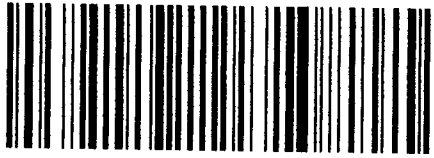
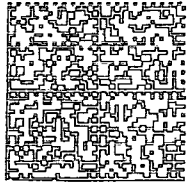


CERTIFIED MAIL™

BO WRISTON
DODDRIDGE COUNTY FLOODPLAIN MGT
118 EAST COURT ST., ROOM 102
WEST UNION, WV 26456



7013 2250 0001 6914 8704



HASLER
015H14161808
\$6.48
05/23/14
Mailed From 26456

US POSTAGE

5-24



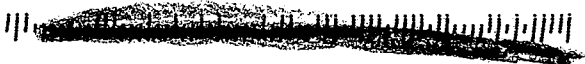
- A INSUFFICIENT ADDRESS
- C ATTEMPTED NOT KNOWN
- S NO SUCH NUMBER/ STREET
- NOT DELIVERABLE AS ADDRESSED
- UNABLE TO FORWARD
- OTHER

1ST NOTICE _____
2ND NOTICE 5-2
RETURN 6-8

RTS
RETURN TO SENDER

Unclaimed

2645649735 R001



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

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: # 14-209
 Howard Eakles
 Clarence Thomas (Life Est)
 Rt 1 Box 267 B
 West Union, WV
 26456

2. Article Number
 (Transfer from service label)

7013 2250 0001 6914 8704

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
 X

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type
 Certified Mail® Priority Mail Express™
 Registered Return Receipt for Merchandise
 Insured Mail Collect on Delivery

4. Restricted Delivery? (Extra Fee) Yes

Legal Advertisement:
Doddridge County
Floodplain Permit Application

Please take notice that on the 21th day of May, 2014

EQT PRODUCTION COMPANY #14-209

filed an

application for a Floodplain Permit to develop land located at or
about: **SURFACE OWNERS: HARRY & CHRISTINA ARNOLD, JAMES &
DORIS MELOTT AND HOWARD EAKLES (CLARENCE THOMAS LIFE EST).
CENTRAL STATION RD /ARNOLDS CREEK RD TO RIGHT FORK RUN RD.**

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

Any interested persons who desire to comment shall present
the same in writing by **June 10, 2014.**

Delivered to the:

Clerk of the County Court

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

Beth A Rogers, Doddridge County Clerk

Edwin L. "Bo" Wriston. Doddridge County Flood Plain Manager

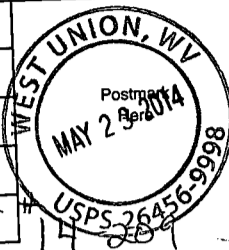
7013 2250 0001 6914 8698

U.S. Postal Service™
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For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	\$.48
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.48



Sent To James & Doris Melott
 Street, Apt. No.,
 or PO Box No. Rt. 1, Box 265
 City, State, ZIP+4 West Union, WV 26456

PS Form 3800, August 2006 See Reverse for Instructions

7013 2250 0001 6914 8735

U.S. Postal Service™
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For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	\$.48
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.48



Sent To Harry & Christina Arnold
 Street, Apt. No.,
 or PO Box No. Rt. 1, Box 264A
 City, State, ZIP+4 West Union, WV 26456

PS Form 3800, August 2006 See Reverse for Instructions

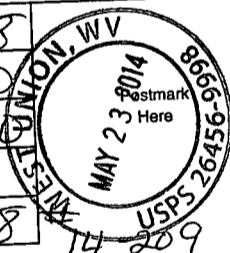
7013 2250 0001 6914 8704

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 6.48



Sent To Howard Egates
Clarence Thomas (Life Est)
 Street, Apt. No.,
 or PO Box No. Rt. 1, Box 267B
 City, State, ZIP+4 West Union WV 26456

PS Form 3800, August 2006 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: ~~#~~ 14-209

Harry & Christina Arnold
 Rt 1, Box 264A
 West Union, WV 26456

2. Article Number
(Transfer from service label)

7013 2250 0001 6914 8735

COMPLETE THIS SECTION ON DELIVERY

A. Signature

x *Mary Cerd*

-
- Agent
-
-
- Addressee

B. Received by (Printed Name)

HARRY ARNOLD

C. Date of Delivery

*5/27/14*D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type

-
- Certified Mail®
-
- Priority Mail Express™
-
-
- Registered
-
- Return Receipt for Merchandise
-
-
- Insured Mail
-
- Collect on Delivery

4. Restricted Delivery? (Extra Fee) Yes

UNITED STATES POSTAL SERVICE

250

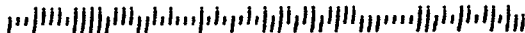
26456



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

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

Bo Wriston, Doddridge County FPM
118 Court Street, STE 102
West Union, WV 26456



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: #14-209

James & Doris Melott

Rt1 Box 265

West Union, WV
26456

2. Article Number

(Transfer from service label)

7013 2250 0001 6914 8698

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Doris Melott

 Agent Addressee

B. Received by (Printed Name)

Doris Melott

C. Date of Delivery

5-30-14

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

3. Service Type

 Certified Mail® Priority Mail Express™ Registered Return Receipt for Merchandise Insured Mail Collect on Delivery

4. Restricted Delivery? (Extra Fee)

 Yes


UNITED STATES POSTAL SERVICE



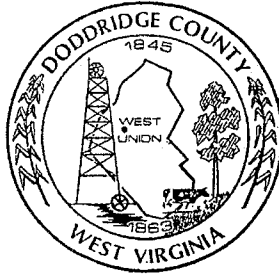
First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

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

30 Wister Road, Doddridge County FPM
118 Court Street, STE 102
West Union, WV 26456



WEST UNION, WV
DODD RIDGE COUNTY, WV
AUG 6 PM 4:40



Commercial/Industrial Floodplain Development Permit

Doddridge County, WV Floodplain Management

This permit has been issued to EQT PRODUCTION CO , and is for the approved commercial and/or industrial development project associated with this permit that impacts the FEMA-designated floodplain and/or floodway of Doddridge County, WV, pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance. This permit must be posted at the site of work as to be clearly visible, and must remain posted during entirety of development.

Permit: #14-209 Neely Storage Yard

Date Approved: 07/17/2014

Expires: 07/17/2015

Issued to: EQT PRODUCTION COMPANY

**POC: MEGAN LANDFRIED
304-848-0061**

**Company Address: 115 PROFESSIONAL PLACE
BRIDGEPORT, WV 26330**

**Project Address: Central District
Firm: 54017C0130C**

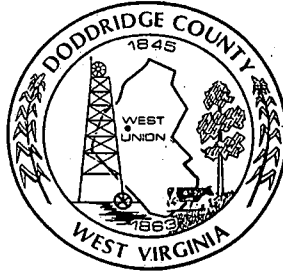
Lat/Long: 39295106N/80.813504W

Purpose of development: Temporary Storage Yard to support Saturn Compressor Station. 6.16 acre temporary gravel yard, with 4.97 acres in floodplain. H&H study shows 0.04' rise only. Area to be reclaimed after project completion.

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

Date: 07/17/2014

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



Commercial/Industrial Floodplain Development Permit

Doddridge County, WV Floodplain Management

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Expires: 07/17/2015

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**POC: MEGAN LANDFRIED
304-848-0061**

**Company Address: 115 PROFESSIONAL PLACE
BRIDGEPORT, WV 26330**

**Project Address: Central District
Firm: 54017C0130C**

Lat/Long: 39295106N/80.813504W

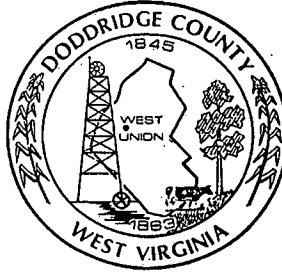
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doddridgecountyfpm@gmail.com

118 East Court Street; West Union, WV 26456



Commercial/Industrial Floodplain Development Permit

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Expires: 07/17/2015

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**POC: MEGAN LANDFRIED
304-848-0061**

**Company Address: 115 PROFESSIONAL PLACE
BRIDGEPORT, WV 26330**

**Project Address: Central District
Firm: 54017C0130C**

Lat/Long: 39295106N/80.813504W

Purpose of development: Temporary Storage Yard to support Saturn Compressor Station. 6.16 acre temporary gravel yard, with 4.97 acres in floodplain. H&H study shows 0.04' rise only. Area to be reclaimed after project completion.

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Date: 07/17/2014

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

Doddridge County, West Virginia

RECEIPT NO: 2202

DATE: 2014/05/20

FROM: POTESTA & ASSOCIATES INC

AMOUNT: \$ 500.00

FIVE HUNDRED DOLLARS AND 00 CENTS

FOR: #14-209 EQT GATHERING LLC
NEELY STORAGE YARD

00000012345 FP-BUILDING PERMITS

020-318

TOTAL: \$500.00

MICHAEL HEADLEY

SHERIFF & TREASURER

MEC

CLERK

Customer Copy

Legal Advertisement:
Doddridge County
Floodplain Permit Application

Please take notice that on the 21th day of May, 2014

EQT PRODUCTION COMPANY #14-209

filed an

application for a Floodplain Permit to develop land located at or
about: **SURFACE OWNERS: HARRY & CHRISTINA ARNOLD, JAMES &
DORIS MELOTT AND HOWARD EAKLES (CLARENCE THOMAS LIFE EST).
CENTRAL STATION RD /ARNOLDS CREEK RD TO RIGHT FORK RUN RD.**

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

Any interested persons who desire to comment shall present
the same in writing by **June 10, 2014.**

Delivered to the:
Clerk of the County Court
118 E. Court Street, West Union, WV 26456.

Beth A Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston. Doddridge County Flood Plain Manager



Engineers and Environmental Consultants

7012 MacCorkle Avenue, SE, Charleston, WV 25304 • (304)342-1400 • FAX (304)343-9031; www.potesta.com

EQT Gathering
#14-209
Neely Storage
Yard.

May 1, 2014

Mr. Bo Wriston
Doddridge County Floodplain Coordinator
Doddridge County Commission
118 East Court Street
West Union, West Virginia 26456

RE: Floodplain Permit Application
EQT Gathering, LLC
EQT Neely Storage Yard
Doddridge County, West Virginia
POTESTA Project No. 0101-13-0413-010

FILED
2014 MAY -8 AM 8:08
BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

Dear Mr. Wriston:

Potesta & Associates, Inc. (POTESTA) is pleased to submit this cover letter with the associated Floodplain Development Permit Application for the proposed Neely Storage Yard. Directions to the project are attached to this letter. The proposed project will consist of laying down gravel on approximately 6.16 acres of land to be used for storage. Based on information presented on the site FIRM, approximately 4.97 acres of the project is located within FEMA Flood Zone A. The project work area is located along County Route 36 in Doddridge County as shown on the attached drawing. Flood Zone A is the regulatory floodplain associated with the Base Flood (1 percent annual chance flood event), commonly referred to as the 100-year floodplain and indicates that the limits of the floodplain are approximate; as such, Base Flood Elevations (BFEs) have not been previously established by FEMA. Work within the floodplain associated with this lay down/storage yard shall include the placement of gravel for the storage yard which will be utilized for activities at EQT Gathering's Saturn Compressor Station. All work associated with the proposed Neely Storage Yard within the limits of the floodplain will be in accordance with the following. No permanent aboveground structures are to be constructed within the floodplain. All work will be temporary and all material, including gravel, will be removed once the work at Saturn Station is completed. The area will be reclaimed to original conditions.

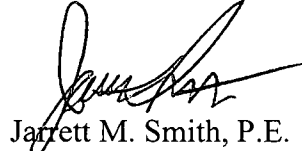
Included with this permit application are floodplain map, site plan sheets, and miscellaneous detail sheets for this project.

Mr. Bo Wriston
May 1, 2014
Page 2

If you have any questions, please feel free to contact me at (304) 342-1400 or jmsmith@potesta.com, or Megan Landfried (EQT) at (304) 848-0061.

Sincerely,

POTESTA & ASSOCIATES, INC.



Jarrett M. Smith, P.E.
Senior Engineer

JMS:JWS/clr

Enclosures

c: Ms. Megan Landfried – EQT (via email)



#14-209
EQT Gathering
Neely Storage Yard

DODDRIDGE COUNTY FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

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

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

APPLICANT'S SIGNATURE

Megan E Landfried

DATE

5/1/14

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

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

APPLICANT'S NAME: EQT Production Company, c/o Megan Landfried

ADDRESS: 115 Professional Place, Bridgeport, WV 26330

TELEPHONE NUMBER: (304) 848-0061

BUILDER'S NAME: _____
ADDRESS: _____
TELEPHONE NUMBER: _____

ENGINEER'S NAME: Jarrett M. Smith, PE / Potesta & Associates, Inc.
ADDRESS: 7012 MacCorkle Avenue, SE, Charleston, WV 25304
TELEPHONE NUMBER: (304) 342-1400

PROJECT LOCATION:

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) See attached for project locations and adjacent land owners.

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) _____

DISTRICT: _____

DATE/FROM WHOM PROPERTY

PURCHASED: _____

LAND BOOK DESCRIPTION: _____

DEED BOOK REFERENCE: _____

TAX MAP REFERENCE: _____

EXISTING BUILDINGS/USES OF PROPERTY: _____

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

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

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

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

ACTIVITY

STRUCTURAL TYPE

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

B. OTHER DEVELOPMENT ACTIVITIES:

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

C. STANDARD SITE PLAN OR SKETCH

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

ACTUAL TOTAL CONSTRUCTION COSTS OF THE COMPLETE DEVELOPMENT IRRESPECTIVE OF WHETHER ALL OR ANY PART OF THE SUBJECT PROPOSED CONSTRUCTION PROJECT IS WITHIN THE FLOODPLAIN \$ 50,000

D. ADJACENT AND/OR AFFECTED LANDOWNERS:

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

NAME: _____

ADDRESS: _____

NAME: _____

ADDRESS: _____

NAME: _____

ADDRESS: _____

NAME: _____

ADDRESS: _____

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

NAME: _____

ADDRESS: _____

NAME: _____

ADDRESS: _____

NAME: _____

ADDRESS: _____

NAME: _____

ADDRESS: _____

E. CONFIRMATION FORM

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

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

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

NAME (PRINT): Megan Landfried

SIGNATURE:  DATE: 5/1/14

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

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

THE PROPOSED DEVELOPMENT:

THE PROPOSED DEVELOPMENT IS LOCATED ON:

FIRM Panel: _____

Dated: _____

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

Is located in Special Flood Hazard Area.
 FIRM zone designation _____
 100-Year flood elevation is: _____ NGVD (MSL)

Unavailable

The proposed development is located in a floodway.
 FBFM Panel No. _____ Dated _____

See section 4 for additional instructions.

