

Commercial/Industrial Floodplain Development Permit

Doddridge County, WV Floodplain Management

This permit has been issued to ANTERO RESOURCES , and is for the approved commercial and/or industrial development project associated with this permit 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: #14-244 Wolf Pen Pad, Harwood Pad Road

Date Approved: 07/10/2014

Expires: N/A

Issued to: ANTERO RESOURCES

**POC: Emily Kijowski
303-357-7232**

**Company Address: 1615 WYNKOOP ST
DENVER, CO**

Project Address: New Milton District

Lat/Long: 39.239403N/80.687587W

Purpose of development: Road. Project does NOT impact floodplain.

Issued by: Edwin L. "Bo" Wriston, Doddridge County FPM (or designee)

Date: 07/10/2014

For additional information regarding this permit, please contact
Doddridge County Floodplain Manager at 304.873.2631, or via email at
doddridgecountyfpm@gmail.com
118 East Court Street; West Union, WV 26456

Legal Advertisement:
Doddridge County
Floodplain Permit Application

Please take notice that on the 8th day of July, 2014

Antero Resources

filed an application for a Floodplain Permit to develop land located at or about:

New Milton District 39.239403N / 80.687587W

Permit #14-244 Wolf Pen Pad, Harwood Pad Road

(Note: This project is not within the floodplain)

The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours. As this project is outside the FEMA identified floodplain of Doddridge County, Doddridge County Floodplain Management has no regulatory authority.

Any interested persons who desire to comment shall present the same in writing by **August 4, 2014**, delivered to:

Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston, Doddridge County Flood Plain Manager

#14-244

FILED

2014 JUL -8 PM 1:42

BOB A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV



Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

July 3, 2014

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

Mr. Wriston:

Antero Resources Appalachian Corporation (Antero) would like to submit a Doddridge County Floodplain permit application for our Wolf Pen Pad, Harwood Pad Road. Our project is located in Doddridge County, New Milton District and per the WV Flood Tool Map, this location is not within the floodplain.

Attached you will find the following:

- Doddridge County Floodplain Permit Application
- Construction Plans
- WV Flood Tool Map

If you have any questions please feel free to contact me at (303) 357-7232.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Emily Kijowski".

Emily Kijowski
Permit Representative
Antero Resources Appalachian Corporation

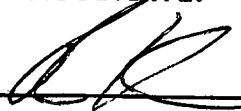
Enclosures

DODDRIDGE COUNTY FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

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

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

APPLICANT'S SIGNATURE _____



DATE July 3, 2014

SECTION 2: PROPOSE DEVELOPMENT (TO BE COMPLETED BY APPLICANT).

IF THE APPLICANT IS NOT A NATURAL PERSON, THE NAME, ADDRESS, AND TELEPHONE NUMBER OF A NATURAL PERSON WHO SHALL BE APPOINTED BY THE APPLICANT TO RECEIVE NOTICE PURSUANT TO ANY PROVISION OF THE CURRENT DODDRIDGE COUNTY FLOODPLAIN ORDINANCE.

APPLICANT'S NAME: Antero Midstream LLC - Randy Kloberdanz,

ADDRESS: 1615 Wynkoop Street, Denver, CO 80202

TELEPHONE NUMBER: Contact Emily Kijowski: (303)-357-7232

BUILDER'S NAME: Antero Midstream LLC
ADDRESS: 1615 Wynkoop Strett, Denver, CO 80202
TELEPHONE NUMBER: (303)-357-7310

ENGINEER'S NAME: Hannah Engineering
ADDRESS: 1121 Beverly Pike, Elkins, WV 26241
TELEPHONE NUMBER: (304)-636-7777

PROJECT LOCATION:

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) Most construction within state right of way, staging area: Roger A. McClain

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) 743 Piggan Run Road, West Union, WV 26456

DISTRICT: New Milton

DATE/FROM WHOM PROPERTY

PURCHASED: N/A

LAND BOOK DESCRIPTION: _____

DEED BOOK REFERENCE: Deed Book 288, page 303

TAX MAP REFERENCE: Tax Map 8, Parcel 10

EXISTING BUILDINGS/USES OF PROPERTY: None

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY See above

ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY _____

To avoid delay in processing the application, please provide enough information to easily identify the project location.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

ACTIVITY

STRUCTURAL TYPE

- | | | | |
|-------------------------------------|-------------------------|--------------------------|----------------------------------|
| <input checked="" 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 Altercation (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)
-

C. STANDARD SITE PLAN OR SKETCH

1. SUBMIT ALL STANDARD SITE PLANS, IF ANY HAVE BEEN PREPARED.
2. IF STANDARD SITE PLANS HAVE NOT BEEN PREPARED:
 SKETCH ON A SEPARATE 8 ½ X 11 INCH SHEET OF PAPER THE SHAPE AND LOCATION OF THE LOT. SHOW THE LOCATION OF THE INTENDED CONSTRUCTION OR LAND USE INDICATING BUILDING SETBACKS, SIZE & HEIGHT. IDENTIFY EXISTING BUILDINGS, STRUCTURES OR LAND USES ON THE PROPERTY.
3. SIGN AND DATE THE SKETCH.

ACTUAL TOTAL CONSTRUCTION COSTS OF THE COMPLETE DEVELOPMENT IRRESPECTIVE OF WHETHER ALL OR ANY PART OF THE SUBJECT PROPOSED CONSTRUCTION PROJECT IS WITHIN THE FLOODPLAIN \$ N/A - Location is not within the floodplain

D. ADJACENT AND/OR AFFECTED LANDOWNERS:

1. NAME AND ADDRESS OF ALL OWNERS OF SURFACE TRACTS ADJACENT TO THE AREA OF THE SURFACE TRACT (UP & DOWN STREAM) UPON WHICH THE PROPOSED ACTIVITY WILL OCCUR AND ALL OTHER SURFACE OWNERS UP & DOWN STREAM) WHO OWN PROPERTY THAT MAY BE AFFECTED BY FLOODING AS IS DEMONSTRATED BY A FLOODPLAIN STUDY OR SURVEY (IF ONE HAS BEEN COMPLETED).

NAME: N/A-No properties sharing an
 ADDRESS: immediate and common boundary
up or down stream due to the
location not being in floodplain

NAME: _____
 ADDRESS: _____

NAME: _____
 ADDRESS: _____

NAME: _____
 ADDRESS: _____

1. NAME AND ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON ANY ADJACENT PROPERTY AT THE TIME THE FLOODPLAIN PERMIT APPLICATION IS FILED AND THE NAME AND ADDRESS OF AT LEAST ONE ADULT RESIDING IN ANY HOME ON ANY PROPERTY THAT MAY BE AFFECTED BY FLOODING AS IS DEMONSTRATED BY A FLOODPLAIN STUDY OR SURVEY.

NAME: N/A-No properties sharing an
 ADDRESS: immediate and common boundary
up or down stream due to the
location not being in floodplain

NAME: _____
 ADDRESS: _____

NAME: _____
 ADDRESS: _____

NAME: _____
 ADDRESS: _____

E. CONFIRMATION FORM

THE APPLICANT ACKNOWLEDGES, AGREES, AND CONFIRMS THAT HE/IT WILL PAY WITHIN 30 DAYS OF RECEIPT OF INVOICE BY THE COUNTY FOR ALL EXPENSES RELATIVE TO THE PERMIT APPLICATION PROCESS GREATER THAN THE REQUIRED DEPOSIT FOR EXPENSES INCLUDING:

- (A) PERSONAL SERVICE OF PROCESS BY THE DODDRIDGE COUNTY SHERIFF AT THE RATES PERMITTED BY LAW FOR SUCH SERVICE.
- (B) SERVICE BY CERTIFIED MAIL RETURN RECEIPT REQUESTED.
- (C) PUBLICATION.

- (D) COURT REPORTING SERVICES AT ANY HEARINGS REQUESTED BY THE APPLICANT.
- (E) CONSULTANTS AND/OR HEARING EXPERTS UTILIZED BY DODDRIDGE COUNTY FLOODPLAIN ADMINISTRATOR/MANAGER OR FLOODPLAIN APPEALS BOARD FOR REVIEW OF MATERIALS AND/OR TESTIMONY REGARDING THE EFFICACY OF GRANTING OR DENYING THE APPLICANT'S FLOODPLAIN PERMIT.

NAME (PRINT): Randy Kloberdanz

SIGNATURE: 

DATE: July 3, 2014

After completing SECTION 2, APPLICANT should submit form to Floodplain Administrator/Manager or his/her representative for review.

SECTION 3: FLOODPLAIN DETERMINATION (to be completed by Floodplain Administrator/Manager or his/her representative)

THE PROPOSED DEVELOPMENT:

THE PROPOSED DEVELOPMENT IS LOCATED ON:

FIRM Panel: _____

Dated: _____

Is **NOT** located in a Specific Flood Hazard Area (Notify applicant that the application review is complete and **NO FLOODPLAIN DEVELOPMENT PERMIT IS REQUIRED**).

Is located in Special Flood Hazard Area.

FIRM zone designation _____

100-Year flood elevation is: _____ NGVD (MSL)

Unavailable

The proposed development is located in a floodway.

FBFM Panel No. _____

Dated _____

See section 4 for additional instructions.

SIGNED _____

DATE _____

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by Floodplain Administrator/Manager or his/her representative)

The applicant must submit the documents checked below before the application can be processed.

- A plan showing the location of all existing structures, water bodies, adjacent roads, lot dimensions and proposed development.

- Development plans, drawn to scale, and specifications, including where applicable: details for anchoring structures, storage tanks, proposed elevation of lowest floor, (including basement or crawl space), types of water resistant materials used below the first floor, details of flood proffing of utilities located below the first floor and details of enclosures below the first floor. Also _____

- Subdivision or other development plans (If the subdivision or development exceeds 50 lots or 5 acres, whichever is the lesser, the applicant must provide 100-year flood elevations if they are not otherwise available).

- Plans showing the extent of watercourse relocation and/or landform alterations.

- Top of new fill elevation _____ Ft. NGVD (MSL).
For floodproofing structures applicant must attach certification from registered engineer or architect.

- Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the 100-year flood. A copy of all data and calculations supporting this finding must also be submitted.

- Manufactured homes located in a floodplain area must have a West Virginia Contractor's License and a Manufactured Home Installation License as required by the Federal Emergency Management Agency (FEMA).

Other:

SECTION 5: PERMIT DETERMINATION (To be completed by Floodplain Administrator/Manager or his/her representative)

I have determined that the proposed activity (type is or is not) in conformance with provisions of the Floodplain Ordinance adopted by the County Commission of Doddridge County on May 21, 2013. The permit is issued subject to the conditions attached to and made part of this permit.

SIGNED _____ DATE _____

If the Floodplain Administrator/Manager found that the above was not in conformance with the provisions of the Doddridge County Floodplain Ordinance and/or denied that application, the applicant may complete an appealing process below.

APPEALS: Appealed to the County Commission of Doddridge County? Yes No

Hearing Date: _____

County Commission Decision - Approved Yes No

CONDITIONS: _____

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT before Certificate of Compliance is issued).

The following information must be provided for project structures. This section must be completed by a registered professional engineer or a licensed land surveyor (or attach a certification to this application).

COMPLETE 1 OR 2 BELOW:

- 1 Actual (As-Built) Elevation of the top of the lowest floor (including basement or crawl space is _____ FT. NGVD (MSL)
- 2 Actual (As Built) elevation of floodproofing is _____ FT. NGVD (MSL)

Note: Any work performed prior to submittal of the above information is at risk of the applicant.

SECTION 7: COMPLIANCE ACTION (To be completed by the Floodplain Administrator/Manager or his/her representative).

The Floodplain Administrator/Manager or his/her representative will complete this section as applicable based on inspection of the project to ensure compliance with the Doddridge County Floodplain Ordinance.

INSPECTIONS:

DATE: _____ BY: _____
DEFICIENCIES ? Y/N

COMMENTS _____

SECTION 8: CERTIFICATE OF COMPLIANCE (To be completed by Floodplain Administrator/Manager or his/her representative).

Certificate of Compliance issued: DATE: _____ BY: _____

**CERTIFICATE OF COMPLIANCE
FOR DEVELOPMENT IN SPECIAL FLOOD HAZARD AREA
(OWNER MUST RETAIN)**

PERMIT NUMBER: _____

PERMIT DATE: _____

PURPOSE –

CONSTRUCTION LOCATION: _____

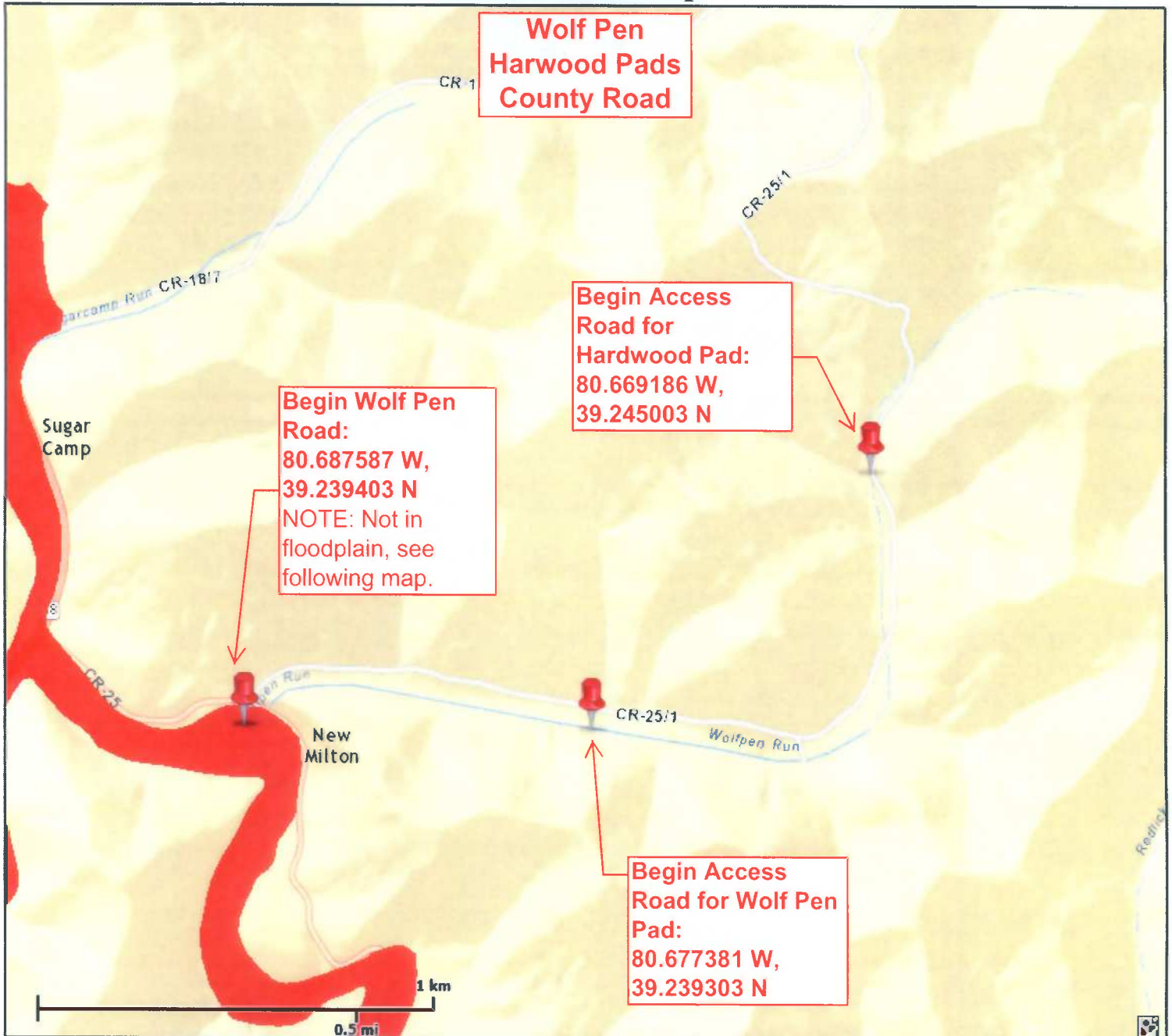
OWNER'S ADDRESS: _____

**THE FOLLOWING MUST BE COMPLETED BY THE FLOODPLAIN
ADMINISTRATOR/MANAGER OR HIS/HER AGENT.**

**COMPLIANCE IS HEREBY CERTIFIED WITH THE REQUIREMENT OF THE
FLOODPLAIN ORDINANCE ADOPTED BY THE COUNTY COMMISSION OF
DODDRIDGE COUNTY ON MAY 21, 2013.**

SIGNED _____ **DATE** _____

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.

