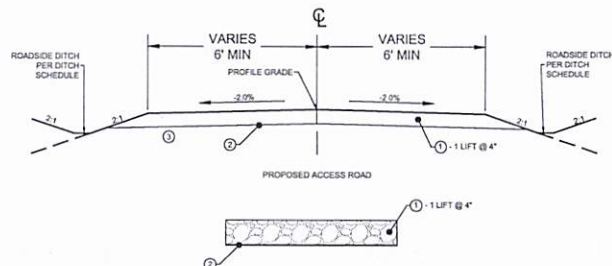
Lime	1.5 tons per acre
Fertilizer	10/0/20 200 lbs per acre
Straw Mulching	2 tons per acre

31 LIME, FERTILIZER, AND MULCH CHARTS  
NTS

**TYPES OF ROAD CROSS-SECTIONS**



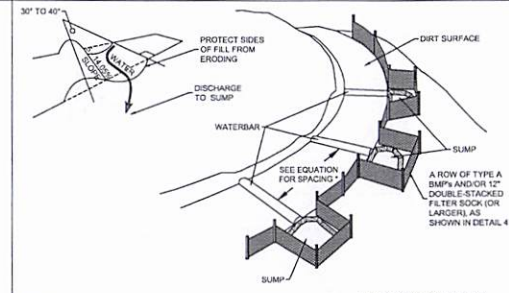
32 TYPES OF ROAD CROSS-SECTIONS  
NTS



- LEGEND**
- ① 3" CLEAN AGGREGATE (OR APPROVED EQUAL)
  - ② GEOTEXTILE FABRIC
  - ③ COMPACTED SUBGRADE (EXISTING GROUND)

- NOTES**
- TIE TO EXISTING ROAD.
  - ALL DITCHES SHALL BE VEGETATED OR ROCK LINED BASED ON DITCH SLOPE OR AS SHOWN ON THESE PLANS.
  - EXCAVATE A MINIMUM OF 1" INTO EXISTING ACCESS ROAD IN PROPOSED WIDENING AREAS.

33 ACCESS ROAD TYPICAL SECTION  
NTS



- NOTES**
- WATERBARS SHOULD BE INSTALLED ACROSS THE ENTIRE ROADWAY ON ALL SLOPES GREATER THAN 5%.
  - WATERBARS SHALL BE PLACED AT 5% TO 14.05% SLOPE DOWNHILL. THEY SHALL BE SPACED AT THE INCREMENTS AS SHOWN ON THE PLANS, AND IN ACCORDANCE WITH WVDEP E&S STANDARDS.
  - WATERBARS SHOULD BE CONSTRUCTED TO DISCHARGE TO A SUMP. WATERBARS SHOULD BE ORIENTED SO THAT THE DISCHARGE DOES NOT FLOW BACK INTO THE ROADWAY. GRANITEX FB OR EQUIVALENT SHOULD BE LOCATED BELOW THE DISCHARGE END OF THE WATERBARS.
  - HAUL ROADS SHOULD CARRY LESS THAN 23 VEHICLES PER DAY.
- MAINTENANCE**
- WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS AS SOON AS CONDITIONS ALLOW.
  - MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL HAUL ROAD HAS ACHIEVED PERMANENT STABILIZATION.

34 HAUL ROAD DETAIL  
NTS

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
AFE # A12878

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

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NO.	DESCRIPTION	QTY

**GENERAL INFORMATION**

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

**REVISION**

NO.	DESCRIPTION	DATE	BY

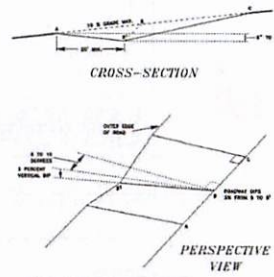
**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE ESCP DETAILS**

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA			
DRAWN BY:	JJJ (TTO)	DATE:	1/31/2024
CHECKED BY:	JRR (TTO)	AFE No.:	A12878
SCALE:	AS SHOWN	SHEET:	34-ESCPB
REVISION No.:	0		

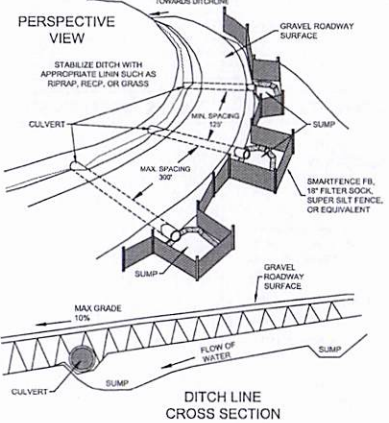
USER: JEFF JONES  
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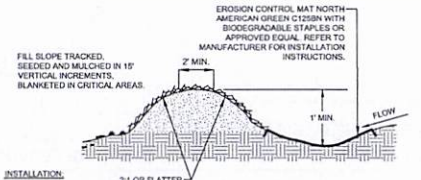
SPACING = 400/75' SLOPE = 10%

DISTANCE FROM DITCH	Average Slope of Channel			
	1%	2%	3%	4%
0-10'	24"	24"	24"	24"
10-20'	24"	24"	24"	24"
20-30'	24"	24"	24"	24"
30-40'	24"	24"	24"	24"
40-50'	24"	24"	24"	24"
50-60'	24"	24"	24"	24"
60-70'	24"	24"	24"	24"
70-80'	24"	24"	24"	24"
80-90'	24"	24"	24"	24"
90-100'	24"	24"	24"	24"

35 BRAD-BASE DIP  
NTS

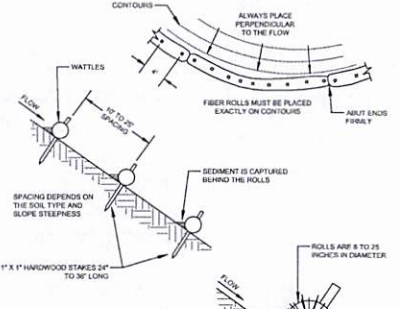


36 EROSION AND SEDIMENT CONTROL FOR ACCESS ROADS AND DRIVEWAYS  
NTS

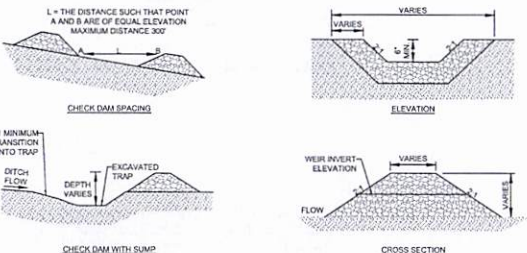


- INSTALLATION:**
1. WHEN CLEARING THE LOCATION FOR THE DIVERSION, ONLY CLEAR ENOUGH ROOM FOR CONSTRUCTION AND MAINTENANCE EQUIPMENT ACCESS. DO NOT CLEAR ANY ADDITIONAL AREA UNTIL ALL EROSION CONTROL DEVICES ARE IN PLACE.
  2. REMOVE ALL STUMPS, ROOTS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY.
  3. INSTALL DIVERSION AND COMPACT AS SHOWN IN DETAIL. INSURE POSITIVE DRAINAGE DURING CONSTRUCTION OF BERM.
  4. SCARP, SEED, MULCH AND TACK DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF BERM.
  5. INSTALL EROSION CONTROL MAT NORTH AMERICAN GREEN C125B PER MANUFACTURER'S RECOMMENDATIONS AND KEY INTO SIDES OF CHANNEL TO PREVENT WATER FROM UNDERMINING OR DAMAGING CHANNEL LINER.
- NOTES:**
1. TEMPORARY BERMS SHALL BE PLACED, MAINTAINED, AND ADJUSTED CONTINUOUSLY UNTIL 90% VEGETATIVE GROWTH IS ESTABLISHED ON THE EXTERIOR SLOPES WITH PERMANENT STORM DRAINAGE FACILITIES FUNCTIONING.
  2. BERMS SHALL OUTLET TO SLOPE PIPES, CHANNELS, OR OTHER APPROVED MEANS OF CONVEYING RUNOFF TO A SEDIMENT TRAP, SEDIMENT BASIN, OR COLLECTOR CHANNEL.
  3. CHANNEL BEHIND BERM SHALL HAVE POSITIVE GRADE TO OUTLET AND AN APPROPRIATE PROTECTIVE LINING.
  4. BERM SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
  5. AN ACCEPTABLE ALTERNATIVE TO TOP-OF-SLOPE BERM IS TO CONTINUOUSLY GRADE THE TOP OF FILL TO DIRECT RUNOFF AWAY FROM THE FULLSLOPE TO A COLLECTOR CHANNEL, SEDIMENT TRAP, OR SEDIMENT BASIN.
- MAINTENANCE:**
- INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS. REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND IMMEDIATELY STABILIZE IT.