SIGNED _____

DATE _____

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

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

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

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

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

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

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

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

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

Other:

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

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

SIGNED _____ DATE _____

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

APPEALS: Appealed to the County Commission of Doddridge County? Yes No
Hearing Date: _____
County Commission Decision - Approved Yes No

CONDITIONS: _____

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

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

COMPLETE 1 OR 2 BELOW:

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

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

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

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

INSPECTIONS:

DATE: _____ BY: _____
DEFICIENCIES ? Y/N

COMMENTS _____

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

Certificate of Compliance Issued: DATE: _____ BY: _____

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

PERMIT NUMBER: _____

PERMIT DATE: _____

PURPOSE –

CONSTRUCTION LOCATION: _____

OWNER'S ADDRESS: _____

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

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

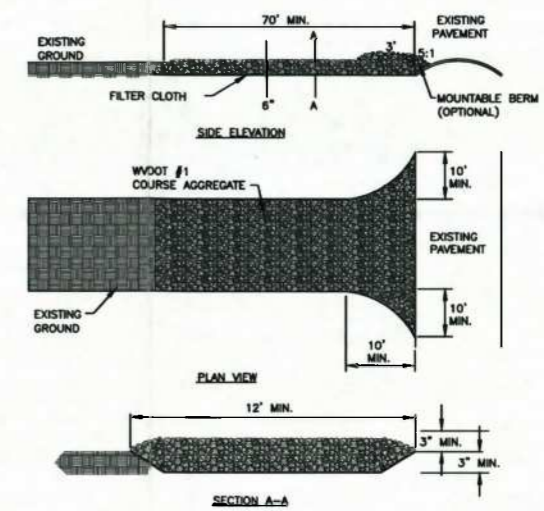
SIGNED _____ DATE _____

File: 13-0413-010-PLAN.dwg
 Plot: 13-0413-010-PLAN.dwg
 Date: 4/29/2014
 Time: 10:00:00 AM
 Plotter: HP DesignJet 5000



No.	Date	Revision

-PLAN
 CAD File No.
 JM
 Drawn
 JWS
 Checked
 JMS
 Approved
 1" = 100'
 Scale:
 APRIL 2014
 Date:
 13-0413-010
 Project No.



- NOTES:**
1. TOP SOIL SHOULD BE REMOVED PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE
 2. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
 3. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
 4. MOUNTABLE BERM SHOULD BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED. PIPE TO BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
 5. MAINTENANCE - ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION IMMEDIATELY. IF EXCESSIVE AMOUNT OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND THE LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWER, CULVERTS, OR OTHER DRAINAGEWAYS IS NOT ACCEPTABLE.

**STONE CONSTRUCTION
 ENTRANCE DETAIL**
 NO SCALE

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING FLOODPLAIN
	PROPOSED STONE CONSTRUCTION ENTRANCE
	PROPOSED WORK AREAS



MAPPING REFERENCE:
 BASE TOPOGRAPHIC MAPPING TAKEN FROM WGIS SAMB AERIAL MAPPING, DATED 2003.

ISSUE DATE 4/29/2014

POTESTA & ASSOCIATES, INC.
 ENGINEERS AND ENVIRONMENTAL CONSULTANTS
 7012 MacCubbin Ave. SE, Charleston, WV 25304
 TEL: (304) 342-1400 FAX: (304) 342-9031
 E-Mail Address: potesta@potesta.com

POTESTA

Client
 EQT GATHERING, LLC
 115 PROFESSIONAL PLACE
 BRIDGEPORT, WEST VIRGINIA

Title
 PLAN VIEW
 NEELY STORAGE YARD
 FLOODPLAIN APPLICATION
 DODDRIDGE COUNTY, WEST VIRGINIA

Drawing No. **1**

Neely Storage Site – land information for Flood Plain permit

Site = (District 1 TM 7 Parcel 72) Harry D. Arnold & Christina Arnold (surv.)
Rt. 1 Box 264A West Union, WV 26456

Right = (District 1 TM 7 Parcel 72.3) James E. Melott & Doris J. Melott
Rt. 1 Box 265 West Union, WV 26456

Left = (District 1 TM 7 Parcel 71) Howard Eakles
Rt. 1 Box 267B West Union, WV 26456
Clarence Thomas (life estate)
Rt. 1 Box 267B West Union, WV 26456



Court St, West Union, WV 26456

1. Head **northeast** on **Columbia St** toward **W Main St**

go 269 ft
total 269 ft



2. Take the 2nd right onto **E Main St**
About 59 secs

go 0.2 mi
total 0.3 mi



3. Turn right onto **WV-18 S**
About 2 mins

go 0.5 mi
total 0.8 mi



4. Turn right onto **US-50 W**
About 2 mins

go 2.6 mi
total 3.4 mi



5. Turn right onto **Arnolds Creek Rd/Central Station Rd/Co Rte 1/1/Right Fork Run Rd**
Continue to follow Co Rte 1/1/Right Fork Run Rd

go 1.5 mi
total 4.8 mi

Estimated time to the destination:
About 4 mins

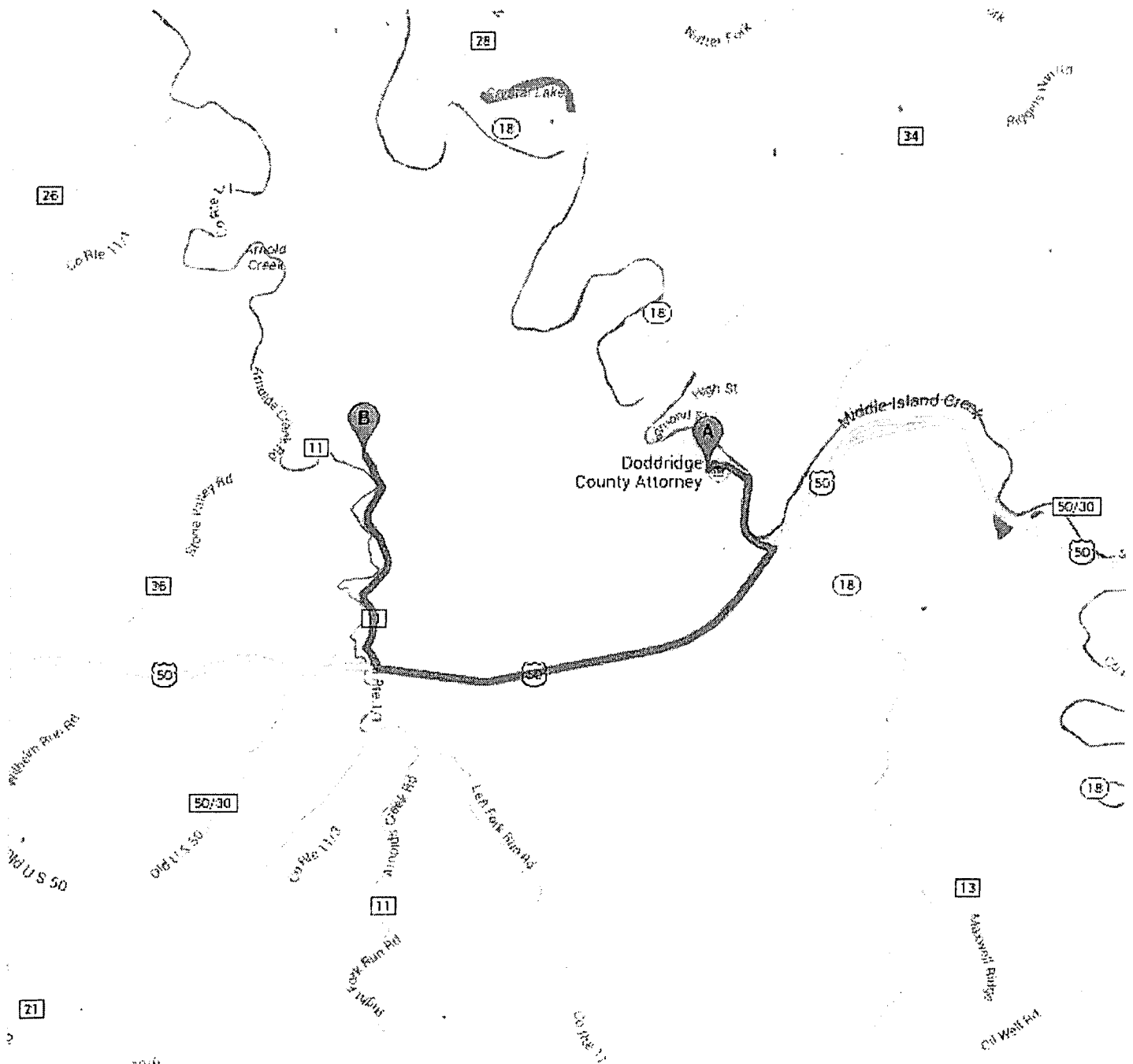


Co Rte 1/1/Right Fork Run Rd

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2014 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.





Edwin Wriston <doddridgecountyfpm@gmail.com>

FW: Floodplain

4 messages

Landfried, Megan <MLandfried@eqt.com>

Thu, Jul 17, 2014 at 2:01 PM

To: "Edwin \"Bo\" Wriston (doddridgecountyfpm@gmail.com)" <doddridgecountyfpm@gmail.com>

Hi Bo,

As promised, I have attached the hydraulic analysis results for the Neely Storage Yard. As you will see in this report the addition of gravel to the site will only slightly change the level of the floodplain (0.04 feet). Also, of note, this yard will only be in place during construction of this site. Once construction has finished the gravel will be removed. As I stated in my voicemail, our construction group is getting really antsy for this permit. If all looks good to you I would appreciate a response as soon as possible.

Thanks a lot!

Megan

From: Jarrett M. Smith [mailto:JMSmith@potesta.com]**Sent:** Thursday, July 17, 2014 1:43 PM**To:** Landfried, Megan**Subject:** RE: Floodplain

Sorry my lunch consisted of a site visit to a landslide on the west side.

Here it is.

Jarrett M. Smith, P.E.

Senior Engineer

Potesta & Associates, Inc.

7012 MacCorkle Avenue, SE

Charleston, WV 25304

Phone: (304) 342-1400

Fax: (304) 343-9031

This electronic communication and attachments may contain confidential information. The recommendation and/or design data included herein are provided as a matter of convenience and should not be used for final design or ultimate decision-making. Rely on the final copy materials bearing the consultant's original signature and/or seal. If you have received this information in error, please notify the sender immediately.

From: Landfried, Megan [mailto:MLandfried@eqt.com]
Sent: Thursday, July 17, 2014 1:34 PM
To: Jarrett M. Smith
Subject: Floodplain

Jarrett,

I still haven't gotten the floodplain information. I wanted to make sure that the email hadn't gotten kicked back to you guys.

Thanks,

Megan



www.eqt.com

v1.e

 **Wriston, Bo - Hydraulic Analysis Results along Arnold Creek (13-0413-010).pdf**
13847K

Edwin Wriston <doddridgecountyfpm@gmail.com>
To: "Landfried, Megan" <MLandfried@eqt.com>
Cc: brett slater <bislater.4774@yahoo.com>

Thu, Jul 17, 2014 at 2:05 PM

Megan,

Thank you! H&H is good. Now... do you have all the other required permits from DEP, etc. that are needed? Are there any others required? As soon as you can provide the approval letters for the additional needed permits I can issue the FPP.

Let me know soonest!

V/R,

[Quoted text hidden]

--

Edwin L. "Bo" Wriston, Floodplain Manager
Doddridge County Commission
118 East Court Street
West Union, WV 26456

Work Phone: 1-304-873-2631
Mobile Phone: 1-304-629-3735
Fax: 1-304-873-1840
doddridgecountyfpm@gmail.com
www.doddridgecounty.wv.gov

--

CONFIDENTIALITY NOTE: This email message is for the sole use of the intended recipient(s) and may contain confidential, privileged, or sensitive information. Any unauthorized review, use, disclosure, or distribution is strictly prohibited and may be legally accountable.

Landfried, Megan <MLandfried@eqt.com>
To: Edwin Wriston <doddridgecountyfpm@gmail.com>
Cc: brett slater <blslater.4774@yahoo.com>

Thu, Jul 17, 2014 at 2:07 PM

Bo,

No other permits are necessary for this Project! I even included at the end of the first paragraph for you! I will make sure that all of our letters have a permitting reference from here on out.

Thanks!

Megan

From: Edwin Wriston [mailto:doddridgecountyfpm@gmail.com]
Sent: Thursday, July 17, 2014 2:06 PM
To: Landfried, Megan
Cc: brett slater
Subject: Re: FW: Floodplain

[Quoted text hidden]

Edwin Wriston <doddridgecountyfpm@gmail.com>
To: "Landfried, Megan" <MLandfried@eqt.com>
Cc: brett slater <blslater.4774@yahoo.com>

Thu, Jul 17, 2014 at 2:10 PM

Megan,

Perfect! Approval will be to you within the 1/2 hour.

[Quoted text hidden]



Edwin Wriston <doddridgecountyfpm@gmail.com>

Neely Storage yard Project Approval

1 message

Edwin Wriston <doddridgecountyfpm@gmail.com>

Thu, Jul 17, 2014 at 2:29 PM

To: Megan Landfriend <MLandfried@eqt.com>

Cc: brett slater <blslater.4774@yahoo.com>

Megan,

This email is to notify you that the following EQT project has been approved:

- **Neely Storage Yard**, designated as **DCFPP #14-209**

Project 14-209 is within the floodplain. Per your correspondence, all regulatory needs have been met, and additional permits and H&H studies have been submitted for the official permit record/file. Work on this project should start within 180 days of permit issuance, and must be completed within one calendar year.