Map Created on 7/3/2014

 Location of the mouse click

 **Flood Hazard Zone
(1% annual chance floodplain)**

User Notes:

Disclaimer:

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

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

Flood Hazard Area:

Elevation: About 1163 feet

Location (long, lat): 80.690007 W, 39.228314 N

Location (UTM 17N): (526756, 4342159)

FEMA Issued Flood Map: 54017C0230C

Contacts: Doddridge County

CRS Information: N/A

Parcel Number:

WV Flood Map

**Wolf Pen Harwood Pads
County Road - Close up of
Wolf Pen Road**


**Begin Wolf Pen
Road:
80.687587 W,
39.239403 N**

50 m

200 ft

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

Map Created on 7/3/2014

 Location of the mouse click

 **Flood Hazard Zone
(1% annual chance floodplain)**

User Notes:

Disclaimer:

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

Flood Hazard Area:

Elevation: N/A

Location (long, lat):

Location (UTM 17N):

FEMA Issued Flood Map:

Contacts:

CRS Information:

Parcel Number:

STATE OF WEST VIRGINIA,
COUNTY OF DODDRIDGE, TO WIT

I, Virginia Nicholson, Editor of THE
HERALD RECORD, a weekly newspaper
published regularly, in Doddridge County,
West Virginia, Do Hereby Certify
That the Accompanying Legal Notice
Entitled:

Floodplain Permit
14-244
Wolf Pen, Harwood Park

was published in said paper for ... *2*

successive weeks beginning with the issue
of ... *July 15th* 2014 and
ending with the issue of

... *July 22nd* 2014 and
that said notice contains ... *189*

WORD SPACE at ... *115* cents a word
amounts to the sum of \$... *2174*

FOR FIRST PUBLICATION, SECOND
PUBLICATION IS 75% OF THE FIRST
PUBLICATION

\$ *1631*

and each publication thereafter

\$ *3805* TOTAL

EDITOR

Virginia Nicholson

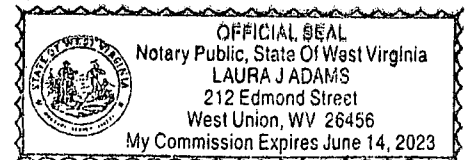
SWORN TO AND SUBSCRIBED

BEFORE ME THIS THE ... *24th* DAY
OF ... *July* 2014

NOTARY PUBLIC

Laura Adams

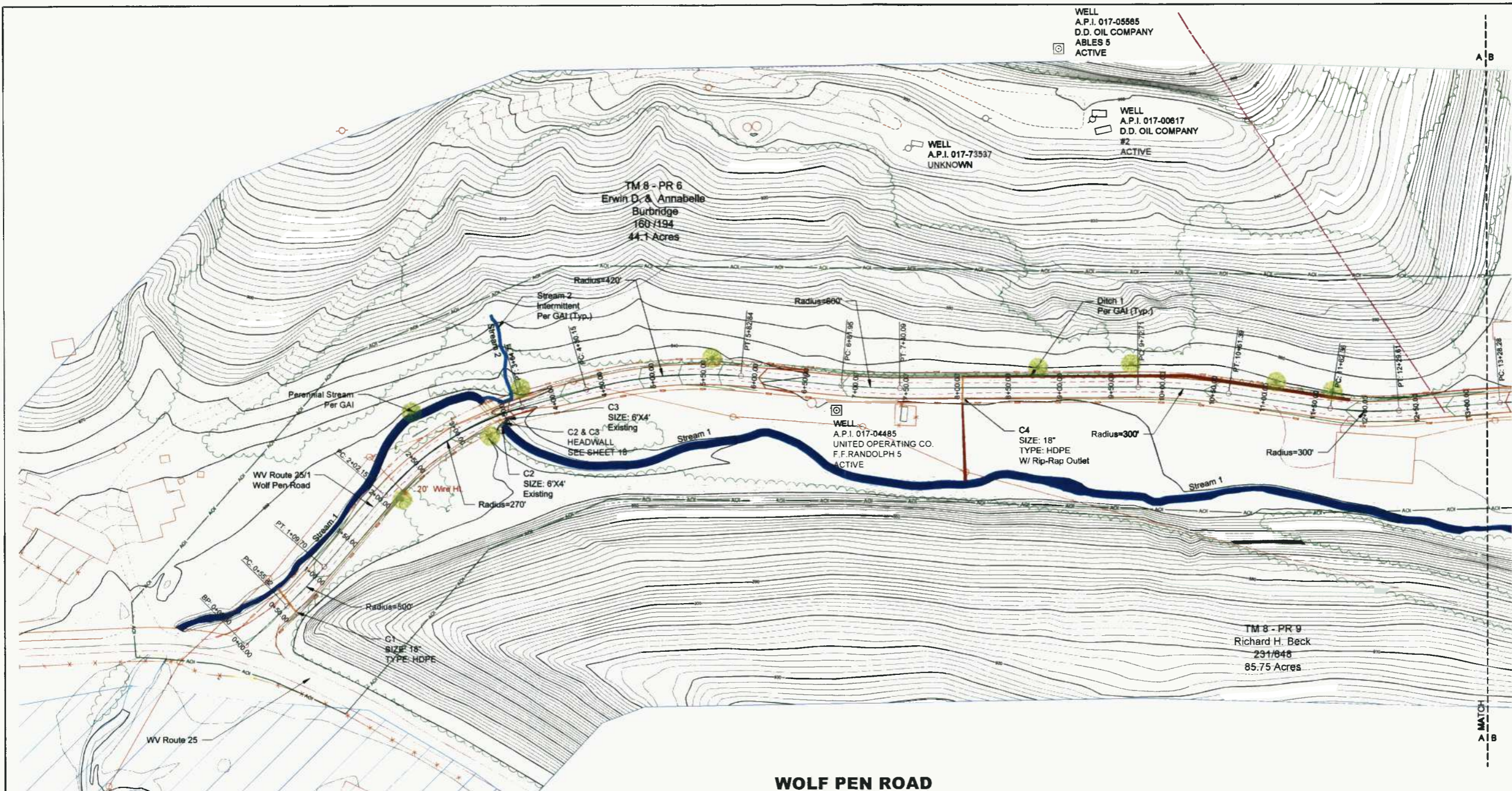
LEGAL ADVERTISEMENT:
Doddridge County
Floodplain Permit Application
Please take notice that on the 8th day of July, 2014
Antero Resources filed an application for a Floodplain
Permit to develop land located at or about: New Millon
District 39.239403N/80.687587W Permit #14-244 Wolf
Pen Pad, Harwood Pad Road (Note: This project is not
within the floodplain)
The Application is on file with the Clerk of the County
Court and may be inspected or copied during regular
business hours. As this project is outside the FEMA
identified floodplain of Doddridge County, Doddridge
County Floodplain Management has no regulatory
authority. Any interested persons who desire to comment
shall present the same in writing by August 4, 2014.
Delivered to the
Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A. Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston, Doddridge County Flood Plain
Manager
7-15-2xb





THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES CORP

WV NAD 83 NORTH FEET



LEGEND

- Proposed Road 2' Contour
- Proposed Road 10' Contour
- Existing 2' Contour
- Existing 10' Contour
- ROW Right of Way
- AOI Area of Influence
- 4' Wide Safety Berm
- Rock Rip-rap Ditch
- TRM Lined Ditch
- Jute Lined Ditch
- Direction of Flow
- Silt Sock
- Super Silt Fence
- Run-off Diversion
- Level Spreader
- Culvert w/ Riprap
- Existing Culvert
- Existing Overhead Electric
- Existing Gaslines
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Swale/Gully
- Ditch
- Wetland/Pond
- Spring
- Property Line
- Fence Line
- Tree Line

**WOLF PEN ROAD
ROAD PLAN
SECTION A
ANTERO RESOURCES
CORPORATION**

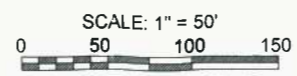
Schedule of Culverts							
Number	Dia.	LF	Type	EXISTING LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
C1	18"	30	HDPE	15'	0+59	.01 Min.	2% Min.
C2	6'X4'	30	CAP	6'X4'	3+35	.08	1%
C3	6'X4'	28	CAP	6'X4'	3+42	.08	1%
C4	18"	24	HDPE	18"	8+01	.15	1.2%
C5	36"	24	HDPE	36"	13+92	.28	2% Min.
C6	18"	24	HDPE	12"	18+36	.35	2% Min.
C7	18"	24	HDPE	15"	20+95	.39	2% Min.
C8	18"	24	HDPE	15"	23+24	.44	2% Min.
C9	18"	28	HDPE	12"	25+45	.48	1% Min.
C10	18"	20	CMP	18"	26+17	.50	0.1%
C11	24"	24	HDPE	24"	29+35	.56	3%
C12	6"	40	CAP	6"	32+93	.82	1.2%
C13	6"	20	CAP	6"	36+99	.70	0.4%
C14	18"	24	HDPE	14"	44+94	.85	2% Min.
C15	18"	26	HDPE	18" LD.	50+75	.96	2% Min.
C16	6" X 4'	20	CONC.	6" X 4'	57+85	1.10	1% Min.
C17	18"	24	HDPE	12" LD.	58+50	1.11	1% Min.
C18	18"	20	HDPE	18" LD.	61+86	1.17	2% Min.
C19	18"	24	HDPE	16"	63+48	1.20	2% Min.
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.
C21	8"	24	STL	12"	68+41	1.30	2.2%
C22	24"	24	HDPE	24"	74+80	1.41	4.4%
C21A	18"	24	HDPE	NEW	68+37	1.20	2% Min.
C25	8"	22	STL	NEW	58+25	1.12	1%
C26	18"	40	HDPE	NEW	29+02	.55	1%

Schedule of Driveway Culverts							
Number	Dia.	LF	Type	CENTERLINE LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
D1	15"	14	HDPE	14+00	14+17	.27	1%
D2	15"	20	HDPE	47+00	47+20	.90	0.7%
D3	48"	20	PVC	52+00	52+20	1.00	0.7%
D4	48"	20	PVC	58+00	58+20	1.05	1.5%
D5	15"	44	HDPE	62+00	62+44	1.11	1.8%
D6	NA	24	BRDG	72+14	72+38	1.19	7%
D7	NA	20	BRDG	72+14	72+34	1.37	7%

INSTALL 18" LEVEL SPREADERS ON ALL CULVERT RIP-RAP OUTLETS SHOWN ON THE DWGS.
INSTALL 18" SILT SOCK AT LOD OF STAGING AREA.
INSTALL ADDITIONAL E&S CONTROLS AS REQUIRED PER WV DOH BMP'S.

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE, OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11, KEEP REPLACEMENT PIPE WITHIN THE ROW.
RIP RAP INLET TO PROVIDE NEW STREAM BED

DATE:	REVISIONS:
APR. 2, 2014	Headwall Modifications
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

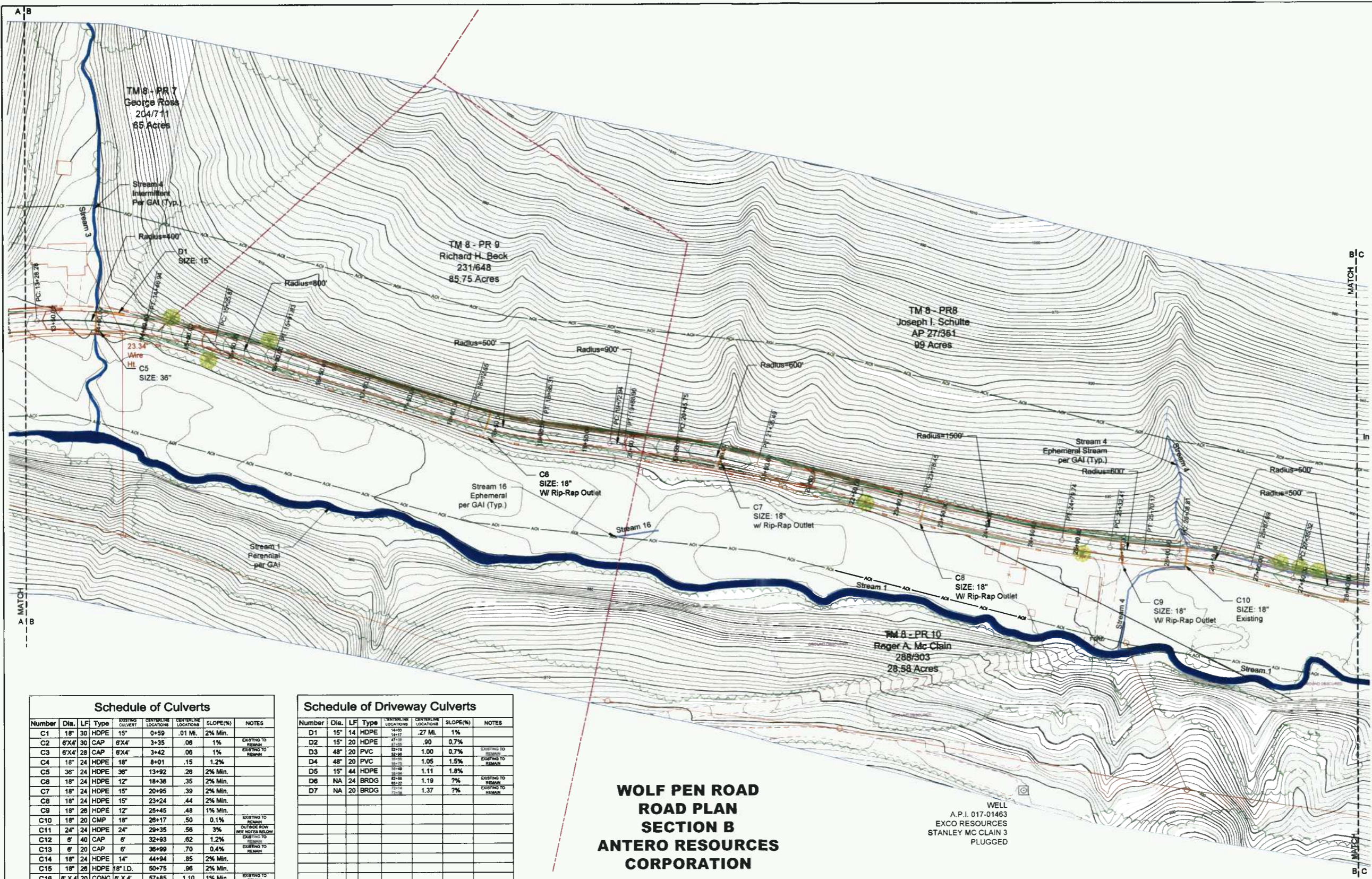


**HANNAH
ENGINEERING**
ELKINS, WV
304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD PLAN
SECTION A

NEW MILTON DISTRICT
DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014
SCALE: 1"=50'
JOB NO: 13 ARAC 01
DRAWN BY: DAN GRIMM
PETE TENNEY
**SHEET 6
OF 20 SHEETS**



