Doddridge County, WV Floodplain Management

This permit gives approval for the development/project listed that impacts the FEMA-designated floodplain and/or floodway of Doddridge County, WV, pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance. ***This permit must be posted at the site of work as to be clearly visible and must remain posted during entirety of development.***

Permit #: 24-665

Date Approved: October 7, 2024 **Expires: October 7, 2025**

Issued to: DTM Stonewall Gas Gathering, LLC **POC: John Dzurko**

Company Address: 1000 Noble Energy Drive Canonsburg, PA 15317

Project Address: 3378 Big Isaac Road Salem, WV 26426

Firm: 54017C0260C **Lat/Long: 39.202606, -80.555774**

Purpose of development: Compressor Station

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

George C. Eidel

Date: October 7, 2024

For additional information regarding this permit, please contact Doddridge County Floodplain Manager at 304.873.1343, or via email at doddridgecountyfpm@gmail.com
101Church Street Suite102; West Union, WV 26456

421CKPS0000074210000887

DT Midstream

Stonewall Gas Gathering, LLC
500 Woodward Ave, Suite 2900
Detroit, MI 48226

PAGE: 1 of 1

DATE: August 30, 2024
CHECK NUMBER: 4210000887
AMOUNT PAID: $25,000.00

Inquiries To:
PAYMENT_ANALYST@DTMIDSTREAM.COM

24251000042100002300030700020

00023 64482 CKS NE 24243 - 4210000887 NNNNNNNNNNN 2425100006210 XIDDD2 C
DODDRIDGE COUNTY COMMISSION
99 COURT STREET
WEST UNION WV 26456

Date	Invoice Number	Description	Gross Amount	Discount	Net Amount
	8292024		$25,000.00	$0.00	$25,000.00
		TOTALS	**$25,000.00**	**$0.00**	**$25,000.00**

SEP 5 '24 PM2:11

FP#24-665

PLEASE DETACH BEFORE DEPOSITING CHECK

DT Midstream

Stonewall Gas Gathering, LLC
500 Woodward Ave, Suite 2900
Detroit, MI 48226

CHECK NUMBER 4210000887

9-32
720

August 30, 2024

PAY TO THE ORDER OF: DODDRIDGE COUNTY COMMISSION
99 COURT STREET
WEST UNION, WV 26456

CHECK AMOUNT
$25,000.00

EXACTLY *********25,000 DOLLARS AND 00 CENTS

Security features included. Details on back.

JPMorgan Chase Bank, N.A.
Detroit, MI

Jeff A Jewell
Authorized Signature

⑈4210000887⑈ ⑆072000326⑆ 100049490⑈

COPY COPY COPY COPY COPY

FLOODPLAIN PERMIT #24-665

DT Midstream Stonewall Gas Gathering, LLC, 3378 Big Isaac Rd, Compressor Station 39.202606, -80.555774

TASK	COMPLETE (DATE)	NOTES
CHECK RECEIVED	9/5/2024	
US ARMY CORP. ENGINEERS (USACE)		No issues see CEC Notes
US FISH & WILDLIFE SERVICES (USFWS)		No issues
WV DEPT. NATURAL RESOURCES (WVDNR)		
WV DEPT. ENVIROMENTAL PROTECTION (WVDEP)		
STATE HISTORIC & PRESERVATION OFFICE (SHPO)		
OFFICE of LAND & STREAM (OLS)		
WVDOH		
Elevation Certificate		
DATE OF COMMISSION READING	9/17/2024	
DATE AVAILABLE TO BE GRANTED	10/7/2024	
PERMIT GRANTED		
COMPLETE		

7022 1670 0003 1400 9608

7022 1670 0003 1400 9615

7022 1670 0003 1400 9622

7022 1670 0003 1400 9639

7022 1670 0003 1400 9646

7022 1670 0003 1400 9653

Doddridge County Floodplain Permits

(Week of September 9, 2024)

Please take notice that on the **(5th)** of **(September), 2024, (DT Midstream Stonewall Gas Gathering, LLC)** filed an application for a Floodplain Permit **(#24-665)** to develop land located at or about **(3378 Big Isaac Road); Coordinates: 39.202606, -80.555774**. The Application is on file with the Floodplain Manager of the County and may be inspected or copied during regular business hours in accordance with WV Code Chapter 29B Freedom of Information, Article 1 Public Records and county policy and procedures. Any interested persons who desire to comment shall present the same in writing by **(October 7, 2024)** (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Floodplain Manager of the County at 99 Court Street, Suite 128, West Union, WV 26456. **This project is for the Meathouse Compressor Station**

GEORGE C. EIDEL, CFM

Doddridge County Floodplain Manager

Permit# 24-665
Meathouse Fork
Project Name: Compressor Station
DMT Stonewall
Permittees Name: Gas Gathering
DT Midstream Co.
Floodplain Office Use Only

Doddridge County, WV

SEP 5 '24 PM2:02

Floodplain Development Permit Application

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

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

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. The permit will expire if no work is commenced within six months of issuance.
5. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal requirements.
6. Applicant hereby gives consent to the Floodplain Administrator/Manager or his/her representative to make inspections to verify compliance.
7. I THE APPLICANT CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.

APPLICANT'S SIGNATURE _____

DATE 8/13/2024

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Applicant Information:

Please provide all pertinent data.

Applicant Information		
Responsible Party Name: DTM Stonewall Gas Gathering LLC		
Mailing Address: 1000 Noble Energy Dr, Suite 500		
City: Canonsburg	**State:** PA	**Zip:** 15317
Point of Contact (POC): John Dzurko		
POC Title: Principal Environmental Engineer		
POC Primary Phone: 412-721-7429		
POC Primary Email: john.dzurko@dtmidstream.com		
FEIN: 813886447	**Corporate DUNS:**	
Website: www.dtmidstream.com		
Local Mailing Address: 1000 Noble Energy Dr, Suite 500		
City: Canonsburg	**State:** PA	**Zip:** 15317
Local Project Manager (PM): John Dzurko		
Local PM Primary Phone: 412-721-7429		
Local PM Secondary Phone: n/a		
Local PM Primary Email: john.dzurko@dtmidstream.com		
Person Filing Application: John Dzurko		
Applicant Title: Principal Environmental Engineer		
Applicant Primary Phone: 412-721-7429		
Applicant Secondary Phone: n/a		
Applicant Primary Email: john.dzurko@dtmidstream.com		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Project Narrative:

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

Project Narrative:
The project includes the development of a natural gas compressor facility, associated natural gas pipelines, and an interconnect at the site.
The site improvements include excavation and fill to support a permanent gravel pad and driveway, existing county roadway and intersection widening,
removal of an existing stream crossing culvert, installation of a new stream crossing culvert, and installation of compressor station and pipeline equipment.
The approximate anticipated project construction start date is January 2025 and expected end date is January 2026.
Please refer to the Hydrologic & Hydraulic Analysis Report included with this application for additional project information.

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Proposed Development:

Please check all elements of the proposed project that apply.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

ACTIVITY

- ☐ New Structure
- ☐ Addition
- ☐ Alteration
- ☐ Relocation
- ☐ Demolition
- ☐ Manufact ured/Mobil Home

STRUCTURAL TYPE

- ☐ Residential (1 – 4 Family)
- ☐ Residential (more than 4 Family)
- ☐ Non-residential (floodproofing)
- ☐ Combined Use (res. & com.)
- Replacement

B. OTHER DEVELOPLMENT ACTIVITIES:

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

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 1 of 9

Site/Property Information:		
Legal Description:		
Big Isaac 30 AC		
Physical Address/911 Address: Route 25 / 3378 Big Isaac Rd, Salem, WV 26426		
Decimal Latitude/Longitude: N 39.202802, W 80.556706		
DMS Latitude/Longitude: N 39d 12' 10.09", W 80d 33' 24.14"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0035-0000
Land Book Description:		
Book WB41, Pg. 619		
Deed Book Reference:		
Tax Map Reference:		
0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: *(to be completed by Floodplain Manager or designee)*			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long): SEE Attached Maps		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ Yes ☒ No		**Is the development in the floodplain?** ☒ Yes ☐ No **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 2 of 9

Site/Property Information:		
Legal Description: Big Isaac 1 AC		
Physical Address/911 Address: 3 Salem Rt 48 Dr		
Decimal Latitude/Longitude: N 39.201674, W 80.555256		
DMS Latitude/Longitude: N 39d 12' 6.03", W 80d 33' 18.92"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0031-0000
Land Book Description: Book 281, Pg. 665		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 3 of 9

Site/Property Information:		
Legal Description: Meathouse 89.74 AC		
Physical Address/911 Address: 3 Salem Rt 25 Rd / 3532 Big Isaac Rd, Salem, WV 26426		
Decimal Latitude/Longitude: N 39.201224, W 80.553347		
DMS Latitude/Longitude: N 39d 12' 4.41", W 80d 33' 12.05"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0036-0000
Land Book Description: Book 281, Pg. 665		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 4 of 9

Site/Property Information:		
Legal Description: 5.36 AC Meathouse		
Physical Address/911 Address: 3 Salem Rt 25 Rd / 3532 Big Isaac Rd, Salem, WV 26426		
Decimal Latitude/Longitude: N 39.200791, W 80.550220		
DMS Latitude/Longitude: N 39d 12' 2.85", W 80d 33' 0.79"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0037-0007
Land Book Description: Book 470, Pg. 295		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 5 of 9

Site/Property Information:		
Legal Description: Big Isaac 145 x 145 x 140 x 170		
Physical Address/911 Address: 48 Salem Rd		
Decimal Latitude/Longitude: N 39.204151, W 80.555671		
DMS Latitude/Longitude: N 39d 12' 14.94", W 80d 33' 20.42"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0029-0000
Land Book Description: Book 281, Pg. 665		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 6 of 9

Site/Property Information:		
Legal Description: Isaac Camp 1.4 AC		
Physical Address/911 Address: Route 48		
Decimal Latitude/Longitude: N 39.204496, W 80.555793		
DMS Latitude/Longitude: N 39d 12' 16.19", W 80d 33' 20.85"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0030-0000
Land Book Description: Book 262, Pg. 505		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
101 - Residential 1 Family		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 7 of 9

Site/Property Information:		
Legal Description: Little Isaac Creek; 22.3 AC		
Physical Address/911 Address: 3 Salem Rt 48 Rd / 3076 Big Isaac Rd, Salem, WV 26426		
Decimal Latitude/Longitude: N 39.205407, W 80.556494		
DMS Latitude/Longitude: N 39d 12' 19.47", W 80d 33' 23.38"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0025-0000
Land Book Description: Book 0153, Pg. 0503		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 8 of 9

Site/Property Information:		
Legal Description: Meathouse 22 AC; 1/4 of 1/8		
Physical Address/911 Address: Route 48		
Decimal Latitude/Longitude: N 39.205296, W 80.553327		
DMS Latitude/Longitude: N 39d 12' 19.07", W 80d 33' 11.98"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0032-0000
Land Book Description: Book WB39, Pg. 687; Book WB23, Pg. 602; Book 527, Pg. 179; Book 305,		
Pg. 720; Book MB15, Pg. 178; Book 361, Pg. 299; Book WB40, Pg. 679		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
113 - Inactive Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Development Site/Property Information:

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

Property Designation: 9 of 9

Site/Property Information:		
Legal Description: Isaac Camp 9.27 AC		
Physical Address/911 Address: 3 Salem Rt 48 Rd		
Decimal Latitude/Longitude: N 39.206705, W 80.553041		
DMS Latitude/Longitude: N 39d 12' 24.14", W 80d 33' 10.95"		
District: Greenbrier	**Map:** 0011	**Parcel:** 09-04-0011-0026-0000
Land Book Description: Book 443, Pg. 206		
Deed Book Reference:		
Tax Map Reference: 0011		
Existing Buildings/Use of Property:		
112 - Active Farm		

Floodplain Location Data: ***(to be completed by Floodplain Manager or designee)***			
Community:	**Number:**	**Panel:**	**Suffix:**
Location (Lat/Long):		**Approximate Elevation:** **Estimated BFE:**	
Is the development in the floodway? ☐ **Yes** ☐ **No**		**Is the development in the floodplain?** ☐ **Yes** ☐ **No** **Zone:** _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 1 of 9

Property Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 3378 Big Isaac Rd			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 118 Utica Sreet, Ithaca, NY 14850	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Surface Rights Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 3378 Big Isaac Rd			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 118 Utica Sreet, Ithaca, NY 14850	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Mineral Rights Owner Data: *(As Applicable)*			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 2 **of** 9

Property Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 3 Salem Rt 48 Dr			
City: Jane Lew	**State:** WV	**Zip:** 26378	
Mailing Address: 118 Utica Street	**City:** Ithaca	**State:** NY	**Zip:** 14850
Primary Phone:			
Primary Email:			

Surface Rights Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 3 Salem Rt 48 Dr			
City: Jane Lew	**State:** WV	**Zip:** 26378	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Mineral Rights Owner Data: ***(As Applicable)***			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 3 **of** 9

Property Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 3 Salem Rt 25 Rd			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 118 Utica Street	**City:** Ithaca	**State:** NY	**Zip:** 14850
Primary Phone:			
Primary Email:			

Surface Rights Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 3 Salem Rt 25 Rd			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 118 Utica Street	**City:** Ithaca	**State:** NY	**Zip:** 14850
Primary Phone:			
Primary Email:			

Mineral Rights Owner Data: ***(As Applicable)***			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 4 **of** 9

Property Owner Data:			
Name of Primary Owner (PO): Michael Herrick			
Physical Address: None listed			
City:	**State:**	**Zip:**	
Mailing Address: 3764 Big Isaac Rd	**City:** Salem	**State:** WV	**Zip:** 26426
Primary Phone:			
Primary Email:			

Surface Rights Owner Data:			
Name of Primary Owner (PO): Michael Herrick			
Physical Address: None listed			
City:	**State:**	**Zip:**	
Mailing Address: 3764 Big Isaac Rd	**City:** Salem	**State:** WV	**Zip:** 26426
Primary Phone:			
Primary Email:			

Mineral Rights Owner Data: *(As Applicable)*			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 5 **of** 9

Property Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 48 Salem Rd			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 118 Utica Street	**City:** Ithaca	**State:** NY	**Zip:** 14850
Primary Phone:			
Primary Email:			

Surface Rights Owner Data:			
Name of Primary Owner (PO): Jeffrey J. Ford			
Physical Address: 48 Salem Rd			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 118 Utica Street	**City:** Ithaca	**State:** NY	**Zip:** 14850
Primary Phone:			
Primary Email:			

Mineral Rights Owner Data: ***(As Applicable)***			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 6 **of** 9

Property Owner Data:		
Name of Primary Owner (PO): Warren E. and Judy E. Bee		
Physical Address: Route 48		
City: Salem	**State:** WV	**Zip:** 26426
Mailing Address: 3076 Big Isaac Rd	**City:** Salem	**State:** WV **Zip:** 26426
Primary Phone:		
Primary Email:		

Surface Rights Owner Data:		
Name of Primary Owner (PO): Jeffrey J. Ford		
Physical Address: 48 Salem Rd		
City: Salem	**State:** WV	**Zip:** 26426
Mailing Address: 3076 Big Isaac Rd	**City:** Salem	**State:** WV **Zip:** 26426
Primary Phone:		
Primary Email:		

Mineral Rights Owner Data: *(As Applicable)*		
Name of Primary Owner (PO):		
Physical Address:		
City:	**State:**	**Zip:**
Mailing Address:	**City:**	**State:** **Zip:**
Primary Phone:		
Primary Email:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 7 **of** 9

Property Owner Data:		
Name of Primary Owner (PO): Warren E. and Judy E. Bee		
Physical Address: 3 Salem Rt 48 Rd		
City: Salem	**State:** WV	**Zip:** 26426
Mailing Address: 3076 Big Isaac Rd	**City:** Salem	**State:** WV **Zip:** 26426
Primary Phone:		
Primary Email:		

Surface Rights Owner Data:		
Name of Primary Owner (PO): Jeffrey J. Ford		
Physical Address: 3 Salem Rt 48 Rd		
City: Salem	**State:** WV	**Zip:** 26426
Mailing Address: 3076 Big Isaac Rd	**City:** Salem	**State:** WV **Zip:** 26426
Primary Phone:		
Primary Email:		

Mineral Rights Owner Data: ***(As Applicable)***		
Name of Primary Owner (PO):		
Physical Address:		
City:	**State:**	**Zip:**
Mailing Address:	**City:**	**State:** **Zip:**
Primary Phone:		
Primary Email:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 8 **of** 9

Property Owner Data:			
Name of Primary Owner (PO): David Nicholson			
Physical Address: Route 48			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 10837 Good Hope Pike	**City:** Jane Lew	**State:** WV	**Zip:** 26378
Primary Phone:			
Primary Email:			

Surface Rights Owner Data:			
Name of Primary Owner (PO): David Nicholson			
Physical Address: Route 48			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 10837 Good Hope Pike	**City:** Jane Lew	**State:** WV	**Zip:** 26378
Primary Phone:			
Primary Email:			

Mineral Rights Owner Data: ***(As Applicable)***			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Property Owner Data:

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

Property Designation: 9 **of** 9

Property Owner Data:		
Name of Primary Owner (PO): Roy E. & Debra D. Morgan		
Physical Address: 3 Salem Rt 48 Rd		
City: Salem	**State:** WV	**Zip:** 26426
Mailing Address: 77 Monas Way	**City:** Salem	**State:** WV **Zip:** 26426
Primary Phone:		
Primary Email:		

Surface Rights Owner Data:		
Name of Primary Owner (PO): David Nicholson		
Physical Address: 3 Salem Rt 48 Rd		
City: Salem	**State:** WV	**Zip:** 26426
Mailing Address: 77 Monas Way	**City:** Salem	**State:** WV **Zip:** 26426
Primary Phone:		
Primary Email:		

Mineral Rights Owner Data: ***(As Applicable)***		
Name of Primary Owner (PO):		
Physical Address:		
City:	**State:**	**Zip:**
Mailing Address:	**City:**	**State:** **Zip:**
Primary Phone:		
Primary Email:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Contractor Data:

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

Property Designation: ____ of ____

Contractor/Sub-Contractor (C/SC) Information:		
C/SC Company Name:		
C/SC WV License Number:		
C/SC FEIN:	**C/SC DUNS:**	
Local C/SC Point of Contact (POC):		
Local C/SC POC Title:		
C/SC Mailing Address:		
City:	**State:**	**Zip-Code:**
Local C/SC Office Phone:		
Local C/SC POC Phone:		
Local C/SC POC E-Mail:		

Engineer Firm Information:		
Engineer Firm Name: Civil & Environmental Consultants, Inc.		
Engineer WV License Number: 24442		
Engineer Firm FEIN: 25-1599565	**Engineer Firm DUNS:** 36-160-9878	
Engineer Firm Primary Point of Contact (POC): Timothy G. Johnston, P.E.		
Engineer Firm Primary POC Title: Project Manager		
Engineer Firm Mailing Address: 700 Cherrington Parkway		
City: Moon Township	**State:** PA	**Zip-Code:** 15108
Engineer Firm Office Phone: 412-429-2324		
Engineer Firm Primary POC Phone: 412-489-0203		
Engineer Firm Primary POC E-Mail: tjohnston@cecinc.com		

Adjacent and/or Affected Landowners Data

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

Adjacent Property Owner Data: Upstream			
Name of Primary Owner (PO): Bryan E. & Ronda R. Ash			
Physical Address: 2 Salem Rt 48/1			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 743 Piggin Run	**City:** West Union	**State:** WV	**Zip:** 26456
Primary Phone:			
Primary Email:			

Adjacent Property Owner Data: Upstream			
Name of Primary Owner (PO): Bryan E. & Ronda R. Ash			
Physical Address: 2 Salem Rt 48/1			
City: Salem	**State:** WV	**Zip:** 26426	
Mailing Address: 743 Piggin Run	**City:** West Union	**State:** WV	**Zip:** 26456
Primary Phone:			
Primary Email:			

Adjacent Property Owner Data: Downstream			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Adjacent Property Owner Data: Downstream			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Site Plan

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

A SITE PLAN MUST CONTAIN THE FOLLOWING INFORMATION:

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

Applicant

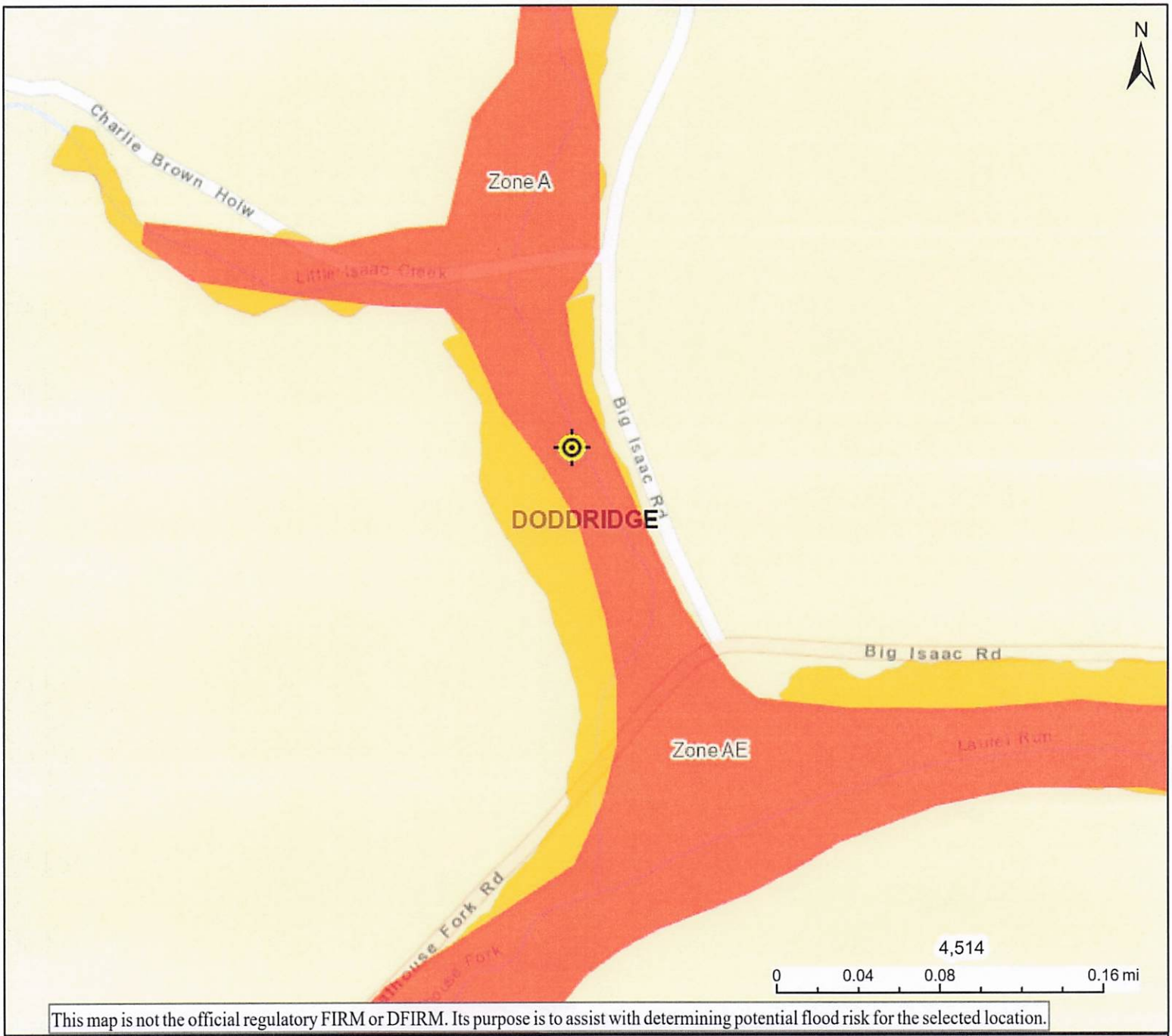
Please read print name, sign and date below:

- I certify that I am authorized to submit this application for the primary project developer.
- I certify that the information included in this application is to the best of my knowledge true and complete.
- I certify that all required Federal, State, and local permits required by law and/or ordinance for the above described development of this project have will be properly attained, are current and valid, and must be presented prior to a Doddridge County Floodplain Permit being issued.
- I understand that if in the course of the development project additional permits become required that were not needed during the initial proposal, the primary developer must notify the Doddridge County Floodplain Manager within 48 hours of such need, and that a "Stop Work" order may be issued for all project work directly impacting the floodplain or floodway, until such time the required additional permits are acquired.
- I understand that once the floodplain permit is submitted, the application will be entered into official public record at the next regularly scheduled Doddridge County Commission meeting after the date of submittal.
- I understand that from the date of submittal of the fully completed permit application, the Doddridge County Floodplain Manager has ninety (90) days to make a determination to either grant or deny said permit application. During this approval period, the Doddridge County Floodplain Manager may, at his or her discretion, conduct a review and/or additional study of provided documentation by means of an independent engineering firm. All costs associated with said review and/or study must be reimbursed to the County before issuance of approved permit.
- I understand that during the approval period, the Doddridge County Floodplain Manager of designee may at his or her discretion conduct site visits and document conditions of proposed development pursuant to the permit application.
- I understand that once the Floodplain Permit is granted, the permit will be entered into official public record. Appeals to the permit may be made no later than twenty (20) days after said issuance. If a valid appeal is submitted, as determined by the Doddridge County Floodplain Manager, a "Stop Work" order will be issued for all project development directly involving the floodplain or floodway. A public hearing by the Doddridge County Appeals Board will be scheduled no less than ten (10) days after the next regularly scheduled Doddridge County Commission meeting.
- I understand that all decisions of the Doddridge County Appeals Board shall be final.
- **I understand issuance of a Floodplain Permit authorizes me to proceed with construction as proposed.**
- In signing this application, the primary developer hereby grants the Doddridge County Floodplain Manager or designee the right to enter onto the above---described location to inspect the development work proposed, in progress, and/or completed.
- I understand that if I do not follow exactly the site---plan submitted and approved by this permit that a "Stop Work" order may be issued by the Doddridge County Floodplain Manager and that I must stop all construction immediately until discrepancies of actual work vs. proposed work is resolved.

Applicant Signature: _____ Date: 8/28/2024

Applicant Printed Name: John Dzurko

Compressor Station Big Isaac



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

HIGH RISK

Regulatory Floodway	
Zone AE	1-Percent-Annual-Chance Flood Hazard Area **With Base Flood Elevation** (BFE)
Zone A	1-Percent-Annual-Chance Flood Hazard Area **Without BFE** (may have Advisory Flood Heights)
Advisory	1-Percent-Annual-Chance Future Conditions (High Risk Advisory Flood Zones)

Download the Full Legend for all flood tool symbols
https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf

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. Refer to the official Flood Insurance Study (FIS) for detailed flood elevation data in flood profiles and data tables. WV Flood Tool (*https://www.MapWV.gov/flood*) is supported by FEMA, WV NFIP Office, and WV GIS Technical Center.

Flood Info Location

Map created on 9/4/2024

User Notes Awaiting CLOMR-F

Flood Hazard Area	Location is **WITHIN** the FEMA 100-year floodplain.
Flood Zone	AE
Stream	Big Isaac Creek
Watershed (HUC8)	Little Musringum-Middle Island (5030201)
Flood Height	Flood Height 2 948.0 ft (Source: BFE - Non-Restudy) NAV
Water Depth	About 4.7 ft (Source: HEC-RAS)
Elevation	943.2 ft (Source: FEMA 2018-20) (NAVD88)
Community & ID	Doddridge County (ID: 540024)
FEMA Map & Date	54017C0260C; Effective Date: 10/4/2011
Location (lat, long)	(39.202606, -80.555774) (WGS84)
Parcel ID	09-04-0011-0035-0000
E-911 Address	

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway
Moon Township, Pennsylvania 15108
(412) 429-2324 Toll Free (800) 365-2324
Fax (412) 429-2114

TO: **Doddridge County Office of Emergency Management**
99 Court Street, Suite 128
West Union, WV 26456

LETTER OF TRANSMITTAL

DATE: **9/4/24** JOB NO.: **342-931**
ATTENTION: **Mr. George Eidel, C.F.M.**
RE: **Floodplain Development Permit Application - Meathouse Fork Compressor Station (DTM Stonewall Gas Gathering, LLC)**

WE ARE SENDING YOU									
	X	ATTACHED		SEPARATE COVER	VIA	**Fed-Ex 3Day / Electronic**	THE FOLLOWING ITEMS:		
		SHOP DWGS		PRINTS	X	PLANS		SAMPLES		SPECIFICATIONS
		COPY OF LETTER				CHANGE ORDER			

COPIES	DATE	NUMBER	DESCRIPTION
1	8/29/24		Floodplain Development Permit Application (check fee being mailed separately)
1	8/29/24		Hydrologic & Hydraulic Analysis Report
1	7/31/24		Copy of FEMA CLOMR-F Submission Package

WE ARE SENDING YOU						
	x	FOR APPROVAL		APPROVAL AS SUBMITTED		RESUBMIT ___ COPIES FOR APPROVAL
	x	FOR YOUR USE		APPROVED AS NOTED		SUBMIT ___ COPIES FOR DISTRIBUTION
		AS REQUESTED		RETURNED FOR CORRECTIONS		RETURN ___ PRINTS
	x	FOR REVIEW AND COMMENT		FOR EXECUTION		
		FOR BIDS DUE:				PRINTS RETURNED AFTER LOAN TO US

REMARKS

Please find enclosed the Doddridge County Floodplain Development Permit Application submission package associated with the Meathouse Fork Compressor Station Project located near the intersection of Big Isaac Road (C.R. 48) and Little Isaac Run (C.R. 48/1) in Doddridge County, West Virginia. The permit application fee check is being sent out separately by DTM. If you have any questions, please feel free to contact me any time at (412) 429-2324.

COPY TO: File

SIGNED: Timothy G. Johnston, P.E. (Project Manager)

George Eidel

From: Central Communications <mapping@centrale911.com>
Sent: Thursday, September 5, 2024 3:16 PM
To: Charles M Pitzer
Cc: George Eidel
Subject: Re: Doddridge County, WV - Address request for a New Facility
Attachments: Address Verification Letter For Stonewall Gas Gathering, LLC.doc

Good afternoon,

I have added the address verification letter as well as a screenshot of the location to this email. Please let me know if there are any issues.

Thank you,

--
Evan Wells
Central Communications
Doddridge/Ritchie 911
Mapping & Addressing
304-659-2979

On 9/5/2024 12:45, Charles M Pitzer wrote:

> Good afternoon.
>
> I am requesting an address for the following location where Stonewall Gas Gathering, LLC is planning to construct a new compressor/facility building off of Charlie Brown Hollow, Salem WV (48/1). The driveway entrance is located at coordinate 39.2035010 -80.5571382 and the building will be sitting near coordinate 39.2028035 -80.5570960.
>
> Please let me know if you need additional information.
>
> Thank you,
>
> **Mike Pitzer**
> **DT Midstream | Land Operations Supervisor**
> 1100 Frederick Lane, Morgantown, WV 26508
> [M] 304.290.7437
> www.dtmidstream.com
> DT Midstream

George Eidel

From: Huchel, Grant <ghuchel@cecinc.com>
Sent: Friday, September 6, 2024 12:58 PM
To: George Eidel
Subject: RE: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Hi George,

Can you confirm that you received the Floodplain Development Permit Application for the DTM Meathouse Fork Compressor Station project? I received a notification this was delivered yesterday afternoon (9/5), so just wanted to double check.

Thanks again for your help and coordination!

Grant R. Huchel, E.I.T. | *Assistant Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.249.2344 **office** 412.429.2324 **mobile** 412.965.7790
www.cecinc.com

From: George Eidel <geidel@doddridgecountywv.gov>
Sent: Monday, August 19, 2024 8:12 AM
To: Huchel, Grant <ghuchel@cecinc.com>
Subject: RE: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Grant,

Sorry for not getting to this sooner, yes, we need those owners that are only in the floodplain.

From: Huchel, Grant <ghuchel@cecinc.com>
Sent: Monday, August 12, 2024 3:20 PM
To: geidel@doddridgecountywv.gov
Subject: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Hi George,

I am working on a project that is submitting a Floodplain Development Permit Application to Doddridge County.

On page 8 of the application, are all adjacent property owners required to be listed, or only adjacent property owners which may be impacted by the proposed development? (i.e. the latter meaning that if there are adjacent property owners outside of our floodplain study, do we just omit those on the form?)

Below is a screenshot from Pg 8 of the application:

Adjacent and/or Affected Landowners Data

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

Adjacent Property Owner Data: Upstream			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Adjacent Property Owner Data: Upstream			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Thank you,

Grant R. Huchel, E.I.T. | *Assistant Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.249.2344 **office** 412.429.2324 **mobile** 412.965.7790
www.cecinc.com

Doddridge County Office of
Emergency Management/Floodplain Management
99 Court Street, Suite 128
304-873-1343
geidel@doddridgecountywv.gov

September 30, 2024

Dear Sir or Ma'am,

You are receiving this letter because you have been identified as a land surface and/or mineral rights owner for property or adjacent property related to the proposed development/project identified by the following page.

No action is required of you. This letter is simply to inform you of the proposed development.

If you would like to comment on this proposed project, or would like additional information, you may contact the Doddridge County Floodplain Manager at the above address.

Respectfully yours,

George Eidel, CFM, OEM Director/Floodplain Manager

George Eidel

From: Huchel, Grant <ghuchel@cecinc.com>
Sent: Friday, September 6, 2024 3:08 PM
To: George Eidel
Subject: RE: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Great, thank you for confirming! Have a nice weekend.

Grant R. Huchel, E.I.T. | *Assistant Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.249.2344 **office** 412.429.2324 **mobile** 412.965.7790
www.cecinc.com

From: George Eidel <geidel@doddridgecountywv.gov>
Sent: Friday, September 6, 2024 1:30 PM
To: Huchel, Grant <ghuchel@cecinc.com>
Subject: RE: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Yes, I just got done reviewing it, it is now going through the process.

From: Huchel, Grant <ghuchel@cecinc.com>
Sent: Friday, September 6, 2024 12:58 PM
To: George Eidel <geidel@doddridgecountywv.gov>
Subject: RE: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Hi George,

Can you confirm that you received the Floodplain Development Permit Application for the DTM Meathouse Fork Compressor Station project? I received a notification this was delivered yesterday afternoon (9/5), so just wanted to double check.

Thanks again for your help and coordination!

Grant R. Huchel, E.I.T. | *Assistant Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.249.2344 **office** 412.429.2324 **mobile** 412.965.7790
www.cecinc.com

From: George Eidel <geidel@doddridgecountywv.gov>
Sent: Monday, August 19, 2024 8:12 AM
To: Huchel, Grant <ghuchel@cecinc.com>
Subject: RE: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Grant,

Sorry for not getting to this sooner, yes, we need those owners that are only in the floodplain.

From: Huchel, Grant <ghuchel@cecinc.com>
Sent: Monday, August 12, 2024 3:20 PM
To: geidel@doddridgecountywv.gov
Subject: Doddridge Cty Floodplain Development Permit App - Adjacent Property Owner Info

Hi George,

I am working on a project that is submitting a Floodplain Development Permit Application to Doddridge County.

On page 8 of the application, are all adjacent property owners required to be listed, or only adjacent property owners which may be impacted by the proposed development? (i.e. the latter meaning that if there are adjacent property owners outside of our floodplain study, do we just omit those on the form?)

Below is a screenshot from Pg 8 of the application:

Adjacent and/or Affected Landowners Data

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

Adjacent Property Owner Data: Upstream			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Adjacent Property Owner Data: Upstream			
Name of Primary Owner (PO):			
Physical Address:			
City:	**State:**	**Zip:**	
Mailing Address:	**City:**	**State:**	**Zip:**
Primary Phone:			
Primary Email:			

Thank you,

Grant R. Huchel, E.I.T. | *Assistant Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.249.2344 **office** 412.429.2324 **mobile** 412.965.7790
www.cecinc.com

Gmail **George Eidel <doddridgecountyfpm@gmail.com>**

Permit (24-665)

1 message

Bryan Ash <beash59@gmail.com> Mon, Sep 30, 2024 at 12:19 PM
To: doddridgecountyfpm@gmail.com

Mr. Eidel,
My name is Bryan Ash. I am responding to the letter I received from your office concerning the above referenced permit. I own approximately 296 acres located at Little Issac Fork, aka Charlie Brown Hollow. The entire drainage of all of the 296 acres drains through the area contained in this permit.
I am extremely concerned about the effects this project will have on my property which is directly upstream of the project site. I tried to call your office. There was no answer, no way to leave a message. Please contact me so we can have a discussion about this project. I need information about the impacts on the drainage through this project. My contact information is;

Bryan Ash
Cell 304-641-2640
743 Piggin Run
West Union, WV 26456

Contact via cell phone is preferred.

Sincerely,
Bryan Ash

Sent from my iPhone

The Doddridge Independent, LLC
187 Main Street
West Union, WV 26456
+13048448040

Invoice

BILL TO
George Eidel
Doddridge County OES/Floodplain
99 Court Street, Suite 128
West Union, WV 26456-2095 USA

INVOICE #	DATE	TOTAL DUE	DUE DATE	TERMS	ENCLOSED
6519	09/23/2024	$290.68	10/23/2024	Net 30	

DATE	ACCOUNT SUMMARY	AMOUNT
09/12/2024	Balance Forward	182.00
	Other payments and credits after 09/12/2024 through 09/22/2024	0.00
09/23/2024	Other invoices from this date	0.00
	New charges (details below)	108.68
	Total Amount Due	290.68

ACTIVITY	QTY	RATE	AMOUNT
Legal Ad Class 2 Please take notice that on the (6th) of (September), 2024, (Doddridge County Park) filed an application for a Floodplain Permit (#24-666} to develop land located at or about (71 Outlet Road); Coordinates:39.289489, -80.735253. This project is for the demolition and construction of a new park pavilion.	1	54.34	54.34
Legal Ad Class 2 Please take notice that on the (5th) of (September), 2024, (DT Midstream Stonewall Gas Gathering, LLC) filed an application for a Floodplain Permit (#24-665) to develop land located at or about (3378 Big Isaac Road); Coordinates: 39.202606, -80.555774. This project is for the Meathouse Compressor Station	1	54.34	54.34

Thank you for your business...

020-718-220

SUBTOTAL	108.68
TAX	0.00
TOTAL	108.68
TOTAL OF NEW CHARGES	108.68
BALANCE DUE	**$290.68**

The Doddridge Independent

The Doddridge Independent
PUBLISHER'S CERTIFICATE

I, Michael D. Zorn, Publisher of The Doddridge Independent, A newspaper of general circulation published in the town of West Union, Doddridge County, West Virginia, do hereby certify that:

Please take notice that on the (5th) of (September), 2024, (DT Midstream Stonewall Gas Gathering, LLC) filed an application for a Floodplain Permit (#24-665) to develop land located at or about (3378 Big Isaac Road); Coordinates: 39.202606, -80.555774. The Application is on file with the Floodplain Manager of the County and may be inspected or copied during regular business hours in accordance with WV Code Chapter 29B Freedom of Information, Article 1 Public Records and county policy and procedures. Any interested persons who

was published in The Doddridge Independent
2 times commencing on Friday, September 13, 2024 and
Ending on Friday, September 20, 2024 at the request of:

George Eidel, Doddridge County Floodplain Manager& Doddridge County Commission

Given under my hand this Monday, September 23, 2024

The publisher's fee for said publication is:

$ 31.05 1st Run/$ 23.29 Subsequent Runs
This Legal Ad Total: $ 54.34

Michael D. Zorn
Publisher of The Doddridge Independent

Subscribed to and sworn to before me on
this date: 9 / 23 / 24

Notary Public in and for Doddridge County
My Commission expires on
The 20 day of May 2025

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
JODIE LUSK
Summit Community Bank
251 Main Street
West Union, WV 26456
My Commission Expires May 20, 2025

Floodplain Public Notice • Legal Notice

Please take notice that on the (5th) of (September), 2024, (DT Midstream Stonewall Gas Gathering, LLC) filed an application for a Floodplain Permit (#24-665) to develop land located at or about (3378 Big Isaac Road); Coordinates: 39.202606, -80.555774. The Application is on file with the Floodplain Manager of the County and may be inspected or copied during regular business hours in accordance with WV Code Chapter 29B Freedom of Information, Article 1 Public Records and county policy and procedures. Any interested persons who desire to comment shall present the same in writing by (October 7, 2024) (20 calendar days after the announcement at the regularly scheduled Doddridge County Commission Meeting) delivered to the Floodplain Manager of the County at 99 Court Street, Suite 128, West Union, WV 26456. This project is for the Meathouse Compressor Station

C2 9/13- 9/20

DOCUMENT HAS MULTIPLE SECURITY FEATURES. SEE BACK FOR DETAILS.

SHERIFF OF DODDRIDGE COUNTY
FLOOD PLAIN ORDINANCE
99 COURT STREET, SUITE 233
WEST UNION WV, 26456

~~1098~~ ~~1005~~

DATE: ~~Sept~~ Oct. 1, 2024

69-222
522

PAY TO THE ORDER OF The Doddridge Independent $ 108. ~~00~~ 100

One hundred & Sixty Eight ~~00~~ 100 DOLLARS

Summit COMMUNITY BANK
310 North Main Street Moorefield, WV 26836

Memo INV # 6519

Signature

⑆052202225⑆ 510000172611 1005

George Eidel

From: Johnston, Tim <tjohnston@cecinc.com>
Sent: Tuesday, October 15, 2024 2:40 PM
To: geidel@doddridgecountywv.gov
Subject: DTM's Meathouse Fork Compressor Station - FEMA CLOMR-F Determination Letter
Attachments: DTM Meathouse Fork CS 24-03-0930C-cover.pdf; DTM Meathouse Fork CS 24-03-0930C-540024.pdf

Hi George,

The FEMA CLOMR-F Determination Letters for DTM's proposed Meathouse Fork Compressor Station are attached for your use. Please let me know if you have any questions or need additional information associated with the floodplain permit application.

Thank you,
Tim

Timothy G. Johnston, P.E.* | *Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.489.0203 **office** 412.429.2324 **mobile** 724.875.6718
www.cecinc.com
*Professional Engineer in PA, OH, WV

Federal Emergency Management Agency
Washington, D.C. 20472

October 02, 2024

THE HONORABLE SHAWN GLASPELL
PRESIDENT, DODDRIDGE COUNTY COMMISSION
99 COURT STREET
SUITE 201
WEST UNION, WV 26456

CASE NO.: 24-03-0930C
COMMUNITY: DODDRIDGE COUNTY, WEST VIRGINIA (UNINCORPORATED AREAS)
COMMUNITY NO.: 540024

DEAR MR. GLASPELL:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Conditional Letter of Map Revision based on Fill (CLOMR-F) Comment Document. This comment document provides additional information regarding the effective NFIP map, the legal description of the property and our comments regarding this proposed project.

Additional documents are enclosed which provide information regarding the subject property and CLOMR-Fs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Sincerely,

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:
CLOMR-F COMMENT DOCUMENT

cc: Mr. David Wallner

Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION BASED ON FILL
COMMENT DOCUMENT

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	DODDRIDGE COUNTY, WEST VIRGINIA (Unincorporated Areas)	A portion of the Greenbrier District, as described in the Deed recorded in Book 94, Page 72, in the Office of the County Clerk, Doddridge County, West Virginia The portion of property is more particularly described by the following metes and bounds:
	COMMUNITY NO.: 540024	
AFFECTED MAP PANEL	NUMBER: 54017C0260C	
	DATE: 10/4/2011	
FLOODING SOURCE: LITTLE ISAAC CREEK; BIG ISAAC CREEK		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY:39.202883, -80.556122 SOURCE OF LAT & LONG: LOMA LOGIC DATUM: NAD 83

COMMENT TABLE REGARDING THE PROPOSED PROPERTY (PLEASE NOTE THAT THIS IS NOT A FINAL DETERMINATION. A FINAL DETERMINATION WILL BE MADE UPON RECEIPT OF AS-BUILT INFORMATION REGARDING THIS PROPERTY.)

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT WOULD BE REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
--	--	--	Little Isaacs Run	Portion of Property	X (unshaded)	947.7 feet	--	954.8 feet

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

LEGAL PROPERTY DESCRIPTION
PORTIONS REMAIN IN THE SFHA
CONDITIONAL LOMR-F DETERMINATION
ZONE A
STATE LOCAL CONSIDERATIONS

This document provides the Federal Emergency Management Agency's comment regarding a request for a Conditional Letter of Map Revision based on Fill for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the proposed described portion(s) of the property(ies) would not be located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) if built as proposed. Our final determination will be made upon receipt of a copy of this document, as-built elevations, and a completed Community Acknowledgement form. Proper completion of this form certifies the subject property is reasonably safe from flooding in accordance with Part 65.5(a)(4) of our regulations. Further guidance on determining if the subject property is reasonably safe from flooding may be found in FEMA Technical Bulletin 10-01. A copy of this bulletin can be obtained by calling the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or from our web site at http://www.fema.gov/mit/tb1001.pdf. This document is not a final determination; it only provides our comment on the proposed project in relation to the SFHA shown on the effective NFIP map.

This comment document is based on the flood data presently available. The enclosed documents provide additional information regarding this request. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION BASED ON FILL COMMENT DOCUMENT

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LEGAL PROPERTY DESCRIPTION (CONTINUED)

BEGINNING AT A POINT, a 5/8" rebar capped 'CEC', at the northwest corner of said land of Jeffrey J. Ford, being tax parcel number 09-04-0011-0036-0000, and the southwest corner of land now or formerly of Warren E. & Judy E. Bee, as recorded in Deed Book 153, Page 503; thence through the Ford property, along a reference line, South 53°34'07" East, 532.89 feet to a point at the northeast comer of the herein described Flood Zone Determination Area, being the TRUE POINT OF BEGINNING; thence continuing through said Ford property, the following seven (7) courses and distances: 1. South 27°01'33" East, 432. 79 feet to a point; 2. South 60°03'56" West, 34.06 feet to a point; 3. North 31°34'53" West, 115.70 feet to a point; 4. North 36°18'55" West, 146.07 feet to a point; 5. North 24°55'39" West, 163.85 feet to a point; 6. North 40°40'17" West, 53.78 feet to a point; 7. South 87°52'30" East, 84.12 feet to the TRUE POINT OF BEGINNING

PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 1 Property.)

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

CONDITIONAL LOMR-F DETERMINATION (This Additional Consideration applies to the preceding 1 Property.)

Comments regarding this conditional request are based on the flood data presently available. Our final determination will be made upon receipt of this Comment Document, certified as-built elevations and/or certified as-built survey. Since this request is for a Conditional Letter of Map Revision based on Fill, we will also require the applicable processing fee, and the "Community Acknowledgement" form. Please note that additional items may be required before a final as-built determination is issued.

This letter does not relieve Federal agencies of the need to comply with Executive Order 11988 on Floodplain Management in carrying out their responsibilities and providing Federally undertaken, financed, or assisted construction and improvements, or in their regulating or licensing activities.

ZONE A (This Additional Consideration applies to the preceding 1 Property.)