Further, per previous correspondence, this project is to be temporary in nature, and all land is to be reclaimed at the completion of the project.

We have included an electronic copy of an approved permit for your records in word document format. (Note: A PDF version can be provided upon request.)

A hard copy of this permit has been printed and laminated for you to post at your construction site. This hard copy may be picked up from the Doddridge County Clerk's office during normal business hours at your leisure. Should you require additional laminated copies, those can be provided at no charge.

Should you have any further questions regarding these permit approvals, please feel free to contact my office at your convenience.

Respectfully,

--

Edwin L. "Bo" Wriston, Floodplain Manager
Doddridge County Commission
118 East Court Street
West Union, WV 26456
Work Phone: 1-304-873-2631
Mobile Phone: 1-304-629-3735
Fax: 1-304-873-1840
doddridgecountyfpm@gmail.com
www.doddridgecounty.wv.gov

--

CONFIDENTIALITY NOTE: This email message is for the sole use of the intended recipient(s) and may contain confidential, privileged, or sensitive information. Any unauthorized review, use, disclosure, or distribution is strictly prohibited and may be legally accountable.

**PERMIT #14-209 APPROVED.docx**

372K

STATE OF WEST VIRGINIA,
COUNTY OF DODDRIDGE, TO WIT

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

Floodplain Permit

14-209

EQT

was published in said paper for *2*

successive weeks beginning with the issue

of *May 27th* 2014 and

ending with the issue of

June 3rd

2014 and

that said notice contains *189*

WORD SPACE at *115* cents a word

amounts to the sum of \$ *21.74*

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

\$ *16.31*

and each publication thereafter

\$ *38.05* TOTAL

EDITOR

Virginia Nicholson

SWORN TO AND SUBSCRIBED

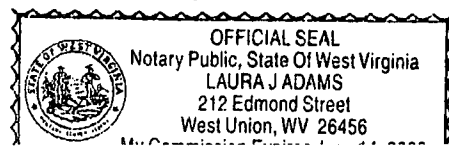
BEFORE ME THIS THE *6th* DAY

OF *June* 2014

NOTARY PUBLIC

Laura J Adams

LEGAL ADVERTISEMENT:
Doddridge County
Floodplain Permit Application
Please take notice that on the 21st day of May, 2014
EQT PRODUCTION COMPANY #14 -209 filed an
application for a Floodplain Permit to develop land
located at or about: SURFACE OWNERS: HARRY &
CHRISTINA ARNOLD, JAMES & DORIS MELOTT
AND HOWARD EAKLES (CLARENCE THOMAS LIFE
EST), CENTRAL STATION RD/ARNOLDS CREEK RD
TO RIGHT FORK RUN RD.
The Application is on file with the Clerk of the County
Court and may be inspected or copied during regular
business hours. Any interested persons who desire to
comment shall present the same in writing by June 10,
2014.
Delivered to the:
Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A. Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston, Doddridge County Flood Plain
Manager
S-27-2xb





2014 JUL 18 AM 10: 57

BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

July 17, 2014

Mr. Bo Wriston
Doddridge County Floodplain Manager
Doddridge County Commission
118 East Court Street
West Union, West Virginia 26456

RE: Hydraulic Analysis Results along Arnold Creek
EQT Proposed Neely Storage Yard
Doddridge County, West Virginia
Potesta Project No. 0101-13-0413-010

Dear Mr. Wriston:

Potesta & Associates, Inc. (POTESTA) is pleased to present the findings of a hydraulic analysis conducted for the Neely Storage Yard located in Doddridge County, West Virginia. This work was completed on behalf of EQT Gathering, LLC (EQT). The purpose of this study was to estimate the Base Flood Elevation (BFE) (one percent annual) at the site and determine the potential increase in BFEs resulting from the placement of aggregate for the Neely Storage Yard associated with the Saturn Compressor Station. This report is being prepared based on your request during a meeting with EQT's Megan Landfried on July 1, 2014. The permit application is already submitted to the Doddridge County Commission (DCC) and this report will supplement that application. Additional permits from the United States Army Corps of Engineers and the West Virginia Department of Environmental Protection were not necessary for this project.

BACKGROUND

The project area is proposed for construction activities associated with the Saturn Compressor Station. EQT is proposing to construct the Neely Storage Yard for construction equipment storage and material laydown. The area will be approximately 6.48 acres and the aggregate will be approximately 18 inches thick. The proposed yard is located along Arnold Creek just east of the Central Station along County Route 11 in Doddridge County, West Virginia. Approximate coordinates of the yard are latitude 39° 17' 43.38" N and longitude 80° 48' 48.57" W. The location of the project site is shown on WV Flood Map in **Appendix A**.

The project site is located in Flood Zone A, as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 54017C0115C, revision date October 4, 2011. Flood Zone A represents the 100-year floodplain and is regulated by the DCC. Flood Zone A has been determined by FEMA by approximate methods, in that BFEs have not previously been determined. Because hydraulic analyses were not performed for Zone A, the Special Flood Hazard Area (SFHA) shown on the FIRM have been approximated graphically based on available topographic mapping and do not represent actual elevations. A copy of the FIRM is included in **Appendix B**.

MODELING DATA

As stated above, the project site is located in Flood Zone A; as such, previous hydraulic studies of the area have not been prepared by FEMA. POTESTA utilized topographic mapping taken from WVGIS SAMB Aerial Mapping (Dated 2003) for generating cross section for this project. Cross sections extended downstream of the site approximately 1,000 feet. Cross sections were extended upstream of the site approximately 1,310 feet. The location of these cross sections is indicated on the attached POTESTA, Figure 2 located in **Appendix A**.

The USGS regression equation was considered when computing the peak flow rate for the one-percent annual flood event. This method is further described below.

USGS Regression Equation Method

The regression equation, as outlined in the United States Geological Survey (USGS) report entitled Estimating Magnitude and Frequency of Peak Discharges in Rural, Unregulated, Streams in West Virginia (2000) (U.S. Department of the Interior, 2000), was the first method considered to compute the one-percent annual flow rate for the project site. This method of computing flood discharges is the same used for many of the streams modeled in the FEMA Flood Insurance Studies in West Virginia. The one-percent annual peak flow rate computed using this method was 2,273 cubic feet per second (cfs) and 2,500 cfs was used in the HEC-RAS modeling. Hydrologic calculations are located in **Appendix C**.

MODELING APPROACH

Two computer models were developed to show the effects of the aggregate placement for the yard. The first model (i.e., existing conditions model) was developed to estimate the base flood elevation of the site. The second model (i.e., proposed conditions model) was developed to determine the increase in base flood elevations resulting from the aggregate placement. The computer models were run using the 2008 version of HEC-RAS Version 4.0.0.

The following narratives summarize the details of each of the two models.

Existing Conditions Model

The model consists of nine primary cross sections. Geometry for cross sections was obtained using WVGIS SAMB Aerial Mapping (Dated 2003). Geometry for cross sections is summarized in **Appendix D**. The cross sections extend downstream of the site approximately 1,000 feet, and upstream of the site approximately 1,310 feet. Location and alignment of the cross sections used for the HEC-RAS computer model are shown on Figure 2 located in **Appendix A**.

Manning's roughness coefficients, or "n" values for the South Fork of Fishing Creek were estimated from photographs taken during a site visit. Manning's coefficients used in the model consist of 0.035 for the stream channel and 0.06 for overbank areas.

As shown on Table 1 in **Appendix E**, the HEC-RAS model resulted in approximate BFE's of 789.50 feet at Station 1135 and 791.78 feet at Station 1335, both which are located through the proposed Neely Storage Yard. Approximate BFEs for other cross sections are also shown on Table 1 in **Appendix E**. A computer generated summary report of the HEC-RAS computations is provided in **Appendix F**.

Proposed Conditions

The HEC-RAS model for the proposed conditions scenario was modified from the existing conditions model to include the 18 inches of aggregate for the proposed Neely Storage Yard.

When creating the proposed conditions model, the yard was modeled by modifying cross section of Stations 1135 and 1335 to increase the area of those cross sections affected by the yard to include the 18 inches of aggregate.

As shown on Table 1 in **Appendix E**, the BFE at the nearest upstream cross section (1735), 400 feet from the last cross section associated with the yard (Station 1335), shows an increase in the BFE of 0.04 feet; this is the maximum increase in BFE within the study area. The next cross section upstream is 975 feet from the proposed yard and it increased 0.03 feet as a result of construction. A computer generated summary report of the HEC-RAS computations is provided in **Appendix F**.

SUMMARY OF RESULTS

As summarized in Table 1 located in **Appendix E**, it was determined that there may be a 0.04 feet increase in 100-year flood elevations resulting from construction of the proposed Neely Storage Yard when comparing the existing conditions and the proposed conditions.

Mr. Bo Wriston
July 17, 2014
Page 4

If you have any questions or require additional information, please do not hesitate to call me at (304) 342-1400 or email me at jmsmith@potesta.com.

Sincerely,

POTESTA & ASSOCIATES, INC.

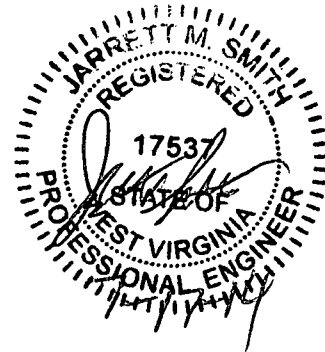


Jarrett M. Smith, P.E.
Senior Engineer

JMS/clr

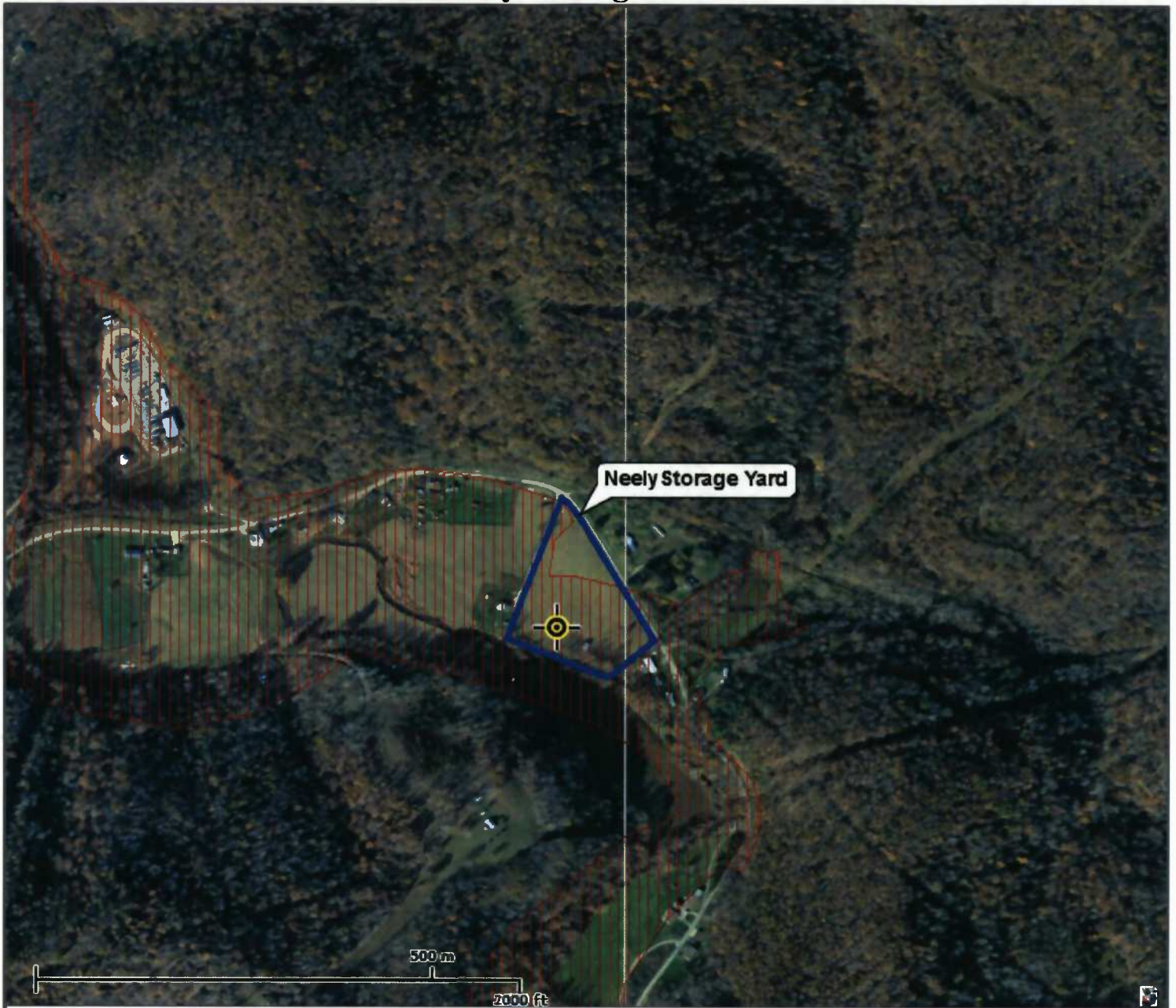
Enclosures: Appendix A - Drawings
Appendix B - Flood Insurance Rate Map (FIRM)
Appendix C - One Percent Annual Flow Rate Determination
Appendix D - Cross Section Data
Appendix E - Table 1
Appendix F - HEC-RAS Results

c: Ms. Megan Landfried – EQT



APPENDIX A

Neely Storage Yard



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

Map Created on 4/29/2014

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

User Notes:

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

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

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

Flood Zone: A

Advisory Flood Height: N/A
 Water Depth: N/A
 Elevation: About 794 feet
 Location (long, lat): 80.813504 W, 39.295106 N
 Location (UTM 17N): (516082, 4349542)
 FEMA Issued Flood Map: 54017C0115C
 Contacts: Doddridge County
 CRS Information: N/A
 Flood Profile: **No Profile**
 HEC-RAS Model: **No Model**
 Parcel Number:

DATE PLOTTED: 07/16/2014 10:58:50 AM
 PLOT FILE: C:\Users\jms\Documents\13-0413-010\13-0413-010.dwg
 PLOT SCALE: 1" = 100'
 PLOT BY: jms



No.	Date	Revision

PLAN
 CAD File No.
 JM
 Drawn
 JMS
 Checked
 JMS
 Approved
 1" = 100'
 Scale
 JULY 2014
 Date
 13-0413-010
 Project No.

