

PERMIT NO. 14-115

**DODDRIDGE COUNTY
FLOODPLAIN DEVELOPMENT
PERMIT**

PURPOSE FOR PERMIT: Pipe line & Temporary Bridge

ISSUED TO Antero Resources Corp

ADDRESS: 1625 17th St.
Denver, Co 80202

PROJECT ADDRESS: Blandville Rt 25. Meat house

ISSUED BY: Ralph Sander

DATE: 2-14-14

CONSTRUCTION MUST START WITHIN 180 DAYS FROM ISSUED DATE. PERMIT EXPIRES IN 12 MONTHS FROM ISSUED DATE. IF EXTENTION IS NEEDED A REQUEST MUST BE MADE IN WRITING STATING A REASON FOR THE EXTENTION.

THIS PERMIT MUST BE POSTED ON THE PREMISES IN A CONSPICUOUS PLACE SO AS TO BE CLEARLY VISIBLE FROM THE STREET.

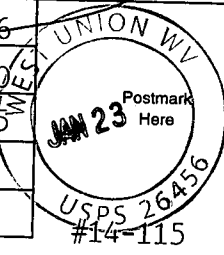
U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

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

OFFICIAL USE

7013 2250 0001 6914 7677

Postage	\$	46
Certified Fee		3.10
Return Receipt Fee (Endorsement Required)		2.55
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$	6.11



Sent To Norma C. Boyer
Street, Apt. No.,
or PO Box No. 31 Meathouse Fork Rd
City, State, ZIP+4 New Milton, WV 26411

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- 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: #14-115

Norma C Boyer
31 Meathouse Fork Rd
New Milton, wV 26411

2. Article Number
(Transfer from service label)

7013 2250 0001 6914 7677

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Norma Boyer

Agent

Addressee

B. Received by (Printed Name)

Norma Boyer

C. Date of Delivery

1-24-11

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

3. Service Type

Certified Mail

Express Mail

Registered

Return Receipt for Merchandise

Insured Mail

C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes

UNITED STATES POSTAL SERVICE



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

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

Dan Wellings
Doddrige Co. Flood Plain
Room 102
118 E. Court St.
West Union WV 26456

2014 JAN 27 PM 12:06
BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

FILED





ANTERO RESOURCES CORPORATION
 1625 17th STREET, SUITE 300
 DENVER, COLORADO 80202

Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	Jan-20-2014	47036	\$2,248.00

VOUCHER	VENDOR INV #	INV DATE	TOTAL AMOUNT	PRIOR PMTS & DISCOUNTS	NET AMOUNT
01-AP-10684	PLFLOODPLAIN	01/20/14	2,248.00	0.00	2,248.00
Willard Pipeline & Temp Bridge Floodplain Permit					
TOTAL INVOICES PAID					2,248.00

14-115
 Antero - Willard Pipe line

DETACH AND RETAIN FOR TAX PURPOSES

Doddridge County, West Virginia

RECEIPT NO: 1322

DATE: 2014/01/24

FROM: ANTERO

AMOUNT: \$ 2,248.00

TWO THOUSAND TWO HUNDRED FORTY EIGHT DOLLARS AND 00 CENTS

FOR: #14-115 ANTERO-WILLARD PIPELINE

00000047036 FP-BUILDING PERMITS

020-318

TOTAL: \$2,248.00

MICHAEL HEADLEY
 SHERIFF & TREASURER

MEC
 CLERK

Legal Advertisement:
Doddridge County
Floodplain Permit Application

Please take notice that on the 23rd day of , 2014

**ANTERO RESOURCES APPALACHIAN CORPORATION –
WILLARD PIPELINE # 14 - 115**

filed an

application for a Floodplain Permit to develop land located at or
about: **SURFACE OWNERS: NORMA C BOYER**

NEW MILTON DISTRICT, D/B:220/70, T/M: 6-8-5

The Application is on file with the Clerk of the County Court and
may be inspected or copied during regular business hours.

Any interested persons who desire to comment shall present
the same in writing by **FEBRUARY 12, 2013.**

Delivered to the:

Clerk of the County Court

118 E. Court Street, West Union, WV 26456.

Beth A Rogers, Doddridge County Clerk

Dan Wellings, Doddridge County Flood Plain Manager

FILED

2014 JAN 22 PM 12: 21

RECEIVED
COUNTY CLERK
January 21, 2014 DODDRIDGE COUNTY, WV



Antero Resources
1625 17th Street
Denver, Colorado 80202
Office 303.357.7310
Fax 303.357.7315

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

Mr. Wellings:

Antero Resources Corporation (Antero) would like to submit a Doddridge County Floodplain permit application for our Willard Pipeline project and temporary bridge. Our project is located in Doddridge County, New Milton District and as shown on FIRM Map 54017C0230C, approximately 491' of the pipeline will bore underneath the floodplain. The proposed project area for the pipeline consists of a 95' construction right of way and contains approximately 29.05 acres. The proposed 16" steel pipeline originates at an existing well pad and then travels south to an existing compressor site. The proposed temporary metal bridge will be approximately 89.5' x 21' and will be supported by double stacked 10" timbermat abutments on either side of the stream. Please refer to the enclosed exhibits.

Attached you will find the following:

- Doddridge County Floodplain Permit Application and required permit fee
- FIRM Map
- Willard Pipeline Construction Plans
- HECRAS Study

If you have any questions please feel free to contact me at (303) 357-6412.

Thank you in advance.

Sincerely,

Shaye Marshall
Permit Representative
Antero Resources Corporation

Enclosures

THRASHER

14-115

January 16, 2014

Mr. Dan Wellings
Doddridge County Commission
118 East Court Street
West Union, WV 26456

2014 JAN 27 AM 10:59
FILED
BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

**RE: *Doddridge County Floodplain Development Permit
Antero Resources Corporation
Willard Pipeline, Doddridge County, West Virginia
Thrasher Project # 101-015-0191***

Mr. Wellings:

On behalf of Antero Resources Corporation (Antero), the Thrasher Group, Inc. (Thrasher), is submitting to your office for review and approval an application package for a Doddridge County Floodplain Development Permit for a proposed project in the USGS New Milton and Smithburg 7.5 minute quadrangles of Doddridge County, WV. The proposed project area for the Willard pipeline consists of a 95' construction right-of-way (ROW) and contains approximately 29.05 acres. The proposed 16" steel Willard pipeline originates at an existing well pad, at approximate coordinates 39.254622 N, 80.690118 W, and then travels south to an existing compressor site, at approximate coordinates 39.228134 N, 80.688289 W. The total pipeline length is approximately 13,845 LF, of which approximately 491 feet are located within the floodplain.

In addition, the project seeks to utilize three (3) existing access roads, one of which will involve crossing the perennial stream Meathouse Fork at approximately 39.238357°N, 80.687601°W; and will require the construction of a temporary bridge. The proposed temporary metal bridge will have dimensions of approximately 89.5' x 21' and will be supported by double stacked 10" timbermat abutments on either side of the stream. Please refer to the enclosed temporary bridge exhibits.

No permanent above-ground structures are proposed to be constructed within the 100 year flood plain. After construction, all material will be replaced to restore original elevation, slope and contour. Note that all required federal and state permit applications have been submitted for the project and are attached.


Please see the attached permit application, permit fee worksheet and payment.

If any further documentation is required for this project, or if any questions may arise please feel free to contact me at your convenience at (330) 491-8170 or lmartin@thrashereng.com.

Mr. Wellings
January 16, 2014
Page 2 of 2

Sincerely,

THRASHER GROUP, INC.



Leigh A. Martin
Environmental Scientist



Jeff Gola, P.E.
Project Engineer

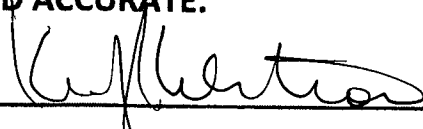
FILED

DODDRIDGE COUNTY
FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

2014 JAN 22 PM 12:21
REC'D CLERK
DODDRIDGE COUNTY, WV

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.**

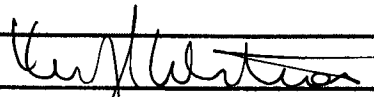
APPLICANT'S SIGNATURE 

DATE January 21, 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 Resources Corporation - Kevin Kilstrom-VP of Production

ADDRESS: 1625 17th Street, Denver, CO 80202 

TELEPHONE NUMBER: Contact Shauna DeMattee: 303-357-6820

BUILDER'S NAME: Antero Resources Corporation
ADDRESS: 1625 17th Street, Denver, CO 80202
TELEPHONE NUMBER: (303) 357-7310

ENGINEER'S NAME: Matthew Fluharty, PE, Thrasher
ADDRESS: 600 White Oaks Blvd Bridgeport, WV 26330
TELEPHONE NUMBER: 304-624-4108

PROJECT LOCATION:

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) Please see attached Exhibit A

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) Please see attached Exhibit A

DISTRICT:

DATE/FROM WHOM PROPERTY

PURCHASED: N/A

LAND BOOK DESCRIPTION:

DEED BOOK REFERENCE: Please see attached Exhibit A

TAX MAP REFERENCE:

EXISTING BUILDINGS/USES OF PROPERTY: None

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

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 \$ 349,600.00

*See attached Floodplain Calculation Fee

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: _____ Please see attached Exhibit A
 ADDRESS: _____

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
 ADDRESS: _____

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:

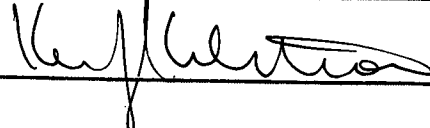
- (A) PERSONAL SERVICE OF PROCESS BY THE DODDRIDGE COUNTY SHERIFF AT THE RATES PERMITTED BY LAW FOR SUCH SERVICE.
- (B) SERVICE BY CERTIFIED MAIL RETURN RECEIPT REQUESTED.
- (C) PUBLICATION.

Exhibit A

DIST/NAME	DIST	MAP	PAGE	SUB	OWNER	ADDRESS	CITY/STATE	LOC	BOOK	PAGE	LEGAL DESC
SURFACE OWNER											
						31					
NEW MILTON	6	8	5		BOYER NORMA C	MEATHOUS E FORK ROAD	NEW MILTON, WV 26411	BLADVILLE RT 25	220	70	MEATHOUSE FK 68A 15.6P
ADJACENT SURFACE OWNERS											
						792					
NEW MILTON	6	8	9		BECK RICHARD	MEATHOUS E FORK ROAD	NEW MILTON, WV 26411	RT 1 RT 25/1	231	648	MEATHOUSE 80.75 AC
NEW MILTON	6	4	24		WYCKOFF DEBORAH LYNN	RT 1 BOX 35	NEW MILTON, WV 26411		WB43	1	1/3 INT 151.99 AC & 1/3 OF 7/16 INT O&G MEATHOUSE
NEW MILTON	6	4	38		DAVIS DOROTHY	HC 68 BOX 28	WEST UNION, WV 26456	RT 18	WB42	354	MEATHOUSE FK 75.80 AC

- (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): Antero Resources Corporation - Kevin Kilstrom-VP of Production

SIGNATURE:  DATE: January 21, 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: 230C
 Dated: 10-4-11

- 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.
 BFBM Panel No. _____ Dated _____
- See section 4 for additional instructions.

SIGNED *Robert S. ...*

DATE 2-14-14

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** _____

Doddridge County Flood Plain Application Fee Calculator (if in Flood Plain)

Willard Pipeline & Temporary Bridge Project

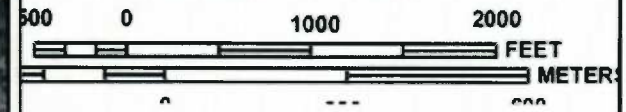
Estimated Construction Costs	\$349,600.00
Amount over \$100,000	\$249,600.00
Drilling Oil and Gas Well Fee	\$1,000.00
\$5 per \$1,000 over \$100,000	\$1,248.00
Amount Due with Application	\$2,248.00

ANTERO RESOURCES CORPORATION
Willard Pipeline - Cost Estimate For Construction within Floodplain

Feature	Length in Floodplain (feet)	Construction in Floodplain (Y/N)	Installation Method	Unit Cost/Foot	Total
16" steel pipeline	491	Yes	HDD	\$ 600	\$ 294,600
Temporary Bridge	89.5 x 21	Yes			\$ 55,000
			Total Construction Cost Estimate =		\$ 349,600



MAP SCALE 1" = 1000'



PANEL 0230C

FIRM

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

PANEL 230 OF 325

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0230	C

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

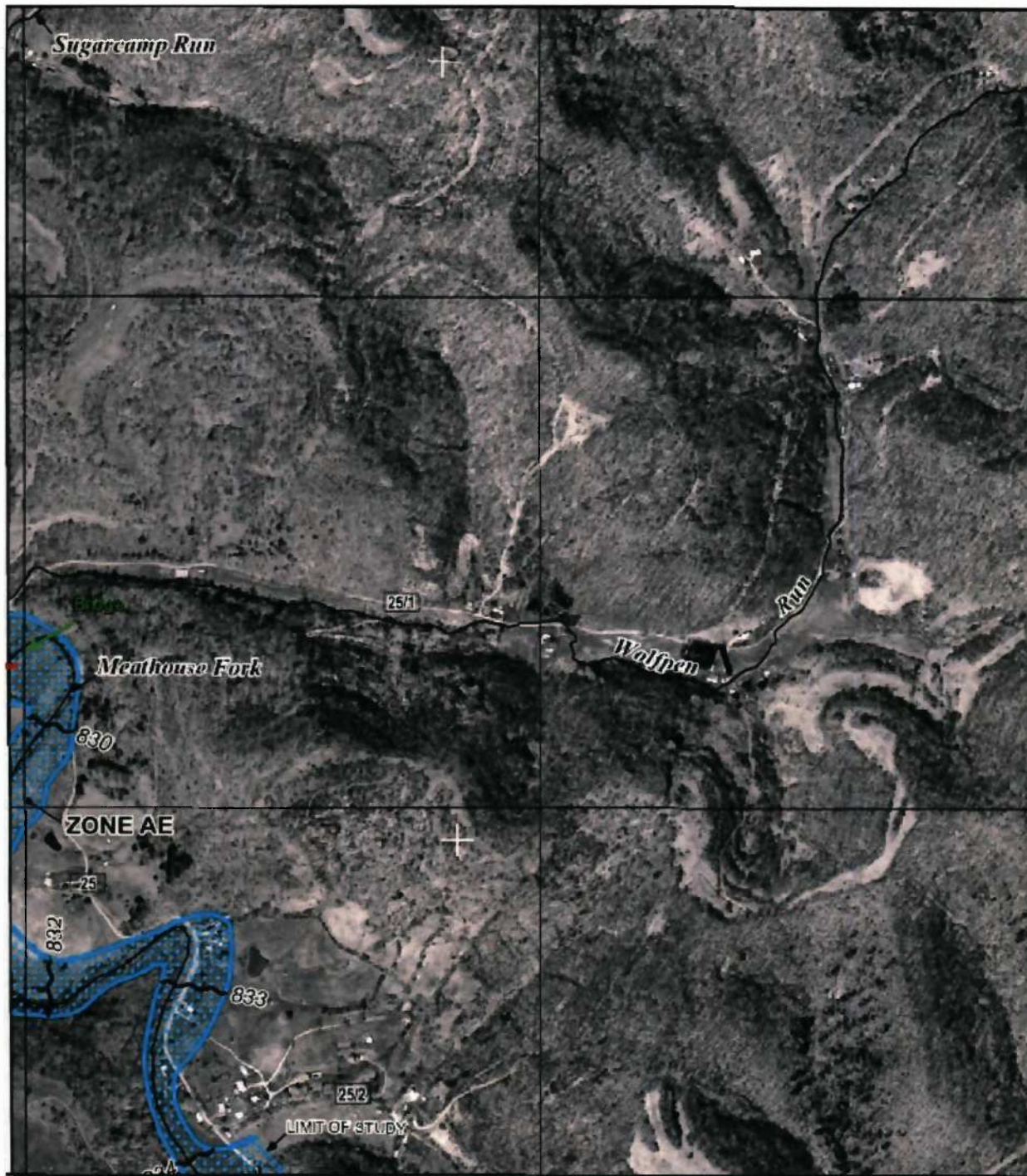
**MAP NUMBER
54017C0230C**

**MAP REVISED
OCTOBER 4, 2011**

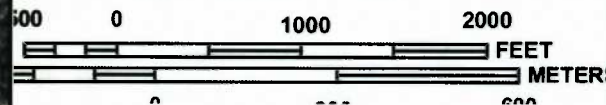


Federal Emergency Management Agency

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



MAP SCALE 1" = 1000'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0235C

FIRM

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

PANEL 235 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0235	C

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



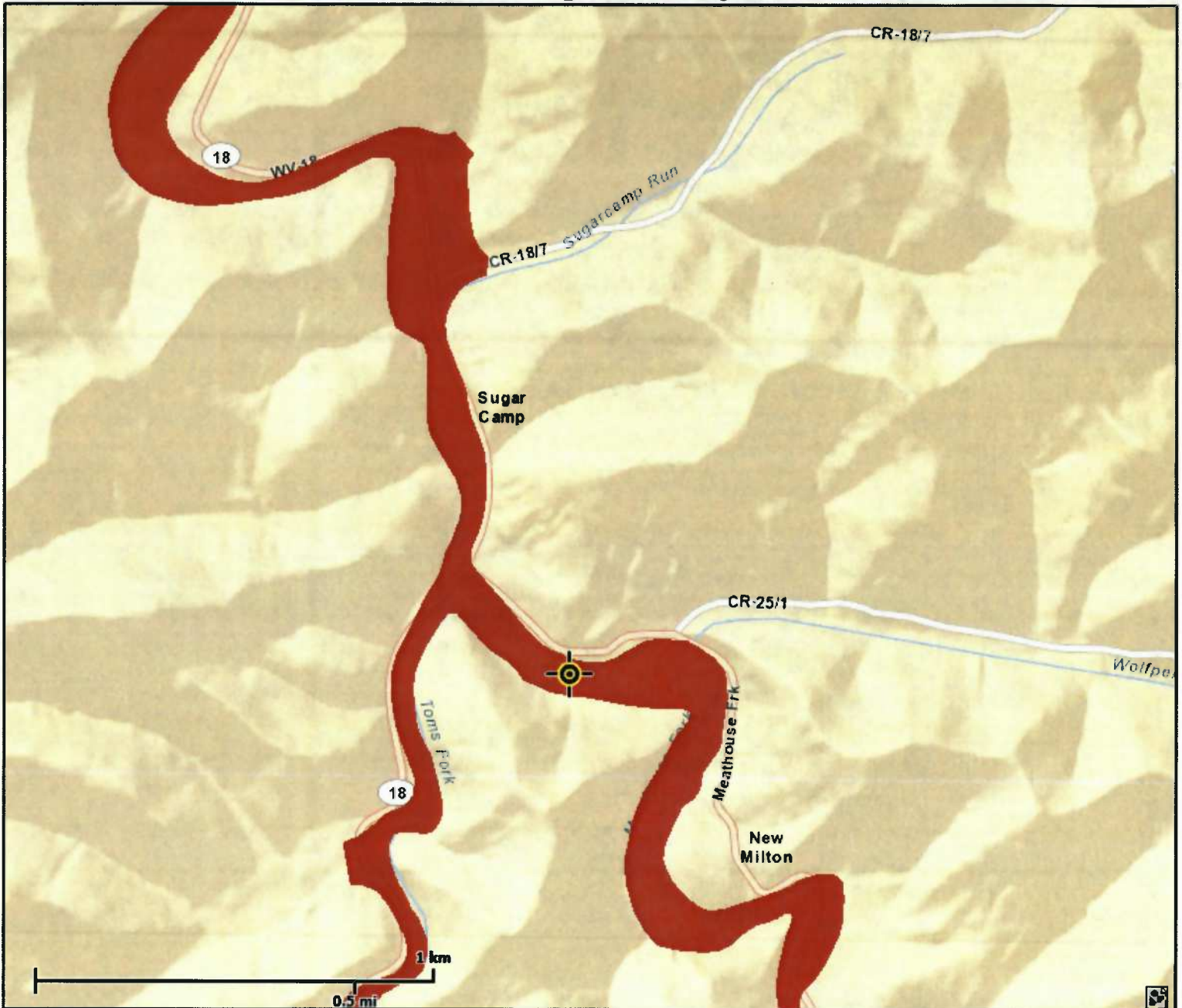
MAP NUMBER
54017C0235C

MAP REVISED
OCTOBER 4, 2011

Federal Emergency Management Agency

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

Willard Pipeline Project



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 11/13/2013



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: Selected site is **WITHIN** the FEMA 100-year floodplain.

Elevation: About 817 feet

Location (long, lat): 80.690552 W, 39.238512 N

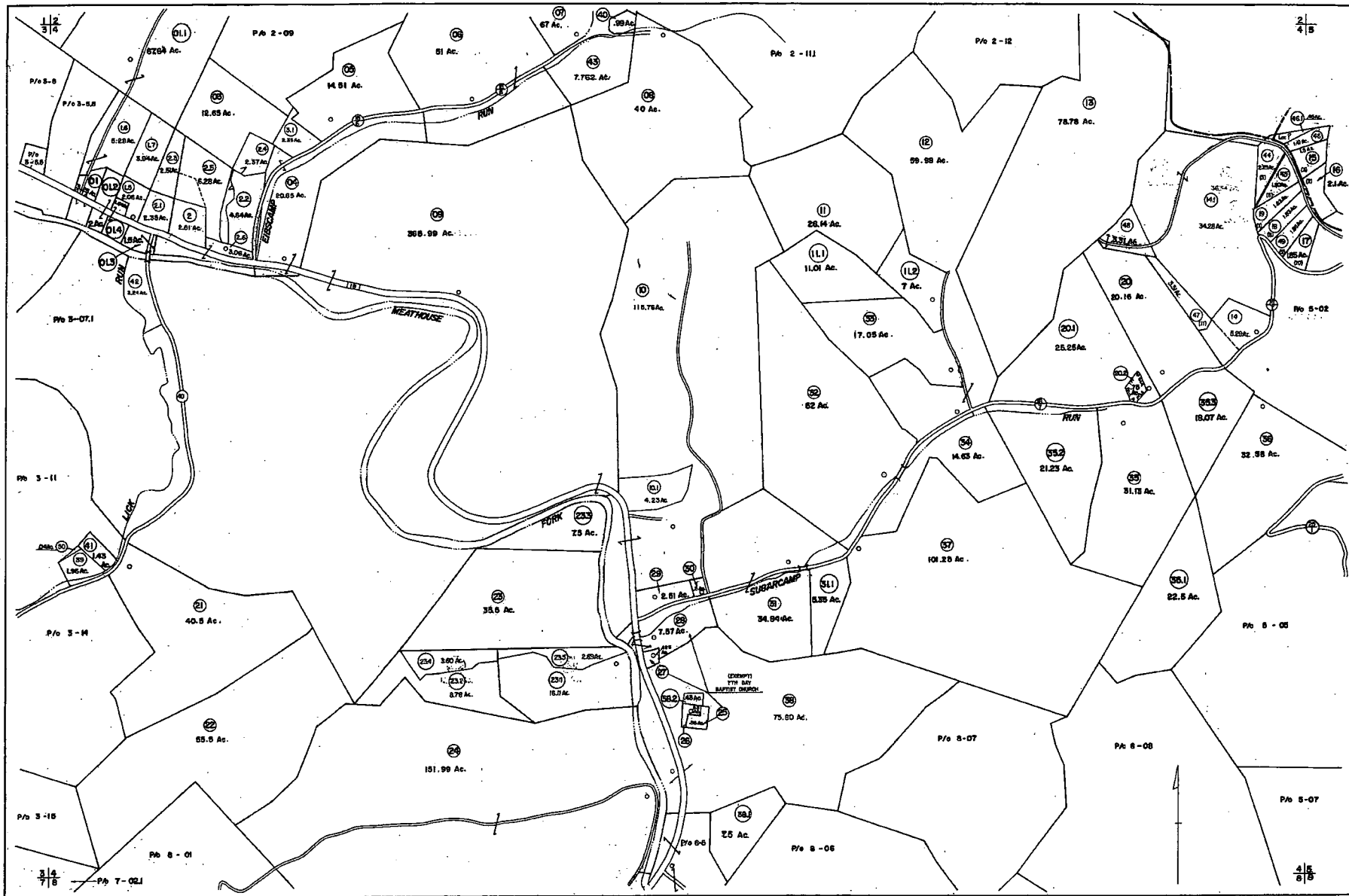
Location (UTM 17N): (526705, 4343291)

FEMA Issued Flood Map: 54017C0230C

Contacts: Doddridge County

CRS Information: No CRS information available

Parcel Number:



FOR TAX PURPOSES ONLY

Prepared by
L. ROBERT KIMBALL
County Engineer

Legend	
Property line	.....
Map of present or nearby	.....
Conventional line	.....
Blocklot line	.....
County line	.....
Original lot line	.....
Blocklot number	.....
Present or future number in block	.....
Improvement	.....
Railroad	.....