37 TEMPORARY DIVERSION BERM FOR OFFSITE WATER  
NTS



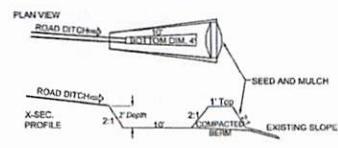
38 WATTLES  
NTS



**NOTES:**

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

39 ROCK CHECK DAM  
NTS



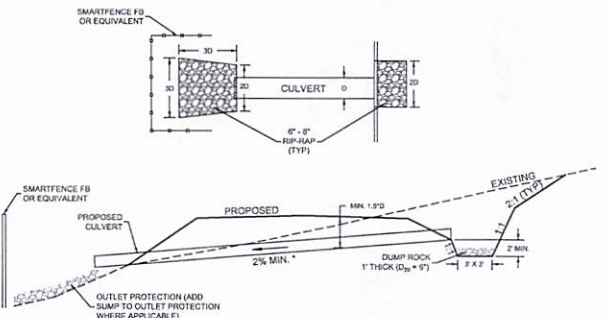
**LEVEL SPREADER DETAIL**  
NTS.

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

**NOTES:**

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

40 LEVEL SPREADER  
NTS



**NOTES:**

1. 2% MINIMUM SLOPE EXCEPT WHERE NOTED ON PLANS.
2. CULVERTS IN STREAMS SHALL BE LAID AT 0% AND COUNTERSUNK.

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

41 TYPICAL CULVERT & CULVERT INLET/OUTLET PROTECTION  
NTS

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
AFE # A12878

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

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NO.	DESCRIPTION	QTY

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3. THIS SHEET IS INTENDED TO BE PLOTTED ON A12878 (24" x 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

**Antero**  
Midstream

**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

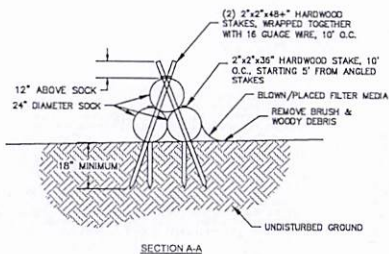
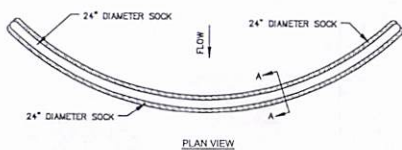
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CHECKED BY: JRM (TIG) AFE No.: A12878

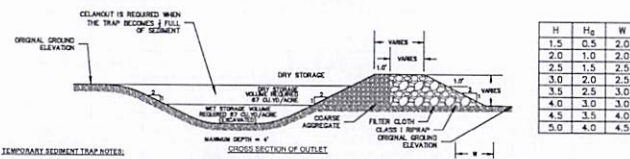
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REVISION No.: 0

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 USER: jpratt.jpratt  
 PLOT DATE/TIME: 1/31/2024 8:42 AM



42 TRIPLE STACK FILTER SOCK SEDIMENT TRAP  
NTS



**TEMPORARY SEDIMENT TRAP NOTES:**

- THE DETAIL SHOWN IS A GENERAL SCHEMATIC. THE CONTRACTOR SHALL DESIGN AND SET EACH TRAP ACCORDING TO THE GRADING PLAN.
- SEDIMENT TRAPS SHALL BE USED IN AREAS WHERE THE TOTAL CONTRIBUTING DRAINAGE AREA IS LESS THAN 3 ACRES.
- FILL MATERIAL FOR ANY SEDIMENT TRAP ENHANCEMENT SHALL BE FREE OF ROCKS OR OTHER WOODY DEBRIS. FILLING MATERIALS, SAND, STONES, AND OTHER STRUCTURAL MATERIALS, THE ENHANCEMENT SHALL BE CONTACTED BY 8" LAGERS BY TRANSDUCING WITH CONSTRUCTION EQUIPMENT.
- ANY SEDIMENT TRAP ENHANCEMENT SHALL BE STRENGTHENED WITH TEMPORARY VEGETATION IMMEDIATELY AFTER INSTALLATION.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
- THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE UP-SLOPE DRAINAGE AREA HAS BEEN STABILIZED.
- ALL CUT AND FILL SLOPES FORMING THE SEDIMENT TRAP SHALL BE 2:1 OR FLATTER.
- SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 OF THE VOLUME SEDIMENT REMOVED FROM THE TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AS DIRT AND CAUSE SEDIMENTATION PROBLEMS.
- THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY WINDS OR OTHER CONSTRUCTION EQUIPMENT.
- A RIP RAP SPURWAY CHANNEL MAY BE NECESSARY IF A CONCENTRATED OUTLET FLOW IS ANTICIPATED.
- FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT ITS DESIGN PERFORMANCE IS MAINTAINED. STONE CHANNELS WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED.

**NOTES:**

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

43 TEMPORARY SEDIMENT TRAP  
NTS  
DETAIL PROVIDED BY ANTERO WESTSTREAM LLC

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



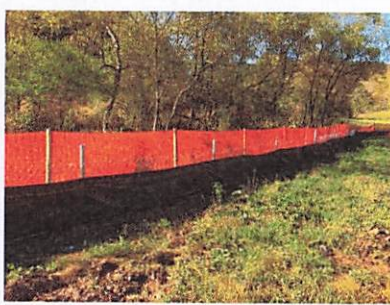
**PHASE I:**  
THIS IS ESSENTIALLY ORANGE SAFETY FENCE LINE SHOWN ABOVE. THIS MEASURE IS PUT IN PLACE TO LET CONTRACTORS KNOW THAT NO WORK IS TAKE PLACE BEYOND THIS POINT. THIS CONTROL IS TYPICALLY UTILIZED WHEN THERE IS A WETLAND OR STREAM LOCATED IN THE AREA BUT NOT WITHIN APPROXIMATELY 100 FEET OF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

44 SUPPLEMENTAL 404 CWA BMP CONTROLS  
NTS  
DETAIL PROVIDED BY ANTERO WESTSTREAM LLC



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

44 B SUPPLEMENTAL 404 CWA BMP CONTROLS  
NTS  
DETAIL PROVIDED BY ANTERO WESTSTREAM LLC



**PHASE III:**  
THIS CONTROL CONSISTS OF SUPER SILT FENCE WITH ORANGE CONSTRUCTION FENCE ACTING AS THE VISIBLE PORTION OF THE BARRIER. THIS CONTROL IS USED TO PREVENT SOILS OR GRAVELS FROM ENTERING STREAMS OR WETLANDS DURING CONSTRUCTION. THE SUPER SILT FENCE CAN BE USED IN CONJUNCTION WITH OTHER E&S METHODS. THIS CONTROL IS USED IN AREAS WHERE STREAMS OR WETLANDS ARE WITHIN APPROXIMATELY 50 FEET OF THE DISTURBED AREA.

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

44 C SUPPLEMENTAL 404 CWA BMP CONTROLS  
NTS  
DETAIL PROVIDED BY ANTERO WESTSTREAM LLC

**DEFINITIONS:**

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

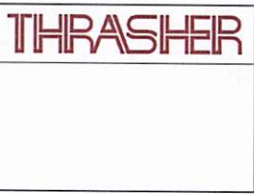
**FILTER CLOTH -** TYPICALLY TYPAR OR ANOTHER SUCH MATERIAL (USUALLY WOVEN) WHICH IS DESIGNED TO ALLOW WATER TO FLOW BUT RETAIN SEDIMENT.