LEGEND

- Proposed Road 2' Contour
- Proposed Road 10' Contour
- Existing 2' Contour
- Existing 10' Contour
- ROW Right of Way
- AOI Area of Influence
- 4' Wide Safety Berm
- Rock Rip-rap Ditch
- TRM Lined Ditch
- Jute Lined Ditch
- Direction of Flow
- Silt Sock
- Super Silt Fence
- Run-off Diversion
- Level Spreader
- Culvert w/ Riprap
- Existing Culvert
- Existing Overhead Electric
- Existing Gaslines
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Swale/Gully
- Ditch
- Wetland/Pond
- Spring
- Property Line
- Fence Line
- Tree Line

Schedule of Culverts

Number	Dia.	LF	Type	ENTERLINE LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
C1	18"	30	HDPE	0+59	.01 MI.	2% Min.	
C2	6'X4'	30	CAP	6'X4'	3+35	.06	1% EXISTING TO REMAIN
C3	6'X4'	28	CAP	6'X4'	3+42	.06	1% EXISTING TO REMAIN
C4	18"	24	HDPE	18"	8+01	.15	1.2%
C5	36"	24	HDPE	36"	13+92	.28	2% Min.
C6	18"	24	HDPE	12"	18+38	.35	2% Min.
C7	18"	24	HDPE	15"	20+95	.39	2% Min.
C8	18"	24	HDPE	15"	23+24	.44	2% Min.
C9	18"	26	HDPE	12"	25+45	.48	1% Min.
C10	18"	20	CMP	18"	26+17	.50	0.1% EXISTING TO REMAIN
C11	24"	24	HDPE	24"	29+35	.56	3% OUTSIDE ROW SEE NOTES BELOW
C12	6"	40	CAP	6"	32+93	.62	1.2% EXISTING TO REMAIN
C13	6"	20	CAP	6"	36+99	.70	0.4% EXISTING TO REMAIN
C14	18"	24	HDPE	14"	44+94	.85	2% Min.
C15	18"	28	HDPE	18" I.D.	50+75	.98	2% Min.
C16	6'X4'	20	CONC.	6'X4'	57+85	1.10	1% Min. EXISTING TO REMAIN
C17	18"	24	HDPE	12" I.D.	58+50	1.11	1% Min.
C18	18"	20	HDPE	18" I.D.	61+68	1.17	2% Min.
C19	18"	24	HDPE	18"	63+48	1.20	2% Min.
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.
C21	8"	24	STL	12"	68+41	1.30	2.2% GAS LINE CONDUIT
C22	24"	24	HDPE	24"	74+80	1.41	4.4%
C21A	18"	24	HDPE	NEW	68+37	1.20	2% Min. NEW CULVERT
C25	8"	22	STL	NEW	59+25	1.12	1% GAS LINE CONDUIT
C28	18"	40	HDPE	NEW	29+02	.55	1%

Schedule of Driveway Culverts

Number	Dia.	LF	Type	ENTERLINE LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
D1	15"	14	HDPE	14+50	14+50	.27	1% .27 MI.
D2	15"	20	HDPE	47+39	47+39	.90	0.7%
D3	48"	20	PVC	52+74	52+74	1.00	0.7%
D4	48"	20	PVC	52+74	52+74	1.05	1.5%
D5	15"	44	HDPE	59+49	59+49	1.11	1.8%
D6	NA	24	BRDG	62+46	62+46	1.19	7% EXISTING TO REMAIN
D7	NA	20	BRDG	72+16	72+16	1.37	7% EXISTING TO REMAIN

INSTALL 18" LEVEL SPREADERS ON ALL CULVERT RIP-RAP OUTLETS SHOWN ON THE DWGS. INSTALL 18" SILT SOCK AT LOD OF STAGING AREA. INSTALL ADDITIONAL E&S CONTROLS AS REQUIRED PER WV DOH BMP'S.

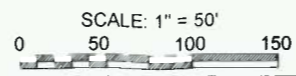
**WOLF PEN ROAD
ROAD PLAN
SECTION B
ANTERO RESOURCES
CORPORATION**

DATE:	REVISIONS:
APR. 2, 2014	Headwall Modifications
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

HANNAH ENGINEERING
ELKINS, WV
304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD PLAN
SECTION B
NEW MILTON DISTRICT DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014 SCALE: 1"=50' JOB NO: 13 ARAC 01 DRAWN BY: DAN GRIMM, PETE TENNEY SHEET 7 OF 20 SHEETS



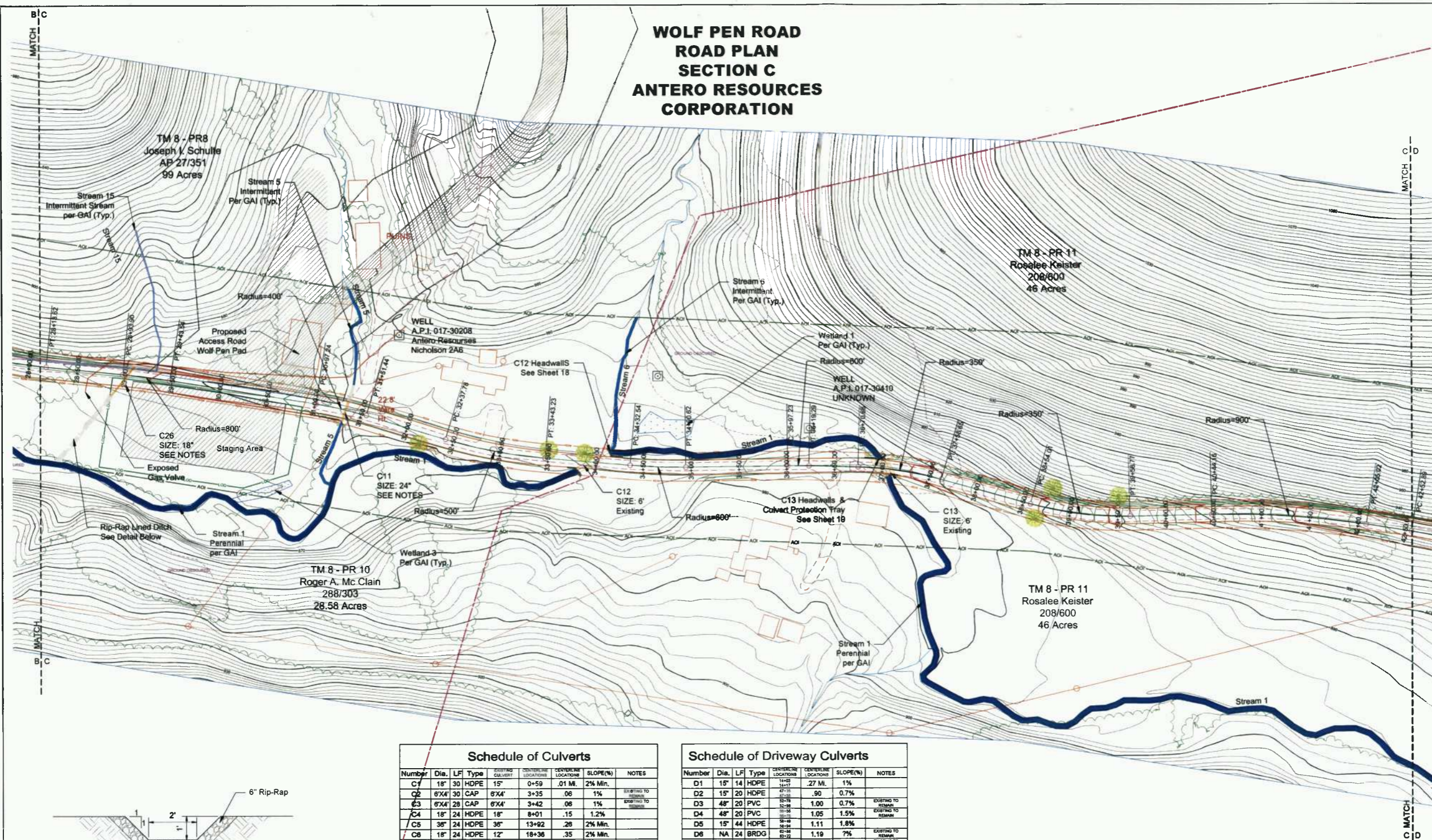
ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE. OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11. KEEP REPLACEMENT PIPE WITHIN THE ROW. RIP RAP INLET TO PROVIDE NEW STREAM BED

**WOLF PEN ROAD
ROAD PLAN
SECTION C
ANTERO RESOURCES
CORPORATION**



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES CORP

WV NAD 83 NORTH FEET



LEGEND

- Proposed Road 2' Contour
- Proposed Road 10' Contour
- Existing 2' Contour
- Existing 10' Contour
- ROW Right of Way
- AOI Area of Influence
- 4' Wide Safety Berm
- Rock Rip-rap Ditch
- TRM Lined Ditch
- Jute Lined Ditch
- Direction of Flow
- Silt Sock
- Super Silt Fence
- Run-off Diversion
- Level Spreader
- Culvert w/ Riprap
- Existing Culvert
- Existing Overhead Electric
- Existing Gaslines
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Swale/Gully
- Ditch
- Wetland/Pond
- Spring
- Property Line
- Fence Line
- Tree Line

Schedule of Culverts

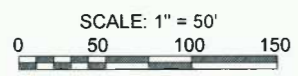
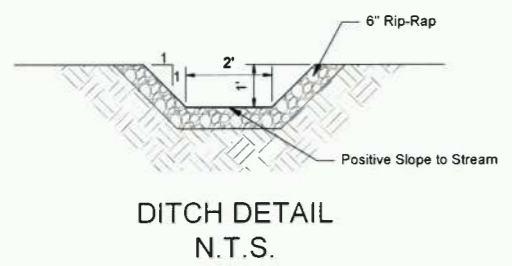
Number	Dia.	LF	Type	EXISTING LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
C1	18"	30	HDPE	15'	0+59	.01 M.	2% Min.
C2	6"X4"	30	CAP	6"X4"	3+35	.06	1%
C3	6"X4"	28	CAP	6"X4"	3+42	.06	1%
C4	18"	24	HDPE	18"	8+01	.15	1.2%
C5	36"	24	HDPE	36"	13+92	.28	2% Min.
C6	18"	24	HDPE	12"	18+36	.35	2% Min.
C7	18"	24	HDPE	15"	20+95	.39	2% Min.
C8	18"	24	HDPE	15"	23+24	.44	2% Min.
C9	18"	28	HDPE	12"	25+45	.48	1% Min.
C10	18"	20	CMP	18"	26+17	.50	0.1%
C11	24"	24	HDPE	24"	29+35	.56	3%
C12	6"	40	CAP	6"	32+93	.62	1.2%
C13	6"	20	CAP	6"	36+99	.70	0.4%
C14	18"	24	HDPE	14"	44+94	.85	2% Min.
C15	18"	28	HDPE	18" L.D.	50+75	.96	2% Min.
C16	6" X 4"	20	CONC.	6" X 4"	57+85	1.10	1% Min.
C17	18"	24	HDPE	12" L.D.	58+50	1.11	1% Min.
C18	18"	20	HDPE	18" L.D.	61+06	1.17	2% Min.
C19	18"	24	HDPE	16"	63+48	1.20	2% Min.
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.
C21	8"	24	STL	12"	68+41	1.30	2.2%
C22	24"	24	HDPE	24"	74+00	1.41	4.4%
C21A	18"	24	HDPE	NEW	68+37	1.20	2% Min.
C25	6"	22	STL	NEW	59+25	1.12	1%
C26	18"	40	HDPE	NEW	29+02	.55	1%

Schedule of Driveway Culverts

Number	Dia.	LF	Type	EXISTING LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
D1	15"	14	HDPE	15"	1+17	.27 M.	1%
D2	15"	20	HDPE	15"	6+28	.90	0.7%
D3	48"	20	PVC	48"	32+98	1.00	0.7%
D4	48"	20	PVC	48"	33+28	1.05	1.5%
D5	15"	44	HDPE	15"	38+49	1.11	1.8%
D6	NA	24	BRDG	NA	62+29	1.19	7%
D7	NA	20	BRDG	NA	72+36	1.37	7%

INSTALL 18" LEVEL SPREADERS ON ALL CULVERT RIP-RAP OUTLETS SHOWN ON THE DWG'S. INSTALL 18" SILT SOCK AT LOD OF STAGING AREA. INSTALL ADDITIONAL E&S CONTROLS AS REQUIRED PER WV DOH BMPS.

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE. OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11, KEEP REPLACEMENT PIPE WITHIN THE ROW. RIP RAP INLET TO PROVIDE NEW STREAM BED



DATE: APR. 2, 2014
REVISIONS:

DATE	REVISIONS
APR. 2, 2014	Headwall Modifications
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

**HANNAH
ENGINEERING**
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304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD PLAN
SECTION C

NEW MILTON DISTRICT DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014 SCALE: 1"=50' JOB NO: 13 ARAC 01 DRAWN BY: DAN GRIMM, PETE TENNEY SHEET 8 OF 20 SHEETS



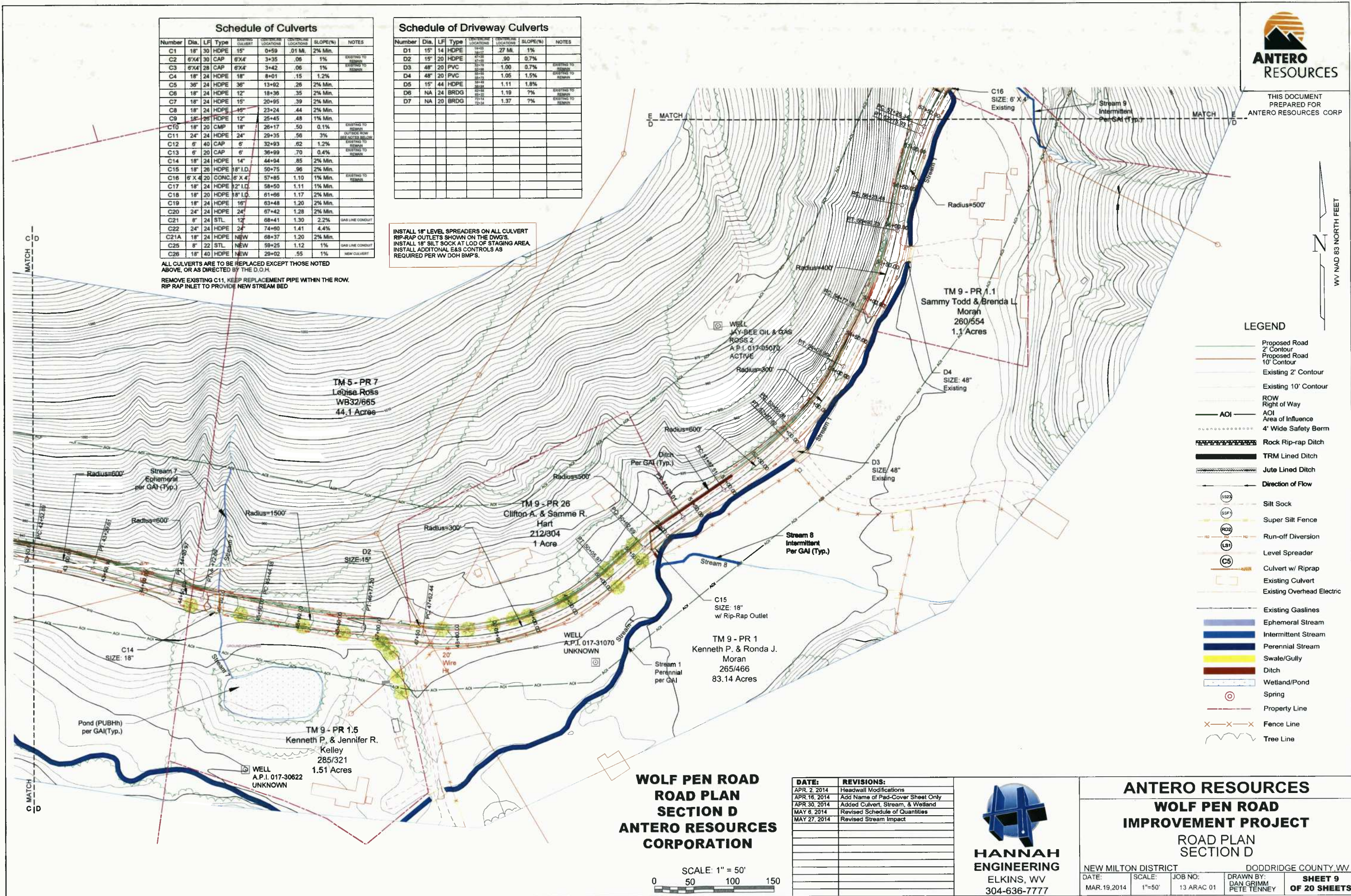
THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES CORP