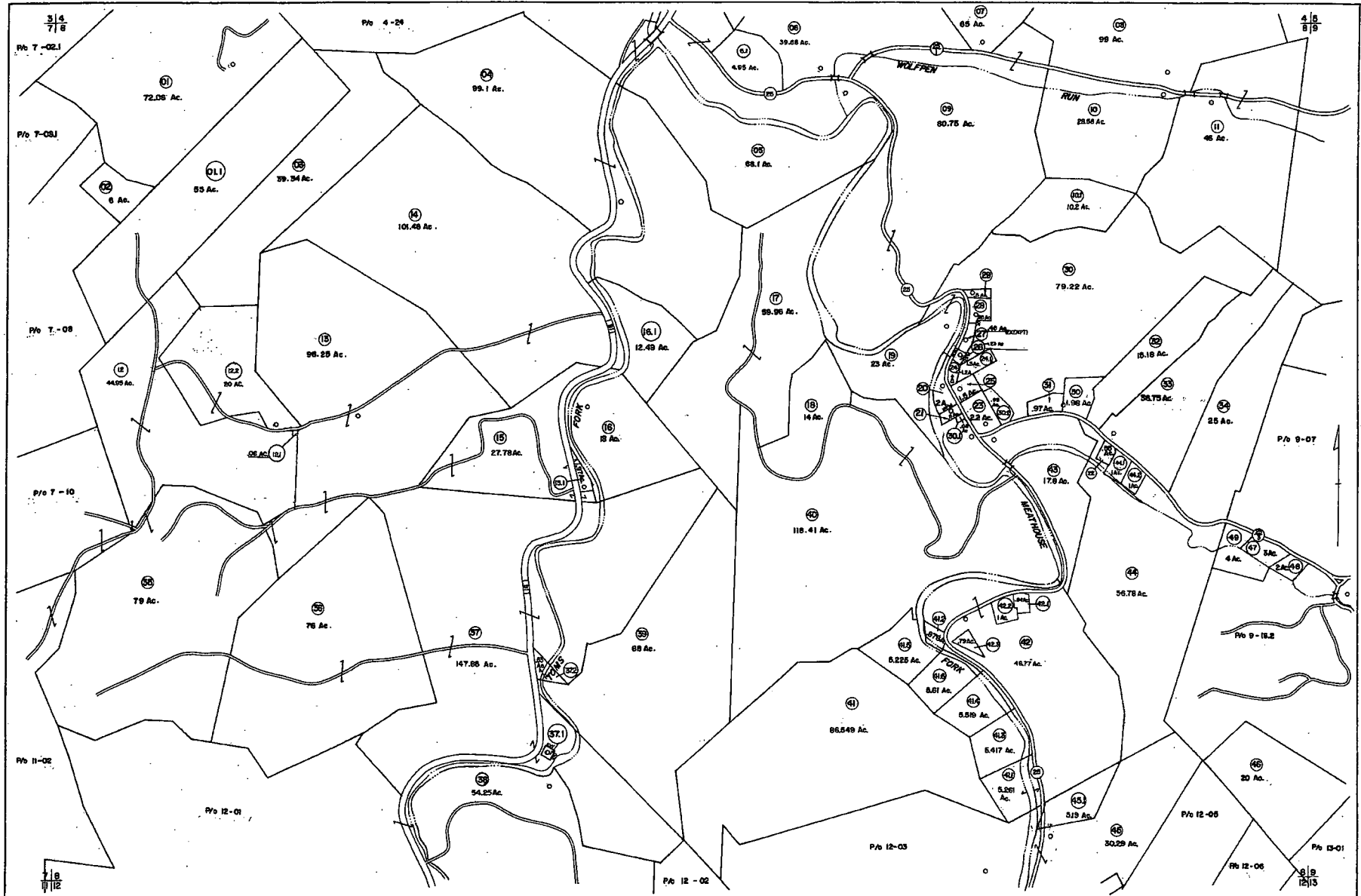
Revisions	
1	Original Map
2	3-1-1980
3	1-15-1981
4	7-20-1982
5	1-15-1983
6	1-15-1984
7	1-15-1985
8	1-15-1986
9	1-15-1987
10	1-15-1988
11	1-15-1989
12	1-15-1990
13	1-15-1991
14	1-15-1992
15	1-15-1993
16	1-15-1994
17	1-15-1995
18	1-15-1996
19	1-15-1997
20	1-15-1998
21	1-15-1999
22	1-15-2000
23	1-15-2001
24	1-15-2002
25	1-15-2003
26	1-15-2004
27	1-15-2005
28	1-15-2006
29	1-15-2007
30	1-15-2008
31	1-15-2009
32	1-15-2010
33	1-15-2011
34	1-15-2012
35	1-15-2013
36	1-15-2014
37	1-15-2015
38	1-15-2016
39	1-15-2017
40	1-15-2018
41	1-15-2019
42	1-15-2020
43	1-15-2021
44	1-15-2022
45	1-15-2023
46	1-15-2024
47	1-15-2025
48	1-15-2026
49	1-15-2027
50	1-15-2028
51	1-15-2029
52	1-15-2030

STATE OF WEST VIRGINIA
DODDRIDGE COUNTY

Office of Assessor

NEW MILTON DISTRICT
SHEET 04

Date: Aerial Photographs APRIL, 1962 Data: Map: 447, 1962



FOR TAX PURPOSES ONLY
 Prepared by
L. ROBERT KIMBALL
 Consulting Engineer

Legend

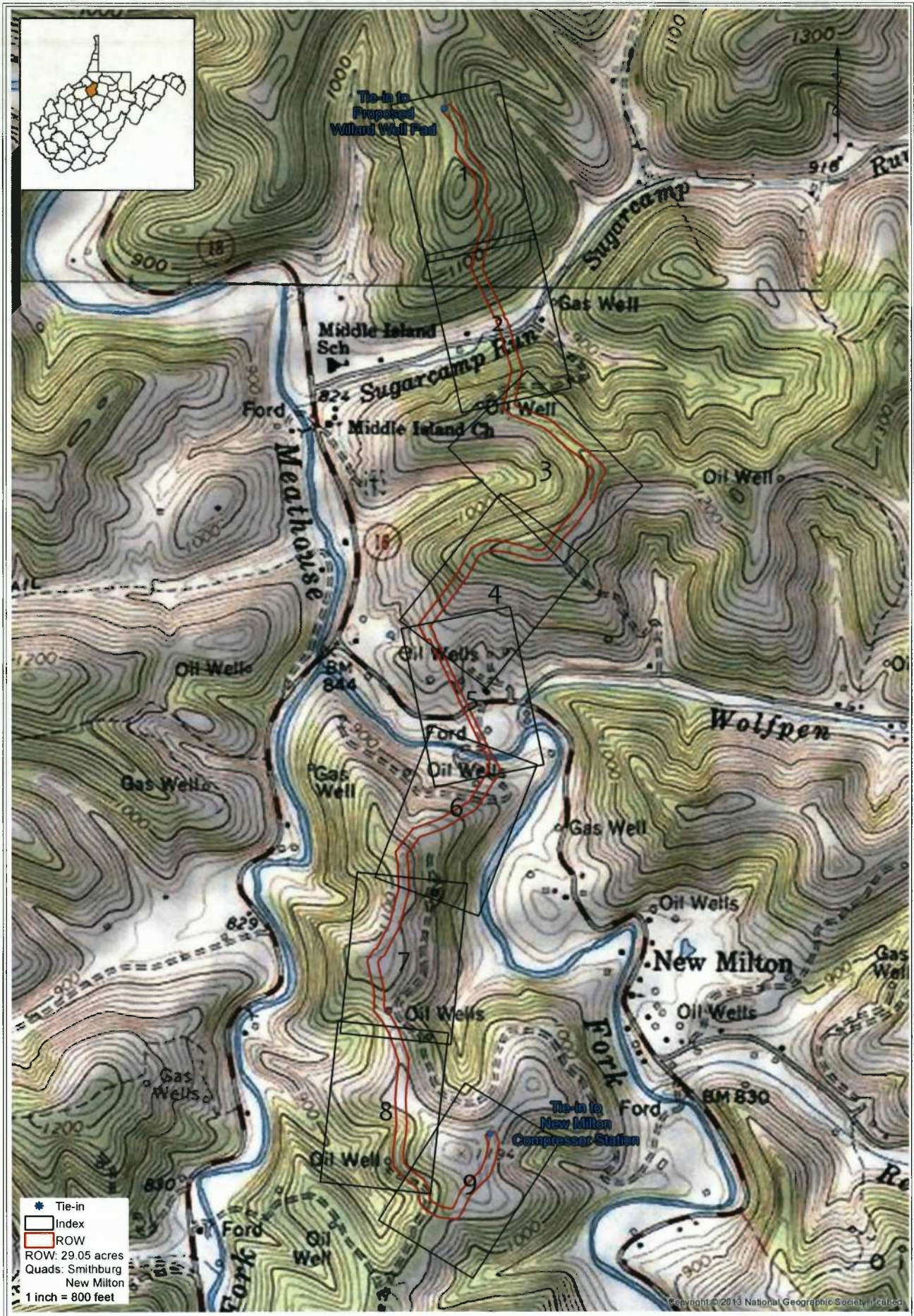
Property line	.....	Graded for line	.....
Edge of present or former	.....	Reel lot number	.....
Corporation line	.....	Parcel or index number in book	.....
Original line	.....	Measurement	.....
County line	.....	Road	.....

Revisions

No.	Description	Date	By
1	3/7/70	SBH
2	4/6/70	SBH
3
4
5
6
7
8
9
10

STATE OF WEST VIRGINIA
 DODDRIDGE COUNTY
 Office of Assessor

NEW MILTON DISTRICT
 SHEET 08
 Date Aerial Photographs Taken: 1967 Date Map Revised: 1970



* Tie-in
 □ Index
 ■ ROW
 ROW: 29.05 acres
 Quads: Smithburg
 New Milton
 1 inch = 800 feet

Figure 1: Project Location
 Willard Pipeline
 Doddridge County - West Virginia

THRASHER

By Town



12/11/2013

CONSTRUCTION SEQUENCE OF EVENTS:

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

**UTILITY AGENCIES
SERVING PROJECT AREA
MISS UTILITY**

**WEST VIRGINIA DIVISION
OF HIGHWAYS**
WYDOH DIST #4
P.O. DRAWER 4220
CLARKSBURG, WV 26302
(304) 842-1575
(304) 842-1507 FAX
RALPH SAPP - UTILITY SUPERVISOR - CROSSINGS
DENISE RONCONE - PERMIT SUPERVISOR - TEMP. ACCESSES

GAS
TEXAS KEYSTONE, INC.
560 EPSILON DRIVE
PITTSBURGH, PA 15638
PHONE: 1-412-434-5616

DOMINION TRANSMISSION INC.
DOMINION EXPLORATION AND PRODUCTION
PHONE: 1-800-256-7883
MOUNTAINEER GAS COMPANY
PHONE: 1-800-834-2070

DENEX PETROLEUM CORPORATION
PHONE: 1-304-472-1186
JAY BEE OIL & GAS
PHONE: 1-304-628-1111

POWER

ALLEGHENY POWER
PHONE: 1-800-255-3443

WATER

NO PUBLIC WATER IN PROJECT AREA

SEWER

NO PUBLIC SEWER IN PROJECT AREA

CABLE

ADELPHIA CABLE
1-800-292-6561
CONTACT: RALPH ROBINSON
TELEPHONE
VERIZON TELECOMMUNICATIONS
1-800-375-2355

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

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

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

GENERAL NOTES

1. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE OR LOCATION OF ANY UNDERGROUND UTILITIES. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL CONTACT ALL PUBLIC AND PRIVATE UTILITY AGENCIES FRANCHISED TO SERVE THE PROJECT AREA AND DETERMINE THE EXISTENCE AND/OR LOCATION OF ALL UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL CONTACT "MISS UTILITY" PRIOR TO ANY CONSTRUCTION. TELEPHONE 1-800-245-4848.
3. 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.

GENERAL NOTES CONTD.

4. ALL PERMITS MUST BE SECURED PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL CO-ORDINATE ALL STREAM CROSSING INSTALLATIONS PROPOSED SO NOT TO DELAY THE CONSTRUCTION PROCESS. STREAM CROSSING IS TO BE CONSTRUCTED USING A CONVENTIONAL BORE & JACK METHOD OR A HORIZONTAL DIRECTIONAL DRILL METHOD.
6. ALL WYDOH ROAD CROSSINGS TO BE CONSTRUCTED USING A CONVENTIONAL BORE AND JACK METHOD OR A HORIZONTAL DIRECTIONAL DRILL METHOD. WYDOH TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY WORK WITHIN WYDOH R/W.

GENERAL NOTES CONTD.

7. ALL CONSTRUCTION TO BE DONE IN THE PROPOSED GAS LINE LIMITS OF DISTURBANCE AS SHOWN.
8. APPROXIMATE LOCATIONS OF EXISTING WATER, SEWER & GAS LINES HAVE BEEN SHOWN ON PLANS FROM INFORMATION GATHERED FROM LOCAL UTILITIES.
9. PROPERTY LINES SHOWN ON PLANS ARE 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.

WYDOH GENERAL NOTES

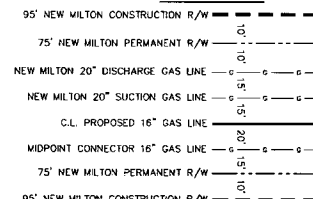
ALL CONSTRUCTION ON THE DIVISION OF HIGHWAYS RIGHT OF WAY WILL CONFORM TO THE FOLLOWING:

1. WEST VIRGINIA DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS ROADS AND BRIDGES, "LATEST EDITION AND ACCOMMODATION OF UTILITIES ON HIGHWAY RIGHT OF WAY," "LATEST EDITION."
2. TRAFFIC CONTROL WILL CONFORM TO THE MANUAL, "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATION," LATEST EDITION AS DIRECTED BY THE DEPARTMENT'S REPRESENTATIVE ON THE PROJECT.
3. COMPACTION TESTING WITHIN THE DIVISION OF HIGHWAYS ROAD RIGHT OF WAYS SHALL BE PER DIVISION OF HIGHWAYS STANDARD SPECIFICATION FOR ROADS AND BRIDGES, LATEST ADDITION SECTION 670.4.5.
4. ON ALL UNDERGROUND UTILITY INSTALLATIONS ON THE DEPARTMENT'S RIGHT OF WAY, A MAGNETIC TAPE COLOR CODED IN ACCORDANCE WITH "GUIDELINES FOR UNIFORM MARKING OF UNDERGROUND FACILITIES," WILL BE PLACED ONE FOOT (12") TO EIGHTEEN INCHES (18") BELOW THE SURFACE DIRECTLY OVER THE INSTALLATION OF THE LINE OR PIPE.
5. ALL CROSSINGS INCLUDING SERVICE LINES ARE TO BE BORED UNLESS, PRIOR APPROVAL IS RECEIVED, AND THEY NEED TO BE SO NOTED ON PLAN SHEETS.
6. WHEN THE FINISHED GRADE WITHIN DITCHWAYS OF WYDOH ROADWAYS IS 5% OR GREATER DITCHWAYS SHALL BE RIP-RAPPED.
7. ALL CONSTRUCTION SHALL MAINTAIN 5' DISTANCE FROM EXISTING PAVEMENT EDGE OR BOTTOM OF DITCH LINE, UNLESS NOTED OTHERWISE, OR NO OTHER PRACTICAL MEANS OF CONSTRUCTION EXISTS.
8. IN AREAS WHERE D.O.H. CULVERTS ARE LOCATED, ALL LINES CONSTRUCTED SHALL BE AROUND OR UNDER EXISTING CULVERTS, UNLESS OTHERWISE NOTED.
9. REMOVAL OF BITUMINOUS CONCRETE SURFACE BY MILLING OR GRINDING MAY BE REQUIRED WITHIN THE THE D.O.H. ROADWAYS.
10. BEDDING SHALL BE PLACED ON ASPHALT SURFACE TO PROJECT THE PAVEMENT WHEN A TRENCHER OR TRACKED VEHICLE IS USED.
11. ALL DAMAGE TO ROAD SURFACE SHALL BE REPAIRED ACCORDING TO WEST VIRGINIA DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS AND DETAILS.
12. ALL EXISTING DUMP ROCK OR RIP RAP DITCHES DISTURBED BY THE GAS LINE CONTRACTOR SHALL BE RESTORED WITH THE SAME SIZE, GRADE, AND QUALITY OF ROCK AFTER THE GAS LINE HAS BEEN INSTALLED.
13. REPAIR TO DRIVEWAYS ON W.V.D.O.H. RIGHT OF WAYS SHALL CONFORM TO THE APPROPRIATE W.V.D.O.H. TYPICAL REPAIR DETAIL.
14. CLEANUP WILL BE ACCOMPLISHED DAILY. SHOULDER WILL BE RESTORED AND STABILIZED WITH STONE ADDED AT THE DIRECTION OF THE W.V.D.O.H. ALL CULVERTS AND DRAINAGE DITCHES SHALL BE OPEN AND MAINTAINED DURING CONSTRUCTION.
15. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN SEVEN DAYS OF COMPLETION OF THE BACK FILL OPERATION.
16. NO EXCESS EXCAVATION MATERIAL SHALL BE WASTED ON W.V.D.O.H. RIGHT OF WAY WITHOUT THE AGREEMENT OF THE W.V.D.O.H.
17. APPROPRIATE AGGREGATE BASE COURSE AND/OR AGGREGATE SHOULDER STONE IS TO BE PLACED ON THE SHOULDER AT A THICKNESS EQUAL TO 6" INCHES OR ITS ORIGINAL THICKNESS WHICHEVER IS GREATER. PAVED SHOULDERS SHALL BE PAVED.

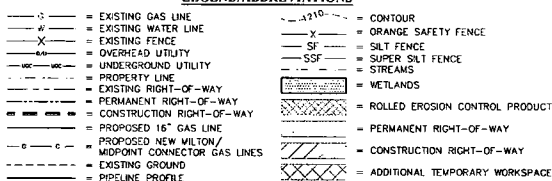
EROSION & SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENT MEASURES TO BE IN ACCORDANCE WITH WEST VIRGINIA ONLINE BMP MANUAL FOR STANDARD GUIDELINES AND SPECIFICATIONS AVAILABLE AT: [HTTPS://APPS.DEP.WV.GOV/WWW/MSTORMWATER/BMP/INDEX.HTML](https://apps.dep.wv.gov/www/mststormwater/bmp/index.html)
2. EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN SHOWN ON PLANS ARE IN THE DETAILS.
3. 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 RESEDED IMMEDIATELY, OR A SOON AS WEATHER CONDITIONS ALLOW.
4. CLEARING AND GRUBBING IS TO OCCUR IN THE NOTED LIMITS OF DISTURBANCE (L.O.D.) ONLY.

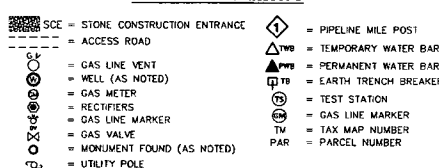
**NEW MILTON 95' CONSTRUCTION
RIGHT-OF-WAY**



LEGEND/ABBREVIATIONS



LEGEND/ABBREVIATIONS



DRAWING INDEX

COVER	COVER
SHEET 0	MAIN INDEX
SHEET #5L	SHEET LAYOUT
SHEET #1	PROPOSED PIPE LINE PLAN AND PROFILE
SHEET #2	PROPOSED PIPE LINE PLAN AND PROFILE
SHEET #3	PROPOSED PIPE LINE PLAN AND PROFILE
SHEET #4	PROPOSED PIPE LINE PLAN AND PROFILE
SHEET #5	PROPOSED PIPE LINE PLAN AND PROFILE
SHEET #6	PROPOSED PIPE LINE PLAN AND PROFILE
SHEET D1	GENERAL DETAILS
SHEET D2	GENERAL DETAILS
SHEET D3	GENERAL DETAILS
SHEET D4	GENERAL DETAILS
SHEET D5	GENERAL DETAILS
SHEET D6	GENERAL DETAILS
SHEET D7	GENERAL DETAILS
SHEET D8	GENERAL DETAILS
SHEET D9	GENERAL DETAILS
SHEET D10	GENERAL DETAILS

APPROVED FOR CONSTRUCTION

DATE: _____ BY: _____
MATTHEW W. FLDHARTY, WV P.E. #16375

**PRELIMINARY
PLANS**



ANTERO RESOURCES CORPORATION
WILLARD PIPELINE
DODDRIDGE COUNTY, WEST VIRGINIA
INDEX SHEET

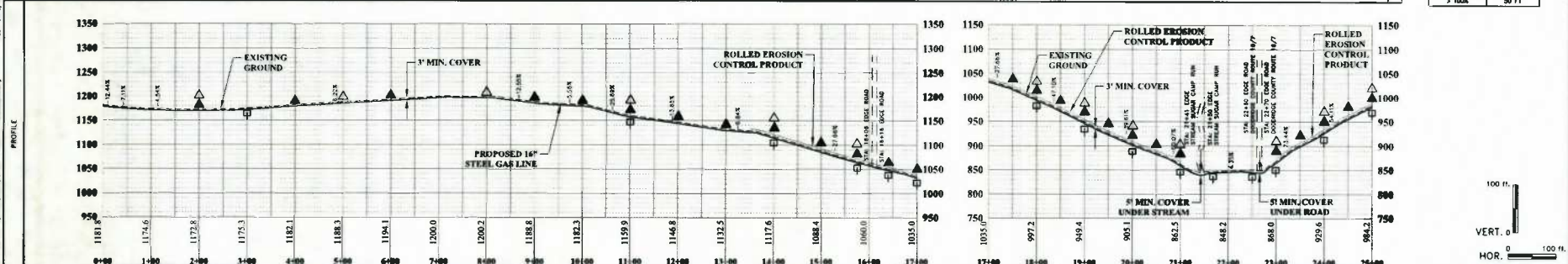
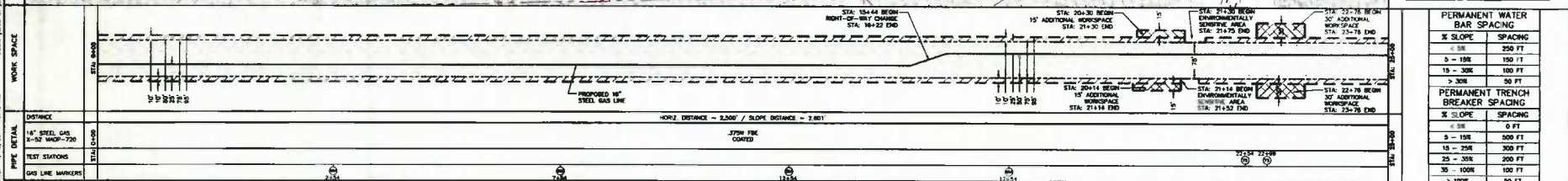
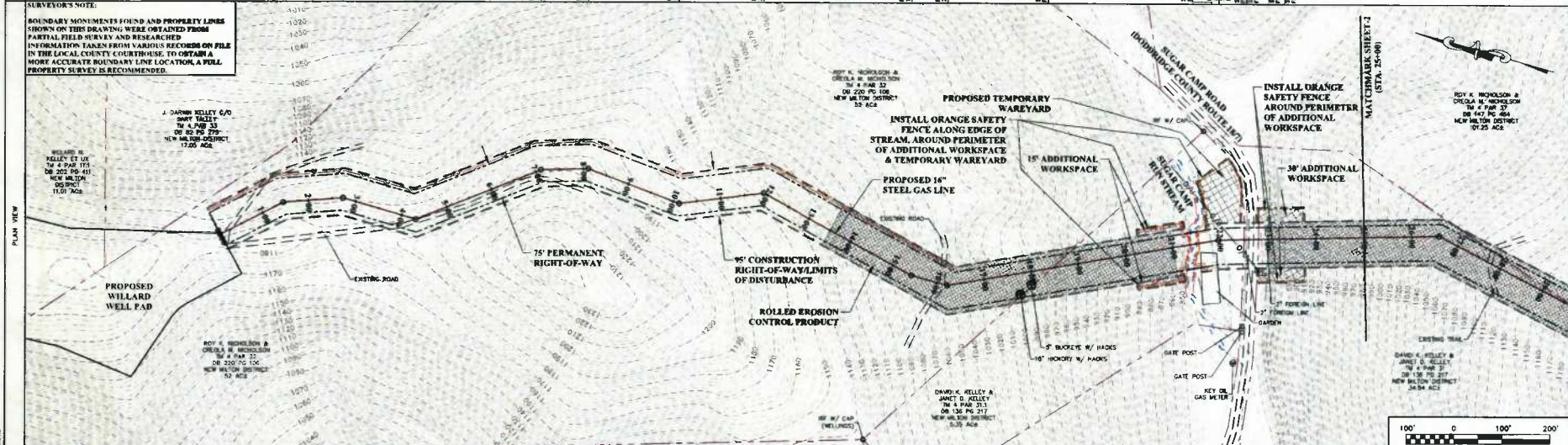
SHEET No. **i**

101-019-0191

SCALE AS SHOWN
DATE: _____
CHECKED: _____
APPROVED: _____
PROJECT No. 101-019-0191

DATE: _____
SCALE: _____
PROJECT No. 101-019-0191

OWNERSHIP, PARCEL NO. & LENGTH (FT)	STA. 0+00	ROY K. NICHOLSON & CECILIA M. NICHOLSON 1/4 & 1/2 PAR 32 NEW MILTON DISTRICT 1.845 AC	DAVID K. KELLEY & JANET D. KELLEY 1/4 & 1/2 PAR 31,1 NEW MILTON DISTRICT 1.845 AC	DODDRIEGE COUNTY ROUTE 167 1/4 PAR 31,1 NEW MILTON DISTRICT 1.845 AC	DAVID K. KELLEY & JANET D. KELLEY 1/4 & 1/2 PAR 31 NEW MILTON DISTRICT 1.845 AC
STATIONING	0+00, 0+20, 0+40, 0+60, 0+80, 1+00, 1+20, 1+40, 1+60, 1+80, 2+00, 2+20, 2+40, 2+60, 2+80, 3+00, 3+20, 3+40, 3+60, 3+80, 4+00, 4+20, 4+40, 4+60, 4+80, 5+00, 5+20, 5+40, 5+60, 5+80, 6+00, 6+20, 6+40, 6+60, 6+80, 7+00, 7+20, 7+40, 7+60, 7+80, 8+00, 8+20, 8+40, 8+60, 8+80, 9+00, 9+20, 9+40, 9+60, 9+80, 10+00				



NO.	DESCRIPTION	QUANTITY	NO.	DESCRIPTION	QUANTITY
1	16" STEEL 2-80 0.375" WALL FIRE COATED PIPE	2,800'	1	EROSION CONTROL PRODUCT	15
2	EARTH TRENCH BREAKERS	15			