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

**EMBANKMENT -** A WALL OR BANK OF EARTH OR STONE.

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

45 DEFINITIONS  
NTS  
DETAIL PROVIDED BY ANTERO WESTSTREAM LLC



**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_

AFE # A12878

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

REVISION		
NO.	DESCRIPTION	DATE

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**Antero**  
Midstream

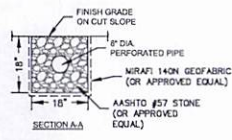
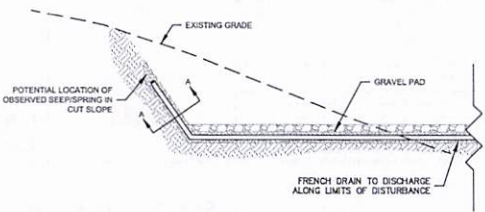
**SALEM HP DISCHARGE PIPELINE  
ESCP DETAILS**

PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA

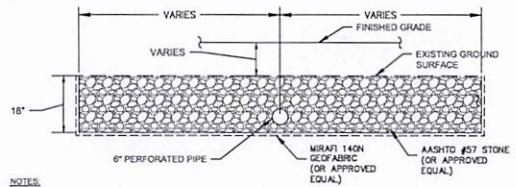
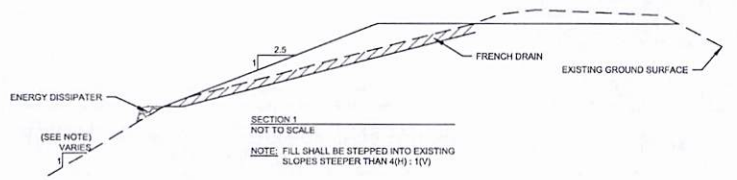
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 CHECKED BY: JRN (TTC) AFE No.: A12878  
 SCALE: AS SHOWN  
 REVISION No.: 0 SHEET: 36-ESCP10

USER: jared.jones  
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 C:\P\1556-00-ANTIGO-SALEM TO BALS-CADSWG\_A12878\Drawings\SALEM HP ESCP\ESCP DETAIL SHEETS.dwg



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

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



**NOTES:**

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

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



**Typical Polymer Stabilized Fiber Matrix Application Rates**

SLOPE	Maximum Rainfall of $\leq 20"$									
	6:1	5:1	4:1	3:1	2:1	1.5:1	1:1			
Soil Stabilizer (gals/acre)	4	5	6	7	8	9	10			
Fiber (lbs/acre)	1,500	1,500	1,500	1,800	2,000	2,500	3,000			

SLOPE	Maximum Rainfall of $> 20"$ and for Site Winterization		
	5:1	4:1	2:1
Soil Stabilizer (gals/acre)	6	8	10
Fiber (lbs/acre)	2,000	2,500	3,000

**NOTES:**

A BONDED FIBER MATRIX (BFM) IS AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. BFM'S MAKE USE OF A CROSSLINKED HYDROCOLLOID TACKIFIER TO BOND THERMALLY PROCESSED WOOD FIBERS. APPLICATION RATES VARY ACCORDING TO SITE CONDITIONS. FOR SLOPES UP TO 24:1 THE BFM SHOULD BE APPLIED AT A RATE OF 3,000 LBS/ACRE. STEEPER SLOPES MAY NEED AS MUCH AS 4,000 LBS/ACRE.

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

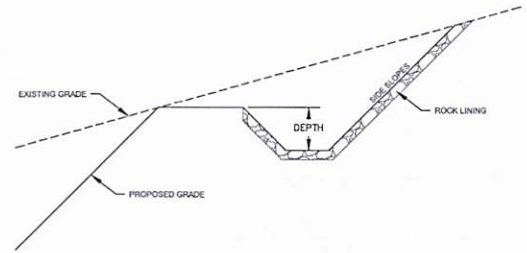
A POLYMER STABILIZED FIBER MATRIX (PSFM) CAN ALSO BE AN EFFECTIVE METHOD OF STABILIZING STEEP SLOPES WHEN USED PROPERLY. PSFM'S MAKE USE OF A LINEAR SOIL STABILIZING TACKIFIER THAT WORKS DIRECTLY ON SOIL TO MAINTAIN SOIL STRUCTURE, MAINTAIN PORE SPACE CAPACITY AND FLOCCULATE DISLODGED SEDIMENT THAT WILL SIGNIFICANTLY REDUCE RUNOFF TURBIDITY. PROPERLY APPLIED, A PSFM MAY BE AS MUCH AS 90% EFFECTIVE.

**NOTES:**

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

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

48 BONDED FIBER MATRIX (HYDROMULCH)  
NTS



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

49 TYPICAL ROCK LINED CHANNEL  
NTS

**THRASHER**

**IFP**  
ISSUED FOR PERMITTING

DATE: \_\_\_\_\_  
AFE # A12878

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**SUMMARY OF MATERIALS (3D)**

NO.	DESCRIPTION	QTY

**GENERAL INFORMATION**

1. ALL DESIGN, STRENGTH OF PIPELINE AND MAP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVIEW ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
2. INSTALLATION / SPECIFICATIONS / PLACEMENT OF BFM'S MAY VARY BASED ON FIELD CONDITIONS TO MAXIMIZE EFFECTIVENESS.
3. THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI D (24" x 36") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

**SALEM HP DISCHARGE PIPELINE ESCP DETAILS**  
 PROPOSED 6" STEEL GAS LINE  
 HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JLU (TIG) | DATE: 1/31/2024  
 CHECKED BY: JBN (TIG) | AFE No: A12878  
 SCALE: AS SHOWN  
 REVISION No: 0 | SHEET: 37-ESCP11



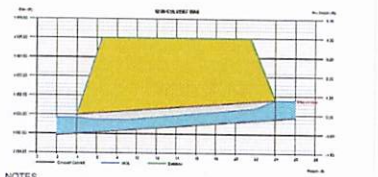
LAYOUT FOR: CULV...  
 DATE FILE: A:\051105-11556-00-ANTERS-SALEM TO BALD-SALONG A1378A\Drawings\PLANS\SALEM HP DISCHARGE\CULVERT AND DITCH REPORT SHEETS.dwg  
 USER: jreed\_jreed  
 PLOT DATE/TIME: 1/31/2024 4:42 AM

**Culvert Report**

Hydrus Express Estimator for AutoCAD® Civil 3D® by Autodesk, Inc. Monday, Jan 29, 2024

**12-IN CULVERT MAX**

Invert Elev Dn (ft)	= 1160.00	Calculations	
Pipe Length (ft)	= 20.00	Qmin (cfs)	= 3.38
Slope (%)	= 4.00	Qmax (cfs)	= 2.36
Invert Elev Up (ft)	= 1160.80	Qmax (cfs)	= 2.36
Rise (ft)	= 12.0	Tabular Elev (ft)	= (R <sup>2</sup> +D)/2
Span (ft)	= 12.0	Highlighted	
No. Barrels	= 1	Qmin (cfs)	= 2.36
N-Value	= 0.012	Qmax (cfs)	= 2.36
Culvert Type	= Circular Culvert	Qmax (cfs)	= 2.36
Culvert Entrance	= Smooth tapered inlet throat	Qmax (cfs)	= 2.36
Coeff. K <sub>1</sub> M <sub>1</sub> C <sub>1</sub> Y <sub>1</sub> A	= 0.534, 0.555, 0.0190, 0.9, 0.2	Qmax (cfs)	= 2.36
Embankment		Qmax (cfs)	= 2.36
Top Elevation (ft)	= 1165.00	Qmax (cfs)	= 2.36
Top Width (ft)	= 15.00	Qmax (cfs)	= 2.36
Crest Width (ft)	= 0.00	Qmax (cfs)	= 2.36



- NOTES**
- CROSS-DRAINAGE CULVERTS ARE SPACED APART AT LEAST 125' AND NO MORE THAN 300'.
  - CULVERT SPACING = 400/PERCENT GRADE + 75'.
  - OUTLET PROTECTION MUST BE INSTALLED AT EACH CULVERT.