The National Flood Insurance Program map affecting this property depicts a Special Flood Hazard Area that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION BASED ON FILL COMMENT DOCUMENT

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

STATE AND LOCAL CONSIDERATIONS (This Additional Consideration applies to all properties in the CLOMR-F COMMENT DOCUMENT)

Please note that this document does not override or supersede any State or local procedural or substantive provisions which may apply to floodplain management requirements associated with amendments to State or local floodplain zoning ordinances, maps, or State or local procedures adopted under the National Flood Insurance Program.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

George Eidel

From: Johnston, Tim <tjohnston@cecinc.com>
Sent: Monday, October 21, 2024 10:17 AM
To: George Eidel
Subject: RE: DTM's Meathouse Fork Compressor Station - FEMA CLOMR-F Determination Letter

Thank you, George.

John is the correct person to send this too and the address you listed below is also correct. Thanks for the heads up on the adjacent landowner's concern. I will discuss this with John as well.

Thanks again,
Tim

Timothy G. Johnston, P.E.* | *Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.489.0203 **office** 412.429.2324 **mobile** 724.875.6718
www.cecinc.com
*Professional Engineer in PA, OH, WV

From: George Eidel <geidel@doddridgecountywv.gov>
Sent: Monday, October 21, 2024 10:06 AM
To: Johnston, Tim <tjohnston@cecinc.com>
Subject: RE: DTM's Meathouse Fork Compressor Station - FEMA CLOMR-F Determination Letter

Got it, we only had one person call with concerns, he was an adjacent landowner and was worried about more flooding to his property. The H&H study showed that there would be a minor chance in rise but is within FEMA's requirement. I will be sending the floodplain permit out today, it will be mailed to John Dzurko at 1000 Noble Energy Dr. in Canonsburg. If you would like it mailed out to someone else , please let me know.

From: Johnston, Tim <tjohnston@cecinc.com>
Sent: Monday, October 21, 2024 9:46 AM
To: George Eidel <geidel@doddridgecountywv.gov>
Subject: RE: DTM's Meathouse Fork Compressor Station - FEMA CLOMR-F Determination Letter

Hi George,

Yes, you had provided a community acknowledgement form for this CLOMR-F and FEMA has that on file. I believe FEMA's statement regarding a completed Community Acknowledgement form was in regard to the LOMR-F being filed once the site is built.

Thank you,
Tim

Timothy G. Johnston, P.E.* | *Project Manager*
Civil & Environmental Consultants, Inc.
700 Cherrington Parkway, Moon Township, PA 15108
direct 412.489.0203 **office** 412.429.2324 **mobile** 724.875.6718
www.cecinc.com
*Professional Engineer in PA, OH, WV

From: George Eidel <geidel@doddridgecountywv.gov>
Sent: Monday, October 21, 2024 9:39 AM
To: Johnston, Tim <tjohnston@cecinc.com>
Subject: RE: DTM's Meathouse Fork Compressor Station - FEMA CLOMR-F Determination Letter

Tim,

I am working on your project and looking at the CLOMR-F and see that they are wanting the community acknowledgement form filled out. Did we do one? I can remember.

George

From: Johnston, Tim <tjohnston@cecinc.com>
Sent: Tuesday, October 15, 2024 2:40 PM
To: geidel@doddridgecountywv.gov
Subject: DTM's Meathouse Fork Compressor Station - FEMA CLOMR-F Determination Letter

Hi George,

The FEMA CLOMR-F Determination Letters for DTM's proposed Meathouse Fork Compressor Station are attached for your use. Please let me know if you have any questions or need additional information associated with the floodplain permit application.

Thank you,
Tim

Timothy G. Johnston, P.E.* | *Project Manager*
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WE OWN IT. Senior Leadership · Integrated Services
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FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) CONDITIONAL LETTER OF MAP REVISION (CLOMR-F) APPLICATION

MEATHOUSE FORK COMPRESSOR STATION PROJECT DODDRIDGE COUNTY, WEST VIRGINIA

Prepared for:

DTM Stonewall Gas Gathering LLC (DTM)
100 Noble Energy Drive, Suite 500
Canonsburg, PA 15317

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
700 Cherrington Parkway
Moon Township, PA 15108

CEC Project 342-931

JULY 2024

TABLE OF CONTENTS

MT-1 FORM

DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY

PROPERTY INFORMATION FORM

O.M.B. NO. 1660-0015
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.63 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). **NOTE: Do not send your completed form to this address.**

This form may be completed by the property owner, property owner's agent, licensed land surveyor, or registered professional engineer to support a request for a Letter of Map Amendment (LOMA), Conditional Letter of Map Amendment (CLOMA), Letter of Map Revision Based on Fill (LOMR-F), or Conditional Letter of Map Revision Based on Fill (CLOMR-F) for existing or proposed, single or multiple lots/structures. In order to process your request, all information on this form must be completed ***in its entirety***, unless stated as optional. **Incomplete submissions will result in processing delays.** Please check the item below that describes your request:

☐ LOMA	A letter from DHS-FEMA stating that an existing structure or parcel of land that has not been elevated by fill (natural grade) would not be inundated by the base flood.
☐ CLOMA	A letter from DHS-FEMA stating that a proposed structure that is not to be elevated by fill (natural grade) would not be inundated by the base flood if built as proposed.
☐ LOMR-F	A letter from DHS-FEMA stating that an **existing** structure or parcel of land that has been **elevated by fill** would not be inundated by the base flood.
■ CLOMR-F	A letter from DHS-FEMA stating that a parcel of land or **proposed** structure that will be **elevated by fill** would not be inundated by the base flood if fill is placed on the parcel as proposed or the structure is built as proposed.

Fill is defined as material from any source (including the subject property) placed that raises the ground to or above the Base Flood Elevation (BFE). The common construction practice of removing unsuitable existing material (topsoil) and backfilling with select structural material is not considered the placement of fill if the practice does not alter the existing (natural grade) elevation, which is at or above the BFE. **Fill that is placed before the date of the first National Flood Insurance Program (NFIP) map showing the area in a Special Flood Hazard Area (SFHA) is considered natural grade.**

Has fill been placed on your property to raise ground that was previously below the BFE? ☐ Yes ■ No If yes, when was fill placed? mm/dd/yyyy

Will fill be placed on your property to raise ground that is below the BFE? ■ Yes* ☐ No If yes, when will fill be placed? 01/18/2025 mm/dd/yyyy

* If yes, Endangered Species Act (ESA) compliance must be documented to FEMA prior to issuance of the CLOMR-F determination (please refer page 4 to the MT-1 instructions).

1. Street Address of the Property (if request is for multiple structures or units, please attach additional sheet referencing each address and enter street names below):

   Little Isaacs Run, Jane Lew, WV 26378

2. Legal description of Property (Lot, Block, Subdivision or abbreviated description from the Deed):

   South 27°01'33" East, 432.79 feet to a point; South 60°03'56" West, 34.06 feet to a point; North 31°34'53" West, 115.70 feet to a point; North 36°18'55" West, 146.07 feet to a point; North 24°55'59" West, 163.85 feet to a point; North 40°40'17" West, 55.78 feet to a point; South 87°52'30" East, 64.12 feet to the TRUE POINT OF BEGINNING.

3. Are you requesting that a flood zone determination be completed for (check one):

   ☐ Structures on the property? What are the dates of construction? _____ (MM/YYYY)
   ☒ A portion of land within the bounds of the property? (A certified metes and bounds description and map of the area to be removed, certified by a licensed land surveyor or registered professional engineer, are **required.** For the preferred format of metes and bounds descriptions, please refer to the MT-1 Form 1 Instructions.)
   ☐ The entire legally recorded property?

4. Is this request for a (check one):

   ☐ Single structure
   ☒ Single lot
   ☐ Multiple structures (How many structures are involved in your request? List the number: _____)
   ☐ Multiple lots (How many lots are involved in your request? List the number: _____)

In addition to this form (MT-1 Form 1), please complete the checklist below. **ALL** requests must include one copy of the following:

- ■ Copy of the effective FIRM panel on which the structure and/or property location has been accurately plotted (property inadvertently located in the NFIP regulatory floodway will require Section B of MT-1 Form 3)

- ☐ Copy of the Subdivision Plat Map for the property **(with recordation data and stamp of the Recorder's Office)**

OR

- ■ Copy of the Property Deed **(with recordation data and stamp of the Recorder's Office), *accompanied by*** a tax assessor's map or other certified map showing the surveyed location of the property relative to local streets and watercourses. The map should include at least one street intersection that is shown on the FIRM panel.

- ■ Form 2 – Elevation Form. If the request is to remove the structure, and an Elevation Certificate has already been completed for this property, it may be submitted in lieu of Form 2. If the request is to remove the entire legally recorded property, or a portion thereof, the lowest lot elevation must be provided on Form 2.

- ■ Please include a map scale and North arrow on all maps submitted.

For LOMR-Fs and CLOMR-Fs, the following must be submitted in addition to the items listed above:

- ■ Form 3 – Community Acknowledgment Form

For CLOMR-Fs, the following must be submitted in addition to the items listed above:

- ■ Documented ESA compliance, which may include a copy of an Incidental Take Permit, an Incidental Take Statement, a "not likely to adversely affect" determination from the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (USFWS), or an official letter from NMFS or USFWS concurring that the project has "No Effect" on proposed or listed species or designated critical habitat. Please refer to the MT-1 instructions for additional information.

Please do *not* submit original documents. Please retain a copy of all submitted documents for your records.

DHS-FEMA encourages the submission of all required data in a digital format (e.g. scanned documents and images on Compact Disc [CD]). Digital submissions help to further DHS-FEMA's Digital Vision and also may facilitate the processing of your request.

Incomplete submissions will result in processing delays. For additional information regarding this form, including where to obtain the supporting documents listed above, please refer to the MT-1 Form Instructions located at http://www.fema.gov/plan/prevent/fhm/dl_mt-1.shtm**.**

Processing Fee (see instructions for appropriate mailing address; or visit http://www.fema.gov/fhm/frm_fees.shtm **for** the most current fee schedule)

Revised fee schedules are published periodically, but no more than once annually, as noted in the **Federal Register**. Please note: single/multiple lot(s)/structure(s) LOMAs are fee exempt. The current review and processing fees are listed below:

Check the fee that applies to your request:

- ☐ $325 (single lot/structure LOMR-F following a CLOMR-F)
- ☐ $425 (single lot/structure LOMR-F)
- ■ $500 (single lot/structure CLOMA or CLOMR-F)
- ☐ $700 (multiple lot/structure LOMR-F following a CLOMR-F, or multiple lot/structure CLOMA)
- ☐ $800 (multiple lot/structure LOMR-F or CLOMR-F)

Please submit the Payment Information Form for remittance of applicable fees. Please make your check or money order payable to:
National Flood Insurance Program.

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Applicant's Name (required): John Dzurko

Company (if applicable): DTM Stonewall Gas Gathering LLC

Mailing Address (required):
1000 Noble Energy Dr, Suite 500, Canonsburg PA 15317

Daytime Telephone No. (required): (412) 721-7429

E-Mail Address (optional): ☐ By checking here you may receive correspondence electronically at the email address provided):

Fax No. (optional):

Date (required) 07/31/2024

Signature of Applicant (required)

DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY

ELEVATION FORM

O.M.B. NO. 1660-0015
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). **NOTE: Do not send your completed form to this address.**

This form must be completed for requests and must be completed and signed by a registered professional engineer or licensed land surveyor. **A DHS - FEMA National Flood Insurance Program (NFIP) Elevation Certificate may be submitted in lieu of this form for single structure requests.**

For requests to remove a structure on natural grade OR on engineered fill from the Special Flood Hazard Area (SFHA), submit the lowest adjacent grade (the lowest ground touching the structure), ***including an attached deck or garage***. For requests to remove an entire parcel of land from the SFHA, provide the lowest lot elevation; or, if the request involves an area described by metes and bounds, provide the lowest elevation within the metes and bounds description. All measurements are to be rounded to nearest tenth of a foot. In order to process your request, all information on this form must be completed ***in its entirety***. **Incomplete submissions will result in processing delays.**

1. NFIP Community Number: 540024 Property Name or Address: Little Isaacs Run, Jane Lew, WV 26378

2. Are the elevations listed below based on ☐ ***existing*** or ■ ***proposed*** conditions? (Check one)

3. For the existing or proposed structures listed below, what are the types of construction? (check all that apply)
   ☐ crawl space ■ slab on grade ☐ basement/enclosure ☐ other (explain)

4. Has DHS - FEMA identified this area as subject to land subsidence or uplift? (see instructions) ☐ Yes ■ No
   If yes, what is the date of the current re-leveling? / (month/year)

5. What is the elevation datum? ☐ NGVD 29 ■ NAVD 88 ☐ Other (explain)
   If any of the elevations listed below were computed using a datum different than the datum used for the effective Flood Insurance Rate Map (FIRM) (e.g., NGVD 29 or NAVD 88), what was the conversion factor?
   Local Elevation +/- ft. = FIRM Datum

6. Please provide the Latitude and Longitude of the most upstream edge of the ***structure*** (in decimal degrees to the nearest fifth decimal place):
   Indicate Datum: ☐ WGS84 ☐ NAD83 ☐ NAD27 Lat. . Long. .
   Please provide the Latitude and Longitude of the most upstream edge of the ***property*** (in decimal degrees to the nearest fifth decimal place):
   Indicate Datum: ☐ WGS84 ■ NAD83 ☐ NAD27 Lat. 39.20346 Long. -80.55742

Address	Lot Number	Block Number	Lowest Lot Elevation*	Lowest Adjacent Grade To Structure	Base Flood Elevation	BFE Source
Little Isaacs Run, Jane Lew, WV 26378	35	11	954.83 ft	N/A	948 ft	FIRM 54017CV000A

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Timothy G Johnston	License No.: 24442	Expiration Date: 12/31/2024
Company Name: Civil & Environmental Consultants, Inc.	Telephone No.: 412-489-0203	
Email: tjohnston@cecinc.com	Fax No.	
Signature: Timothy G. Johnston	Date: 07/30/2024	

TIMOTHY G. JOHNSTON REGISTERED 24442 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER
Seal (optional)

* For requests involving a portion of property, include the lowest ground elevation within the metes and bounds description.
Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Continued from Page 1.

Address	Lot Number	Block Number	Lowest Lot Elevation*	Lowest Adjacent Grade To Structure	Base Flood Elevation	BFE Source

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name:	License No.:	Expiration Date:
Company Name:	Telephone No.:	
Email:	Fax No.	
Signature:	Date:	

* For requests involving a portion of property, include the lowest ground elevation within the metes and bounds description.
Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Seal (optional)

DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY

COMMUNITY ACKNOWLEDGMENT FORM

O.M.B. NO. 1660-0015
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.38 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). NOTE: Do not send your completed form to this address.

This form must be completed for requests involving the existing or proposed placement of fill (complete Section A) ***OR*** to provide acknowledgment of this request to remove a property from the SFHA which was previously located within the regulatory floodway (complete Section B).

This form must be completed and signed by the official responsible for floodplain management in the community. **The six digit NFIP community number and the subject property address must appear in the spaces provided below. Incomplete submissions will result in processing delays.** Please refer to the MT-1 instructions for additional information about this form.

Community Number: 540024

Property Name or Address: 3378 Big Isaac Rd, Salem, WV 26426 Doddridge County

A. REQUESTS INVOLVING THE PLACEMENT OF FILL

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision Based on Fill (LOMR-F) or Conditional LOMR-F request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a Conditional LOMR-F, will be obtained. For Conditional LOMR-F requests, the applicant has or will document Endangered Species Act (ESA) compliance to FEMA prior to issuance of the Conditional LOMR-F determination. For LOMR-F requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. Section 9 of the ESA prohibits anyone from "taking" or harming an endangered species. If an action might harm an endangered species, a permit is required from U.S. Fish and Wildlife Service or National Marine Fisheries Service under Section 10 of the ESA. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by DHS-FEMA, all analyses and documentation used to make this determination. For LOMR-F requests, we understand that this request is being forwarded to DHS-FEMA for a possible map revision.

Community Comments:

This area is in an AE zone, it is not within the floorway. I have requested that an Hydraulic and Hydrologic study be completed and the CLOMR-F be done prior to any fill being placed in the area. All other permits and studies must be completed prior to a floodplain permit being approved and issued

Community Official's Name and Title: (*Please Print or Type*)		Telephone No.:
George Eidel, CFM Doddridge County Floodplain Manager		304-873-1343
Community Name:	Community Official's Signature: (required)	Date:
Doddridge County		07/31/2024

B. PROPERTY LOCATED WITHIN THE REGULATORY FLOODWAY

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this request for a LOMA. We understand that this request is being forwarded to DHS-FEMA to determine if this property has been inadvertently included in the regulatory floodway. We acknowledge that no fill on this property has been or will be placed within the designated regulatory floodway. We find that the completed or proposed project meets or is designed to meet all of the community floodplain management requirements.

Community Comments:

This area is in an AE zone, it is not within the floorway. I have requested that an Hydraulic and Hydrologic study be completed and the CLOMR-F be done prior to any fill being placed in the area. All other permits and studies must be completed prior to a floodplain permit being approved and issued

Community Official's Name and Title: (*Please Print or Type*)		Telephone No.:
Community Name:	Community Official's Signature (required):	Date:

FEDERAL EMERGENCY MANAGEMENT AGENCY

PAYMENT INFORMATION FORM

Community Name: Doddridge County

Project Identifier: Meathouse Fork Compressor Station

THIS FORM MUST BE MAILED, ALONG WITH THE APPROPRIATE FEE, TO THE ADDRESS BELOW OR FAXED TO THE FAX NUMBER BELOW.

Please make check or money order payable to the National Flood Insurance Program.

Type of Request:

- ☒ MT-1 application
- ☐ MT-2 application

LOMC Clearinghouse
847 South Pickett Street
Alexandria, VA 22304-4605
Attn.: LOMC Manager

- ☐ EDR application

FEMA Project Library
847 South Pickett Street
Alexandria, VA 22304-4605
FAX (703) 212-4090

Request No. (if known): _____ **Check No.:** _____ **Amount:** $500.00

☐ INITIAL FEE* ☐ FINAL FEE ☐ FEE BALANCE** ☐ MASTER CARD ☒ VISA ☐ CHECK ☐ MONEY ORDER

*Note: Check only for EDR and/or Alluvial Fan requests (as appropriate).

****Note: Check only if submitting a corrected fee for an ongoing request.**

COMPLETE THIS SECTION *ONLY* IF PAYING BY CREDIT CARD

CARD NUMBER **EXP. DATE**

5	5	6	9	–	7	1	0	0	–	0	3	4	4	–	1	5	9	5		1	1	–	2	4
1	2	3	4		5	6	7	8		9	10	11	12		13	14	15	16		Month			Year	

Date _____ Signature _____

NAME *(AS IT APPEARS ON CARD)*: Christie Winder
(please print or type)

ADDRESS: *(for your credit card receipt-please print or type)* 700 Cherrington Pkwy
Moon Township, PA 15108

DAYTIME PHONE: 412-429-2324

CORPS – USFWS SLOPES EVALUATION / COORDINATION DOCUMENT

CORPS - USFWS SLOPES Evaluation/Coordination Document
Corps File No.: LRH-2024-00489-OHR-Little Isaac Creek
USFWS Project Code: 2024-0101699

1. Applicant Information: Mr. John Dzurko
DT Midstream
1000 Noble Energy Drive, Suite 500
Canonsburg, Pennsylvania 15317

2. Description of Proposed Regulated Activity(s) and location: The Corps of Engineers is evaluating a Department of the Army (DA) permit for the proposed Meathouse Fork Compressor Station Project in Doddridge County, West Virginia. The proposed activity has an approximate center location of 39.20217° N, 80.555588° W. The proposed project would result the temporary discharge of dredged and/or fill material into 378 linear feet (0.051 acre) of five (5) streams and 2.47 acre of nine (9) wetlands (0.16 acre of permanent wetland conversion) and the permanent discharge of dredged and/or fill material into 267 linear feet (0.025 acre) of three (3) streams and 0.45 acre of two (2) wetlands for the construction of a new compressor station, meter pad, and associated pipeline connecting the two. The proposed project would result in approximately 5 acres of tree clearing.

3. Proposed Authorization Method (and number, if applicable):
- ☒ Nationwide Permit: 39 and 12
- ☐ Regional General Permit:
- ☐ Individual Permit:
- ☐ Permit Modification:
- ☐ Letter of Permission:

4. Aquatic Resource(s): Little Isaac Creek
5. County: Doddridge
6. Hydrologic Unit Code: 05030201
7. Latitude and Longitude (NAD83): 39.20217° N, 80.555588° W
8. USGS 7.5-minute quad name: WV – Big Isaac
9. Listed species with potential to occur in proposed project area: clubshell mussel, snuffbox mussel, longsolid mussel, round hickorynut mussel, Indiana bat, northern long-eared bat
10. The Corps has determined the proposed project:
- ☒ Would result in no effect to: clubshell mussel, snuffbox mussel, longsolid mussel, round hickorynut mussel
- ☐ May affect:
- ☒ May affect, but is not likely to adversely affect: Indiana bat, northern long-eared bat
- ☐ Likely to adversely affect:
- ☒ Proposed species: Tri-colored bat, salamander mussel

11. Justification for species effects determination(s) including avoidance and minimization measures:

No Effect

Freshwater mussels: Ten species of freshwater mussels that inhabit medium to large streams and rivers in West Virginia were listed as endangered between 1976 and 2012. These include the clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), James spinymussel (*Pleurobema collina*), northern riffleshell (*Epioblasma torulosa rangiana*), pink mucket pearlymussel (*Lampsilis abrupta*), rayed bean (*Villosa fabilis*), sheepnose (*Plethobasus cyphyus*), snuffbox (*Epioblasma triquetra*), spectaclecase (*Cumberlandia monodonta*), and tubercled-blossum pearlymussel (*Epioblasma torulosa torulosa*). Many are found in gravelly substrates with moderate current. Freshwater mussels feed by filtering food particles from the water column. Juvenile and adult freshwater mussels have been documented to feed on detritus, diatoms, phytoplankton, and zooplankton. Freshwater mussels rely on fish to complete their life histories. When mussel larvae (glochidia) are released into the water by adult females, they must attach themselves within a few days to the gills of an appropriate fish host, which they then parasitize for a short time while developing into juvenile mussels. Population losses and declines have occurred as a result of impoundments, navigation projects, water quality degradation from agricultural and industrial wastes, deforestation and other forms of habitat alteration, including gravel and sand dredging. Impacts that directly affect the species also include reduction or elimination of fish hosts.

According to information obtained from the USFWS IPaC database, the proposed project lies within the range of the following federally-listed, endangered and threatened mussel species:

Clubshell (mussel), snuffbox mussel, longsolid (mussel), round hickorynut (mussel): Little Isaac Creek and unnamed tributaries to Big Isaac Creek would be impacted in order to implement the proposed project. The project area is located approximately 35 aerial miles from the Ohio River. Best management practices would be implemented in order to prevent increased sedimentation to downstream resources. Therefore, the Corps has determined that the proposed project would result in *no effect* to the clubshell mussel or the snuffbox mussel. The Corps received a *no effect* determination through the IPaC Northeast DKey for the clubshell mussel, snuffbox mussel, longsolid mussel and round hickorynut mussel on 17 July 2024 (Project Code 2024-0101699).

May Affect but Not Likely to Adversely Affect

Indiana bat: The Indiana bat was listed as an endangered species in 1967 due to large numbers of deaths associated with human disturbance at winter hibernacula. Since then, its numbers have declined, with additional threats that include commercialization of caves, loss of summer habitats, pesticides and other contaminants and, more recently, the disease white-nose syndrome. White-nose syndrome is a disease caused by the fungus *Pseudogymnoascus destructans*, which colonizes the skin of affected bats, particularly in the wings and on the muzzle. The disease causes behavior abnormalities during the bat's hibernation period, often resulting in mortality. In West Virginia, Indiana bats typically hibernate from mid-November until early April in caves or abandoned mine openings that are connected to larger underground tunnels. They emerge from these hibernacula in the spring and migrate to summer habitats. Indiana bat foraging habitat is generally defined as riparian, bottomland, or upland forest, as well as old fields or pastures with scattered trees, and streams and wetlands. Summer roosting and maternity habitats consist primarily of live or dead hardwood trees that have exfoliating bark, which provide 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. Indiana bats are faithful to their maternity areas and return year after year to the same areas to forage and raise their young. Forested areas containing trees greater than five inches diameter at breast height provide suitable summer roosting and maternity habitat for the Indiana bat, and all such areas in West Virginia are considered potential habitat for this species.

The applicant has committed to seasonal tree clearing (November 15 - March 31) of all trees greater than 3" DBH and erosion and sedimentation controls. The Corps would include a special condition requiring seasonal tree clearing with any verification associated with the proposed project. The project AOI is not within a known use area for the Indiana bat. Therefore, the Corps has determined that the proposed project *may affect, but is not likely to adversely affect* the Indiana bat. The Corps received a *may affect, not likely to adversely affect* determination through the IPaC Northeast DKey for the clubshell mussel and snuffbox mussel on 17 July 2024 (Project Code 2024-0101699).

NLEB:

The applicant has committed to seasonal tree clearing (November 15 - March 31) of all trees greater than 3" DBH and erosion and sedimentation controls. The Corps would include a special condition requiring seasonal tree clearing with any verification associated with the proposed project. Therefore, the Corps has determined that the proposed project *may affect, but is not likely to adversely affect* the NLEB.

Proposed Species:

The proposed project lies within the range of the following federally proposed endangered mussel species: salamander mussel (*Simpsonaias ambigua*). Based on the salamander mussel habitat description provided by the USFWS, the proposed project is not likely to jeopardize the continued existence of the proposed species. The USFWS is considering portions of the following rivers and streams to be occupied by the salamander mussel at the time of proposed listing, and appropriate for critical habitat designation: Allegheny River, Beech Fork River, Black River, Blanchard River, Big Pine Creek, Chippewa River, Clinton River, Conneaut Creek, Drennon Creek, Duck River, East Fork White River, Eau Claire River, Fish Creek (Indiana), Fish Creek (West Virginia), Fishing Creek, French Creek, Graham Creek, Harpeth River, Kinniconick Creek, Laughery Creek, Lemonweir River, Licking River, Little Kanawha River, Middle Fork Wildcat Creek, Middle Island Creek, Mill Creek, North Branch

Pensaukee River, North Fork Licking River, Otter Creek, Rolling Fork River, South Fork Hughes River, South Fork Licking River, St. Croix River, Tippecanoe River, Tonawanda Creek, and Wisconsin River. The proposed project would not destroy or adversely modify proposed critical habitat for the proposed species. Based on the information provided and the habitat/stressors, the Corps has determined the proposed action would not jeopardize the continued existence of the salamander mussel, therefore, further consideration and/or conference under Section 7 (a)(4) is not warranted at this time for the salamander mussel.

These non-jeopardy determinations are being provided under Part VI (2)(a) of the June 2020 West Virginia Standard Local Operating Procedures for Threatened and Endangered Species (SLOPES) agreement between the Corps and the USFWS WVFO. The Corps is not requesting concurrence from the USFWS WVFO on these non-jeopardy determinations.

12. Corps Project Manager Name and Contact Information: Rachel McCarty Rachel.a.mccarty@usace.army.mil 304-807-0826_____
13. USFWS Response Date: _____

USFWS Response:

The USFWS ☒ **concurs** / ☐ **does not concur** with the determination(s) listed above.

CRISTINA SANDERS Digitally signed by CRISTINA SANDERS Date: 2024.07.24 08:07:28 -04'00'

_____ _____

U. S. Fish and Wildlife Service, West Virginia Field Office — Date
Biologist

Enclosures:

DESCRIPTION OF FEMA DETERMINATION AREA

DESCRIPTION OF
FEMA DETERMINATION AREA
0.569 ACRES
GREENBRIER MAGISTERIAL DISTRICT
COUNTY OF DODDRIDGE, STATE OF WEST VIRGINIA

All that certain piece or parcel of land being part of lands now or formerly Jeffrey J. Ford, as recorded in Will Book 41, Page 619 in the Office of the Clerk of the County Commission of Doddridge County, West Virginia, situate in the Greenbrier Magisterial District, County of Doddridge, State of West Virginia, more particularly bounded and described as follows:

BEGINNING AT A POINT at the approximate intersection of Big Isaac Road and Little Isaac Run Road;

thence through the right of ways of Big Isaac Road and Little Isaac Run Road, through said Ford property and along a reference line, ±South 63°55'31" West, ±276.13 feet to a point at the northeast corner of the herein described FEMA Determination Area, being the **TRUE POINT OF BEGINNING;**

thence continuing through said Ford property, the following seven (7) courses and distances:

1. South 27°01'33" East, 432.79 feet to a point;
2. South 60°03'56" West, 34.06 feet to a point;
3. North 31°34'53" West, 115.70 feet to a point;
4. North 36°18'55" West, 146.07 feet to a point;
5. North 24°55'39" West, 163.85 feet to a point;
6. North 40°40'17" West, 53.78 feet to a point;
7. South 87°52'30" East, 84.12 feet to the **TRUE POINT OF BEGINNING.**

Bearings based on West Virginia State Plane NAD83-2011, North Zone, as determined by Civil & Environmental Consultants, Inc., using survey grade GPS measurements and OPUS post-processing.

Containing 24,797 Sq. Ft. or 0.569 Acres

DAVID J. SEBASTIAN JR. LICENSED No. 2421 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

7/31/24

Date Prepared: July 30, 2024
File Name: 342-931_LD_07-30-24_FEMA-DeterminationArea_0.569Acres.docx

700 Cherrington Parkway | Moon Township, PA 15108 | p: 412-429-2324 f: 412-429-2114 | www.cecinc.com

DEED OF SUBJECT PARCEL

STATE OF **WEST VIRGINIA**
COUNTY OF **DODDRIDGE**

I, Lorena C.(Catee) Slater Clerk of the Doddridge County Commission, do hereby certify that the foregoing writing is a true and accurate copy as appears of record in my office in **DEED,** *Book:* ***94*** at *Page:* ***72***, of said record.

The foregoing instrument was acknowledged before me **Friday, August 30, 2024**.

COUNTY SEAL

Lorena Catee Slater

Lorena C.(Catee) Slater
Clerk of the Doddridge County Commission

By Jennifer Smith

Jennifer Smith
Deputy Clerk

Clay D Hammond,
Notary Public.

State of West Virginia,

Doddridge County, County Clerk's Office, September 12, 1935.

The foregoing writing and the annexed certificate were this day admitted to record in this office.

Teste: _____, Clerk.

MERYL HEFLIN ET VIR
TO ///// DEED
J. E. & AUDRA SPURGEON
GREENBRIER DISTRICT

THIS DEED, made this the 15th day of October, 1934, between Meryl Heflin and Ben Heflin her husband, parties of the first part, and J. E. Spurgeon and Audra Spurgeon, parties of the second part, all of the State of West Virginia.

W i t n e s s e t h, that for and in consideration of the sum of One Dollar cash in hand paid, receipt of which is hereby acknowledged, and the further consideration of the undivided interest in other lands having heretofore been conveyed to the said Meryl Heflin by the said parties of the second part, by deed dated the 10th day of October, 1934.

The parties of the first part do grant, sell and convey with covenants of general warranty, unto the said parties of the second part, jointly, all of their right, title and interest, being the five-sevenths undivided, in and to all that certain tract, parcel or lot of land, situate in Greenbrier District, Doddridge County, West Virginia, bounded and described as follows:

Beginning at a corner in the middle of the road thence S 5 E 110 poles to a beech, gone; S 29 E 37.4 poles to a white oak; S 65½ W 29⅛ poles to a white oak, gone; S 11 W 17.7 poles to a rock, marked; S 47 E 65.4 poles to a stone and white oak; N 24½ E 40.4 poles to a stone in line with pointers; N 28° 53' W 101 poles to a pipe in edge of road; N 50½ E 13.6 poles to a stake in edge of road; N 46 E 43.6 poles to forks of road; N 23 W 16 poles to edge of road; N 14 W 16 poles in road; N 5½ E 12 poles to the forks of road; S 89 W 24.6 poles to a walnut tree; and thence N 66 W 15.9 poles to the place of beginning, containing 36.29 acres, more or less, as surveyed by J. M. Martin as shown on a plat bearing date October, 1, 1934, and being a part of the real estate conveyed by Stephen Bennett, et al., by deed bearing date September 22, 1882 to Sarah I. Slusser, recorded in the office of the clerk of the County Court of Doddridge County, West Virginia, in Deed Book No. 13 page 171.

There is expressly reserved in this conveyance by the parties of the first part, one acre, more or less which was heretofore conveyed to G. M. Williams, by predecessors in title to said land, and is now owned by the Hope Natural Gas Company, a Corporation.

There is also reserved and excepted in this conveyance all of the coal, oil and gas in and underlying the property hentofore described.

Witness the following signatures and seals.

Meryl Heflin. (SEAL)

Ben Heflin (SEAL)

State of West Virginia,

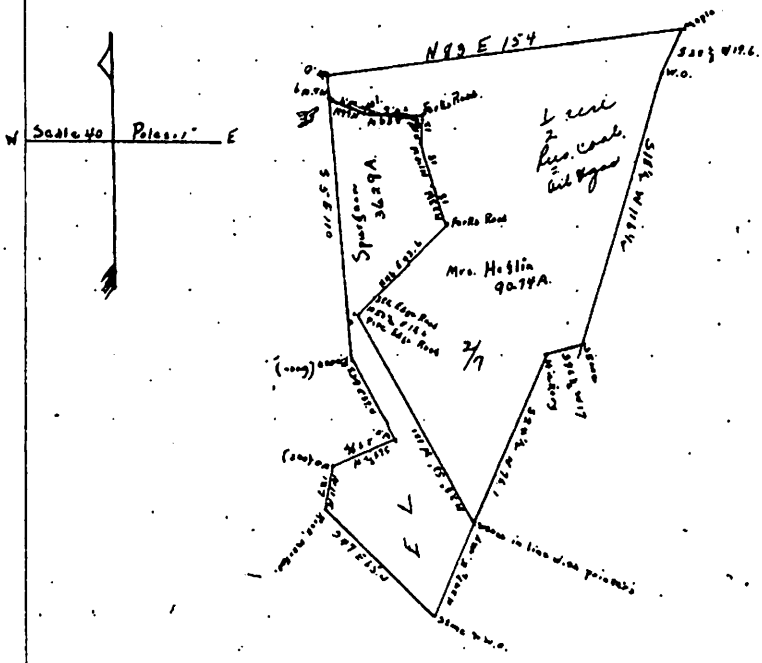
County of Doddridge, to-wit:

I, C. C. Freeman, a Notary Public of the said County of Doddridge do certify that Meryl Heflin and Ben Heflin her husband whose names are signed to the writing hereto annexed, bearing date on the 15th day of October, 1934, have this day acknowledged the same before me in my said county.

Given under my hand this the 20th day of October, 1934.

C. C. Freeman
Notary Public.

My commission expires
September 6, 1939.



Plat of the Sarah I. Slusser Farm, near Big-Isaac, W. Va. Containing 128.53 acres, less 1.5 acres to be deducted therefrom, and leaving 127.03 acres, which is now owned and divided as shown above, by Mrs. ____Heflin & E. L. Spurgeon, Mr. Spurgeon receiving 2/7 - 36.29 acres after the 1.5 acre deduction, and Mrs. Heflin, the remaining 5/7 - 90.74 acres.

Very Respectfully,

J. M. Martin, Surveyor.

This Oct. 1st. 1934.

State of West Virginia,

Doddridge County, County Clerk's Office, September 13, 1935.

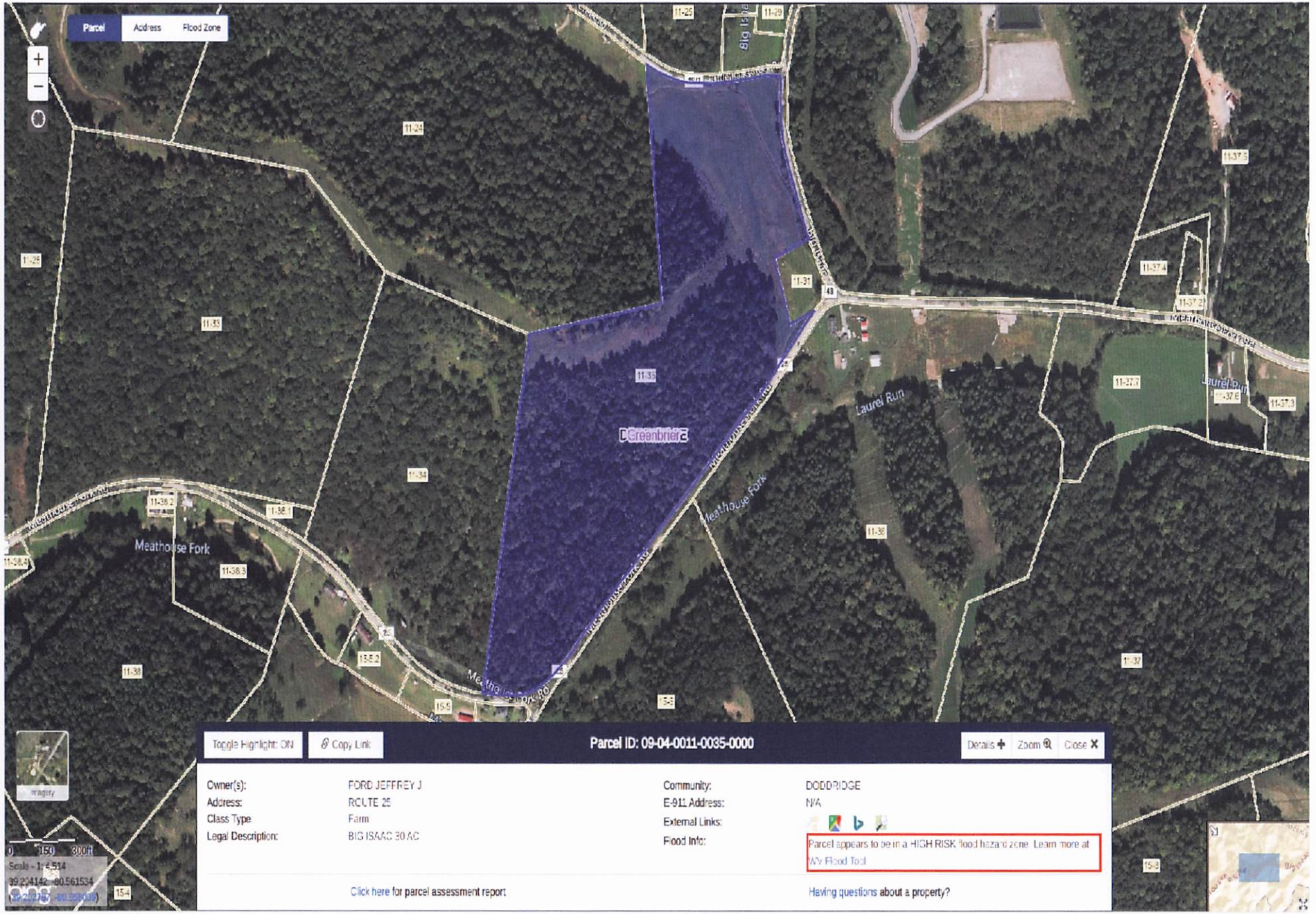
The foregoing writing and the annexed certificate and plat were this day admitted to record in this office.

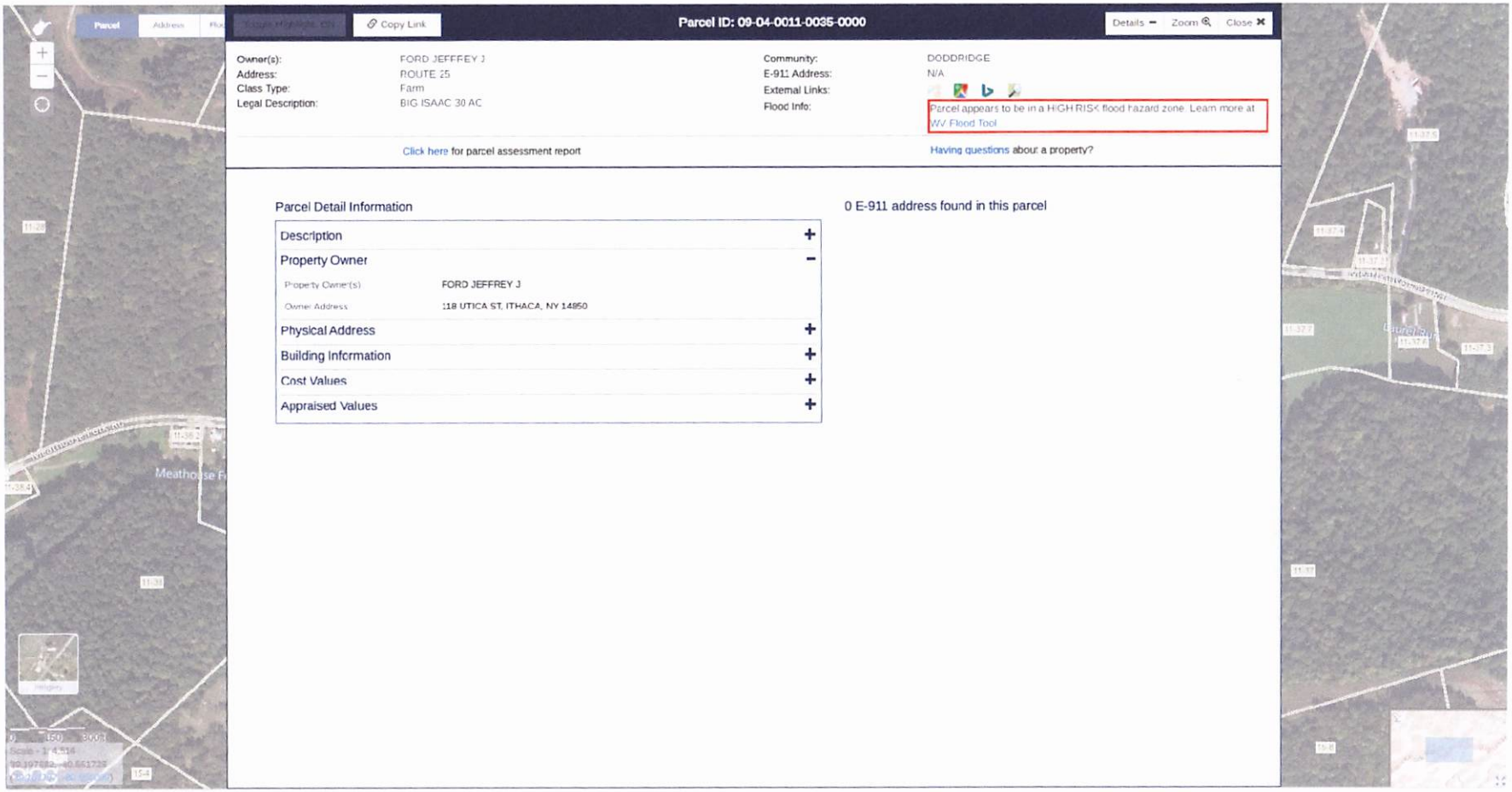
Teste: _____ Clerk.

FEMA TOPOGRAPHIC WORK MAP (EX-1)

ANNOTATED FIRM MAP (FIGURE NO. 1)

PARCEL MAP


Parcel
Address
Flood Zone
Greenbrier
Laurel Run
Meathouse Fork
Meathouse Fork Rd
Big Isaac
Toggle Highlight: ON
Copy Link
Parcel ID: 09-04-0011-0035-0000
Details
Zoom
Close
Owner(s): FORD JEFFREY J
Address: ROUTE 25
Class Type: Farm
Legal Description: BIG ISAAC 30 AC
Community: DODDRIDGE
E-911 Address: N/A
External Links:
Flood Info:
Parcel appears to be in a HIGH RISK flood hazard zone. Learn more at WV Flood Tool
Click here for parcel assessment report
Having questions about a property?
Imagery


Parcel
Address
Copy Link
Parcel ID: 09-04-0011-0035-0000
Details
Zoom
Close
Owner(s): FORD JEFFREY J
Address: ROUTE 25
Class Type: Farm
Legal Description: BIG ISAAC 30 AC
Community: DODDRIDGE
E-911 Address: N/A
External Links:
Flood Info: Parcel appears to be in a HIGH RISK flood hazard zone. Learn more at WV Flood Tool
Click here for parcel assessment report
Having questions about a property?
Parcel Detail Information
0 E-911 address found in this parcel
Description
Property Owner
Property Owner(s): FORD JEFFREY J
Owner Address: 118 UTICA ST, ITHACA, NY 14850
Physical Address
Building Information
Cost Values
Appraised Values

August 29, 2024

Mr. George Eidel, C.F.M. – Doddridge County Emergency Manager and Floodplain Manager
Doddridge County Office
99 Court Street, Suite 128
West Union, WV 26456

Dear Mr. Eidel:

Subject: Floodplain Analysis
DTM Stonewall Gas Gathering LLC
Meathouse Fork Compressor Station
Doddridge County, WV 15090
CEC Project 342-931

On behalf of DTM Stonewall Gas Gathering, LLC (DTM), a DT Midstream Company, Civil & Environmental Consultants, Inc. (CEC) has conducted a hydraulic analysis of the proposed development for the Meathouse Fork Compressor Station site located near the intersection of Big Isaac Road (C.R. 48) and Little Isaac Run (C.R. 48/1). The purpose of this correspondence is to provide a summary and documentation of the hydraulic analysis results in support of a permit application for development within a Special Flood Hazard Area. We look forward to working with you and believe that this development meets the requirements for floodplain development in Doddridge County.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Grant R. Huchel, E.I.T.
Assistant Project Manager

Timothy G. Johnston, P.E.
Project Manager

HYDROLOGIC & HYDRAULIC ANALYSIS REPORT

MEATHOUSE FORK COMPRESSOR STATION
GREENBRIER DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

Prepared for:

DT MIDSTREAM, INC.
1000 Noble Energy Drive, 5th Floor
Canonsburg, PA 15317

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
700 Cherrington Parkway
Moon Township, PA 15108

CEC Project 342-931

AUGUST 2024

Civil & Environmental Consultants, Inc.

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LIST OF FIGURES

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Appendix

1.0 INTRODUCTION AND OBJECTIVE

The proposed Meathouse Fork Compressor Station site is located within the western floodplain of Big Isaac Creek and the southern floodplain of Little Isaac Creek and is approximately 400 feet northwest of the intersection of Big Isaac Road and Meathouse Fork Road. The project includes the development of a natural gas compressor facility, associated natural gas pipelines, and an interconnect at the site. The site improvements include excavation and fill to support a permanent gravel pad and driveway, existing county roadway and intersection widening, removal of an existing stream crossing culvert, installation of a new stream crossing culvert, and installation of compressor station and pipeline equipment.

Based on the mapped floodplain shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel No. 54017C0260C, Effective October 4, 2011, the proposed development is located within the 100-Year floodplain of Big Isaac Creek (Zone A and Zone AE) and 100-Year floodplain of Little Isaac Creek (Zone A). There is no regulatory floodway defined within the project area. Because the project is located within FEMA Zones A and AE without regulatory floodways, the National Flood Insurance Program (NFIP) Code of Federal Regulations (CFR) Title 44 requires demonstration that the cumulative effect of proposed development will not increase Base Flood Elevations (BFEs) by more than one foot.