PRELIMINARY PLANS

ANTERO RESOURCES CORPORATION
WILLARD PIPELINE
DODDRIEGE COUNTY, WEST VIRGINIA
PLAN AND PROFILE

101-015-0191

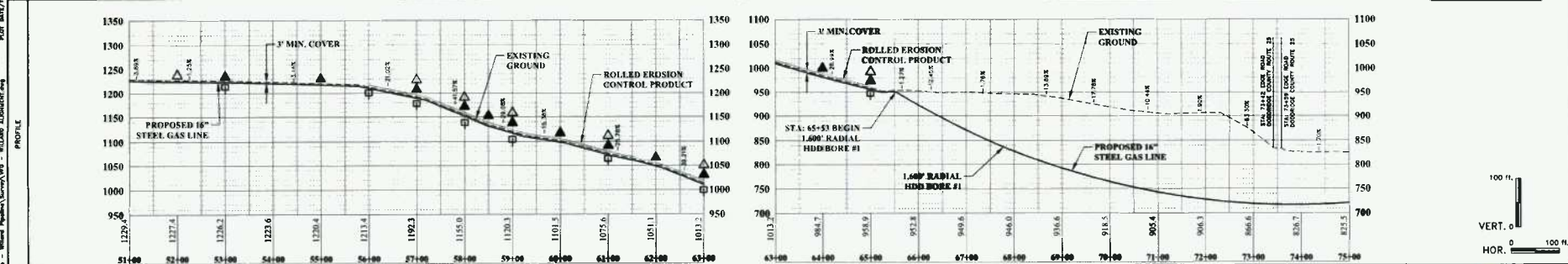
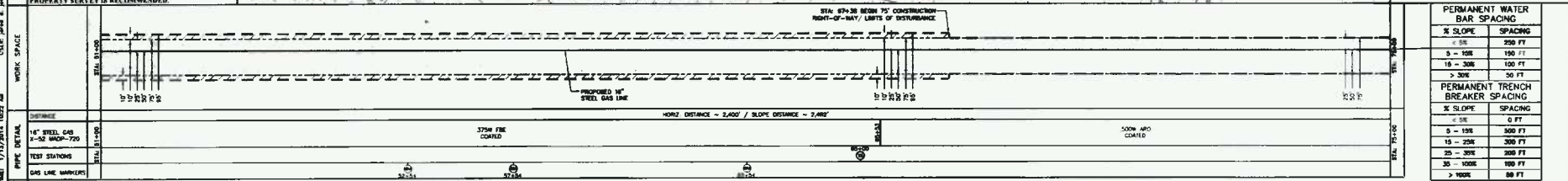
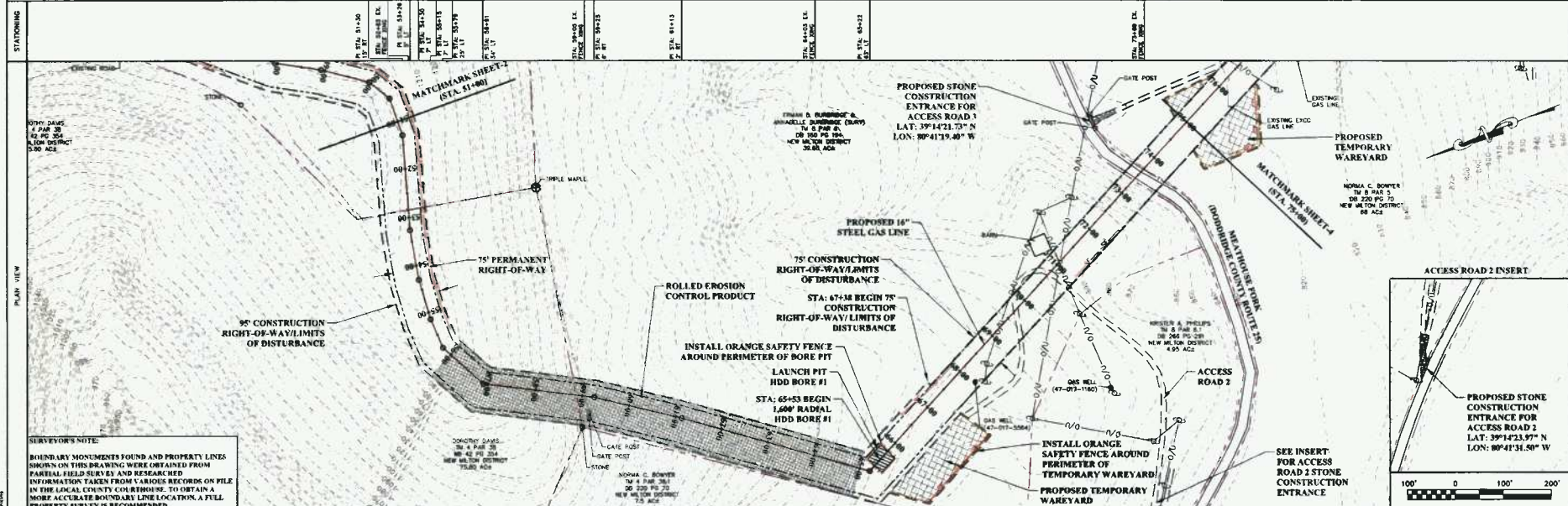
ANTERO RESOURCES CORPORATION
WILLARD PIPELINE
DODDRIEGE COUNTY, WEST VIRGINIA
PLAN AND PROFILE

101-015-0191

ANTERO RESOURCES CORPORATION
WILLARD PIPELINE
DODDRIEGE COUNTY, WEST VIRGINIA
PLAN AND PROFILE

101-015-0191

OWNERSHIP, PARCEL NO. & LENGTH (FT)	8/7 GEORGE A. ROSS TO 8 PAR 7 HORIZ. DISTANCE = 1,109' ±	8/7 BORTHY DAVIS TO 4 PAR 8 HORIZ. DISTANCE = 802' ±	8/7 ERMAN D. BURROUGHS & ANNABELLE BURROUGHS (DAUGHTER) TO 8 PAR 8 HORIZ. DISTANCE = 1,448' ±	DOODORIDGE COUNTY SOUTH 25 (SOUTH 25) HORIZ. DISTANCE = 812'	8/7 NORMA C. BOWYER TO 8 PAR 5 HORIZ. DISTANCE = 1,782' ±
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ESTIMATED QUANTIFIED MATERIAL LIST			ESTIMATED QUANTIFIED MATERIAL LIST		
NO.	DESCRIPTION	QUANTITY	NO.	DESCRIPTION	QUANTITY
1	16" STEEL 1-80 0.375" WALL FIRE COATED PIPE	1,492	1	EXISTING GAS LINE	
2	16" STEEL 1-80 0.300" WALL AND COATED PIPE	98'	2	EXISTING WATER LINE	
3	EARTH TRENCH BREAKERS	2	3	EXISTING FENCE	

<ul style="list-style-type: none"> — EXISTING GAS LINE — EXISTING WATER LINE — EXISTING FENCE — UNDERGROUND UTILITY — PARCEL LINE — PERMANENT RIGHT-OF-WAY — CONSTRUCTION RIGHT-OF-WAY — PROPOSED 16" STEEL GAS LINE — PROPOSED NEW WELLS — PROPOSED CONSTRUCTION GAS LINES — EXISTING GROUND — 3' MIN. COVER PROFILE 	<ul style="list-style-type: none"> — CONTOUR — CONTOUR SAFETY FENCE — SBT FENCE — SURVEY SBT FENCE — STRIPLINE — RETIACLES — ROLLED EROSION CONTROL PRODUCT — PERMANENT RIGHT-OF-WAY — CONSTRUCTION RIGHT-OF-WAY — ADDITIONAL TEMPORARY WORKSPACE 	<ul style="list-style-type: none"> — STONE CONSTRUCTION ENTRANCE — EXISTING ROAD — GAS LINE WENT — WELL (AS NOTED) — GAS LINE WENT — RECEIVERS — GAS LINE MARKER — GAS WELLS — MONUMENT FOUND (AS NOTED) — UTILITY POLE 	<ul style="list-style-type: none"> — PIPELINE WIRE POST — TEMPORARY WATER BAR — PERMANENT WATER BAR — EARTH TRENCH BREAKER — TEST STATION — GAS LINE MARKER — TIE WIRE MARKER — PARCEL NUMBER
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PERMANENT WATER BAR SPACING	
% SLOPE	SPACING
0 - 5%	250 FT
5 - 15%	150 FT
15 - 30%	100 FT
> 30%	50 FT

PERMANENT TRENCH BREAKER SPACING	
% SLOPE	SPACING
0 - 5%	0 FT
5 - 15%	500 FT
15 - 25%	300 FT
25 - 30%	200 FT
30 - 100%	100 FT
> 100%	50 FT

PRELIMINARY PLANS

ANTERO RESOURCES CORPORATION

WILLARD PIPELINE

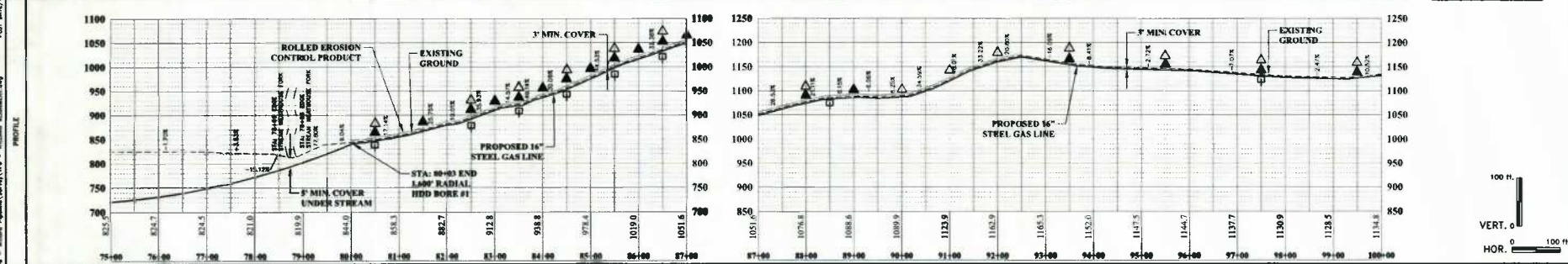
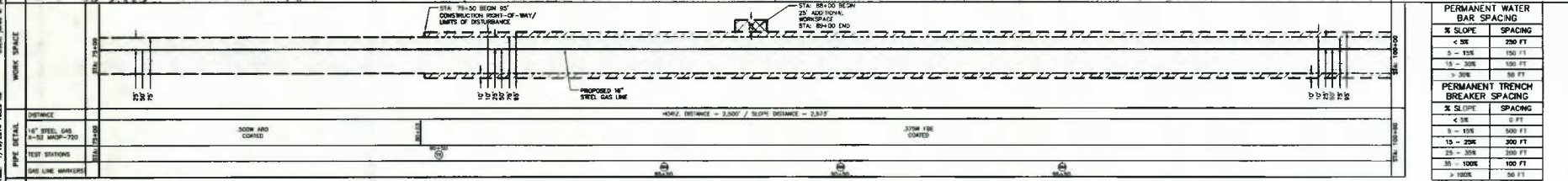
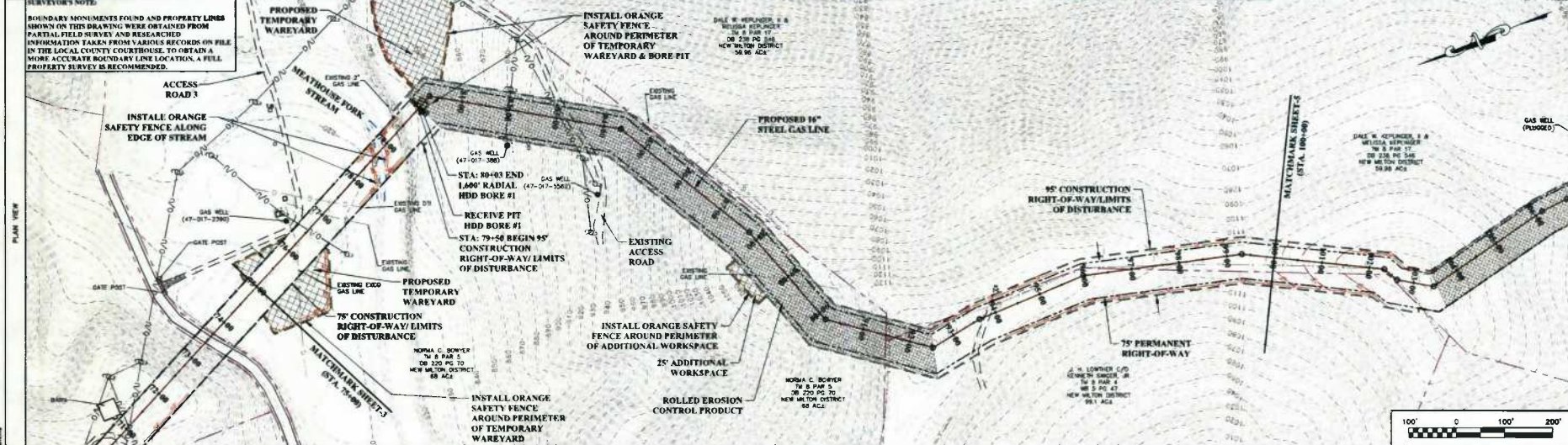
DOODORIDGE COUNTY, WEST VIRGINIA

PLAN AND PROFILE

DATE: 10/15/2014
 DRAWN BY: JAW
 CHECKED BY: JAW
 PROJECT NO.: 101-015-0191
 SHEET NO.: 3

ANTERO RESOURCES CORPORATION
 WILLARD PIPELINE
 DOODORIDGE COUNTY, WEST VIRGINIA
 PLAN AND PROFILE

OWNERSHIP, PARCEL NO. & LENGTH (FT)	8/7 NORMA C. BOWEN TR 8 PAR 2 HOME DISTANCE = 1,782'8"	8/7 DALE W. REPLINGER & WELLSA REPLINGER TR 8 PAR 17 HOME DISTANCE = 28'8"	8/7 J. H. LOWMYER C/O KENNETH SWIGER, JR. TR 8 PAR 4 HOME DISTANCE = 533'8"	8/7 DALE W. REPLINGER & WELLSA REPLINGER TR 8 PAR 17 HOME DISTANCE = 2,290'8"
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ESTIMATED QUANTIFIED MATERIAL LIST		ESTIMATED QUANTIFIED MATERIAL LIST			
NO.	DESCRIPTION	QUANTITY	NO.	DESCRIPTION	QUANTITY
1	16\"/>				

LEGEND/ABBREVIATIONS

- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- S — EXISTING SEWER LINE
- U — UNDERGROUND UTILITY
- P — PERMANENT RIGHT-OF-WAY
- C — CONSTRUCTION RIGHT-OF-WAY
- R — ROLLED EROSION CONTROL PRODUCT
- T — TEMPORARY RIGHT-OF-WAY
- A — ADDITIONAL TEMPORARY WORKSPACE
- E — EXISTING GROUND
- P.P. — PROFILE

LEGEND/ABBREVIATIONS

- S — STONE CONSTRUCTION ENTRANCE
- R — EXISTING ROAD
- F — EXISTING FENCE
- S.F. — SLOPE BREAK FENCE
- S — STREAM
- H — HEDGECROW
- R — ROLLED EROSION CONTROL PRODUCT
- P — PERMANENT RIGHT-OF-WAY
- C — CONSTRUCTION RIGHT-OF-WAY
- T — TEMPORARY RIGHT-OF-WAY
- A — ADDITIONAL TEMPORARY WORKSPACE
- E — EXISTING GROUND
- P.P. — PROFILE

LEGEND/ABBREVIATIONS

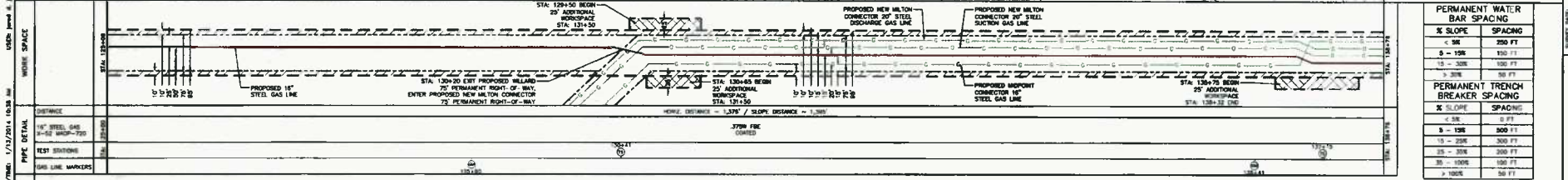
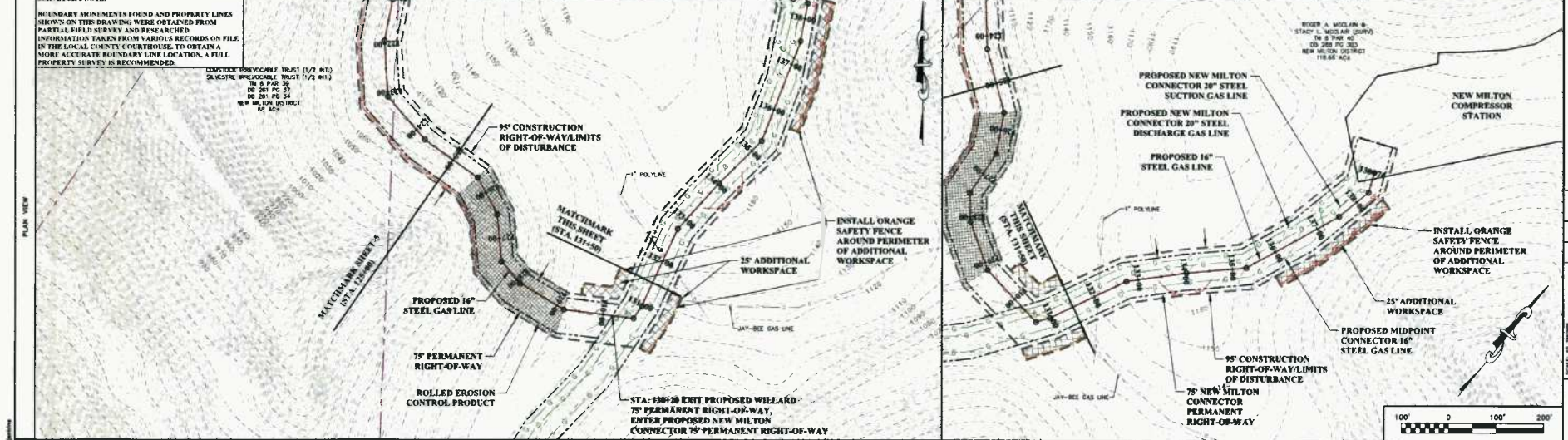
- P — PIPELINE MILE POST
- T — TEMPORARY WATER BAR
- P.T. — PERMANENT WATER BAR
- E.T. — EXISTING TRENCH BREAKER
- T.S. — TEST STATION
- G.L.M. — GAS LINE MARKER
- G.M. — GAS MILE
- M.F. — MONUMENT FOUND (AS NOTED)
- G.M. — GAS MILE
- M.F. — MONUMENT FOUND (AS NOTED)
- U.P. — UTILITY POLE

PRELIMINARY PLANS

ANTERO RESOURCES CORPORATION
WILLARD PIPELINE
DODDORIE COUNTY, WEST VIRGINIA
PLAN AND PROFILE

SHEET NO. 4
 PROJECT NO. 101-015-0191
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 DATE: [Date]
 SCALE: AS SHOWN
 PROJECT: [Name]
 SHEET: 4 OF 4
 ANTHERO RESOURCES CORPORATION
 100 WEST GAINWAY AVENUE, SUITE 200, CHARLOTTE, NC 28203
 PHONE: (704) 524-4108
 FAX: (704) 524-7831
 ANTHERO RESOURCES CORPORATION
 101-015-0191
 SHEET NO. 4

OWNERSHIP, PARCEL NO. & LENGTH (FT)	STATIONING	10+00.00	10+10.00	10+20.00	10+30.00	10+40.00	10+50.00	10+60.00	10+70.00	10+80.00	10+90.00	11+00.00	11+10.00	11+20.00	11+30.00	11+40.00	11+50.00	11+60.00	11+70.00	11+80.00	11+90.00	12+00.00
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ESTIMATED QUANTIFIED MATERIAL LIST		ESTIMATED QUANTIFIED MATERIAL LIST	
NO.	DESCRIPTION	QUANTITY	DESCRIPTION
1	16" STEEL GAS LINE	1,000.00	CONCRETE
2	EARTH TRENCH BREAKERS	4	CONCRETE
3	CONSTRUCTION ENTRANCE	1	CONCRETE
4	CONCRETE	1	CONCRETE
5	CONCRETE	1	CONCRETE
6	CONCRETE	1	CONCRETE
7	CONCRETE	1	CONCRETE
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PERMANENT WATER BAR SPACING	
% SLOPE	SPACING
< 5%	250 FT
5 - 10%	150 FT
10 - 20%	100 FT
20 - 30%	75 FT
30 - 40%	50 FT
40 - 50%	25 FT
50 - 100%	10 FT
> 100%	5 FT

PERMANENT TRENCH BREAKER SPACING	
% SLOPE	SPACING
< 5%	5 FT
5 - 10%	100 FT
10 - 20%	200 FT
20 - 30%	300 FT
30 - 40%	400 FT
40 - 50%	500 FT
50 - 100%	600 FT
> 100%	700 FT

ESTIMATED QUANTIFIED MATERIAL LIST		ESTIMATED QUANTIFIED MATERIAL LIST	
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ANTERO RESOURCES CORPORATION
WILLARD PIPELINE
DODDRIEGE COUNTY, WEST VIRGINIA
PLAN AND PROFILE

101-0115-0191

THRASHER
CORPORATION
100 WALL GARDEN BUILDING, P.O. BOX 14330
DENVER, CO 80214

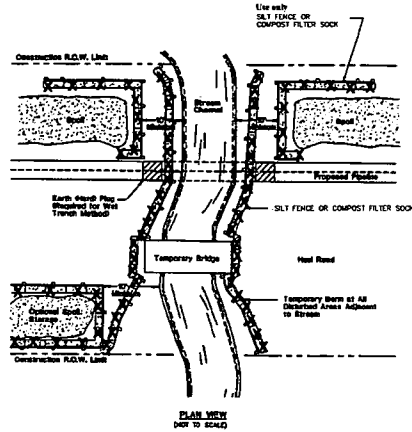
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PRELIMINARY PLANS

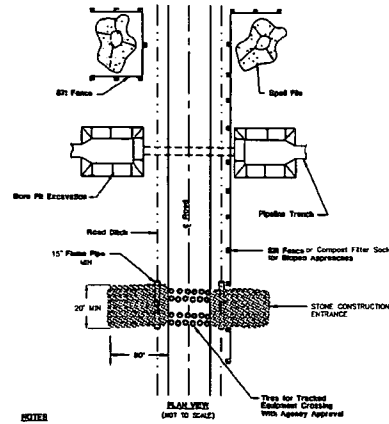
ANTERO RESOURCES

SHEET NO. 6

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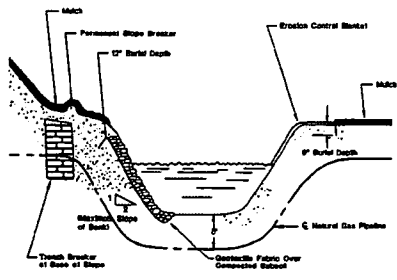


**EROSION AND SEDIMENT CONTROL
 FOR STREAM CROSSING**
 SCALE: N.T.S.



TYPICAL ROAD CROSSING
 SCALE: N.T.S.

NOTES:
 1. Procedures shown in this drawing apply to paved and gravel roads and some driveways.
 2. Rock pad shall consist of 8"-10" rock.
 3. Roads must be cleaned after equipment crosses and dirt placed in spot containment areas.
 4. Geotextile fabric shall be placed under rock pad in agricultural areas.
 5. Additional instructions included on other drawings or in state permits.

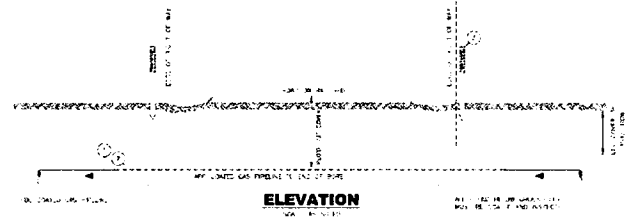


STREAM BANK STABILIZATION
 SCALE: N.T.S.

NOTES:
 1. Size and placement of rock riprap will be as stated in permits.
 2. When installing geotextile fabric overlap adjacent sheets 4 inches and use stone with slopes 6% to 1% installed 12 inches O.C.
 3. Baskets shall extend 500 feet back from stream bank in riprap areas.
 4. Additional instructions included on other drawings or in state permits.

- GENERAL NOTES:**
1. ALL COMPONENTS SHALL BE FABRICATED, INSPECTED AND TESTED IN ACCORDANCE WITH COMPANY'S SPECIFICATIONS.
 2. ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS USING PROCEDURES QUALIFIED IN ACCORDANCE WITH AWS 114.1. ALL CROWN WELDS SHALL BE RADIOGRAPHICALLY INSPECTED.
 3. THE CONTRACTOR SHALL VERIFY MATERIAL QUANTITIES SHOWN IN THE BILL OF MATERIAL PRIOR TO FABRICATION.
 4. ALL DIMENSIONS SHOWN SHALL BE FIELD VERIFIED PRIOR TO FABRICATION.
 5. ALL FABRICATION, TESTING, FINISHING, COATING AND COMPLETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE COMPANY'S PIPELINE CONSTRUCTION SPECIFICATIONS.
 6. ALL WORK TO BE DONE IN ACCORDANCE WITH CFR-49 INCLUDING SUBPART H FOR CLASS 2 LOCATION.
 7. ANY NEW PIPING OR FITTERS BURRED ON OR TRANSFERRED CONTACT WITH THE SOLAR/ WINDFIELD MUST BE COATED AND HOUSED NOTIFIED AS PER COMPANY POLICY. COATING PIPELINE EXPOSED SLUGIC WORK MUST BE INSPECTED FOR CORROSION DAMAGE.

PIPING BILL OF MATERIAL				QUANTITY	UNIT PRICE	TOTAL
SIZE	NO.	QTY.	DESCRIPTION			
12"	1	1	PIPE			
12"	1	1	12" X 12" X 1/2" STEEL			
12"	1	1	12" X 12" X 1/2" STEEL			
MISCELLANEOUS						
12"	1	1	12" X 12" X 1/2" STEEL			
TOTAL QUANTITY IN FIELD						



**TYPICAL ARO CROSSING NATURAL GAS PIPELINE
 SMART PIG COMPLIANT (UNCAUSED)
 MAX DOT CLASS 4 JURISDICTIONAL**



ANTHERO RESOURCES CORPORATION
 WILLARD PIPELINE
 DOODRIDGE COUNTY, WEST VIRGINIA
 DETAILS

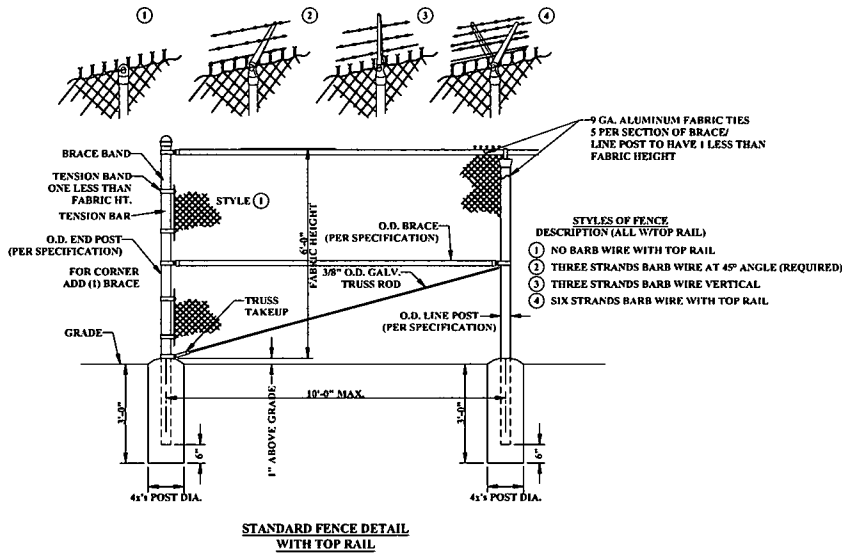
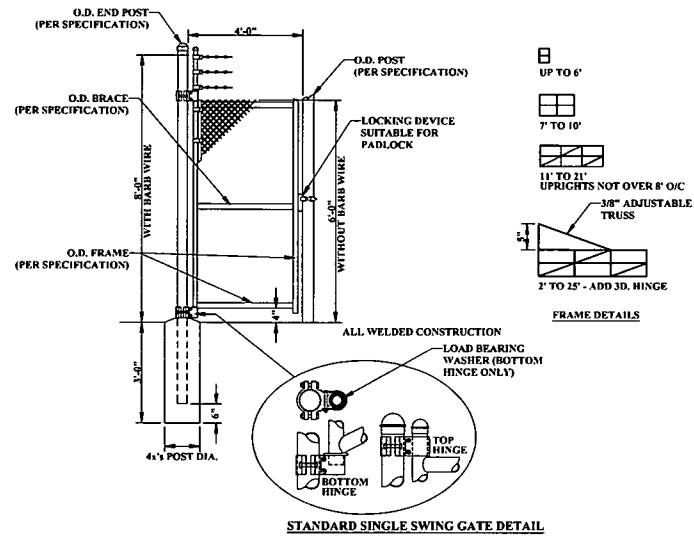
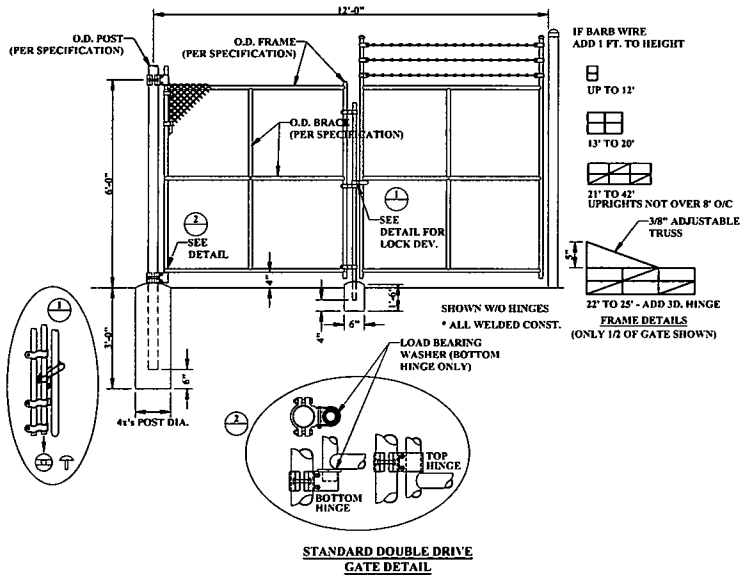
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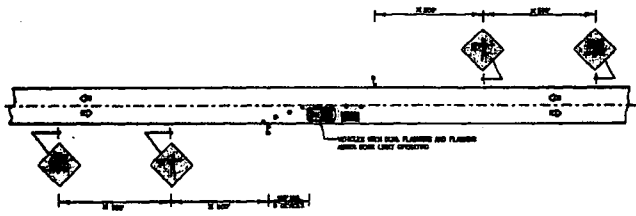
PROJECT No. **101-013-0191**

DRAWN BY: []
 CHECKED BY: []
 DATE: []

SCALE AS SHOWN
 1" = 10'

ANTHERO RESOURCES CORPORATION IS AN EQUAL OPPORTUNITY EMPLOYER. ALL INFORMATION ON THIS DRAWING IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE.