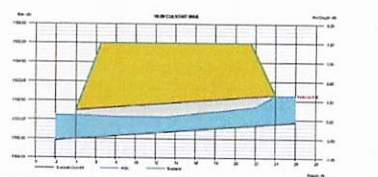
TYPICAL 12" CULVERT  
NTS

**Culvert Report**

Hydrus Express Estimator for AutoCAD® Civil 3D® by Autodesk, Inc. Monday, Jan 29, 2024

**18-IN CULVERT MAX**

Invert Elev Dn (ft)	= 1160.00	Calculations	
Pipe Length (ft)	= 20.00	Qmin (cfs)	= 6.58
Slope (%)	= 4.00	Qmax (cfs)	= 6.58
Invert Elev Up (ft)	= 1160.80	Qmax (cfs)	= 6.58
Rise (ft)	= 18.0	Tabular Elev (ft)	= (R <sup>2</sup> +D)/2
Span (ft)	= 18.0	Highlighted	
No. Barrels	= 1	Qmin (cfs)	= 6.58
N-Value	= 0.012	Qmax (cfs)	= 6.58
Culvert Type	= Circular Culvert	Qmax (cfs)	= 6.58
Culvert Entrance	= Smooth tapered inlet throat	Qmax (cfs)	= 6.58
Coeff. K <sub>1</sub> M <sub>1</sub> C <sub>1</sub> Y <sub>1</sub> A	= 0.534, 0.555, 0.0190, 0.9, 0.2	Qmax (cfs)	= 6.58
Embankment		Qmax (cfs)	= 6.58
Top Elevation (ft)	= 1165.00	Qmax (cfs)	= 6.58
Top Width (ft)	= 15.00	Qmax (cfs)	= 6.58
Crest Width (ft)	= 0.00	Qmax (cfs)	= 6.58



- NOTES**
- CROSS-DRAINAGE CULVERTS ARE SPACED APART AT LEAST 125' AND NO MORE THAN 300'.
  - CULVERT SPACING = 400/PERCENT GRADE + 75'.
  - OUTLET PROTECTION MUST BE INSTALLED AT EACH CULVERT.

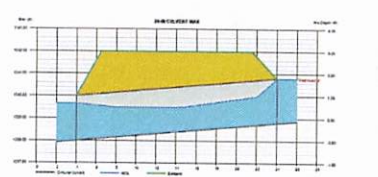
TYPICAL 18" CULVERT  
NTS

**Culvert Report**

Hydrus Express Estimator for AutoCAD® Civil 3D® by Autodesk, Inc. Monday, Jan 29, 2024

**24-IN CULVERT MAX**

Invert Elev Dn (ft)	= 1038.00	Calculations	
Pipe Length (ft)	= 20.00	Qmin (cfs)	= 13.61
Slope (%)	= 4.00	Qmax (cfs)	= 13.61
Invert Elev Up (ft)	= 1038.80	Qmax (cfs)	= 13.61
Rise (ft)	= 24.0	Tabular Elev (ft)	= (R <sup>2</sup> +D)/2
Span (ft)	= 24.0	Highlighted	
No. Barrels	= 1	Qmin (cfs)	= 13.61
N-Value	= 0.012	Qmax (cfs)	= 13.61
Culvert Type	= Circular Culvert	Qmax (cfs)	= 13.61
Culvert Entrance	= Smooth tapered inlet throat	Qmax (cfs)	= 13.61
Coeff. K <sub>1</sub> M <sub>1</sub> C <sub>1</sub> Y <sub>1</sub> A	= 0.534, 0.555, 0.0190, 0.9, 0.2	Qmax (cfs)	= 13.61
Embankment		Qmax (cfs)	= 13.61
Top Elevation (ft)	= 1042.00	Qmax (cfs)	= 13.61
Top Width (ft)	= 15.00	Qmax (cfs)	= 13.61
Crest Width (ft)	= 0.00	Qmax (cfs)	= 13.61



- NOTES**
- CROSS-DRAINAGE CULVERTS ARE SPACED APART AT LEAST 125' AND NO MORE THAN 300'.
  - CULVERT SPACING = 400/PERCENT GRADE + 75'.
  - OUTLET PROTECTION MUST BE INSTALLED AT EACH CULVERT.

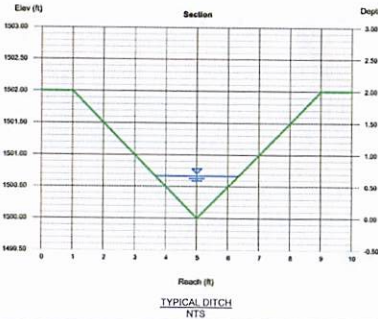
TYPICAL 24" CULVERT  
NTS

**Channel Report**

Hydrus Express Estimator for AutoCAD® Civil 3D® by Autodesk, Inc. Monday, Jan 29, 2024

**V-DITCH MAX**

Triangular		Highlighted	
Side Slopes (z:1)	= 2.00, 2.00	Depth (ft)	= 0.67
Total Depth (ft)	= 2.00	Q (cfs)	= 13.61
Invert Elev (ft)	= 1500.00	Area (sqft)	= 0.90
Slope (%)	= 8.00	Velocity (ft/s)	= 15.16
N-Value	= 0.012	Wetted Perim (ft)	= 3.00
Calculations		Chl. Depth, Yc (ft)	= 1.24
Compute by	Known Q	Top Width (ft)	= 2.68
Known Q (cfs)	= 13.61	ECCL (ft)	= 4.24



TYPICAL DITCH  
NTS



DATE: \_\_\_\_\_  
AFE # A12878

SUMMARY OF MATERIALS (3D)			SUMMARY OF MATERIALS (3D)		
NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY

GENERAL INFORMATION	
1.	ALL DESIGN, STRENGTH OF PIPELINE AND MAOP CALCULATIONS ALONG WITH ROUTING WERE PREPARED BY ANTERO AND PROVIDED TO THRASHER FOR REVISION ON THE PLANS. THRASHER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THESE CALCULATIONS AND/OR ROUTE PROVIDED BY ANTERO.
2.	CULVERT AND DITCH DESIGNS ARE BASED ON AVAILABLE MAPPING AND ASSUMED PROPOSED ROAD SURFACE ELEVATIONS.
3.	THIS SHEET IS INTENDED TO BE PLOTTED ON ANSI B (21" x 34") FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