The objective of the hydraulic analysis is to compare the BFEs of the existing (pre-project) and proposed (post-project) conditions. This report documents the results of the hydraulic analysis performed by Civil & Environmental Consultants, Inc. (CEC), which indicates that the maximum increase in BFE due to the proposed project is less than 1.00 foot and as such, no map revisions are required for the proposed development in the floodplain and there are no adverse impacts on the subject or adjacent parcels. Additionally, Section 4.3.2 of the WVDOH Drainage Manual requires that the "Check Storm" is evaluated and satisfied for the proposed and existing conditions for roadways within the floodplain. The determinations of this analysis satisfy the requirements outlined in the CFR Title 44, the Doddridge County Floodplain Ordinance, and the WVDOH Drainage Manual. The supporting technical data is based on the standard step-backwater computer model used to develop the BFEs shown on the FIRM.

2.0 HYDROLOGIC ANALYSIS METHODOLOGY

The proposed project is located on FEMA FIRM Panel No. 54017C0260C, Effective October 4, 2011. The proposed development is located within the 100-Year floodplain of Big Isaac Creek (Zone A and Zone AE) and 100-Year floodplain of Little Isaac Creek (Zone A). There is no regulatory floodway defined within the project area. The project is located within FEMA Flood Insurance Study (FIS) Number 54017CV000A.

According to the FIS, Big Isaac Creek (at the confluence with Meathouse Fork) has a 100-year, 24-hour flow rate of 1,450 cubic feet per second (CFS). This flow rate is an input at station (STA) 19+01 within the Big Isaac Creek model; this river station cross section is identified as the last section within Big Isaac Creek prior to its upstream confluence with Little Isaac Creek. The FIS of Big Isaac Creek includes the tributary drainage area of Little Isaac Creek within the study and does not analyze Little Isaac Creek as an independent stream within Table 2 – Summary of Discharges in the FIS. Therefore, the flow rate for Little Isaac Creek was determined via USGS StreamStats program. The 100-year, 24-hour flow rate was estimated to be 162 CFS and was entered at STA 7+93 within the Little Isaac Creek model. Lastly, the known 100-year, 24-hour flow input value at the most upstream river station of the Big Isaac Creek model (RS 2595 was entered as 1,288 CFS. This was determined by taking the difference of the known flow within the FIS of Big Isaac Creek and the StreamStats estimated flow for Little Isaac Creek. The FEMA FIRM is included as Figure 6, the FIS is included in Appendix VI, and the StreamStats Reports are included in Appendix VII of this report.

Section 4.3.2 of the WVDOH Drainage Manual requires proposed structures to be reviewed using a "Check Storm" that represents the 100-year storm or the overtopping of the roadway, whichever is less. The goal of the "Check Storm" is to avoid increasing the water surface elevation such that it becomes destructive to property upstream and downstream of the project area. Therefore, a "Check Storm" corresponding to the 25-year storm event was analyzed along Big Isaac Creek to evaluate the water surface elevations upstream and downstream of the existing Little Isaacs Run (48/1) culvert crossing during pre- and post-development conditions. The 25-year, 24-hour flow rate was estimated using USGS StreamStats; refer to Appendix VII for the complete StreamStats Reports. The 25-year, 24-hour flow at RS 2595 was estimated to be 142 CFS. Just downstream of

the confluence with Little Isaac Creek, the 25-year, 24-hour flow at RS 1901 was estimated to be 572 CFS. The "Check Storm" analysis for Little Isaac Creek utilized the 100-year storm event and the hydrologic methodologies outlined above. Refer to Section 4.0 for additional information describing the requirements of the Check Storm analysis.

3.0 HYDRAULIC ANALYSIS METHODOLOGY

CEC performed a detailed hydraulic analysis of Big Isaac Creek and Little Isaac Creek at the project site using the United States Army Corps of Engineers (USACE) computer software program, Hydrologic Engineering Center – River Analysis System (HEC-RAS) version 6.4.1 to model the water surface elevations (WSELs) along Big Isaac Creek and Little Isaac Creek during the 25-year and 100-year flood events. HEC-RAS is a computer program which allows the user to perform one-dimensional steady and un-steady flow, two-dimensional steady and unsteady flow, and sediment transport calculations. CEC has performed a one-dimensional steady flow encroachment model to assess the risk associated with the proposed grading improvements within the FEMA floodplain. CEC placed requests for the Effective Hydraulic Modeling of Big Isaac Creek through FEMA's Flood Risk Study Engineering Library (FRISEL), FEMA Freedom of Information Act (FOIA), and the United States Army Corps of Engineers (USACE), but the effective hydraulic model was determined to be unavailable. In accordance with FEMA guidelines.

For Big Isaac Creek, twenty-two (22) cross sections were analyzed in both the existing and proposed conditions models to provide a determination of the 100-year WSELs. Seven (7) cross sections in the proposed conditions model are located at the same station but have different cross section cut line extents spanning the overbank when compared to the existing conditions model; this is a result of the proposed grading. For Little Isaac Creek, fourteen (14) cross sections were analyzed in both the existing and proposed conditions model to provide a determination of the 100-year WSELs. Six (6) cross sections in the proposed conditions model are located at the same station but have a different cross section cut line extents spanning the overbank when compared to the existing conditions model; this is a result of the proposed grading. Two (2) cross sections are located at slightly different stations and have different cross section cut line extents between proposed and existing conditions models. This is due to the existing 60" CMP culvert being removed as part of the project and the proposed 9'x4' concrete box culvert added to the proposed conditions model. The cross sections used to develop the existing conditions models are shown on Figure EX-2A; the cross sections used to develop the proposed conditions models are shown on Figure EX-2B. All analyzed cross sections are based on existing and proposed site geometry.

The Big Isaac Creek study area extends approximately 1,945 feet downstream and 650 feet upstream of an existing 72" CMP culvert located at River Station (RS) 1945. This culvert crosses the embankment for Little Isaacs Run (48/1). The total study reach length is 2,595 feet. The limits of encroachment from the proposed fill slope within the FEMA floodplain begin approximately at RS 1398 and end approximately at RS 1901. The study area and encroachment limits are shown on the Existing and Proposed Floodplain Map, included in this report as Figure 1. The existing conditions cross sections and calculated floodplain are shown on the Existing Site 100-YR Floodplain Map and the proposed conditions cross sections and calculated floodplain are shown on the Proposed Site 100-YR Floodplain Map, both included in this report as Figure 2A and Figure 2B, respectively. The hydraulic analysis was performed using a specified WSEL downstream boundary condition with the downstream WSEL being provided by the FIS (WSEL = 944.9). Contraction for this structure begins at RS 1970 and expansion ends at 1937, downstream of the existing dam. Therefore, within this region contraction coefficients of 0.3 and expansion coefficients of 0.5 were used. In all other areas without significant contraction and expansion, contraction and expansion coefficients of 0.1 and 0.3, respectively, were used. The existing 72" CMP culvert remains unchanged between existing and proposed models for Big Isaac Creek. The contraction and expansion coefficients used in the model are consistent with the HEC-RAS Hydraulic Reference Manual recommendations.

The Little Isaac Creek study area extends approximately 139 feet downstream and 654 feet upstream of an existing 60" CMP culvert located at RS 139 for a total study reach length of 793 feet. The limits of encroachment from the proposed fill slope within the FEMA floodplain begin at approximately RS 34 and end at approximately RS 251. The study area and encroachment limits are shown on the Existing and Proposed Floodplain Map included in this report as Figure 1. Additionally, the Existing Site 100-YR Floodplain Map and Proposed Site 100-YR Floodplain Map are both included in this report as Figure 2A and Figure 2B, respectively. The hydraulic analysis was performed using a normal depth downstream boundary condition using a 2.50% energy grade slope. In the existing conditions model, contraction for this structure begins at RS 204 and expansion ends at RS 104, downstream of the existing culvert. The existing 60" CMP culvert was not included in the proposed model for Little Isaac Creek since this structure will be removed during construction. The proposed 9'x4' concrete box culvert is located at RS 233. In the

proposed conditions model, contraction for this structure begins at RS 276 and expansion ends at RS 190, downstream of the proposed culvert. Therefore, within this region contraction coefficients of 0.3 and expansion coefficients of 0.5 were used. In all other areas without significant contraction and expansion, contraction and expansion coefficients of 0.1 and 0.3, respectively, were used. The contraction and expansion coefficients used in the model are consistent with the HEC-RAS Hydraulic Reference Manual recommendations.

In order to evaluate the potential effects of the proposed project on the BFE, Existing and Proposed Conditions models were developed using the cross-sectional survey data, privately collected LiDAR data, and public LiDAR data for Doddridge County. The following sections describe the developed models used in this analysis.

3.1 EXISTING (PRE-PROJECT) CONDITIONS MODEL

CEC created two (2) Existing Conditions (EX) Models, as outlined above. One EX Model was created for each impacted stream. The EX Models were developed to be consistent with FEMA guidelines for waterways in Zone A and Zone AE without effective models.

Cross sections in the HEC-RAS models for the existing conditions were created using CEC field survey data collected in July 2024 on the NAVD 88 and GEOID 18 in the West Virginia State Plane Coordinate System. For areas outside of the CEC surveyed area, privately collected LiDAR topography and publicly available Doddridge County LiDAR topography were used to supplement the aforementioned CEC survey data. Elevations at critical grade changes along the cross-section lengths were input into the model.

The existing stream and land cover surface characteristics determined the Manning's roughness coefficient values for the floodplains and channels. The stream channels of Little Isaac Creek and Big Isaac Creek meander mildly and have substrate primarily consisting of gravel; therefore, a value of 0.04 was used for the stream bottom. The overbanks consist of meadow with brush areas and gravel or paved surfaces. A roughness coefficient of 0.06 was used for meadow with brush areas. In areas of the overbanks where the land cover is a gravel or paved surface, a value of 0.013

was used. The manning's roughness coefficient values are consistent with the values used in the FEMA FIS for Middle Island Creek, Buckeye Creek, and Meathouse Fork. The FIS does not include manning's roughness coefficients for Big Isaac Creek.

3.2 PROPOSED CONDITIONS MODEL

The proposed compressor station is located within the western floodplain of Big Isaac Creek, beginning near the confluence of Little Isaac Creek and Big Isaac Creek and ending approximately 400 feet northwest of the intersection of Big Isaac Road and Meathouse Fork Road. The project includes the development of a natural gas compressor facility, associated natural gas pipelines, and an interconnect at the site. The site improvements include excavation and fill to support a permanent gravel pad and driveway, existing county roadway and intersection widening, removal of an existing stream crossing culvert, installation of a new stream crossing culvert, and installation of compressor station and pipeline equipment. The proposed compressor station pad will generally be raised to a minimum elevation of 954.80 feet to allow the finished pad elevation to be a minimum 6.80 feet above the BFE of 948, which is the nearest BFE on the FIRM.

CEC created one (1) Proposed Conditions (PR) Model based on the Big Isaac Creek EX Model and one (1) PR Model based on the Little Isaac Creek EX Model to reflect the proposed grading terrain of the project. The changes made for this analysis were as follows:

- Both PR Models: Modifications to the geometry of the hydraulic cross-sections within the project limits were made to reflect the proposed terrain;
- Both PR Models: Hydraulic cross-sections from the EFF were re-positioned and realigned perpendicular to the proposed contours
- Both PR Models: Ineffective flow areas were modified for cross-sections within the project limits to better reflect flow over the proposed ground surface;
- Little Isaac Creek PR Model: Includes the proposed 9' x 4' concrete box culvert structure at the proposed driveway entrance, and;
- Little Isaac Creek PR Model: Removed the existing 60" CMP culvert and associated embankment within Little Isaac Creek.

The remaining areas and parameters within PR Models have been left unchanged from the EX Models. The PR Models' results indicate that the maximum increase in BFE due to the proposed project within the subject parcel is less than 1.00 feet and there are no adverse impacts on adjacent parcels. Please refer to Appendices I, II, and III for comparisons and results of the EX and PR HEC-RAS Models.

4.0 SUMMARY OF RESULTS

The Comparative Data Tables and Profiles (found in Appendix I and II) show the BFEs from the EX and PR Models at the analyzed cross-sections within each respective stream. As shown in the comparative profiles and data tables for Big Isaac Creek, minor rises will occur at multiple RS cross-sections within the project limits (RS 1447, RS 1500, RS 1600, RS 1699, RS 1762, RS 1800, RS 1850, RS 1901, RS 1920, RS 1970, RS 1990, RS 2100, RS 2199, RS 2595) of no more than 0.9 feet. The project will also not create rises to the BFE upstream of the proposed project limits and onto adjacent parcels.

As shown in the comparative profiles and data tables for Little Isaac Creek, minor rises will occur at multiple RS cross-sections within the project limits (RS 34, RS 104, RS 125, RS 154, RS 354, RS 454, RS 1850, RS 1901, RS 1920, RS 1970, RS 1990, RS 2100, RS 2199, RS 2595) of no more than 0.9 feet. The project will also not create rises to the BFE upstream of the proposed project limits and onto adjacent parcels. In addition, the Little Isaac Creek PR model shows slightly lower BFE at several locations (RS 304, RS 404, RS 499, RS 597, RS 793).

Additionally, Section 4.3.2 of the WVDOH Drainage Manual requires proposed structures to be reviewed using a "Check Storm" that represents the 100-year storm or the overtopping of the roadway, whichever is less. The goal of the "Check Storm" is to avoid increasing the water surface elevation such that it becomes destructive to property upstream and downstream of the project area. The Little Isaac Creek EX and PR models show that the 100-year storm is contained within the stream banks and, therefore, no further analysis for the "Check Storm" is required. The EX model for Big Isaac Creek shows overtopping onto Little Isaacs Run (48/1) during the 25-year storm event. Therefore, the 25-year storm event was identified as the "Check Storm" to be evaluated. The PR model for Big Isaac Creek shows no increase in WSE during the 25-year event at RS 1920 and RS 1937, which are the two cross sections located upstream and downstream at the embankment and culvert for Little Isaacs Run (48/1). Therefore, the requirements of the WVDOH "Check Storm" are satisfied.

5.0 CONCLUSIONS

CEC performed a hydraulic analysis of the two (2) subject reaches for the proposed project in general accordance with the Doddridge County Floodplain Ordinance, the NFIP CFR Title 44, and standard engineering practices. Based on this analysis, our findings indicate that the maximum increase in BFE due to the proposed project is less than 1.00 feet and there are no adverse impacts on the subject or adjacent parcels or within the road rights of way. Furthermore, results from the 25-year "Check Storm" analysis indicate that no increase in WSE during the 25-year storm event occurred within the immediate vicinity of existing and proposed culverts for each model; therefore, the requirements of Section 4.3.2 of WVDOH Drainage manual are satisfied. Finally, in accordance with Article VI, Section 6.1.E.10 of the Doddridge County Floodplain Ordinance, a Conditional Letter of Map Revision based on Fill (CLOMR-F) has been submitted to FEMA. Upon receipt, a copy of the CLOMR-F approval will be provided to Doddridge County. Therefore, this project meets all requirements outlined within the Doddridge County Floodplain Ordinance and Floodplain Development Application.

6.0 LIMITATIONS AND EXPECTATIONS

The findings and opinions presented are relative to the dates of the site survey and the referenced hydrologic and hydraulic data sets and should not be relied on to represent conditions at substantially later dates. The opinions included herein are based on information obtained during the study and CEC's experience. If additional information becomes available that might impact CEC's conclusions, CEC requests the opportunity to review the information, reassess the potential concerns, and modify CEC's opinions, if warranted. Our services included a review or use of documents or data sources prepared by others, CEC has no responsibility for the accuracy of information contained therein.

7.0 REFERENCES

Doddridge County, West Virginia. Doddridge County Floodplain Ordinance, Enacted May 21, 2013, Revised June 5, 2018, Amended August 7, 2018.

Federal Emergency Management Agency (FEMA). Flood Insurance Study (FIS), Doddridge County, West Virginia and Incorporated Areas, FIS Study Number 54017CV000A, Effective October 4, 2011.

Hoggan, D. H. Computer-Assisted Floodplain Hydrology and Hydraulics, McGraw-Hill, 1997.

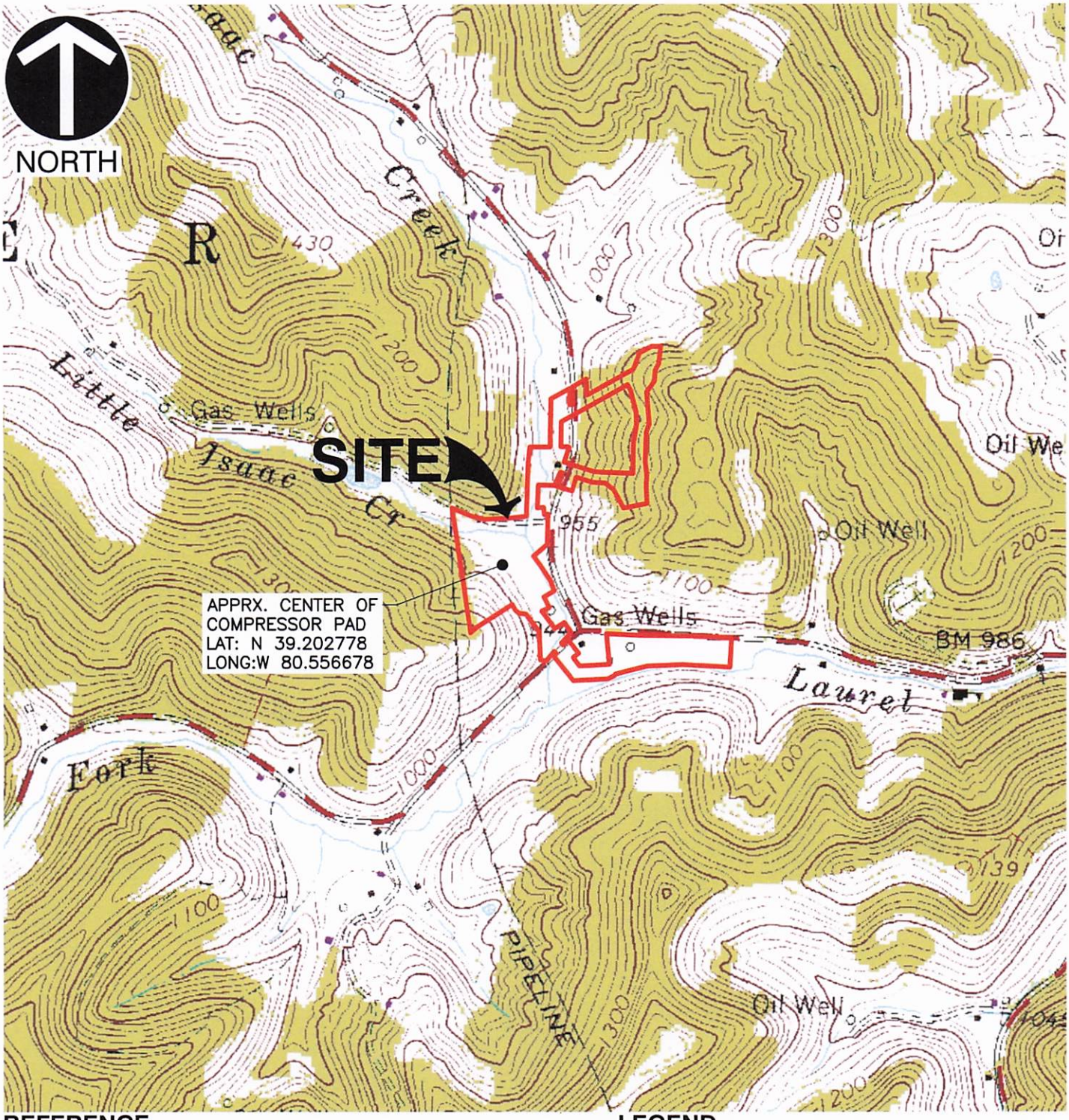
National Archives and Records Administration. Code of Federal Regulations, Title 44. Amended July 11, 2024.

U.S. Army Corps of Engineers (USACE), 2020. HEC-RAS, Hydraulic Reference Manual Version 6.0 USACE, Hydrologic Engineering Center, Davis, CA.

U.S. Department of Agriculture Natural Resources Conservation Service. National Engineering Handbook (NEH) Part 630 Chapter 15. May 2010.

West Virginia Department of Transportation, Division of Highways Engineering Division. Drainage Manual, 3rd Edition, December 2007, Revised May 2, 2012.

FIGURES



REFERENCE

1. U.S.G.S. 7.5' TOPOGRAPHIC MAP, DODDRIDGE QUADRANGLE, WV DATED: 1994

LEGEND

PROPOSED LIMIT OF DISTURBANCE

SCALE IN FEET

0 1000 2000

Civil & Environmental Consultants, Inc.

700 Cherrington Parkway
Moon Township, PA 15108

Ph: 412.429.2324 · 800.365.2324

www.cecinc.com

DTM STONEWALL GAS GATHERING LLC
MEATHOUSE FORK
COMPRESSOR STATION
DODDRIDGE COUNTY, WEST VIRGINIA

SITE LOCATION MAP

DRAWN BY:	MJK	CHECKED BY:	GRH	APPROVED BY:	TGJ	FIGURE NO.:
DATE:	AUGUST 2024	DWG SCALE:	1"=1000'	PROJECT NO:	342-931	5

National Flood Hazard Layer FIRMette

FEMA

80°33'42"W 39°12'24"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

80°33'5"W 39°11'56"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

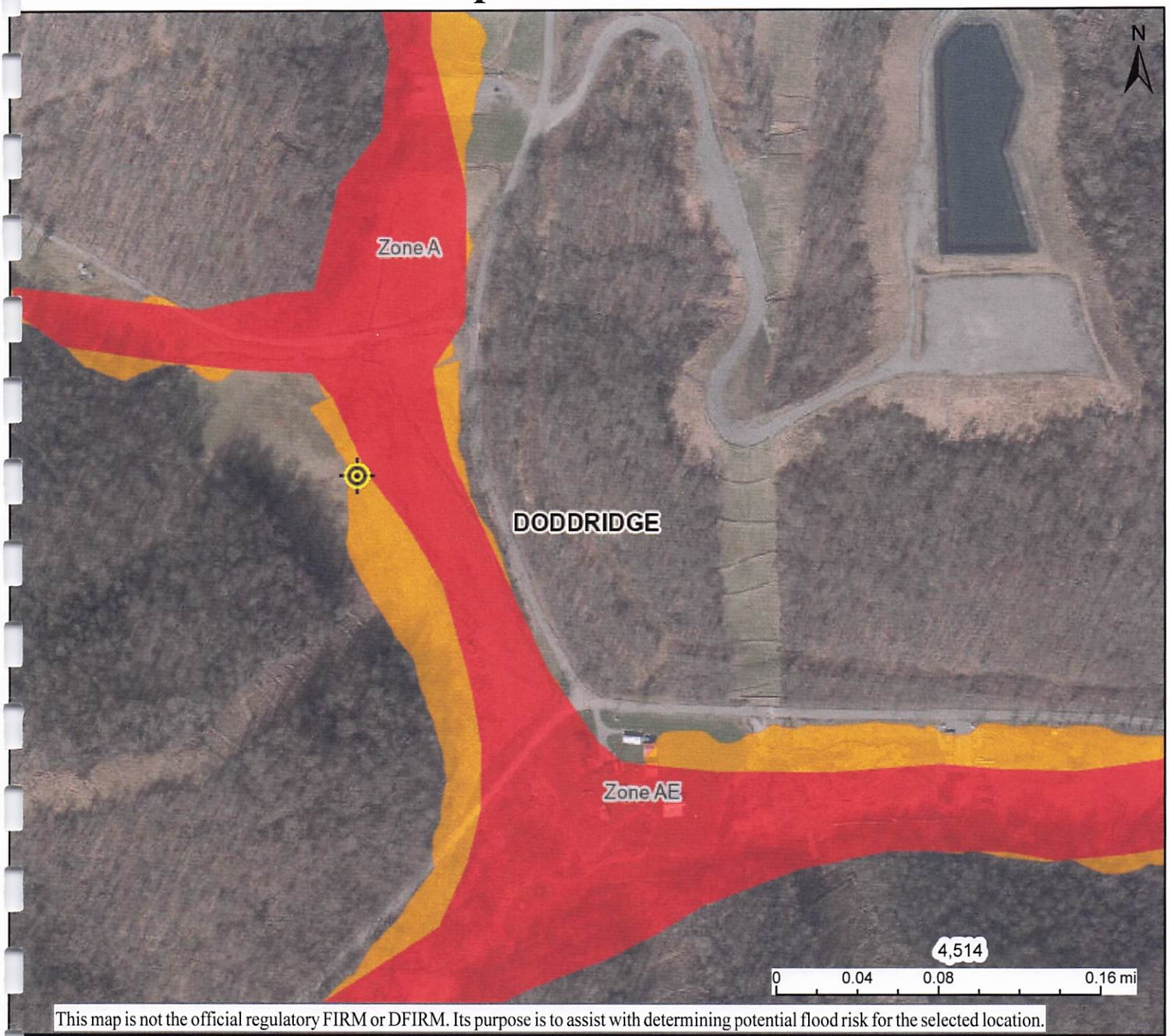
The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/29/2024 at 12:33 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

WV Flood Map-Meathouse Fork CS



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

	Regulatory Floodway
Zone AE	1-Percent-Annual-Chance Flood Hazard Area **With Base Flood Elevation** (BFE)
Zone A	1-Percent-Annual-Chance Flood Hazard Area **Without BFE** (may have Advisory Flood Heights)
Advisory	1-Percent-Annual-Chance Future Conditions (High Risk Advisory Flood Zones)

Download the Full Legend for all flood tool symbols
https://www.mapwv.gov/flood/map/docs/wv_flood_tool_legend.pdf

isclaimer:
he online map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. Refer to the official lood Insurance Study (FIS) for detailed flood elevation data in flood profiles nd data tables. WV Flood Tool (*https://www.MapWV.gov/flood*) is supported y FEMA, WV NFIP Office, and WV GIS Technical Center.

Flood Info Location — *Map created on 5/29/2024*

User Notes

Flood Hazard Area	Location is **WITHIN** the FEMA 100-year floodplain.
Flood Zone	AE
Stream	Big Isaac Creek
Watershed (HUC8)	Little Musringum-Middle Island (5030201)
Flood Height	Flood Height 2 948.0 ft (Source: BFE - Non-Restudy) NAVI
Water Depth	About 0.7 ft (Source: HEC-RAS)
Elevation	947.4 ft (Source: FEMA 2018-20) (NAVD88)
Community & ID	Doddridge County (ID: 540024)
FEMA Map & Date	54017C0260C; Effective Date: 10/4/2011
Location (lat, long)	(39.202805, -80.556351) (WGS84)
Parcel ID	09-04-0011-0035-0000
E-911 Address	

APPENDIX I

EXISTING VS. PROPOSED CONDITIONS HEC-RAS DATA TABLE

HEC-RAS River: Big Isaac Creek Reach: Reach 1

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	2595	100-Year	Big Isaac Creek Proposed	1288.00	949.23	955.23		955.51	0.003298	5.52	400.83	169.98	0.46
Reach 1	2595	100-Year	Big Isaac Creek Existing	1288.00	949.23	955.13		955.44	0.003732	5.78	382.79	168.38	0.49
Reach 1	2595	25-Year	Big Isaac Creek Proposed	142.00	949.23	952.15		952.34	0.003807	3.45	41.13	20.86	0.43
Reach 1	2595	25-Year	Big Isaac Creek Existing	142.00	949.23	952.17		952.35	0.003700	3.42	41.56	20.94	0.43
Reach 1	2495	100-Year	Big Isaac Creek Proposed	1288.00	949.34	954.16	954.16	954.95	0.008807	8.98	265.91	147.57	0.77
Reach 1	2495	100-Year	Big Isaac Creek Existing	1288.00	949.34	954.24		954.86	0.008546	7.87	277.72	148.90	0.68
Reach 1	2495	25-Year	Big Isaac Creek Proposed	142.00	949.34	951.38		951.74	0.009931	4.83	30.04	20.92	0.69
Reach 1	2495	25-Year	Big Isaac Creek Existing	142.00	949.34	951.45		951.76	0.010177	4.51	31.47	21.21	0.65
Reach 1	2397	100-Year	Big Isaac Creek Proposed	1288.00	947.54	953.20	953.20	953.99	0.008910	9.03	267.47	149.91	0.74
Reach 1	2397	100-Year	Big Isaac Creek Existing	1288.00	947.54	953.20	953.20	953.99	0.008910	9.03	267.47	149.91	0.74
Reach 1	2397	25-Year	Big Isaac Creek Proposed	142.00	947.54	949.85	949.71	950.44	0.018167	6.13	23.18	15.63	0.89
Reach 1	2397	25-Year	Big Isaac Creek Existing	142.00	947.54	949.85	949.71	950.44	0.018192	6.13	23.17	15.62	0.89
Reach 1	2298	100-Year	Big Isaac Creek Proposed	1288.00	945.44	951.57	951.57	952.28	0.011034	8.82	269.73	160.79	0.78
Reach 1	2298	100-Year	Big Isaac Creek Existing	1288.00	945.44	951.57	951.57	952.28	0.011034	8.82	269.73	160.79	0.78
Reach 1	2298	25-Year	Big Isaac Creek Proposed	142.00	945.44	948.69		949.12	0.009522	5.26	26.97	13.49	0.66
Reach 1	2298	25-Year	Big Isaac Creek Existing	142.00	945.44	948.69		949.12	0.009481	5.26	27.02	13.50	0.66
Reach 1	2199	100-Year	Big Isaac Creek Proposed	1288.00	944.97	949.88		950.27	0.008294	7.66	331.58	178.92	0.69
Reach 1	2199	100-Year	Big Isaac Creek Existing	1288.00	944.97	949.86		950.26	0.008561	7.75	328.03	178.73	0.70
Reach 1	2199	25-Year	Big Isaac Creek Proposed	142.00	944.97	948.23		948.42	0.004560	3.90	66.13	126.78	0.46
Reach 1	2199	25-Year	Big Isaac Creek Existing	142.00	944.97	948.22		948.41	0.004638	3.92	65.46	126.50	0.47
Reach 1	2100	100-Year	Big Isaac Creek Proposed	1288.00	945.37	949.63		949.74	0.002770	4.64	536.77	237.88	0.42
Reach 1	2100	100-Year	Big Isaac Creek Existing	1288.00	945.37	949.59		949.71	0.002908	4.72	528.56	237.70	0.43
Reach 1	2100	25-Year	Big Isaac Creek Proposed	142.00	945.37	948.22		948.24	0.000577	1.55	208.38	227.88	0.18
Reach 1	2100	25-Year	Big Isaac Creek Existing	142.00	945.37	948.22		948.23	0.000587	1.56	207.18	227.82	0.18
Reach 1	1999	100-Year	Big Isaac Creek Proposed	1288.00	943.55	949.44		949.53	0.001618	4.08	631.11	246.03	0.32
Reach 1	1999	100-Year	Big Isaac Creek Existing	1288.00	943.55	949.39		949.49	0.001692	4.15	624.46	248.32	0.33
Reach 1	1999	25-Year	Big Isaac Creek Proposed	142.00	943.55	948.21		948.21	0.000122	0.93	337.19	231.18	0.08
Reach 1	1999	25-Year	Big Isaac Creek Existing	142.00	943.55	948.20		948.21	0.000123	0.93	336.98	233.02	0.09
Reach 1	1970	100-Year	Big Isaac Creek Proposed	1288.00	944.00	949.38	948.01	949.49	0.001317	3.62	642.03	252.08	0.30
Reach 1	1970	100-Year	Big Isaac Creek Existing	1288.00	944.00	949.36	948.01	949.44	0.001094	3.42	694.68	259.84	0.28
Reach 1	1970	25-Year	Big Isaac Creek Proposed	142.00	944.00	948.20	945.99	948.21	0.000080	0.73	357.32	228.66	0.07
Reach 1	1970	25-Year	Big Isaac Creek Existing	142.00	944.00	948.20	945.99	948.20	0.000063	0.68	401.48	242.27	0.06
Reach 1	1945			Culvert									
Reach 1	1937	100-Year	Big Isaac Creek Proposed	1288.00	944.19	948.01	948.01	948.61	0.010684	8.00	251.47	179.80	0.80
Reach 1	1937	100-Year	Big Isaac Creek Existing	1288.00	944.19	948.01	948.01	948.33	0.006319	6.08	361.83	248.65	0.62
Reach 1	1937	25-Year	Big Isaac Creek Proposed	142.00	944.19	946.77	946.77	947.97	0.017245	8.81	16.11	102.38	0.99

Calculations Prepared by: CCR
Calculations Checked by: DJW

HEC-RAS River: Big Isaac Creek Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	1937	25-Year	Big Isaac Creek Existing	142.00	944.19	946.77	946.77	947.97	0.017245	8.81	16.11	154.27	0.99
Reach 1	1920	100-Year	Big Isaac Creek Proposed	1288.00	943.66	947.58	947.54	948.29	0.011681	8.93	258.62	150.27	0.86
Reach 1	1920	100-Year	Big Isaac Creek Existing	1288.00	943.66	947.44	947.43	948.06	0.013229	8.30	279.91	196.85	0.83
Reach 1	1920	25-Year	Big Isaac Creek Proposed	142.00	943.66	946.97		946.99	0.000422	1.48	170.25	138.77	0.16
Reach 1	1920	25-Year	Big Isaac Creek Existing	142.00	943.66	947.07		947.08	0.000341	1.22	208.31	185.03	0.13
Reach 1	1901	100-Year	Big Isaac Creek Proposed	1450.00	942.67	947.63		947.95	0.011063	5.98	343.66	175.41	0.54
Reach 1	1901	100-Year	Big Isaac Creek Existing	1450.00	942.67	947.35		947.78	0.009883	8.06	410.22	318.02	0.75
Reach 1	1901	25-Year	Big Isaac Creek Proposed	572.00	942.67	946.49	946.49	946.87	0.019414	6.27	147.49	168.23	0.67
Reach 1	1901	25-Year	Big Isaac Creek Existing	572.00	942.67	946.62	946.62	946.99	0.008359	6.38	198.93	248.75	0.67
Reach 1	1850	100-Year	Big Isaac Creek Proposed	1450.00	941.91	947.44		947.62	0.003618	5.16	489.84	197.64	0.45
Reach 1	1850	100-Year	Big Isaac Creek Existing	1450.00	941.91	947.20		947.38	0.004477	5.51	536.63	308.40	0.50
Reach 1	1850	25-Year	Big Isaac Creek Proposed	572.00	941.91	946.17		946.33	0.004757	4.61	242.57	194.48	0.49
Reach 1	1850	25-Year	Big Isaac Creek Existing	572.00	941.91	946.25		946.39	0.004255	4.44	271.51	242.73	0.46
Reach 1	1800	100-Year	Big Isaac Creek Proposed	1450.00	941.91	947.25		947.41	0.004241	4.32	475.29	186.97	0.35
Reach 1	1800	100-Year	Big Isaac Creek Existing	1450.00	941.91	946.58		947.04	0.009033	8.51	383.48	247.92	0.76
Reach 1	1800	25-Year	Big Isaac Creek Proposed	572.00	941.91	945.91		946.05	0.006444	4.23	226.65	180.26	0.41
Reach 1	1800	25-Year	Big Isaac Creek Existing	572.00	941.91	945.62	945.62	946.06	0.009200	7.13	177.77	182.94	0.73
Reach 1	1762	100-Year	Big Isaac Creek Proposed	1450.00	942.38	947.14		947.27	0.003031	3.44	513.01	171.44	0.30
Reach 1	1762	100-Year	Big Isaac Creek Existing	1450.00	942.38	946.50		946.72	0.005143	5.60	461.60	235.61	0.53
Reach 1	1762	25-Year	Big Isaac Creek Proposed	572.00	942.38	945.80		945.86	0.003077	2.68	285.57	166.36	0.28
Reach 1	1762	25-Year	Big Isaac Creek Existing	572.00	942.38	945.50		945.63	0.004464	4.18	248.43	192.11	0.47
Reach 1	1699	100-Year	Big Isaac Creek Proposed	1450.00	941.29	946.88		947.05	0.003860	4.14	449.58	148.53	0.34
Reach 1	1699	100-Year	Big Isaac Creek Existing	1450.00	941.29	946.04		946.35	0.006157	6.87	403.57	191.79	0.62
Reach 1	1699	25-Year	Big Isaac Creek Proposed	572.00	941.29	945.56		945.65	0.003586	3.19	255.76	145.40	0.31
Reach 1	1699	25-Year	Big Isaac Creek Existing	572.00	941.29	945.18		945.35	0.004285	4.83	241.53	183.21	0.50
Reach 1	1600	100-Year	Big Isaac Creek Proposed	1450.00	939.76	946.44		946.65	0.004052	4.41	400.92	112.07	0.33
Reach 1	1600	100-Year	Big Isaac Creek Existing	1450.00	939.77	945.60		945.82	0.004226	6.02	456.68	185.49	0.50
Reach 1	1600	25-Year	Big Isaac Creek Proposed	572.00	939.76	945.30		945.38	0.002113	2.72	274.47	110.31	0.23
Reach 1	1600	25-Year	Big Isaac Creek Existing	572.00	939.77	945.05		945.10	0.001277	3.03	358.00	169.16	0.27
Reach 1	1500	100-Year	Big Isaac Creek Proposed	1450.00	939.29	945.65		946.09	0.007257	7.31	300.31	96.36	0.60
Reach 1	1500	100-Year	Big Isaac Creek Existing	1450.00	939.29	945.25		945.42	0.003597	5.55	523.08	231.77	0.44
Reach 1	1500	25-Year	Big Isaac Creek Proposed	572.00	939.29	945.04		945.16	0.002167	3.77	241.92	95.50	0.32
Reach 1	1500	25-Year	Big Isaac Creek Existing	572.00	939.29	944.96		945.00	0.000805	2.52	458.28	221.75	0.21
Reach 1	1447	100-Year	Big Isaac Creek Proposed	1450.00	940.52	945.31	944.18	945.65	0.008306	5.20	312.23	101.20	0.45
Reach 1	1447	100-Year	Big Isaac Creek Existing	1450.00	940.52	945.12		945.25	0.002468	4.58	597.40	245.58	0.40
Reach 1	1447	25-Year	Big Isaac Creek Proposed	572.00	940.52	944.97	943.36	945.04	0.001890	2.37	277.31	100.96	0.21

Calculations Prepared by: CCR
Calculations Checked by: DJW

HEC-RAS River: Big Isaac Creek Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	1447	25-Year	Big Isaac Creek Existing	572.00	940.52	944.94		944.96	0.000482	1.96	552.40	241.22	0.17
Reach 1	1398	100-Year	Big Isaac Creek Proposed	1450.00	940.22	944.97	943.69	945.27	0.006892	4.86	329.65	137.40	0.42
Reach 1	1398	100-Year	Big Isaac Creek Existing	1450.00	940.22	945.04		945.13	0.001937	3.92	650.86	247.20	0.34
Reach 1	1398	25-Year	Big Isaac Creek Proposed	572.00	940.22	944.91	942.89	944.96	0.001142	1.96	323.42	137.29	0.17
Reach 1	1398	25-Year	Big Isaac Creek Existing	572.00	940.22	944.92		944.94	0.000344	1.62	622.72	244.85	0.14
Reach 1	1299	100-Year	Big Isaac Creek Proposed	1450.00	938.94	944.93		944.99	0.001046	2.92	787.79	243.65	0.24
Reach 1	1299	100-Year	Big Isaac Creek Existing	1450.00	938.94	944.92		944.99	0.001017	3.25	786.69	243.61	0.25
Reach 1	1299	25-Year	Big Isaac Creek Proposed	572.00	938.94	944.90		944.91	0.000166	1.16	782.14	243.46	0.10
Reach 1	1299	25-Year	Big Isaac Creek Existing	572.00	938.94	944.90		944.91	0.000161	1.29	781.96	243.46	0.10
Reach 1	1200	100-Year	Big Isaac Creek Proposed	1450.00	938.38	944.90		944.93	0.000299	1.78	1201.20	267.96	0.14
Reach 1	1200	100-Year	Big Isaac Creek Existing	1450.00	938.38	944.90		944.93	0.000297	1.90	1201.14	267.96	0.14
Reach 1	1200	25-Year	Big Isaac Creek Proposed	572.00	938.38	944.90		944.90	0.000047	0.70	1200.60	267.94	0.05
Reach 1	1200	25-Year	Big Isaac Creek Existing	572.00	938.38	944.90		944.90	0.000046	0.75	1200.58	267.94	0.06
Reach 1	1190	100-Year	Big Isaac Creek Proposed	1450.00	938.63	944.90	940.97	944.92	0.000279	1.83	1226.65	269.92	0.14
Reach 1	1190	100-Year	Big Isaac Creek Existing	1450.00	938.63	944.90	940.97	944.92	0.000279	1.83	1226.65	269.92	0.14
Reach 1	1190	25-Year	Big Isaac Creek Proposed	572.00	938.63	944.90	940.52	944.90	0.000043	0.72	1226.65	269.92	0.05
Reach 1	1190	25-Year	Big Isaac Creek Existing	572.00	938.63	944.90	940.52	944.90	0.000043	0.72	1226.65	269.92	0.05

Calculations Prepared by: CCR
Calculations Checked by: DJW

HEC-RAS River: Little Issac Cre Reach: Reach 1 Profile: 100-Year

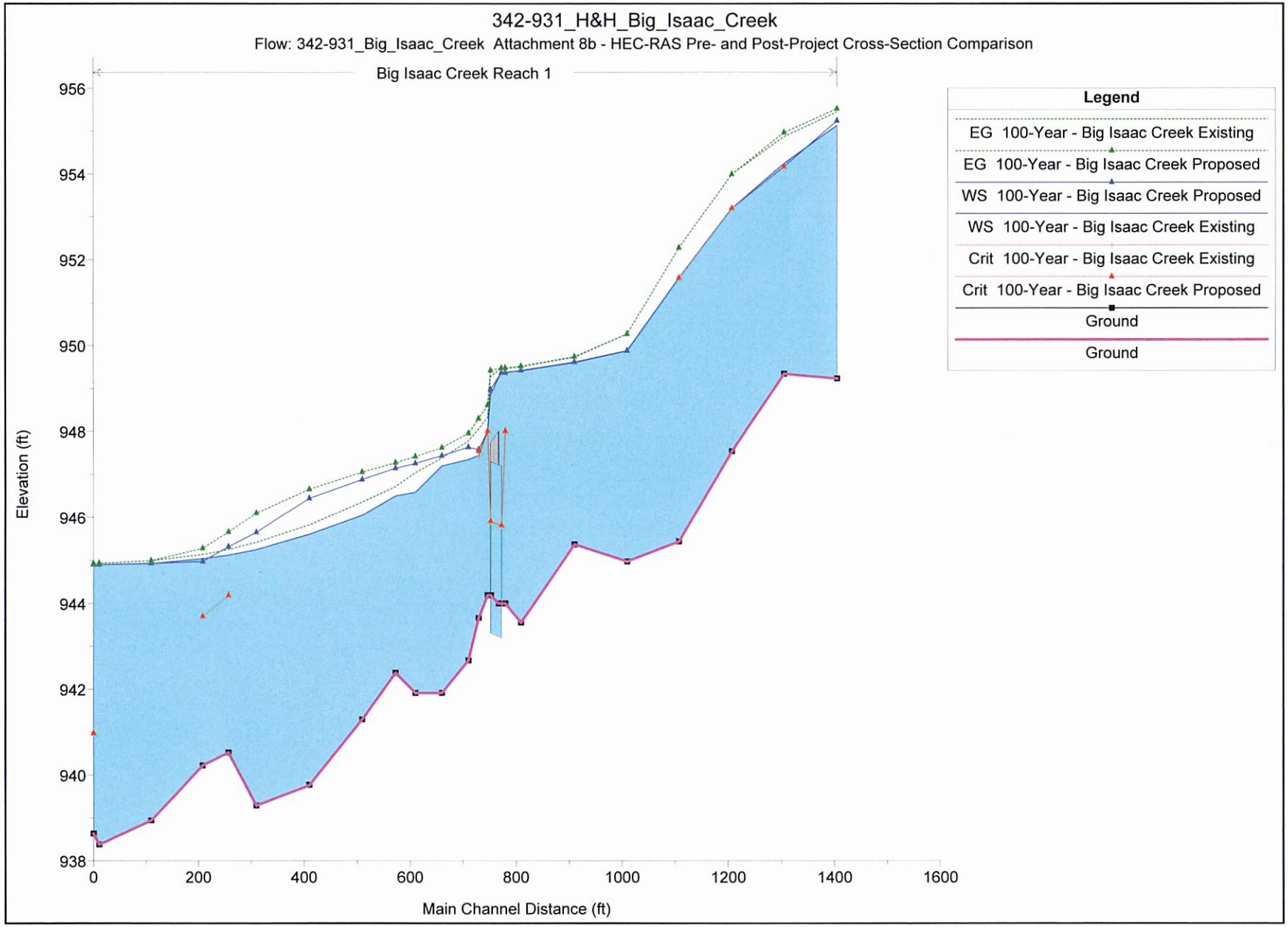
Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	793	100-Year	Little Isaac Creek Proposed 100 Year	162.00	955.11	957.89	957.48	958.29	0.010610	5.09	31.81	19.53	0.70
Reach 1	793	100-Year	Little Isaac Creek Existing 100 Year	162.00	955.11	957.89	957.48	958.29	0.010609	5.09	31.82	19.53	0.70
Reach 1	697	100-Year	Little Isaac Creek Proposed 100 Year	162.00	954.34	956.17	956.17	956.83	0.022928	6.50	24.92	19.26	1.01
Reach 1	697	100-Year	Little Isaac Creek Existing 100 Year	162.00	954.34	956.17	956.17	956.83	0.022928	6.50	24.92	19.26	1.01
Reach 1	597	100-Year	Little Isaac Creek Proposed 100 Year	162.00	952.37	954.90		955.27	0.008308	4.85	33.42	18.13	0.63
Reach 1	597	100-Year	Little Isaac Creek Existing 100 Year	162.00	952.37	954.90		955.27	0.008293	4.84	33.44	18.14	0.63
Reach 1	499	100-Year	Little Isaac Creek Proposed 100 Year	162.00	951.84	954.03	953.57	954.39	0.009551	4.85	33.39	20.06	0.66
Reach 1	499	100-Year	Little Isaac Creek Existing 100 Year	162.00	951.84	954.02	953.57	954.39	0.009669	4.87	33.25	20.03	0.67
Reach 1	454	100-Year	Little Isaac Creek Proposed 100 Year	162.00	950.02	953.61	953.12	953.95	0.009830	4.65	34.84	21.42	0.64
Reach 1	454	100-Year	Little Isaac Creek Existing 100 Year	162.00	950.02	953.59	953.12	953.93	0.010219	4.72	34.34	21.28	0.65
Reach 1	404	100-Year	Little Isaac Creek Proposed 100 Year	162.00	949.51	952.56	952.49	953.23	0.020201	6.58	24.64	16.05	0.94
Reach 1	404	100-Year	Little Isaac Creek Existing 100 Year	162.00	949.51	952.62	952.49	953.24	0.018079	6.33	25.59	16.22	0.89
Reach 1	354	100-Year	Little Isaac Creek Proposed 100 Year	162.00	949.41	951.69	951.60	952.27	0.017276	6.12	27.43	21.13	0.90
Reach 1	354	100-Year	Little Isaac Creek Existing 100 Year	162.00	949.41	951.60	951.60	952.26	0.021166	6.54	25.53	20.57	0.98
Reach 1	304	100-Year	Little Isaac Creek Proposed 100 Year	162.00	947.58	950.61	950.61	951.27	0.023051	6.49	25.04	19.73	1.00
Reach 1	304	100-Year	Little Isaac Creek Existing 100 Year	162.00	947.58	950.86		951.32	0.013034	5.46	30.02	21.53	0.77
Reach 1	276	100-Year	Little Isaac Creek Proposed 100 Year	162.00	946.54	948.56	948.56	949.34	0.022367	7.09	22.84	14.74	1.00
Reach 1	251	100-Year	Little Isaac Creek Existing 100 Year	162.00	947.06	950.18		950.64	0.012900	5.39	30.33	22.25	0.77
Reach 1	233			Culvert									
Reach 1	204	100-Year	Little Isaac Creek Existing 100 Year	162.00	946.65	950.05		950.23	0.004106	3.49	50.68	61.45	0.45
Reach 1	190	100-Year	Little Isaac Creek Proposed 100 Year	162.00	946.09	948.67		948.94	0.005438	4.23	38.84	21.12	0.53
Reach 1	154	100-Year	Little Isaac Creek Proposed 100 Year	162.00	945.18	948.37		948.70	0.007514	4.63	37.64	30.97	0.60
Reach 1	154	100-Year	Little Isaac Creek Existing 100 Year	162.00	945.18	950.08	947.64	950.11	0.000422	1.70	154.60	97.25	0.16
Reach 1	125	100-Year	Little Isaac Creek Proposed 100 Year	162.00	944.20	948.20		948.44	0.008748	4.23	45.37	40.36	0.49
Reach 1	125	100-Year	Little Isaac Creek Existing 100 Year	162.00	944.20	947.92	947.86	948.25	0.014019	4.97	45.36	71.65	0.62
Reach 1	104	100-Year	Little Isaac Creek Proposed 100 Year	162.00	945.87	947.79	947.71	948.19	0.014150	5.75	39.31	39.06	0.82
Reach 1	104	100-Year	Little Isaac Creek Existing 100 Year	162.00	945.87	947.66	947.59	947.92	0.013030	5.19	55.27	85.32	0.77
Reach 1	34	100-Year	Little Isaac Creek Proposed 100 Year	162.00	944.42	946.63	946.63	947.02	0.020245	5.57	36.75	43.49	0.93
Reach 1	34	100-Year	Little Isaac Creek Existing 100 Year	162.00	944.42	946.59	946.59	946.88	0.016997	5.03	49.95	85.75	0.85

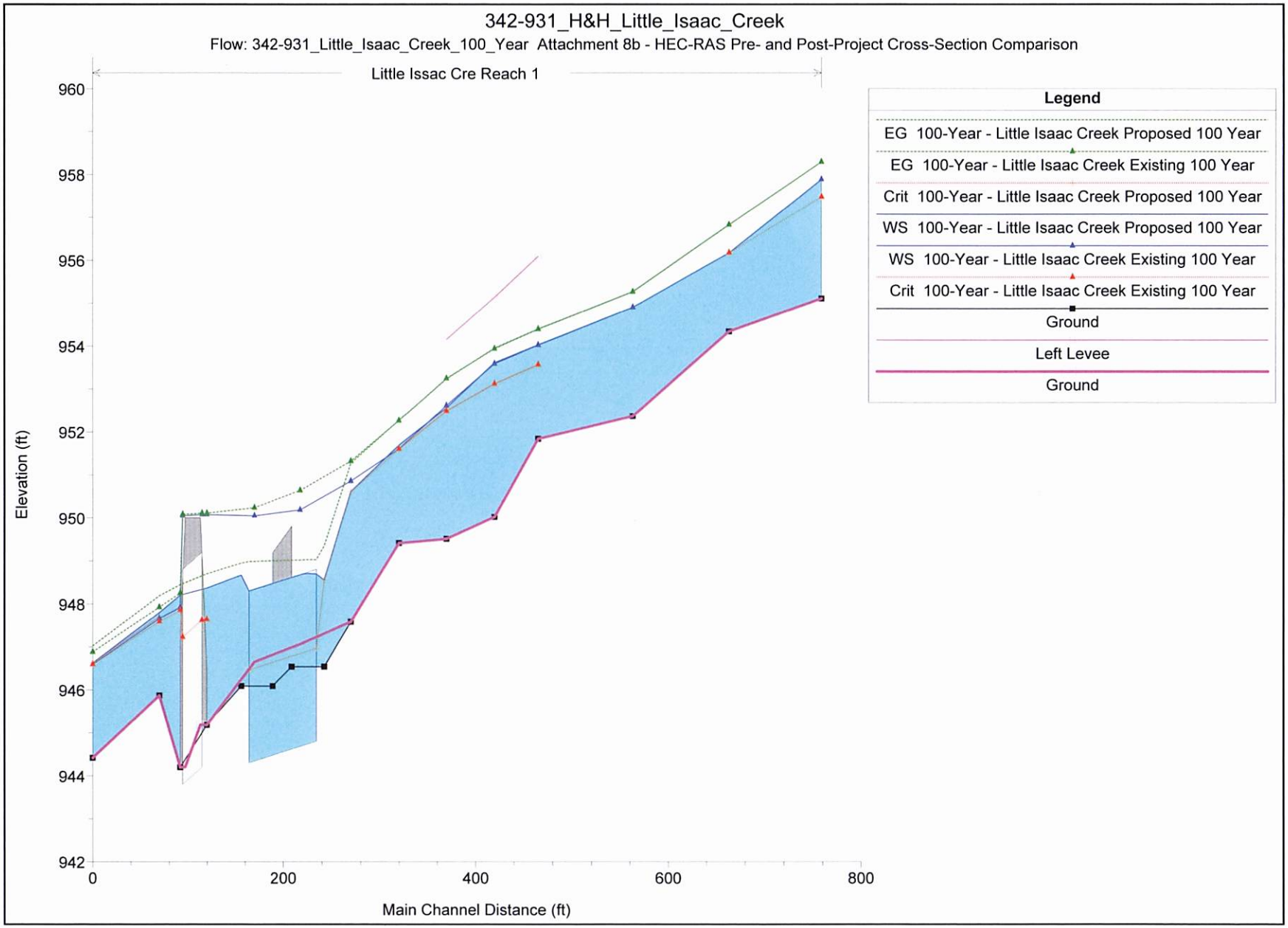
Note: cross-sections were altered in the proposed model to accurately model the changes in the in-line structures. Refer to the Little Isaac Creek profile in Appendix II for complete water surface elevation comparisons.