- SYMBOLS**
- ◻ SIDE AREA
 - ◊ SIGN OR PORTABLE OR PERMANENT SIGNPOST
 - △ FLANGED SIDE PIECE
 - ▲ COVER OR OPERATED VALVE

TYPICAL APPLICATIONS
 CARRY OVERHEAD WIRE

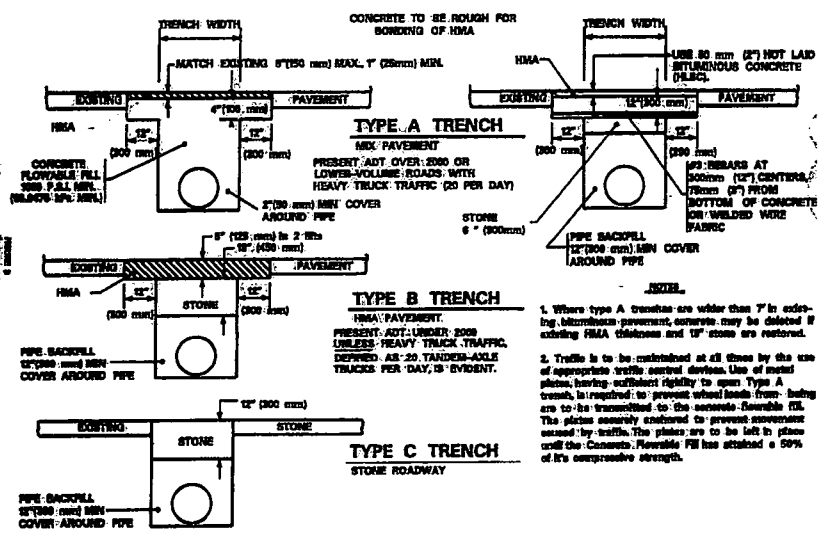
GENERAL NOTES

1. CONSTRUCTION OPERATIONS SHALL BE CONFINED TO ONE TRAFFIC LANE LEAVING THE OPPOSITE LANE OPEN TO TRAFFIC.
2. IF THE ROAD OPERATOR DOES NOT CHOOSE TO INSTALL TRAFFIC CONTROL, THIS WILL BE IN CONFORMANCE WITH CASE 2A.
3. THE FLANGES SHALL BE IN FRONT OF EACH OTHER OR IN DIRECT CONJUNCTION WITH EACH OTHER.
4. ALL LIGHT TRAFFIC SIGNS SHALL BE 24" HIGH WHEN PERMITTED, FLANGES, SIGNS, AND THE FLANGES MAY NOT BE SECURED TO THE COVER OR NOT SECURED TO THE COVER OR THE SIDE WALL SYSTEM SHALL BE SECURED IN PLACE OF THE FLANGED SIDEPIECE.
5. WHEN A SIDE AREA IS REQUIRED TO BE MAINTAINED OR WHEN WORK IS BEING PERFORMED UNDER TRAFFIC CONTROL, SIGNS SHALL BE DISPLAYED AS DIRECTED BY THE CONTRACTOR.
6. ALL TRENCHES, SIDEPIECE, THROUGH ENERGY FLANGES AND TRENCH COVERS ARE INSTALLED AT ALL TIMES TO THE USE OF THE PROVISIONS RELATED OTHERWISE ATTACHED BY THE CONTRACTOR.

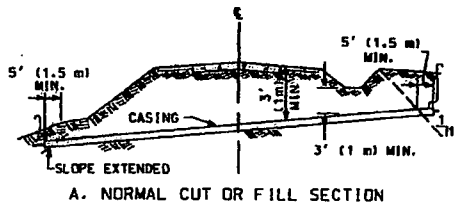
CASE C2

TRAFFIC CONTROL SIGNS
 FLANGES SIDEPIECE ONLY
 SIDEPIECE AT THE END OF THE TRENCH SHALL BE INSTALLED TO THE USE OF THE PROVISIONS RELATED OTHERWISE ATTACHED BY THE CONTRACTOR.

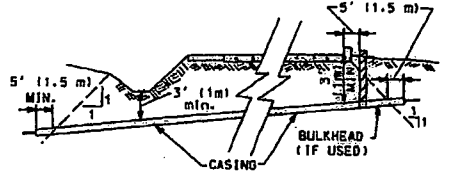
X - NOT IN ACCORDANCE TO DETAIL TO BE USED



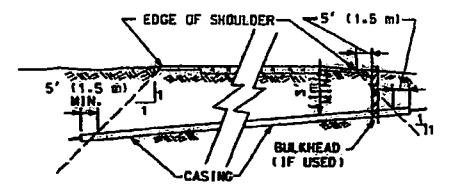
- NOTES**
1. Where Type A trenches are wider than 7' in existing bituminous pavement, concrete may be deleted if existing HMA thickness and 12" stone are restored.
 2. Traffic is to be maintained at all times by the use of appropriate traffic control devices. Use of metal plates, having sufficient rigidity to span Type A trenches, is required to prevent wheel loads from falling on to the transverse, to the maximum desirable tilt. The plates are to be secured to prevent movement caused by traffic. The plates are to be left in place until the Concrete Flowable Fill has attained a 50% of its compressive strength.



A. NORMAL CUT OR FILL SECTION



B. SECTION WITH DITCH OR CURB



C. SECTION WITHOUT DITCH

FIGURE 2

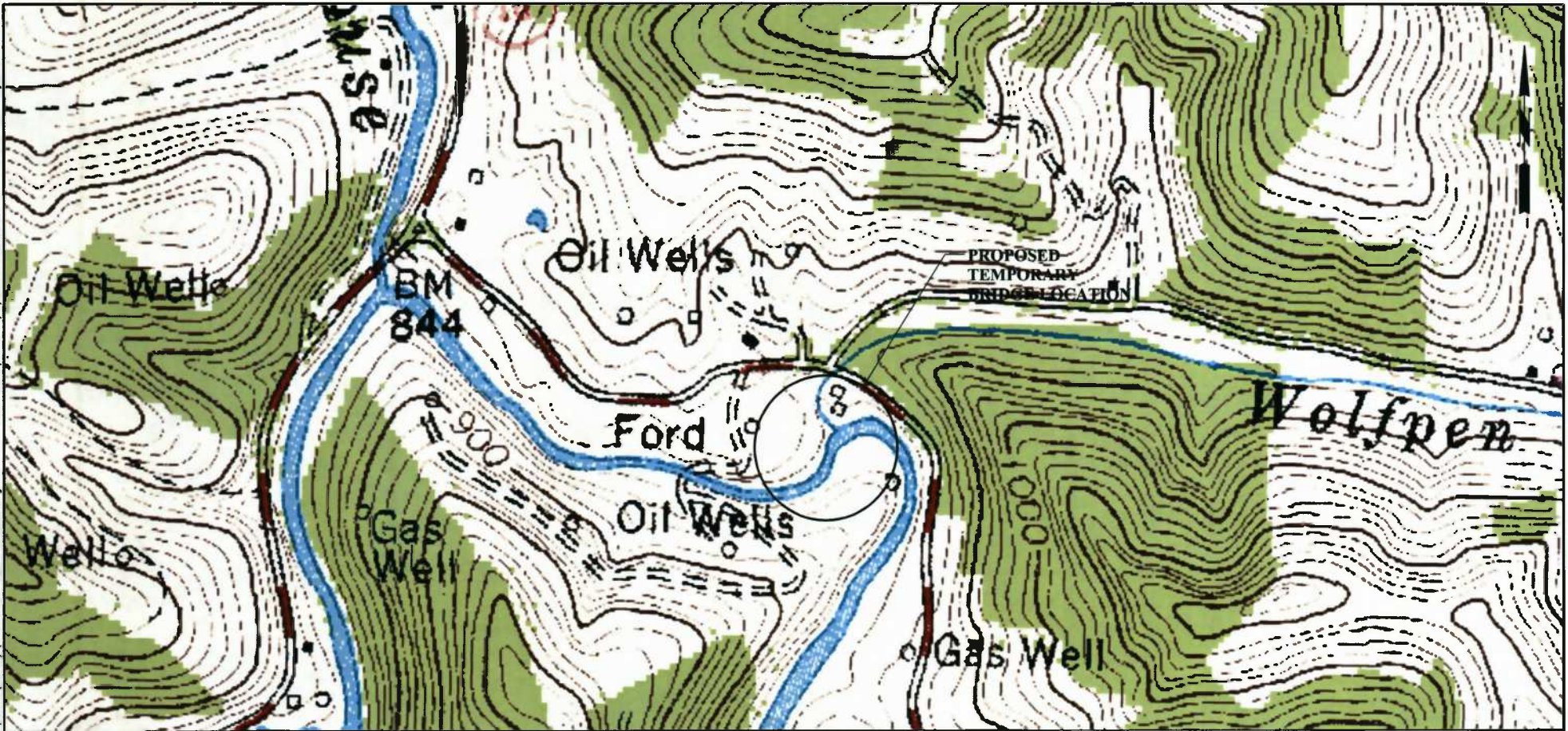
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 USER: David C. Jordan

PROJECT NO.	101-019-0191
DATE	
SCALE	AS SHOWN
DESIGNED BY	
CHECKED BY	
APPROVED BY	
PROJECT	ANTERO RESOURCES CORPORATION WILLARD PIPELINE BOODRIDGE COUNTY, WEST VIRGINIA
SHEET NO.	D10



14-115

USER
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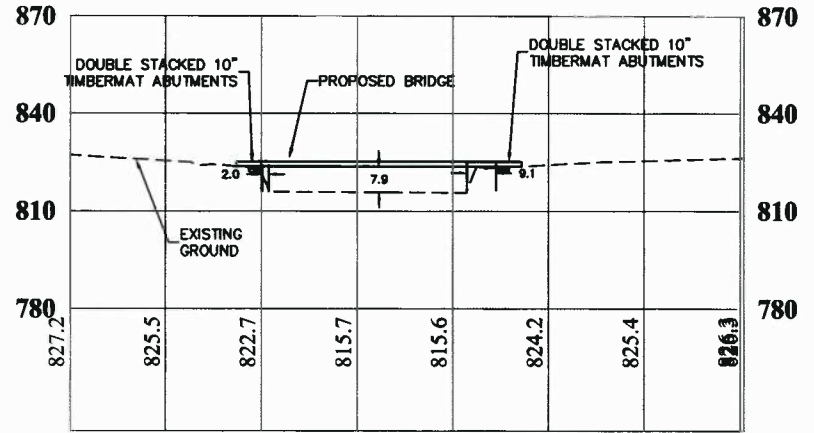
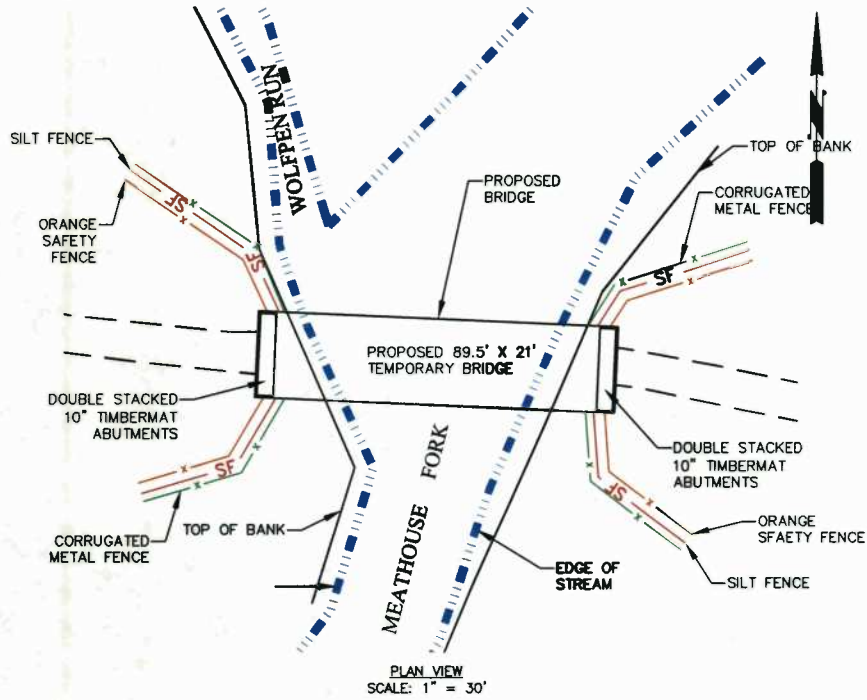


SITE VIEW
SCALE: 1" = 400'

THRASHER
 THE THRASHER GROUP, INC.
 600 WHITE OAKS BOULEVARD
 P.O. BOX 940
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108

PLAT OF EXHIBIT FOR ANTERO RESOURCES CORPORATION	
TAX MAP N/A	SHOWING PROPOSED TEMPORARY BRIDGE SITE FOR THE NEW MILTON CONNECTOR - MEATHOUES FORK STREAM CROSSING SITUATE
PARCEL No. N/A	NEW MILTON DISTRICT WEST VIRGINIA
JOB. No. 015-0191	DODDRIDGE COUNTY SCALE: AS SHOWN JANUARY 2014

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LEGEND/ABBREVIATIONS

- = PERMANENT RIGHT-OF-WAY
- - - = CONSTRUCTION RIGHT-OF-WAY
- GAS --- = PROPOSED 20" STEEL GAS LINE
- x- = CORRUGATED METAL FENCE
- sf- = SILT FENCE
- o- = ORANGE SAFETY FENCE
- e- = EDGE OF STREAM
- - - = EXISTING GROUND
- - - = PIPELINE PROFILE

THRASHER

THE THRASHER GROUP, INC.

600 WHITE OAKS BOULEVARD
P.O. BOX 940
BRIDGEPORT, WV 26330
PHONE 304-624-4108

TAX MAP N/A		SHOWING PROPOSED TEMPORARY BRIDGE FOR THE WILLARD PIPELINE - MEATHOUSE FORK STREAM CROSSING SITUATE	
PARCEL No. N/A		NEW MILTON DISTRICT DODDRIDGE COUNTY	
JOB. No. 015-0191		WEST VIRGINIA SCALE: AS SHOWN JANUARY 2014	

**STREAM CROSSING
FLOODPLAIN ANALYSIS**

**ANTERO – WILLARD PIPELINE STREAM CROSSING
MEATHOUSE FORK RUN
DODDRIDGE COUNTY, WV**

JANUARY 2014

**PREPARED FOR:
ANTERO RESOURCES**

**WILLARD PIPELINE STREAM CROSSING
MEATHOUSE FORK RUN
DODDRIDGE COUNTY, WV**

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2.0 HYDROLOGIC ANALYSIS.....	1
3.0 CONCLUSIONS.....	1

APPENDICES

1	SITE HYDROLOGY CALCULATIONS
2	HEC-RAS SUMMARY TABLE
3	HEC-RAS CROSS SECTIONS
4	SITE PLAN

**WILLARD PIPELINE STREAM CROSSING
MEATHOUSE FORK RUN
DODDRIDGE COUNTY, WEST VIRGINIA**

1.0 PROJECT DESCRIPTION

The Thrasher Group has been contracted by Antero Resources to perform a hydrologic study on a temporary stream crossing that will allow access for construction of the Willard Pipeline. The stream crossing is located off of Meathouse Fork CR 25 in Doddridge County just south of the intersection of HWY 18 and CR 25.

2.0 HYDROLOGIC ANALYSIS

To determine how the temporary stream crossing will affect the existing flood plain, a hydrology and hydraulic analysis was performed. The site is located in the FEMA Flood Zone 'AE.' Therefore, FEMA has performed a detailed flood study of the area provides 100 year flood elevations for the stream section. The hydrologic data and flow for our model was gathered by using the Doddridge County FEMA Insurance Study. From the study, we interpolated a flow rate of 6,602 cfs and used a known downstream flood elevation of 829.5'. Survey of the surrounding area was used in creating the topographic surface. Cross sections were created from the surface and inserted into HEC-RAS. A hydraulic model was run on Meathouse Fork Run to produce an existing base line elevation.

The proposed bridge crossing was then added to the model to provide a comparison between the existing and proposed stream conditions. The bridge crossing was modeled as a 10-12 inch deep timber mat bridge. If the structure depth changes significantly, then the model may need to be checked or re-ran.

3.0 CONCLUSION

The existing flood elevation immediately upstream of the bridge structure was found to be 829.55'. When modeled, the temporary timber mat bridge does not have an effect on the 100 year flood elevation. Appendix 2 includes a summary table of the 100 year flood plain elevations for both existing and proposed stream conditions and the elevation differences at each analyzed section.

APPENDIX 1
SITE HYDROLOGY CALCULATIONS

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the county.

Discharge-frequency curves were developed on a regional basis that applies to West Virginia (References 3 and 4). For the streams studied by detailed methods, 1-percent-annual-chance flood elevations were determined through discharge-frequency relations and the Manning equation. Within the Town of West Union, flood elevations were determined through streamflow-station data relationships and the Manning's equation.

Peak discharge-drainage area relationships for each stream studied by detailed methods are presented in Table 2, "Summary of Discharges".

Table 2 – Summary of Discharges

<u>FLOODING SOURCE AND LOCATION</u>	<u>DRAINAGE AREA (SQ. MILES)</u>	<u>PEAK DISCHARGE (CFS) 1-PERCENT-ANNUAL-CHANCE</u>
MIDDLE ISLAND CREEK		
Upstream of Doddridge-Tyler County boundary	134.78	15,200
Approximately 0.1 mile downstream of confluence of Piggins Run	120.06	13,080
BUCKEYE CREEK		
At confluence with Middle Island Creek	38.62	7,350
Downstream of confluence of Long Run	22.62	5,150
Upstream of confluence of Greenbrier Creek	9.41	3,050
Downstream of confluence of Traugh Fork	1.52	1,310
MEATHOUSE FORK		
At confluence with Middle Island Creek	66.84	9,600
Downstream of confluence of Toms Fork	50.47	8,200
Downstream of confluence of Brushy Fork	29.87 → 35.16	6,050 → 6,602
Downstream of confluence of Laurel Run and Big Isaac Creek	3.76	2,230
MCELROY CREEK		
Upstream of confluence of Flint Run	61.95	9,250
Upstream of confluence of Rigging Run	51.23	8,300
Downstream of confluence of Talkington Fork	39.18	7,100
Downstream of confluence of Robinson Fork and Big Battle Run	20.75	4,900

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 1/16/2014

	Location of the mouse click		Cross Section Line
	Approximate Study (Zone A)		Base Flood Elevation Line
	Detailed Study (Zone AE, AH, AO)		DFIRM Panel (Map) Index
	Floodway		
	Flood Water Depth (HEC-RAS)		

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: Selected site is **WITHIN** the FEMA 100-year floodplain.

Flood Zone: AE

Advisory Flood Height: N/A

Water Depth: N/A

Elevation: About 814 feet

Location (long, lat): 80.687626 W, 39.238376 N

Location (UTM 17N): (526958, 4343276)

FEMA Issued Flood Map: 54017C0230C

Contacts: Doddridge County

CRS Information: No CRS information available

Flood Profile: 54017_018

HEC-RAS Model: No Model

Parcel Number:

APPENDIX 2
HEC-RAS SUMMARY TABLES

HEC-RAS Locations: User Defined Profile: PF 1

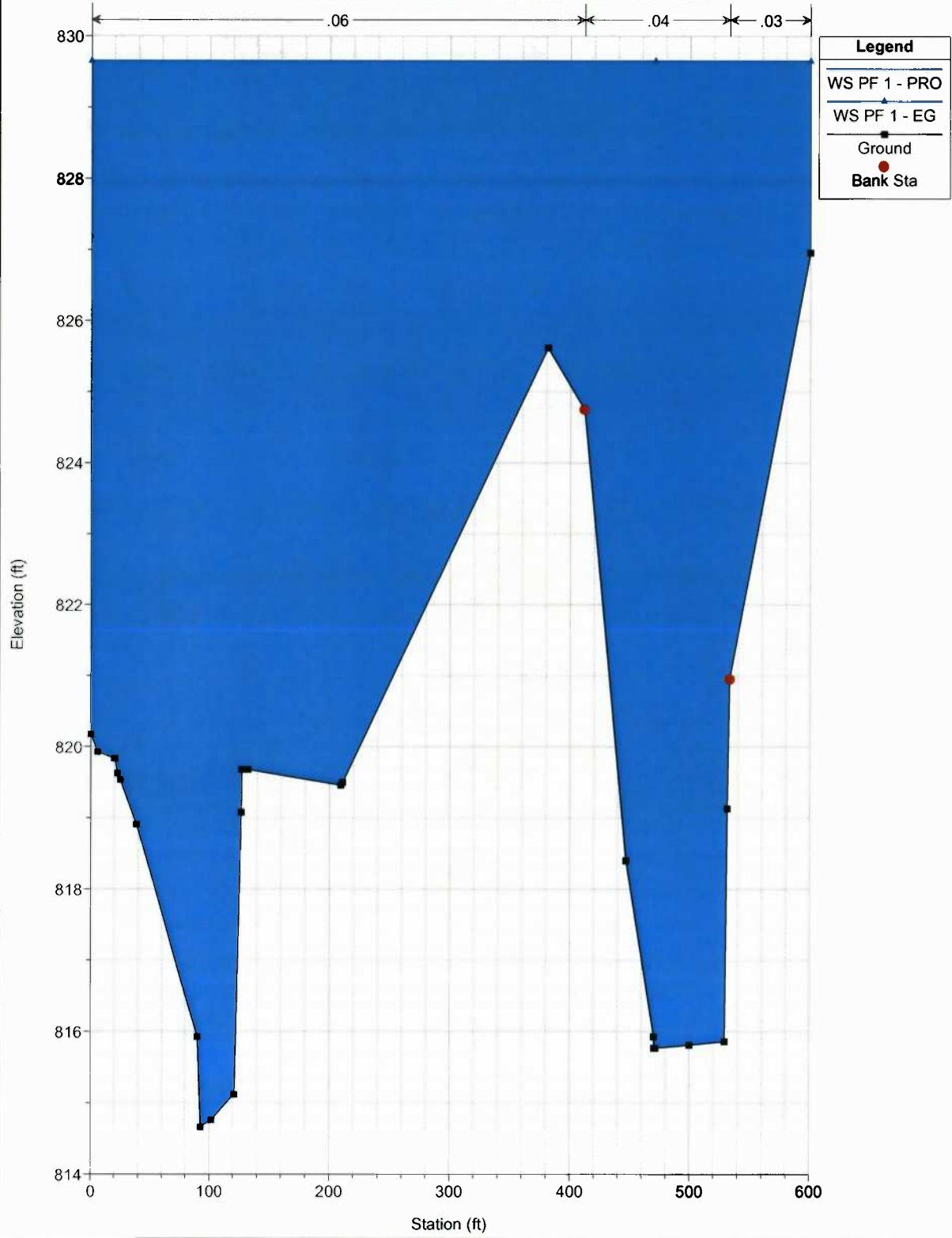
River	Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel.Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Meathouse Fork	Meathouse Fork	2150	PF 1	PRO	8802.00	815.77	829.66		829.68	0.000083	1.72	5554.50	600.00	0.09
Meathouse Fork	Meathouse Fork	2150	PF 1	EG	8802.00	815.77	829.65		829.68	0.000083	1.72	5551.80	600.00	0.09
Meathouse Fork	Meathouse Fork	2100	PF 1	PRO	8802.00	815.74	829.65		829.68	0.000091	1.60	5507.24	600.00	0.09
Meathouse Fork	Meathouse Fork	2100	PF 1	EG	8802.00	815.74	829.65		829.67	0.000091	1.60	5504.35	600.00	0.09
Meathouse Fork	Meathouse Fork	2050	PF 1	PRO	8802.00	815.68	829.64		829.67	0.000098	1.92	5445.97	600.98	0.09
Meathouse Fork	Meathouse Fork	2050	PF 1	EG	8802.00	815.68	829.64		829.67	0.000098	1.93	5443.12	590.95	0.09
Meathouse Fork	Meathouse Fork	2000	PF 1	PRO	8802.00	815.71	829.64		829.67	0.000112	2.04	5218.87	600.00	0.10
Meathouse Fork	Meathouse Fork	2000	PF 1	EG	8802.00	815.71	829.63		829.68	0.000112	2.04	5215.78	600.00	0.10
Meathouse Fork	Meathouse Fork	1950	PF 1	PRO	8802.00	815.78	829.63		829.68	0.000102	1.85	5358.25	600.00	0.09
Meathouse Fork	Meathouse Fork	1950	PF 1	EG	8802.00	815.78	829.63		829.68	0.000103	1.85	5353.38	600.00	0.09
Meathouse Fork	Meathouse Fork	1900	PF 1	PRO	8802.00	815.84	829.63		829.68	0.000104	1.92	5379.43	600.00	0.10
Meathouse Fork	Meathouse Fork	1900	PF 1	EG	8802.00	815.84	829.62		829.65	0.000104	1.93	5376.50	600.00	0.10
Meathouse Fork	Meathouse Fork	1850	PF 1	PRO	8802.00	815.77	829.62		829.65	0.000103	1.81	5385.70	600.00	0.10
Meathouse Fork	Meathouse Fork	1850	PF 1	EG	8802.00	815.77	829.62		829.64	0.000103	1.81	5382.81	600.00	0.10
Meathouse Fork	Meathouse Fork	1800	PF 1	PRO	8802.00	815.38	829.61		829.64	0.000142	2.28	4848.40	600.00	0.11
Meathouse Fork	Meathouse Fork	1800	PF 1	EG	8802.00	815.39	829.60		829.64	0.000142	2.28	4845.47	600.00	0.11
Meathouse Fork	Meathouse Fork	1750	PF 1	PRO	8802.00	815.58	829.60		829.63	0.000123	2.07	5080.40	600.00	0.10
Meathouse Fork	Meathouse Fork	1750	PF 1	EG	8802.00	815.58	829.60		829.63	0.000124	2.07	5077.47	600.00	0.10
Meathouse Fork	Meathouse Fork	1700	PF 1	PRO	8802.00	815.15	829.60		829.63	0.000109	1.97	5270.89	600.00	0.10
Meathouse Fork	Meathouse Fork	1700	PF 1	EG	8802.00	815.15	829.59		829.62	0.000109	1.98	5267.93	600.00	0.10
Meathouse Fork	Meathouse Fork	1650	PF 1	PRO	8802.00	815.50	829.59		829.62	0.000115	1.88	5222.89	600.00	0.10
Meathouse Fork	Meathouse Fork	1650	PF 1	EG	8802.00	815.50	829.59		829.62	0.000115	1.89	5219.96	600.00	0.10
Meathouse Fork	Meathouse Fork	1600	PF 1	PRO	8802.00	815.73	829.59		829.62	0.000109	1.75	5245.85	600.00	0.10
Meathouse Fork	Meathouse Fork	1600	PF 1	EG	8802.00	815.73	829.58		829.61	0.000109	1.75	5242.73	600.00	0.10
Meathouse Fork	Meathouse Fork	1550	PF 1	PRO	8802.00	815.53	829.57		829.61	0.000149	2.14	4719.82	600.00	0.11
Meathouse Fork	Meathouse Fork	1550	PF 1	EG	8802.00	815.53	829.57		829.60	0.000149	2.15	4716.82	600.00	0.11
Meathouse Fork	Meathouse Fork	1500	PF 1	PRO	8802.00	815.95	829.55		829.60	0.000185	2.81	4380.73	600.00	0.13
Meathouse Fork	Meathouse Fork	1500	PF 1	EG	8802.00	815.95	829.54		829.59	0.000186	2.81	4357.72	600.00	0.13
Meathouse Fork	Meathouse Fork	1450	PF 1	PRO	8802.00	815.85	829.56		829.59	0.000105	1.98	5434.60	765.12	0.10
Meathouse Fork	Meathouse Fork	1450	PF 1	EG	8802.00	815.85	829.55		829.58	0.000105	1.97	5430.77	765.12	0.10
Meathouse Fork	Meathouse Fork	1400	PF 1	PRO	8802.00	818.22	829.56		829.58	0.000073	1.63	6137.40	798.30	0.08
Meathouse Fork	Meathouse Fork	1400	PF 1	EG	8802.00	818.22	829.55		829.57	0.000073	1.63	6133.40	798.30	0.08
Meathouse Fork	Meathouse Fork	1350	PF 1	PRO	8802.00	815.93	829.56		829.58	0.000065	1.57	6480.33	865.74	0.08
Meathouse Fork	Meathouse Fork	1350	PF 1	EG	8802.00	815.93	829.55		829.57	0.000068	1.57	6476.05	865.74	0.08
Meathouse Fork	Meathouse Fork	1300	PF 1	PRO	8802.00	815.77	829.55		829.57	0.000064	1.56	6589.32	876.81	0.08
Meathouse Fork	Meathouse Fork	1300	PF 1	EG	8802.00	815.77	829.55		829.57	0.000064	1.56	6584.93	876.81	0.08
Meathouse Fork	Meathouse Fork	1250	PF 1	PRO	8802.00	815.45	829.55		829.57	0.000031	1.18	7927.53	912.52	0.05
Meathouse Fork	Meathouse Fork	1250	PF 1	EG	8802.00	815.45	829.55		829.58	0.000031	1.18	7923.02	912.41	0.05
Meathouse Fork	Meathouse Fork	1218.72	PF 1	PRO	8802.00	815.59	829.54	820.70	829.57	0.000070	1.74	5920.85	688.09	0.08
Meathouse Fork	Meathouse Fork	1218.72	PF 1	EG	8802.00	815.59	829.53		829.58	0.000070	1.74	5917.55	688.06	0.08
Meathouse Fork	Meathouse Fork	1208.34												
Meathouse Fork	Meathouse Fork	1192.52	PF 1	PRO	8802.00	815.23	829.54		829.58	0.000044	1.38	7015.42	800.00	0.07
Meathouse Fork	Meathouse Fork	1192.52	PF 1	EG	8802.00	815.23	829.54		829.58	0.000044	1.38	7013.90	800.00	0.07
Meathouse Fork	Meathouse Fork	1150	PF 1	PRO	8802.00	814.80	829.53		829.55	0.000083	1.79	5773.42	710.94	0.09
Meathouse Fork	Meathouse Fork	1150	PF 1	EG	8802.00	814.80	829.53		829.55	0.000083	1.79	5773.42	710.94	0.09
Meathouse Fork	Meathouse Fork	1100	PF 1	PRO	8802.00	814.73	829.50	821.71	829.55	0.000107	2.11	4210.50	655.70	0.10
Meathouse Fork	Meathouse Fork	1100	PF 1	EG	8802.00	814.73	829.50	821.71	829.55	0.000107	2.11	4210.50	655.70	0.10

APPENDIX 3
HEC-RAS CROSS-SECTIONS

Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

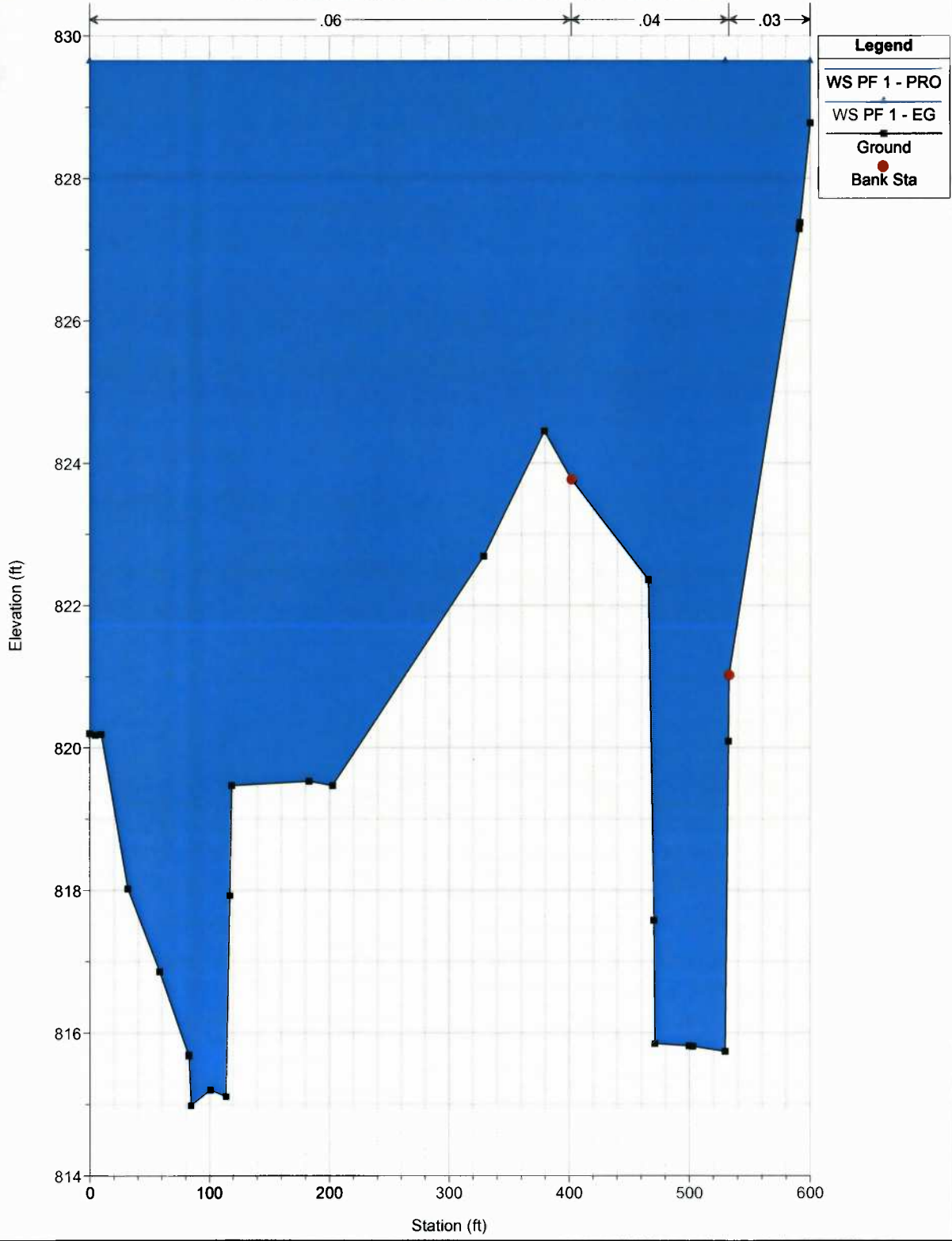
River = Meathouse Fork Reach = Meathouse Fork RS = 2150



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

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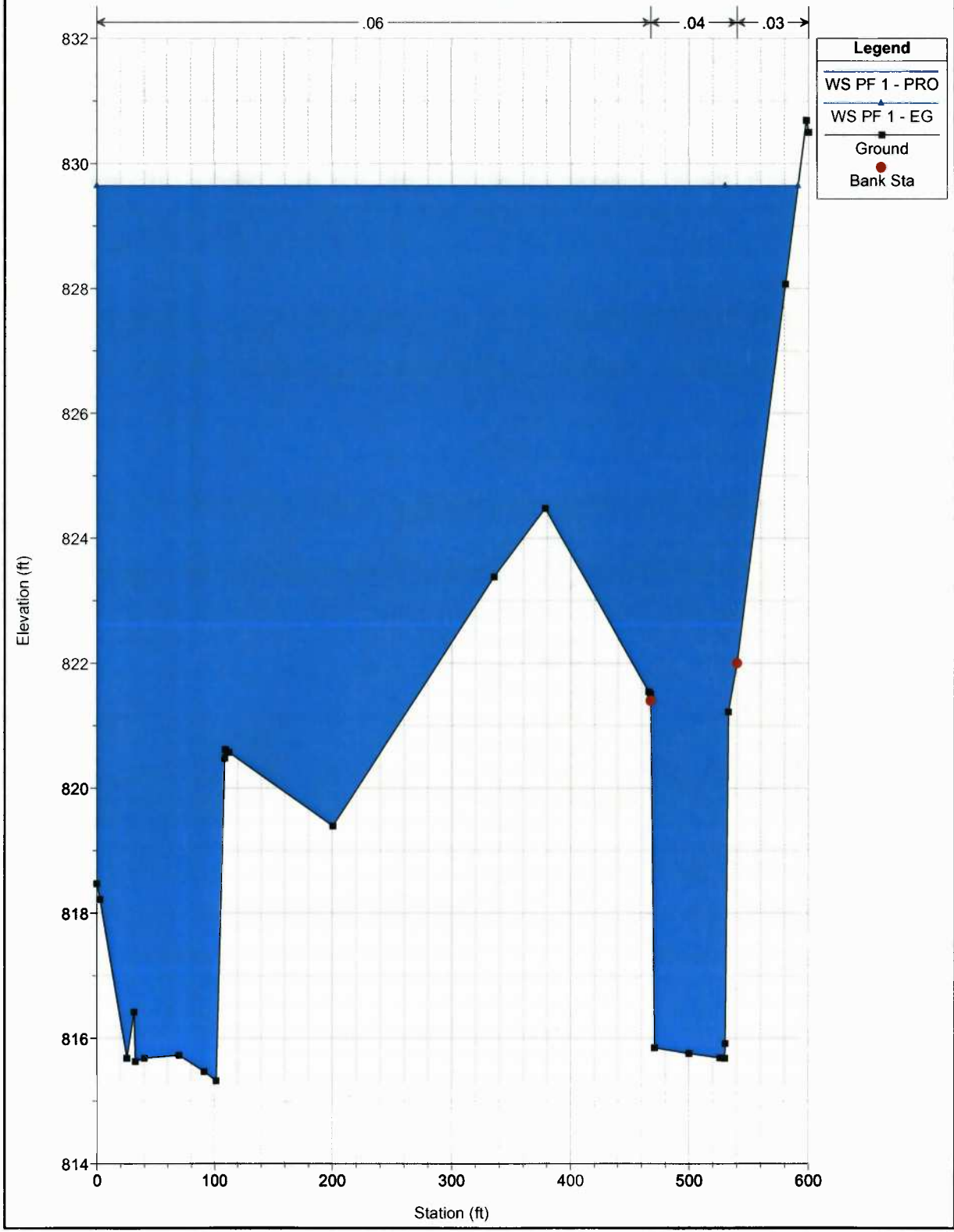
River = Meathouse Fork Reach = Meathouse Fork RS = 2100



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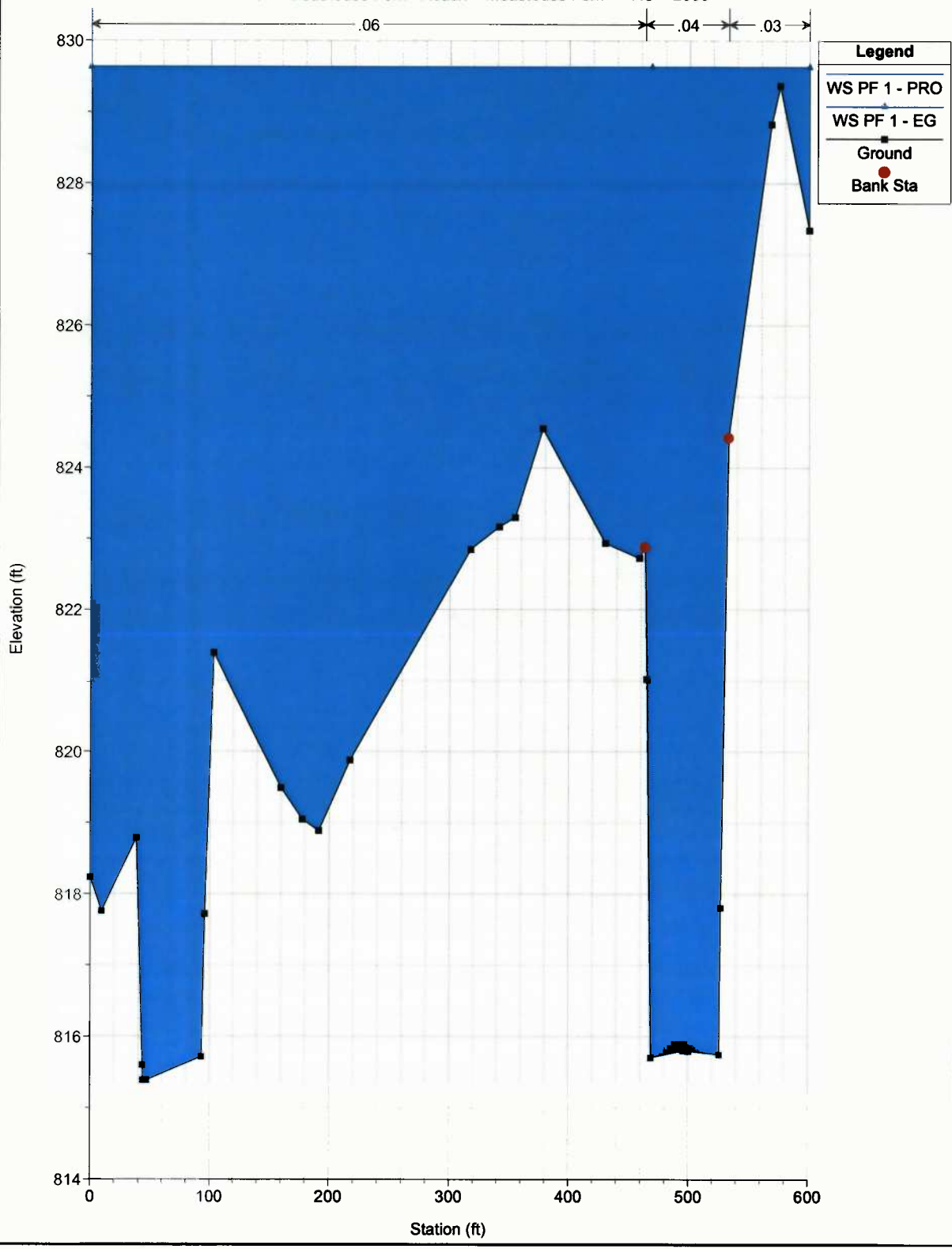
River = Meathouse Fork Reach = Meathouse Fork RS = 2050



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

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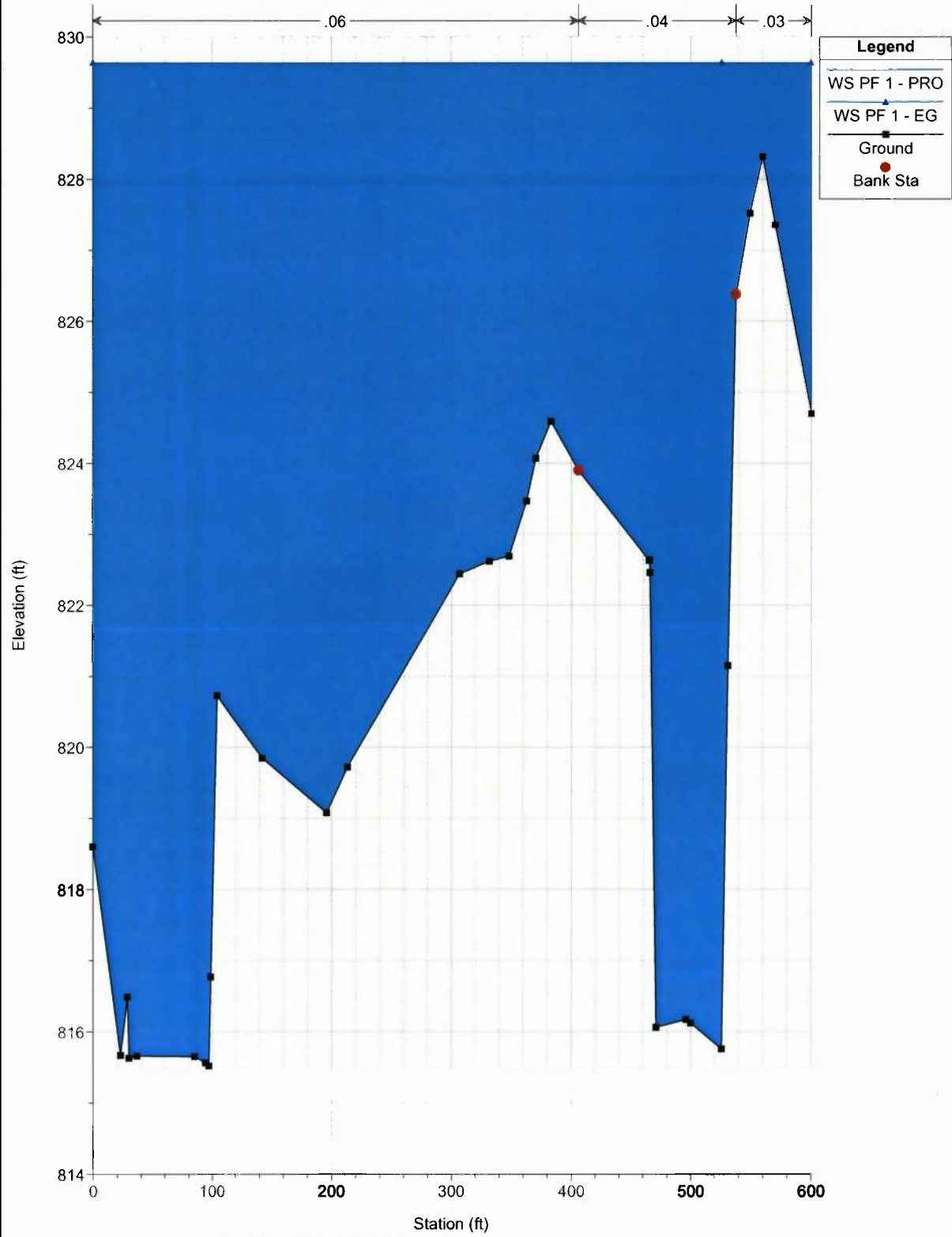
River = Meathouse Fork Reach = Meathouse Fork RS = 2000



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

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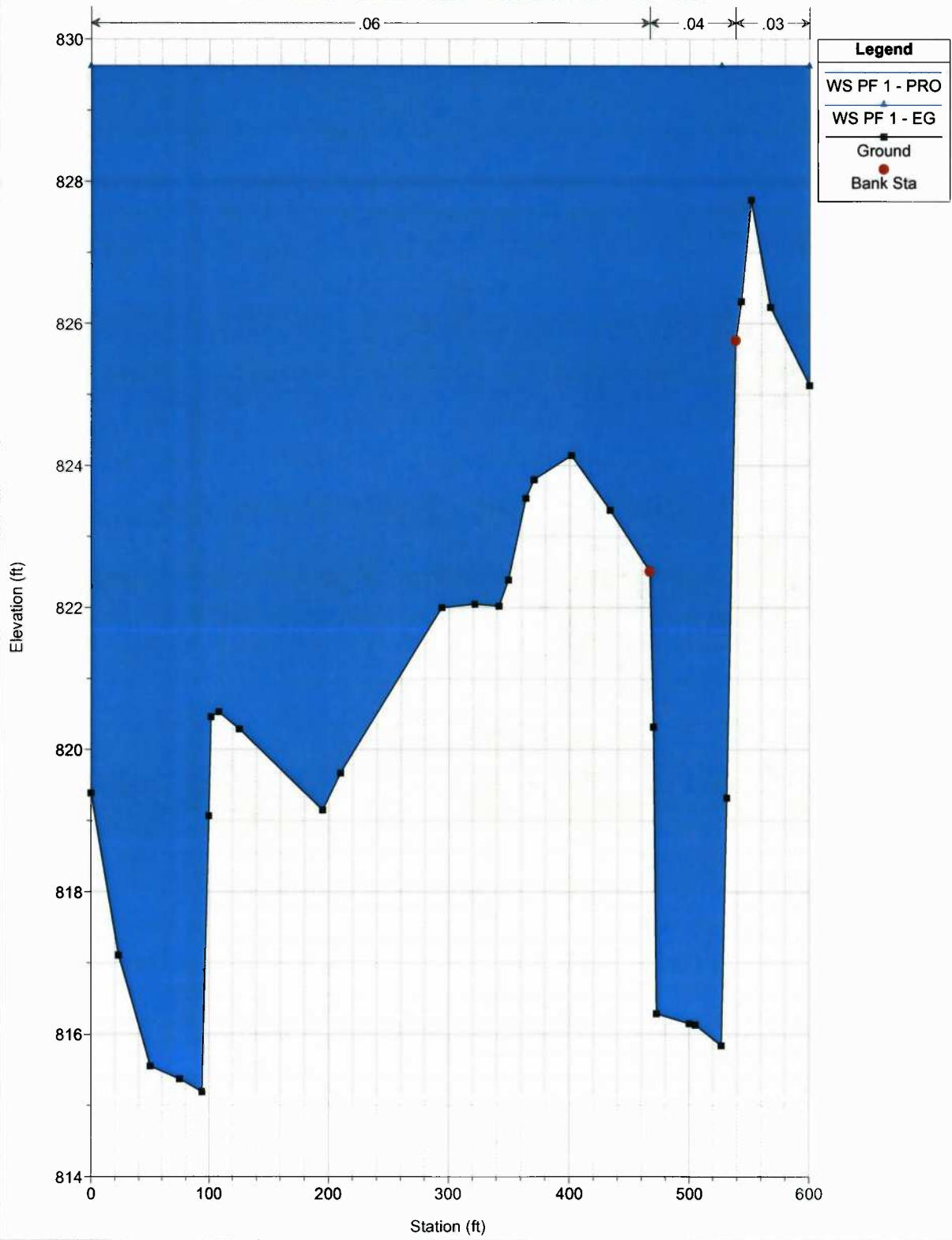
River = Meathouse Fork Reach = Meathouse Fork RS = 1950



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

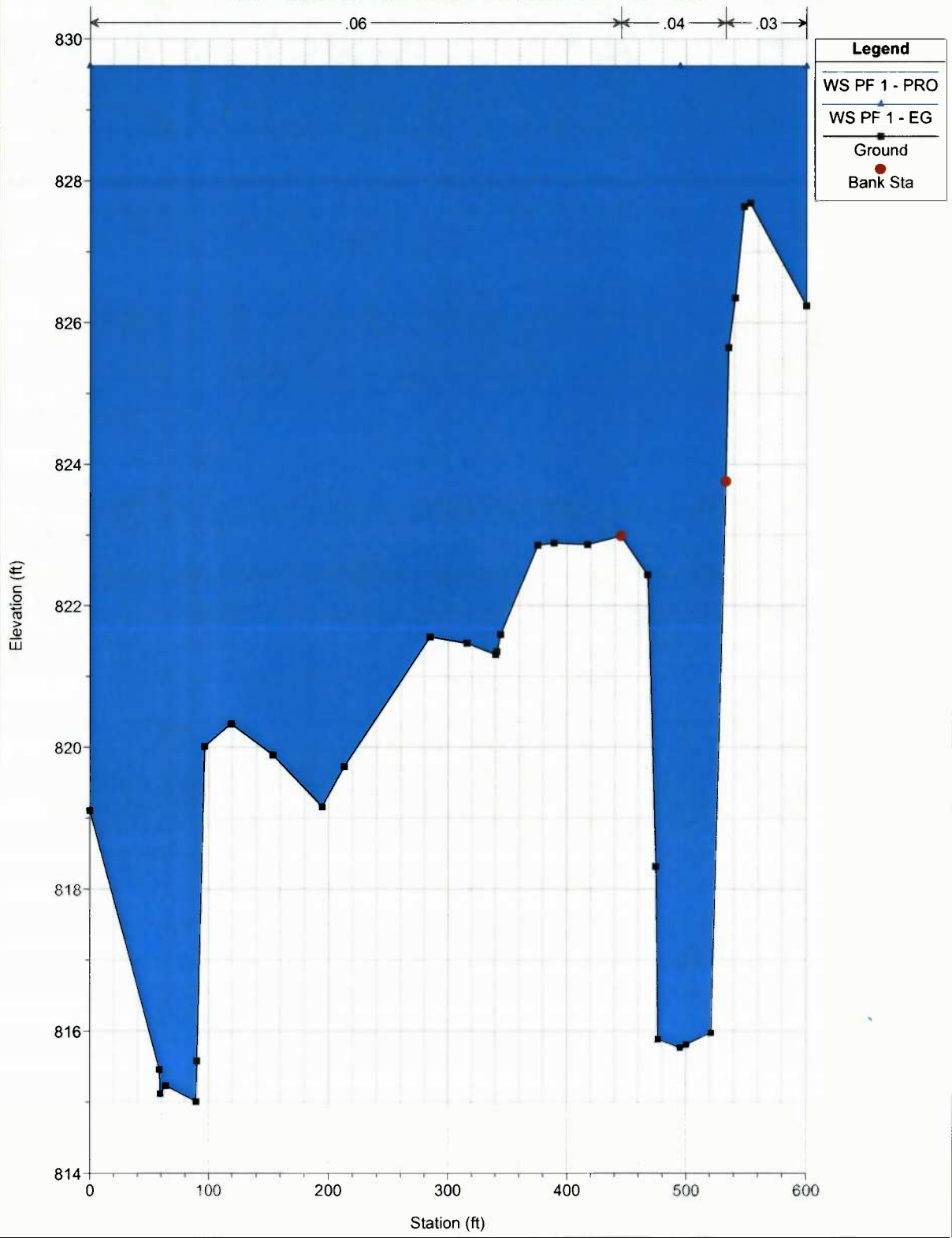
River = Meathouse Fork Reach = Meathouse Fork RS = 1900