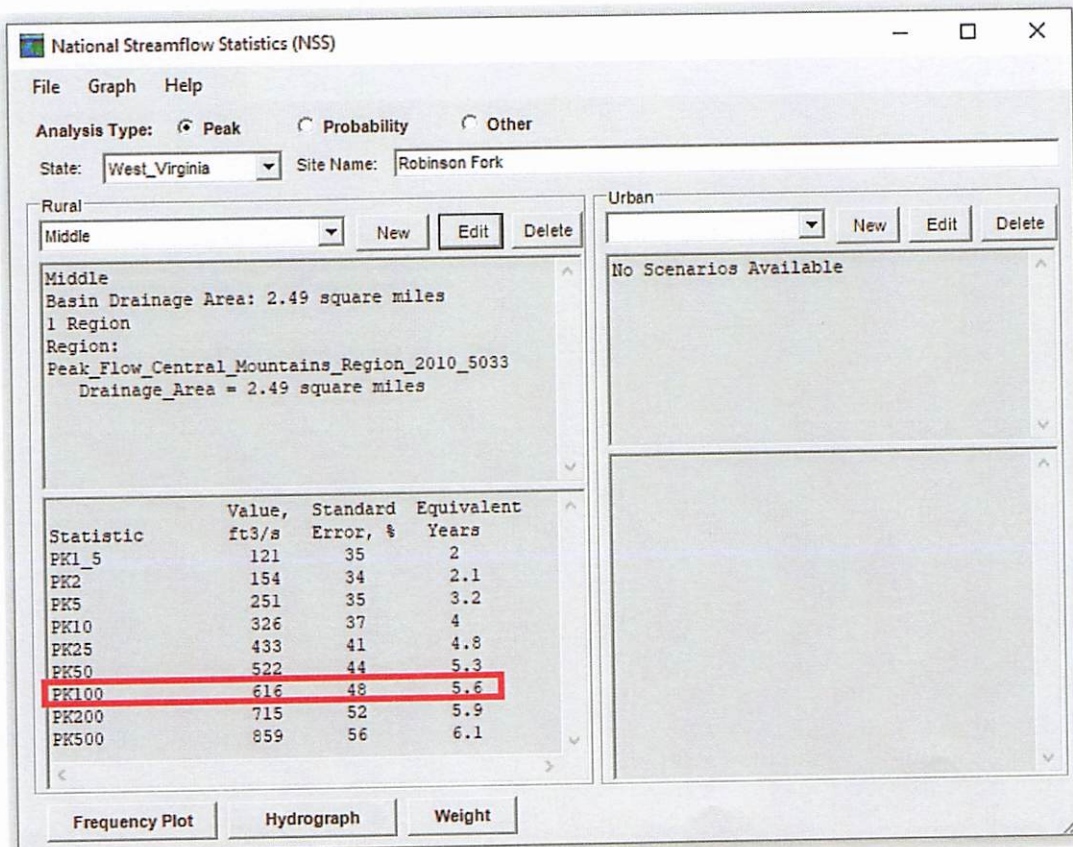
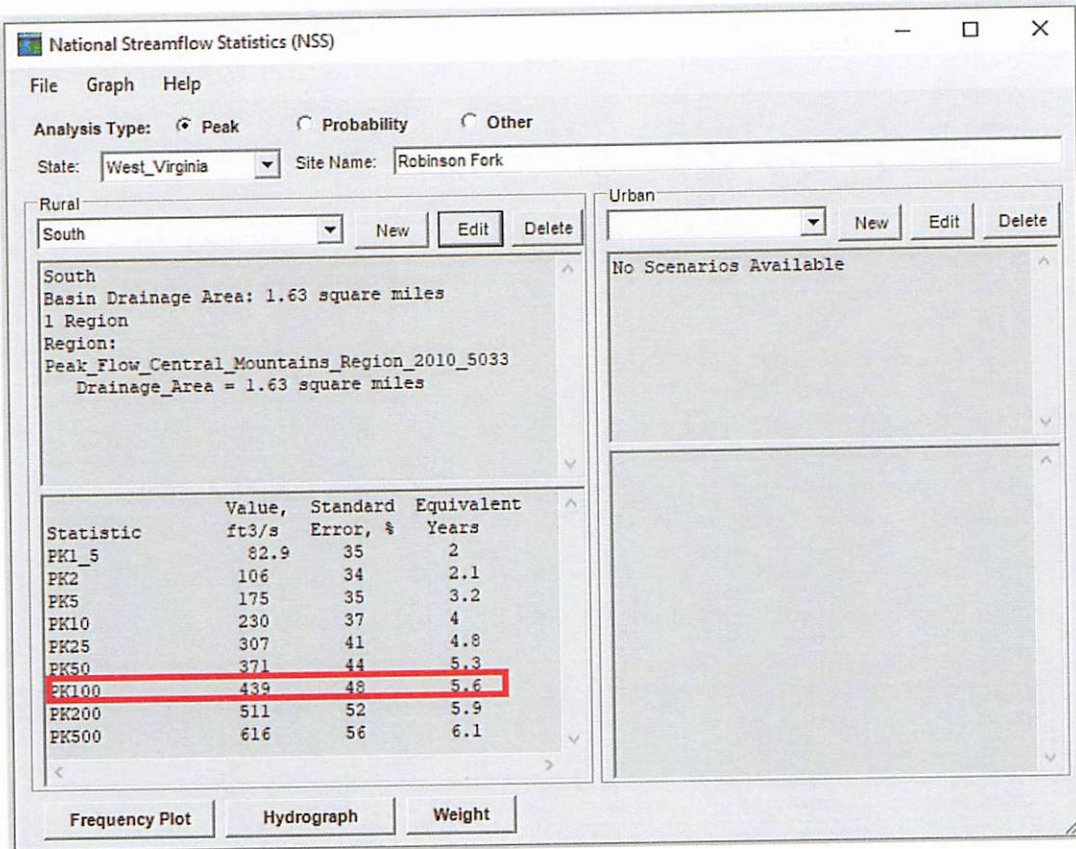
**Antero**  
Midstream

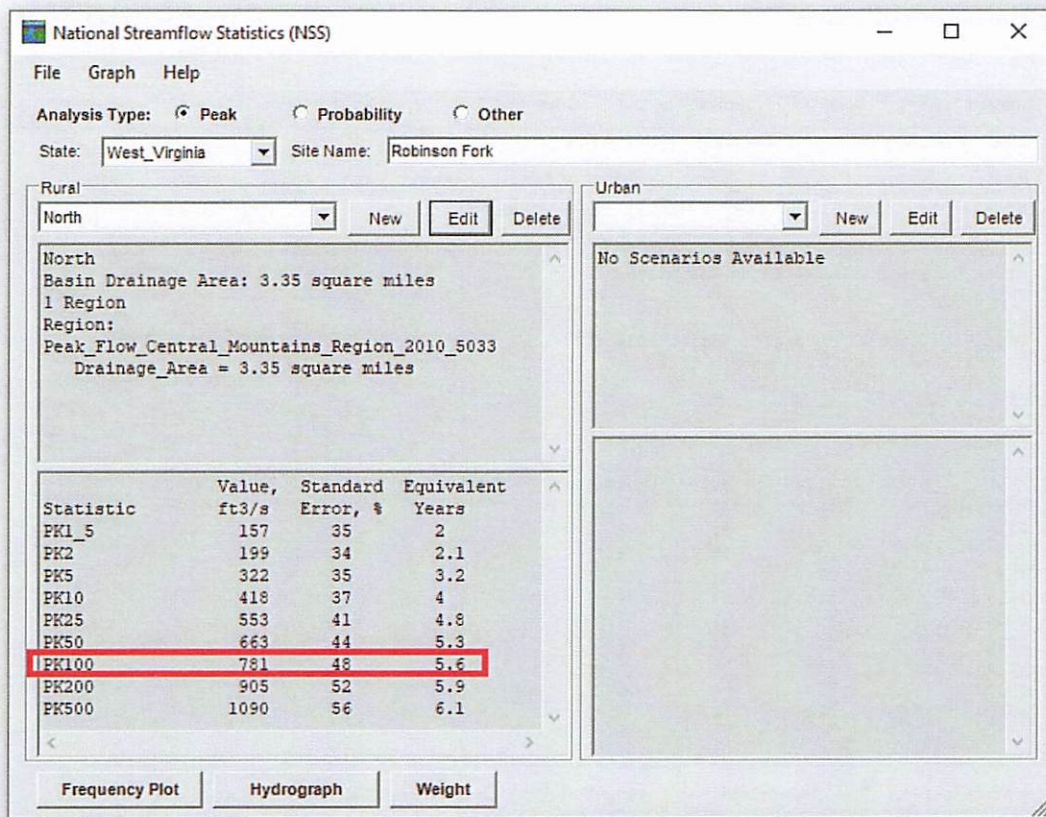
**SALEM HP DISCHARGE PIPELINE  
CULVERT & DITCH REPORTS**  
PROPOSED 6" STEEL GAS LINE

HARRISON & DODDRIDGE COUNTIES, WEST VIRGINIA  
 DRAWN BY: JDL (TIG) DATE: 1/31/2024  
 CHECKED BY: JRH (TIG) AFE No.: A12878  
 SCALE: AS SHOWN  
 SHEET: 38-CULVI  
 REVISION No.: 0



## APPENDIX C National Streamflow Statistics – Drainage Area







ATTACHMENT D  
PERMITTING & COORDINATION TABLE

HEC-RAS		River: Robinson Fork		Profile: PF 1		
Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev
				(cfs)	(ft)	(ft)
Reach 1	5965	PF 1	Pre	439	929	930.17
Reach 1	5965	PF 1	Post	439	929	930.17
Reach 1	5623	PF 1	Pre	439	925	926.19
Reach 1	5623	PF 1	Post	439	925	926.19
Reach 1	5123	PF 1	Pre	439	919	920.41
Reach 1	5123	PF 1	Post	439	919	920.41
Reach 1	4568	PF 1	Pre	439	914	916.51
Reach 1	4568	PF 1	Post	439	914	916.51
Reach 1	3746	PF 1	Pre	616	907	908.49
Reach 1	3746	PF 1	Post	616	907	908.49
Reach 1	3099	PF 1	Pre	616	901	903.53
Reach 1	3099	PF 1	Post	616	901	903.53
Reach 1	2409	PF 1	Pre	616	896	897.51
Reach 1	2409	PF 1	Post	616	896	897.51
Reach 1	2064	PF 1	Pre	616	894	895.84
Reach 1	2064	PF 1	Post	616	894	896.71
Reach 1	2014			Dam & matting		
Reach 1	1963	PF 1	Pre	781	894	895.51
Reach 1	1963	PF 1	Post	781	894	895.51
Reach 1	1463	PF 1	Pre	781	890	891.63
Reach 1	1463	PF 1	Post	781	890	891.63
Reach 1	945	PF 1	Pre	781	886	888.77
Reach 1	945	PF 1	Post	781	886	888.77
Reach 1	520	PF 1	Pre	781	885	887.19
Reach 1	520	PF 1	Post	781	885	887.19
Reach 1	111	PF 1	Pre	781	881	883.61
Reach 1	111	PF 1	Post	781	881	883.61