POTESTA & ASSOCIATES, INC.
 ENGINEERS AND ENVIRONMENTAL CONSULTANTS
 1913 MacCorkle Ave. SE, Charleston, WV 25304
 TEL: (606) 246-1400 FAX: (606) 246-9081
 E-Mail Address: potesta@potesta.com



ISSUE DATE 7/16/2014

Client
 EQT GATHERING, LLC
 115 PROFESSIONAL PLACE
 BRIDGEPORT, WEST VIRGINIA

FIGURE 2 - HYDRAULIC ANALYSIS
 NEELY STORAGE YARD
 FLOODPLAIN APPLICATION
 DODDRIDGE COUNTY, WEST VIRGINIA

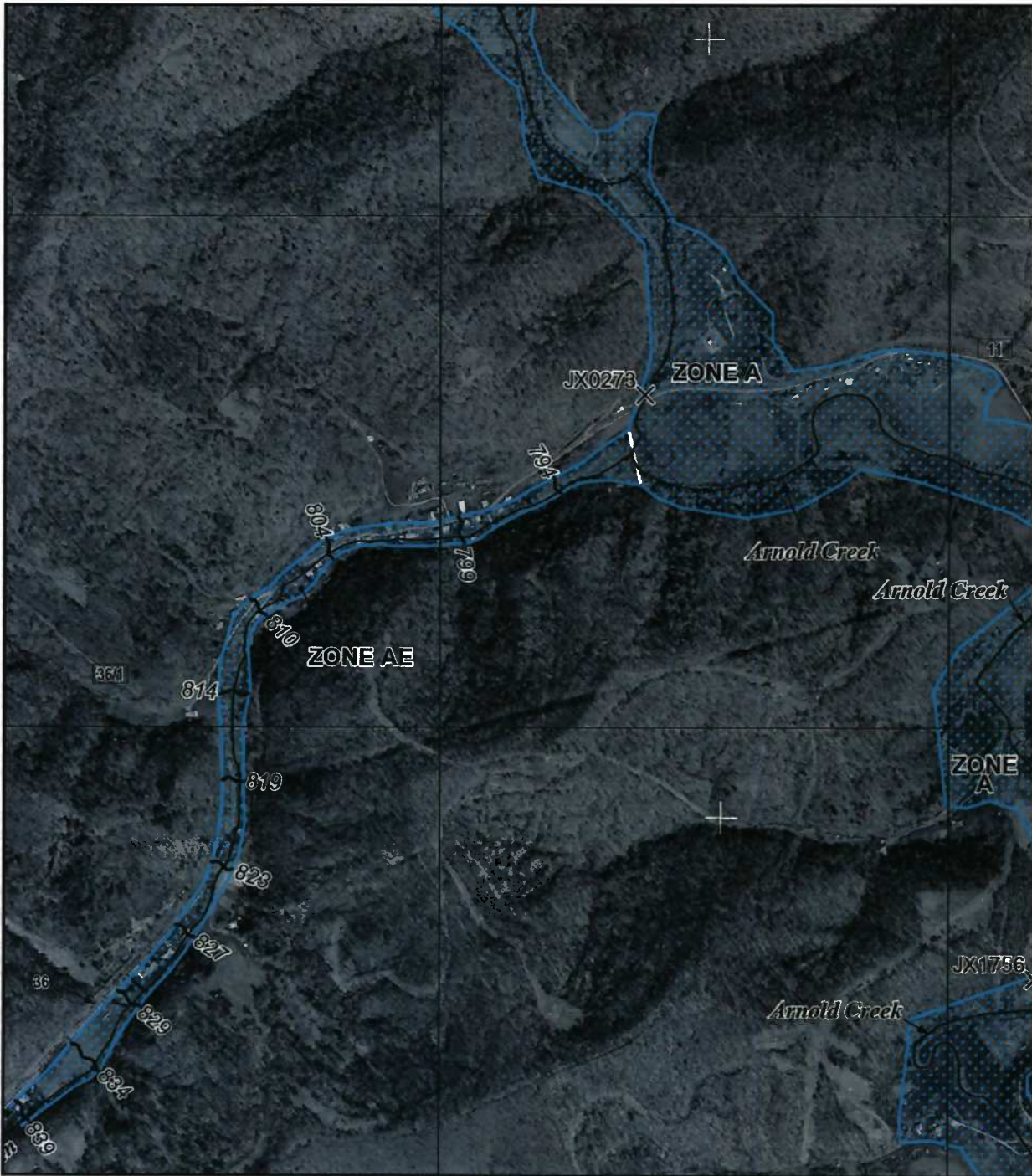
Drawing No. 1

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING FLOODPLAIN
	PROPOSED GRAVEL AREAS

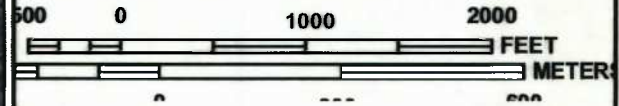


MAPPING REFERENCE:
 BASE TOPOGRAPHIC MAPPING TAKEN FROM WVDS S&MB AERIAL MAPPING, DATED 2003.

APPENDIX B



MAP SCALE 1" = 1000'



NFP

PANEL 0115C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

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

PANEL 115 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DODDRIDGE COUNTY	540024	0115	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
54017C0115C**

**MAP REVISED
OCTOBER 4, 2011**

Federal Emergency Management Agency

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

APPENDIX C

Peak Discharge Determination for Arnold Creek - Doddridge County, WV

POTESTA Project No: 0101-13-0413-010
July 2014

Drainage Area = mi²

Recurrence Interval, (i)	Discharge (ft ³ /s) for South Region		
	Q _i (cfs)	Q _i + 1SE (cfs)	Q _i + 2SE (cfs)
2-yr	203	257	460
5-yr	357	452	809
10-yr	482	611	1,093
25-yr	666	850	1,517
50-yr	821	1,054	1,875
100-yr	990	1,283	2,273
200-yr	1,173	1,537	2,710
500-yr	1,441	1,920	3,361

Key: Q = Discharge (cfs)
 1SE = Standard Error of Estimate
 2SE = 2 Standard Errors of Estimate

Notes:

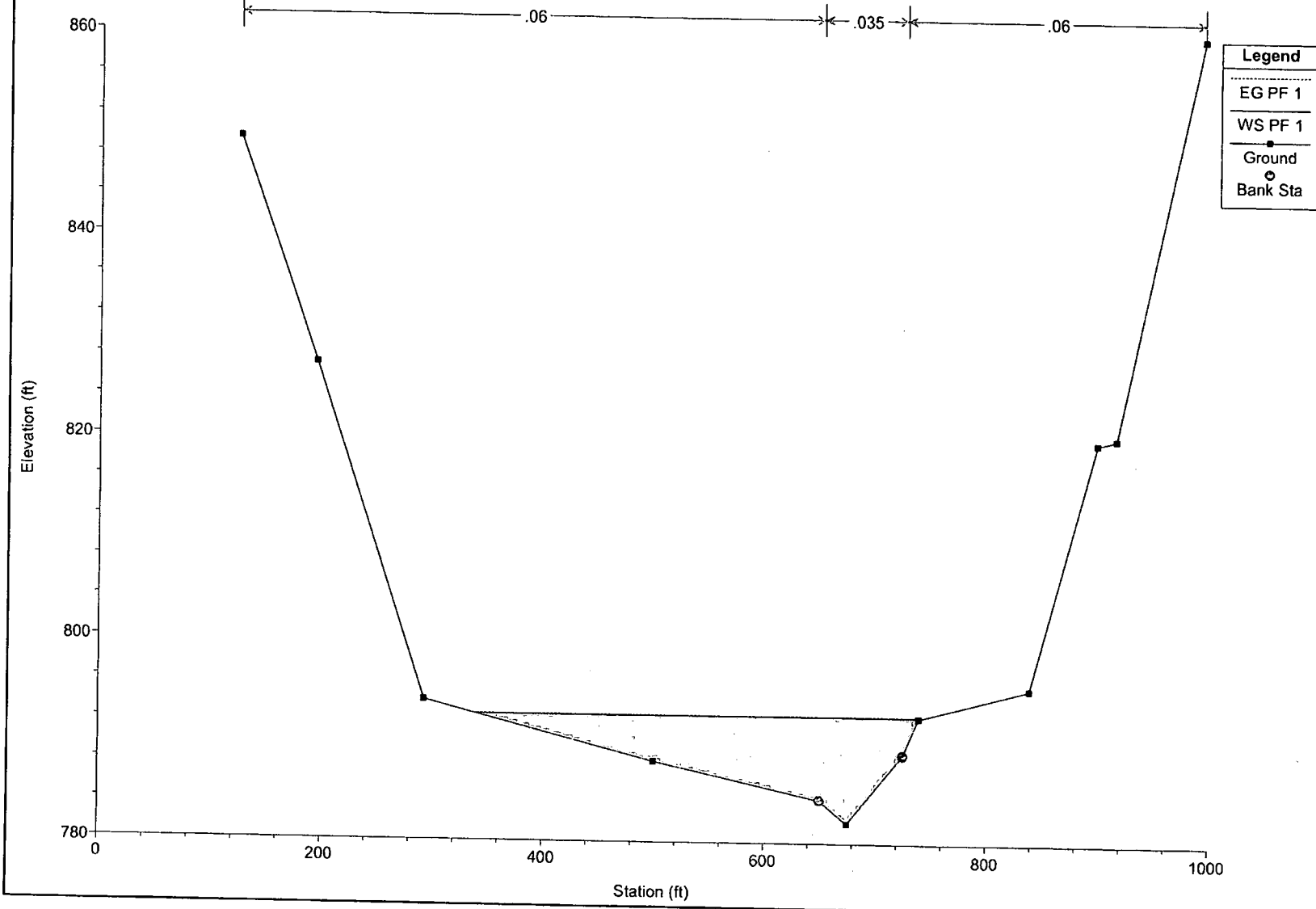
- 1) There is also a negative standard error associated with the mean curves. Only positive values are shown.
- 2) Reference: Estimating Magnitude and Frequency of Peak Discharges for Rural, Unregulated, Streams in West Virginia, U.S. Geological Survey, In cooperation with the West Virginia Department of Transportation, Division of Highways. Water-Resources Investigation Report 00-4080
- 3) These estimates are for unregulated, virtually natural streams in West Virginia. This method is applicable for peak discharges for drainage areas between 0.10 and 8,371 square miles.