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

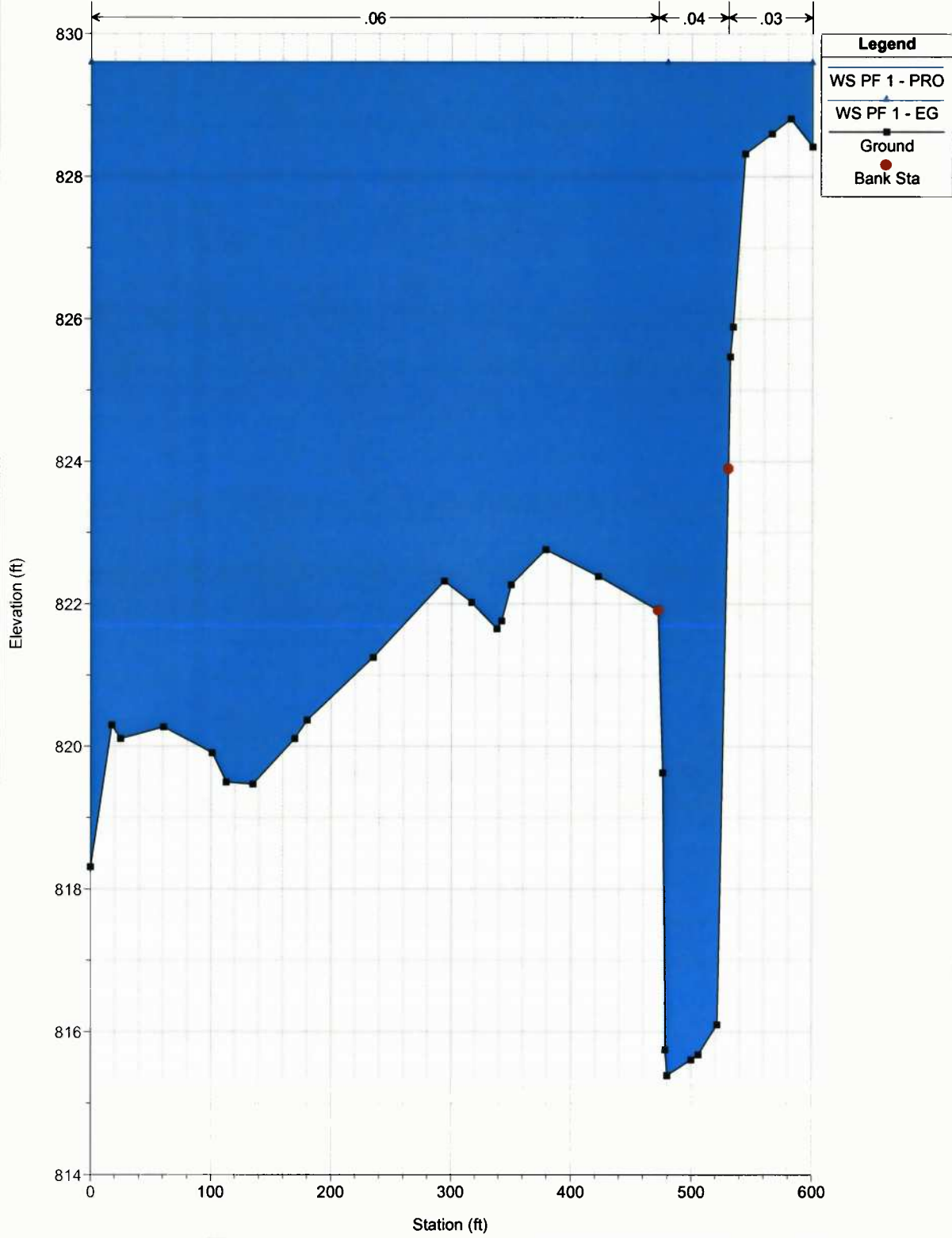
River = Meathouse Fork Reach = Meathouse Fork RS = 1850



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

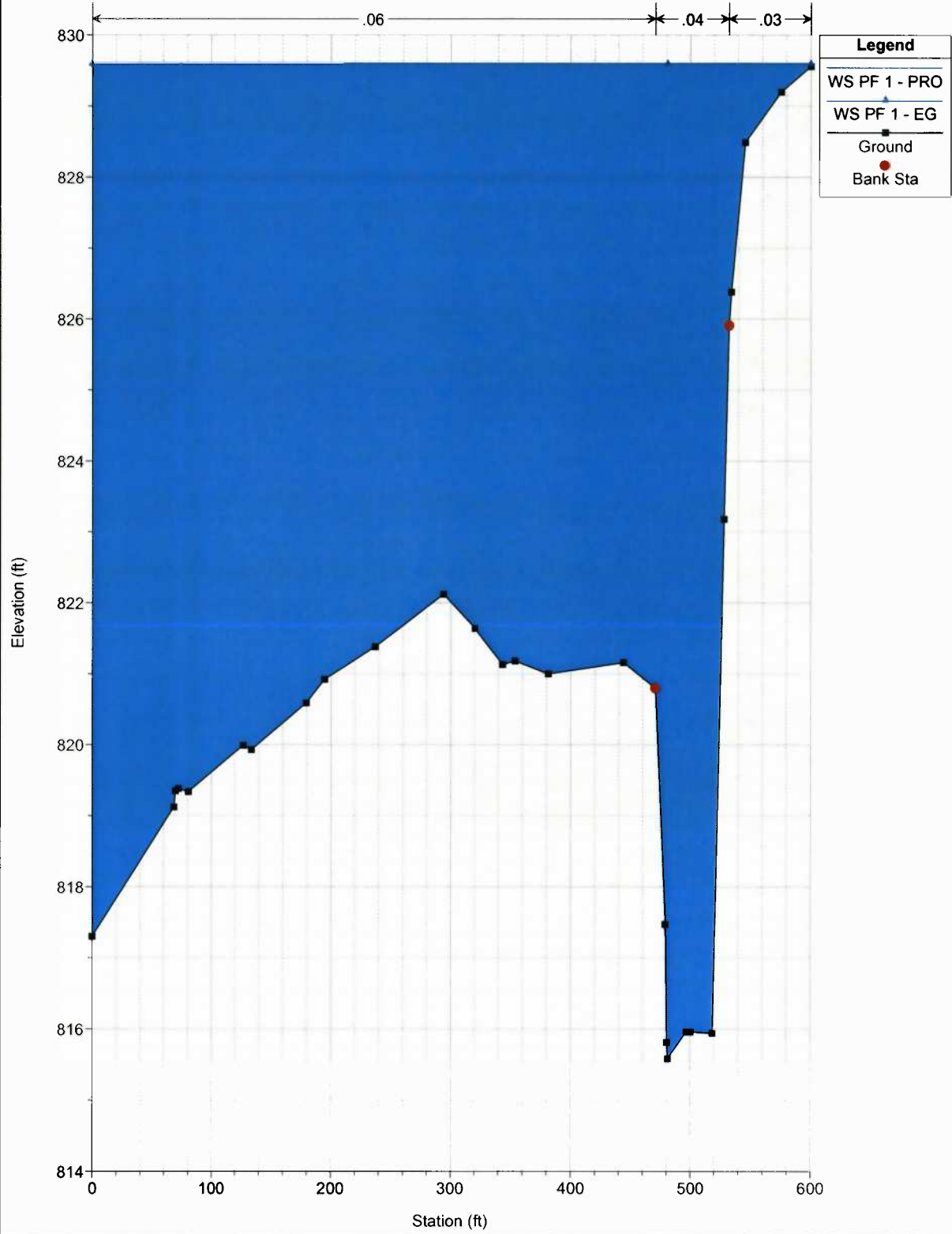
River = Meathouse Fork Reach = Meathouse Fork RS = 1800



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

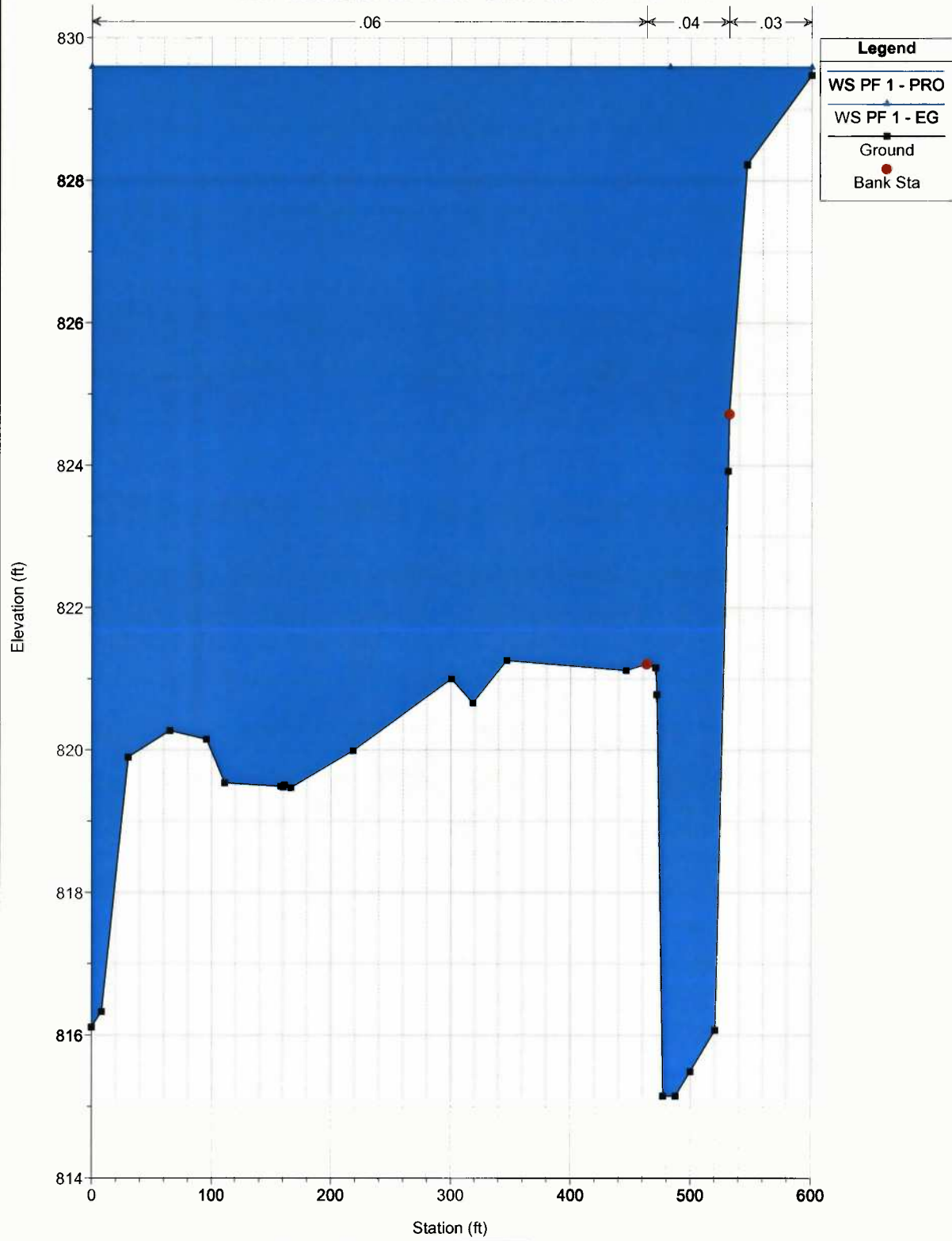
River = Meathouse Fork Reach = Meathouse Fork RS = 1750



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

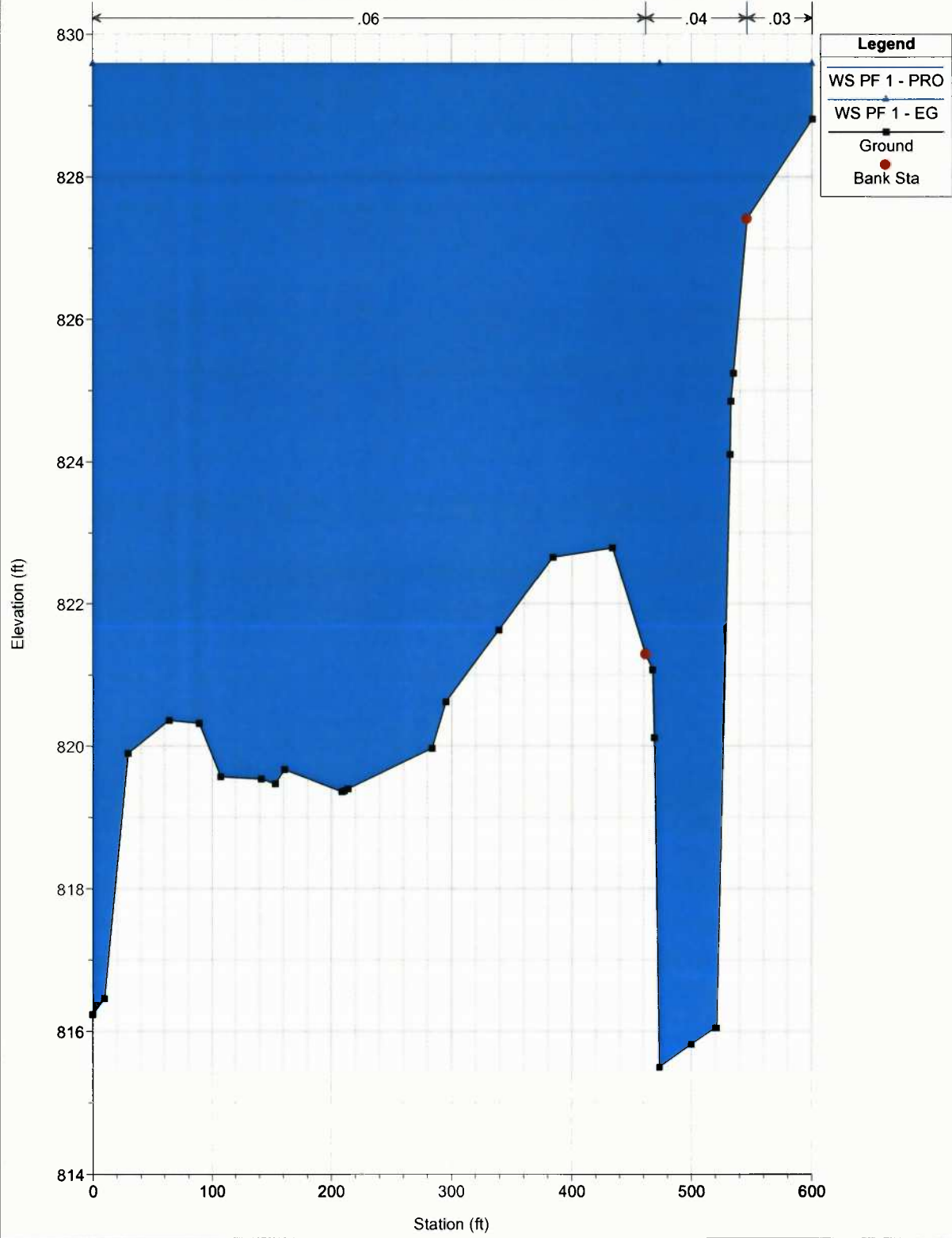
River = Meathouse Fork Reach = Meathouse Fork RS = 1700



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

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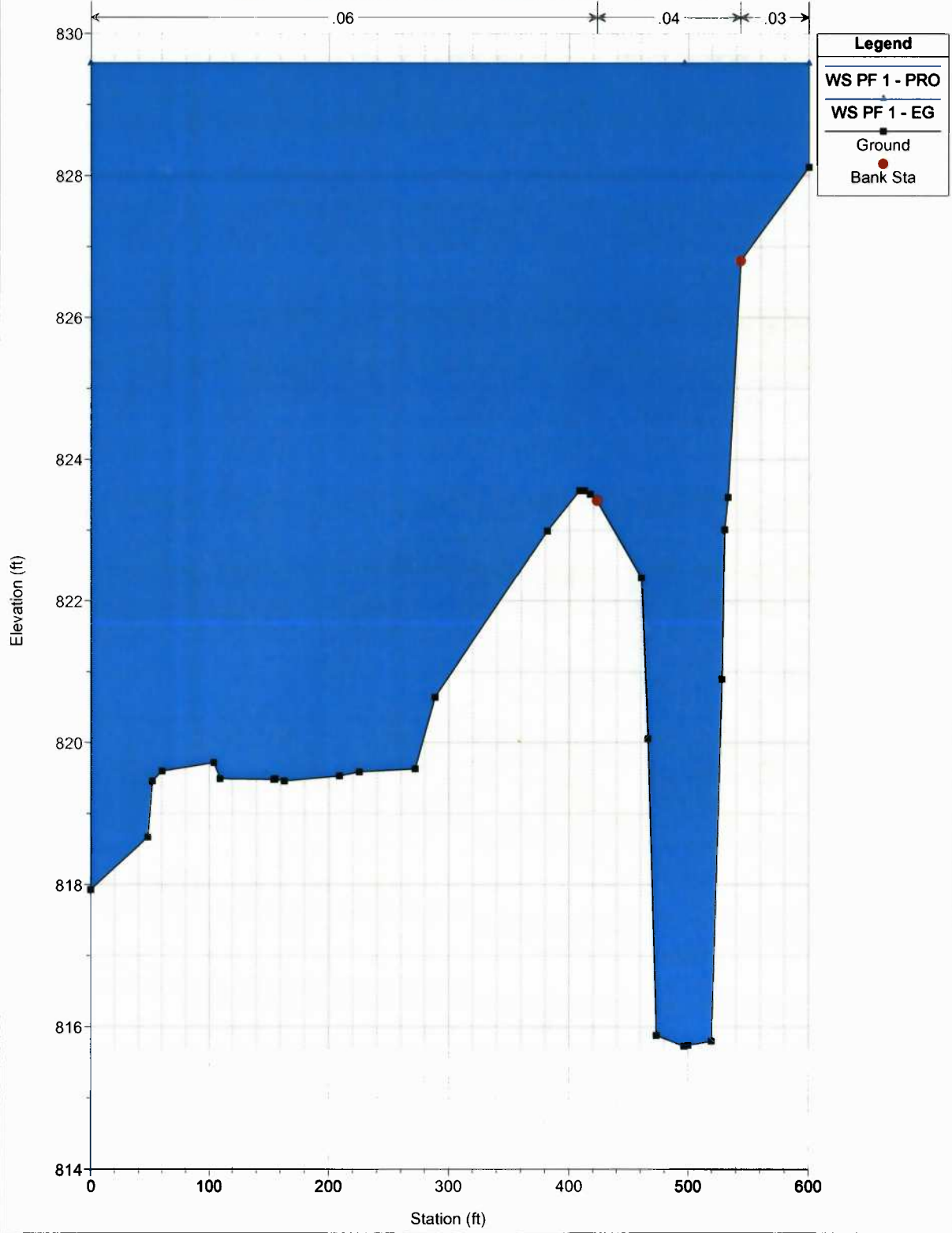
River = Meathouse Fork Reach = Meathouse Fork RS = 1650



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

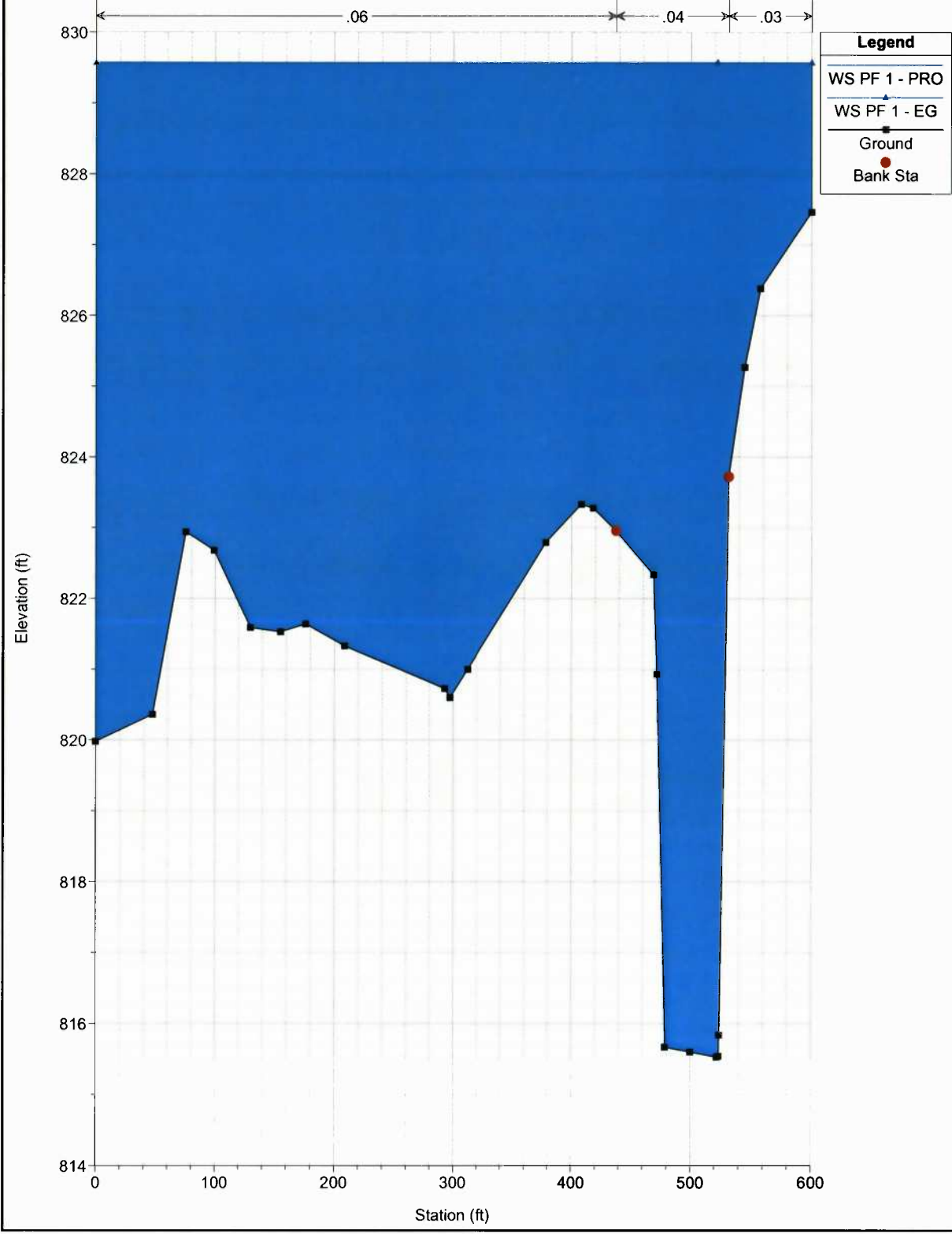
River = Meathouse Fork Reach = Meathouse Fork RS = 1600



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Geom: PROPOSED Flow: Flow Data

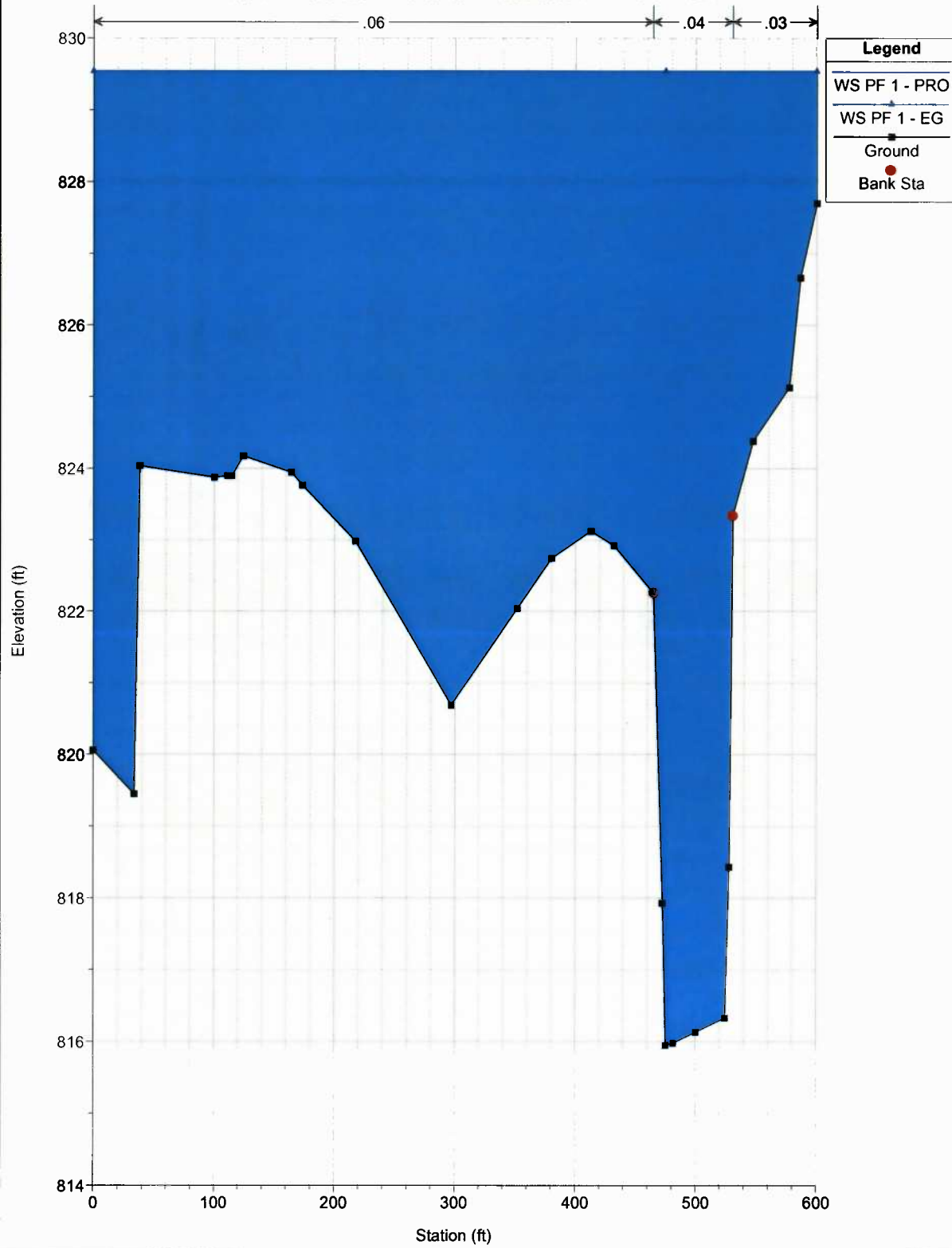
River = Meathouse Fork Reach = Meathouse Fork RS = 1550