Calculations Prepared by: CCR
Calculations Checked by: DJW

APPENDIX II

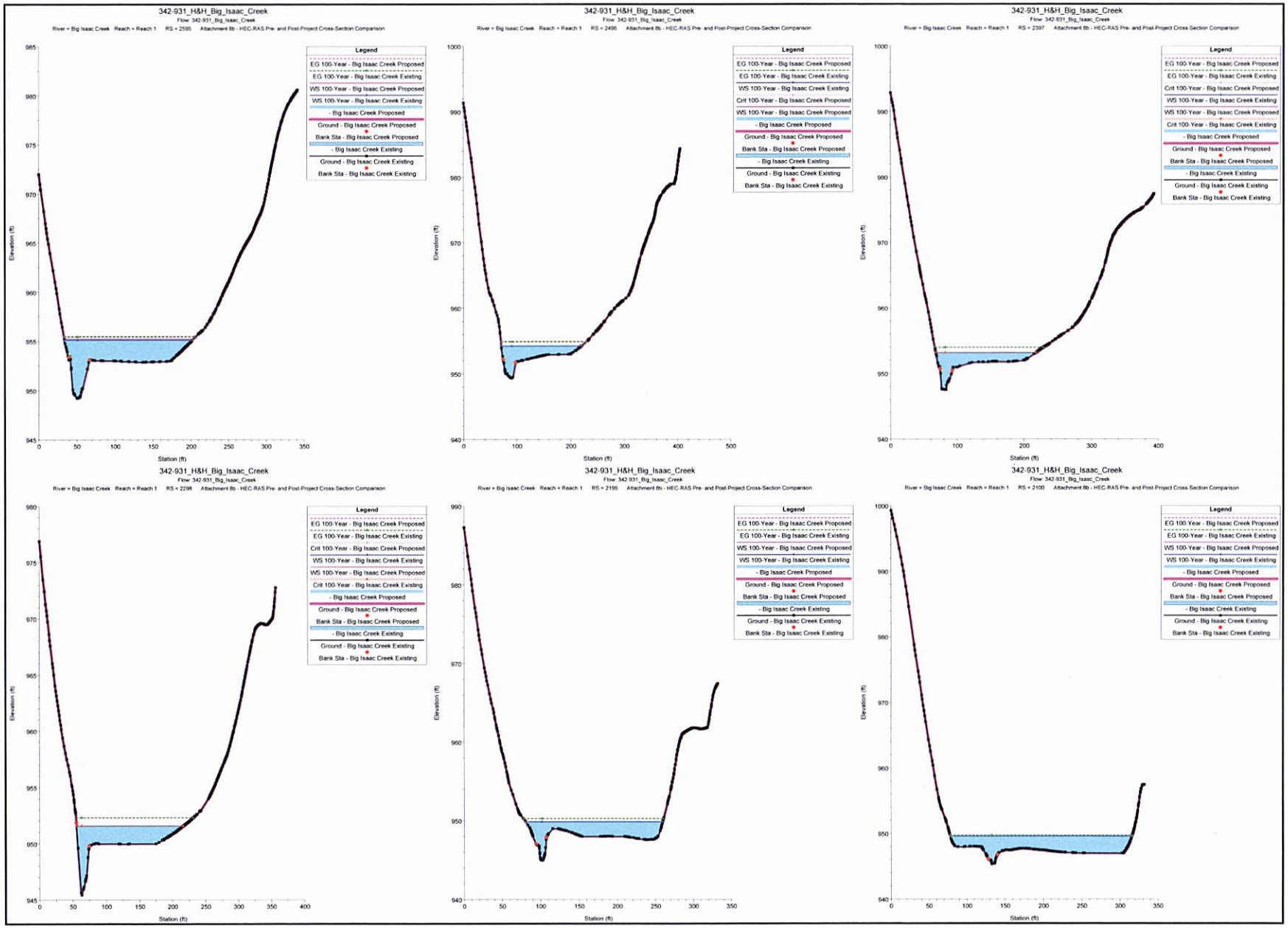
EXISTING VS. PROPOSED CONDITIONS HEC-RAS PROFILE

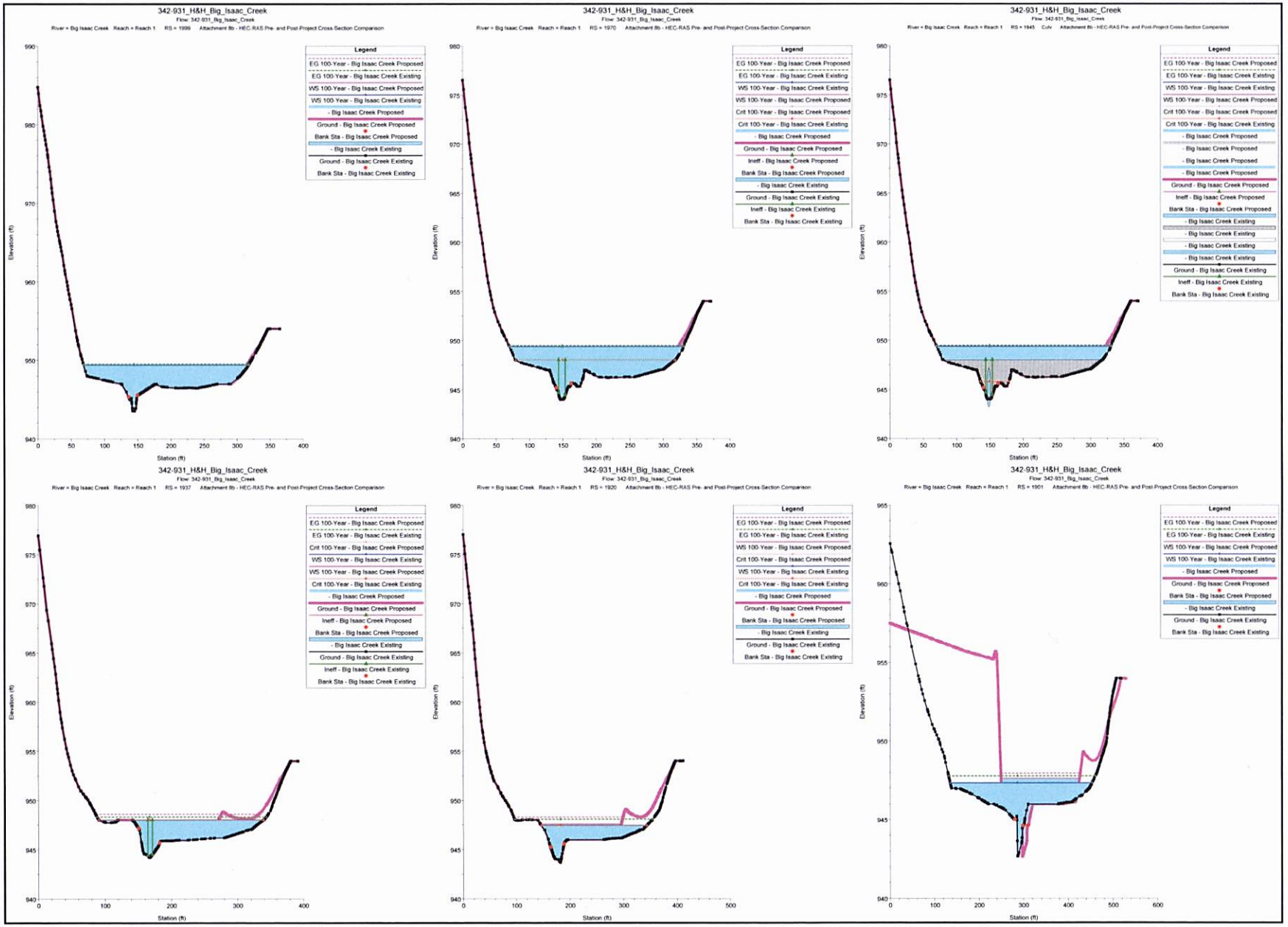

342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Big Isaac Creek Reach 1
Legend
EG 100-Year - Big Isaac Creek Existing
EG 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Proposed
Ground
Ground
Elevation (ft)
956
954
952
950
948
946
944
942
940
938
0
200
400
600
800
1000
1200
1400
1600
Main Channel Distance (ft)

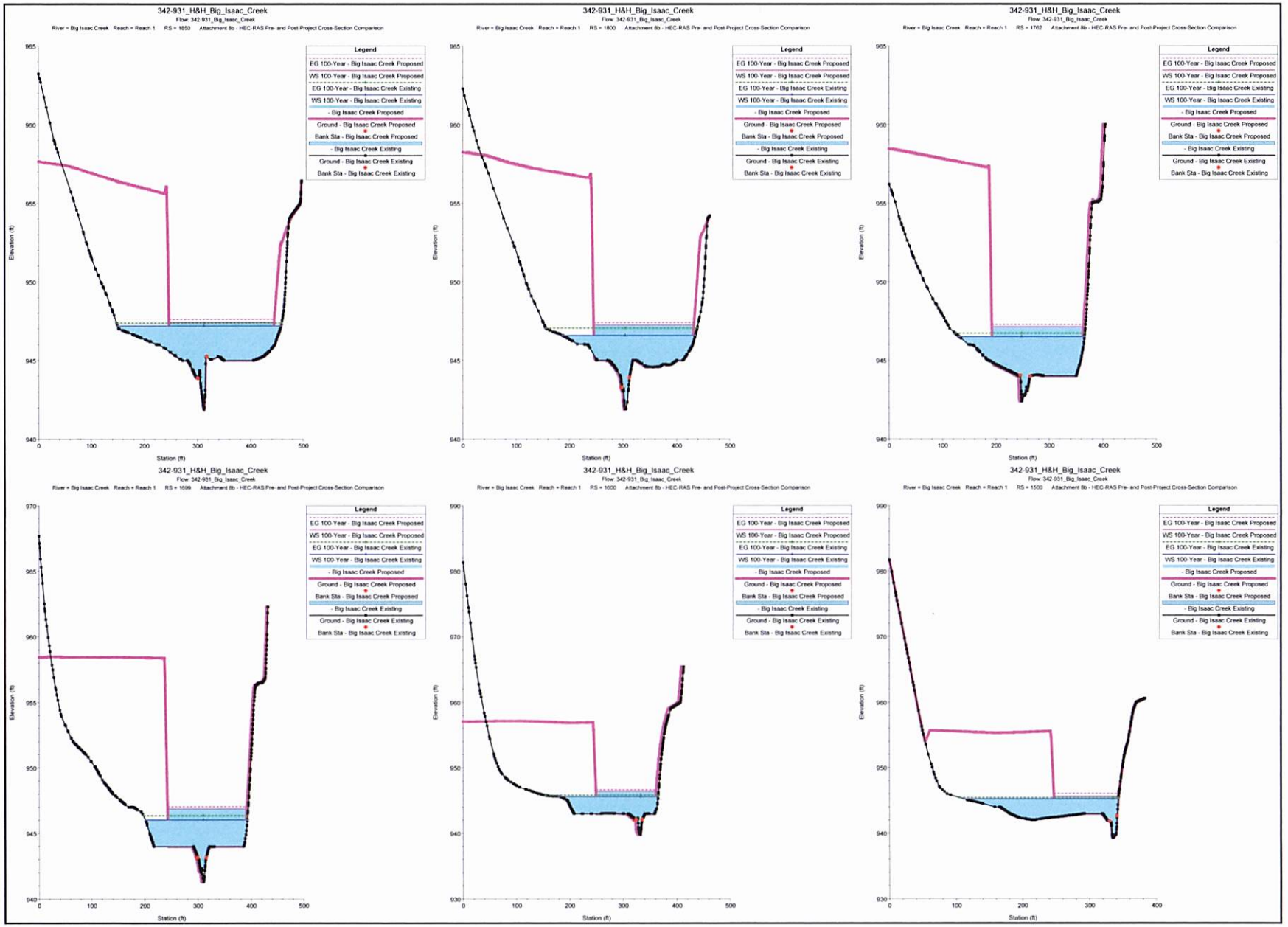

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Little Issac Cre Reach 1
Elevation (ft)
960
958
956
954
952
950
948
946
944
942
0
200
400
600
800
Main Channel Distance (ft)
Legend
EG 100-Year - Little Isaac Creek Proposed 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
Ground
Left Levee
Ground

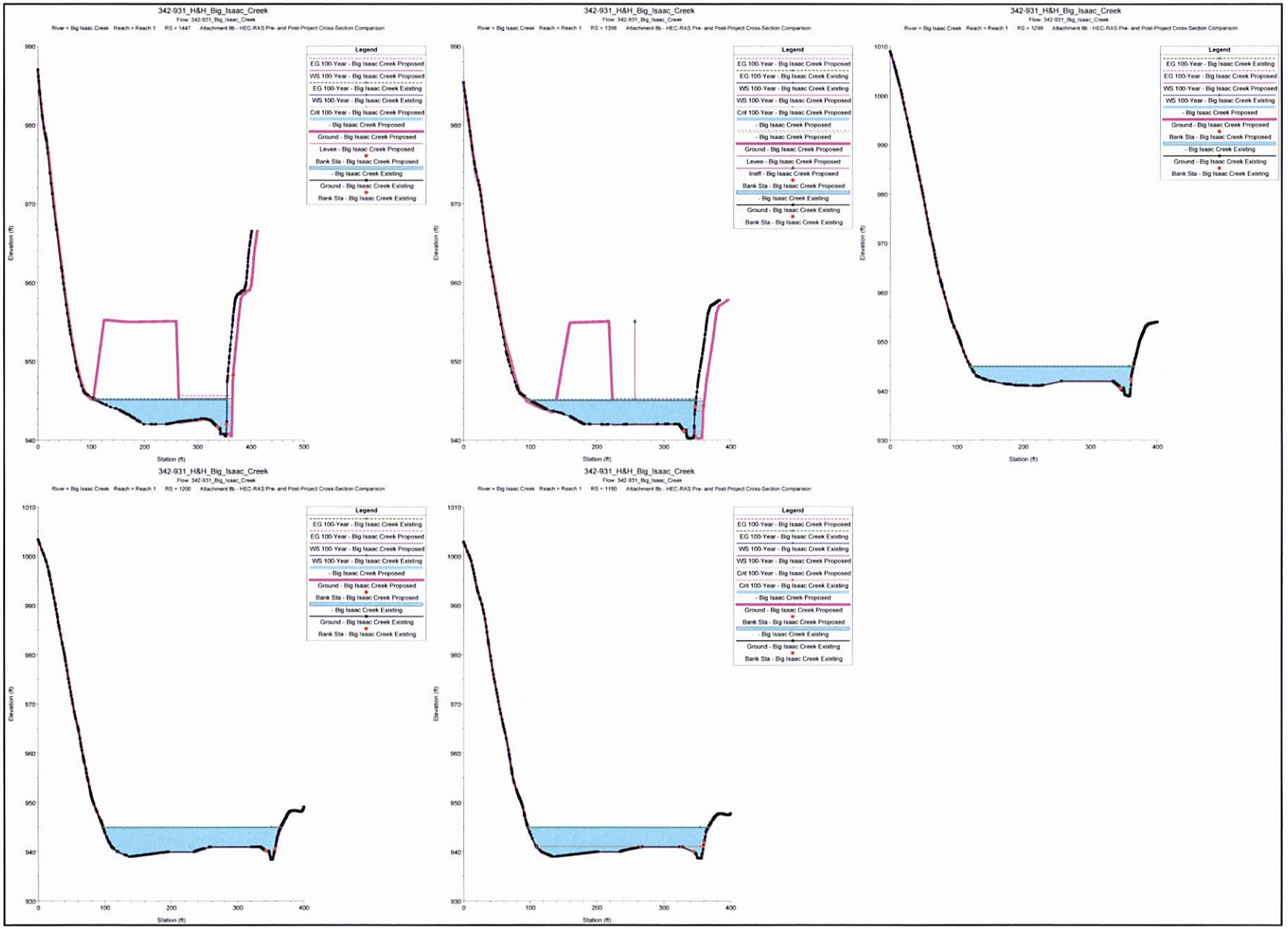
APPENDIX III

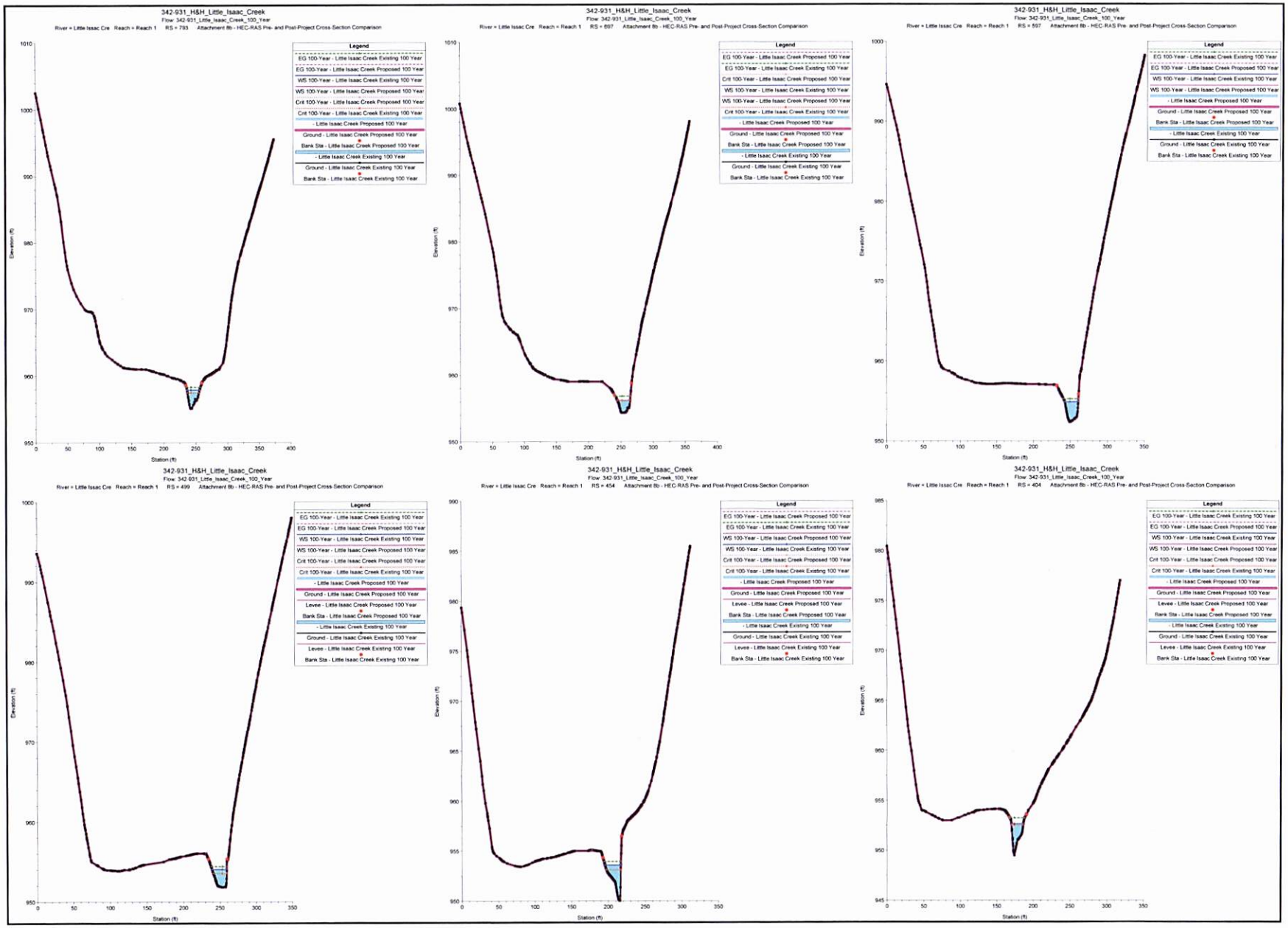
EXISTING VS. PROPOSED CONDITIONS HEC-RAS CROSS-SECTIONS

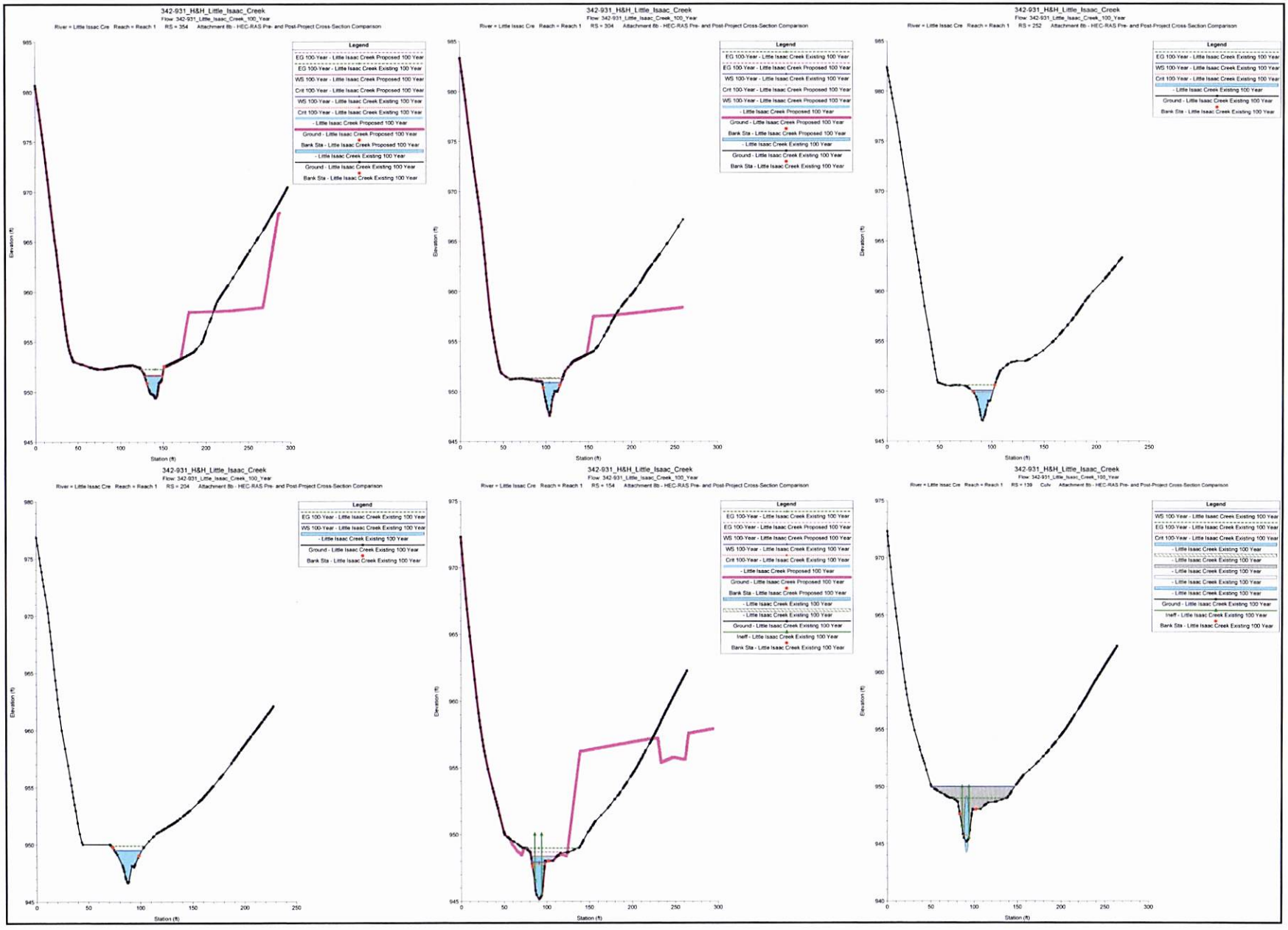

342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2595 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2495 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Proposed
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2397 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
Crit 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2298 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
Crit 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2199 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2100 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)

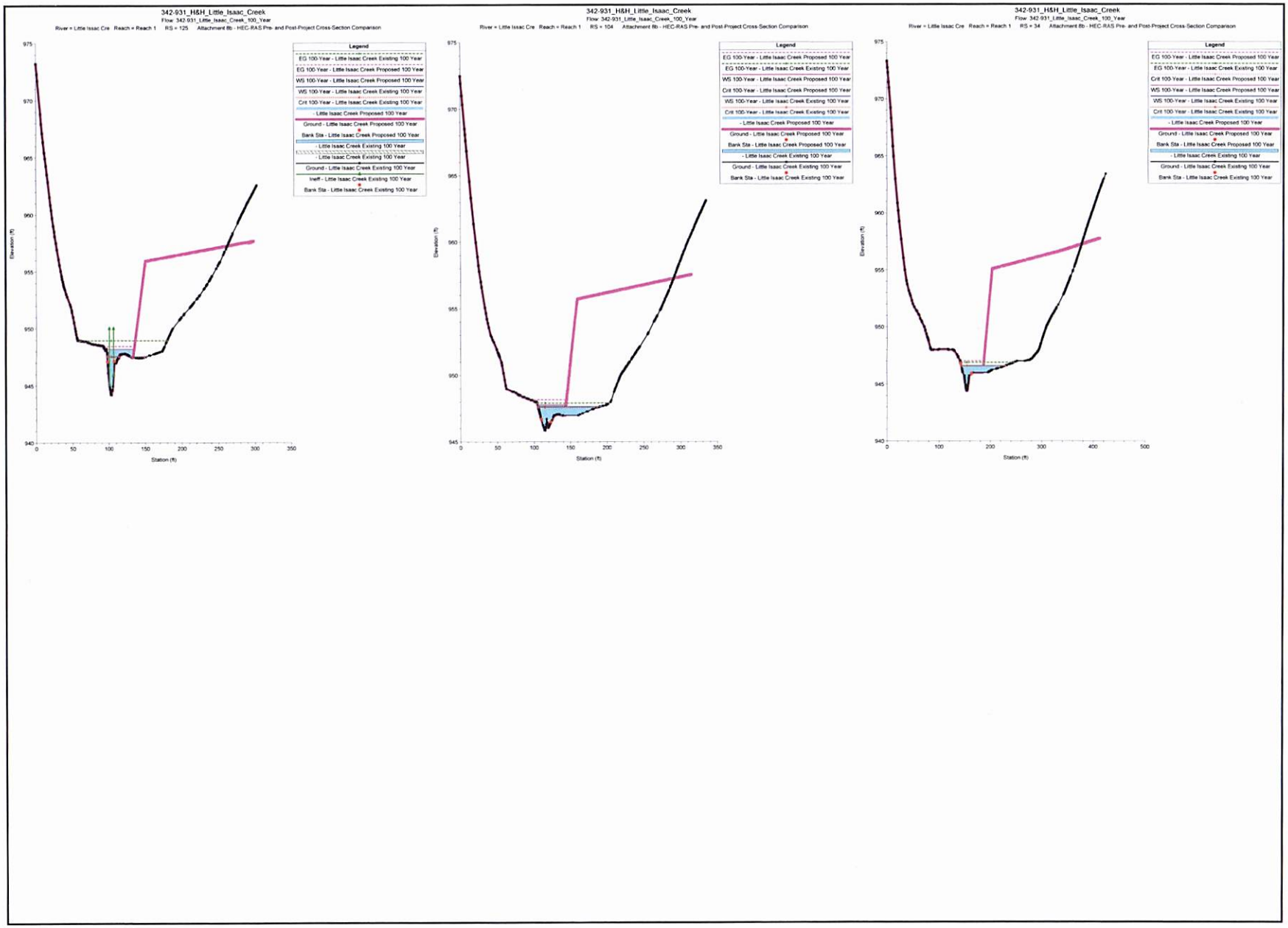

342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1999 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1970 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1945 Culv Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1937 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1920 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1901 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Proposed
Crit 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Ineff - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Ineff - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1850 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1800 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1762 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1699 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1600 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1500 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1447 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Existing
Crit 100-Year - Big Isaac Creek Proposed
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Levee - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1398 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
Crit 100-Year - Big Isaac Creek Proposed
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Levee - Big Isaac Creek Proposed
Ineff - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1299 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Existing
EG 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1200 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Existing
EG 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Proposed
WS 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1190 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Big Isaac Creek Proposed
EG 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Existing
WS 100-Year - Big Isaac Creek Proposed
Crit 100-Year - Big Isaac Creek Proposed
Crit 100-Year - Big Isaac Creek Existing
- Big Isaac Creek Proposed
Ground - Big Isaac Creek Proposed
Bank Sta - Big Isaac Creek Proposed
- Big Isaac Creek Existing
Ground - Big Isaac Creek Existing
Bank Sta - Big Isaac Creek Existing
Elevation (ft)
Station (ft)

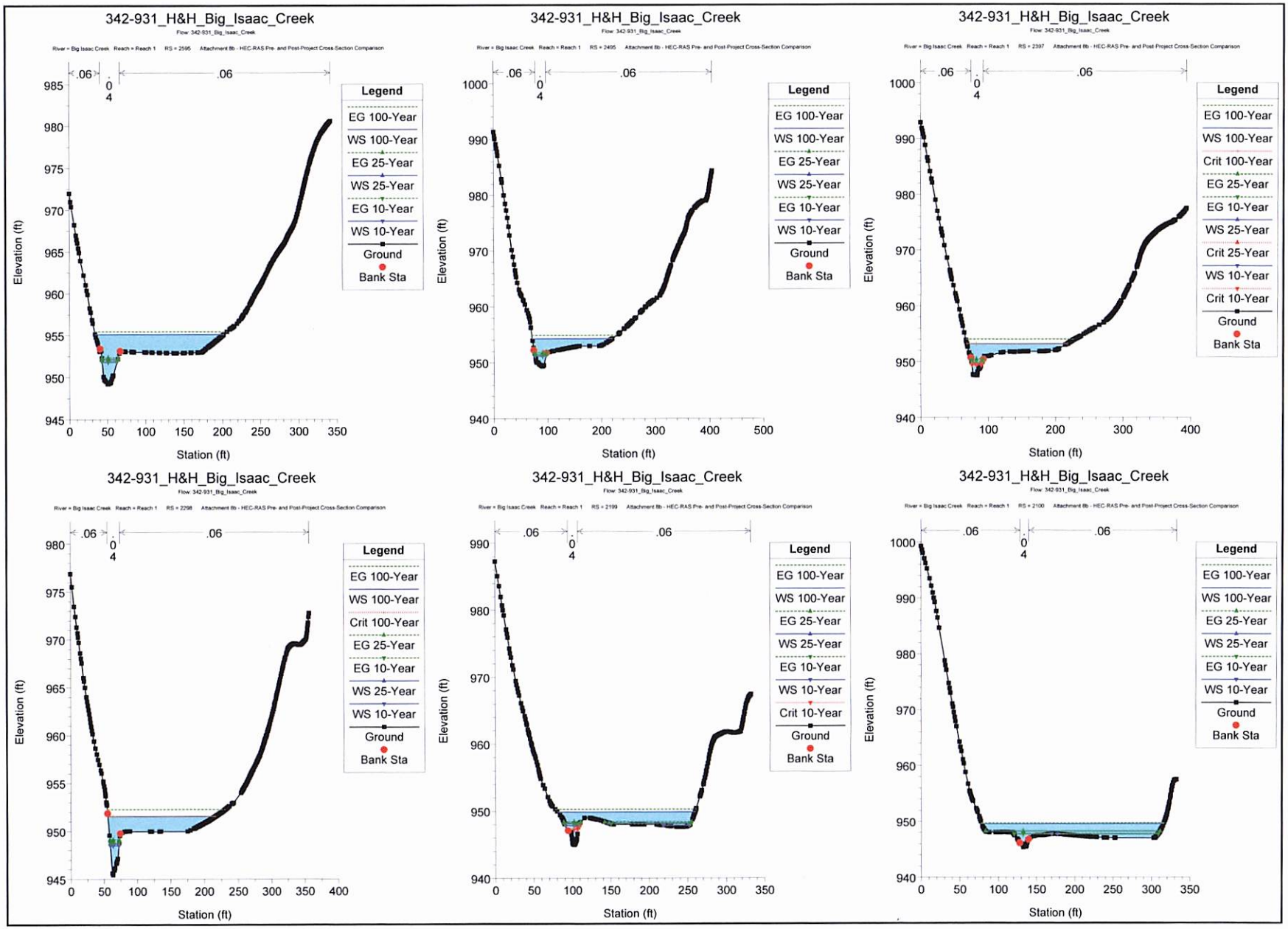

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 793 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 697 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Proposed 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 597 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 499 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Levee - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Levee - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 454 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Proposed 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Levee - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Levee - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 404 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Levee - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Levee - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)

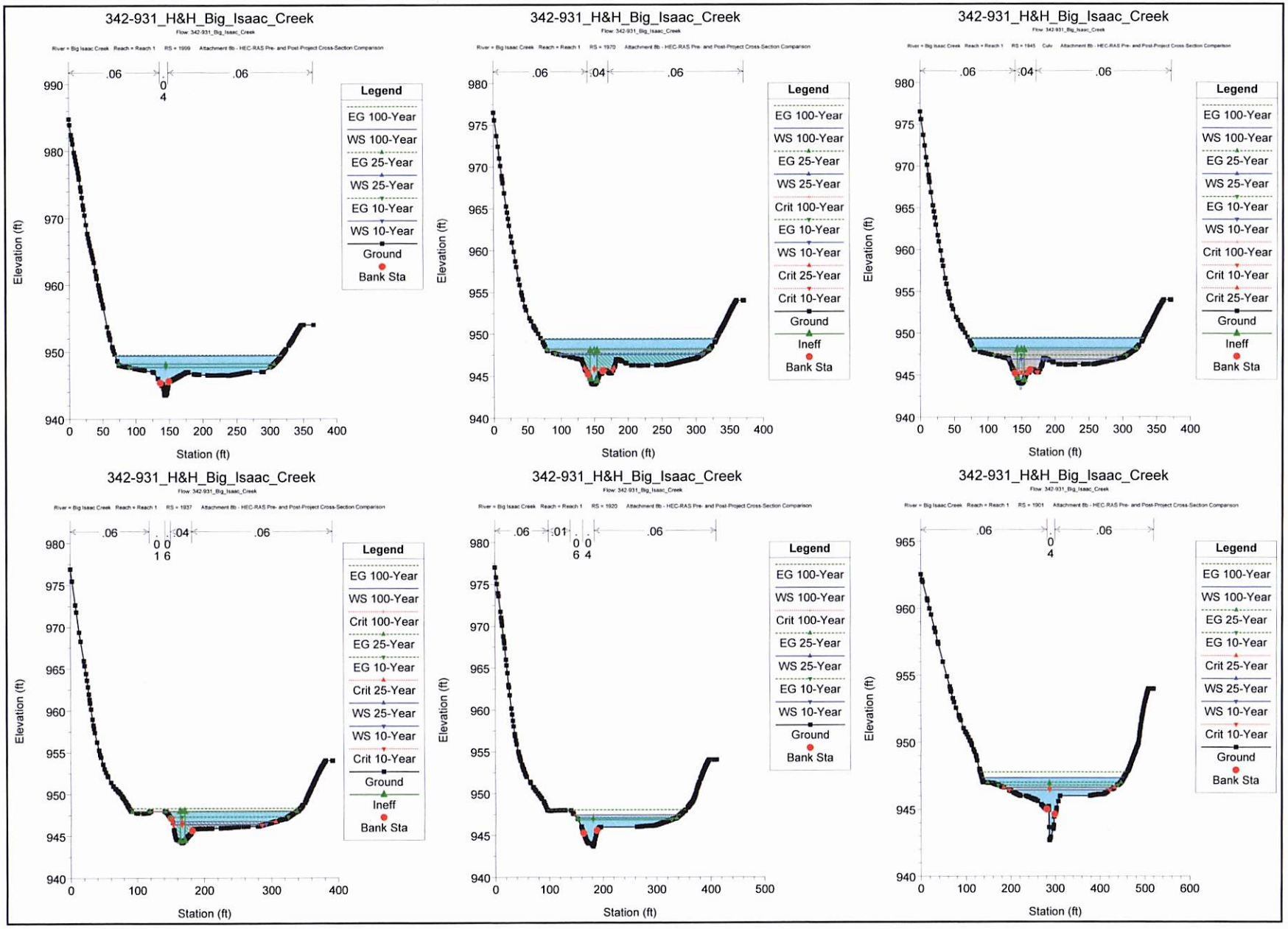

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 354 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Proposed 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 304 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 252 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 204 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 154 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Ineff - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 139 Culv Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
WS 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Ineff - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)

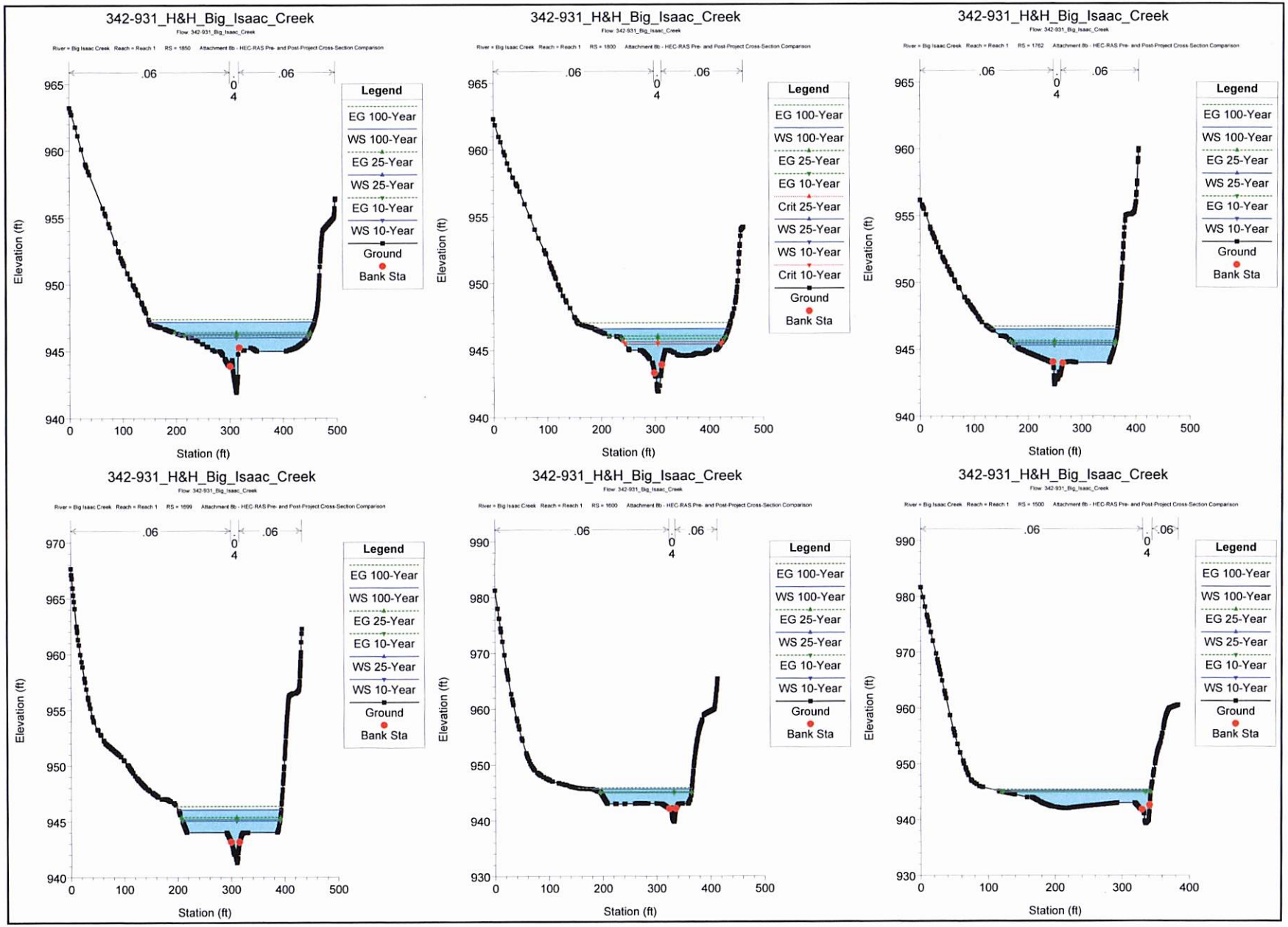

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 125 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Existing 100 Year
EG 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Ineff - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 104 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Proposed 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 34 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
Legend
EG 100-Year - Little Isaac Creek Proposed 100 Year
EG 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Proposed 100 Year
WS 100-Year - Little Isaac Creek Existing 100 Year
Crit 100-Year - Little Isaac Creek Existing 100 Year
- Little Isaac Creek Proposed 100 Year
Ground - Little Isaac Creek Proposed 100 Year
Bank Sta - Little Isaac Creek Proposed 100 Year
- Little Isaac Creek Existing 100 Year
Ground - Little Isaac Creek Existing 100 Year
Bank Sta - Little Isaac Creek Existing 100 Year
Elevation (ft)
Station (ft)