APPENDIX D  
Comparison for Calculated Flows - HEC-RAS  
Excel Data

National Streamflow Statistics (NSS)

File Graph Help

Analysis Type:  Peak  Probability  Other

State: West\_Virginia Site Name: Robinson Fork

Rural

North New Edit Delete

North  
 Basin Drainage Area: 3.35 square miles  
 1 Region  
 Region:  
 Peak\_Flow\_Central\_Mountains\_Region\_2010\_5033  
 Drainage\_Area = 3.35 square miles

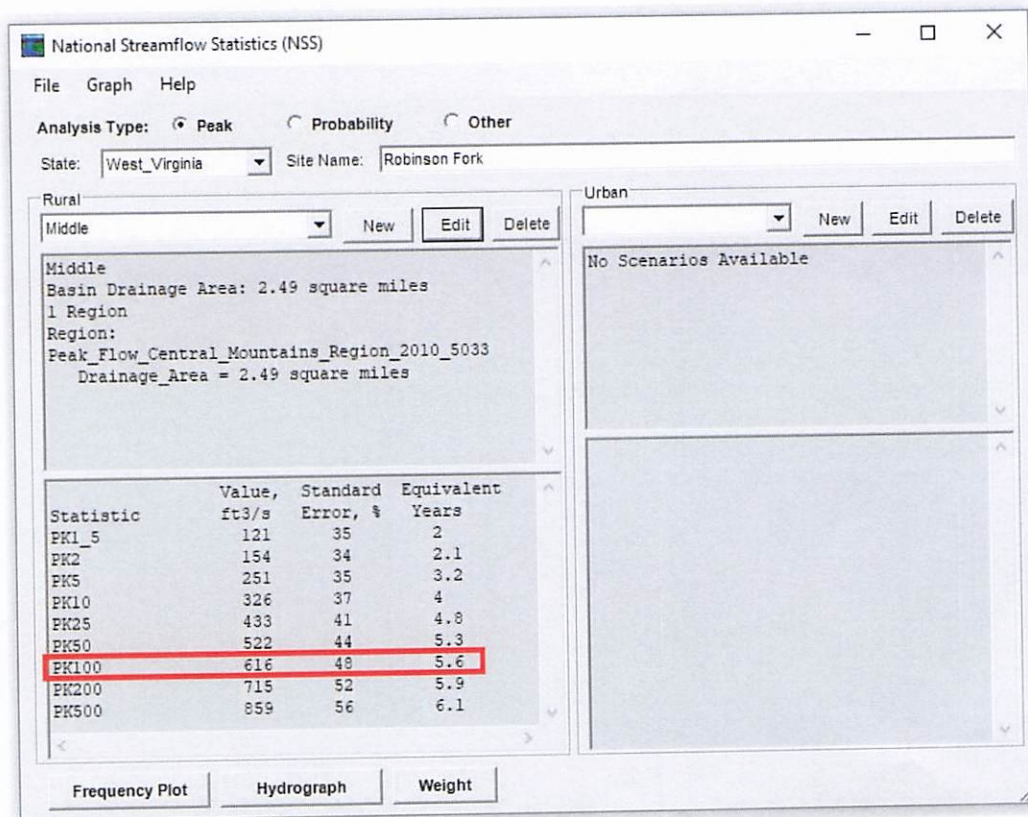
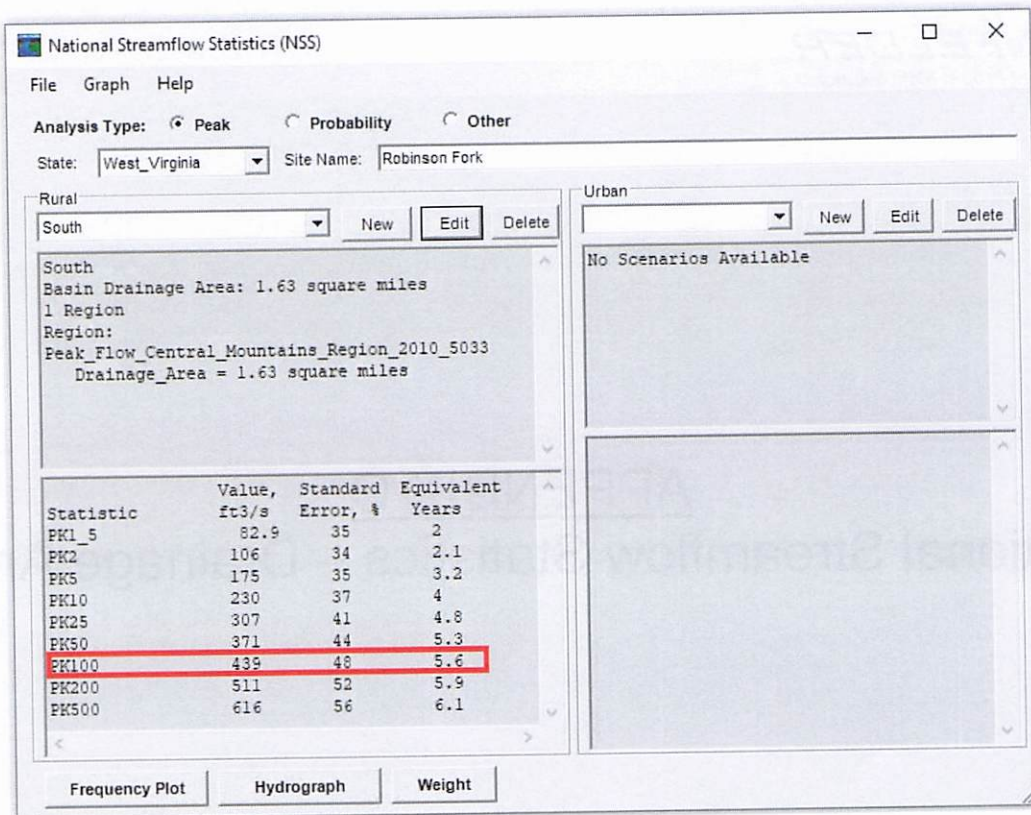
Statistic	Value, ft <sup>3</sup> /s	Standard Error, %	Equivalent Years
PK1_5	157	35	2
PK2	199	34	2.1
PK5	322	35	3.2
PK10	418	37	4
PK25	553	41	4.8
PK50	663	44	5.3
PK100	781	48	5.6
PK200	905	52	5.9
PK500	1090	56	6.1

Urban

New Edit Delete

No Scenarios Available







## APPENDIX C National Streamflow Statistics – Drainage Area

## Permitting & Coordination Table

Permitting Agency	Permit/Coordination Required	Submitted	Received (Anticipated)	Status
USACE <sup>1</sup>	NWP 12	1/26/24	(3/11/24)	PCN Required
	Mitigation Plan	Not Applicable	Not Applicable	Not Required
USFWS <sup>2</sup>	Threatened & Endangered Species (Section 7 Coordination)	<b>Habitat Assessment and Conservation Plan, Official Species List, and Determination Keys were Included in Attachment E of NWP Application for USACE to Initiate Section 7 (SLOPES) with USFWS.</b>		Required
WVSHPO <sup>3</sup>	Section 106 Coordination	<b>Will be Submitted to USACE to Initiate Section 106 Consultation with WVSHPO.</b>		Required
	Phase I & Architectural Survey			
WVDNR-OLS <sup>4</sup>	Stream Activity Application	1/24/24	(2/23/24)	Pending
WVDNR-WRS <sup>5</sup>	Threatened & Endangered State Species	11/15/23	12/18/23	Approved
	Spawning Waiver	To Be Determined	To Be Determined	To Be Determined
County Floodplain	Harrison County Floodplain Application	To Be Submitted	To Be Submitted	To Be Submitted
	Doddridge County Floodplain Application	2/1/24	(3/2/24)	Pending
WVDEP <sup>6</sup>	401 WQC Program Notification	1/26/24	1/29/24	Approved
	NPDES <sup>7</sup> Permit	Not Applicable	Not Applicable	Not Required
	Construction Stormwater General Permit	To Be Submitted	To Be Submitted	To Be Submitted
WVDOH <sup>8</sup>	Utility Permit	To Be Submitted	To Be Submitted	To Be Submitted

- 1 United States Army Corps of Engineers
- 2 United States Fish and Wildlife Service
- 3 West Virginia Division of Culture and History, State Historic Preservation Office
- 4 West Virginia Division of Natural Resources Office of Land and Stream
- 5 West Virginia Division of Natural Resources – Wildlife Resources Section
- 6 West Virginia Department of Environmental Protection
- 7 National Pollutant Discharge Elimination System
- 8 West Virginia Division of Highways

**GEidel@doddridgecountywv.gov**

---

**From:** GEidel@doddridgecountywv.gov  
**Sent:** Thursday, February 1, 2024 8:28 AM  
**To:** 'Matthew Albright'  
**Subject:** RE: Antero Midstream: Salem HP Discharge - Doddridge County Floodplain Application

Matt,

Thank you for sending this over, I will get on it and have it on the commission meeting agenda for next Tuesday. When the other permits come in, we will need copies. Those that are required need to be in before a floodplain permit can be issued. As always if you have any question or need anything please let me know.