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

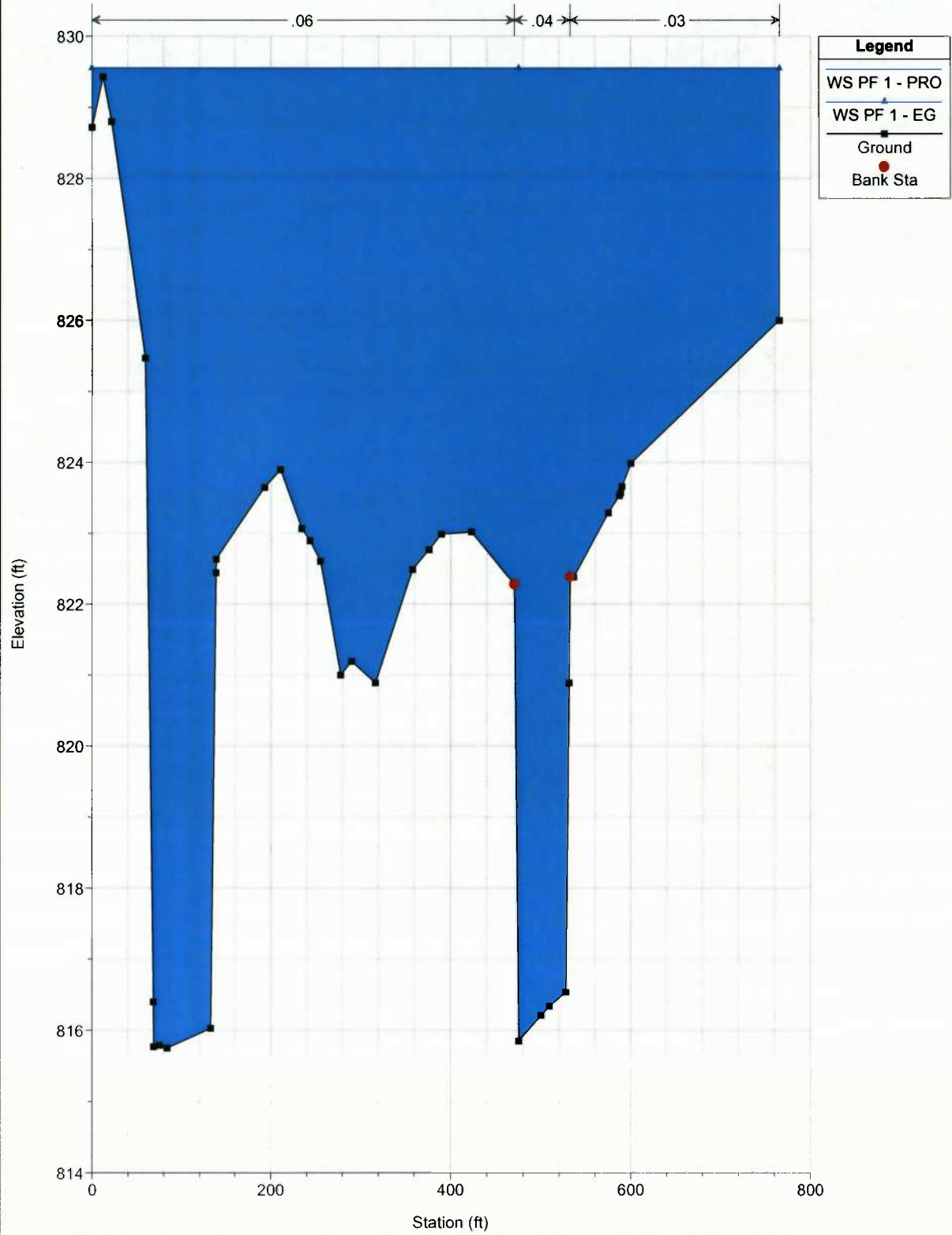
River = Meathouse Fork Reach = Meathouse Fork RS = 1500



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

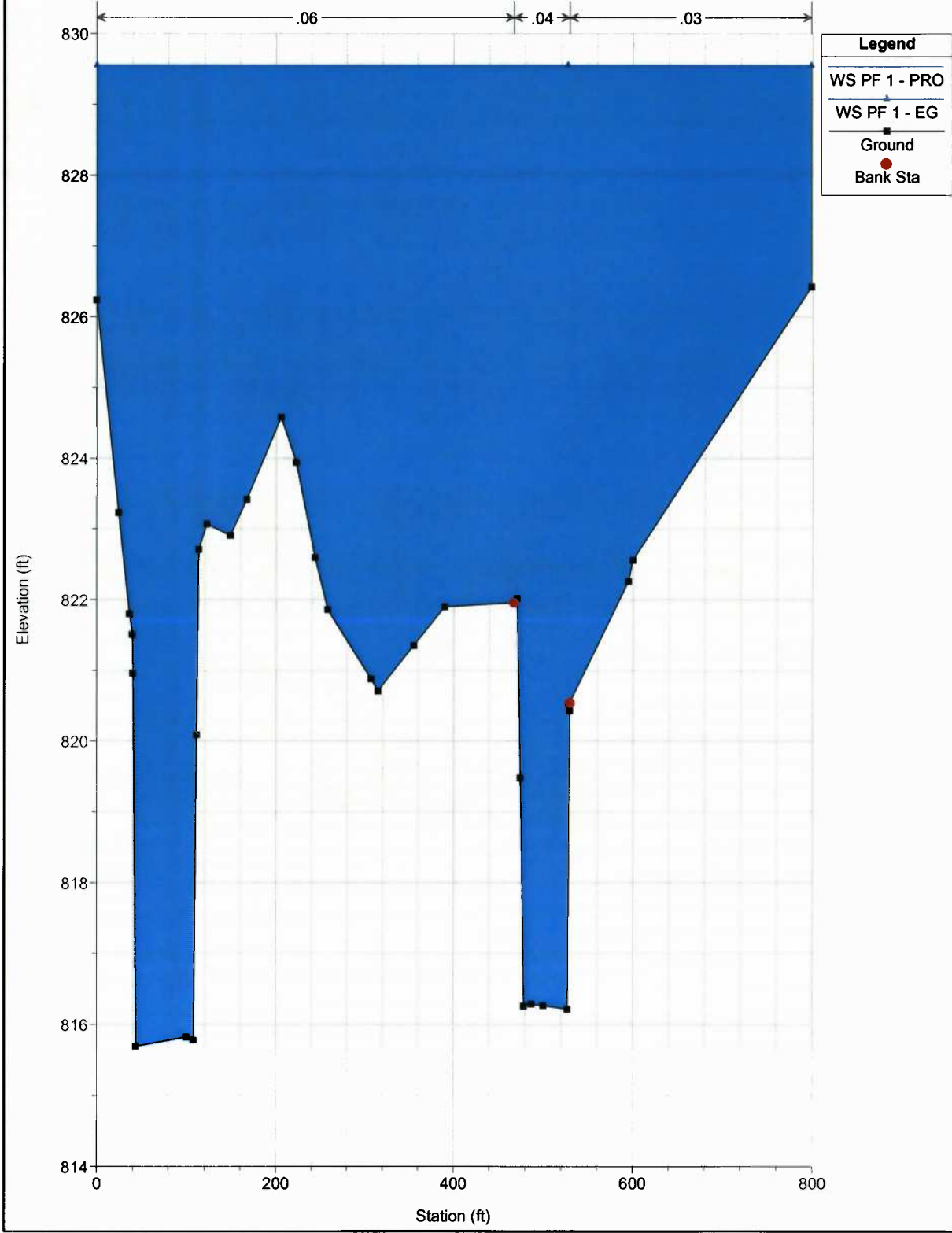
River = Meathouse Fork Reach = Meathouse Fork RS = 1450



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

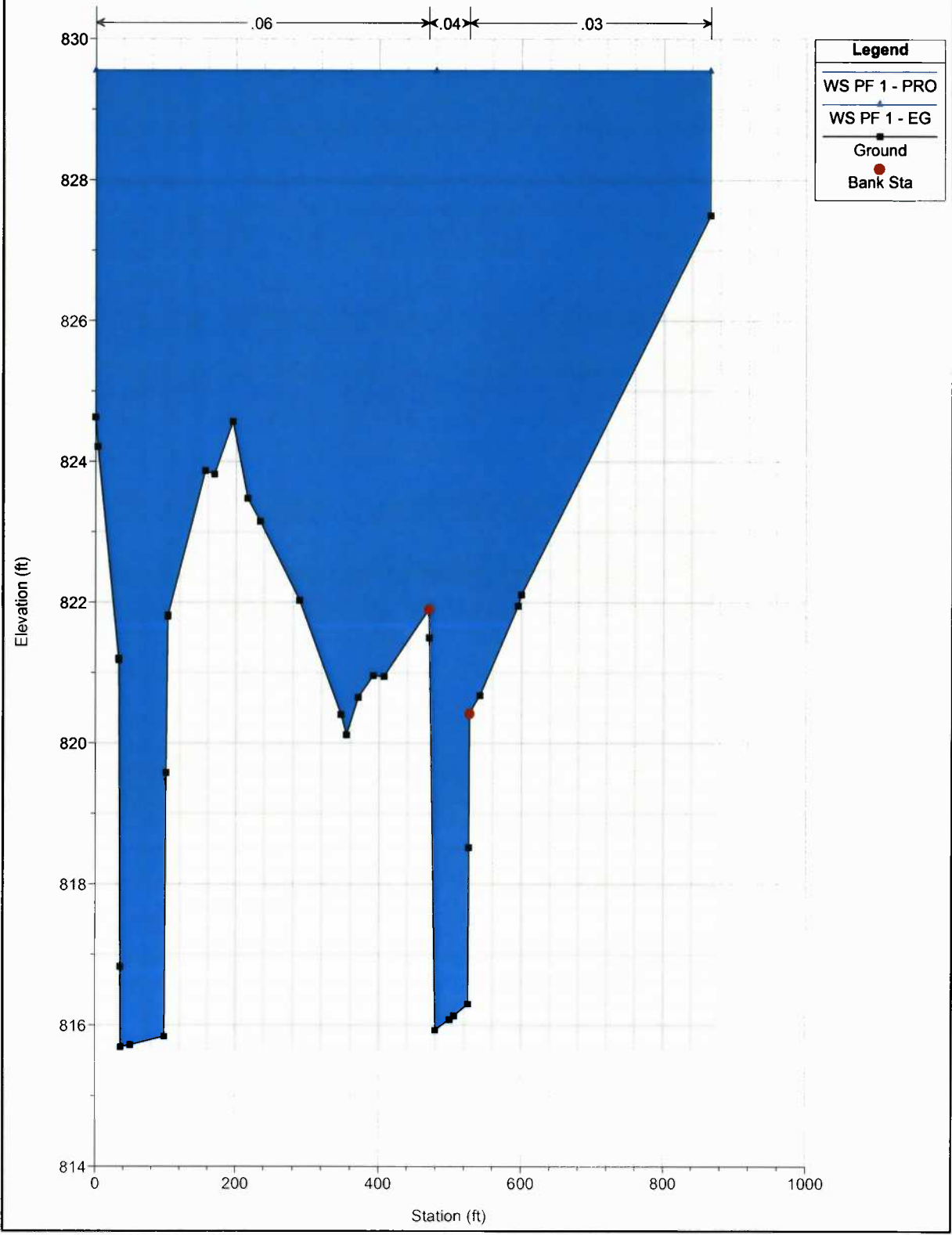
River = Meathouse Fork Reach = Meathouse Fork RS = 1400



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

River = Meathouse Fork Reach = Meathouse Fork RS = 1350

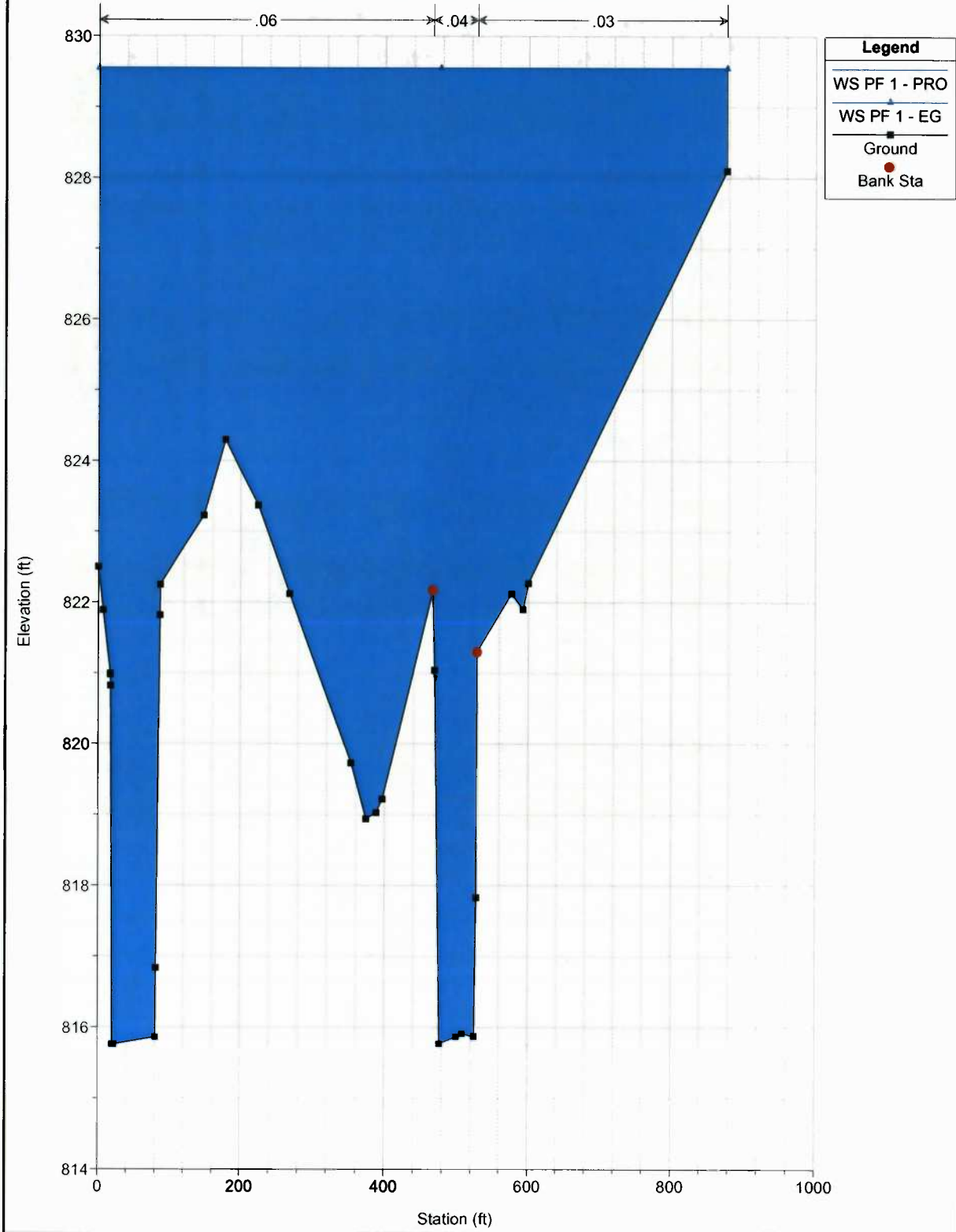


Legend	
WS PF 1 - PRO	— (top line)
WS PF 1 - EG	— (middle line)
Ground	■ (black square)
Bank Sta	● (red circle)

Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

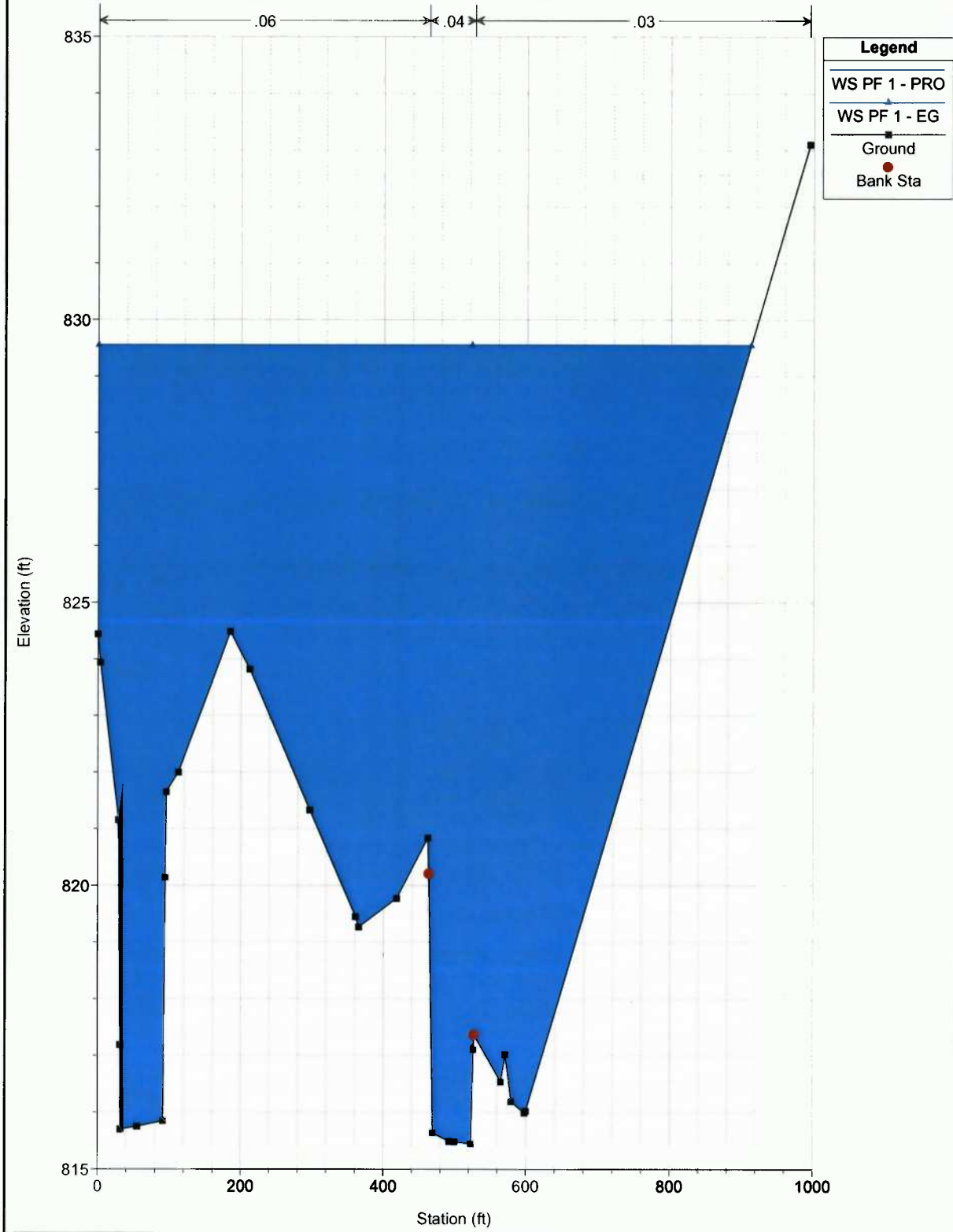
River = Meathouse Fork Reach = Meathouse Fork RS = 1300



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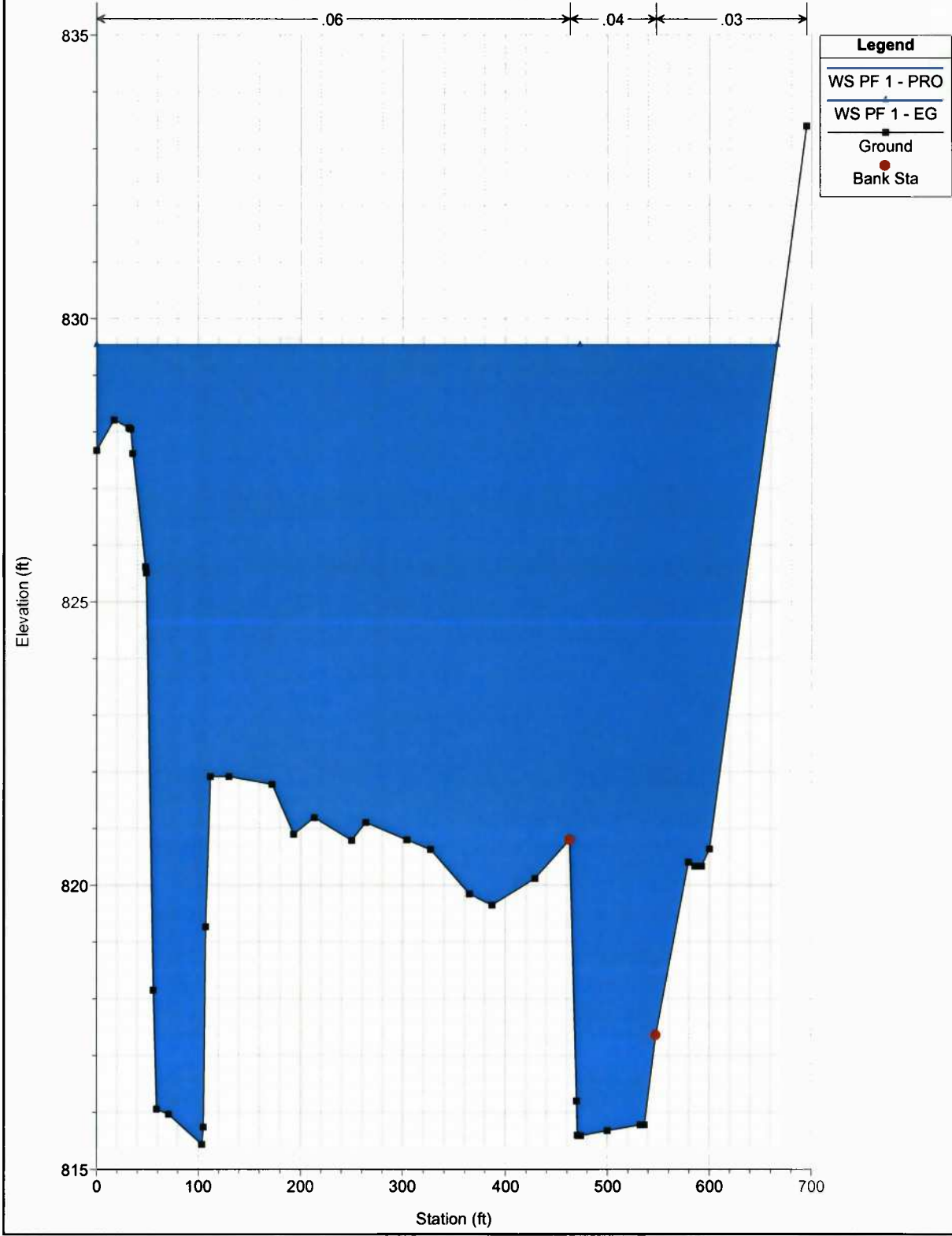
River = Meathouse Fork Reach = Meathouse Fork RS = 1250



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Geom: PROPOSED Flow: Flow Data

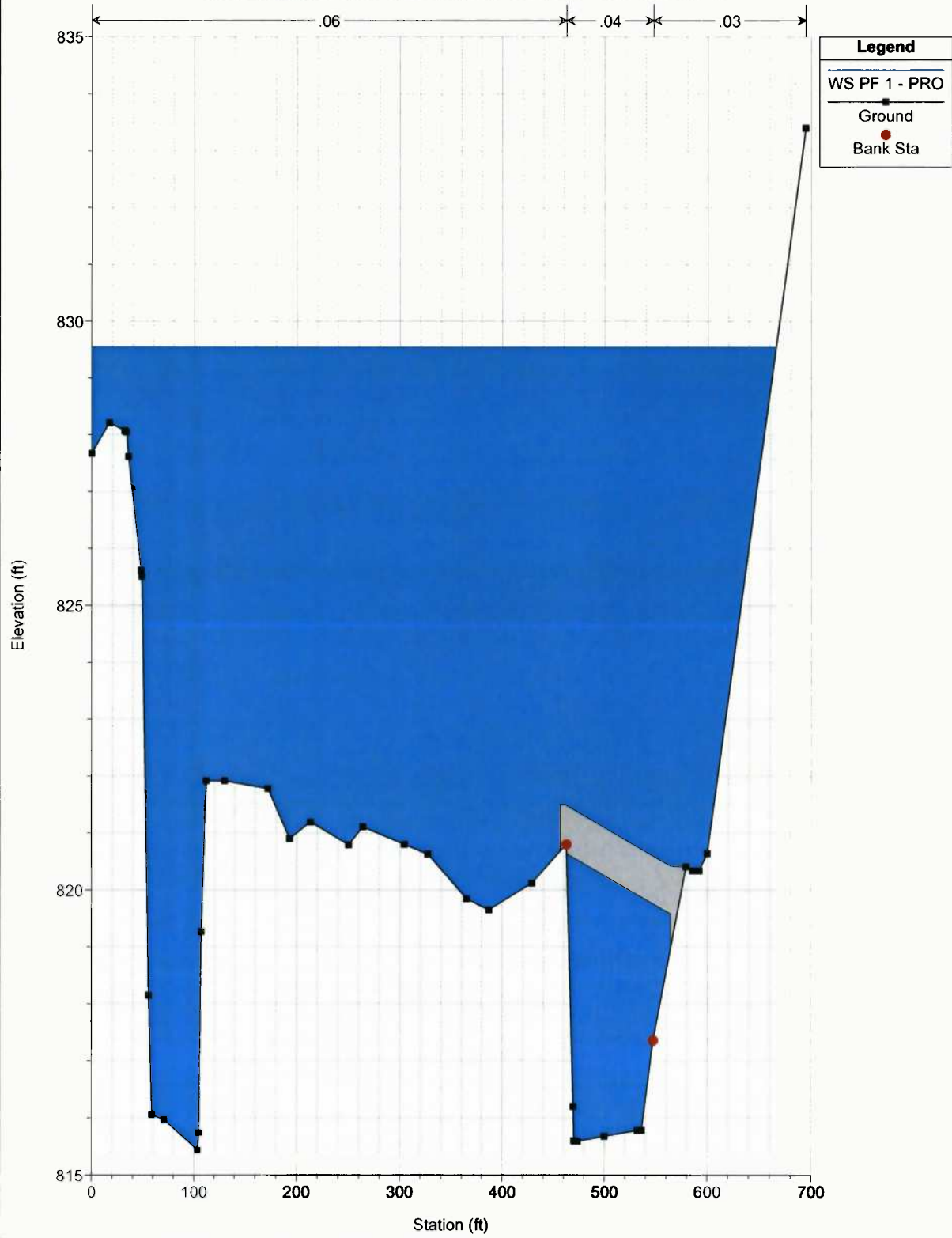
River = Meathouse Fork Reach = Meathouse Fork RS = 1218.72