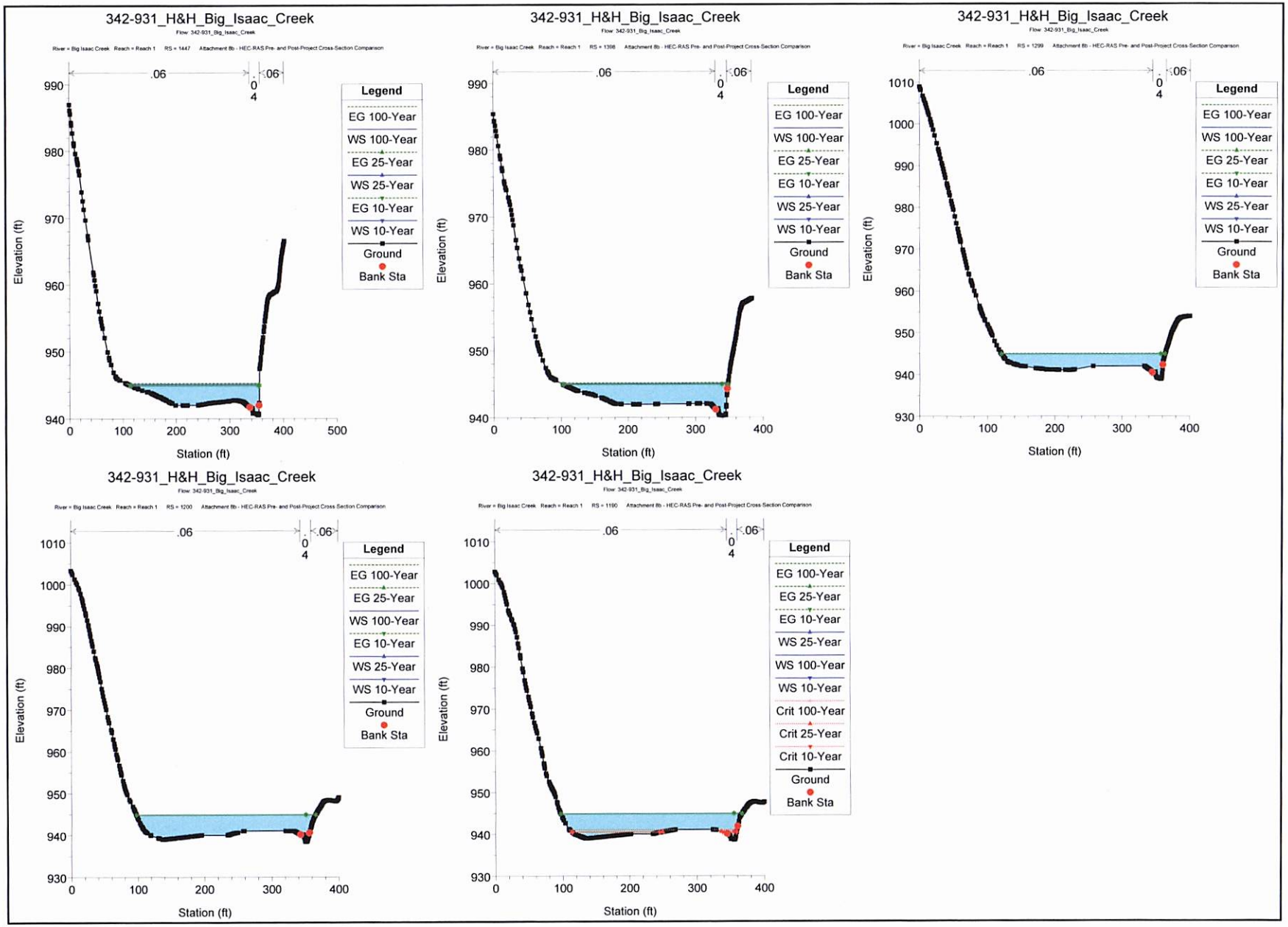
APPENDIX IV

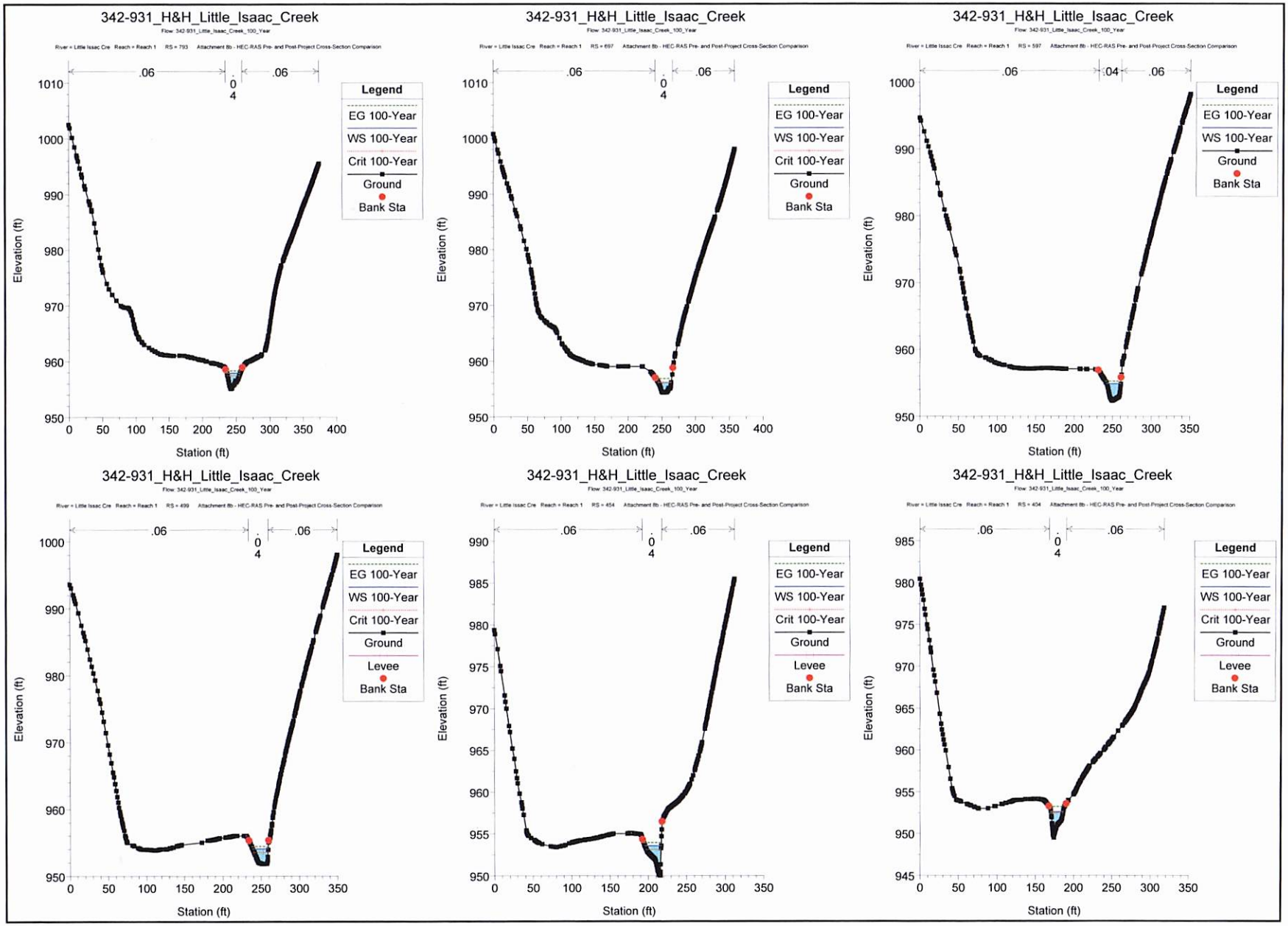
EXISTING CONDITIONS HEC-RAS CROSS-SECTIONS

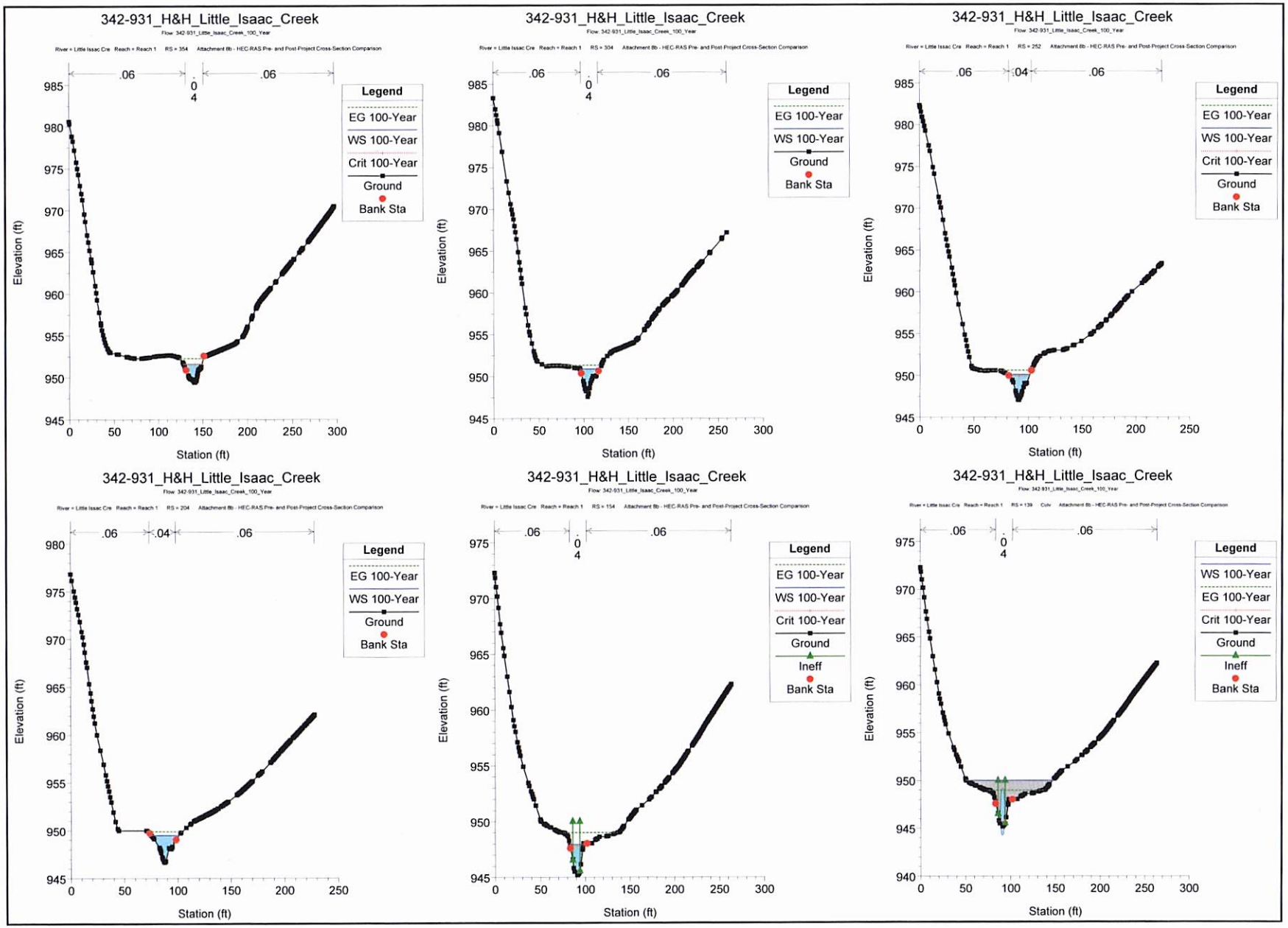

342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2595 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2495 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2397 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
Crit 25-Year
WS 10-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2298 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2199 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2100 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

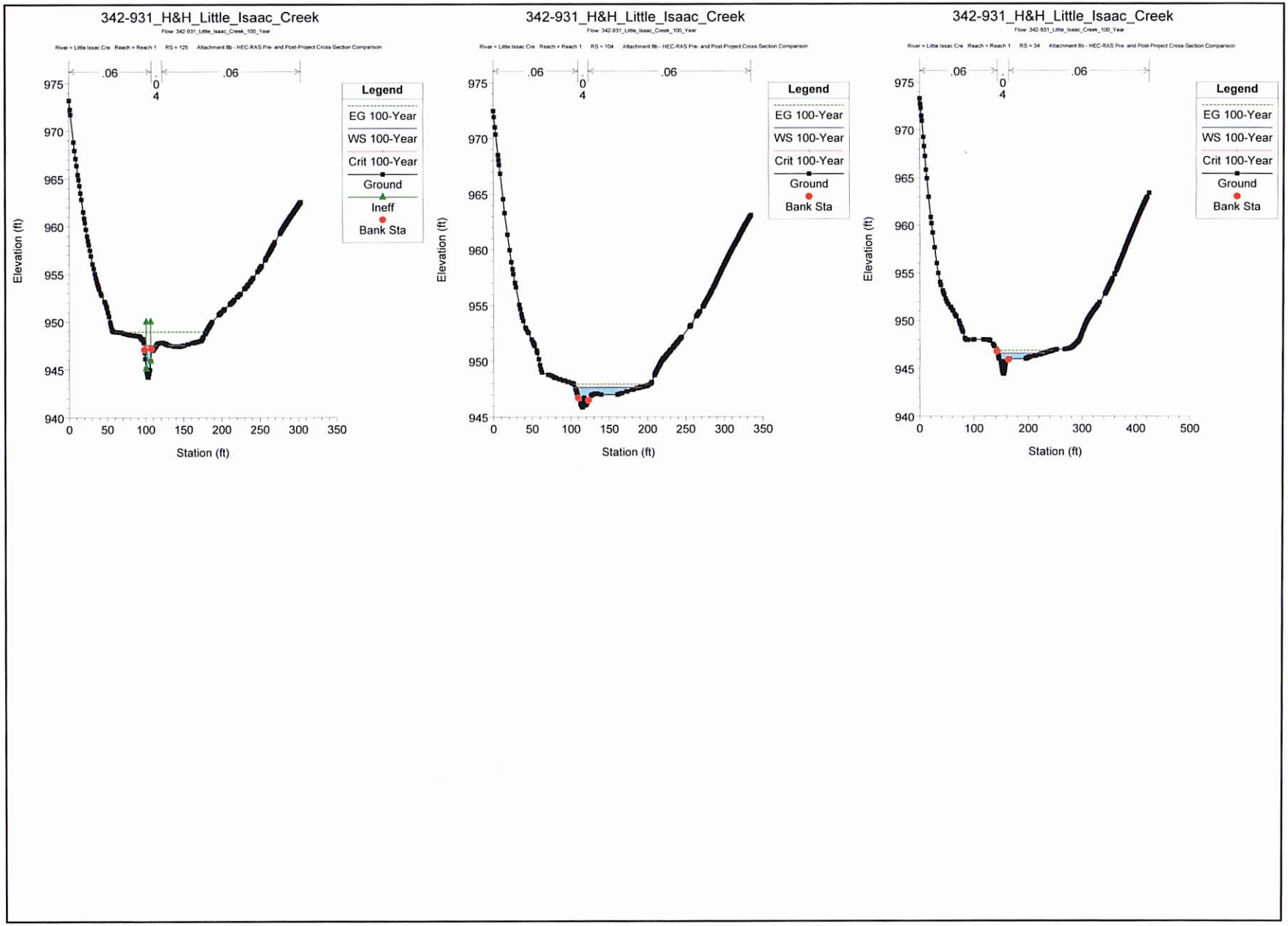

342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1999 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06 .04 .06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1970 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06 .04 .06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
Crit 100-Year
EG 10-Year
WS 10-Year
Crit 25-Year
Crit 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1945 Culv Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06 .04 .06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Crit 100-Year
Crit 10-Year
Crit 25-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1937 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06 .04 .06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
EG 10-Year
Crit 25-Year
WS 25-Year
WS 10-Year
Crit 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1920 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06 .01 .06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1901 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06 .06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
Crit 25-Year
WS 25-Year
WS 10-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1850 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.06
0
4
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1800 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.06
0
4
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
Crit 25-Year
WS 25-Year
WS 10-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1762 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.06
0
4
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1699 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.06
0
4
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1600 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.06
0
4
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1500 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.06
0
4
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1447 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1398 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1299 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1200 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
EG 25-Year
WS 100-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1190 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 100-Year
WS 10-Year
Crit 100-Year
Crit 25-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

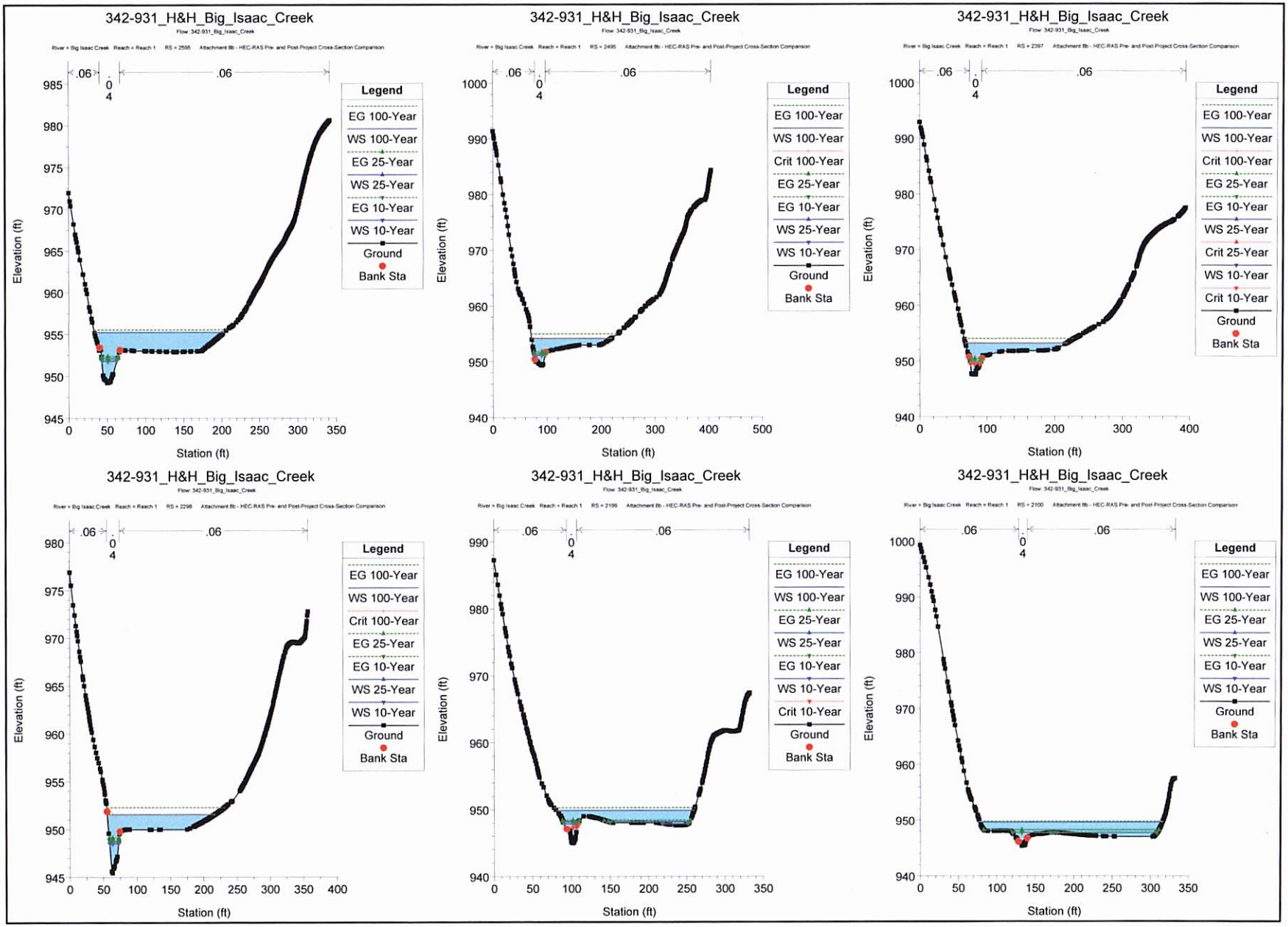

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 793 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 697 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 597 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 499 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 454 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 404 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison

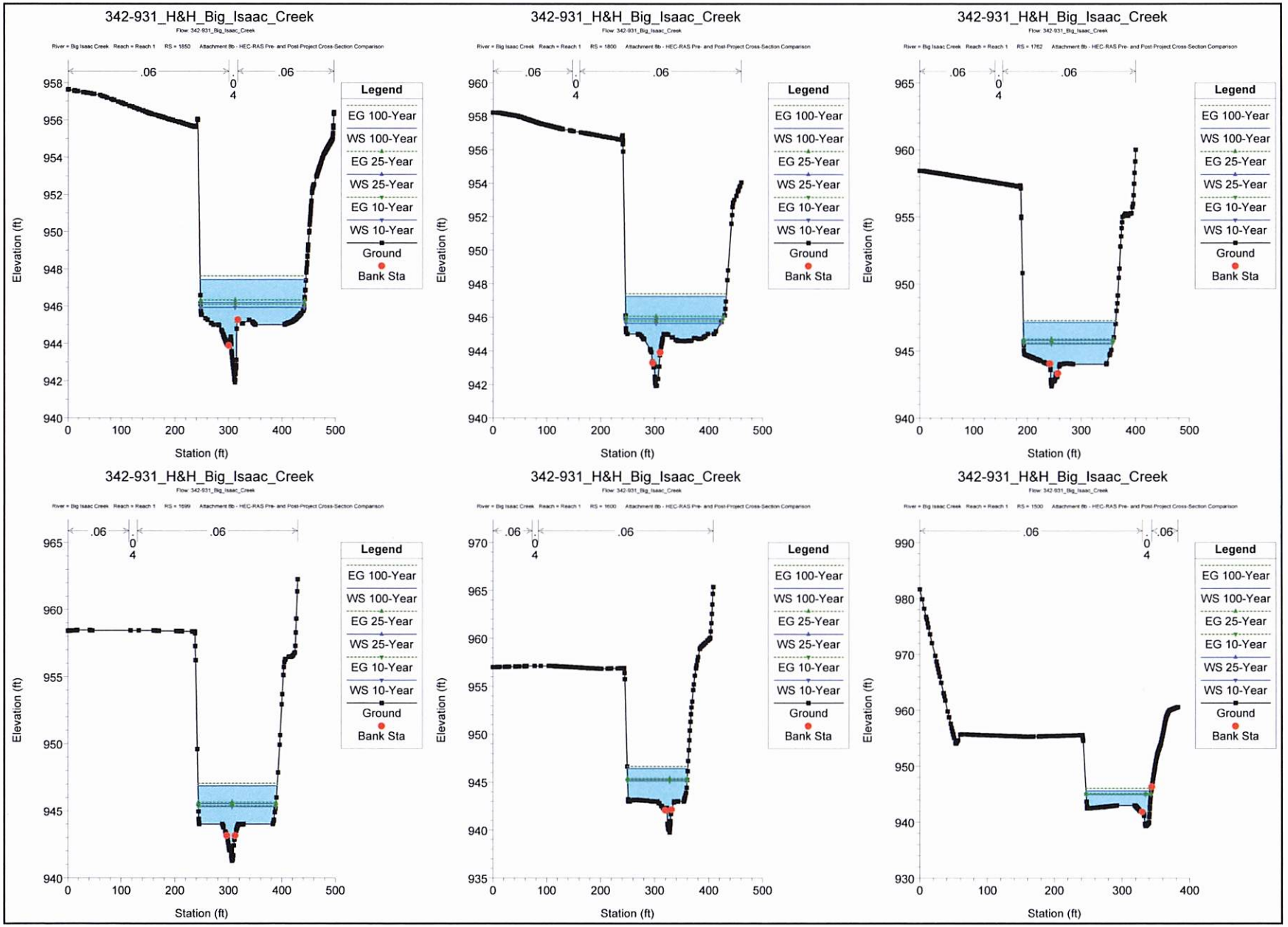

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 354 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 304 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 252 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 204 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 154 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 139 Culv Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
WS 100-Year
EG 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

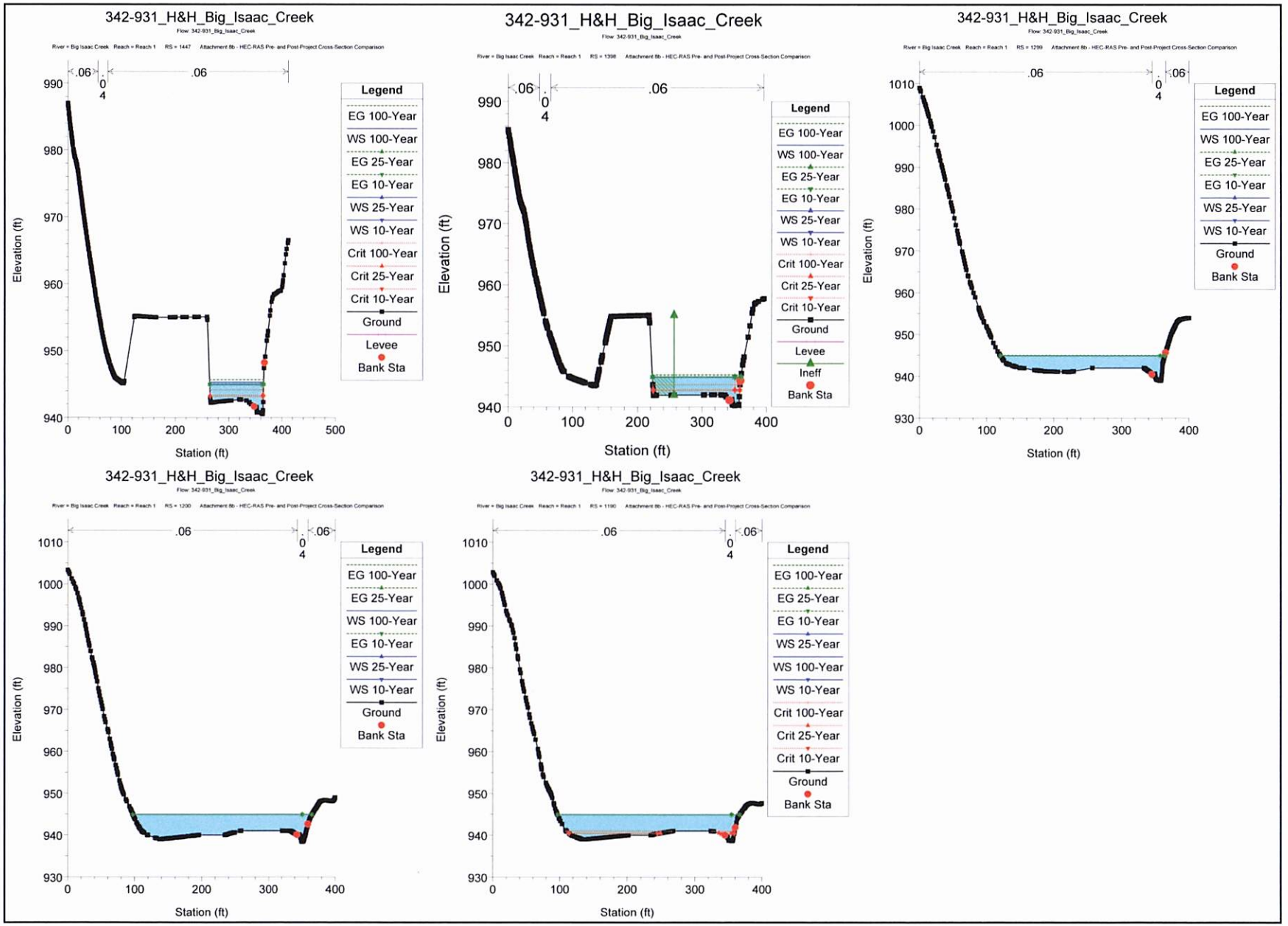

342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 125 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 104 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 34 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

APPENDIX V

PROPOSED CONDITIONS HEC-RAS CROSS-SECTIONS


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2595 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2495 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2397 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
Crit 25-Year
WS 10-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2298 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2199 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 2100 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1850 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1800 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1762 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1699 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1600 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
WS 25-Year
EG 10-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1500 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1447 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Crit 100-Year
Crit 25-Year
Crit 10-Year
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
990
980
970
960
950
940
0
100
200
300
400
500
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1398 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Crit 100-Year
Crit 25-Year
Crit 10-Year
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
990
980
970
960
950
940
0
100
200
300
400
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1299 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
WS 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1010
1000
990
980
970
960
950
940
930
0
100
200
300
400
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1200 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
EG 25-Year
WS 100-Year
EG 10-Year
WS 25-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1010
1000
990
980
970
960
950
940
930
0
100
200
300
400
342-931_H&H_Big_Isaac_Creek
Flow: 342-931_Big_Isaac_Creek
River = Big Isaac Creek Reach = Reach 1 RS = 1190 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 100-Year
EG 25-Year
EG 10-Year
WS 25-Year
WS 100-Year
WS 10-Year
Crit 100-Year
Crit 25-Year
Crit 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1010
1000
990
980
970
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950
940
930
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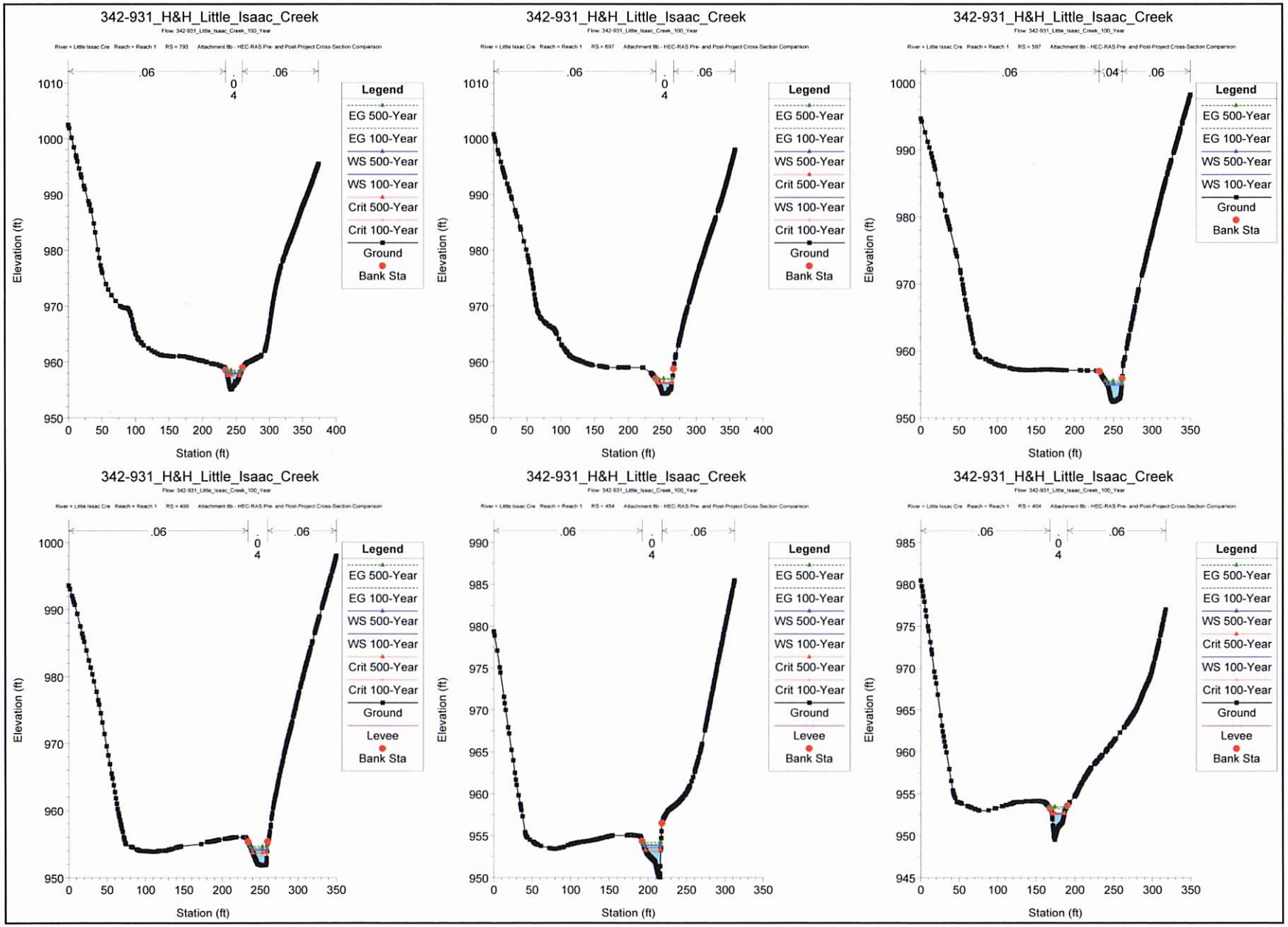
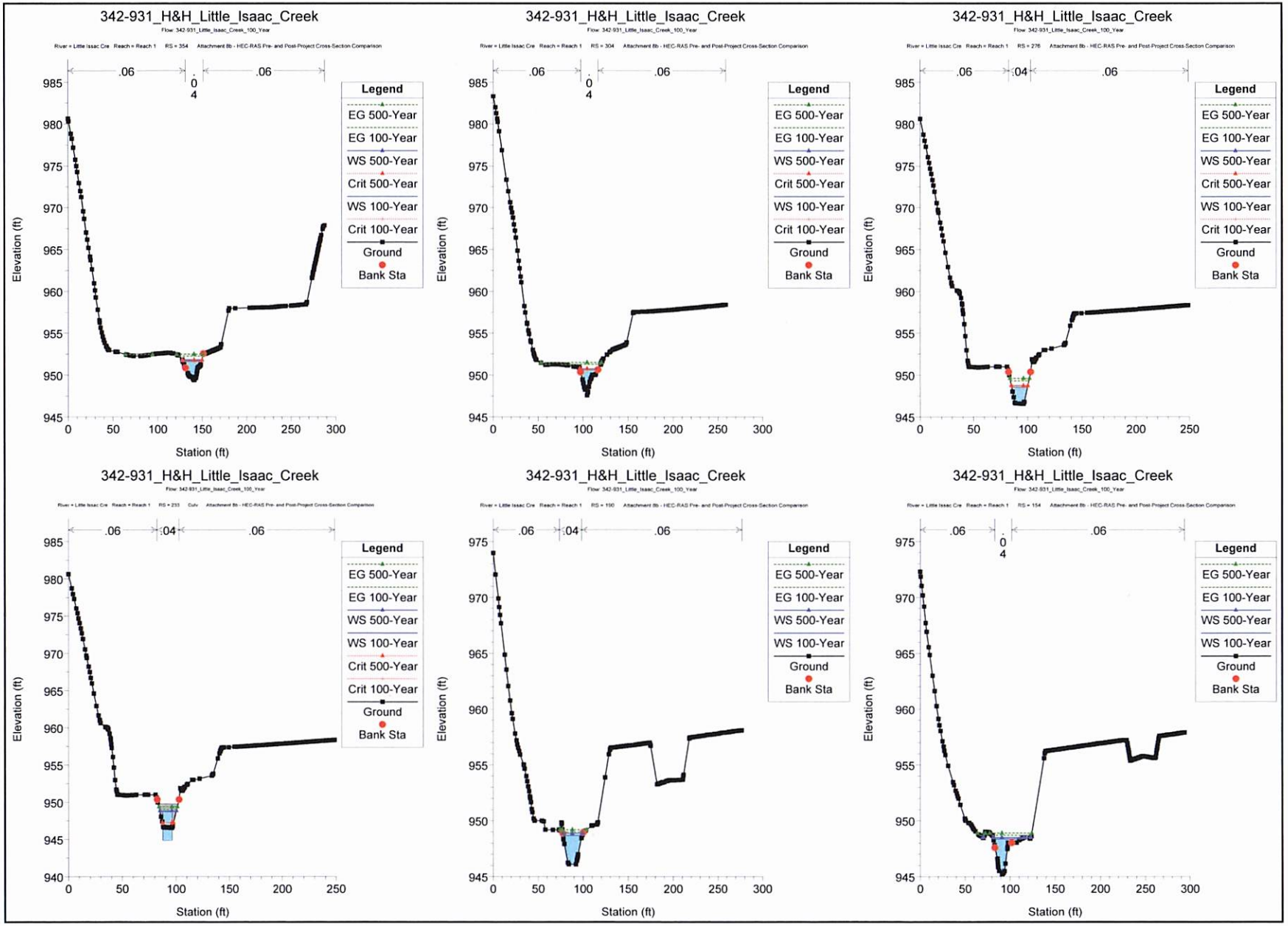
200
300
400


342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 793 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 500-Year
EG 100-Year
WS 500-Year
WS 100-Year
Crit 500-Year
Crit 100-Year
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 697 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 597 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 499 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 454 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 404 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison


342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 354 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 500-Year
EG 100-Year
WS 500-Year
Crit 500-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 304 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 500-Year
EG 100-Year
WS 500-Year
Crit 500-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 276 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 500-Year
EG 100-Year
WS 500-Year
Crit 500-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
342-931_H&H_Little_Isaac_Creek
Flow: 342-931_Little_Isaac_Creek_100_Year
River = Little Issac Cre Reach = Reach 1 RS = 233 Culv Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
.04
.06
Legend
EG 500-Year
EG 100-Year
WS 500-Year
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Crit 500-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
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River = Little Issac Cre Reach = Reach 1 RS = 190 Attachment 8b - HEC-RAS Pre- and Post-Project Cross-Section Comparison
.06
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Legend
EG 500-Year
EG 100-Year
WS 500-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
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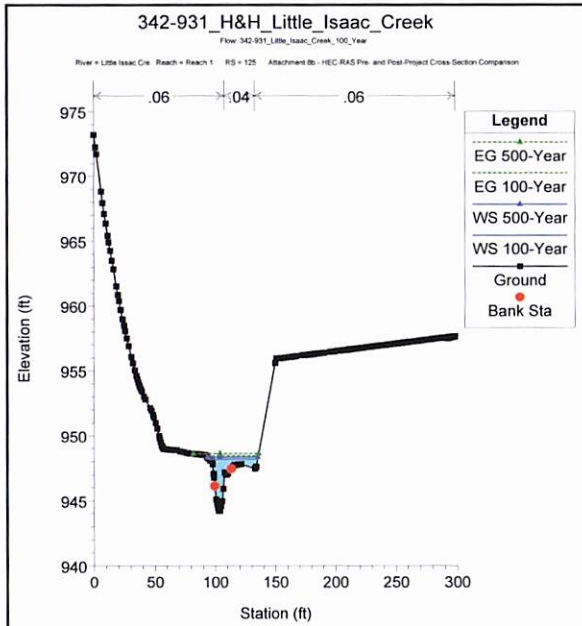
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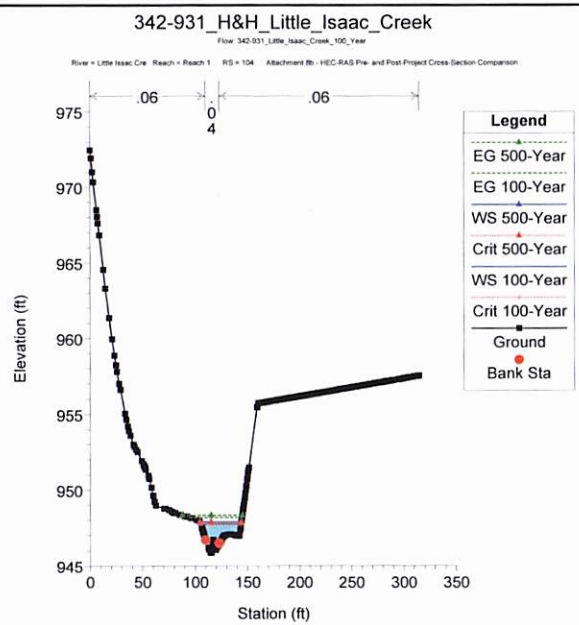
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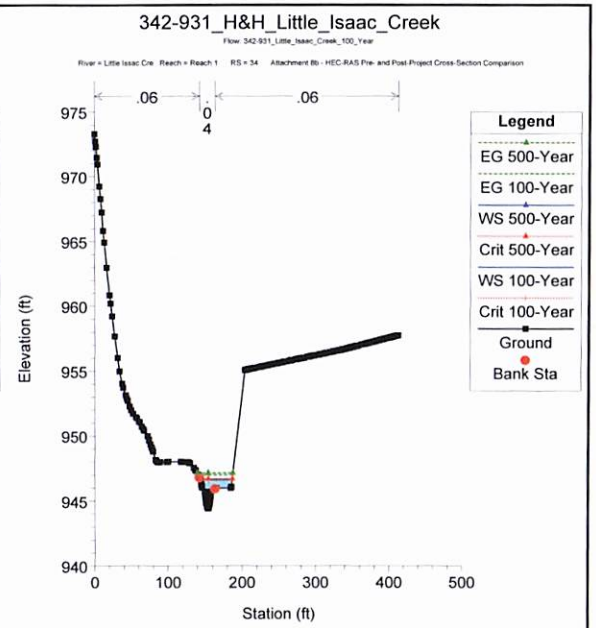
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EG 500-Year
EG 100-Year
WS 500-Year
Crit 500-Year
WS 100-Year
Crit 100-Year
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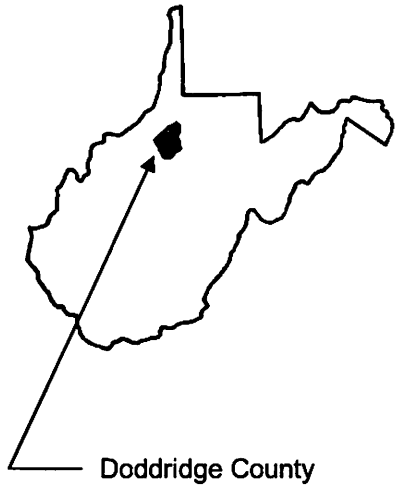
APPENDIX VI

FEMA FLOOD INSURANCE STUDY

FLOOD INSURANCE STUDY

DODDRIDGE COUNTY, WEST VIRGINIA
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
WEST UNION, TOWN OF	540025
DODDRIDGE COUNTY (UNINCORPORATED AREAS)	540024



Effective: October 4, 2011

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
54017CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

Initial Countywide FIS Effective Date: March 18, 1991

Flood Insurance Study Revised: October 4, 2011

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FIGURES

TABLES

EXHIBITS

FLOOD INSURANCE STUDY
DODDRIDGE COUNTY, WEST VIRGINIA
AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This countywide format Flood Insurance Study investigates the existence and severity of flood hazards in the geographic area of Doddridge County, West Virginia, including the Town of West Union and the unincorporated areas of the county (hereinafter referred to collectively as Doddridge County); and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State or other jurisdictional agency will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses in this study were prepared by the U.S. Geological Survey (USGS) for the Federal Emergency Management Agency (FEMA) under Inter-Agency Agreement No. EMW-87-E- 2512. Within the Town of West Union, the work for this study was completed in May 1988; within the unincorporated areas of the county, the work for this study was completed in June 1988.

This digital conversion was prepared by the USACE, Huntington District, for FEMA, under Inter-Agency Agreement No. HSFE03-06-X-0023.

Base map information shown on the FIRM was provided by West Virginia Statewide Addressing and Mapping Board (SAMB). Imagery was captured at a scale of 1:24,000 in the Spring of 2003 for the purpose of producing natural color digital orthophotos at a two-foot pixel resolution.

The projection used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 17, and the horizontal datum used is North American Datum of 1983 (NAD 83), GRS1980 spheroid. Corner coordinates shown on the FIRM are in latitude and longitude referenced to UTM, NAD 1983. Differences in the datum, spheroid, projection, or UTM zones used in the production of FIRMs for adjacent counties may

result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of the information shown on the FIRM.

1.3 Coordination

On January 17, 1985, an initial Consultation and Coordination Officer's (CCO) meeting was held with representatives of FEMA, the county, and the USGS (the study contractor) to determine the streams to be studied by detailed methods. The Huntington District of the U. S. Army Corps of Engineers (USACE) and the Soil Conservation Service (SCS) were contacted for information pertinent to this study.

On April 18, 1990, a final CCO meeting was held with representatives of FEMA, the county, and the study contractor to review the results of the study. The final CCO meeting for the unincorporated areas of Doddridge County also served as the final CCO meeting for this countywide study, and was open to representatives from all communities within the county that were covered by this countywide study.

For this countywide FIS, the final CCO meeting was held on April 29, 2010, and attended by representatives of the Town of West Union and Doddridge County, West Virginia. All problems raised at that meeting have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Doddridge County, West Virginia, including communities listed in Section 1.1.

Table 1, "Areas Studied by Detailed Methods" lists the streams studied by detailed methods.

Table 1 – Areas Studied by Detailed Methods

Stream	Limits of Detailed Study
Middle Island Creek	From the downstream county boundary to the confluence of Meathouse Fork and Buckeye Creek
Buckeye Creek	From the confluence with Middle Island Creek to a point approximately 240 feet upstream of the confluence of Long Run, and from the confluence of Greenbrier Creek to the confluence of Traugh Fork
Meathouse Fork	From the confluence with Middle Island Creek to County Highway 56, and from a point approximately 1,600 feet downstream of County Highway 25-13 to the confluence of Laurel Run and Big Isaac Creek
McElroy Creek	From the confluence of Flint Run to the confluence of Big Battle Run

Table 1 – Areas Studied by Detailed Methods - continued

Stream	Limits of Detailed Study
Wilhelm Run	From the confluence with Arnold Creek to a point approximately 1.2 miles upstream
Long Run	From the confluence with Buckeye Creek to a point approximately 2.4 miles upstream
Toms Fork	From the confluence with Meathouse Fork to the confluence of Little Toms Fork
Greenbrier Creek	From the confluence with Buckeye Creek to a point approximately 1.9 miles upstream
Big Isaac Creek	From the confluence with Meathouse Fork to the confluence of Little Isaac Creek
Laurel Run	From the confluence with Meathouse Fork to a point approximately 0.9 mile upstream of the confluence with Meathouse Fork

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction through January 1990.

All or portions of the following streams were studied by approximate methods: Broad Run, Arnold Creek, Slaughter Run, Flint Run, Riggins Run, Robinson Fork, Big Battle Run, Skelton Run, Talkington Fork, Long Run, Bluestone Creek, Cove Creek, Indian Fork, Nutter Fork, Jockey Camp Run, Morgans Run, Buckeye Creek, Buffalo Calf Creek, Meathouse Fork, Little Toms Fork, Lick Run, Big Isaac Creek, Middle Fork, Dotson Run, Cabin Run, Leason Creek, Right Fork, Left Fork, Elk Lick Run, Pike Fork, Little Battle Run, Piggin Run, Brushy Fork, Rock Run, Wolfpen Run, Englands Run, Jockeycamp Run, Douglascamp Run, Traugh Fork, Bonnet Fork, the South Fork Hughes River, and Sycamore Fork. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and Doddridge County.

No Letters of Map Revision (LOMRs) were incorporated for the October 4, 2011, revision.

2.2 Community Description

Doddridge County is located in northern West Virginia. It is bordered by the unincorporated areas of Wetzel and Tyler Counties to the north; the unincorporated areas of Ritchie County to the west; the unincorporated areas of Harrison County to the east; and the unincorporated areas of Gilmer and Lewis Counties to the south. The total land

area contained within the county is approximately 321.6 square miles. In 2000, the population of the county was 7,491 (Reference 1).