APPENDIX D

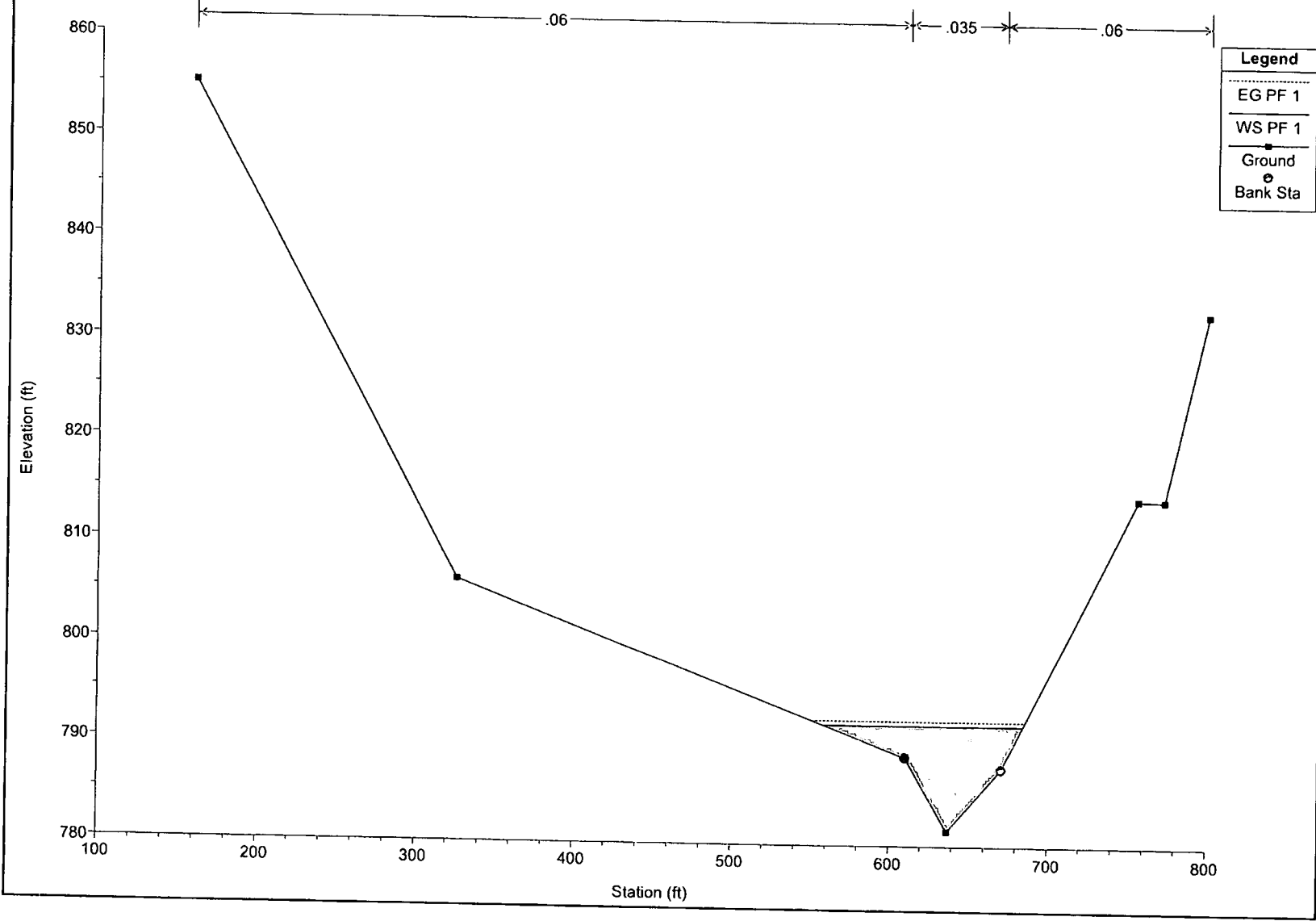


**Pre-Construction
Cross Sections**

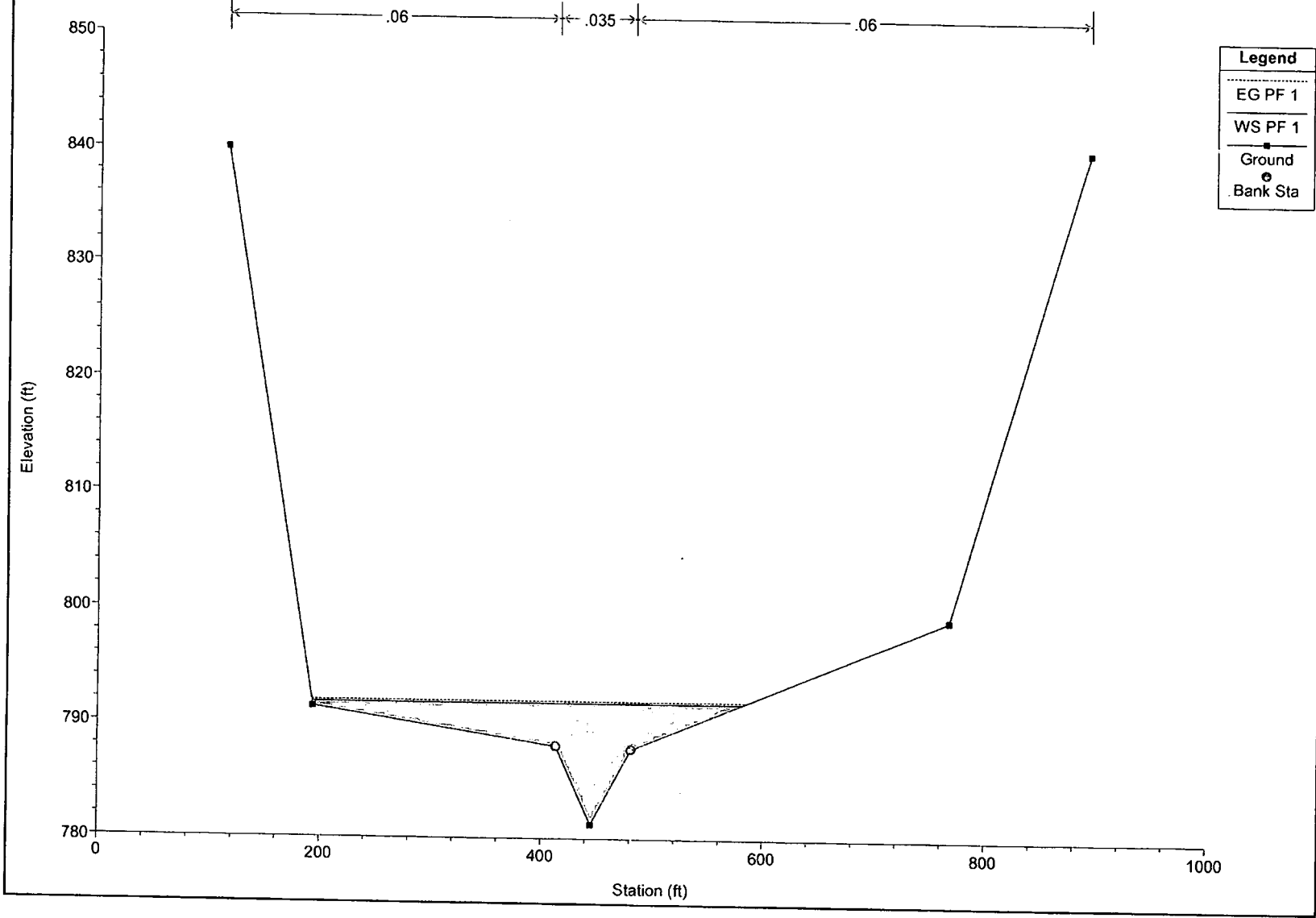
Neely Storage Plan: PrePlan 7/15/2014
CS-1