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

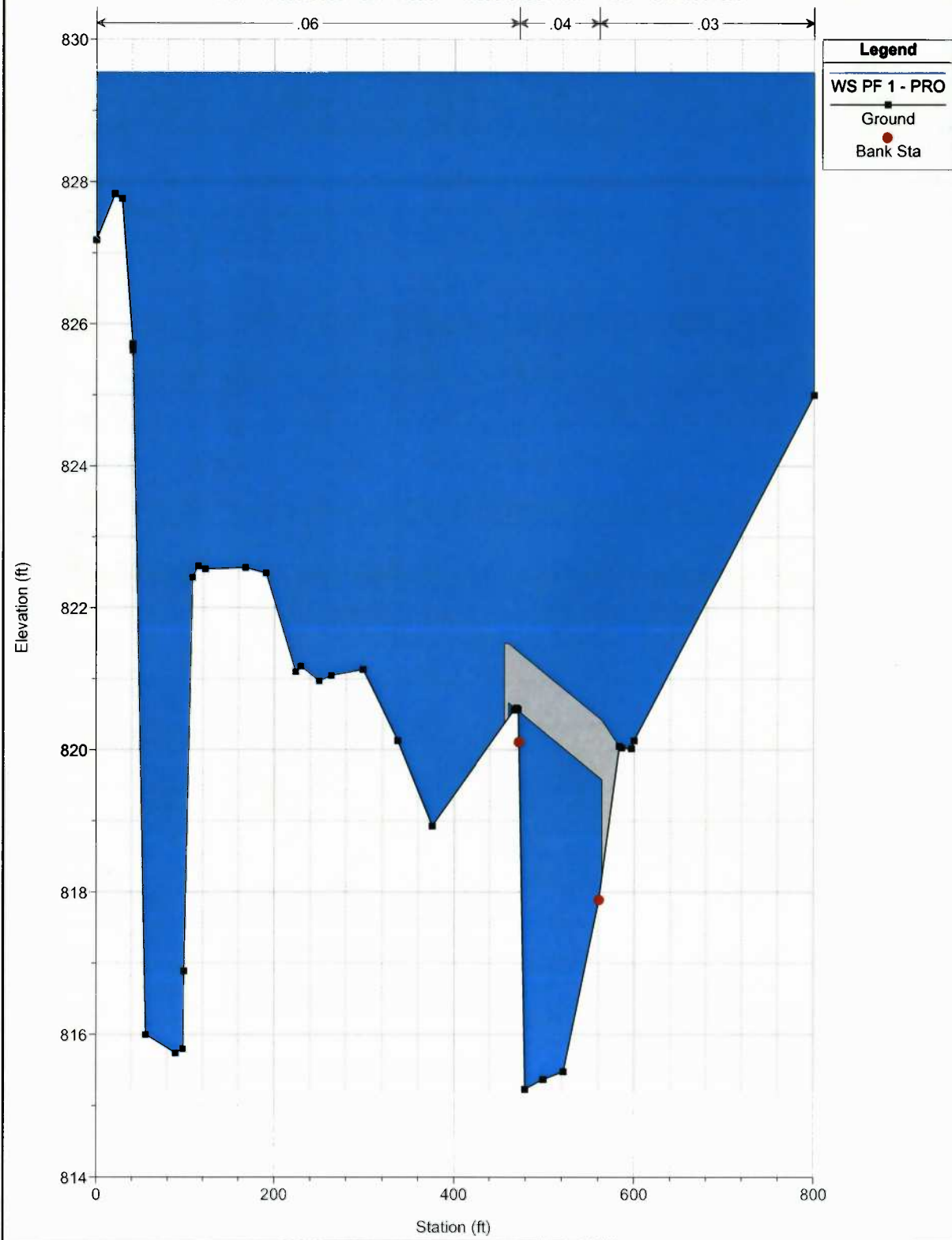
River = Meathouse Fork Reach = Meathouse Fork RS = 1206.34 BR



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

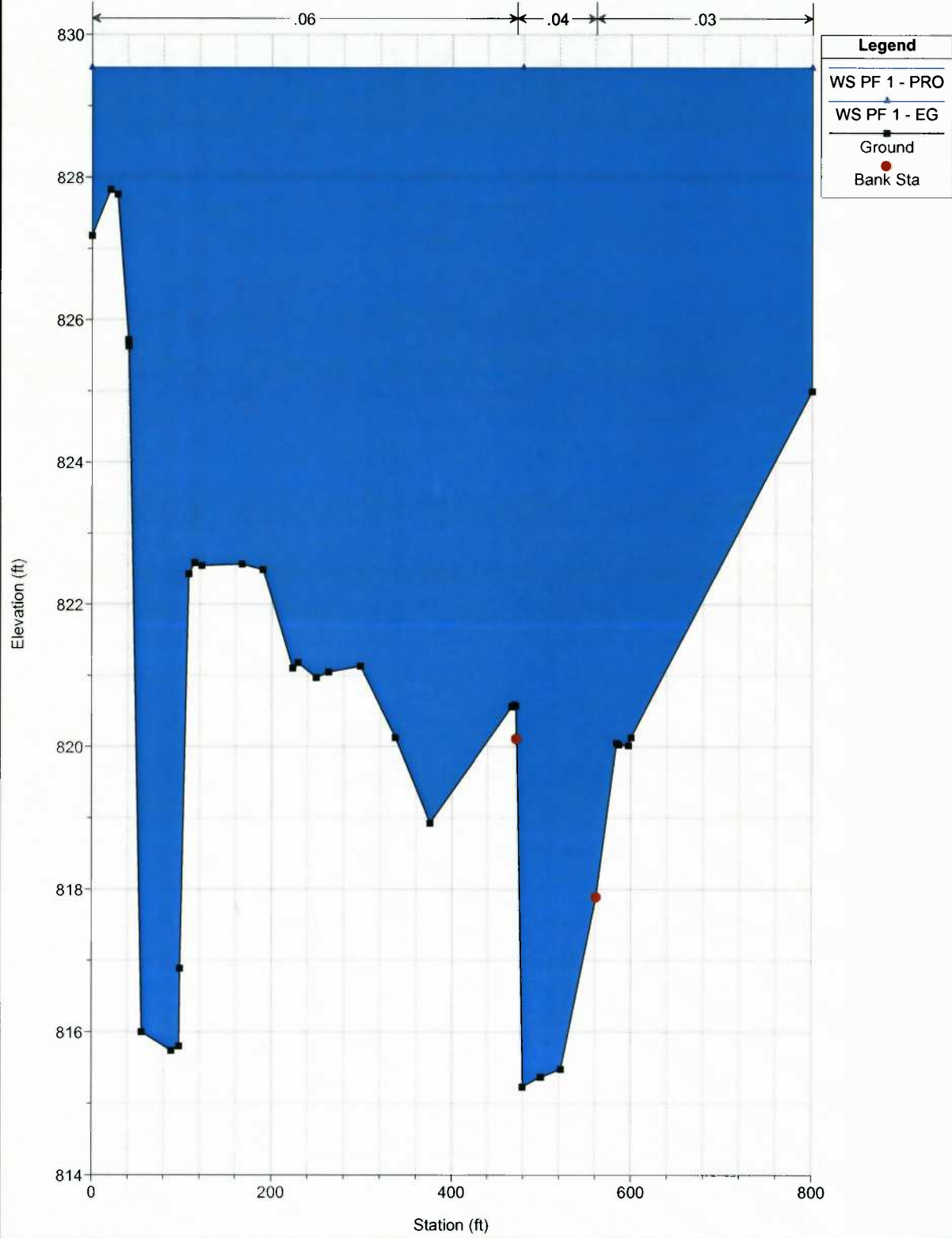
River = Meathouse Fork Reach = Meathouse Fork RS = 1206.34 BR



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

Geom: PROPOSED Flow: Flow Data

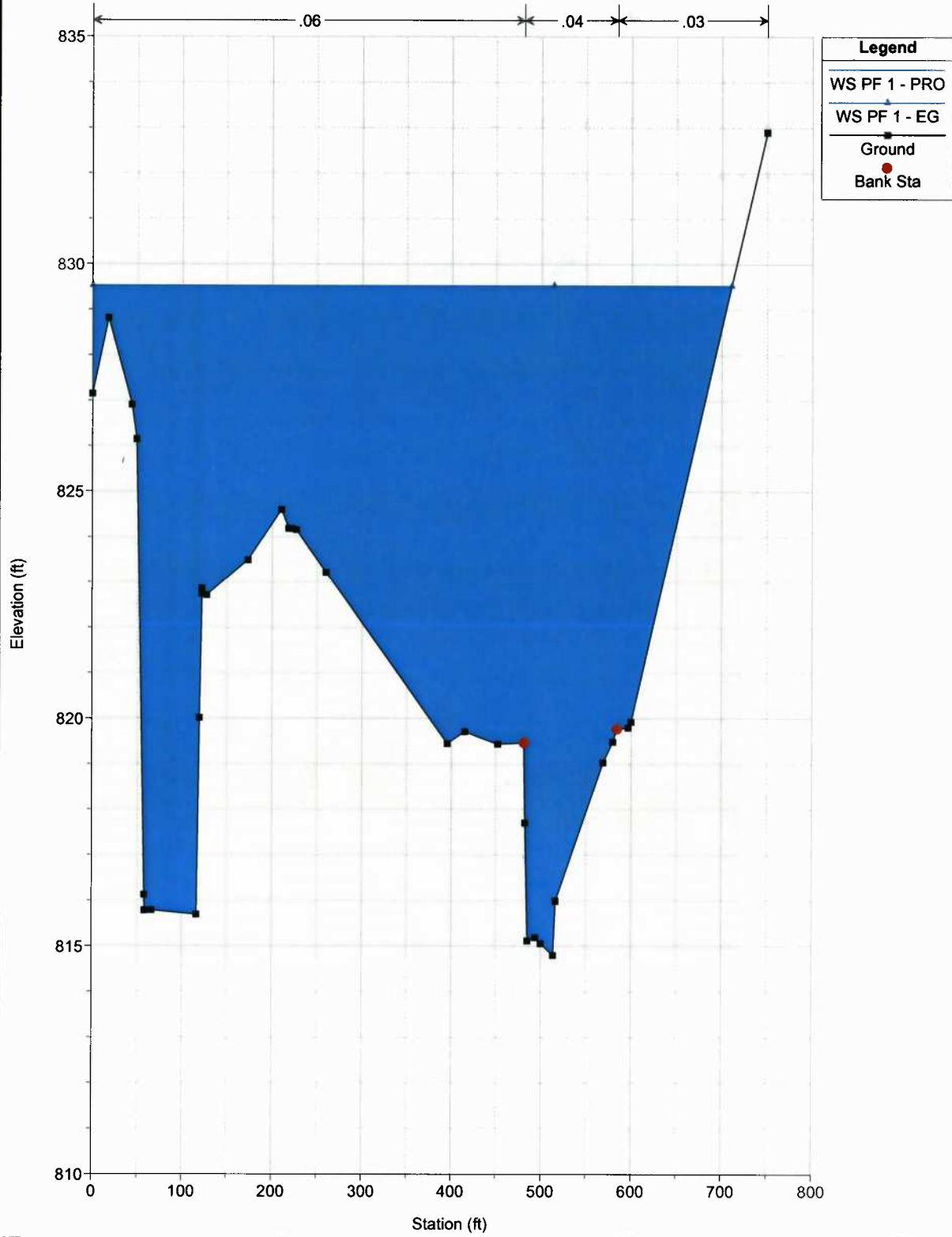
River = Meathouse Fork Reach = Meathouse Fork RS = 1192.52



Willard Pipeline Bridge H&H Plan: 1) PRO 1/16/2014 2:24:40 PM 2) EG 1/16/2014 2:23:34 PM

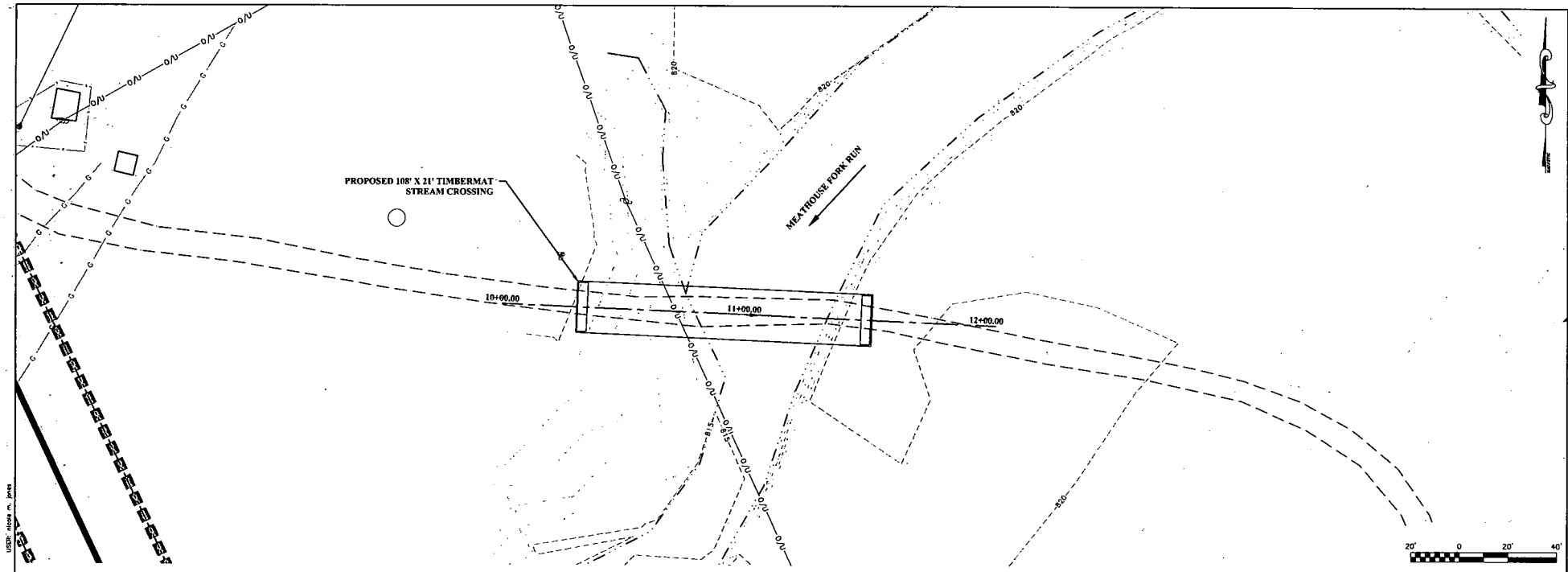
Geom: PROPOSED Flow: Flow Data

River = Meathouse Fork Reach = Meathouse Fork RS = 1150

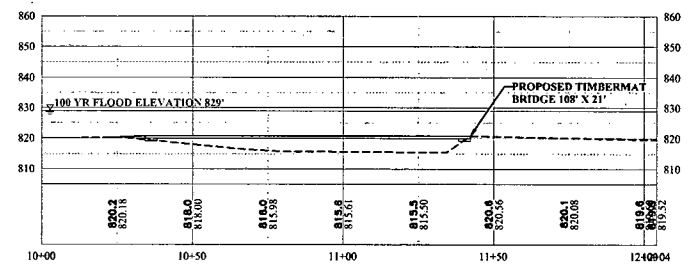


APPENDIX 4

SITE PLANS



Temporary Stream Crossing



LAYOUT No. 100011
 CAD FILE R:\01-00-011 Active - Willard Pipeline\Drawings\Willard Pipeline Crossing.dwg
 PLOT DATE/TIME: 1/13/2014 2:33 PM
 USER: aaron m. jones

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NO.	BY	DATE	DESCRIPTION

SCALE:	DATE:
DRAWN:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

THRASHER

PHASE No.	
CONTRACT No.	
PROJECT No.	

WILLARD PIPELINE
 MEATHOUSE FORK STREAM CROSSING
 PROPOSED TEMPORARY BRIDGE
 PLAN VIEW
 DODDRIDGE COUNTY, WEST VIRGINIA

SHEET No.
1



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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



December 20, 2013

Ms. Leigh Martin
Thrasher Engineering
4150 Belden Village
Canton, Ohio 44718

Re: Antero Resources, Willard Well Pad to New Milton Compressor Site Pipeline Project,
Doddridge County, West Virginia

Dear Ms. Martin:

This responds to your request of December 9, 2013, for information regarding the potential occurrence of federally listed endangered and threatened species and their designated critical habitats. Antero Resources (Antero) proposes to construct the 2.62-mile Willard well pad to New Milton compressor site pipeline project in Doddridge County, West Virginia. These comments are provided pursuant to the Endangered Species Act (ESA, 87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

The U.S. Fish and Wildlife Service (Service) has determined that three federally listed endangered species are known to occur within the proposed project area, and may be affected by the construction and operation of the proposed project. These are the Indiana bat (*Myotis sodalis*), the clubshell mussel (*Pleurobema clava*), and the snuffbox mussel (*Epioblasma triquetra*). Information to avoid impacts to these species is provided below.

Additionally, on October 2, 2013, in the *Federal Register* (78 FR 61045-61080) the Service proposed the northern long eared bat (*Myotis septentrionalis*) for listing under the ESA. If a decision is made to list this species, potential impacts from this project to this species may need to be addressed if this project is not completed by October 2, 2014. We encourage you to begin incorporating conservation measures to protect these species prior to any potential final listing decisions.

Indiana Bat

The project area is within the range of the Indiana bat (*Myotis sodalis*) and may provide summer foraging and roosting habitats, as well as winter habitat, for this endangered mammal. Indiana bats use caves or mine portals for winter hibernation habitat between November 15 and March

31. Indiana bats may use the proposed site for foraging and roosting between April 1 and November 14. Indiana bat foraging habitat is generally defined as riparian, bottomland, or upland forest, as well as old fields or pastures with scattered trees. Roosting and maternity habitats consist primarily of live or dead hardwood trees which have exfoliating bark that provides space for bats to roost between the bark and the bole of the tree. Tree cavities, crevices, splits, or hollow portions of tree boles and limbs also provide roost sites. In West Virginia, the Service considers all forest habitats containing trees greater than or equal to 5 inches in diameter at breast height to be potentially suitable as summer roosting and foraging habitat for the Indiana bat.

Based on radio-telemetry data, the Service presumes that Indiana bats are present in areas within 5 miles of hibernacula, 5 miles of summer capture sites with no known maternity roosts, and 2.5 miles of maternity roosts. The proposed project does not pass through any of these buffer zones.

In your December 9, 2013, correspondence, you stated that Antero will clear all project-related timber when bats are in hibernation (November 15 through March 31) to avoid direct impacts to Indiana bats and that no caves or portals exist within the proposed project boundary. An estimated 21 acres of forest area would be cleared for the project, which would leave approximately 295.53 acres or 67.8 percent of forested habitat within the ¼-mile buffer area after project clearing has been completed. The total number of acres in the buffer area is 436.2. The results of this analysis show that there will be sufficient forested habitat remaining on the landscape post-construction to support Indiana bats.

The Service has concluded that the project is not likely to adversely affect the Indiana bat because Antero has committed that all trees within the proposed project area will be cleared seasonally so that no bats will be killed directly by the removal of trees. In addition, there will be sufficient forested habitat remaining on the landscape post-construction to support Indiana bats.

Freshwater Mussels

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

Ms. Leigh Martin
December 20, 2013

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Appropriate best management practices (BMPs) for erosion and sediment control will be implemented throughout the entire project site to protect waterways against excessive erosion or sedimentation. These BMPs will include, but are not limited to: erosion control blankets along disturbed slopes, trench plugs at the end of any boring, and applicable re-vegetation methods.

The project proposes to cross Meathouse Fork by horizontal directional drill (HDD). This method will allow the pipeline to be placed under the stream without direct affects to the waterway. The HDD method uses bentonite clay in its pressurized drilling that, on occasion, can result in a frac-out that releases bentonite clay into waterways.

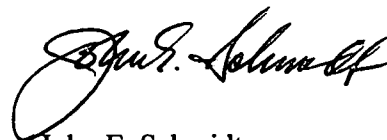
In your December 9, 2013, correspondence, you stated your client's commitment to the following measures that will be followed in the event of a frac-out that could cause the sudden release of bentonite clay substrate into waterways:

1. Agencies will be contacted within 24 hours of the event.
2. Clean up of all spills will begin immediately.
3. Secondary containment measures including silt fence, sand bags, turbidity curtains, water pumps, and other BMPs will be installed.
4. A mussel investigation will promptly begin, as necessary.

In the event of a frac-out, the Service believes that implementation of the measures outlined above coupled with the implemented erosion and sedimentation BMPs will minimize, to the extent practicable, the likelihood of adverse impacts to Meathouse Fork and the clubshell and snuffbox mussels. This office should be notified immediately if any deviations from the submitted plans are anticipated, or if a frac-out occurs during construction of the project.

As a result of this information, the Service has concluded that the project may affect, but is not likely to adversely affect any federally listed endangered and threatened species. No biological assessment or further section 7 consultation under the ESA is required with the Service. Should project plans change or amendments be proposed that we have not considered in your proposed action, or if additional information on listed and proposed species becomes available, or if new species become listed or critical habitat is designated, this determination may be reconsidered. If you have any questions regarding this letter, please contact Liz Stout of my staff at (304) 636-6586, Ext. 15, or elizabeth_stout@fws.gov, or at the letterhead address.

Sincerely,



John E. Schmidt
Field Supervisor



DIVISION OF NATURAL RESOURCES

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

Earl Ray Tomblin
Governor

Frank Jezioro
Director

November 22, 2013

Division of Natural Resources
LICENSE AND RIGHT OF ENTRY

Re: P-13-VI/09-1494

Antero Resources Corporation,
Brett Fletcher
c/o The Thrasher Group, Inc.
Attention: Leigh Martin
4150 Belden Village Street, Suite 101
Canton, Ohio 44718-

Dear Sir or Madam Fletcher:

The Division of Natural Resources hereby grants to you for a term of 10 years, from the date hereof, a License and Right of Entry to construct, replace, cover, repair, operate, maintain, use and remove a sixteen inch (16") steel pipeline (Willard Pipeline) at two (2) separate locations along Meathouse Fork and Sugarcamp Run, New Milton District, Doddridge County, West Virginia, as shown located and highlighted in red on the map attached hereto as Exhibit A - E.

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

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

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

Non-high quality stream:

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

Antero Resources Corporation
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November 22, 2013

- Only ephemeral/intermittent streams that are dry can be trenched.

Bank Stabilization

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

Freshwater Mussels

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

For further assistance, contact the appropriate WVDNR District Fisheries Biologist.
District 1 304-825-6787 District 2 304-822-3551 District 3 304-924-6211
District 4 304-256-6947 District 5 304-675-0871 District 6 304-420-4550

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

Your check in the amount of \$450.00 is now due and payable to the Division of Natural Resources covering the (10) ten-year fee of this agreement. Your agreement will be effective upon receipt of your payment in full.

Sincerely,


Joe T. Scarberry, Supervisor
Office of Land and Streams

JTS:cs

attachment

pc: DNR Fish Biologist
Mr. Mike Zeto, Environmental Enforcement
DNR Conservation Officers



DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
Operations Center
P.O. Box 67
Elkins, West Virginia 26241-3235
Telephone (304) 637-0245
Fax (304) 637-0250

Earl Ray Tomblin
Governor

Frank Jezioro
Director

November 20, 2013

Ms. Leigh A. Martin
Thrasher Group, Inc.
4150 Belden Village, Suite 101
Canton, OH 44718

Dear Ms. Martin:

We have reviewed our files for information on rare, threatened and endangered (RTE) species and sensitive habitats for the area of the proposed Willard Pipeline project in Doddridge County, WV (Project #101-015-0191).

We have no known records of any RTE species or sensitive habitats within the project area. Because Meathouse Fork is an endangered mussel stream, consultation with the US Fish and Wildlife Service will be required prior to boring beneath the stream. The Wildlife Resources Section knows of no surveys that have been conducted in the area for rare species or rare species habitat. Consequently, this response is based on information currently available and should not be considered a comprehensive survey of the area under review.

The information provided above is the product of a database search and retrieval. This information does not satisfy other consultation or permitting requirements for disturbances to the natural resources of the state, and further consultation may be required. Additionally, any concurrence requirements for federally listed species must come from the US Fish and Wildlife Service.

Thank you for your inquiry, and should you have any questions please feel free to contact me at the above number, extension 2048. Enclosed please find an invoice.

Sincerely,

A handwritten signature in black ink, appearing to read "Barbara Sargent".

Barbara Sargent
Environmental Resources Specialist
Wildlife Diversity Unit

enclosure

S:\Monthly\Barb\Invoices\Thrasher1.doc

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 Upon
Oath That the Accompanying Legal Notice
Entitled:

Floodplain Permit
Willard Pipeline
14-115

was published in said paper for *2*

successive weeks beginning with the issue
of *January 28th* 2014 and
ending with the issue of

February 4th 2014 and

that said notice contains *189*

WORD SPACE at *115* cents a word

amounts to the sum of \$ *21.73*

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

\$ *16.29*

and each publication thereafter

\$ *38.02* TOTAL

EDITOR

Virginia Nicholson

SWORN TO AND SUBSCRIBED

BEFORE ME THIS THE *6th* DAY

OF *February* 2014

NOTARY PUBLIC

Laura J Adams

LEGAL ADVERTISEMENT:
Doddridge County
Floodplain Permit Application
Please take notice that on the 23rd day of January,
2014 ANTERO RESOURCES APPALACHIAN
CORPORATION - WILLARD PIPELINE #14-115 filed
an application for a Floodplain Permit to develop land
located at or about: SURFACE OWNERS: NORMA C
BOYER NEW MILTON DISTRICT, D/B:220/70, T/M:
6-8-5.
The Application is on file with the Clerk of the County
Court and may be inspected or copied during regular
business hours. Any interested persons who desire to
comment shall present the same in writing by February
12, 2014.

Delivered to the:
Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A. Rogers, Doddridge County Clerk
Dan Wellings, Doddridge County Flood Plain Manager
1-28-2xb