The county seat is located in the Town of West Union. The total land area of the town is approximately 0.32 square miles, and the population was 806 in 2000 (Reference 1).

The climate of Doddridge County is temperate with a seasonal variation in temperature. The county is located in a region termed humid continental: humid because of the evenly spaced precipitation, and continental because of the yearly range in temperature. Mean annual precipitation of the county is approximately 45 inches. The average monthly temperatures in degrees Fahrenheit range from the mid-30's in winter to the low 70's in summer (Reference 2).

2.3 Principal Flood Problems

The principal flood problems of Doddridge County are the overflows of Middle Island Creek, Buckeye Creek, and Meathouse Fork. The history of flooding in the county indicates that flooding can occur at any time of the year. Large frontal storms or decaying tropical storms produce the worst flooding on the larger streams, while high intensity thunderstorms produce severe flooding on smaller drainage areas. Major floods have occurred in the county in 1875, 1950, 1963, and 1985.

The mountainous topography of the county is conducive to rapid rises on streams and also to fast runoff best described as flash flooding. This condition has been aggravated by human activities such as timbering in the county.

2.4 Flood Protection Measures

No major structural flood protection measures exist or are planned for the county.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 2-, 1-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 2-, 1-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent-annual-chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance (100-year) flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

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

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ. MILES)	PEAK DISCHARGE (CFS) 1-PERCENT-ANNUAL- CHANCE
MIDDLE ISLAND CREEK		
Upstream of Doddridge-Tyler County boundary	134.78	15,200
Approximately 0.1 mile downstream of confluence of Piggin 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	6,050
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

Table 2 – Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ. MILES)	PEAK DISCHARGE (CFS) 1-PERCENT-ANNUAL- CHANCE
WILHELM RUN		
At confluence with Arnold Creek	3.29	2,070
Approximately 1.2 miles upstream of confluence with Arnold Creek	2.07	1,570
LONG RUN		
At confluence with Buckeye Creek	4.44	2,460
Approximately 2.4 miles upstream of confluence with Buckeye Creek	1.85	1,470
TOMS FORK		
At confluence with Meathouse Fork	15.27	4,100
Downstream of confluence of Little Toms Fork	12.58	3,650
GREENBRIER CREEK		
At confluence with Buckeye Creek	2.80	1,880
Approximately 1.9 miles upstream of confluence with Buckeye Creek	1.09	1,080
BIG ISAAC CREEK		
At confluence with Meathouse Fork	1.79	1,450
LAUREL RUN		
At confluence with Meathouse Fork	1.97	1,530
Upstream of confluence of Big Isaac Creek	1.57	1,340

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1) and the FIRM (Exhibit 2) where applicable.

Water-surface elevations of floods of the selected recurrence intervals were computed

using the USACE HEC-2 step-backwater computer program, and the results were published in a special flood hazard information report (References 5 and 6). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Channel roughness factors (Manning's "n") used in the hydraulic computations were assigned on the basis of field surveys of the stream and floodplain areas. For Middle Island Creek, channel "n" values range from 0.040 to 0.045 and overbank "n" values range from 0.050 to 0.070. For Buckeye Creek and Meathouse Fork, channel "n" values range from 0.055 to 0.080.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Qualifying benchmarks within a given jurisdiction that are catalogued by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B or C are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier.

Benchmarks catalogued by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation (e.g. mounted in bedrock)
- Stability B: Monuments which generally hold their position/elevation (e.g. concrete bridge abutment)
- Stability C: Monuments which may be affected by surface ground movements (e.g. concrete monument below frost line)
- Stability D: Mark of questionable or unknown vertical stability (e.g. concrete monument above frost line, or steel witness post)

In addition to NSRS benchmarks, the FIRM may also show vertical control monuments established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

To obtain current elevation, description, and/or location information for benchmarks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their Web site at www.ngs.noaa.gov.

It is important to note that temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

3.3 Vertical Datum

All elevations used in the original Doddridge county FIS reports were referenced to the National Geodetic Vertical Datum of 1929 (NGVD29), formerly referred to as Sea Level Datum of 1929. All flood elevations shown in this FIS report and on the FIRM are referenced to North American Vertical Datum of 1988 (NAVD88). Structure and ground elevations in the community must, therefore, be referenced to NAVD88. Elevation factors used to convert the NGVD29 elevation data of the previous Braxton county FIS reports to NAVD88 are summarized below. Elevation reference marks used in this study are shown on the maps.

The data points used to determine the conversion are listed in Table 3, "Vertical Datum Conversion Values".

Table 3 – Vertical Datum Conversion Values

USGS 7.5-Minute Quadrangle Name	Corner	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Conversion from NGVD29 to NAVD88 (foot)
Shirley	SE	39.375	80.750	-0.522
Center Point	SE	39.375	80.625	-0.515
Folsom	SE	39.375	80.500	-0.525
Pennsboro	SE	39.250	80.875	-0.554
West Union	SE	39.250	80.750	-0.515
Smithburg	SE	39.250	80.625	-0.502
Oxford	SE	39.125	80.750	-0.531
New Milton	SE	39.125	80.625	-0.522
			AVERAGE	**-0.500 foot**

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. A conversion factor of -.500 feet was applied to the NGVD29 elevations in Doddridge County to convert to NAVD88. Structure and ground elevations in the county must, therefore, be referenced to NAVD88. It is important to note that adjacent communities and counties may be referenced to NGVD29. This may result in differences in Base Flood Elevations (BFEs) across the community and county boundaries.

For more information on NAVD88, see the FEMA publication entitled "Converting the National Flood Insurance Program to the North American Vertical Datum of 1988" (FEMA, June 1992), or contact the National Geodetic Survey Information Services, NOAA, N/NGS12, National Geodetic Survey, SSMC-3, #9202, 1315 East-West Highway, Silver Spring, MD 20910-3282 (Internet address http://www.ngs.noaa.gov).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance (100-year) flood elevations and

delineations of the 1- and 0.2-percent-annual-chance (500-year) floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles and Floodway Data Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. For the streams studied in detail, the 1-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 20 feet (Reference 7).

For the streams studied by approximate methods, the boundaries of the 1-percent-annual-chance floodplain were delineated using the Flood Hazard Boundary Map (FHBM) for the Town of West Union and the FIS for the Unincorporated Areas of Doddridge County (References 8 and 9).

The 1-percent-annual-chance floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1, "Floodway Schematic".

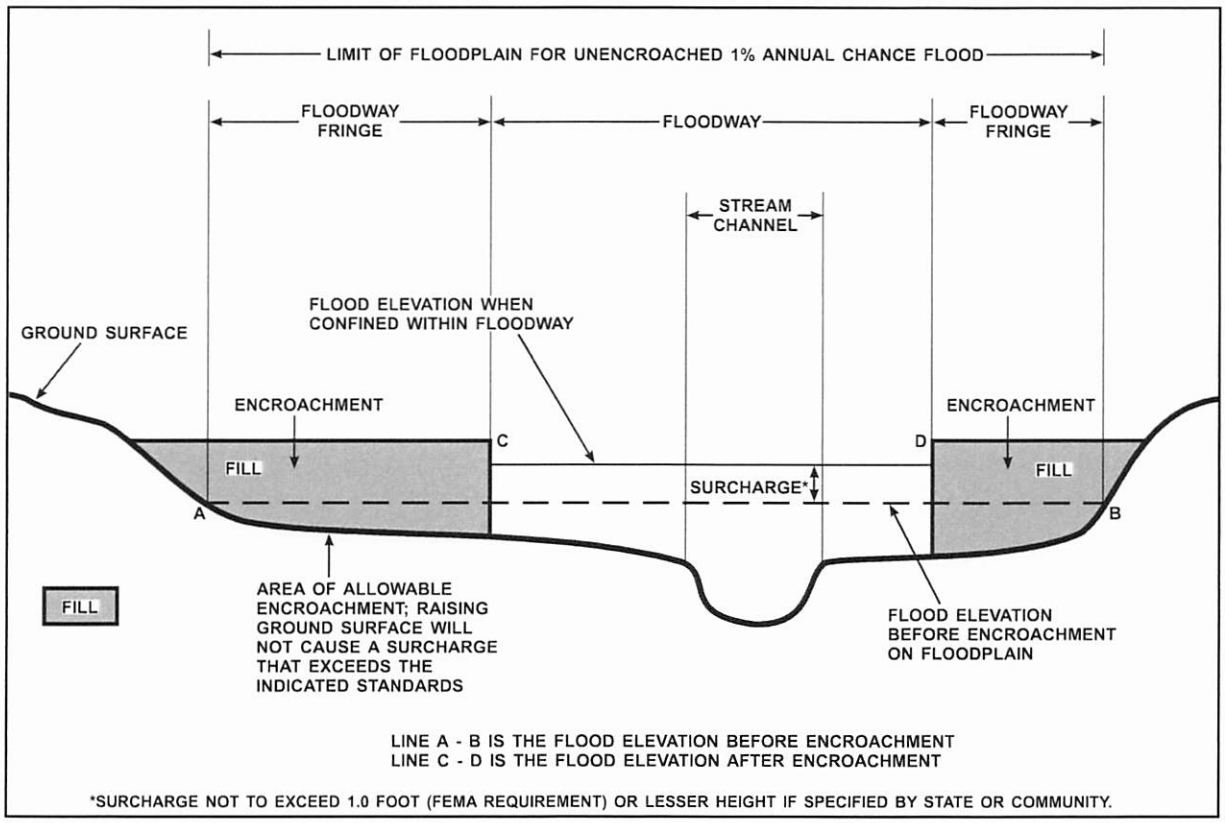


Figure 1 - Floodway Schematic

No floodways were calculated as part of this study.

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no (1-percent-annual-chance) BFEs or base flood depths are shown within this zone.

Zone AE

Zone AE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance risk zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance risk zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot base flood depths derived from the detailed hydraulic analyses are shown within this zone.

Zone AR

Zone AR is the flood insurance risk zone that corresponds to an area of special flood hazard formerly protected from the 1-percent-annual-chance flood event by a flood-control system that was subsequently decertified. Zone AR indicates that the former flood-control system is being restored to provide protection from the 1-percent-annual-chance or greater flood event.

Zone A99

Zone A99 is the flood insurance risk zone that corresponds to areas of the 1-percent-annual-chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No BFEs or depths are shown within this zone.

Zone V

Zone V is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

Zone VE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance risk zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1-foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by levees. No BFEs or base flood depths are shown within this zone.

Zone X (Future Base Flood)

Zone X (Future Base Flood) is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined based on future-conditions hydrology. No BFEs or base flood depths are shown within this zone.

Zone D

Zone D is the flood insurance risk zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplain. The locations of selected cross sections used in the hydraulic analyses are shown where applicable.

The current FIRM presents flooding information for the entire geographic area of Doddridge County. Previously, separate FHBMs and/or FIRMs were prepared for each incorporated community with identified flood hazard areas and the unincorporated areas of the County. Historical map dates relating to pre-countywide maps prepared for each community are presented in Table 4, "Community Map History".

COMMUNITY NAME	INITIAL NFIP MAP DATE	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	INITIAL FIRM DATE	FIRM REVISIONS DATE
West Union, Town of	March 29, 1974	NONE	March 18, 1991	
Doddridge County (Unincorporated Areas)	November 8, 1974	June 3, 1977	March 18, 1991	

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

Flood Insurance Studies have been prepared for the unincorporated areas of Tyler, Ritchie and Harrison Counties, and for Lewis County and Incorporated Areas (References 10, 11, 12 and 13). The results of this study are in exact agreement with the results of those studies.

A FIS is currently being prepared for Gilmer County and Incorporated Areas (Reference 14). The results of that study will be in exact agreement with the results of this study.

Because it is based on more up-to-date analyses, this study supersedes the Flood Hazard Boundary Map for the Town of West Union and the FIS for the Unincorporated Areas of Doddridge County (References 8 and 9).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting Federal Insurance and Mitigation Division, FEMA Region III, One Independence Mall, Sixth Floor, 615 Chestnut Street, Philadelphia, PA 19106-4404.

9.0 BIBLIOGRAPHY AND REFERENCES

1. Holmes, Darrell E., West Virginia Blue Book, Chapman Printing, 2005.

2. U. S. Department of the Interior, Geological Survey, Hydrology of Area 8, Eastern Coal Province, West Virginia, January 1987.

3. U. S. Department of the Interior, Water-Resources Investigation 87-4111, Techniques for Estimating Flood-Depth Frequency Relations for Streams in West Virginia, by Jeffrey B. Wiley, 1987.

4. U. S. Department of the Interior, Geological Survey, in cooperation with the West Virginia Department of Highways, Runoff Studies on Small Drainage Areas by G. S. Runner, Washington, D. C., October 1980.

5. U. S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, April 1984.

6. U. S. Army Corps of Engineers, Huntingdon District, Special Flood Hazard Information Report, Middle Island Creek and Tributaries, Doddridge County, West Virginia, October 1978.

7. U. S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 Feet: Big Isaac, West Virginia, 1964, Photorevised 1976; Center Point, West Virginia, 1961, Photorevised 1976; New Milton, West Virginia, 1965, Photorevised, 1976; Smithburg, West Virginia, 1961, Photorevised 1976; West Union, West Virginia, 1961, Photorevised 1976.

8. U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of West Union, Doddridge County, West Virginia, April 2, 1976.

9. U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Unincorporated Areas of Doddridge County, West Virginia, Washington, D.C., June 3, 1977.

10. Federal Emergency Management Agency, Flood Insurance Study, Unincorporated Areas of Tyler County, West Virginia, Washington, D. C., November 4, 1988.

11. Federal Emergency Management Agency, Flood Insurance Study, Unincorporated Areas of Harrison County, West Virginia, Washington, D. C., July 4, 1988.

12. Federal Emergency Management Agency, Flood Insurance Study, Lewis County and Incorporated Areas, West Virginia, Washington, D.C., July 1, 1987.

13. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Unincorporated Areas of Ritchie County, West Virginia, Washington, D.C., December 11, 1981.

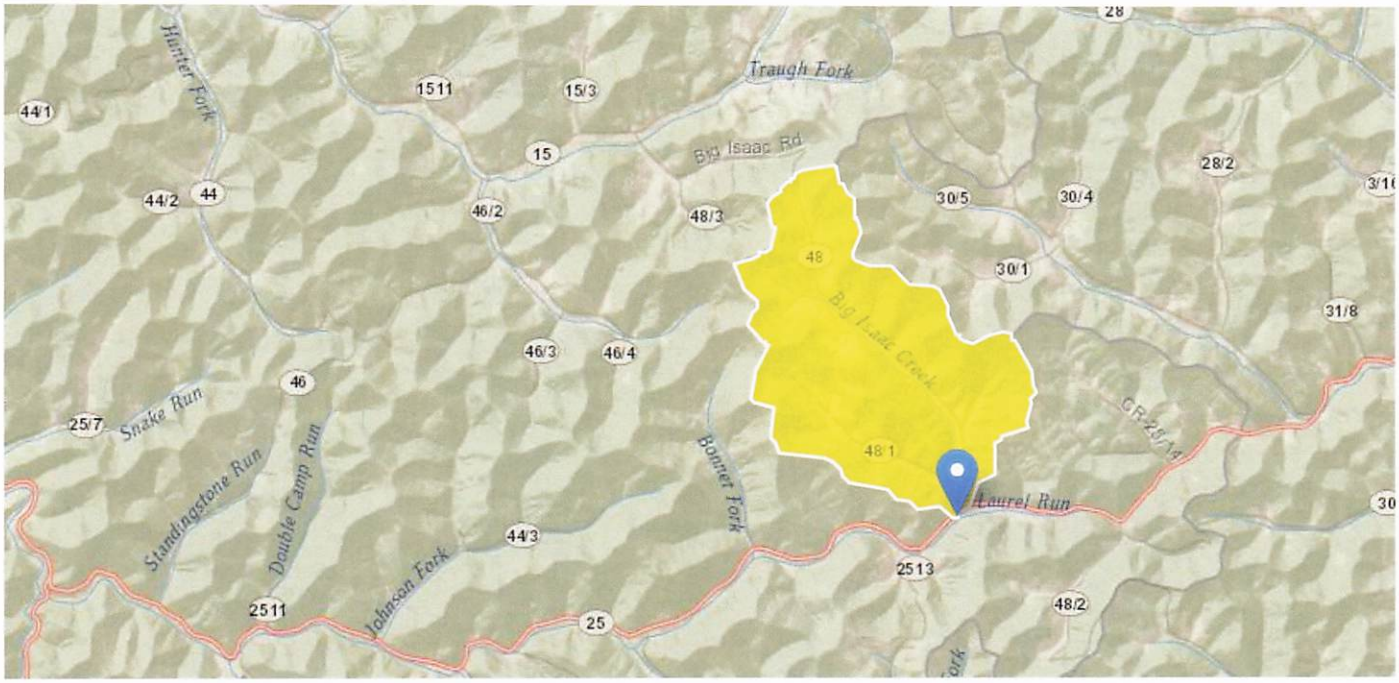
14. Federal Emergency Management Agency, Flood Insurance Study, Gilmer County and Incorporated Areas, West Virginia (Unpublished).

APPENDIX VII

USGS STREAMSTATS REPORTS

Big Isaac StreamStats Report

Region ID: WV
Workspace ID: WV20240814141435516000
Clicked Point (Latitude, Longitude): 39.20038, -80.55562
Time: 2024-08-14 10:15:01 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	1.74	square miles
LC16DEV	Percentage of land-use categories 21-24 from NLCD 2016	5.3	percent
LONG_CENT	Longitude Basin Centroid	80.564166	decimal degrees
LOWREG	Low Flow Region Number	1112	dimensionless
PRECPRIS00	Basin average mean annual precipitation for 1971 to 2000 from PRISM	47.86	inches

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Flow Western Plateaus Region 2010 5033]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	0.13	1516
LC16DEV	Percent_developed_from_NLCD2016	5.3	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100

Peak-Flow Statistics Flow Report [Peak Flow Western Plateaus Region 2010 5033]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct (other -- see report)

Statistic	Value	Unit	ASEp	Equiv. Yrs.
66.7-percent AEP flood	147	ft^3/s	34.1	2.8
50-percent AEP flood	193	ft^3/s	32.2	2.8
20-percent AEP flood	327	ft^3/s	30	4.4
10-percent AEP flood	430	ft^3/s	29.7	5.9
4-percent AEP flood	572	ft^3/s	30.3	7.9
2-percent AEP flood	688	ft^3/s	31.3	9.1
1-percent AEP flood	809	ft^3/s	32.5	10.1
0.5-percent AEP flood	937	ft^3/s	33.9	10.8
0.2-percent AEP flood	1120	ft^3/s	36.1	11.4

Peak-Flow Statistics Citations

Wiley, J.B., and Atkins, J.T., Jr.,2010, Estimation of flood-frequency discharges for rural, unregulated streams in West Virginia: U.S. Geological Survey Scientific Investigations Report 2010–5033, 78 p. (http://pubs.usgs.gov/sir/2010/5033/)

Low-Flow Statistics

Low-Flow Statistics Parameters [LowFlow North 2008 5105]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	16.3	1516
LONG_CENT	Longitude of Basin Centroid	80.564166	decimal degrees	79.618	82.023
LC16DEV	Percent_developed_from_NLCD2016	5.3	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100
LOWREG	Low Flow Region Number	1112	dimensionless	1111	1859

Low-Flow Statistics Disclaimers [LowFlow North 2008 5105]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [LowFlow North 2008 5105]

Statistic	Value	Unit
1 Day 3 Year Bio Based Low Flow	0.00148	ft^3/s
4 Day 3 Year Bio Based Low Flow	0.00145	ft^3/s
1 Day 2 Year Low Flow	0.00352	ft^3/s
1 Day 5 Year Low Flow	0.000478	ft^3/s
3 Day 2 Year Low Flow	0.00438	ft^3/s
3 Day 5 Year Low Flow	0.00092	ft^3/s
7 Day 2 Year Low Flow	0.00587	ft^3/s
7 Day 5 Year Low Flow	0.000822	ft^3/s
14 Day 2 Year Low Flow	0.00585	ft^3/s
14 Day 5 Year Low Flow	0.00197	ft^3/s
1 Day 10 Year Low Flow	0.000131	ft^3/s
30 Day 2 Year Low Flow	0.0139	ft^3/s
30 Day 5 Year Low Flow	0.000801	ft^3/s
3 Day 10 Year Low Flow	0.000181	ft^3/s
7 Day 10 Year Low Flow	0.000497	ft^3/s
14 Day 10 Year Low Flow	0.000297	ft^3/s
30 Day 10 Year Low Flow	0.00129	ft^3/s

Low-Flow Statistics Citations

Wiley, Jeffrey B.,2008, Estimating Selected Streamflow Statistics Representative of 1930–2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2008-5105, 24 p. (http://pubs.usgs.gov/sir/2008/5105/)

Bankfull Statistics

Bankfull Statistics Parameters [Appalachian Highlands D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	0.07722	940.1535

Bankfull Statistics Parameters [Appalachian Plateaus P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	0.081081	536.995602

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Appalachian Highlands D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	19.1	ft
Bieger_D_channel_depth	1.31	ft
Bieger_D_channel_cross_sectional_area	25.5	ft^2

Bankfull Statistics Flow Report [Appalachian Plateaus P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	19.9	ft
Bieger_P_channel_depth	1.32	ft
Bieger_P_channel_cross_sectional_area	26.1	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	15	ft
Bieger_USA_channel_depth	1.36	ft
Bieger_USA_channel_cross_sectional_area	23	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	19.1	ft
Bieger_D_channel_depth	1.31	ft
Bieger_D_channel_cross_sectional_area	25.5	ft^2
Bieger_P_channel_width	19.9	ft
Bieger_P_channel_depth	1.32	ft
Bieger_P_channel_cross_sectional_area	26.1	ft^2
Bieger_USA_channel_width	15	ft
Bieger_USA_channel_depth	1.36	ft
Bieger_USA_channel_cross_sectional_area	23	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications

rom USDA S / U Faculty, 17p. (https://di italcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPa e

Flow-Duration Statistics

Flow-Duration Statistics Parameters [LowFlow North 2008 5105]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	16.3	1516
LC16DEV	Percent_developed_from_NLCD2016	5.3	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100
LONG_CENT	Longitude of Basin Centroid	80.564166	decimal degrees	79.618	82.023
LOWREG	Low Flow Region Number	1112	dimensionless		

Flow-Duration Statistics Disclaimers [LowFlow North 2008 5105]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Flow-Duration Statistics Flow Report [LowFlow North 2008 5105]

Statistic	Value	Unit
10 Percent Duration	5.11	ft^3/s
25 Percent Duration	1.77	ft^3/s
50 Percent Duration	0.494	ft^3/s
75 Percent Duration	0.0813	ft^3/s
90 Percent Duration	0.00871	ft^3/s

Flow-Duration Statistics Citations

Wiley, Jeffrey B.,2008, Estimating Selected Streamflow Statistics Representative of 1930–2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2008-5105, 24 p. (http://pubs.usgs.gov/sir/2008/5105/)

General Flow Statistics

General Flow Statistics Parameters [LowFlow North 2008 5105]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.74	square miles	16.3	1516
LONG_CENT	Longitude of Basin Centroid	80.564166	decimal degrees	79.618	82.023
LC16DEV	Percent_developed_from_NLCD2016	5.3	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100
LOWREG	Low Flow Region Number	1112	dimensionless	1111	1859

General Flow Statistics Disclaimers [LowFlow North 2008 5105]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

General Flow Statistics Flow Report [LowFlow North 2008 5105]

Statistic	Value	Unit
Harmonic Mean Streamflow	0.0368	ft^3/s

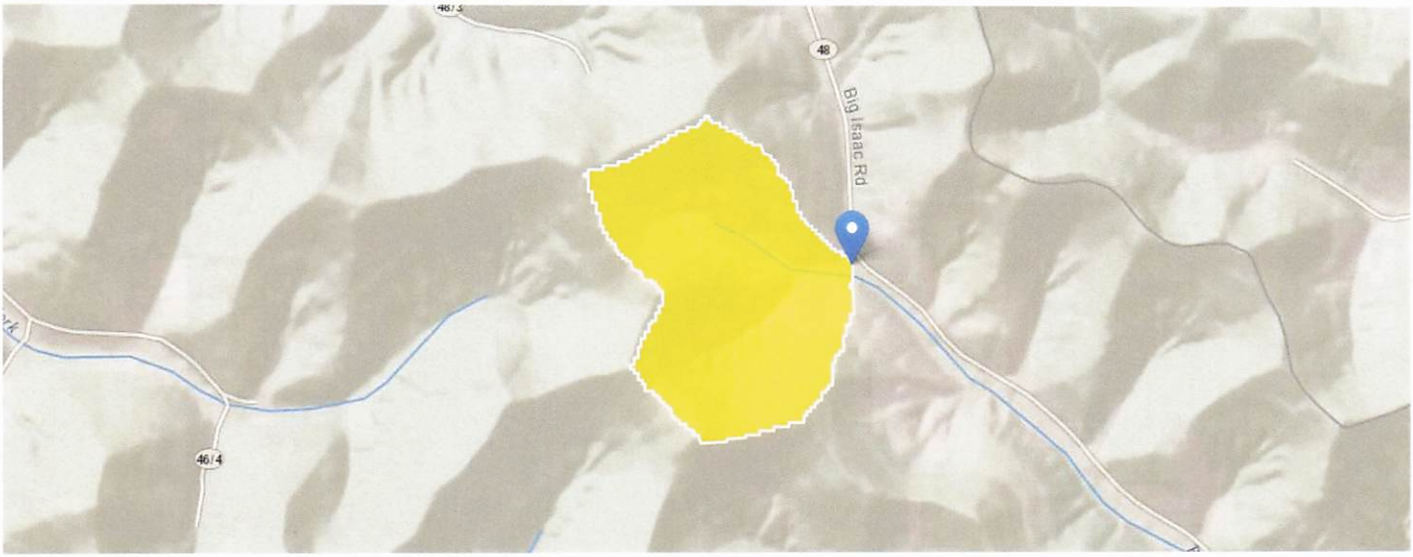
General Flow Statistics Citations

Wiley, Jeffrey B.,2008, Estimating Selected Streamflow Statistics Representative of 1930–2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2008-5105, 24 p. (http://pubs.usgs.gov/sir/2008/5105/)

Application Version: 4.23.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Little Isaac Creek StreamStats Report

Region ID: WV
Workspace ID: WV20240725141001442000
Clicked Point (Latitude, Longitude): 39.21811, -80.57010
Time: 2024-07-25 10:10:25 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.16	square miles
LC16DEV	Percentage of land-use categories 21-24 from NLCD 2016	0.2	percent
LONG_CENT	Longitude Basin Centroid	80.57406	decimal degrees
LOWREG	Low Flow Region Number	1112	dimensionless
PRECPRIS00	Basin average mean annual precipitation for 1971 to 2000 from PRISM	47.66	inches

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Flow Western Plateaus Region 2010 5033]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	0.13	1516
LC16DEV	Percent_developed_from_NLCD2016	0.2	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100

Peak-Flow Statistics Flow Report [Peak Flow Western Plateaus Region 2010 5033]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct (other -- see report)

Statistic	Value	Unit	ASEp	Equiv. Yrs.
66.7-percent AEP flood	25.2	ft^3/s	34.1	2.8
50-percent AEP flood	33.9	ft^3/s	32.2	2.8

Statistic	Value	Unit	ASEp	Equiv. Yrs.
20-percent AEP flood	60.2	ft^3/s	30	4.4
10-percent AEP flood	81.1	ft^3/s	29.7	5.9
4-percent AEP flood	111	ft^3/s	30.3	7.9
2-percent AEP flood	136	ft^3/s	31.3	9.1
1-percent AEP flood	162	ft^3/s	32.5	10.1
0.5-percent AEP flood	190	ft^3/s	33.9	10.8
0.2-percent AEP flood	231	ft^3/s	36.1	11.4

Peak-Flow Statistics Citations

Wiley, J.B., and Atkins, J.T., Jr.,2010, Estimation of flood-frequency discharges for rural, unregulated streams in West Virginia: U.S. Geological Survey Scientific Investigations Report 2010–5033, 78 p. (http://pubs.usgs.gov/sir/2010/5033/)

Low-Flow Statistics

Low-Flow Statistics Parameters [LowFlow North 2008 5105]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	16.3	1516
LONG_CENT	Longitude of Basin Centroid	80.57406	decimal degrees	79.618	82.023
LC16DEV	Percent_developed_from_NLCD2016	0.2	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100
LOWREG	Low Flow Region Number	1112	dimensionless	1111	1859

Low-Flow Statistics Disclaimers [LowFlow North 2008 5105]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [LowFlow North 2008 5105]

Statistic	Value	Unit
1 Day 3 Year Bio Based Low Flow	0.000098	ft^3/s
4 Day 3 Year Bio Based Low Flow	0.000083	ft^3/s
1 Day 2 Year Low Flow	0.000138	ft^3/s
1 Day 5 Year Low Flow	0.0000131	ft^3/s
3 Day 2 Year Low Flow	0.000181	ft^3/s
3 Day 5 Year Low Flow	0.0000312	ft^3/s
7 Day 2 Year Low Flow	0.000254	ft^3/s
7 Day 5 Year Low Flow	0.0000253	ft^3/s
14 Day 2 Year Low Flow	0.00022	ft^3/s
14 Day 5 Year Low Flow	0.0000829	ft^3/s
1 Day 10 Year Low Flow	0.00000288	ft^3/s
30 Day 2 Year Low Flow	0.000602	ft^3/s
30 Day 5 Year Low Flow	0.0000169	ft^3/s
3 Day 10 Year Low Flow	0.00000437	ft^3/s
7 Day 10 Year Low Flow	0.0000168	ft^3/s
14 Day 10 Year Low Flow	0.00000717	ft^3/s
30 Day 10 Year Low Flow	0.0000449	ft^3/s

Low-Flow Statistics Citations

Wiley, Jeffrey B.,2008, Estimating Selected Streamflow Statistics Representative of 1930–2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2008-5105, 24 p. (http://pubs.usgs.gov/sir/2008/5105/)

Flow-Duration Statistics

Flow-Duration Statistics Parameters [LowFlow North 2008 5105]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	16.3	1516
LC16DEV	Percent_developed_from_NLCD2016	0.2	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100
LONG_CENT	Longitude of Basin Centroid	80.57406	decimal degrees	79.618	82.023
LOWREG	Low Flow Region Number	1112	dimensionless		

Flow-Duration Statistics Disclaimers [LowFlow North 2008 5105]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Flow-Duration Statistics Flow Report [LowFlow North 2008 5105]

Statistic	Value	Unit
10 Percent Duration	0.438	ft^3/s
25 Percent Duration	0.134	ft^3/s
50 Percent Duration	0.0348	ft^3/s
75 Percent Duration	0.0045	ft^3/s
90 Percent Duration	0.00032	ft^3/s

Flow-Duration Statistics Citations

Wiley, Jeffrey B.,2008, Estimating Selected Streamflow Statistics Representative of 1930–2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2008-5105, 24 p. (http://pubs.usgs.gov/sir/2008/5105/)

Seasonal Flow Statistics

Seasonal Flow Statistics Parameters [Seasonal LowFlow North 2010 5185]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	16.3	1516
LONG_CENT	Longitude of Basin Centroid	80.57406	decimal degrees	79.618	82.023
LOWREG	Low Flow Region Number	1112	dimensionless	1111	1859

Seasonal Flow Statistics Disclaimers [Seasonal LowFlow North 2010 5185]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Seasonal Flow Statistics Flow Report [Seasonal LowFlow North 2010 5185]

Statistic	Value	Unit
Jan to Mar 1 Day 10 Year Low Flow	0.00611	ft^3/s
Jan to Mar 50 Percent Duration	0.131	ft^3/s
Jan to Mar 30 Day 5 Year Low Flow	0.0508	ft^3/s
Apr to Jun 1 Day 10 Year Low Flow	0.000248	ft^3/s
July to Sept 7 Day 10 Year Low Flow	0.0000129	ft^3/s

Statistic	Value	Unit
Apr to Jun 7 Day 10 Year Low Flow	0.000847	ft^3/s
7 Day 10 Year lowflow Oct to Dec	0.000233	ft^3/s
July to Sept 50 Percent Flow	0.00227	ft^3/s
1 Day 10 Year lowflow Oct to Dec	0.0000263	ft^3/s
Jul to Sep Harmonic Mean Streamflow	0.000829	ft^3/s
Jul to Sep 30 Day 5 Year Low Flow	0.000062	ft^3/s
Apr to Jun 30 Day 5 Year Low Flow	0.00507	ft^3/s
Apr to Jun Harmonic Mean Streamflow	0.0319	ft^3/s
Jul to Sep 1 Day 10 Year Low Flow	8.84e-8	ft^3/s
Apr to Jun 50 Percent Duration	0.0543	ft^3/s
Oct to Dec 50 Percent Duration	0.0182	ft^3/s
Jan to Mar Harmonic Mean Streamflow	0.0419	ft^3/s
Jan to Mar 7 Day 10 Year Low Flow	0.00914	ft^3/s
Oct to Dec 30 Day 5 Year Low Flow	0.000384	ft^3/s
Oct to Dec Harmonic Mean Streamflow	0.00129	ft^3/s

Seasonal Flow Statistics Citations

Wiley, J.B., and Atkins, J.T., Jr.,2010, Estimation of selected seasonal streamflow statistics representative of 1930-2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2010-5185, 20 p. (http://pubs.usgs.gov/sir/2010/5185/)

General Flow Statistics

General Flow Statistics Parameters [LowFlow North 2008 5105]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	16.3	1516
LONG_CENT	Longitude of Basin Centroid	80.57406	decimal degrees	79.618	82.023
LC16DEV	Percent_developed_from_NLCD2016	0.2	percent	0	100
CARBON	Percent Carbonate	0	percent	0	100
LOWREG	Low Flow Region Number	1112	dimensionless	1111	1859

General Flow Statistics Disclaimers [LowFlow North 2008 5105]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

General Flow Statistics Flow Report [LowFlow North 2008 5105]

Statistic	Value	Unit
Harmonic Mean Streamflow	0.00217	ft^3/s

General Flow Statistics Citations

Wiley, Jeffrey B.,2008, Estimating Selected Streamflow Statistics Representative of 1930–2002 in West Virginia: U.S. Geological Survey Scientific Investigations Report 2008-5105, 24 p. (http://pubs.usgs.gov/sir/2008/5105/)

Bankfull Statistics

Bankfull Statistics Parameters [Appalachian Highlands D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	0.07722	940.1535

Bankfull Statistics Parameters [Appalachian Plateaus P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	0.081081	536.995602

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.16	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Appalachian Highlands D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	7.1	ft
Bieger_D_channel_depth	0.662	ft
Bieger_D_channel_cross_sectional_area	4.75	ft^2

Bankfull Statistics Flow Report [Appalachian Plateaus P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	7.14	ft
Bieger_P_channel_depth	0.661	ft
Bieger_P_channel_cross_sectional_area	4.68	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	6.5	ft
Bieger_USA_channel_depth	0.816	ft
Bieger_USA_channel_cross_sectional_area	6.35	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	7.1	ft
Bieger_D_channel_depth	0.662	ft
Bieger_D_channel_cross_sectional_area	4.75	ft^2
Bieger_P_channel_width	7.14	ft
Bieger_P_channel_depth	0.661	ft
Bieger_P_channel_cross_sectional_area	4.68	ft^2
Bieger_USA_channel_width	6.5	ft
Bieger_USA_channel_depth	0.816	ft
Bieger_USA_channel_cross_sectional_area	6.35	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPages)

Application Version: 4.21.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

SCALE IN FEET

0 60 120

LEGEND

- EXISTING PROPERTY LINE
- EXISTING INDEX (MAJOR) CONTOUR
- EXISTING INTERMEDIATE (MINOR) CONTOUR
- EXISTING FENCE LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF UNPAVED ROAD
- EXISTING GAS LINE
- EXISTING CULVERT
- ECOLOGICAL DELINEATION BOUNDARY
- EXISTING WETLAND
- EXISTING WETLAND CONTINUES
- EXISTING DRAINAGE FEATURE
- EXISTING STREAM
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED RIGHT-OF-WAY
- PROPOSED PAVEMENT
- PROPOSED GRAVEL PAD
- PROPOSED GAS LINE
- PROPOSED WATERLINE
- PROPOSED EASEMENT
- PROPOSED INDEX (MAJOR) CONTOUR
- PROPOSED INTERMEDIATE (MINOR) CONTOUR
- EFFECTIVE 1% ANNUAL CHANCE FLOOD HAZARD (FEMA SFHA ZONE AE AND ZONE A)
- EFFECTIVE FEMA BASE FLOOD ELEVATIONS
- REVISED 1% ANNUAL CHANCE FLOOD HAZARD
- PROPOSED LIMIT OF SFHA DETERMINATION

LEGAL DESCRIPTION

DESCRIPTION OF FEMA DETERMINATION AREA
0.569 ACRES
GREENBRIER MAGISTERIAL DISTRICT
COUNTY OF DODDRIDGE, STATE OF WEST VIRGINIA

ALL THAT CERTAIN PIECE OR PARCEL OF LAND BEING PART OF LANDS NOW OR FORMERLY JEFFREY J. FORD, AS RECORDED IN WILL BOOK 41, PAGE 619 IN THE OFFICE OF THE CLERK OF THE COUNTY COMMISSION OF DODDRIDGE COUNTY, WEST VIRGINIA, SITUATE IN THE GREENBRIER MAGISTERIAL DISTRICT, COUNTY OF DODDRIDGE, STATE OF WEST VIRGINIA, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT AT THE APPROXIMATE INTERSECTION OF BIG ISAAC ROAD AND LITTLE ISAAC RUN ROAD;

THENCE THROUGH THE RIGHT OF WAYS OF BIG ISAAC ROAD AND LITTLE ISAAC RUN ROAD, THROUGH SAID FORD PROPERTY AND ALONG A REFERENCE LINE, ±SOUTH 63°55'31" WEST, ±276.13 FEET TO A POINT AT THE NORTHEAST CORNER OF THE HEREIN DESCRIBED FEMA DETERMINATION AREA, BEING THE TRUE POINT OF BEGINNING;

THENCE CONTINUING THROUGH SAID FORD PROPERTY, THE FOLLOWING SEVEN (7) COURSES AND DISTANCES:

1. SOUTH 27°01'33" EAST, 432.79 FEET TO A POINT;
2. SOUTH 60°03'56" WEST, 34.06 FEET TO A POINT;
3. NORTH 31°34'53" WEST, 115.70 FEET TO A POINT;
4. NORTH 36°18'55" WEST, 146.07 FEET TO A POINT;
5. NORTH 24°55'39" WEST, 163.85 FEET TO A POINT;
6. NORTH 40°40'17" WEST, 53.78 FEET TO A POINT;
7. SOUTH 87°52'30" EAST, 84.12 FEET TO THE TRUE POINT OF BEGINNING.

BEARINGS BASED ON WEST VIRGINIA STATE PLANE NAD83-2011, NORTH ZONE, AS DETERMINED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., USING SURVEY GRADE GPS MEASUREMENTS AND OPUS POST-PROCESSING.

CONTAINING 24,797 SQ. FT. OR 0.569 ACRES

REFERENCES

1. EXISTING TOPOGRAPHY OBTAINED FROM DODDRIDGE COUNTY, WEST VIRGINIA PUBLICLY AVAILABLE LIDAR DATA, DATED 2022, ACCESSED MAY 2024.
2. STREAM AND WETLAND DELINEATION PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON MAY 28, 2024.
3. DIGITAL PARCEL INFORMATION OBTAINED FROM DODDRIDGE COUNTY, WEST VIRGINIA PARCEL DATA, ACCESSED MAY 2024.
4. EXISTING PLANIMETRICS LOCATED BY FIELD SURVEY PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED JUNE 6, 2024.
5. PROPOSED COMPRESSOR FACILITY, RIGHT-OF-WAY, WORKSPACES, POTENTIAL INTERCONNECT FACILITIES, AND EXISTING DTM GAS LINE SHOWN PER "MEATHOUSE FORK CS.DWG" PROVIDED BY DT MIDSTREAM, RECEIVED JUNE 20, 2024.

REVISION RECORD

NO	DATE	DESCRIPTION

700 Cherrington Parkway
Moon Township, PA 15108
Ph: 412.429.2324 · 800.365.2324
www.cecinc.com

CEC
Civil & Environmental Consultants, Inc.

DTM STONEWALL GAS GATHERING LLC
MEATHOUSE FORK COMPRESSOR STATION
DODDRIDGE COUNTY, WV

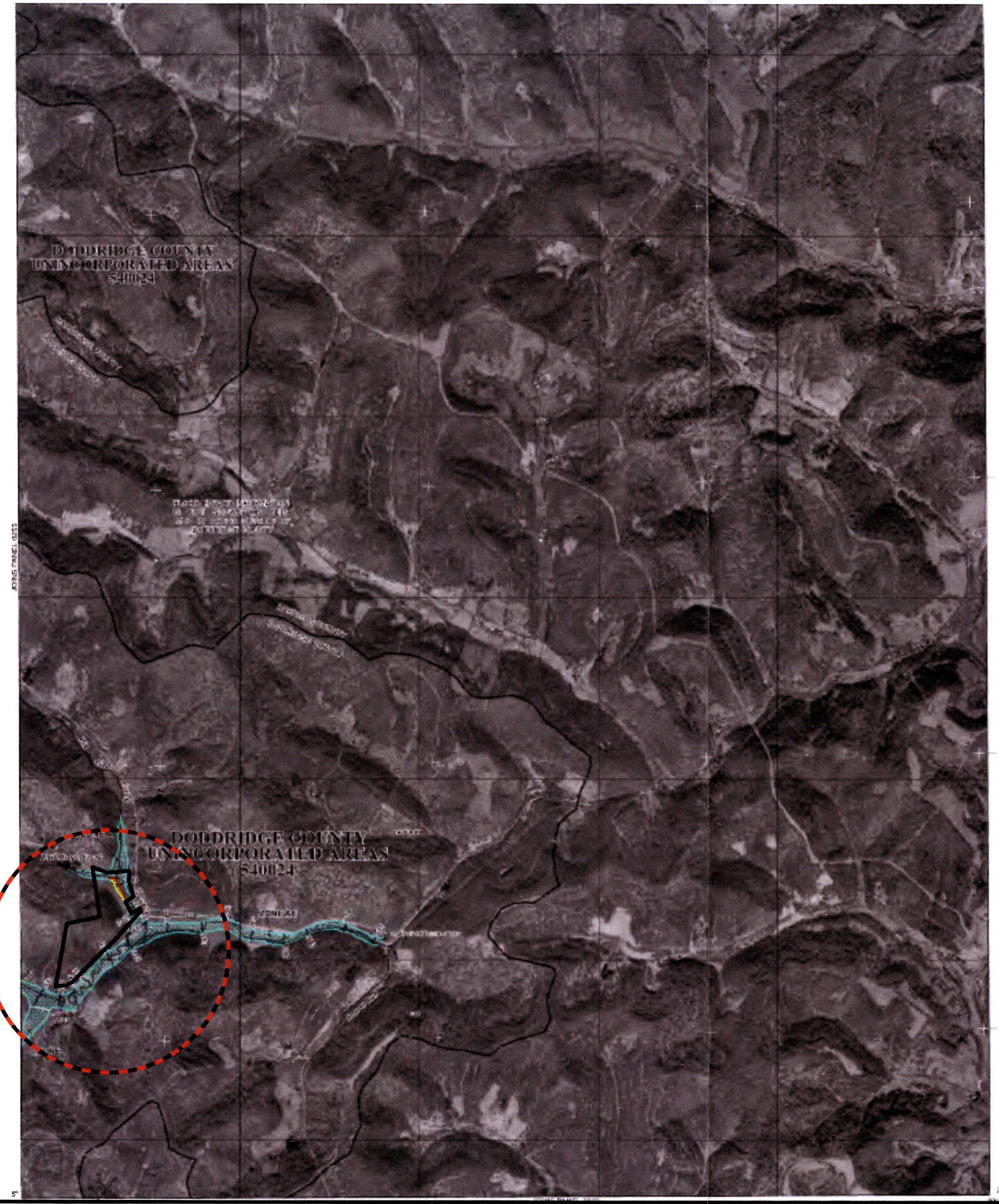
BIG AND LITTLE ISAAC CREEKS TOPOGRAPHIC WORK MAP FOR PROPOSED LIMIT OF SFHA DETERMINATION

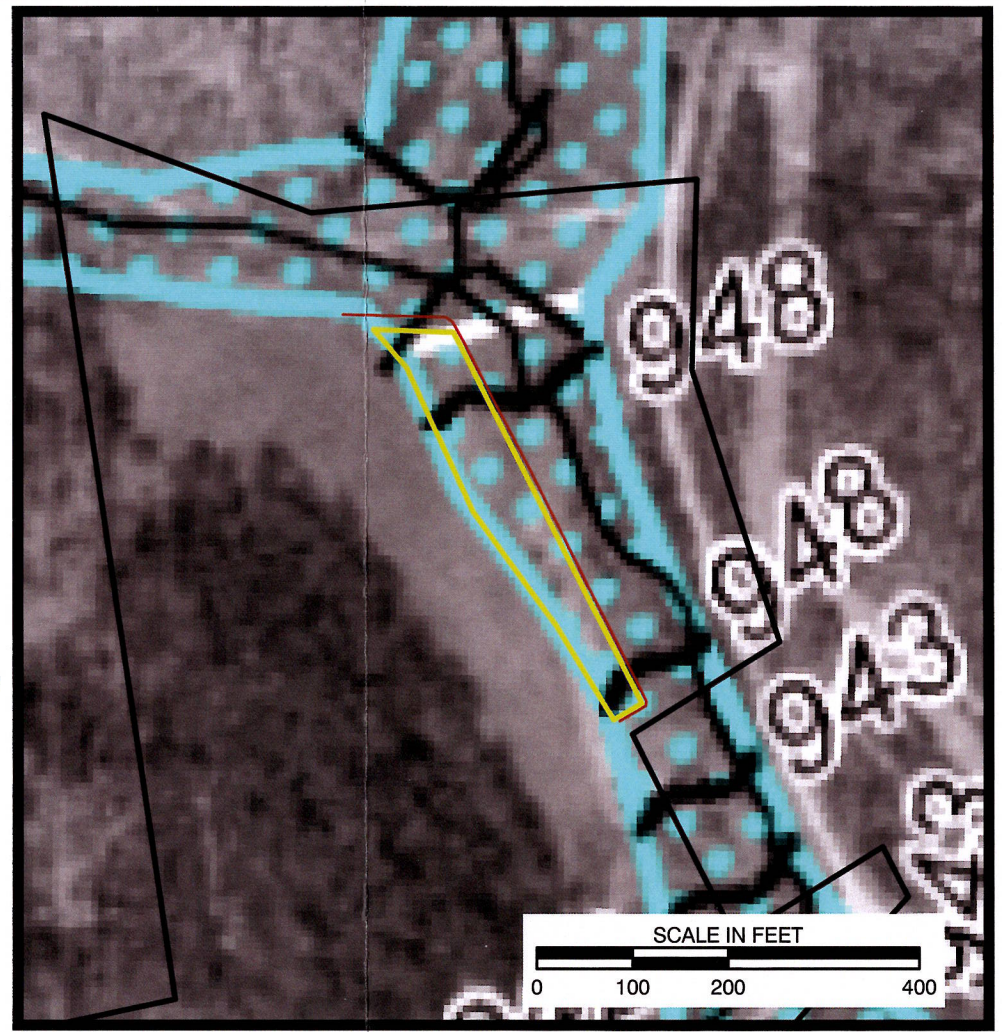
DATE:	JULY 31, 2024	DRAWN BY:	GRH
DWG SCALE:	1" = 60'	CHECKED BY:	DJW
PROJECT NO:	342-931		
APPROVED BY:	TGJ		

TIMOTHY G. JOHNSTON REGISTERED 24442 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

DRAWING NO.: **EX-1**

NORTH





NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0260C

FIRM

FLOOD INSURANCE RATE MAP

DODDRIDGE COUNTY, WEST VIRGINIA AND INCORPORATED AREAS

PANEL 260 OF 325

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0260	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
54017C0260C
MAP REVISED
OCTOBER 4, 2011

Federal Emergency Management Agency

SCALE IN FEET
0 1,250 2,500 5,000

LEGEND

- AREA OF INTEREST (AOI)
- SUBJECT PARCEL LINE
- FEMA FLOODZONE DETERMINATION AREA
- REVISED FLOODPLAIN LIMITS

REFERENCES

1.ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, ACCESSED 7/31/2024

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway
Moon Township, PA 15108
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www.cecinc.com

DTM STONEWALL GAS GATHERING, LLC
MEATHOUSE FORK COMPRESSOR STATION
DODDRIDGE COUNTY, WEST VIRGINIA

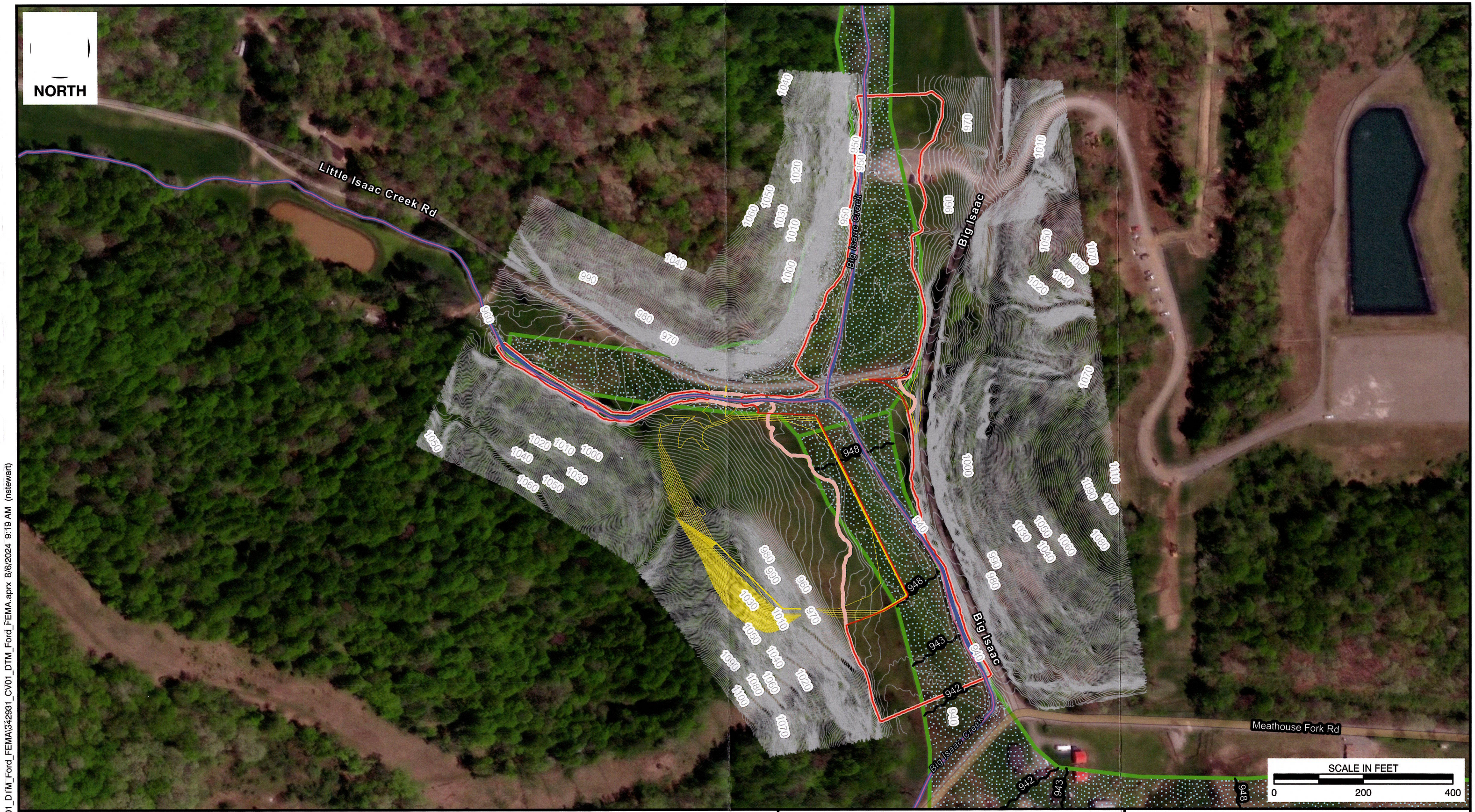
ANNOTATED FIRM MAP

DRAWN BY:	NJS	CHECKED BY:	DW	APPROVED BY:	TGJ*
DATE:	7/31/2024	SCALE:	1" =2,500'	PROJECT NO:	342-931

FIGURE NO: 1

*Hand Signature on file

P:\340-000\342-931\GIS\Maps\CV01_DTM_Ford_FEMA\342931_CV01_DTM_Ford_FEMA.aprx 7/30/2024 11:19 AM (nstewart)



LEGEND

- EFFECTIVE FEMA 1% ANNUAL CHANCE FLOOD HAZARD
- EFFECTIVE FEMA BASE FLOOD ELEVATIONS
- EXISTING 100-YR FLOODPLAIN
- PROPOSED 100-YR FLOODPLAIN
- CORRECTED EFFECTIVE STREAM CENTERLINE
- EFFECTIVE STREAM CENTERLINE
- EXISTING CONTOURS
- PROPOSED CONTOURS

REFERENCES

1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
2. FEMA FIRM: HTTP://HAZARDS-FEMA.MAPS.ARCGIS.COM/HOME/ITEM.HTML?ID=9C2A359AE6774070A8BA6460F2486068.
3. EXISTING LIDAR: DODDRIDGE COUNTY, WEST VIRGINIA PUBLICLY AVAILABLE LIDAR DATA, DATED 2022, ACCESSED MAY 2024.
4. PROPOSED GRADING: CEC CIVIL SITE DEVELOPMENT PLAN SET, JULY 2024.