George

---

**From:** Matthew Albright <MALbright@kleinfelder.com>  
**Sent:** Thursday, February 1, 2024 7:38 AM  
**To:** George Eidel <GEidel@doddridgecountywv.gov> <GEidel@doddridgecountywv.gov>  
**Cc:** Anthony J. Ludovici (aludovici@anteroresources.com) <aludovici@anteroresources.com>; Daniel Bulian (dbulian@anteroresources.com) <dbulian@anteroresources.com>  
**Subject:** Antero Midstream: Salem HP Discharge - Doddridge County Floodplain Application

Hi George,

On behalf of Antero Midstream (Antero), Kleinfelder, Inc. is submitting a floodplain application for the proposed Salem HP Discharge (Pipeline). The floodplain application can be found at the below link, which indicates that the proposed Pipeline will cross a regulated floodplain within Doddridge County.

Today we will be mailing (via Fed-Ex) a hard copy of this application to your office along with the permit fee. Can you please put this application on the agenda for next week's commission meeting?

Please address any questions or comments regarding this correspondence to Anthony Ludovici of Antero. He is cc'd on the email and his contact information is provided below.

Anthony Ludovici  
Environmental Specialist II  
Antero Midstream  
535 White Oaks Boulevard  
Bridgeport, WV 26330  
(304) 627-9120  
[aludovici@anteroresources.com](mailto:aludovici@anteroresources.com)

1. **20240201\_Salem HP Discharge\_Doddridge Co\_Floodplain App-Final.pdf** (40.57 MB) in Antero  
<https://kleinfelderupstream.filegenius.com/downloadPublic/zjepc4345q436vh/bj2o1z935h8ptou>

This link will expire on 05/01/24 at 08:22 am EDT

Thanks,

**Matt Albright**

Project Manager

51 Dutilh Rd., Suite 240

Cranberry Township, PA 16066

m | 609.947.5296



# INVOICE

The Herald Record LLC  
177 MAIN STREET  
WEST UNION, West Virginia 26456  
United States

Phone: 304-873-1600  
Fax: 304-666-1017  
Mobile: 304-266-2247  
TheHeraldRecord.com

**Bill to**

**Doddrige County OFFICE OF EMERGENCY MANAGEMENT**  
101 Church Street  
West Union, West Virginia 26456  
United States

**Invoice Number:** 4328  
**Invoice Date:** February 16, 2024  
**Payment Due:** February 16, 2024

**Amount Due (USD):** \$77.74

Invoice	Quantity	Unit Price	Amount
<b>Class II -- Floodplain Permit #644</b> Run dates -- 2/7/24 -- 2/14/24	1	\$38.87	\$38.87
<b>Class II Floodplain Permit # 645</b> Run dates: 2/7/24 -- 2/14/24	1	\$38.87	\$38.87
<b>Total:</b>			<b>\$77.74</b>
<b>Amount Due (USD):</b>			<b>\$77.74</b>

**STATE of WEST VIRGINIA:**  
**COUNTY OF DODDRIDGE. TO WIT:**

**Doddridge County Floodplain Permits**  
**(Week of February 25, 2024)**

Please take notice that on the (1st) of February, 2024, (Antero Midstream) filed an application for a Floodplain Permit (#24-645) to develop land located at or about (2424 Route 23 North); Coordinates: 39.334243 - 80.577049. The Application is on file with the Floodplain Manager of the County and may be inspected or copied during regular business hours in accordance with WV Code Chapter 29B Freedom of Information, Article 1 Public Records and county policy and procedures. Any interested persons who desire to comment shall present the same in writing by (February 6, 2024) (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Floodplain Manager of the County at 105 Court Street, Suite #3, West Union, WV 26456. This project is for a new 6 inch high pressure pipeline

George Eidel, CFM, OEM  
Doddridge County Floodplain Manager

I, Tamela B. Beamer, Editor of THE HERALD RECORD, a certified weekly newspaper published regularly in Doddridge County, West Virginia, Do Hereby Certify Upon Oath that the accompanying Legal Notice entitled:

**Doddridge County Floodplain Permit Application**  
**# 24-645**

was published in said paper for 2 successive weeks beginning with the issue of 02/07/2024 and ending with the issue of 2/14/2024 that contains 193 word space at .115 cents per word and amounts to the sum of \$28.98 FOR THE FIRST PUBLICATION.

SECOND PUBLICATION IS 75% OF THE FIRST PUBLICATION and each other publication thereafter \$21.73 for the TOTAL OF: \$ 50.71

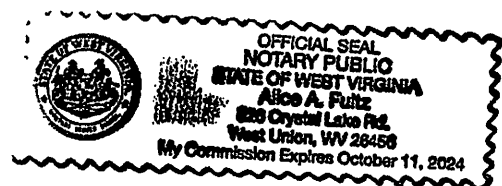
Editor

Tamela B. Beamer

SWORN TO AND SUBSCRIBED BEFORE ME THIS THE 14th day of February, 2024.

Alice A. Fultz  
Notary Public

My Commission Expires: October 11, 2024



PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
OF THE RETURN ADDRESS. FOLD AT DOTTED LINE

**SENDER: COMPLETE THIS SECTION**

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

1. Article Addressed to:

Waylon & Quinn L. Miller  
 138 Cascara Road  
 Salem, WV 26426



9590 9402 7059 1225 4210 17

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery



Doddridge County Office of  
Emergency Management/Floodplain Manager  
101 Church Street, Suite 102  
West Union, WV 26456

**CERTIFIED MAIL®**



7021 1970 0001 7228 0070



quadiant

**\$008.14<sup>0</sup>**

02/01/2024 ZIP 26456  
042L14835518

**US POSTAGE**

2/3

Waylon & Quinn L. Miller  
138 Cascara Road  
Salem, WV 26426

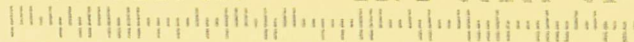
NIXIE 250 DE 1 0002/25/24

RETURN TO SENDER  
UNCLAIMED  
UNABLE TO FORWARD

UNC

26426-629638

BC: 26456119427 \*1171-06165-01-43



PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

**SENDER: COMPLETE THIS SECTION**

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

1. Article Addressed to:

Ezra G. & Artice Richards  
2018 WV Rt. 23 N  
Salem, WV 26426



9590 9402 7059 1225 4209 80

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

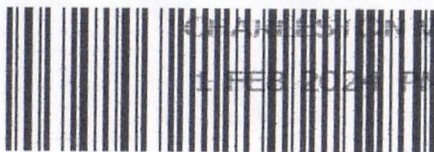
D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

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WEST UNION WV 250  
1 FEB 2024 PM 1 L

7021 1970 0001 7228 0049



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**\$008.14<sup>0</sup>**

02/01/2024 ZIP 26456  
042L14835518

**US POSTAGE**

2/3

Ezra G. & Artice Richards  
2018 WV Rt. 23 N  
Salem, WV 26426

NIXIE 250 DE 1 0003/05/24

RETURN TO SENDER  
REFUSED  
UNABLE TO FORWARD

BC: 26456119427 \*1971-00619-01-44

REF



www.usps.com

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

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

1. Article Addressed to:

Trustees of M. E. Church  
 2421 WV Rt. 23 N  
 Salem, WV 26426



9590 9402 7059 1225 4209 73

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

Agent

Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

Adult Signature

Adult Signature Restricted Delivery

Certified Mail®

Certified Mail Restricted Delivery

Collect on Delivery

Collect on Delivery Restricted Delivery

Insured Mail

Insured Mail Restricted Delivery (over \$500)