Schedule of Culverts							
Number	Dia.	LF	Type	STARTING LOCATION	ENDING LOCATION	SLOPE(%)	NOTES
C1	18"	30	HDPE	15'	0+59	.01 MI.	2% Min.
C2	6'X4'	30	CAP	6'X4'	3+35	.06	1%
C3	6'X4'	28	CAP	6'X4'	3+42	.06	1%
C4	18"	24	HDPE	18"	8+01	.15	1.2%
C5	36"	24	HDPE	36"	13+02	.26	2% Min.
C6	18"	24	HDPE	12"	18+36	.35	2% Min.
C7	18"	24	HDPE	15"	20+95	.39	2% Min.
C8	18"	24	HDPE	15"	23+24	.44	2% Min.
C9	18"	26	HDPE	12"	25+45	.48	1% Min.
C10	18"	20	CMP	18"	26+17	.50	0.1%
C11	24"	24	HDPE	24"	29+35	.56	3%
C12	6"	40	CAP	6"	32+93	.62	1.2%
C13	6"	20	CAP	6"	36+99	.70	0.4%
C14	18"	24	HDPE	14"	44+94	.85	2% Min.
C15	18"	26	HDPE	18" I.D.	50+75	.96	2% Min.
C16	6' X 4'	20	CONC.	6' X 4'	57+85	1.10	1% Min.
C17	18"	24	HDPE	12" I.D.	58+50	1.11	1% Min.
C18	18"	20	HDPE	18" I.D.	61+66	1.17	2% Min.
C19	18"	24	HDPE	18"	63+48	1.20	2% Min.
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.
C21	8"	24	STL	12"	68+41	1.30	2.2%
C22	24"	24	HDPE	24"	74+00	1.41	4.4%
C22A	18"	24	HDPE	NEW	68+37	1.20	2% Min.
C25	8"	22	STL	NEW	59+25	1.12	1%
C26	18"	40	HDPE	NEW	29+02	.55	1%

Schedule of Driveway Culverts							
Number	Dia.	LF	Type	STARTING LOCATION	ENDING LOCATION	SLOPE(%)	NOTES
D1	15"	14	HDPE	15"	.27 MI.	.1%	
D2	15"	20	HDPE	15"	.90	0.7%	
D3	48"	20	PVC	48"	1.00	0.7%	
D4	48"	20	PVC	48"	1.05	1.5%	
D5	15"	44	HDPE	15"	1.11	1.8%	
D6	NA	24	BRDG	NA	1.19	7%	
D7	NA	20	BRDG	NA	1.37	7%	

INSTALL 18" LEVEL SPREADERS ON ALL CULVERT RIP-RAP OUTLETS SHOWN ON THE DWG'S.
INSTALL 18" SILT SOCK AT LOD OF STAGING AREA.
INSTALL ADDITIONAL E&S CONTROLS AS REQUIRED PER WV DOH BMP'S.

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE, OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11, KEEP REPLACEMENT PIPE WITHIN THE ROW.
RIP-RAP INLET TO PROVIDE NEW STREAM BED



LEGEND	
	Proposed Road 2' Contour
	Proposed Road 10' Contour
	Existing 2' Contour
	Existing 10' Contour
	ROW Right of Way
	AOI Area of Influence
	4' Wide Safety Berm
	Rock Rip-rap Ditch
	TRM Lined Ditch
	Jute Lined Ditch
	Direction of Flow
	Silt Sock
	Super Silt Fence
	Run-off Diversion
	Level Spreader
	Culvert w/ Riprap
	Existing Culvert
	Existing Overhead Electric
	Existing Gaslines
	Ephemeral Stream
	Intermittent Stream
	Perennial Stream
	Swale/Gully
	Ditch
	Wetland/Pond
	Spring
	Property Line
	Fence Line
	Tree Line

**WOLF PEN ROAD
ROAD PLAN
SECTION D
ANTERO RESOURCES
CORPORATION**



DATE:	REVISIONS:
APR. 2 2014	Headwall Modifications
APR. 16 2014	Add Name of Pad-Cover Sheet Only
APR. 30 2014	Added Culvert, Stream, & Wetland
MAY 6 2014	Revised Schedule of Quantities
MAY 27 2014	Revised Stream Impact

**HANNAH
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304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD PLAN
SECTION D

NEW MILTON DISTRICT
DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014
SCALE: 1"=50'
JOB NO: 13 ARAC 01
DRAWN BY: DAN GRIMM
PETE TENNEY

**SHEET 9
OF 20 SHEETS**



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES CORP

WV NAD 83 NORTH FEET

Schedule of Culverts							
Number	Dia.	LF	Type	STARTING LOCATION	ENDING LOCATION	SLOPE(%)	NOTES
C1	18"	30	HDPE	0+59	.01 MI.	2% Min.	
C2	6'X4'	30	CAP	3+35		.06 1%	EXISTING TO REMAIN
C3	6'X4'	28	CAP	3+42		.06 1%	EXISTING TO REMAIN
C4	18"	24	HDPE	8+01		.15 1.2%	
C5	36"	24	HDPE	13+92		.26 2% Min.	
C6	18"	24	HDPE	18+38		.35 2% Min.	
C7	18"	24	HDPE	20+95		.39 2% Min.	
C8	18"	24	HDPE	23+24		.44 2% Min.	
C9	18"	28	HDPE	25+45		.48 1% Min.	
C10	18"	20	CMP	26+17		.50 0.1%	EXISTING TO REMAIN
C11	24"	24	HDPE	29+35		.56 3%	OUTSIDE ROW SEE NOTES BELOW
C12	6"	40	CAP	32+93		.82 1.2%	EXISTING TO REMAIN
C13	6"	20	CAP	38+99		.70 0.4%	EXISTING TO REMAIN
C14	18"	24	HDPE	44+94		.85 2% Min.	
C15	18"	28	HDPE	50+75		.98 2% Min.	
C16	6' X 4'	20	CONC.	57+85		1.10 1% Min.	EXISTING TO REMAIN
C17	18"	24	HDPE	58+50		1.11 1% Min.	
C18	18"	20	HDPE	61+88		1.17 2% Min.	
C19	18"	24	HDPE	63+48		1.20 2% Min.	
C20	24"	24	HDPE	67+42		1.28 2% Min.	
C21	8"	24	STL	68+41		1.30 2.2%	GAS LINE CONDUIT
C22	24"	24	HDPE	74+80		1.41 4.4%	
C21A	18"	24	HDPE	88+37		1.20 2% Min.	
C25	8"	22	STL	59+25		1.12 1%	GAS LINE CONDUIT
C28	18"	40	HDPE	29+02		.55 1%	NEW CULVERT

Schedule of Driveway Culverts							
Number	Dia.	LF	Type	STARTING LOCATION	ENDING LOCATION	SLOPE(%)	NOTES
D1	15"	14	HDPE	14+85	.27 MI.	1%	
D2	15"	20	HDPE	47+28		.90 0.7%	
D3	48"	20	PVC	52+28		1.00 0.7%	EXISTING TO REMAIN
D4	48"	20	PVC	58+28		1.05 1.5%	EXISTING TO REMAIN
D5	15"	44	HDPE	58+48		1.11 1.8%	
D6	NA	24	BRDG	62+28		1.19 7%	EXISTING TO REMAIN
D7	NA	20	BRDG	72+28		1.37 7%	EXISTING TO REMAIN

INSTALL 18" LEVEL SPREADERS ON ALL CULVERT RIP-RAP OUTLETS SHOWN ON THE DWG'S.
INSTALL 18" SILT SOCK AT LOD OF STAGING AREA.
INSTALL ADDITIONAL E&S CONTROLS AS REQUIRED PER WV DOH BMP'S.

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE, OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11, KEEP REPLACEMENT PIPE WITHIN THE ROW. RIP RAP INLET TO PROVIDE NEW STREAM BED.

LEGEND	
	Proposed Road 2' Contour
	Proposed Road 10' Contour
	Existing 2' Contour
	Existing 10' Contour
	ROW Right of Way
	AOI Area of Influence
	4' Wide Safety Berm
	Rock Rip-rap Ditch
	TRM Lined Ditch
	Jute Lined Ditch
	Direction of Flow
	Silt Sock
	Super Silt Fence
	Run-off Diversion
	Level Spreader
	Culvert w/ Riprap
	Existing Culvert
	Existing Overhead Electric
	Existing Gaslines
	Ephemeral Stream
	Intermittent Stream
	Perennial Stream
	Swale/Gully
	Ditch
	Wetland/Pond
	Spring
	Property Line
	Fence Line
	Tree Line

**WOLF PEN ROAD
ROAD PLAN
SECTION E
ANTERO RESOURCES
CORPORATION**

DATE:	REVISIONS:
APR. 2, 2014	Headwall Modifications
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

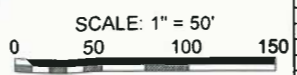
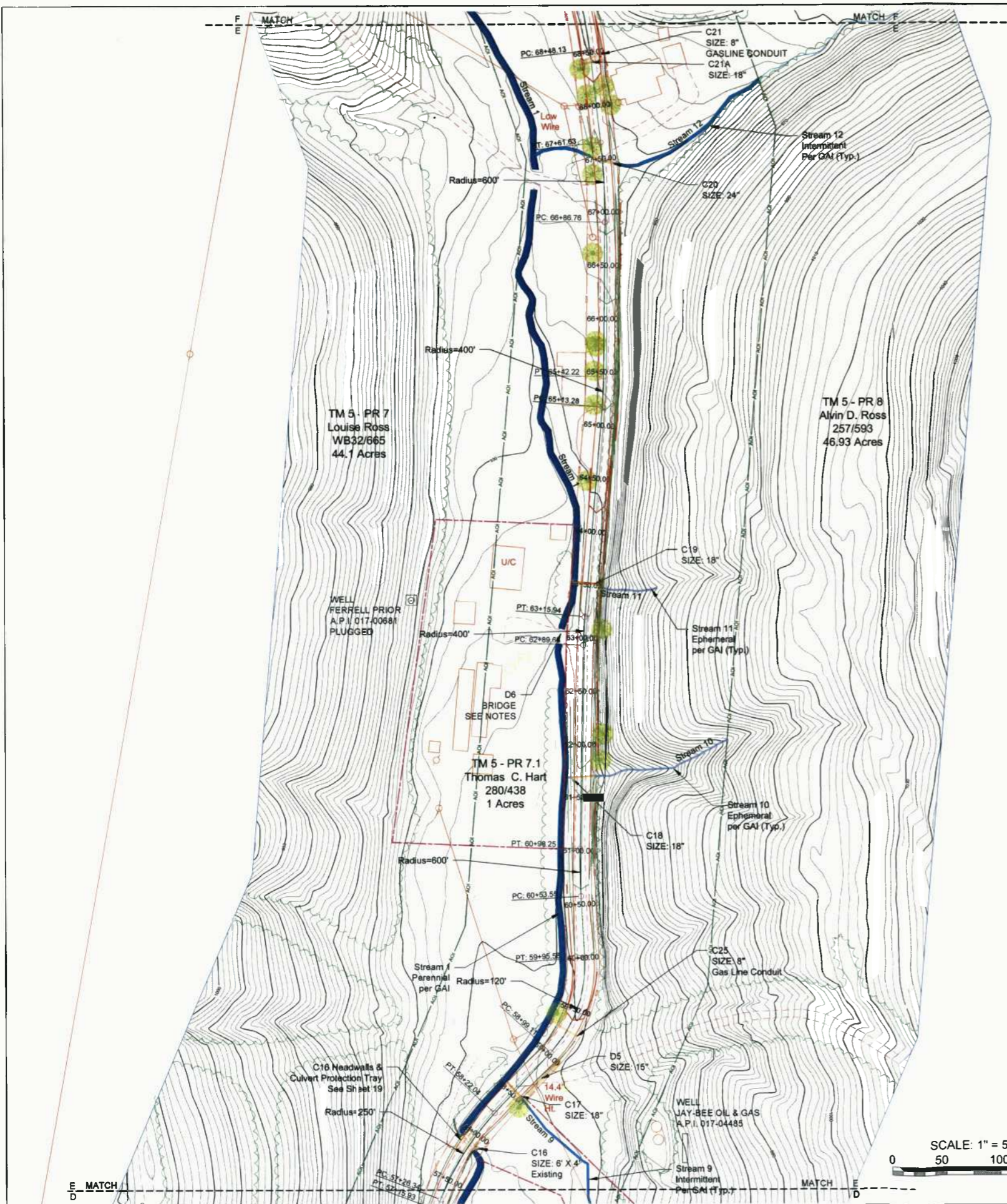
**HANNAH
ENGINEERING**
ELKINS, WV
304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD PLAN
SECTION E

NEW MILTON DISTRICT
DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014
SCALE: 1"=50'
JOB NO: 13 ARAC 01
DRAWN BY: DAN GRIMM
PETE TENNEY