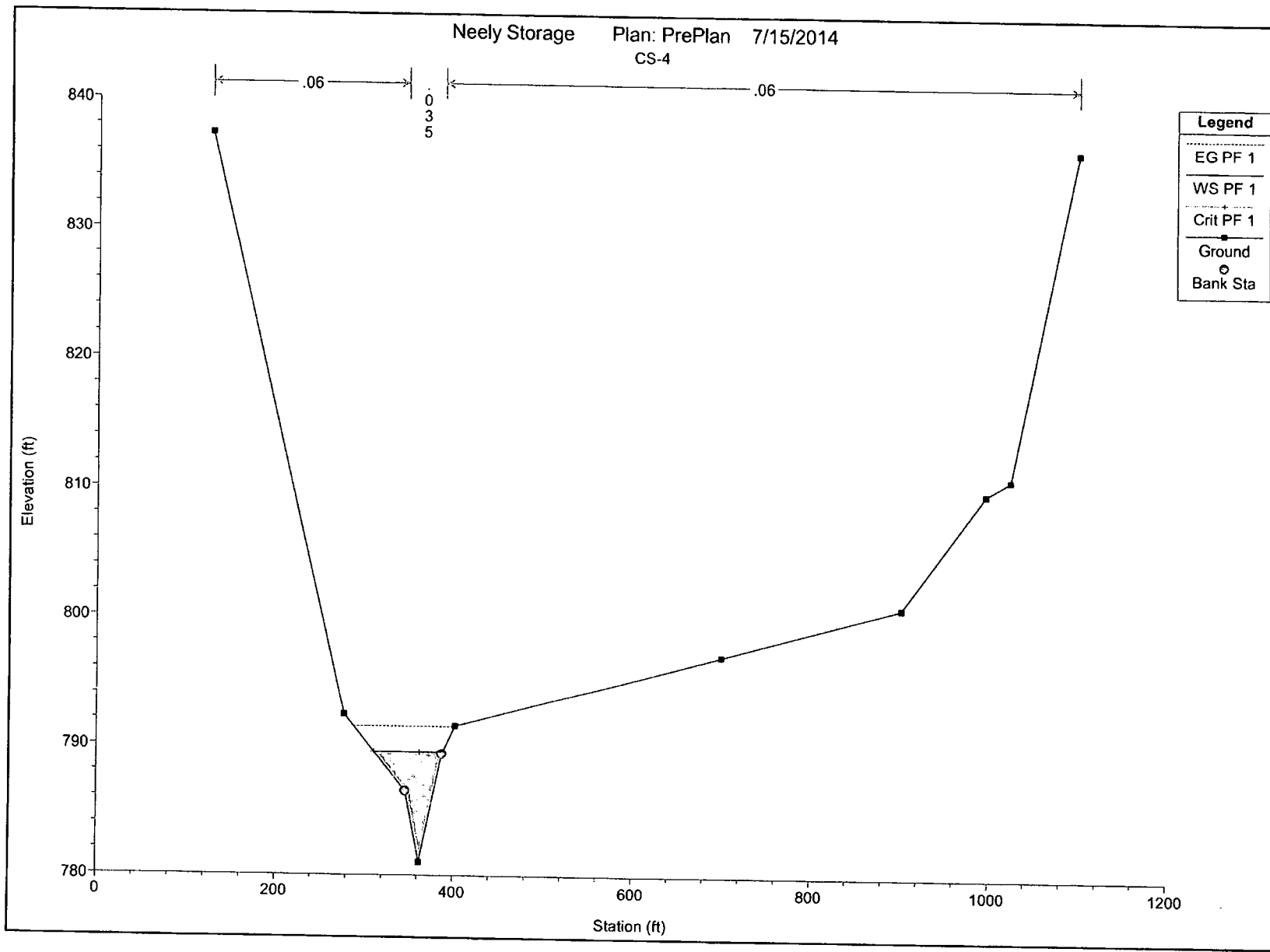


Neely Storage Plan: PrePlan 7/15/2014
CS-2

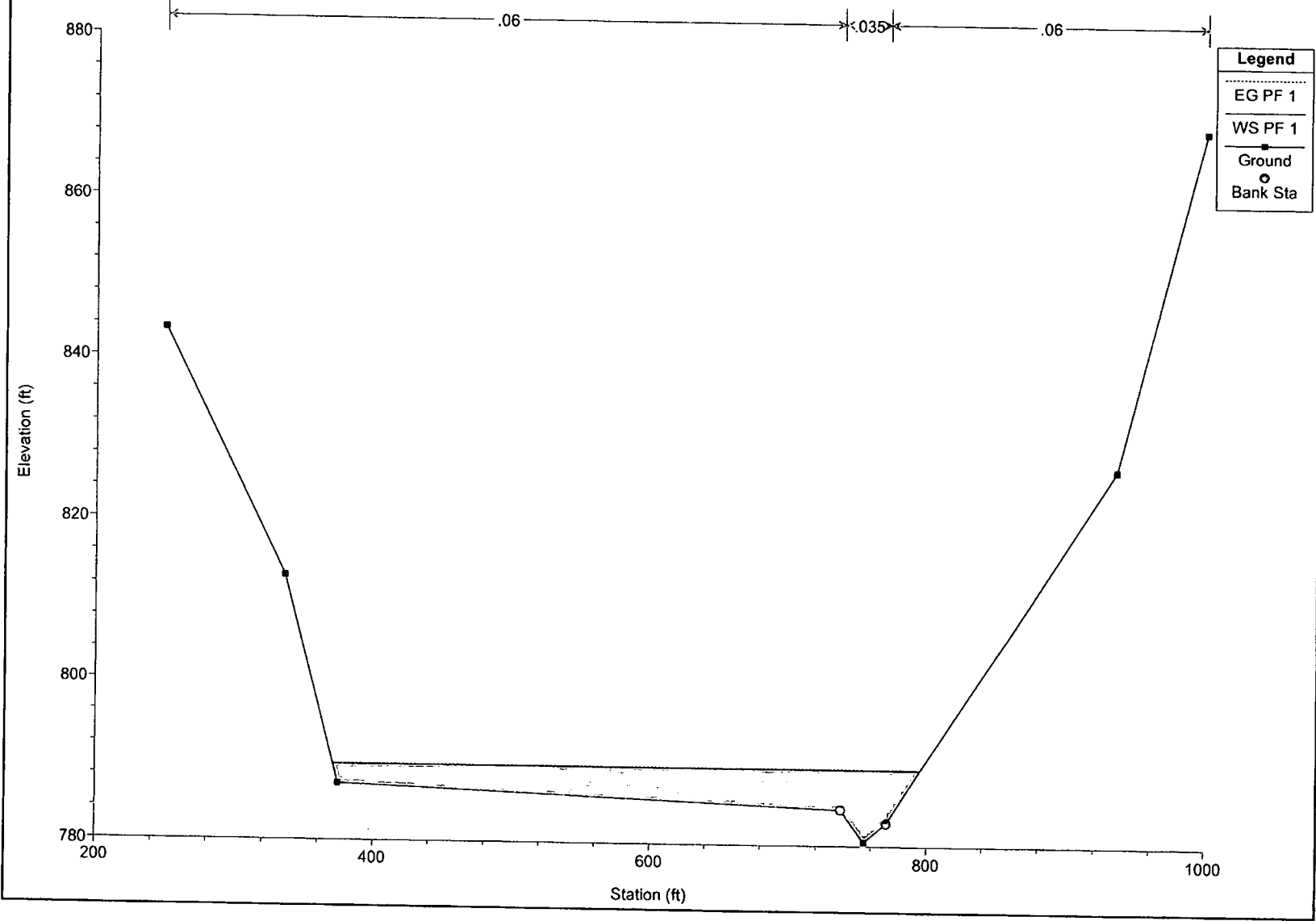


Neely Storage Plan: PrePlan 7/15/2014
CS-3

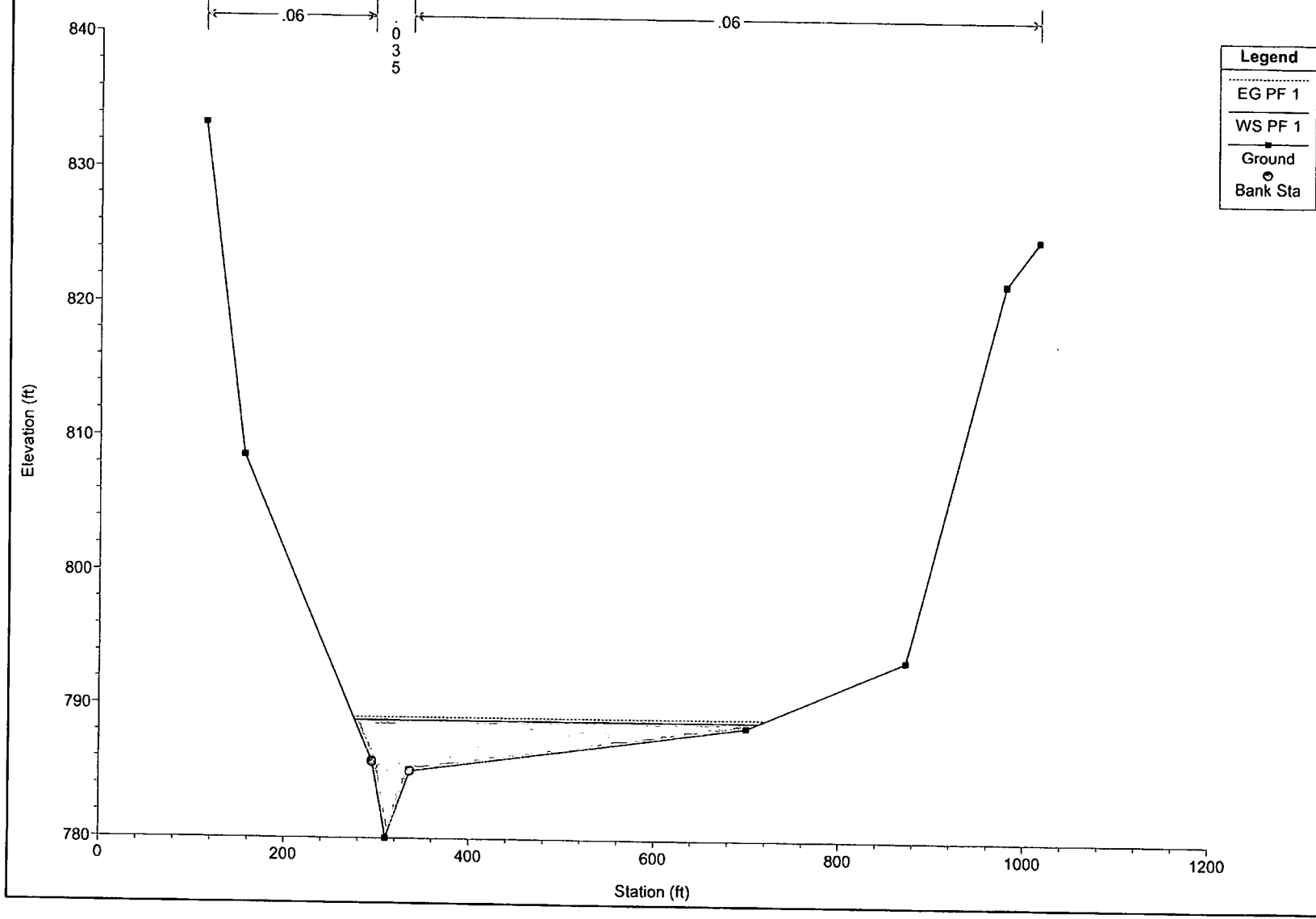




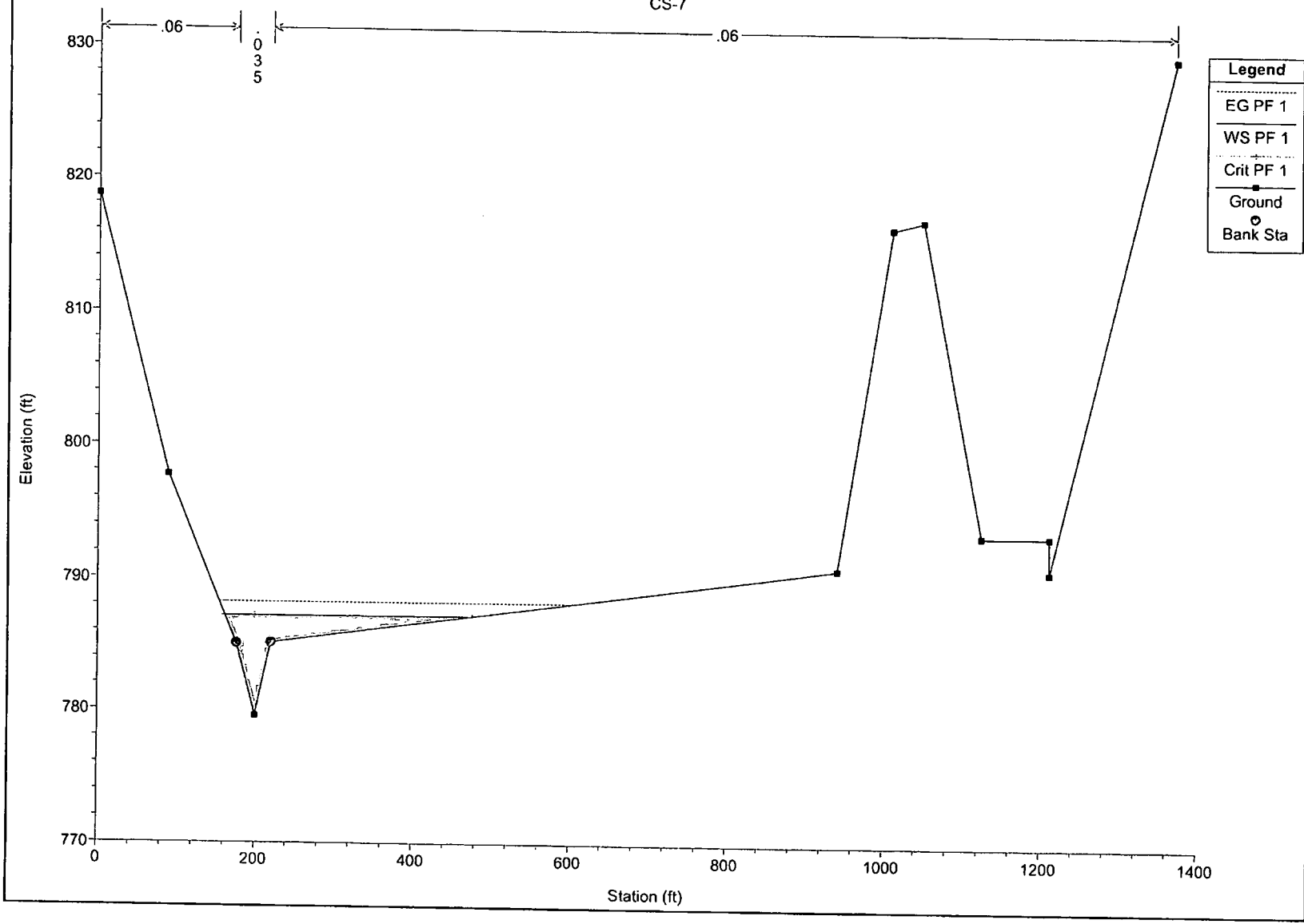
Neely Storage Plan: PrePlan 7/15/2014
CS-5



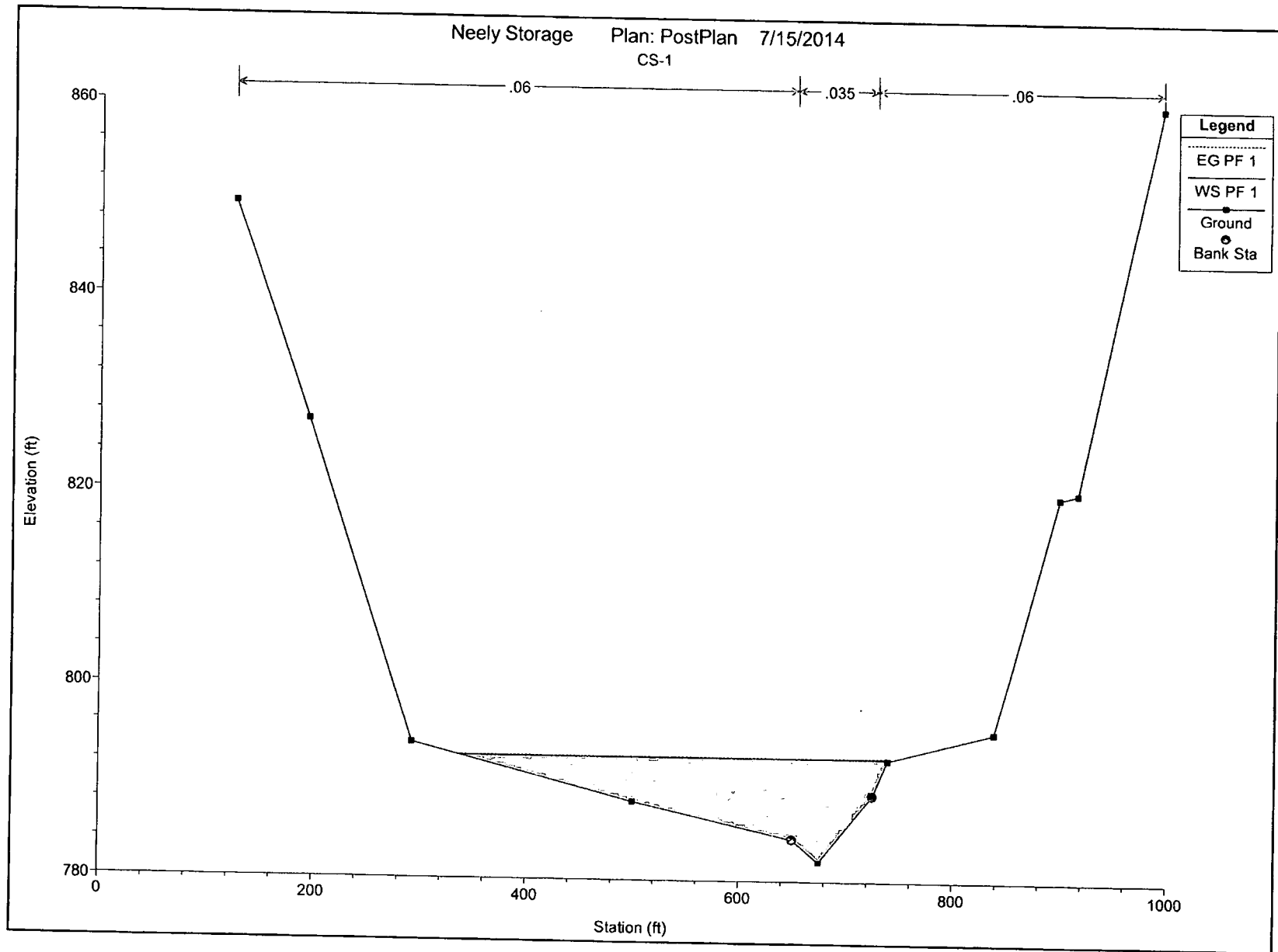
Neely Storage Plan: PrePlan 7/15/2014
CS-6



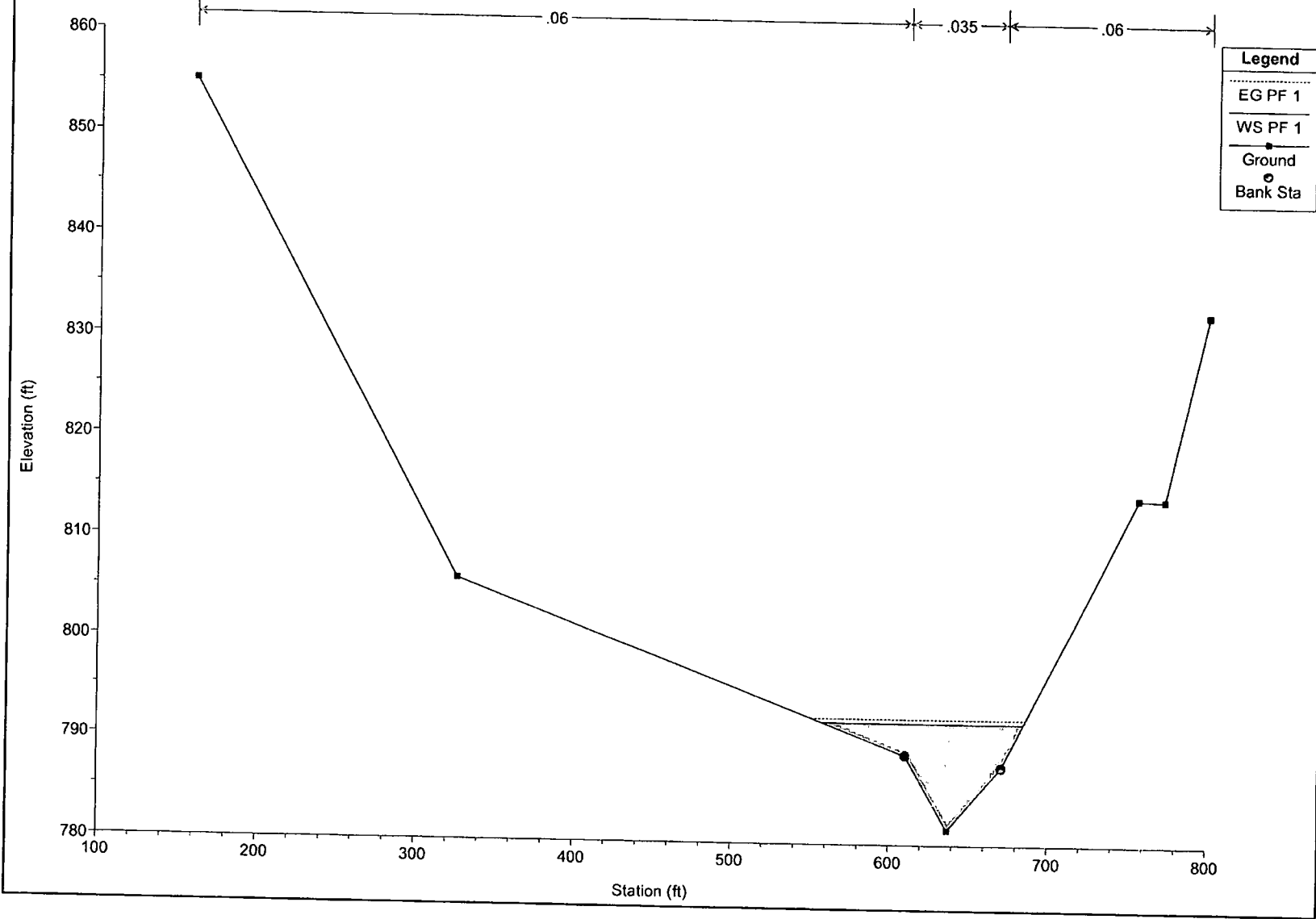
Neely Storage Plan: PrePlan 7/15/2014
CS-7