Priority Mail Express®

Registered Mail™

Registered Mail Restricted Delivery

Signature Confirmation™

Signature Confirmation Restricted Delivery

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Doddridge County Office of  
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WEST UNION WV 250  
1 FEB 2024 PM 1 L

702 1970 0001 7228 0056



quadiant

**\$008.14<sup>0</sup>**

02/01/2024 ZIP 26456  
042L14835518

**US POSTAGE**

23

Trustees of M. E. Church  
2424 WV Rt. 23 N  
Salem, WV 26426

NIXIE 250 DE 1 0002/25/24

RETURN TO SENDER  
UNCLAIMED  
UNABLE TO FORWARD

BC: 26456119427 \*0671-02756-01-43



UNC

264561194  
26426-027524

**SENDER: COMPLETE THIS SECTION**

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

1. Article Addressed to:

Alberta Chipps  
2458 WV Rt. 23 N  
Salem, WV 26426



9590 9402 7059 1225 4209 66

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

Alberta Chipps

 Agent Addressee

B. Received by (Printed Name)

Alberta Chipps

C. Date of Delivery

D. Is delivery address different from item 1?

 Yes

If YES, enter delivery address below:

 No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)

 Priority Mail Express® Registered Mail™ Registered Mail Restricted Delivery Signature Confirmation™ Signature Confirmation Restricted Delivery

USPS TRACKING #



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

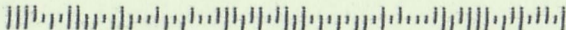
9590 9402 7059 1225 4209 66

**United States  
Postal Service**

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

Doddridge County Office of  
Emergency Management/Floodplain Manager  
101 Church Street, Suite 102  
West Union, WV 26456

24-645



**SENDER: COMPLETE THIS SECTION**

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

1. Article Addressed to:

Dustin Underwood  
1434 WV Rt. 23N  
Salem, WV 26426



9590 9402 7059 1225 4210 00

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

*Dustin Underwood*  Agent  
 Addressee

B. Received by (Printed Name)

*Dustin Underwood*

C. Date of Delivery

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

3. Service Type

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



USPS TRACKING #



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

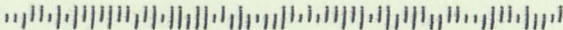
9590 9402 7059 1225 4210 00

**United States  
Postal Service**

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

Doddridge County Office of  
Emergency Management/Floodplain Manager  
101 Church Street, Suite 102  
West Union, WV 26456

24-645



**SENDER: COMPLETE THIS SECTION**

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

1. Article Addressed to:

Lisa R. Wilt  
 2463 WV Rt. 23 N  
 Salem, WV 26426



9590 9402 7059 1225 4209 97

2. Article Number (Transfer from service label)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X *Lisa R Wolford*

- 
- Agent
- 
- 
- Addressee

B. Received by (Printed Name)

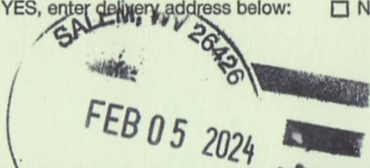
*Lisa R Wolford*

C. Date of Delivery

D. Is delivery address different from item 1?  Yes

If YES, enter delivery address below:

- 
- No



3. Service Type

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

USPS TRACKING #



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

9590 9402 7059 1225 4209 97

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Postal Service**

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24-645



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OFFICIAL USE

Certified Mail Fee

\$

4.15

Extra Services & Fees (check box, add fees as appropriate)

Return Receipt (hardcopy)

\$

3.35

Return Receipt (electronic)

\$

Certified Mail Restricted Delivery

\$

Adult Signature Required

\$

Adult Signature Restricted Delivery

\$

Postage

\$

.64

Total Postage and Fees

\$

8.14

Sent To

Alberta Chipps

Street and Apt. No., or PO Box No.

2458 WURT. 23 N

City, State, ZIP+4®

Salem, WV 26426

24-645

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



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OFFICIAL

WEST UNION, WV

Certified Mail Fee

4.15

\$

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy)

\$ 3.35

Return Receipt (electronic)

\$

Certified Mail Restricted Delivery

\$

Adult Signature Required

\$

Adult Signature Restricted Delivery

\$

Postage

.64

\$

Total Postage and Fees

8.14

\$

Sent To

Ezra G. \* Art. ie Richards

Street and Apt. No., or PO Box No.

2018 WV Rt. 23 N

City, State, ZIP+4®

Salem, WV 26426

24-645

FEB 01 2024  
Postmark Here

USPS 26456-9998

7021 1970 0001 7228 0049

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**OFFICIAL USE**

Certified Mail Fee

4.15

\$

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy)

\$ 3.35

Return Receipt (electronic)

\$

Certified Mail Restricted Delivery

\$

Adult Signature Required

\$

Adult Signature Restricted Delivery

\$

Postage

.64

\$

Total Postage and Fees

8.14

\$

Sent To

Lisa R. Witt

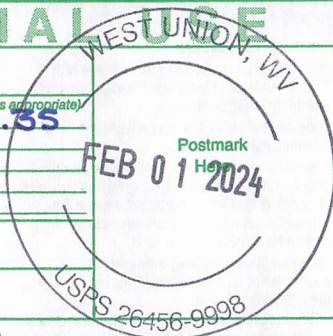
Street and Apt. No., or PO Box No.

2463 WV Rt. 23N

City, State, ZIP+4®

Salem, WV 26426

24-645



7021 1970 0001 7228 0063

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

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OFFICIAL USE

Certified Mail Fee

4.15

\$

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy)

\$ 3.35

Return Receipt (electronic)

\$

Certified Mail Restricted Delivery

\$

Adult Signature Required

\$

Adult Signature Restricted Delivery

\$

Postage

.64

\$

Total Postage and Fees

8.14

\$

Sent To

Trustees of m.e.

Street and Apt. No., or PO Box No.

2424 WV Rt. 23N

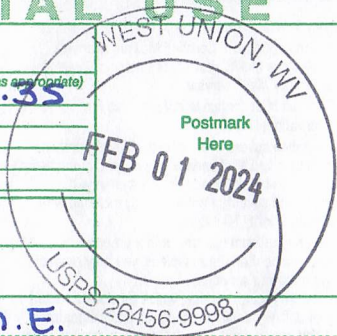
City, State, ZIP+4®

Salem, WV 26426

24-645

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



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CERTIFIED MAIL® RECEIPT

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OFFICIAL USE

Certified Mail Fee

4.15

\$

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy)

\$ 3.35

Return Receipt (electronic)

\$

Certified Mail Restricted Delivery

\$

Adult Signature Required

\$

Adult Signature Restricted Delivery

\$

Postage

.64

\$

Total Postage and Fees

8.14

\$

Sent to

Dustin Underwood

Street and Apt. No., or PO Box No.

1434 WV Rt. 23N

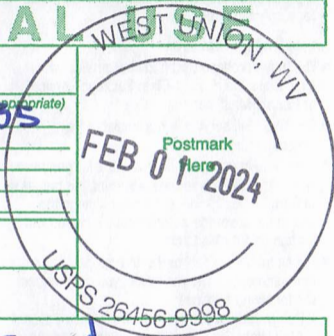
City, State, ZIP+4®

Salmon, WV 26426

24-645

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



7021 1970 0001 7228 0087



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**CERTIFIED MAIL® RECEIPT**  
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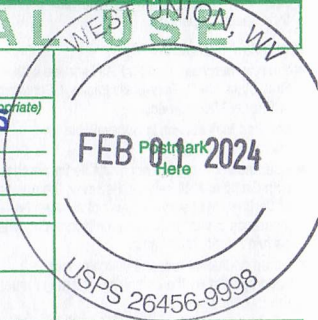
**OFFICIAL USE**

Certified Mail Fee **4.15**  
\$ \_\_\_\_\_  
Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$ **3.35**  
 Return Receipt (electronic) \$ \_\_\_\_\_  
 Certified Mail Restricted Delivery \$ \_\_\_\_\_  
 Adult Signature Required \$ \_\_\_\_\_  
 Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage **.64**  
\$ \_\_\_\_\_

Total Postage and Fees  
\$ **8.14**

Sent To **Waylon: Quinn L. Miller**  
Street and Apt. No., or PO Box No.  
**138 Cascade Rd.**  
City, State, ZIP+4®  
**Salem, WV 26426**



**24-645**

7021 1970 0001 7228 0070