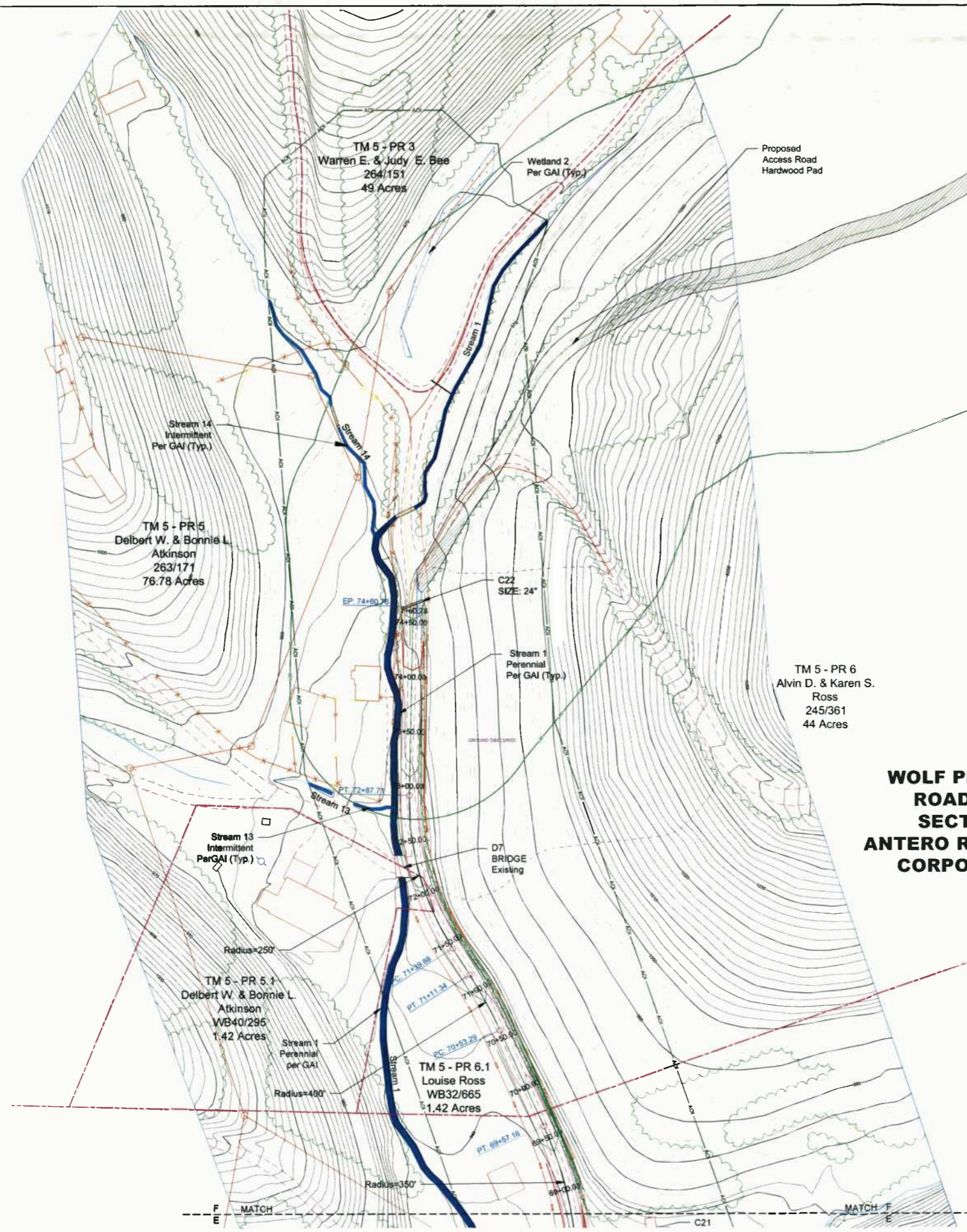
**SHEET 10
OF 20 SHEETS**





THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES CORP

WV NAD 83 NORTH FEET



Schedule of Culverts							
Number	Dia.	LF	Type	EXISTING CULVERT LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
C1	18"	30	HDPE	15"	0+59	.01 M.	2% Min.
C2	6"X4"	30	CAP	6"X4"	3+35	.06	1%
C3	6"X4"	28	CAP	6"X4"	3+42	.08	1%
C4	18"	24	HDPE	18"	8+01	.15	1.2%
C5	36"	24	HDPE	36"	13+92	.28	2% Min.
C6	18"	24	HDPE	12"	18+36	.35	2% Min.
C7	18"	24	HDPE	15"	20+95	.39	2% Min.
C8	18"	24	HDPE	15"	23+24	.44	2% Min.
C9	18"	25	HDPE	12"	25+45	.48	1% Min.
C10	18"	20	CMP	18"	26+17	.50	0.1%
C11	24"	24	HDPE	24"	29+35	.56	3%
C12	6"	40	CAP	6"	32+93	.62	1.2%
C13	6"	20	CAP	6"	36+99	.70	0.4%
C14	18"	24	HDPE	14"	44+94	.85	2% Min.
C15	18"	28	HDPE	18" I.D.	50+75	.96	2% Min.
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C17	18"	24	HDPE	12" I.D.	58+50	1.11	1% Min.
C18	18"	20	HDPE	18" I.D.	61+66	1.17	2% Min.
C19	18"	24	HDPE	18"	63+48	1.20	2% Min.
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.
C21	8"	24	STL	12"	68+41	1.30	2.2%
C22	24"	24	HDPE	24"	74+60	1.41	4.4%
C21A	18"	24	HDPE	NEW	68+37	1.20	2% Min.
C25	8"	22	STL	NEW	59+25	1.12	1%
C26	18"	40	HDPE	NEW	29+02	.55	1%

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE, OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11, KEEP REPLACEMENT PIPE WITHIN THE ROW.
RIP RAP INLET TO PROVIDE NEW STREAM BED

Schedule of Driveway Culverts							
Number	Dia.	LF	Type	EXISTING LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
D1	15"	14	HDPE	47+38	47+38	.27 M.	1%
D2	15"	20	HDPE	47+38	47+38	.90	0.7%
D3	48"	20	PVC	52+78	52+78	1.00	0.7%
D4	48"	20	PVC	55+38	55+38	1.05	1.5%
D5	15"	44	HDPE	54+48	54+48	1.11	1.8%
D6	NA	24	BRDG	62+88	62+88	1.19	7%
D7	NA	20	BRDG	62+22	62+22	1.37	7%

INSTALL 18" LEVEL SPREADERS ON ALL CULVERT RIP-RAP OUTLETS SHOWN ON THE DWG'S.
INSTALL 18" SILT SOCK AT LOD OF STAGING AREA.
INSTALL ADDITIONAL E&S CONTROLS AS REQUIRED PER WV DOH BMP'S.

- LEGEND**
- Proposed Road
 - Proposed Road 2' Contour
 - Proposed Road 10' Contour
 - Existing 2' Contour
 - Existing 10' Contour
 - ROW
 - Right of Way
 - AOI
 - Area of Influence
 - 4' Wide Safety Berm
 - Rock Rip-rap Ditch
 - TRM Lined Ditch
 - Jute Lined Ditch
 - Direction of Flow
 - Silt Sock
 - Super Silt Fence
 - Run-off Diversion
 - Level Spreader
 - Culvert w/ Riprap
 - Existing Culvert
 - Existing Overhead Electric
 - Existing Gaslines
 - Ephemeral Stream
 - Intermittent Stream
 - Perennial Stream
 - Swale/Gully
 - Ditch
 - Wetland/Pond
 - Spring
 - Property Line
 - Fence Line
 - Tree Line

**WOLF PEN ROAD
ROAD PLAN
SECTION F
ANTERO RESOURCES
CORPORATION**

SCALE: 1" = 50'
0 50 100 150

DATE:	REVISIONS:
APR. 2, 2014	Headwall Modifications
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

**HANNAH
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304-636-7777

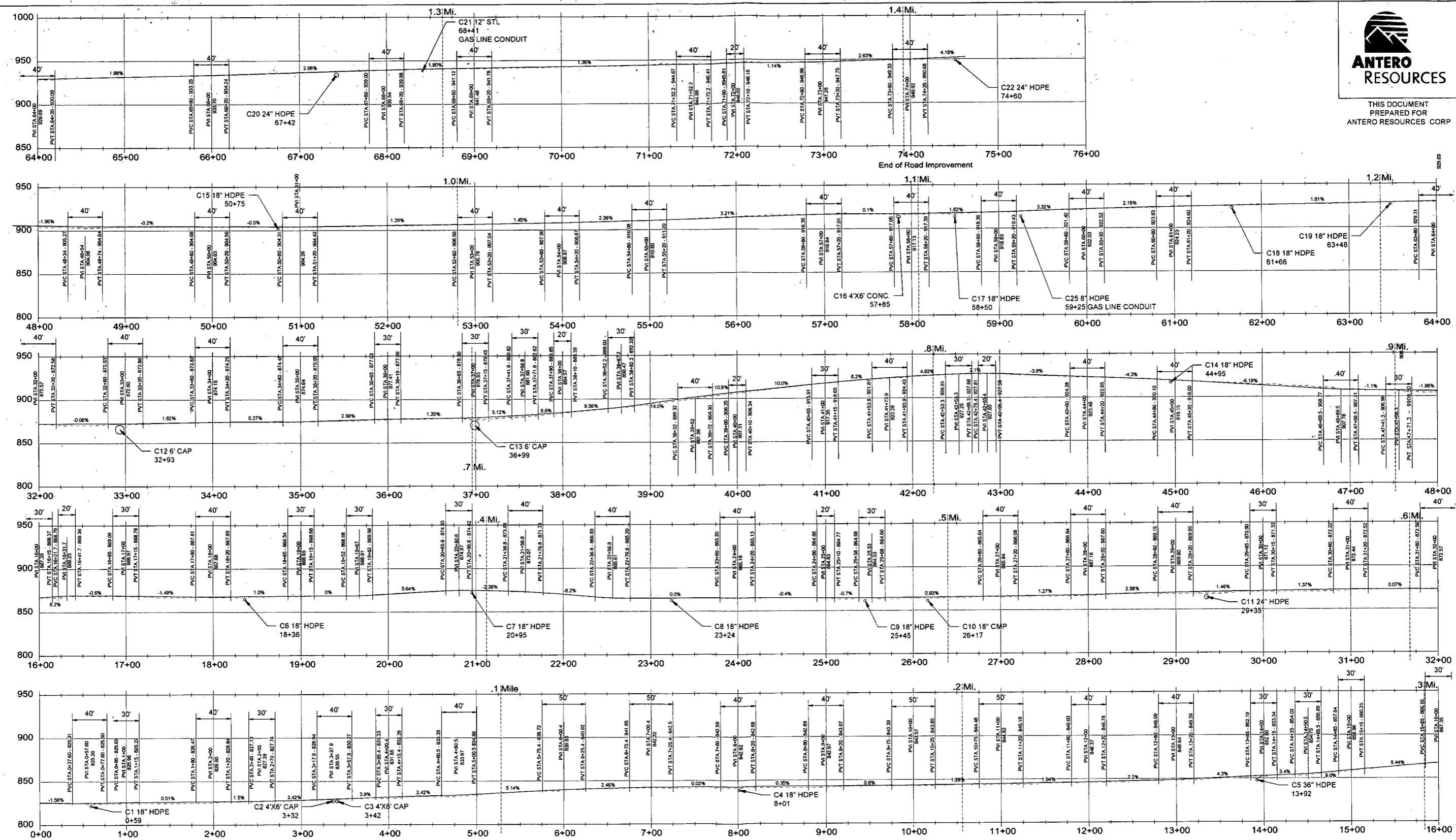
ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD PLAN
SECTION F

NEW MILTON DISTRICT DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014 SCALE: 1"=50' JOB NO.: 13 ARAC 01 DRAWN BY: DAN GRIMM, PETE TENNEY **SHEET 11 OF 20 SHEETS**



THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORP



WV Beginning of Road Improvement 25/1

WOLF PEN ROAD ROAD PROFILE ANTERO RESOURCES CORPORATION

LEGEND: Proposed Grade, Existing Ground, T.O.P OF ROAD, E.G. Existing Ground, T.S. TOP OF SUBGRADE

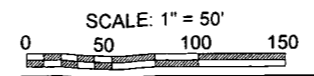


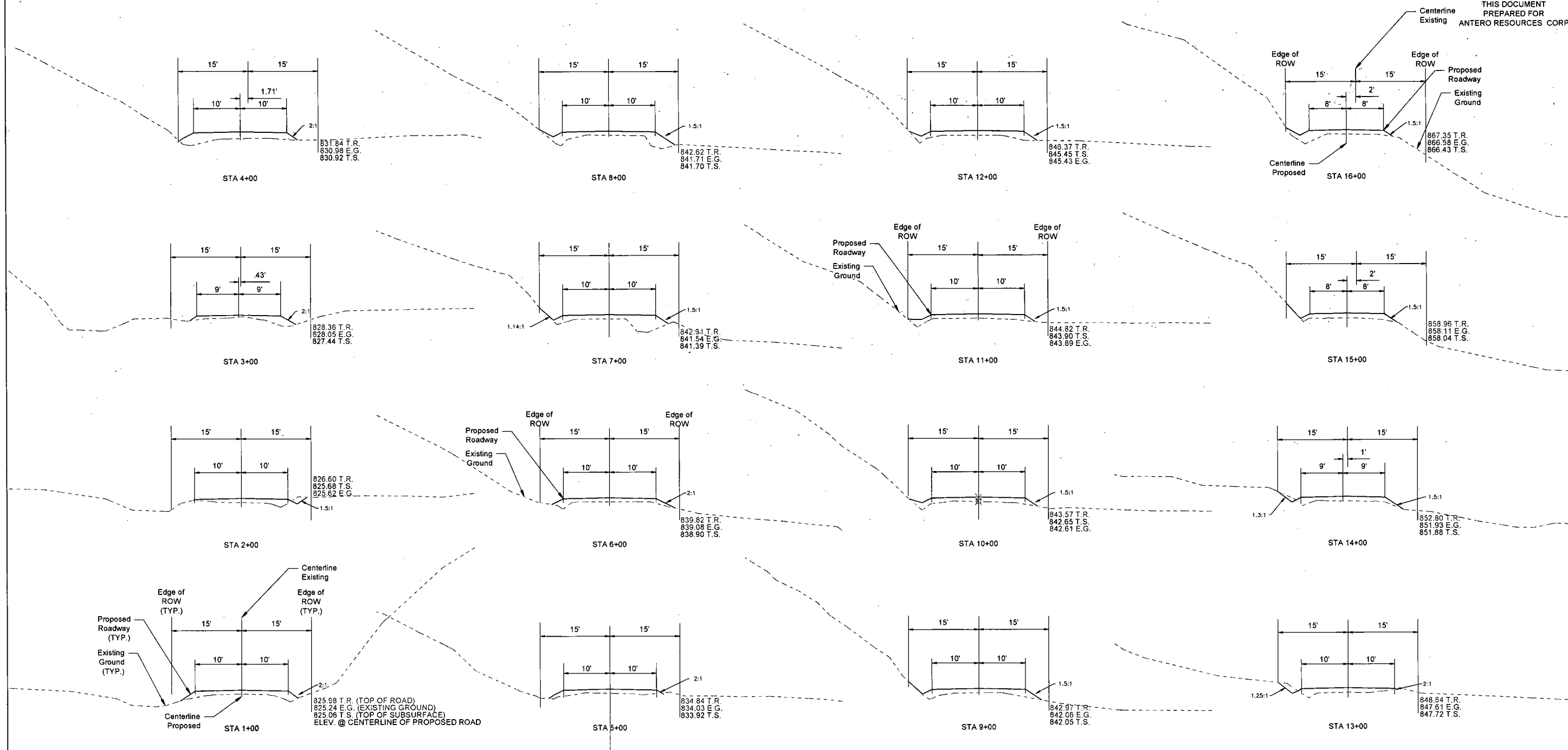
Table with columns: DATE, REVISIONS. Includes dates from APR 2, 2014 to MAY 27, 2014 and revision descriptions like 'Headwall Modifications' and 'Revised Stream Impact'.