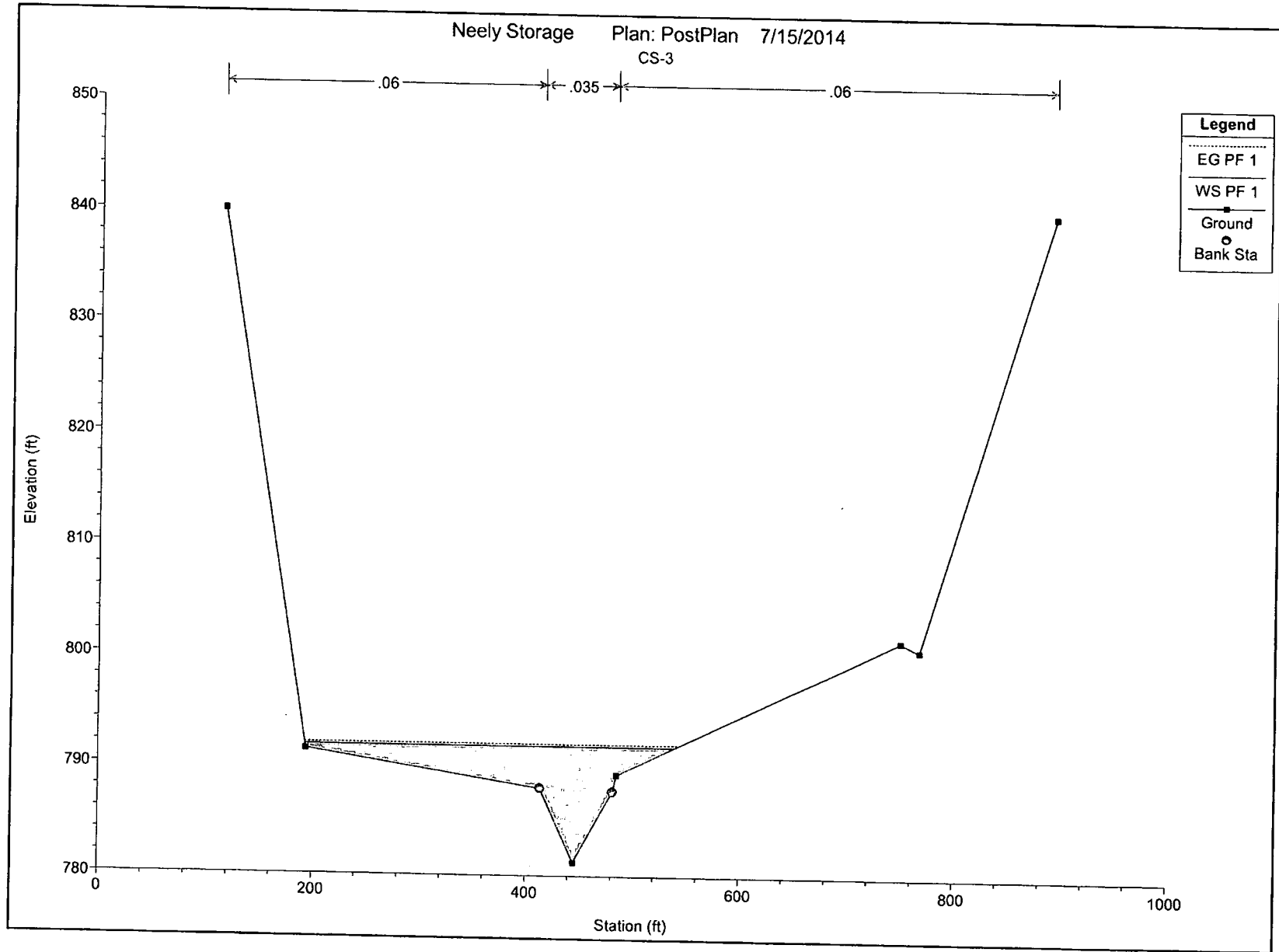
**Post-Construction
Cross Sections**

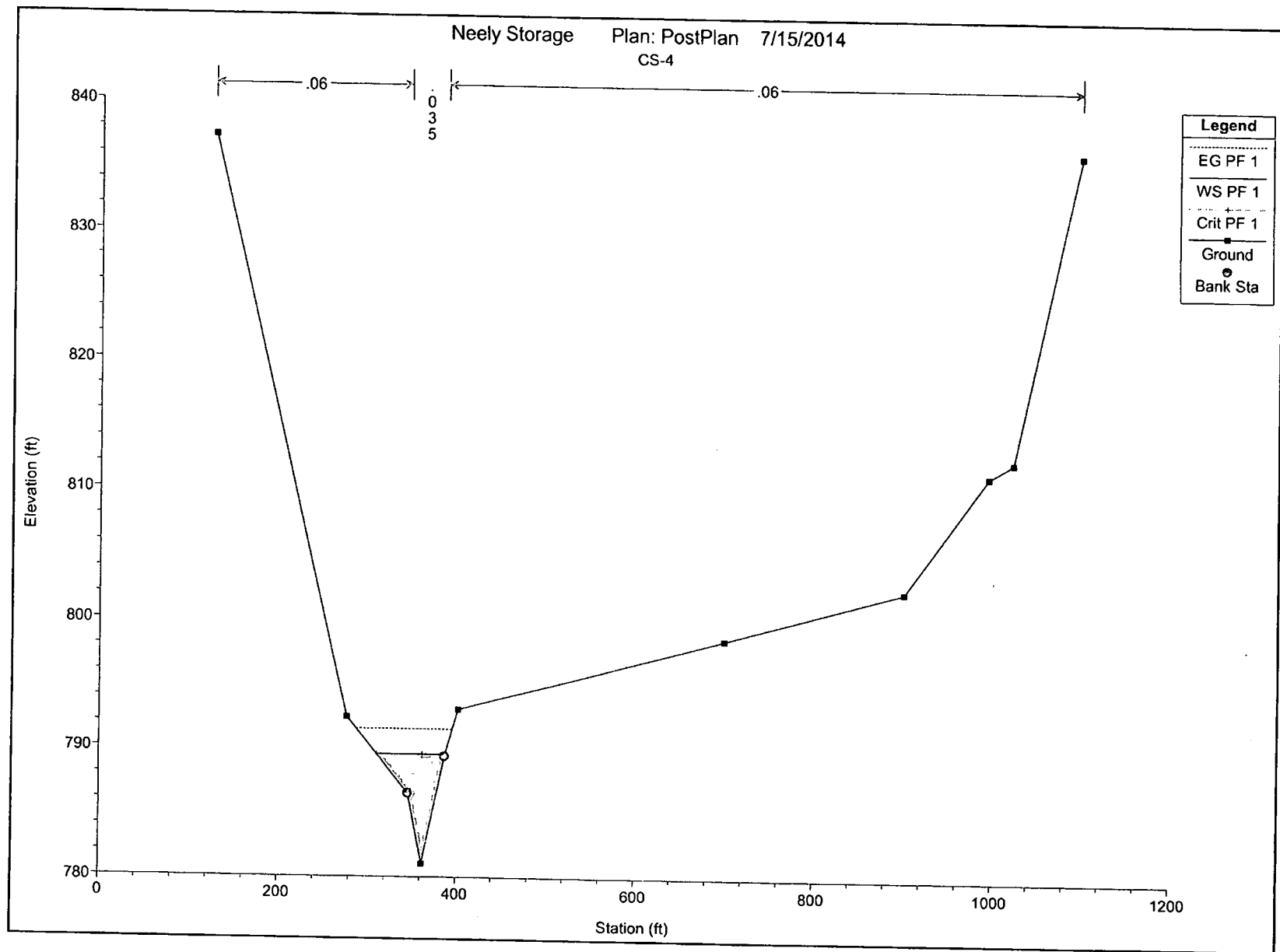


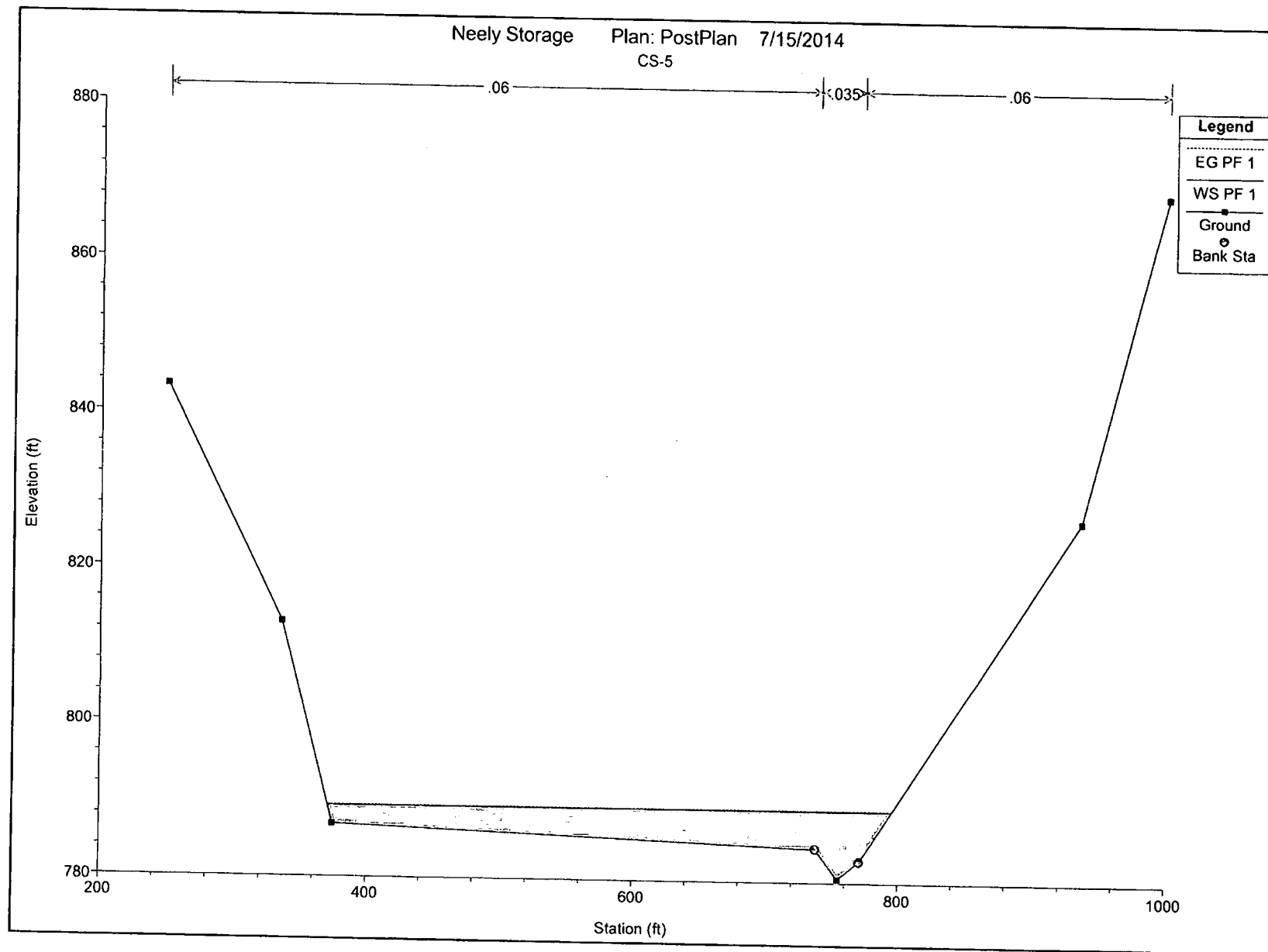
Neely Storage Plan: PostPlan 7/15/2014
CS-2



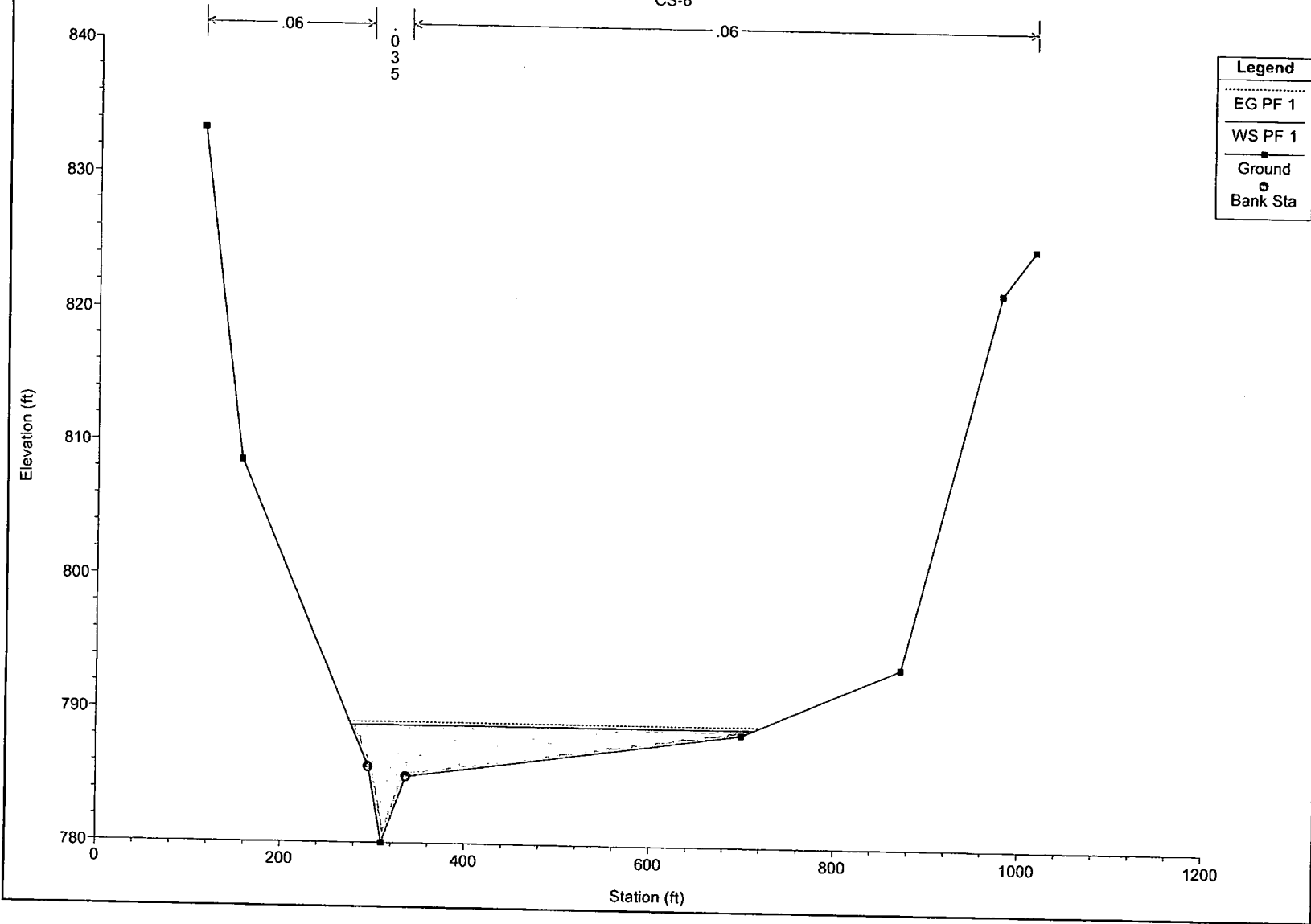
Neely Storage Plan: PostPlan 7/15/2014
CS-3