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Moon Township, PA 15108
Ph: 412.429.2324 · 800.365.2324
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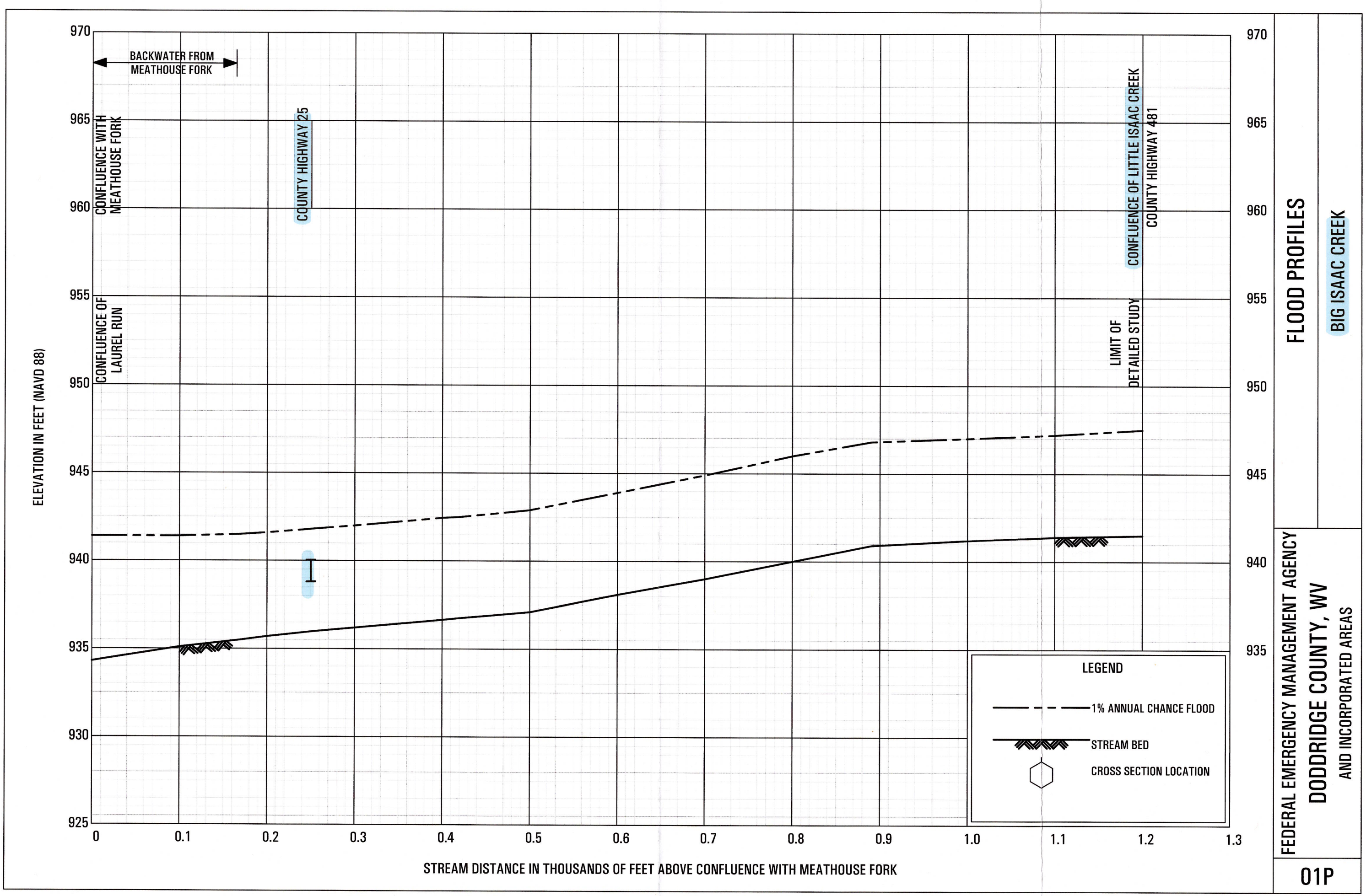
DTM STONEWALL GAS GATHERING, LLC
MEATHOUSE FORK COMPRESSOR STATION
DODDRIDGE COUNTY, WEST VIRGINIA

EXISTING VS. PROPOSED
100-YR FLOODPLAIN MAP

DRAWN BY:	NJS	CHECKED BY:	DW	APPROVED BY:	TGJ*	FIGURE NO: 1
DATE:	8/13/2024	SCALE:	1" =200'	PROJECT NO:	342-931	

*Hand Signature on file

P:\340-000\342-931\-GIS\Maps\CV01_DTM_Ford_FEMA\342931_CV01_DTM_Ford_FEMA.aprx 8/6/2024 9:19 AM (nstewart)



FLOOD PROFILES

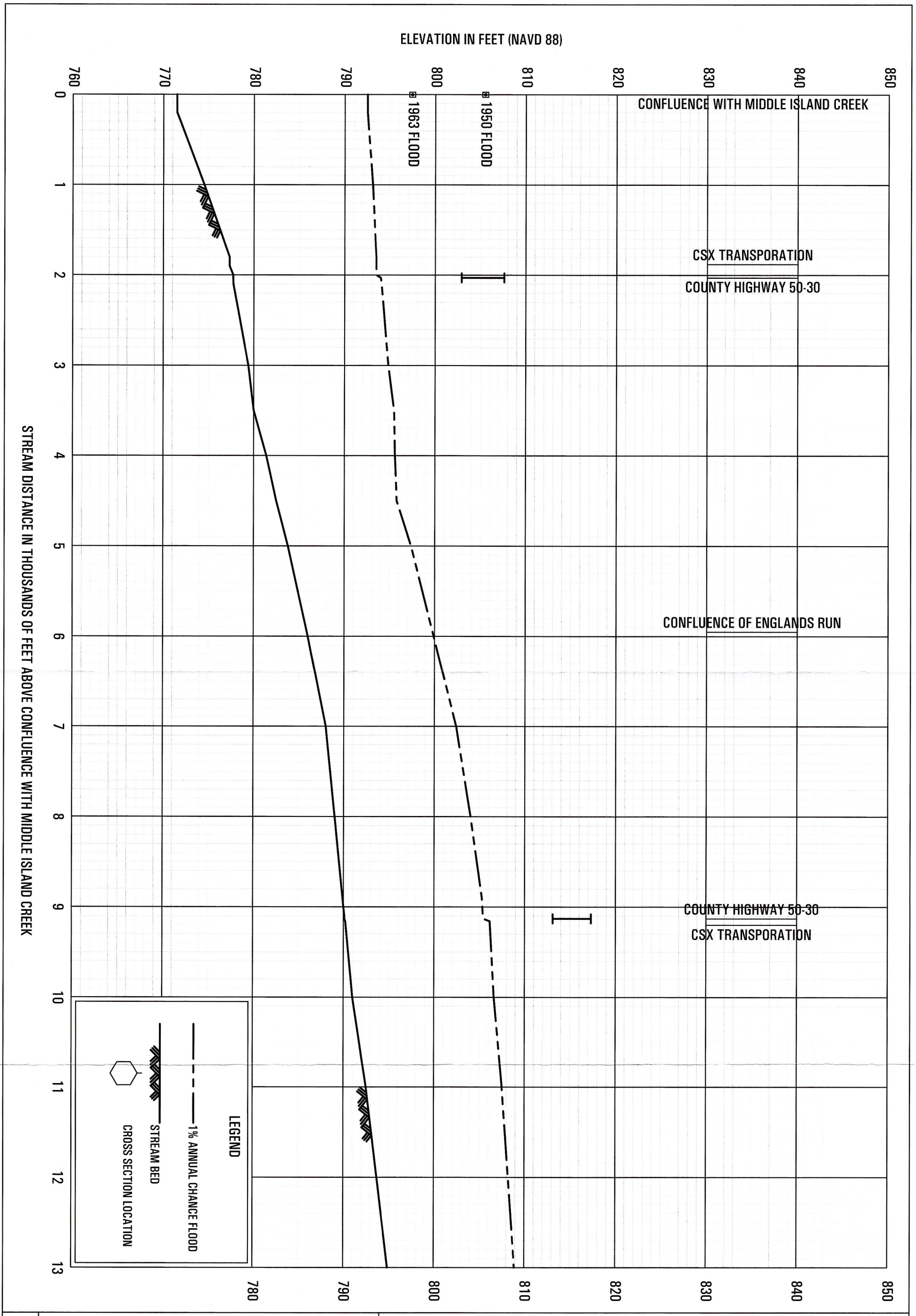
BIG ISAAC CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

01P



02P

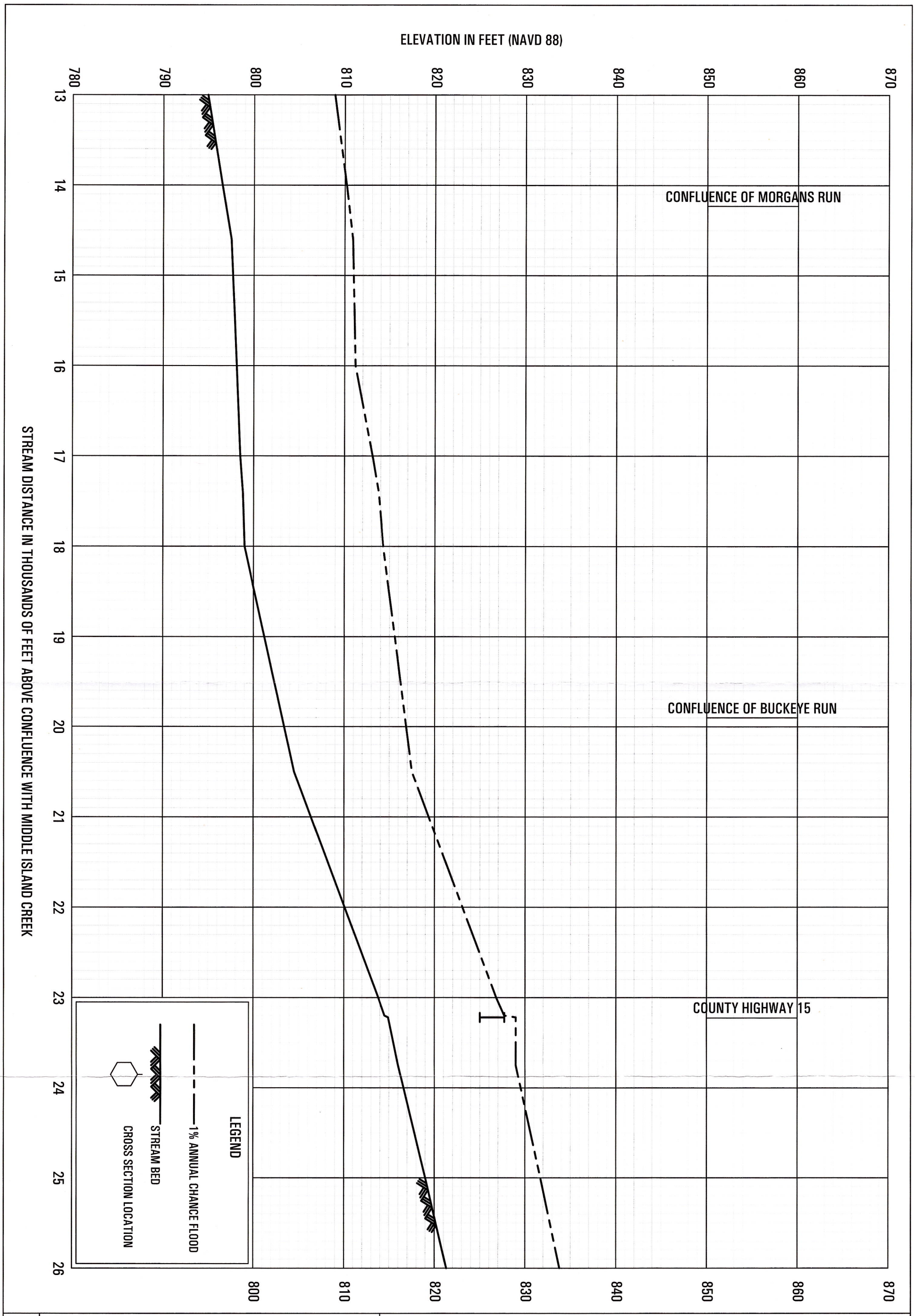
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

BUCKEYE CREEK



03P

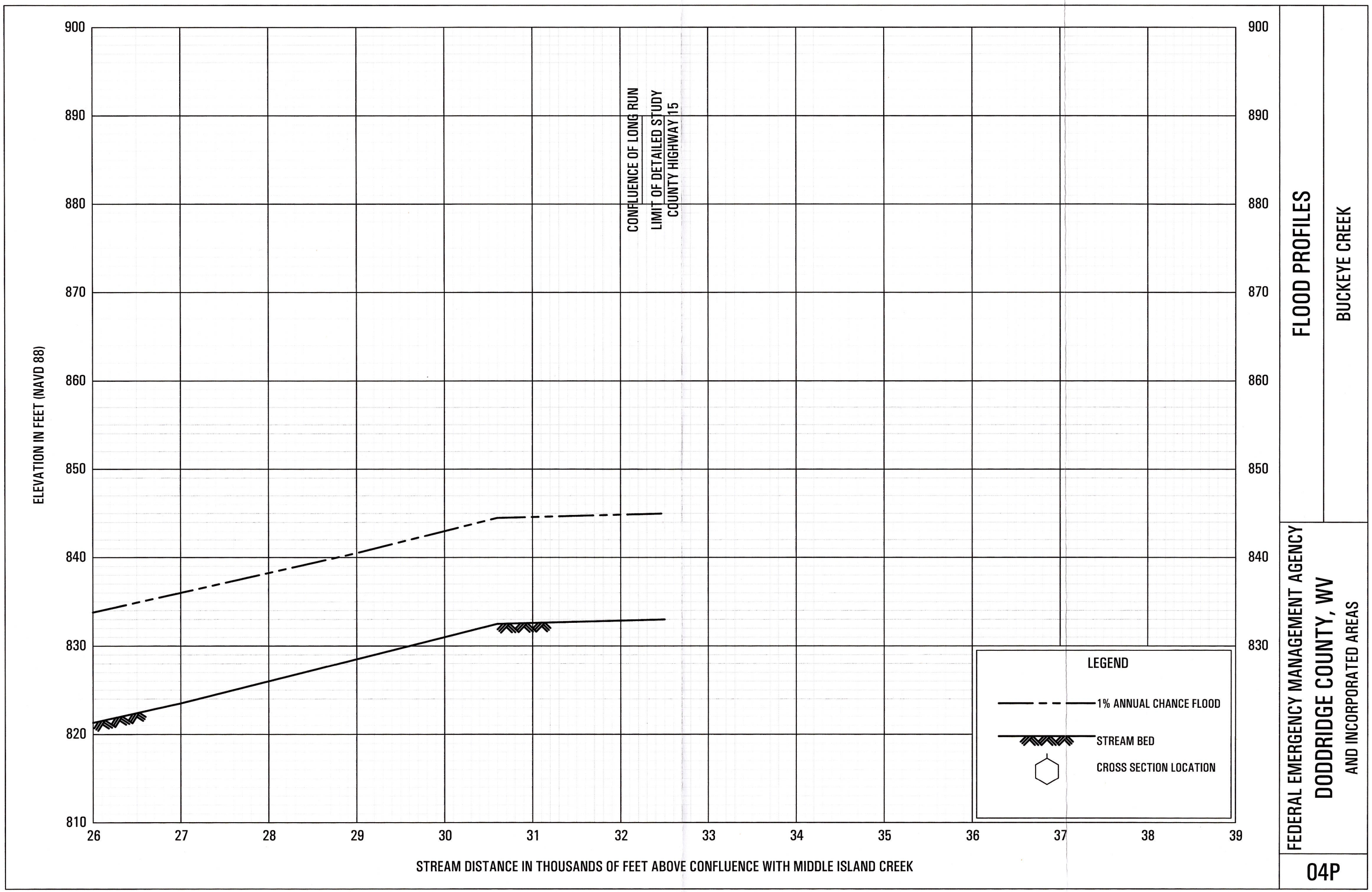
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

BUCKEYE CREEK



FLOOD PROFILES

BUCKEYE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

04P

ELEVATION IN FEET (NAVD 88)

865 870 875 880 885 890 895 900 905 910

CONFLUENCE OF GREENBRIER CREEK

LIMIT OF DETAILED STUDY

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH MIDDLE ISLAND CREEK

55.0 55.5 56.0 56.5 57 57.5 58.0 58.5 59.0 59.5 60.0 60.5 61.0 61.5

875 880 885 890 895 900 905 910

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

05P

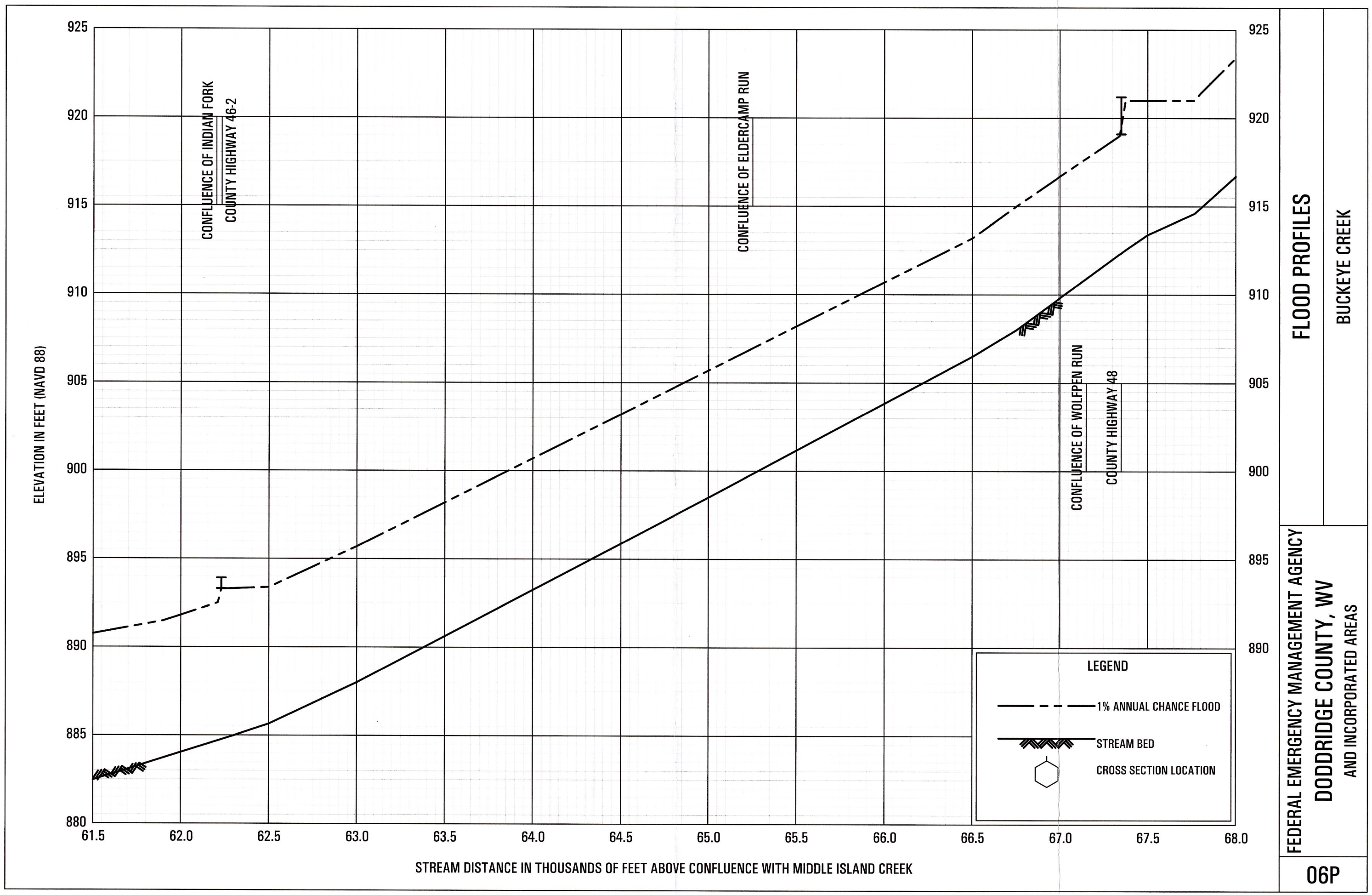
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

BUCKEYE CREEK



FLOOD PROFILES

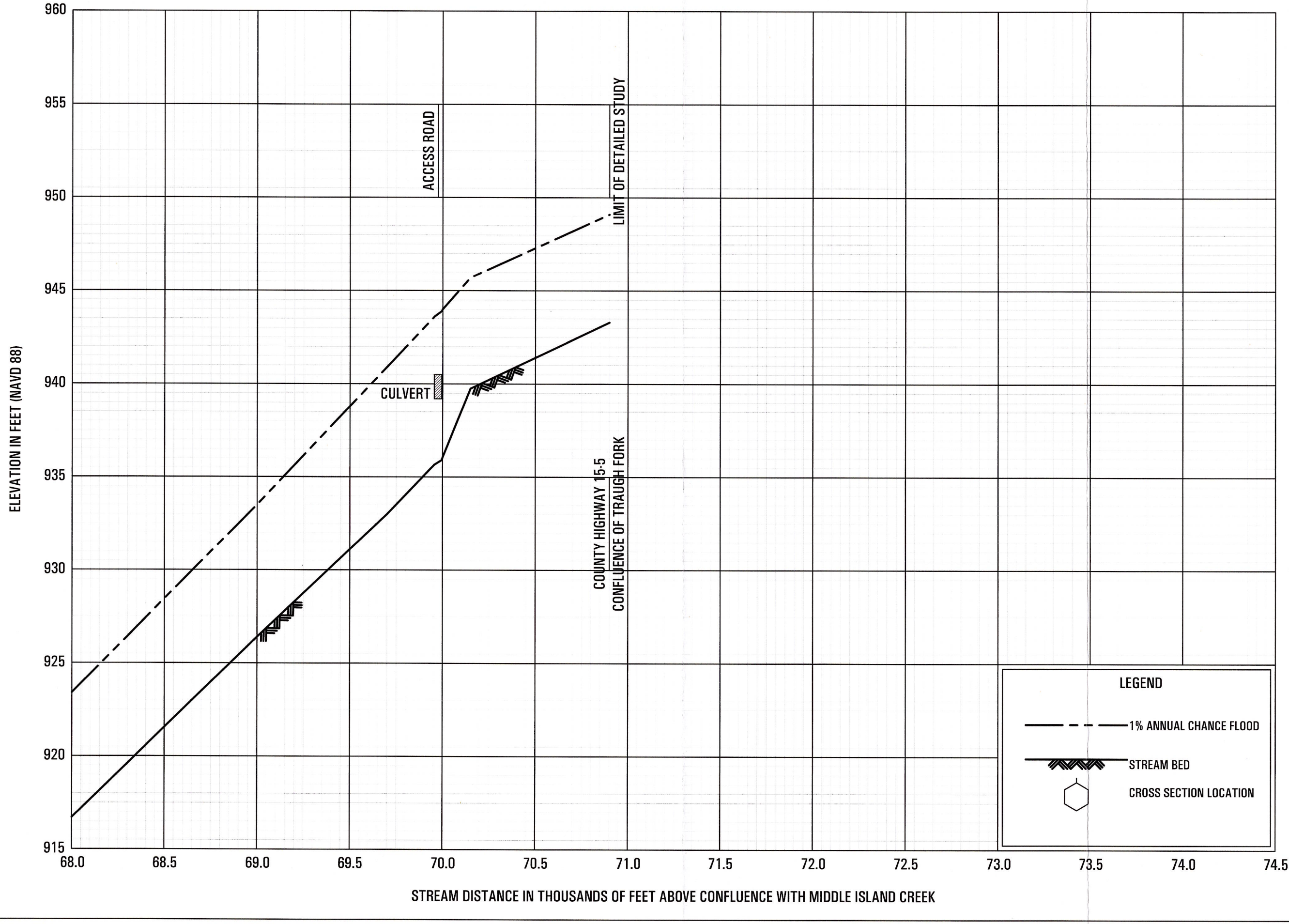
BUCKEYE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

06P



FLOOD PROFILES

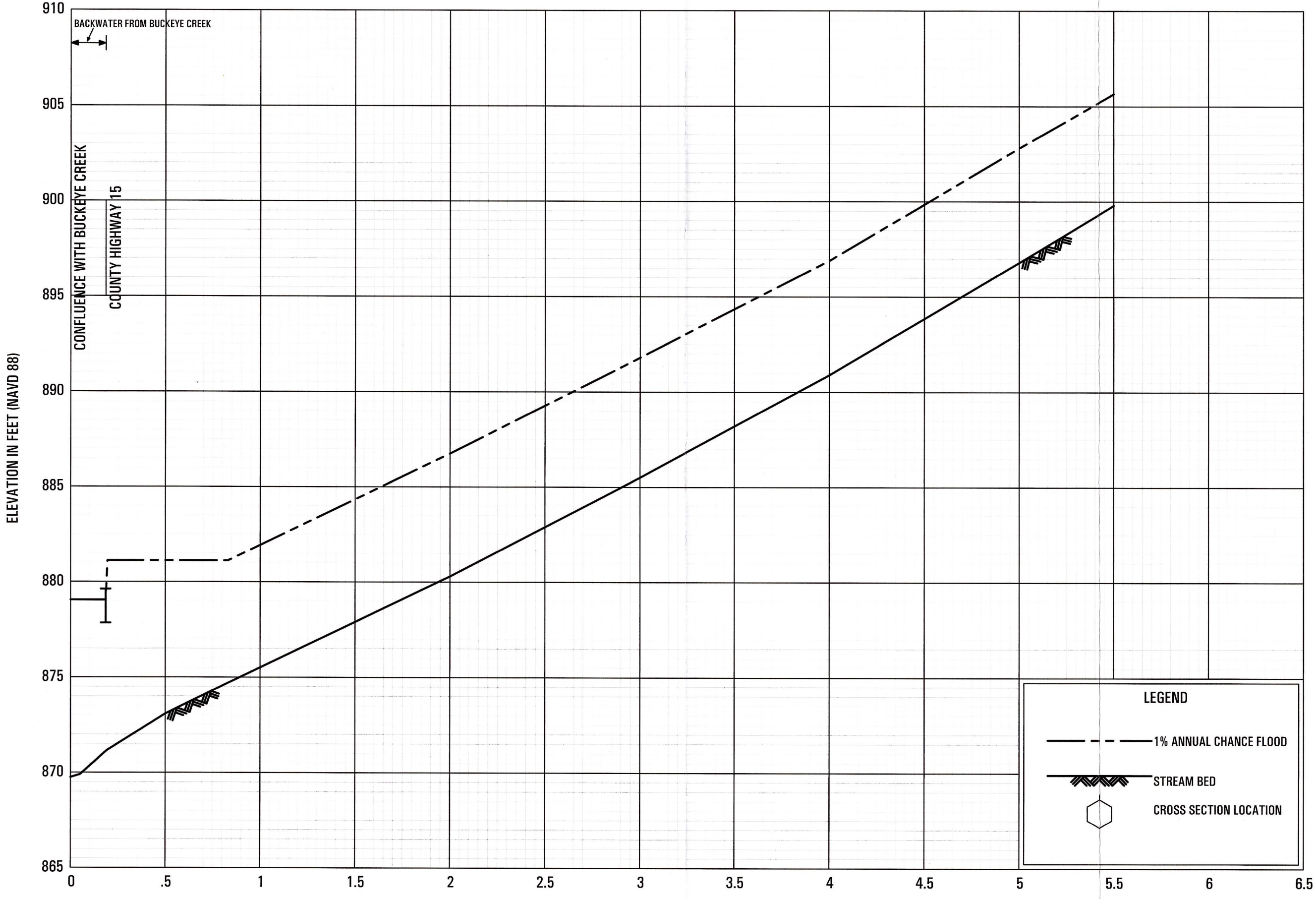
BUCKEYE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

07P



FLOOD PROFILES

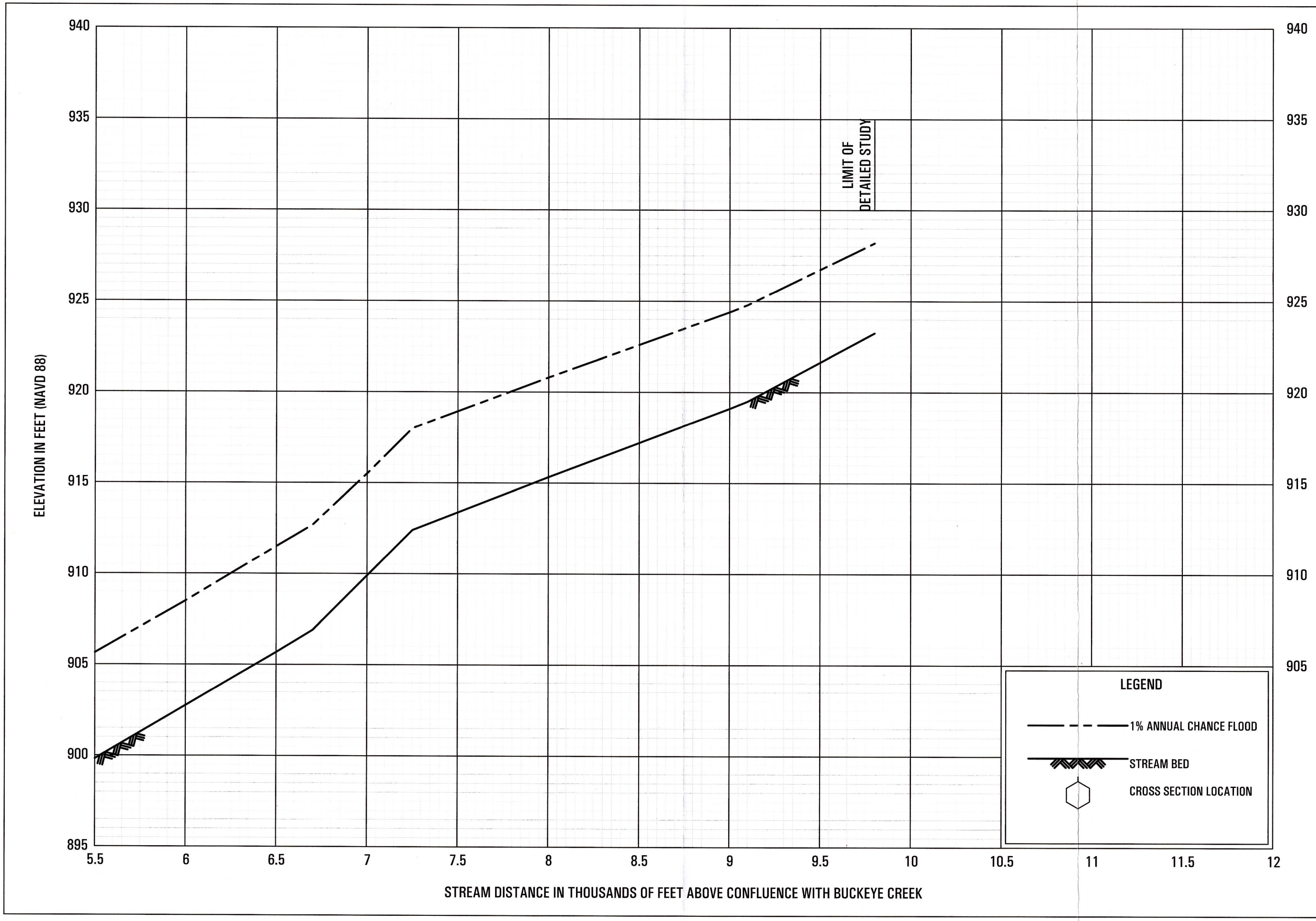
GREENBRIER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

08P



FLOOD PROFILES

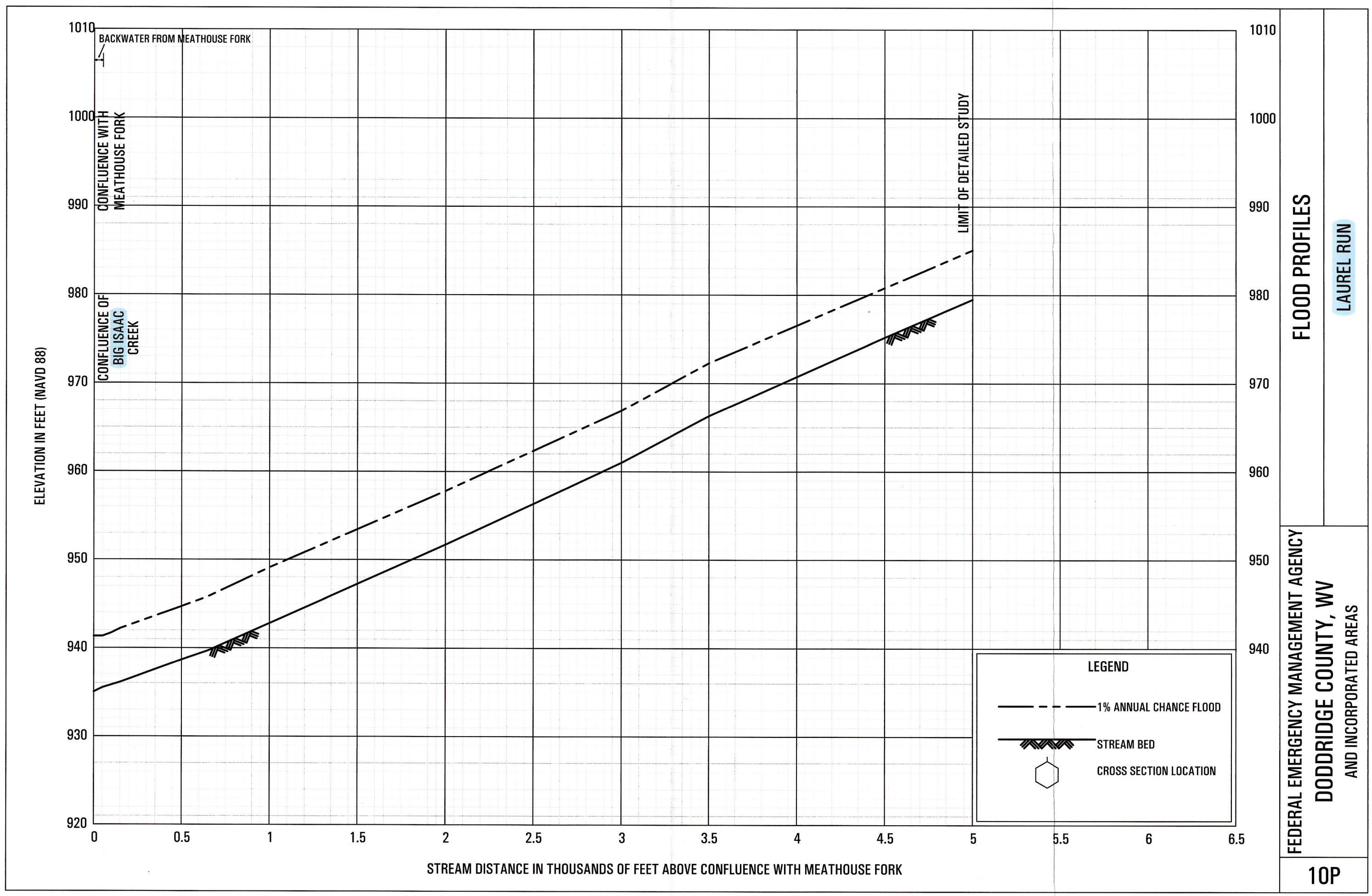
GREENBRIER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

09P



FLOOD PROFILES

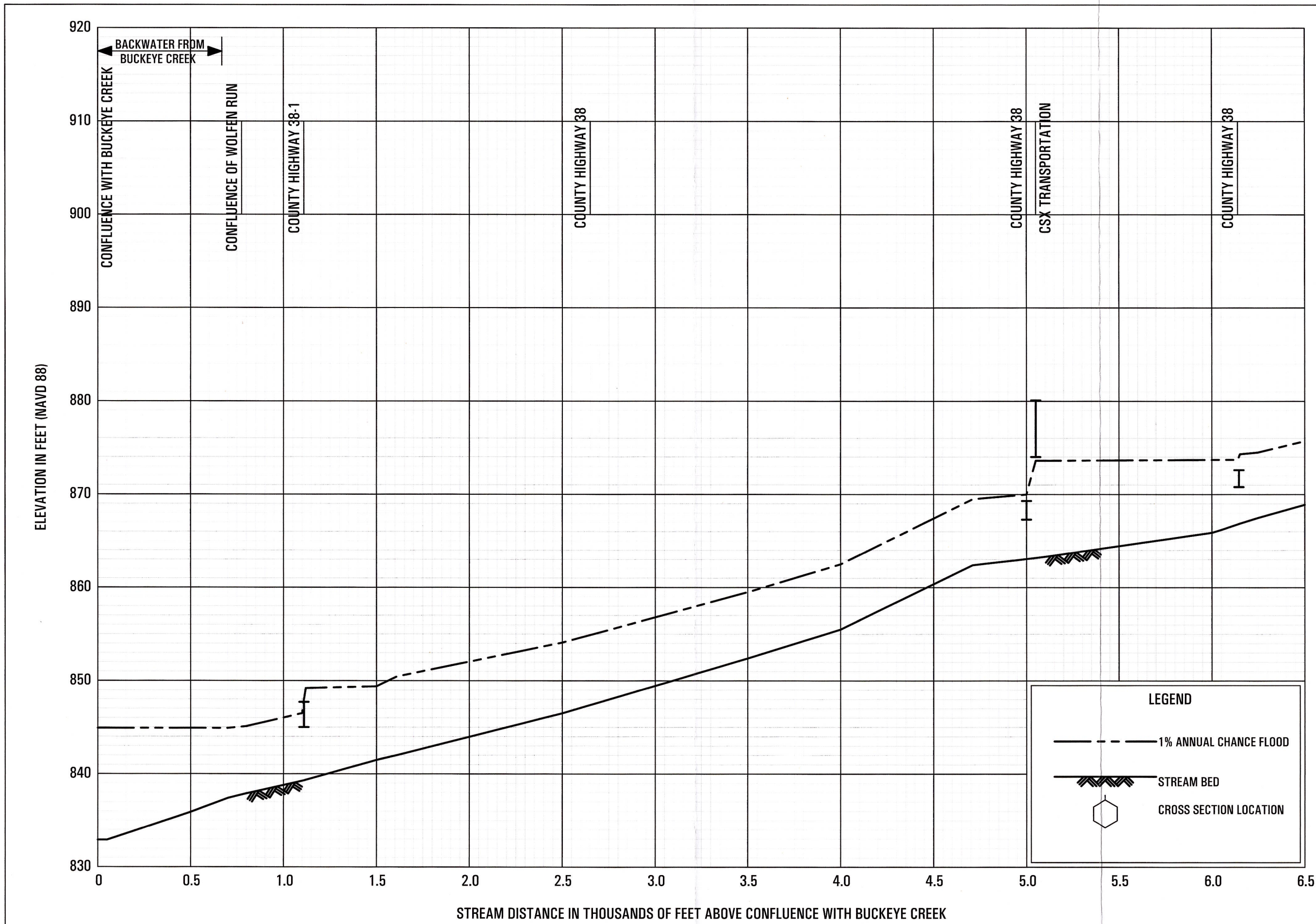
LAUREL RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

10P



FLOOD PROFILES

LONG RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

11P

950
940
930
920
910
900
890
880
870
860

ELEVATION IN FEET (NAVD 88)