ANTERO RESOURCES WOLF PEN ROAD IMPROVEMENT PROJECT ROAD PROFILE. Includes project location (NEW MILTON DISTRICT, DODDRIDGE COUNTY, WV), date (MAR. 19, 2014), scale (1\"/>



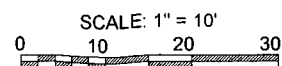
THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES CORP



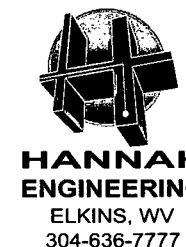
**WOLF PEN ROAD
ROAD SECTIONS
ANTERO RESOURCES
CORPORATION**

LEGEND

- Proposed Grade
- - - Existing Ground
- T.R. TOP OF ROAD
- E.G. Existing Ground
- T.S. TOP OF SUBGRADE

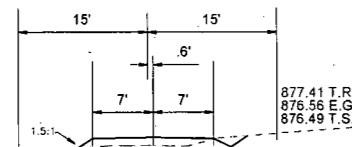


DATE:	REVISIONS:
APR 2, 2014	Headwall Modifications
APR 18, 2014	Add Name of Pad-Cover Sheet Only
APR 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

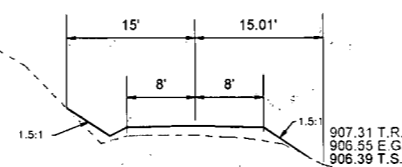


**ANTERO RESOURCES
WOLF PEN ROAD
IMPROVEMENT PROJECT
ROAD SECTIONS**

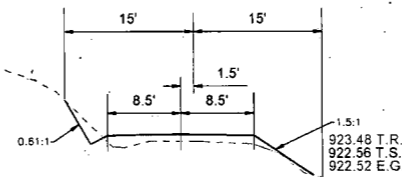
NEW MILTON DISTRICT		DODDRIDGE COUNTY, WV	
DATE: MAR. 19, 2014	SCALE: 1"=10'	JOB NO.: 13 ARAC 01	DRAWN BY: DAN GRIMM PETE TENNEY
			SHEET 13 OF 20 SHEETS



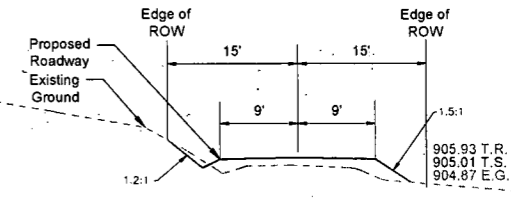
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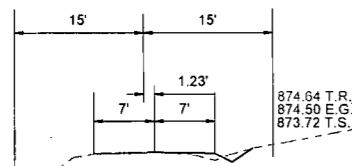
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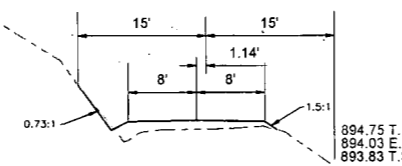
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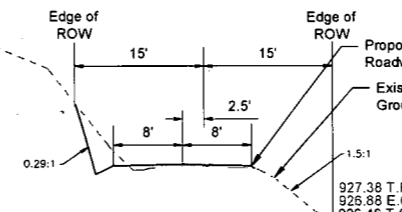
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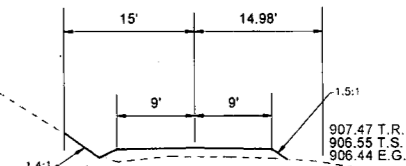
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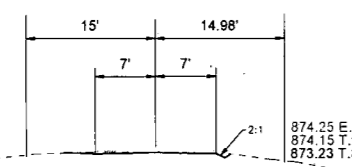
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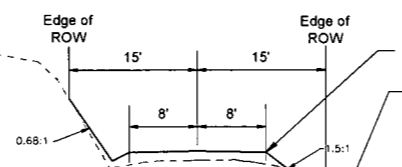
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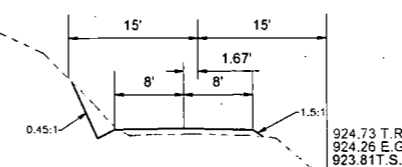
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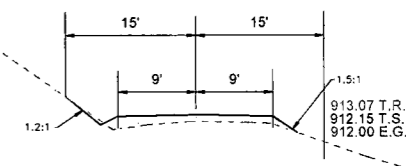
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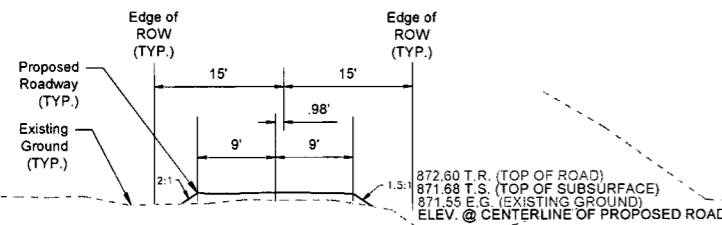
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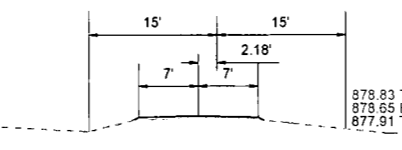
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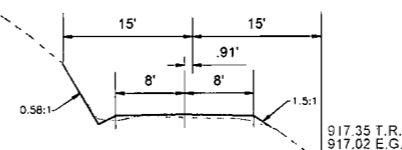
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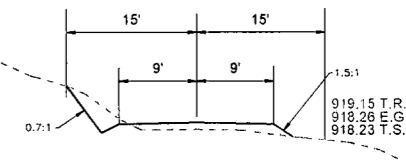
STA 33+00



STA 37+00



STA 41+00



STA 45+00

**WOLF PEN ROAD
ROAD SECTIONS
ANTERO RESOURCES
CORPORATION**

LEGEND
 - - - Proposed Grade
 - - - Existing Ground
 T.R. TOP OF ROAD
 E.G. Existing Ground
 T.S. TOP OF SUBGRADE



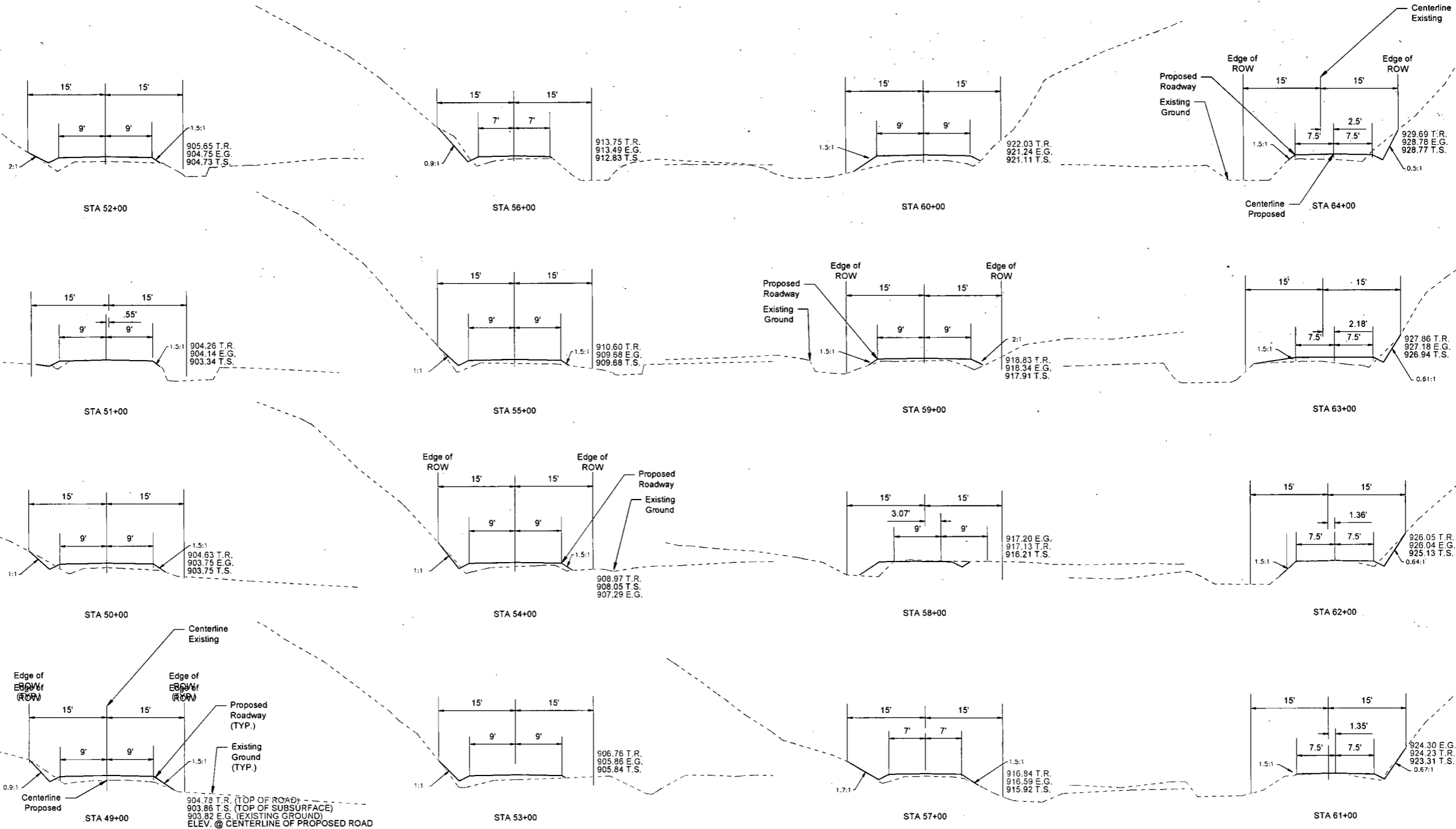
DATE:	REVISIONS:
APR. 2, 2014	Headwall Modifications
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact



**ANTERO RESOURCES
WOLF PEN ROAD
IMPROVEMENT PROJECT
ROAD SECTIONS**

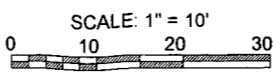
NEW MILTON DISTRICT		DODDRIDGE COUNTY, WV	
DATE: MAR. 19, 2014	SCALE: 1"=10'	JOB NO.: 13 ARAC 01	DRAWN BY: DAN GRIMM PETE TENNEY
		SHEET 15 OF 20 SHEETS	

**WOLF PEN ROAD
ROAD SECTIONS
ANTERO RESOURCES
CORPORATION**



LEGEND

- - - Proposed Grade
- Existing Ground
- T.R. TOP OF ROAD
- E.G. Existing Ground
- T.S. TOP OF SUBGRADE



DATE:	REVISIONS:
APR. 2, 2014	Headwall Modifications
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MAY 6, 2014	Revised Schedule of Quantities
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304-636-7777

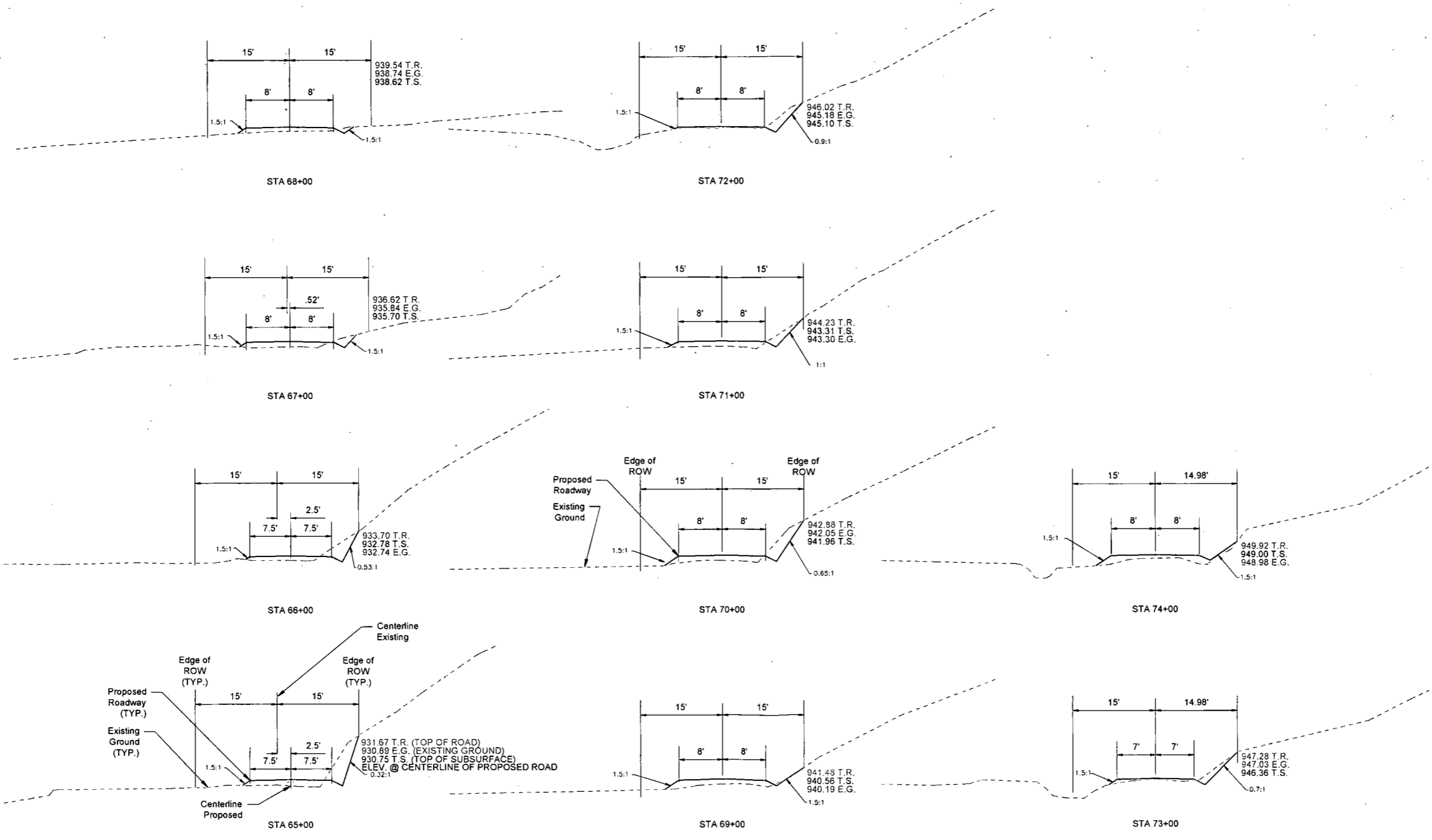
**ANTERO RESOURCES
WOLF PEN ROAD
IMPROVEMENT PROJECT
ROAD SECTIONS**

NEW MILTON DISTRICT DODDRIDGE COUNTY, WV

DATE: MAR. 19, 2014	SCALE: 1"=10'	JOB NO: 13 ARAC 01	DRAWN BY: DAN GRIMM PETE TENNEY	SHEET 16 OF 20 SHEETS
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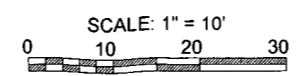


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PREPARED FOR
ANTERO RESOURCES CORP



**WOLF PEN ROAD
ROAD SECTIONS
ANTERO RESOURCES
CORPORATION**

LEGEND
 - - - Proposed Grade
 --- Existing Ground
 T.R. TOP OF ROAD
 E.G. Existing Ground
 T.S. TOP OF SUBGRADE



DATE:	REVISIONS:
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ELKINS, WV
304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
ROAD SECTIONS

NEW MILTON DISTRICT DODDRIDGE COUNTY, WV

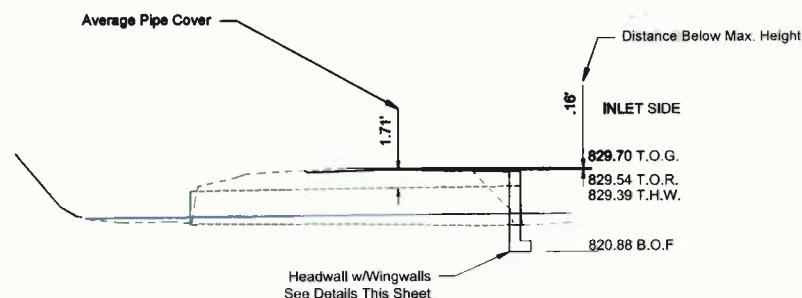
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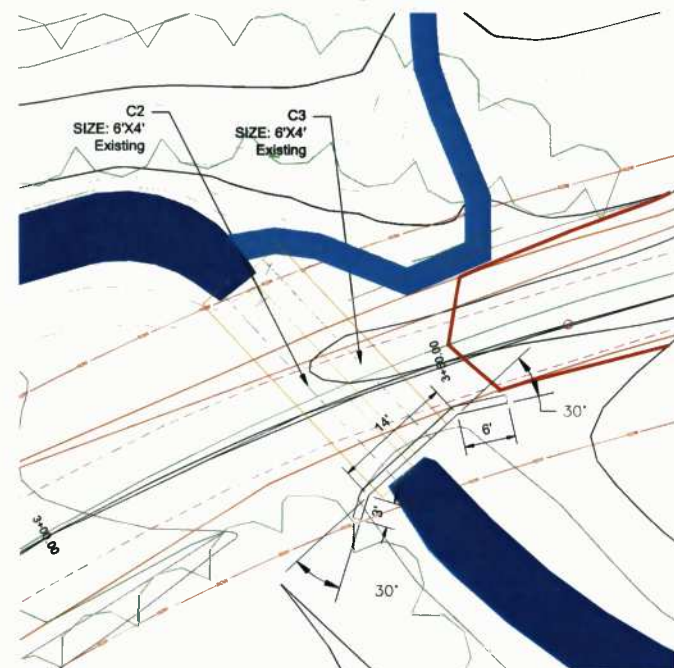
THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORP

WOLF PEN ROAD WOLF PEN RUN CULVERTS ANTERO RESOURCES CORPORATION

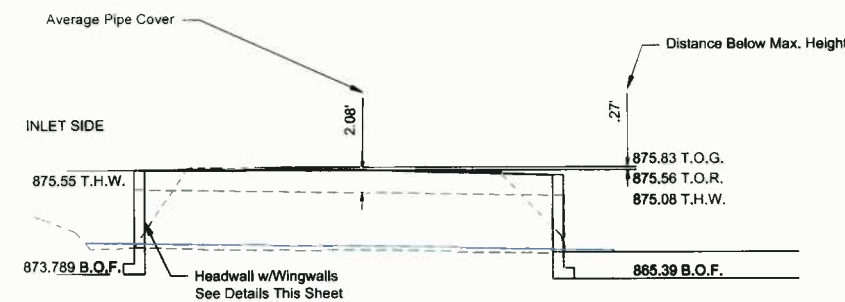
LEGEND
Proposed Grade
Existing Ground
T.O.G. - TOP OF ORIGINAL GROUND (HIGH POINT)
T.O.R. - TOP OF ROAD (HIGH POINT)
T.H.W. - TOP OF HEADWALL
B.O.F. - BOTTOM OF FOOTING



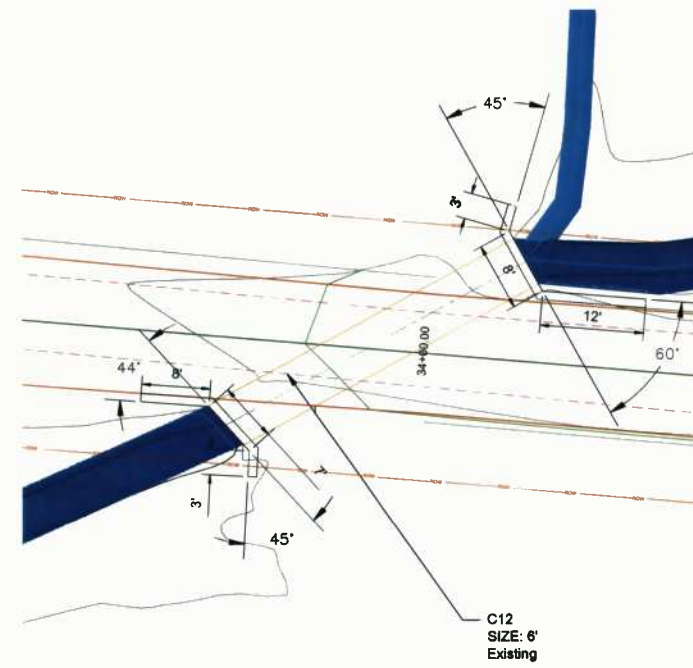
Culverts C2 & C3 Cross Section N.T.S.



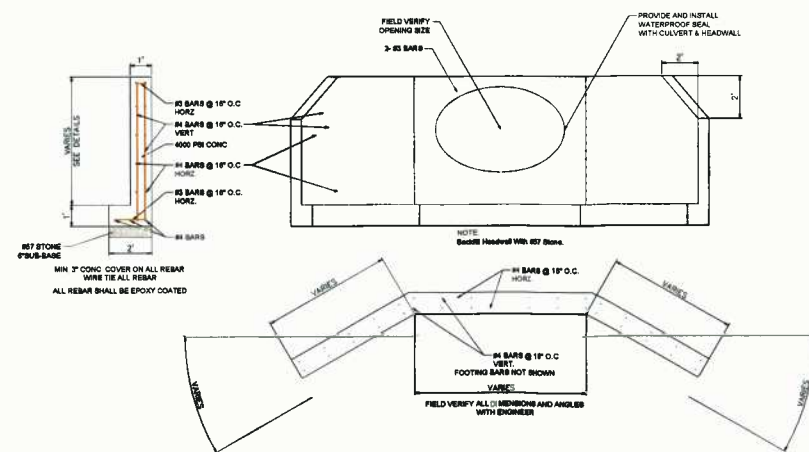
Culvert Headwall C2 & C3 Sta. 3+35 & 3+42 Plan View SCALE: 1" = 10'



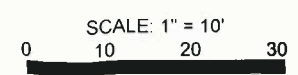
Culvert C12 Cross Section N.T.S.



Culvert Headwall C12 Sta. 33+93 Plan View SCALE: 1" = 10'



HEADWALL & WINGWALL PLAN & SECTION SCALE: 3" = 1'



LEGEND

- Proposed Road 2' Contour
- Proposed Road 10' Contour
- Existing 2' Contour
- Existing 10' Contour
- ROW Right of Way
- AOI Area of Influence
- 4' Wide Safety Berm
- Rock Rip-rap Ditch
- TRM Lined Ditch
- Jute Lined Ditch
- Direction of Flow
- Silt Sock
- Super Silt Fence
- Run-off Diversion
- Level Spreader
- Culvert w/ Riprap
- Existing Culvert
- Existing Overhead Electric
- Existing Gaslines
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Swale/Gully
- Ditch
- Wetland/Pond
- Spring
- Property Line
- Fence Line
- Tree Line

Schedule of Culverts

Number	Dis.	LF	Type	EXISTING CULVERT LOCATIONS	CENTERLINE LOCATIONS	SLOPE(%)	NOTES
C1	18"	30	HDPE	15'	0+59	.01 Min.	2% Min.
C2	6'x4'	30	CAP	6'x4'	3+35	.06	1% EXISTING TO REMAIN
C3	6'x4'	28	CAP	6'x4'	3+42	.06	1% EXISTING TO REMAIN
C4	18"	24	HDPE	18"	8+01	.15	1.2%
C5	36"	24	HDPE	36"	13+92	.28	2% Min.
C6	18"	24	HDPE	12"	18+36	.35	2% Min.
C7	18"	24	HDPE	15"	20+95	.39	2% Min.
C8	18"	24	HDPE	15"	23+24	.44	2% Min.
C9	18"	28	HDPE	12"	25+45	.48	1% Min.
C10	18"	20	CMP	18"	28+17	.50	0.1% EXISTING TO REMAIN
C11	24"	24	HDPE	24"	29+35	.56	3% OUTSIDE ROW SEE NOTES BELOW
C12	6'	40	CAP	6'	32+93	.62	1.2% EXISTING TO REMAIN
C13	6'	20	CAP	6'	36+99	.70	0.4% EXISTING TO REMAIN
C14	18"	24	HDPE	14"	44+84	.85	2% Min.
C15	18"	26	HDPE	18" LD.	50+75	.96	2% Min.
C16	6' x 4'	20	CONC.	6' x 4'	57+85	1.10	1% Min. EXISTING TO REMAIN
C17	18"	24	HDPE	12" LD.	58+50	1.11	1% Min.
C18	18"	20	HDPE	18" LD.	61+66	1.17	2% Min.
C19	18"	24	HDPE	16"	63+48	1.20	2% Min.
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.
C21	8"	24	STL	12"	68+41	1.30	2.2% GAS LINE CONDUIT
C22	24"	24	HDPE	24"	74+60	1.41	4.4%
C21A	18"	24	HDPE	NEW	68+37	1.20	2% Min.
C25	8"	22	STL	NEW	59+25	1.12	1% GAS LINE CONDUIT
C28	18"	40	HDPE	NEW	28+02	.55	1% NEW CULVERT

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE, OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11. KEEP REPLACEMENT PIPE WITHIN THE ROW. RIP RAP INLET TO PROVIDE NEW STREAM BED

DATE: APR. 2, 2014
APR. 16, 2014
APR. 30, 2014
MAY 8, 2014
MAY 27, 2014

REVISIONS:
Headwall Modifications
Add Name of Pad-Cover Sheet Only
Added Culvert, Stream, & Wetland
Revised Schedule of Quantities
Revised Stream Impact

HANNAH ENGINEERING
ELKINS, WV
304-636-7777

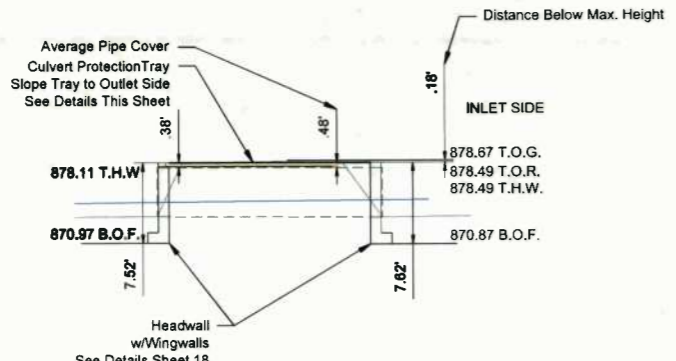
ANTERO RESOURCES
WOLF PEN ROAD
IMPROVEMENT PROJECT
WOLF PEN RUN CULVERTS

NEW MILTON DISTRICT DODDRIDGE COUNTY, WV
DATE: MAR. 19, 2014 SCALE: AS SHOWN JOB NO: 13 ARAC 01 DRAWN BY: DAN GRIMM, PETE TENNEY **SHEET 18 OF 20 SHEETS**

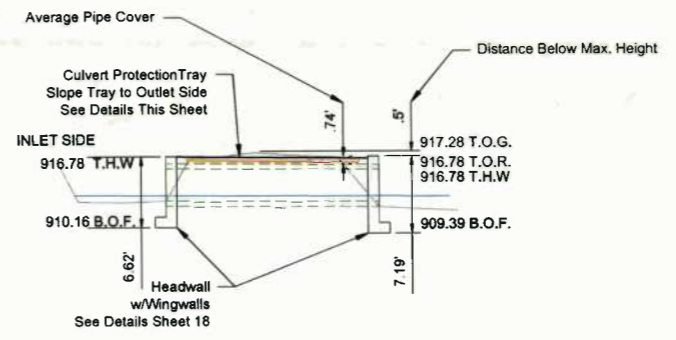


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PREPARED FOR
ANTERO RESOURCES CORP

WOLF PEN ROAD WOLF PEN RUN CULVERTS ANTERO RESOURCES CORPORATION



**Culvert C13
Cross Section
N.T.S.**

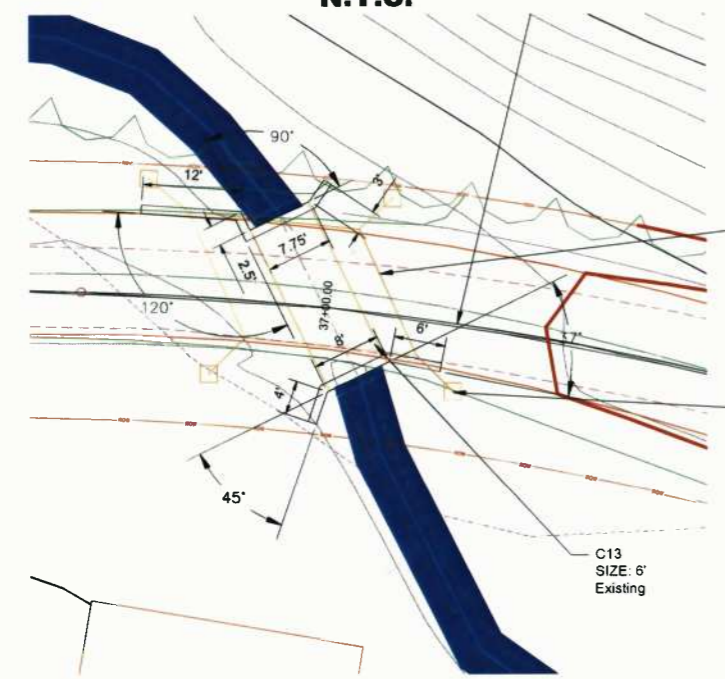


**Culvert C16
Cross Section
N.T.S.**

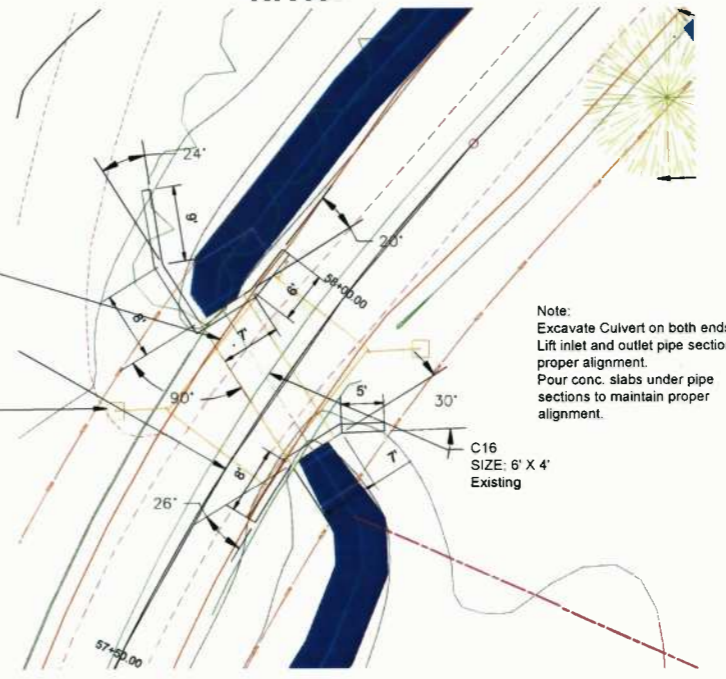
LEGEND
 - - - Proposed Grade
 - - - Existing Ground
 T.O.G. - TOP OF ORIGINAL GROUND (HIGH POINT)
 T.O.R. - TOP OF ROAD (HIGH POINT)
 T.H.W. - TOP OF HEADWALL
 B.O.F. - BOTTOM OF FOOTING

LEGEND

- - - Proposed Road
- - - Proposed Road 10' Contour
- - - Existing 2' Contour
- - - Existing 10' Contour
- - - ROW Right of Way
- - - AOI Area of Influence
- - - 4' Wide Safety Berm
- Rock Rip-rap Ditch
- TRM Lined Ditch
- Jute Lined Ditch
- Direction of Flow
- Silt Sock
- Super Silt Fence
- Run-off Diversion
- Level Spreader
- Culvert w/ Riprap
- Existing Culvert
- Existing Overhead Electric
- Existing Gaslines
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- Intermittent Stream
- Perennial Stream
- Swale/Gully
- Ditch
- Wetland/Pond
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- Fence Line
- Tree Line

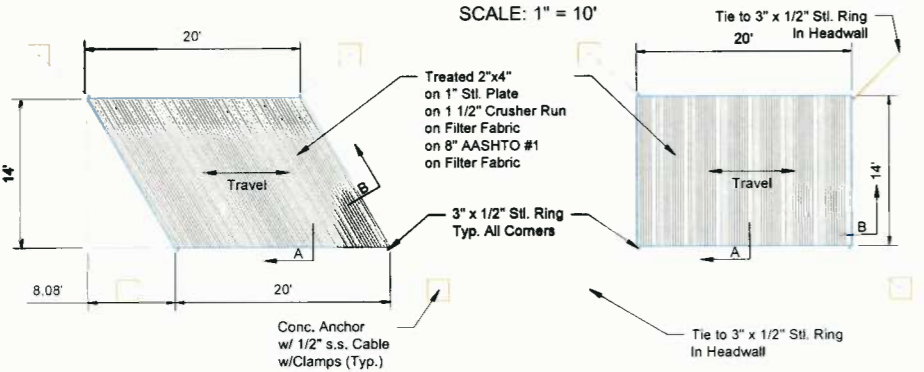


**Culvert Headwalls C13
Sta. 36+99
Plan View
SCALE: 1" = 10'**



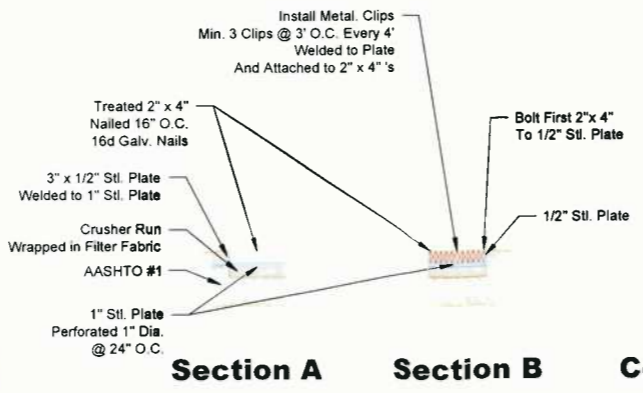
**Culvert Headwalls C16
Sta. 57+85
Plan View
SCALE: 1" = 10'**

Note:
Excavate Culvert on both ends.
Lift inlet and outlet pipe sections to proper alignment.
Pour conc. slabs under pipe sections to maintain proper alignment.