6.5 7.0 7.5 8.0 8.5 9.0 9.5 10 10.5 11 11.5 12 12.5 13

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH BUCKEYE CREEK

LIMIT OF DETAILED STUDY

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

FLOOD PROFILES

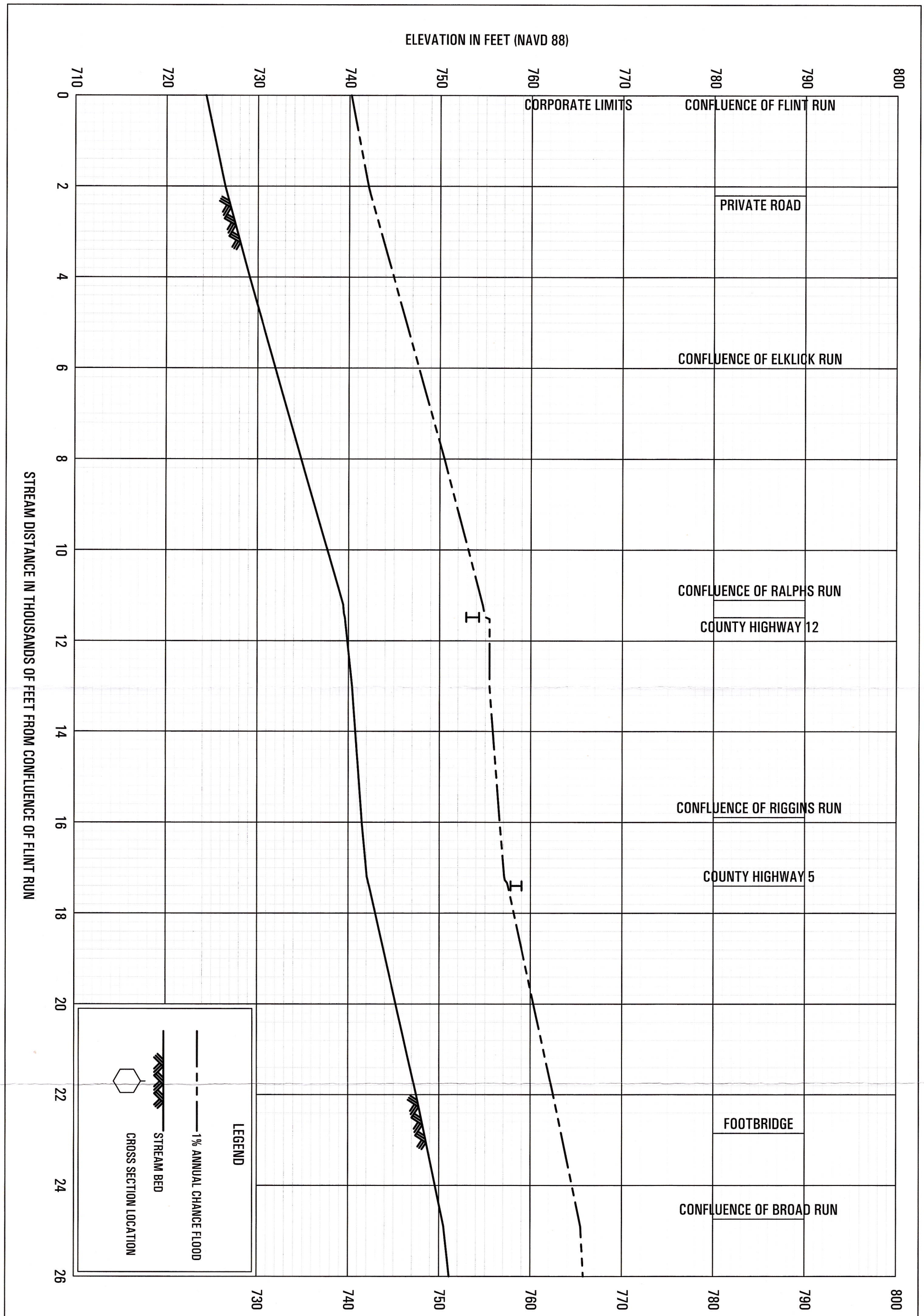
LONG RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

12P



13P

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MCELROY CREEK

ELEVATION IN FEET (NAVD 88)

740 750 760 770 780 790 800 810 820 830

STREAM DISTANCE IN THOUSANDS OF FEET FROM CONFLUENCE OF FLINT RUN

26 28 30 32 34 36 38 40 42 44 46 48 50 52

CONFLUENCE OF FRANKS RUN

FOOTBRIDGE

CONFLUENCE OF TALKINGTON FORK

CONFLUENCE OF PIKE FORK

CONFLUENCE OF LITTLE BATTLE RUN

COUNTY HIGHWAY 55-8

CONFLUENCE OF BIG BATTLE RUN AND ROBINSON CREEK

LIMIT OF DETAILED STUDY

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

760 770 780 790 800 810 820 830

14P

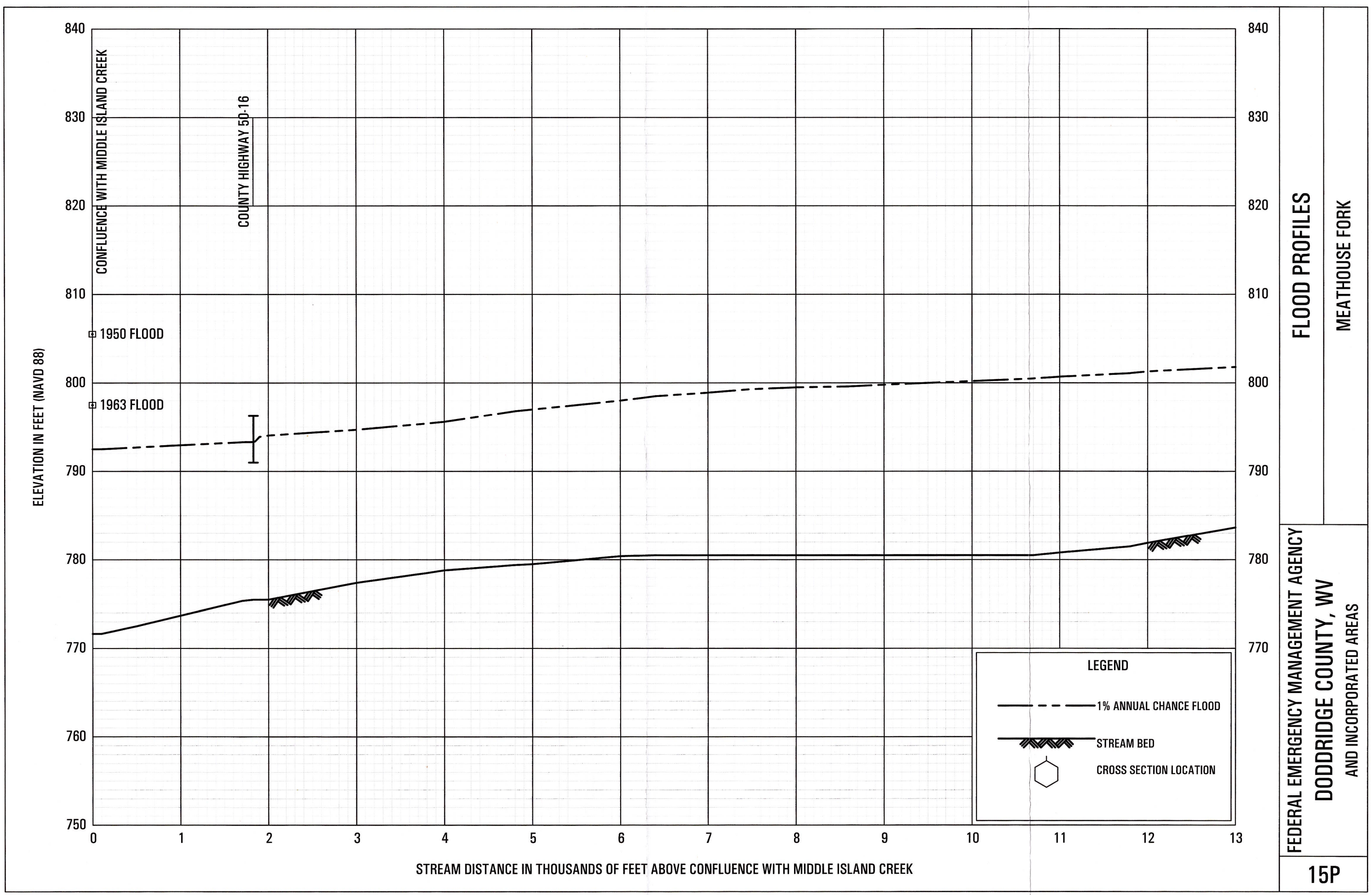
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MCELROY CREEK



FLOOD PROFILES

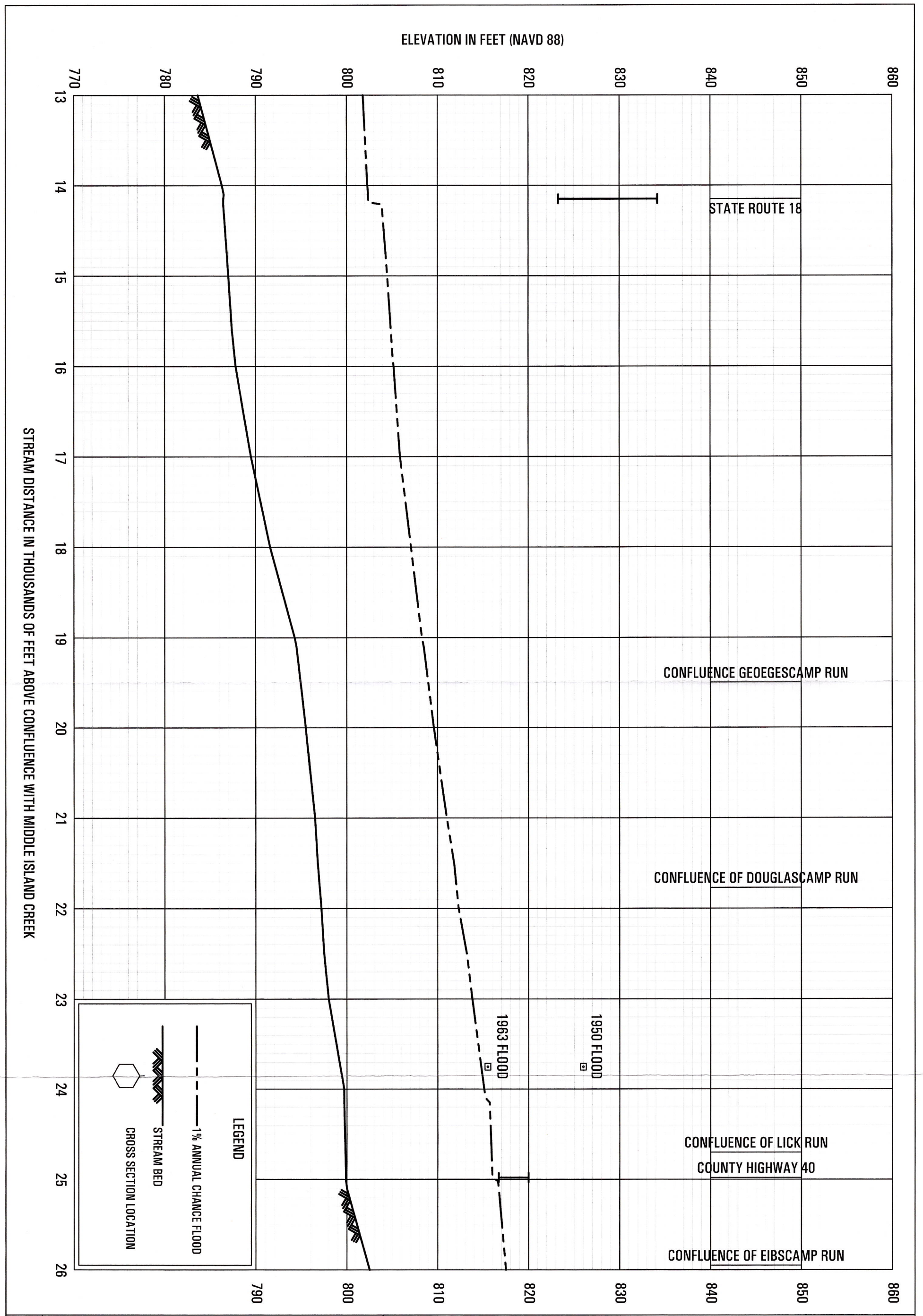
MEATHOUSE FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

15P



16P

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MEATHOUSE FORK

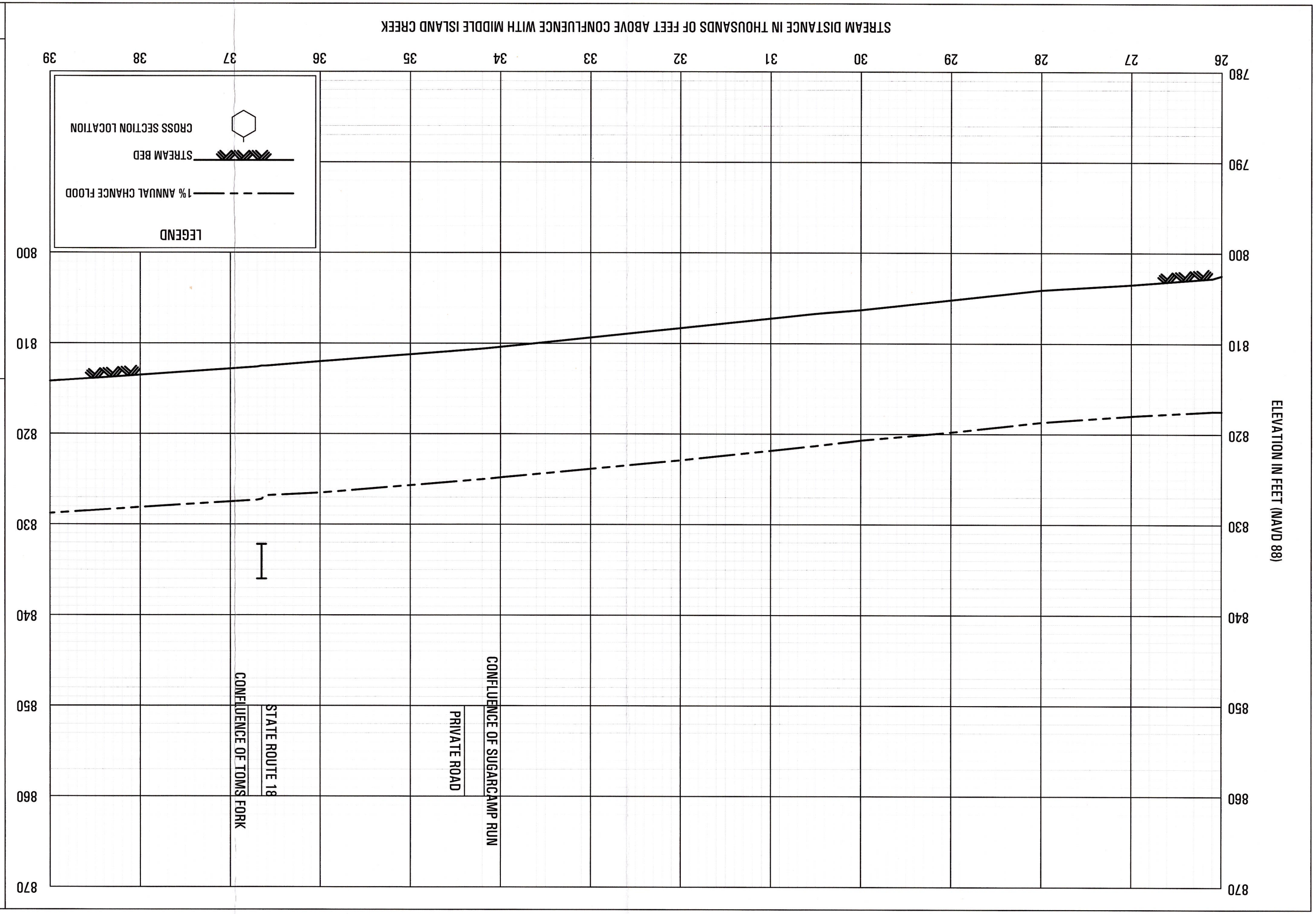
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MEATHOUSE FORK



ELEVATION IN FEET (NAVD 88)

790 800 810 820 830 840 850 860 870 880

39 40 41 42 43 44 45 46 47 48 49 50 51 52

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH MIDDLE ISLAND CREEK

CONFLUENCE OF WOLFPEN RUN

CONFLUENCE OF REDLICK RUN

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

810 820 830 840 850 860 870 880

18P

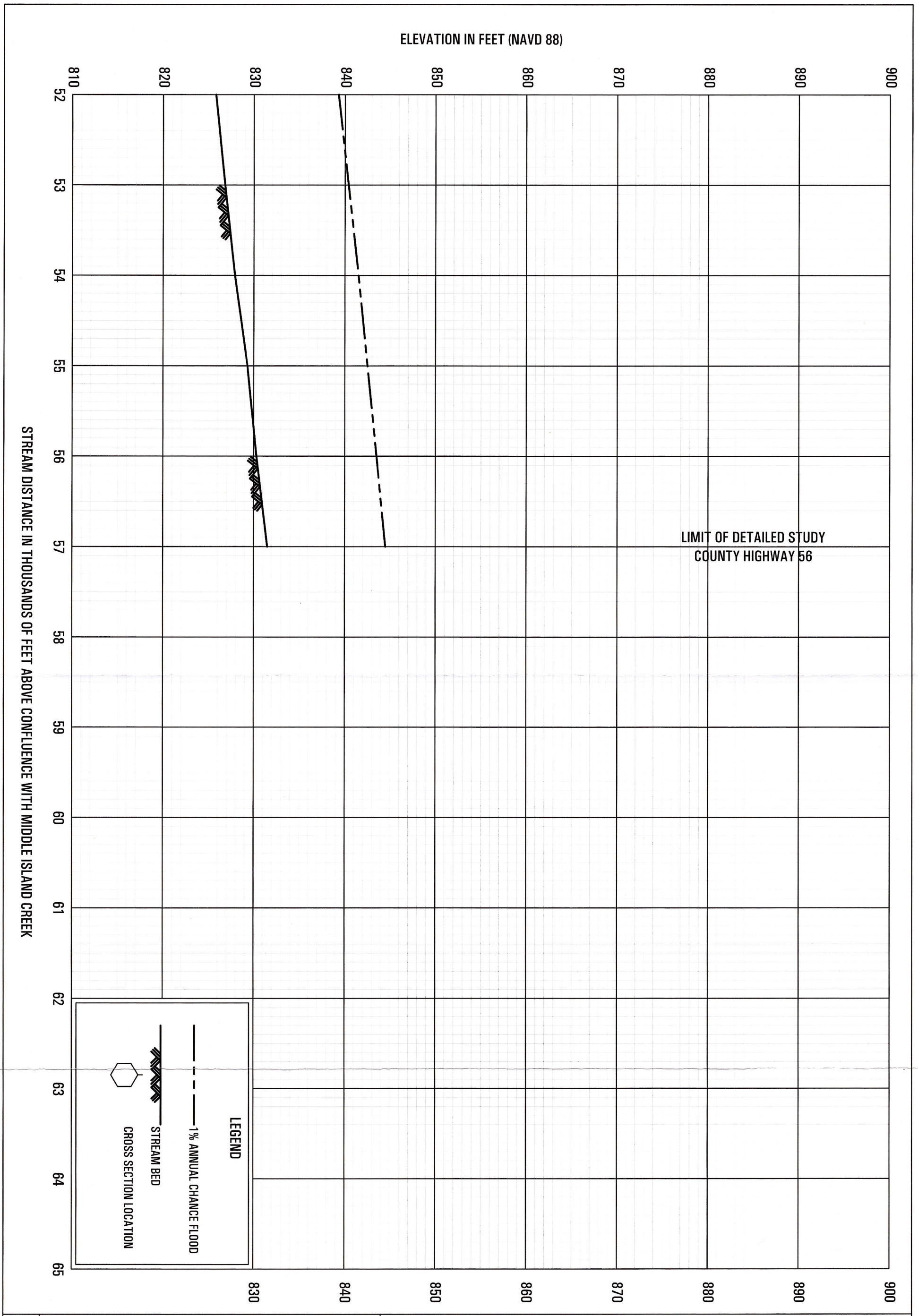
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MEATHOUSE FORK



19P

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MEATHOUSE FORK

ELEVATION IN FEET (NAVD 88)

915 920 925 930 935 940 945 950 955 960

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH MIDDLE ISLAND CREEK

102.0 102.5 103.0 103.5 104.0 104.5 105.0 105.5 106.0 106.5 107.0 107.5 108.0 108.5

LIMIT OF DETAILED STUDY

COUNTY HIGHWAY 25-13

LIMIT OF DETAILED STUDY

CONFLUENCE OF LAUREL RUN
AND BIG ISAAC CREEK

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

925 930 935 940 945 950 955 960

20P

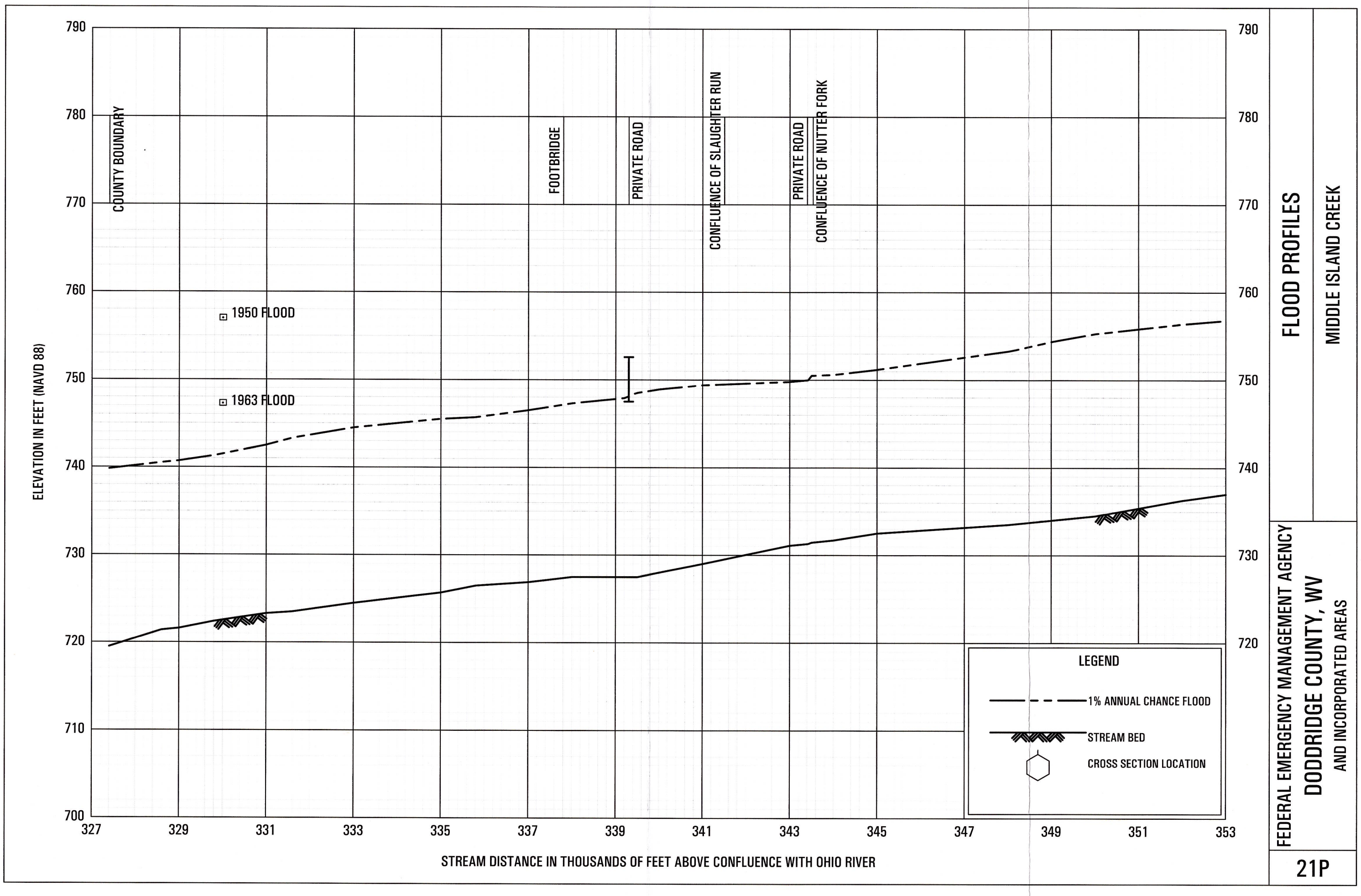
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MEATHOUSE FORK



FLOOD PROFILES

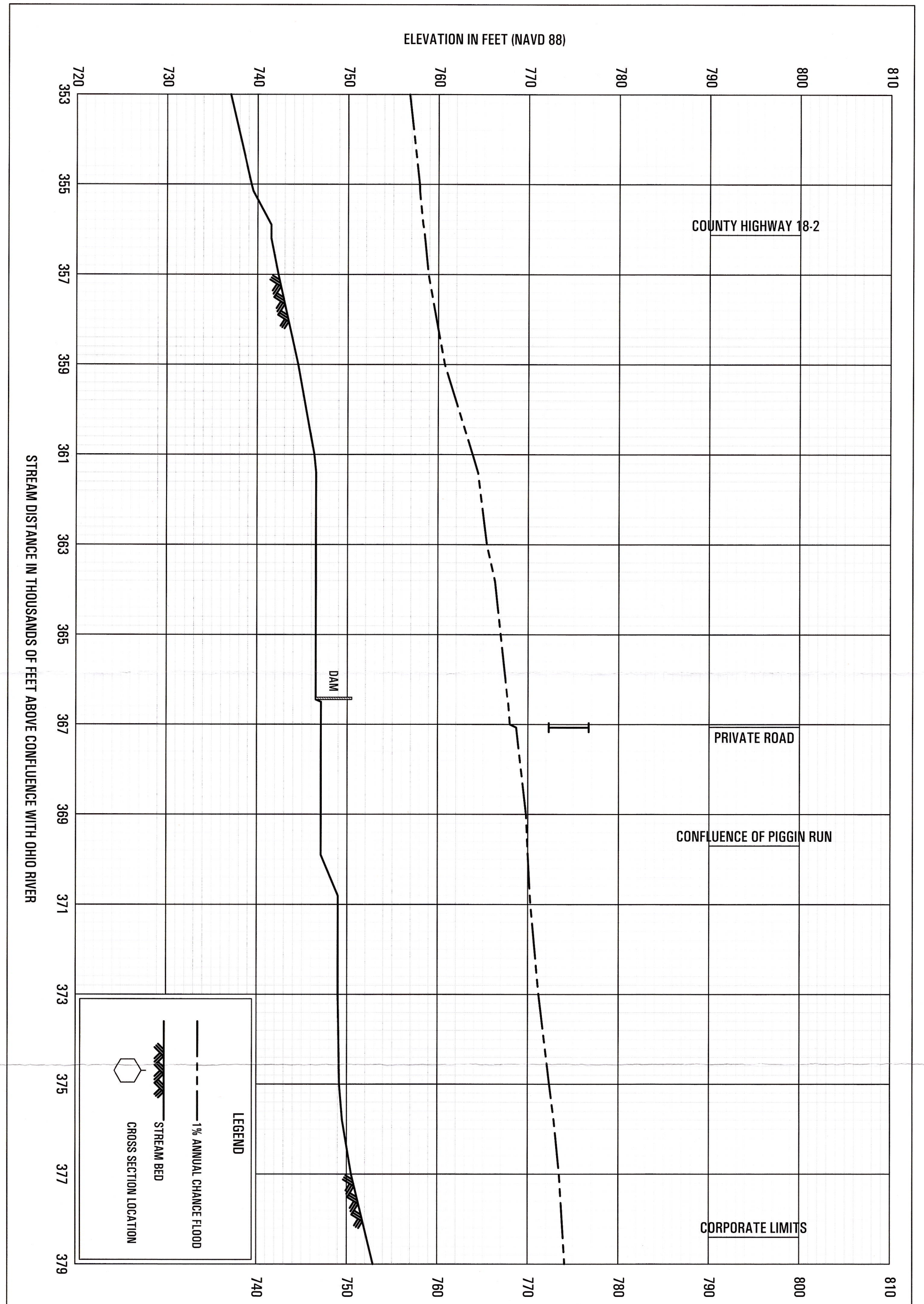
MIDDLE ISLAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

21P



22P

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MIDDLE ISLAND CREEK

ELEVATION IN FEET (NAVD 88)

740 750 760 770 780 790 800 810 820 830

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH OHIO RIVER

379 381 383 385 387 389 391 393 395 397 399 401 403 405

STATE ROUTE 18 SPUR
(SISTERSVILLE AVENUE)

DAM

1963 FLOOD

1950 FLOOD

COUNTY HIGHWAY 50-30

CORPORATE LIMITS

STATE ROUTE 18

CSX TRANSPORTATION

PRIVATE ROAD

CONFLUENCE OF BRUSHY FORK

CONFLUENCE OF BLUESTONE CREEK

CSX TRANSPORTATION

1963 FLOOD

1950 FLOOD

CONFLUENCE OF ROCK RUN

CONFLUENCE OF JOCKEYCAMP RUN

COUNTY HIGHWAY 30-3

CSX TRANSPORTATION

PRIVATE ROAD

T.O.R. = 839.1

L.S. = 822.7

PRIVATE ROAD

U.S. ROUTE 50

CONFLUENCE OF MEATHOUSE FORK
AND BUCKEYE CREEK

LEGEND

1% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

760 770 780 790 800 810 820 830

23P

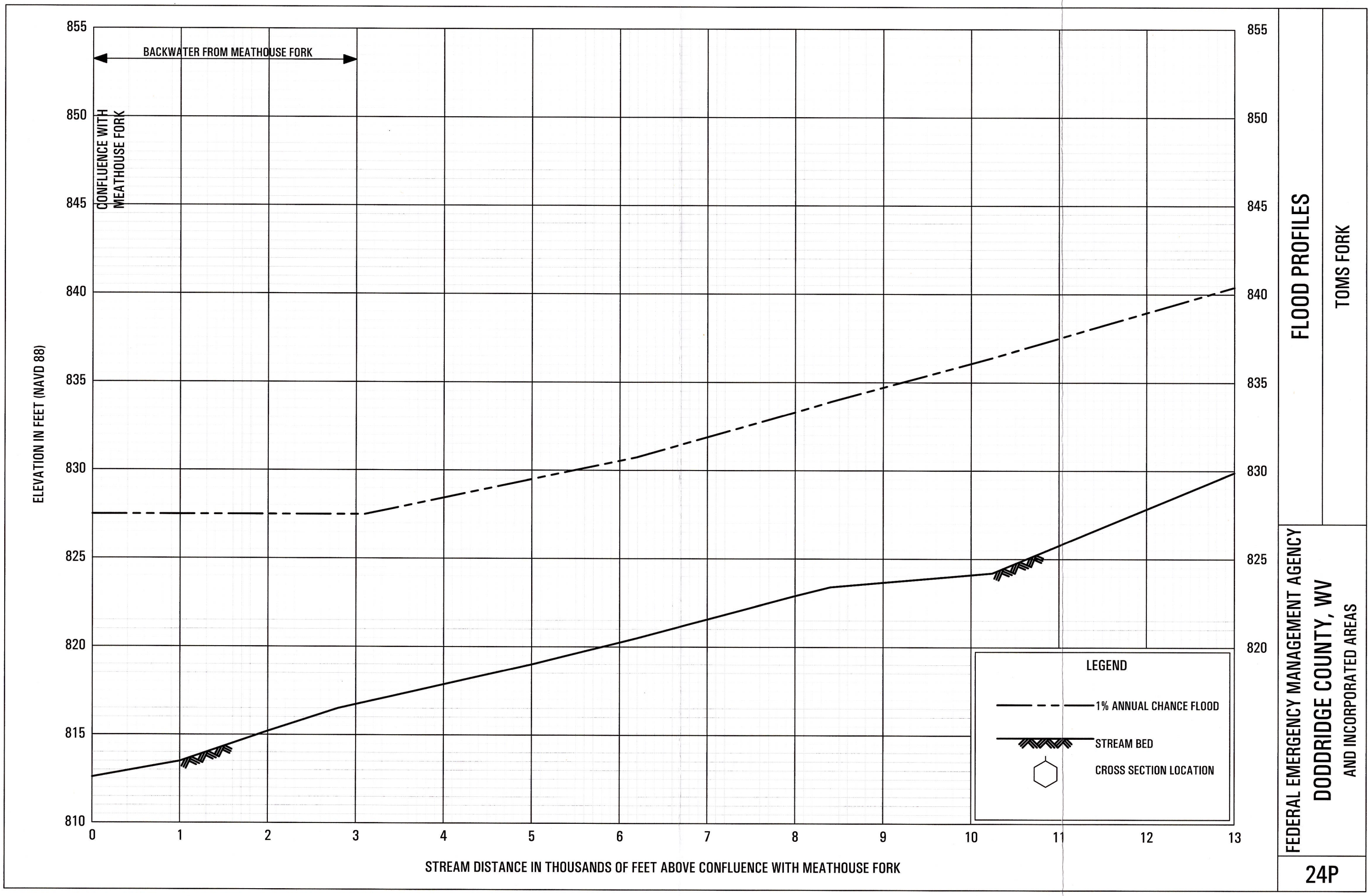
FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

FLOOD PROFILES

MIDDLE ISLAND CREEK



FLOOD PROFILES

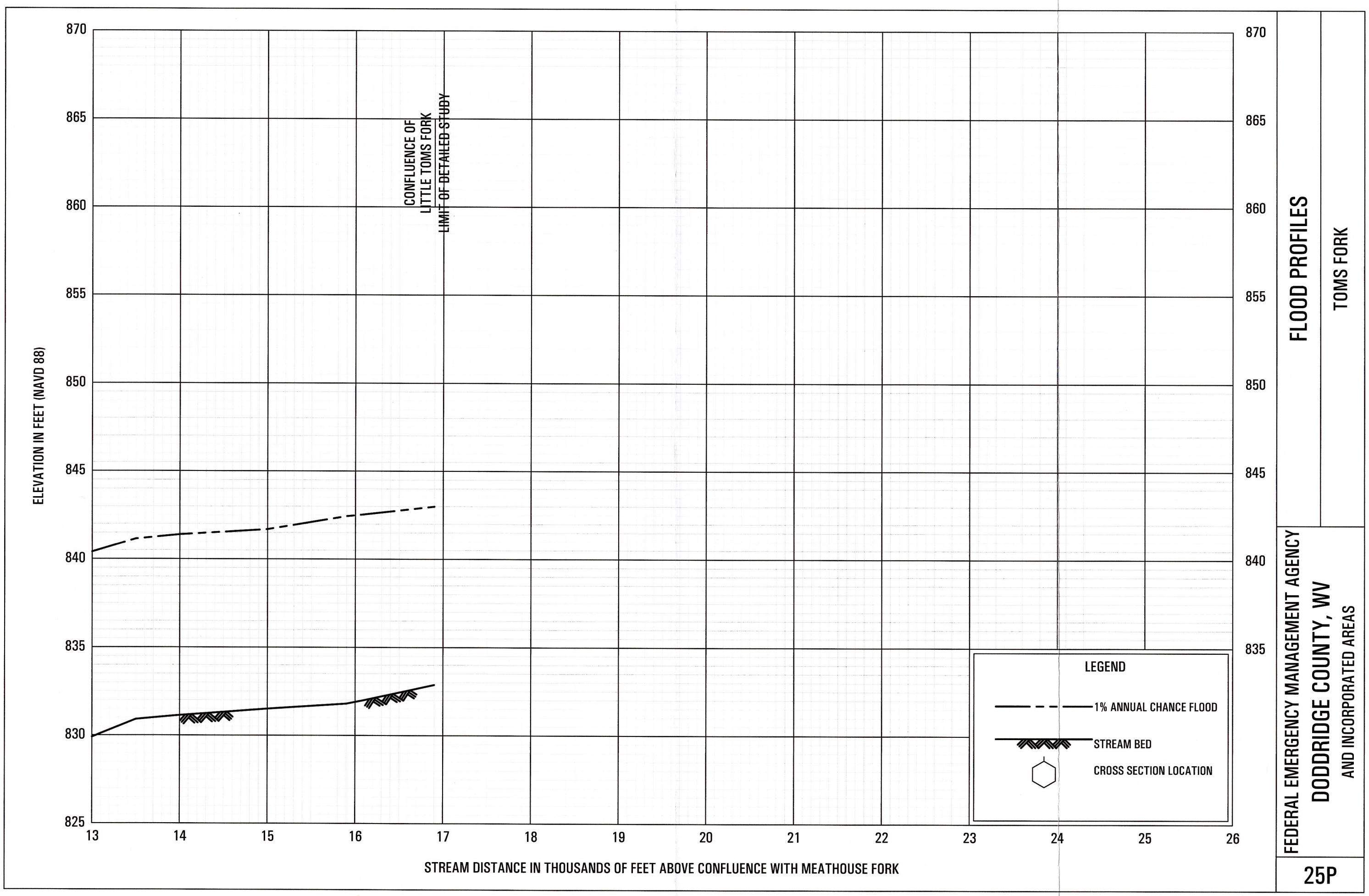
TOMS FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

24P



FLOOD PROFILES

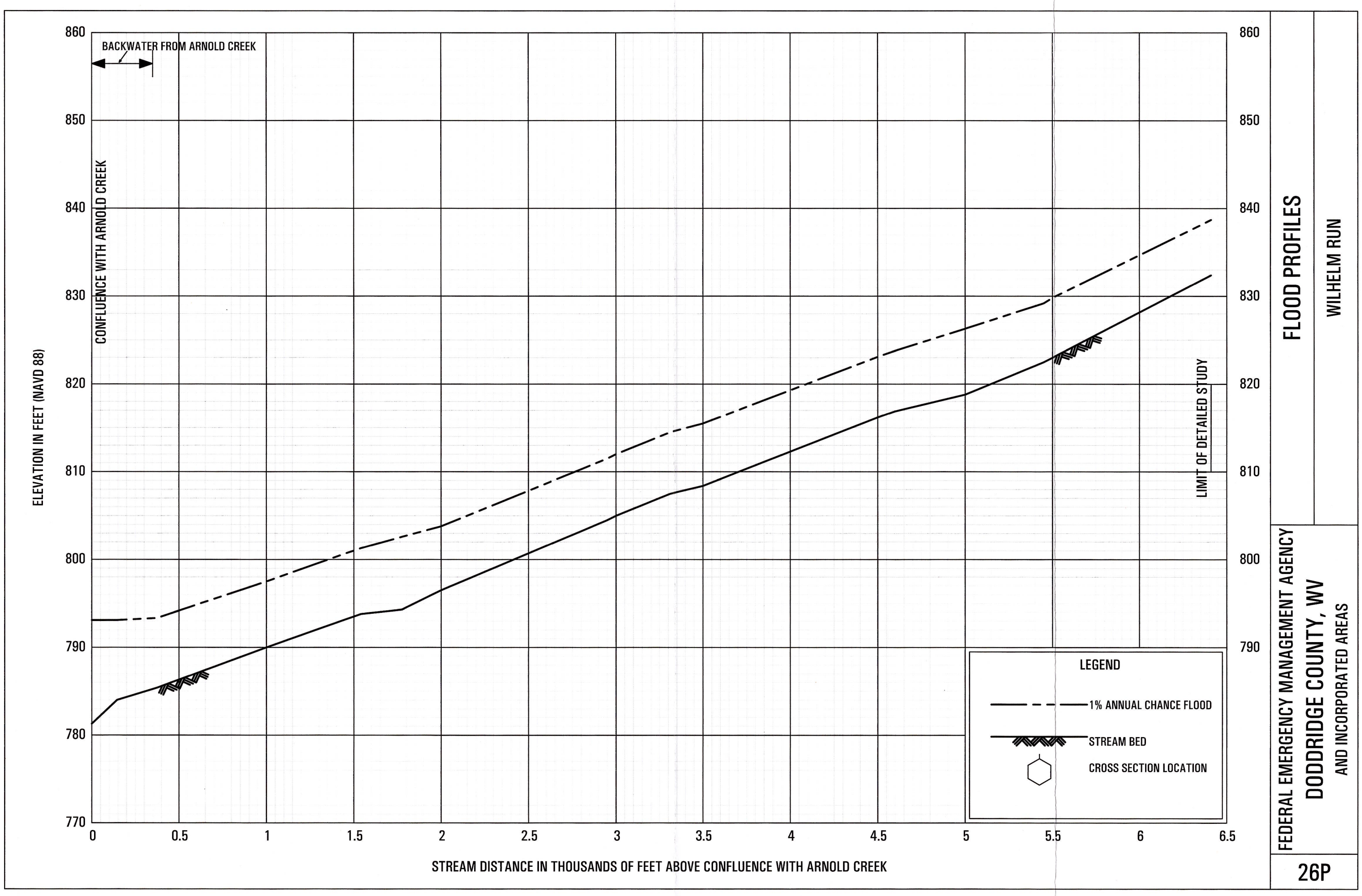
TOMS FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

25P



FLOOD PROFILES

WILHELM RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

DODDRIDGE COUNTY, WV

AND INCORPORATED AREAS

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Jeffrey J. Ford
118 Utica Street
Ithaca, NY 14850

9590 9402 7059 1225 4218 57

2. Article Number *(Transfer from service label)*

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X J. Ford ☐ Agent ☑ Addressee

B. Received by *(Printed Name)* Jeffrey J. Ford

C. Date of Delivery 9/9/2

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

3. Service Type

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

USPS TRACKING #

9590 9402 7059 1225 4218 57

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

United States Postal Service

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

Doddridge County Office of
Emergency Management/Floodplain
99 Court Street, Suite 128
West Union, WV 26456

24-665

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Michael Herrick
3764 Big Isaac Road
Salem, WV 26426

9590 9402 7059 1225 4218 33

2. Article Number *(Transfer from service label)*

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Mikida Jozwick ☐ Agent ☐ Addressee

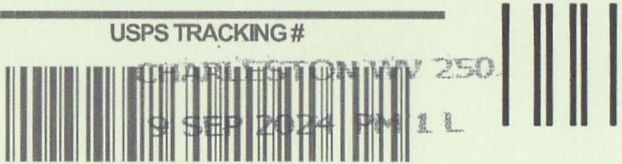
B. Received by *(Printed Name)* Mikida Jozwick C. Date of Delivery

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

3. Service Type

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

USPS TRACKING #



9590 9402 7059 1225 4218 33

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

United States Postal Service

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

Doddridge County Office of
Emergency Management/Floodplain
99 Court Street, Suite 128
West Union, WV 26456

24-665

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Warren E. & Judy E. Bee
3076 Big Isaac Road
Salem, WV 26426

9590 9402 7059 1225 4218 40

2. Article Number *(Transfer from service label)*

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Judy E. Bee ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Judy E. Bee

C. Date of Delivery

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

3. Service Type

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

USPS TRACKING #

9590 9402 7059 1225 4218 40

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

United States Postal Service

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

Doddridge County Office of
Emergency Management/Floodplain
99 Court Street, Suite 128
West Union, WV 26456

24-665

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

David Nicholson
10837 Good Hope Pike
Jane Lew, WV 26378

9590 9402 7059 1225 4218 64

2. Article Number *(Transfer from service label)*

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☑ Agent ☐ Addressee

B. Received by *(Printed Name)* Q Nicholson

C. Date of Delivery 9/10/24

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

3. Service Type

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

USPS TRACKING #

9590 9402 7059 1225 4218 64

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

United States Postal Service

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

Doddridge County Office of
Emergency Management/Floodplain
99 Court Street, Suite 128
West Union, WV 26456

24-665

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Brya[illegible]E. & Ronda R. Ash
[illegible]43 Piggin Run
We[illegible] Union, WV 26456

9590 9402 7059 1225 4218 19

2. Article Number *(Transfer from service label)*

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Bryan Ash ☐ Agent ☑ Addressee

B. Received by *(Printed Name)* Bryan Ash

C. Date of Delivery 9-11-24

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

3. Service Type

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

USPS TRACKING #

CHARLESTON WV 250

11 SEP 2024 PM 2 L

9590 9402 7059 1225 4218 19

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

United States Postal Service

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

Doddridge County Office of
Emergency Management/Floodplain
99 Court Street, Suite 128
West Union, WV 26456

24-665

6-201593

7022 1670 0003 1400 9653

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
DC FPM

Domestic Mail Only

For delivery information, visit our website at *www.usps.com*®.

OFFICIAL USE

Certified Mail Fee
$ 4.85

Extra Services & Fees *(check box, add fee as appropriate)*
- [X] Return Receipt (hardcopy) $ 4.10
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .69

Total Postage and Fees
$ 9.64

WEST UNION, WV
SEP - 6 2024
Postmark Here
USPS 26456-9998

Sent To David Nicholson

Street and Apt. No., or PO Box No. 10637 Good Hope Pike

City, State, ZIP+4® Jane Lew, WV 26378 24-665

PS Form 3800, April 2015 PSN 7530-02-000-9047 **See Reverse for Instructions**

7022 1670 0003 1400 9646

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

DC FPM

Domestic Mail Only

For delivery information, visit our website at *www.usps.com*®.

OFFICIAL USE

Certified Mail Fee
$ 4.85

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

- [X] Return Receipt (hardcopy) $ 4.10
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .69

Total Postage and Fees
$ 9.64

WEST UNION, WV
SEP - 6 2024
USPS 26456-9998

Postmark Here

Sent To Michael Herrick

Street and Apt. No., or PO Box No. 3764 Big Isaac Rd.

City, State, ZIP+4® Salem, WV 26426

24-665

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
DC FPM

Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee $ 4.85

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

- [X] Return Receipt (hardcopy) $ 4.10
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .69

Total Postage and Fees $ 9.64

WEST UNION, WV
Postmark Here
SEP - 6 2024
USPS 26456-9998

Sent To Roye, Debra D. morgan

Street and Apt. No., or PO Box No. 77 Monas Way

City, State, ZIP+4® Salem, WV 26426

24-665

7022 1670 0003 1400 9639

PS Form 3800, April 2015 PSN 7530-02-000-9047 **See Reverse for Instructions**

7022 1670 0003 1400 9622

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

DC
F PM

Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee $ 4.85	
Extra Services & Fees *(check box, add fee as appropriate)*	
☒ Return Receipt (hardcopy) $ 4.10	
☐ Return Receipt (electronic) $	
☐ Certified Mail Restricted Delivery $	
☐ Adult Signature Required $	
☐ Adult Signature Restricted Delivery $	
Postage $ .69	
Total Postage and Fees $ 9.64	

WEST UNION, WV
Postmark Here
SEP - 6 2024
USPS 26456-9998

Sent To Bryan E. & Ronda R

Street and Apt. No., or PO Box No. 743 Piggin Run

City, State, ZIP+4® West Union, WV 26456

24-665

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

DC
FRM

7022 1670 0003 1400 9615

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee
$ 4.85

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

☒ Return Receipt (hardcopy)	$ 4.10
☐ Return Receipt (electronic)	$
☐ Certified Mail Restricted Delivery	$
☐ Adult Signature Required	$
☐ Adult Signature Restricted Delivery	$

Postage
$ .69

Total Postage and Fees
$ 9.64

WEST UNION, WV
SEP - 6 2024
Postmark Here
USPS 26456-9998

Sent To Warren E. & Judy E. Bee

Street and Apt. No., or PO Box No. 3076 Big Isaac Rd.

City, State, ZIP+4® Salem, WV 26426

24-665

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 1670 0003 1400 9608

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

DC FPM

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Certified Mail Fee $ 4.85

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

- [X] Return Receipt (hardcopy) $ 4.10
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .69

Total Postage and Fees $ 9.64

WEST UNION, WV
SEP - 6 2024
USPS 26456-9998

Postmark Here

Sent To Jeffrey J. Ford

Street and Apt. No., or PO Box No. 118 Utica St.

City, State, ZIP+4® Ithaca, NY 14850

24-665

PS Form 3800, April 2015 PSN 7530-02-000-9047 **See Reverse for Instructions**