**C13 Culvert Protection Tray
Plan View
SCALE: 1 1/2" = 1'**

**C16 Culvert Protection Tray
Plan View
SCALE: 1 1/2" = 1'**



**Culvert Protection Tray
Sections & Details
SCALE: 1" = 2'**

Schedule of Culverts

Number	Dia.	LF	Type	EXISTING LOCATION	PROPOSED LOCATION	CENTRELINE LOCATION	SLOPE(%)	NOTES
C1	18"	30	HDPE	15'	0+59	.01 M.	2% Min.	
C2	6"x4"	30	CAP	6"x4"	3+35	.06	1%	EXISTING TO REMAIN
C3	6"x4"	28	CAP	6"x4"	3+42	.06	1%	EXISTING TO REMAIN
C4	18"	24	HDPE	18"	8+01	.15	1.2%	
C5	36"	24	HDPE	36"	13+82	.26	2% Min.	
C6	18"	24	HDPE	12"	18+36	.35	2% Min.	
C7	18"	24	HDPE	15"	20+85	.39	2% Min.	
C8	18"	24	HDPE	15"	23+24	.44	2% Min.	
C9	18"	26	HDPE	12"	25+45	.48	1% Min.	
C10	18"	20	CMP	18"	28+17	.50	0.1%	EXISTING TO REMAIN
C11	24"	24	HDPE	24"	29+35	.56	3%	OUTSIDE ROW
C12	6"	40	CAP	6"	32+83	.62	1.2%	EXISTING TO REMAIN
C13	6"	20	CAP	6"	36+99	.70	0.4%	EXISTING TO REMAIN
C14	18"	24	HDPE	14"	44+94	.85	2% Min.	
C15	18"	28	HDPE	18" I.D.	50+75	.96	2% Min.	
C16	6" X 4"	20	CONC.	6" X 4"	57+85	1.10	1% Min.	EXISTING TO REMAIN
C17	18"	24	HDPE	12" I.D.	58+50	1.11	1% Min.	
C18	18"	20	HDPE	18" I.D.	61+86	1.17	2% Min.	
C19	18"	24	HDPE	18"	63+48	1.20	2% Min.	
C20	24"	24	HDPE	24"	67+42	1.28	2% Min.	
C21	8"	24	STL	12"	68+41	1.30	2.2%	BAR LINE CONDUIT
C22	24"	24	HDPE	24"	74+60	1.41	4.4%	
C21A	18"	24	HDPE	NEW	68+37	1.20	2% Min.	NEW CULVERT
C25	8"	22	STL	NEW	59+25	1.12	1%	BAR LINE CONDUIT
C28	18"	40	HDPE	NEW	29+02	.55	1%	NEW CULVERT

ALL CULVERTS ARE TO BE REPLACED EXCEPT THOSE NOTED ABOVE, OR AS DIRECTED BY THE D.O.H.
REMOVE EXISTING C11, KEEP REPLACEMENT PIPE WITHIN THE ROW. RIP RAP INLET TO PROVIDE NEW STREAM BED

DATE: APR. 2, 2014
REVISIONS: Headwall Modifications

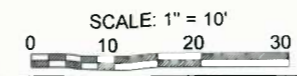
DATE	REVISIONS
APR. 16, 2014	Add Name of Pad-Cover Sheet Only
APR. 30, 2014	Added Culvert, Stream, & Wetland
MAY 6, 2014	Revised Schedule of Quantities
MAY 27, 2014	Revised Stream Impact

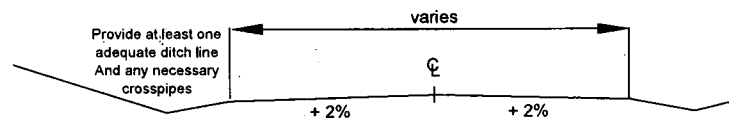
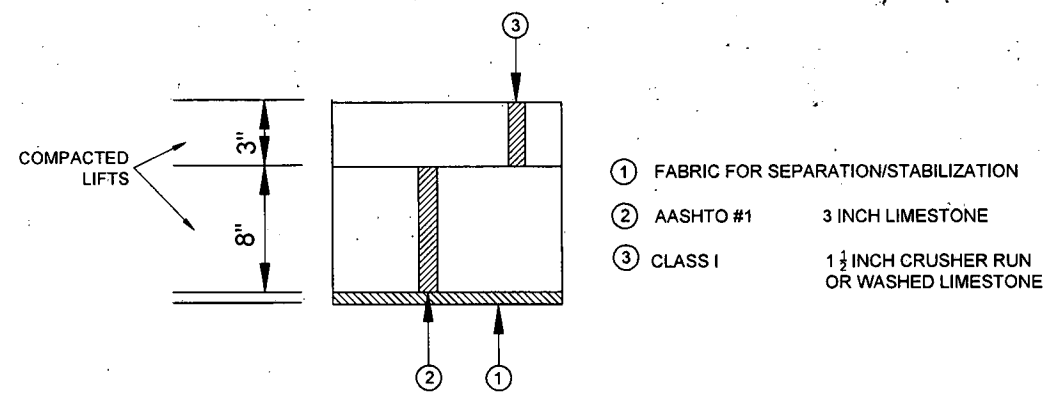
**HANNAH
ENGINEERING**
ELKINS, WV
304-636-7777

ANTERO RESOURCES
**WOLF PEN ROAD
IMPROVEMENT PROJECT**
WOLF PEN RUN CULVERTS

NEW MILTON DISTRICT
DODDRIDGE COUNTY, WV

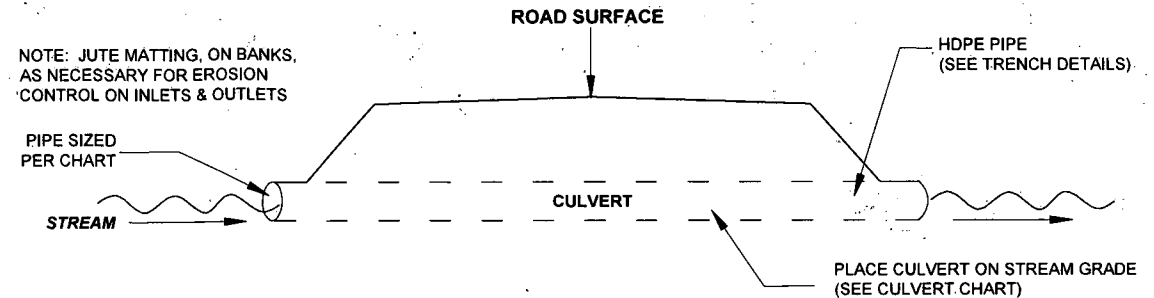
DATE: MAR. 19, 2014
SCALE: AS NOTED
JOB NO: 13 ARAC 01
DRAWN BY: DAN GRIMM
PETE TENNEY
**SHEET 19
OF 20 SHEETS**





DODDRIDGE CO. 25/1 TYPICAL SECTION

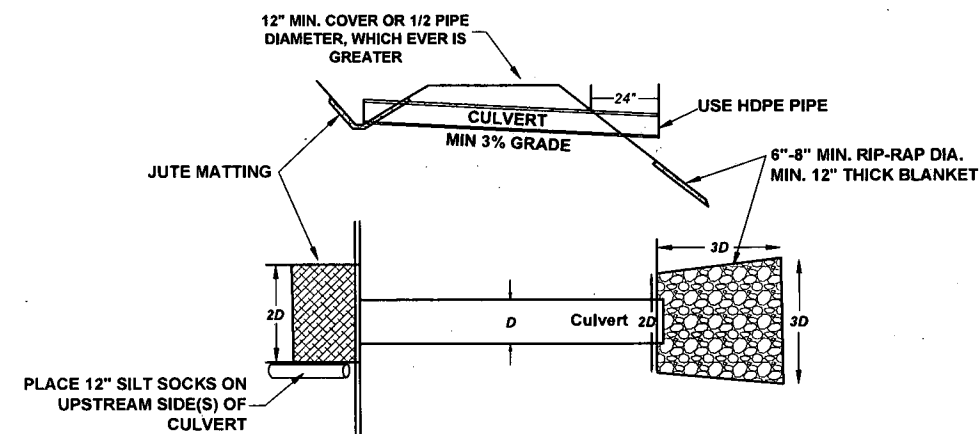
Scarify existing road surface to a minimum depth of 8 inches. Grade scarified material to a minimum 2% crown and compact with steel drum roller. Place geo-textile stabilization fabric over compacted subgrade and place compacted lifts of cited gradations of limestone. GeoGrid may be substituted for geotextile fabric. (See "Type C Trench" Detail below for culverts)



SEE STREAM IMPACT TABLE FOR CULVERTS INVOLVED

STREAM CULVERTS

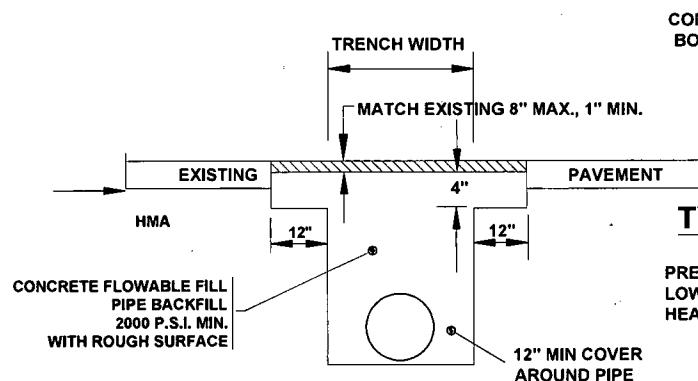
N.T.S.



(SEE CULVERT SECTION SHEET FOR STREAM CULVERT DETAILS)

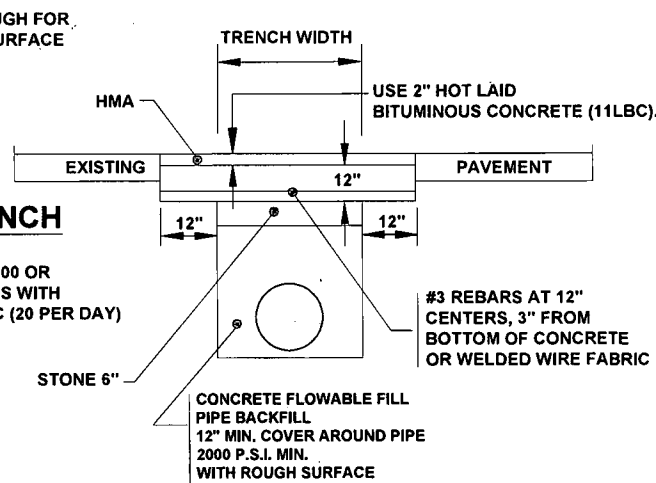
TYPICAL DITCH RELIEF CULVERT & CULVERT INLET/OUTLET PROTECTION DETAIL

N.T.S.



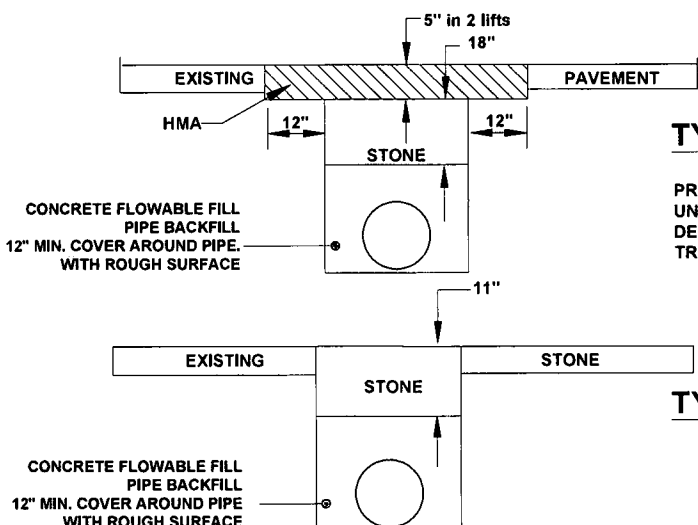
TYPE A TRENCH

MIX PAVEMENT
PRESENT ADT OVER 2000 OR LOWER-VOLUME ROADS WITH HEAVY TRUCK TRAFFIC (20 PER DAY)



TYPE B TRENCH

HMA PAVEMENT
PRESENT ADT UNDER 2000 UNLESS HEAVY TRUCK TRAFFIC, DEFINED AS 20 TANDEM-AXLE TRUCKS PER DAY IS EVIDENT.

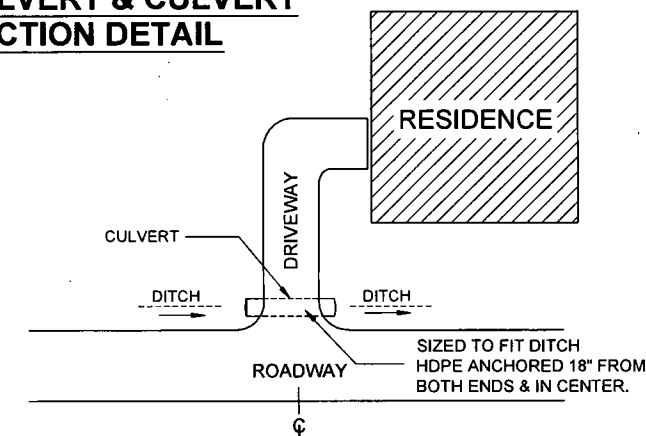


TYPE C TRENCH

STONE ROADWAY

NOTES

1. Where type A trenches are wider than 7' in existing bituminous pavement, concrete may be deleted if existing HMA thickness and 18" stone are restored.
2. Traffic is to be maintained at all times by the use of appropriate traffic control devices. Use of metal plates, having sufficient rigidity to span Type A trench, is required to prevent wheel loads from being applied to the concrete flowable fill. The plates are to be transmitted to the concrete flowable fill. The plates are to be left in place until Concrete Flowable Fill has attained a 50% of its compressive strength.
3. Anchor pipe 18" from ends and at center with maximum 10' intervals prior to placement of flowable fill.
4. Class 1 or #57 Stone may be substituted for concrete flowable fill in Type A, B, & C Trenches.



DRIVEWAY REPLACEMENT CULVERT

N.T.S.

DATE:	REVISIONS:
April 2, 2014	Headwall Modifications
April 15, 2014	Add names of rights - cover sheet only
April 29, 2014	Added culvert, Stream & Wetland
May 6, 2014	Revised Schedule of Quantities
May 27, 2014	Revised Stream Impact

HANNAH ENGINEERING
ELKINS, WV
304-636-7777

ANTERO RESOURCES
WOLF PEN ROAD IMPROVEMENT PROJECT
DETAILS

NEW MILTON DISTRICT DODDRIDGE COUNTY

DATE:	SCALE:	JOB NO:	DRAWN BY:	SHEET 20
MAR. 19, 2014	NONE	13 ARAC 01	JERRI REED	OF 20 SHEETS