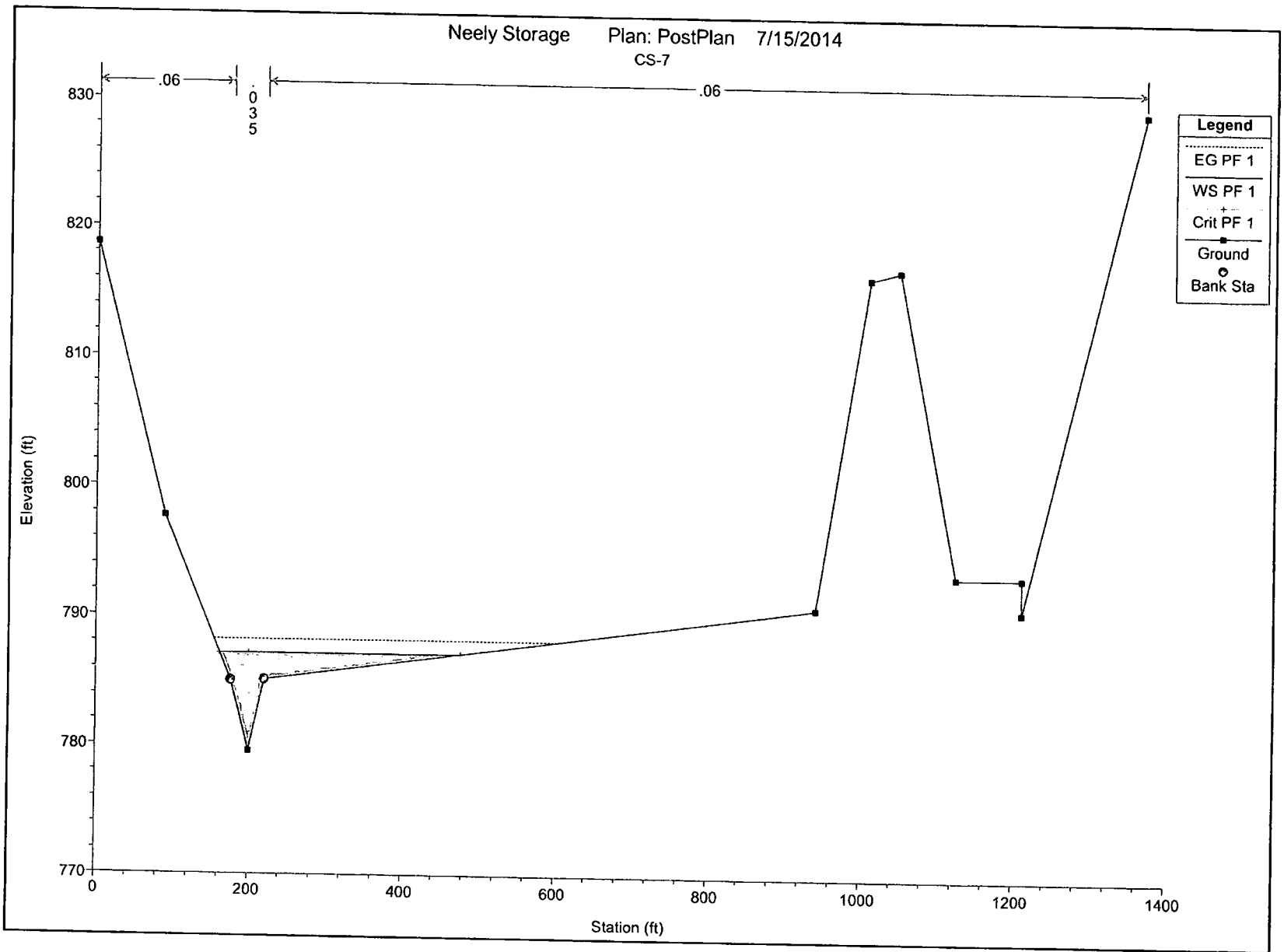


Neely Storage Plan: PostPlan 7/15/2014
CS-6



Legend	
EG PF 1	(Dotted line with square marker)
WS PF 1	(Dashed line with square marker)
Ground	(Solid line with square marker)
Bank Sta	(Circle marker)

Neely Storage Plan: PostPlan 7/15/2014
CS-7



APPENDIX E

TABLE 1**COMPARISON OF 100-YEAR FLOOD ELEVATIONS**

Cross Section¹	Minimum Channel Elevation (Feet)	Existing Conditions Model² (Feet)	Proposed Conditions Model³ (Feet)	Increase (Feet)
0 ⁴	779.50	787.15	787.15	0.00
325	780.00	788.84	788.84	0.00
685	780.50	789.28	789.28	0.00
1135 ⁵	781.00	789.50	789.50	0.00
1335 ⁵	781.21	791.78	791.77	-0.01
1735	781.50	791.91	791.95	0.04
2310	782.00	792.56	792.59	0.03

¹ Cross section stationing corresponds to stream centerline stationing in feet as modeled in the POTESTA HEC-RAS model.

² The Existing Conditions Model considers the site prior to installation of the proposed Neely Storage Yard.

³ The Proposed Conditions Model considers the site after installation of the proposed Neely Storage Yard.

⁴ POTESTA stationing assumes that the beginning cross section is located at Station 0. (Example: Cross section 938 is located 938 feet upstream of the beginning of the model).

⁵ Cross Sections 1135 and 1335 are located through the Neely Storage Yard.

APPENDIX F

HEC-RAS Version 4.0.0 March 2008
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X X XXXXXX XXXX XXXX XX XXXX
X X X X X X X X X
X X X X X X X X
XXXXXXXX XXXX X XXX XXXX XXXXXX XXXX
X X X X X X X X X
X X X X X X X X X
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PRE - PROJECT DATA

Project Title: Neely Storage

Project File : NeelyStorage.prj

Run Date and Time: 7/15/2014 3:41:45 PM

Project in English units

PLAN DATA

Plan Title: PrePlan

Plan File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.p01

Geometry Title: Pre

Geometry File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.g01

Flow Title : Flow 01

Flow File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.f01

Plan Summary Information:

Number of: Cross Sections = 7 Multiple Openings = 0

Culverts = 0 Inline Structures = 0

Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01

Critical depth calculation tolerance = 0.01

Maximum number of iterations = 20

Maximum difference tolerance = 0.3

Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only

Friction Slope Method: Average Conveyance

Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Flow 01

Flow File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.f01

Flow Data (cfs)

River	Reach	RS	PF 1
Arnold Creek	Reach 1	2310	2500

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Arnold Creek	Reach 1	PF 1		Normal S = 0.67

GEOMETRY DATA

Geometry Title: Pre
Geometry File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.g01

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 2310

INPUT

Description: CS-1

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
125	849.49	194.83	827.15	292.68	793.88	500	788	650	784.29
675	782	725	788.82	739.13	792.45	838.26	795.3	898.02	819.77
915.28	820.22	992.88	860						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
125	.06	650	.035	725	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	650	725		575	575		.1	.3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 1735

INPUT

Description: CS-2

Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
159.3	855.15	325.98	806.02	610.07	788.77	637	781.5	671	787.64
756.12	814.52	772.63	814.45	800	832.82				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
159.3	.06	610.07	.035	671	.06

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	610.07	671		390	400	410	.1	.3	

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 1335

INPUT

Description: CS-3

Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
114.77	840	193.97	791.36	413	788.02	445	781.21	481.33	787.76
767.77	799.18	892.88	840.05						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
114.77	.06	413	.035	481.33	.06

Bank	Sta: Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	413	481.33	190	200	210	.1	.3	

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 1135

INPUT

Description: CS-4

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-----	------	-----	------	-----	------	-----	------	-----	------

126.69 837.31 277.18 792.39 346 786.48 362 781 387 789.34
401.83 791.52 700 797.06 901.7 800.86 995.62 809.8 1023.43 810.92
1098.41 836.26

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
126.69 .06 346 .035 387 .06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
346 387 440 450 460 .1 .3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 685

INPUT

Description: CS-5

Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
249.4	843.39	335.99	812.94	374.76	786.88	738	784.4	755	780.5
771	782.77	935.81	826.74	1000	868.93				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
249.4	.06	738	.035	771	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	738	771		355	360	370	.1	.3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 325

INPUT

Description: CS-6

Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
112.41	833.32	155.65	808.59	295	785.72	310	780	336	785
700	788.43	872.2	793.48	979.05	821.63	1015.03	824.91		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
112.41	.06	295	.035	336	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	295	336		315	325	330	.1	.3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 0

INPUT

Description: CS-7

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	818.64	89.15	797.7	176	785.01	200	779.5	220	785.1

940.97 790.87 1010.37 816.45 1049.53 817.06 1124.94 793.46 1211.33 793.46
 1211.33 790.79 1370.94 829.48

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .06 176 .035 220 .06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 176 220 0 0 0 .1 .3

SUMMARY OF MANNING'S N VALUES

River:Arnold Creek

Reach	River Sta.	n1	n2	n3
Reach 1	2310	.06	.035	.06
Reach 1	1735	.06	.035	.06
Reach 1	1335	.06	.035	.06
Reach 1	1135	.06	.035	.06
Reach 1	685	.06	.035	.06
Reach 1	325	.06	.035	.06
Reach 1	0	.06	.035	.06

SUMMARY OF REACH LENGTHS

River: Arnold Creek

Reach	River Sta.	Left	Channel	Right
Reach 1	2310	575	575	575
Reach 1	1735	390	400	410
Reach 1	1335	190	200	210
Reach 1	1135	440	450	460
Reach 1	685	355	360	370
Reach 1	325	315	325	330
Reach 1	0	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Arnold Creek

Reach	River Sta.	Contr.	Expan.
Reach 1	2310	.1	.3
Reach 1	1735	.1	.3
Reach 1	1335	.1	.3
Reach 1	1135	.1	.3
Reach 1	685	.1	.3
Reach 1	325	.1	.3
Reach 1	0	.1	.3

POST - PROJECT DATA

Project Title: Neely Storage

Project File : NeelyStorage.prj

Run Date and Time: 7/15/2014 3:44:13 PM

Project in English units

PLAN DATA

Plan Title: PostPlan

Plan File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.p02

Geometry Title: Post

Geometry File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.g02

Flow Title : Flow 01

Flow File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.f01

Plan Summary Information:

Number of: Cross Sections = 7 Multiple Openings = 0

Culverts = 0 Inline Structures = 0

Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01

Critical depth calculation tolerance = 0.01

Maximum number of iterations = 20

Maximum difference tolerance = 0.3

Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only

Friction Slope Method: Average Conveyance

Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Flow 01

Flow File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.f01

Flow Data (cfs)

River	Reach	RS	PF 1
Arnold Creek	Reach 1	2310	2500

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Arnold Creek	Reach 1	PF 1		Normal S = 0.67

GEOMETRY DATA

Geometry Title: Post
Geometry File : v:\JMSmith\HEC Data\RAS\13-0413-010\NeelyStorage.g02

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 2310

INPUT

Description: CS-1

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
125	849.49	194.83	827.15	292.68	793.88	500	788	650	784.29
675	782	725	788.82	739.13	792.45	838.26	795.3	898.02	819.77
915.28	820.22	992.88	860						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
125	.06	650	.035	725	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	650	725		575	575	.1	.3	

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 1735

INPUT

Description: CS-2

Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
159.3	855.15	325.98	806.02	610.07	788.77	637	781.5	671	787.64
756.12	814.52	772.63	814.45	800	832.82				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
159.3	.06	610.07	.035	671	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	610.07	671		390	400	410	.1	.3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 1335

INPUT

Description: CS-3

Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
114.77	840	193.97	791.36	413	788.02	445	781.21	481.33	787.76
485	789.26	750	801.5	767.77	800.68	892.88	840.05		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
114.77	.06	413	.035	481.33	.06

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	413	481.33		190	200	210	.1	.3	

CROSS SECTION

RIVER: Arnold Creek

REACH: Reach 1 RS: 1135

INPUT

Description: CS-4

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
126.69	837.31	277.18	792.39	346	786.48	362	781	387	789.34
401.83	793.02	700	798.56	901.7	802.36	995.62	811.3	1023.43	812.42
1098.41	836.26								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
126.69	.06	346	.035	387	.06

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	346	387		440	450	460	.1	.3	

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 685

INPUT

Description: CS-5

Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
249.4	843.39	335.99	812.94	374.76	786.88	738	784.4	755	780.5
771	782.77	935.81	826.74	1000	868.93				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
249.4	.06	738	.035	771	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	738	771		355	360	370	.1	.3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 325

INPUT

Description: CS-6

Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
112.41	833.32	155.65	808.59	295	785.72	310	780	336	785
700	788.43	872.2	793.48	979.05	821.63	1015.03	824.91		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
112.41	.06	295	.035	336	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	295	336		315	325	330	.1	.3

CROSS SECTION

RIVER: Arnold Creek
REACH: Reach 1 RS: 0

INPUT

Description: CS-7

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	818.64	89.15	797.7	176	785.01	200	779.5	220	785.1
940.97	790.87	1010.37	816.45	1049.53	817.06	1124.94	793.46	1211.33	793.46
1211.33	790.79	1370.94	829.48						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	176	.035	220	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	176	220		0	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Arnold Creek

Reach	River Sta.	n1	n2	n3
Reach 1	2310	.06	.035	.06
Reach 1	1735	.06	.035	.06
Reach 1	1335	.06	.035	.06
Reach 1	1135	.06	.035	.06
Reach 1	685	.06	.035	.06
Reach 1	325	.06	.035	.06
Reach 1	0	.06	.035	.06

SUMMARY OF REACH LENGTHS

River: Arnold Creek

Reach	River Sta.	Left	Channel	Right
Reach 1	2310	575	575	575
Reach 1	1735	390	400	410
Reach 1	1335	190	200	210
Reach 1	1135	440	450	460
Reach 1	685	355	360	370
Reach 1	325	315	325	330
Reach 1	0	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Arnold Creek

Reach	River Sta.	Contr.	Expan.
Reach 1	2310	.1	.3
Reach 1	1735	.1	.3
Reach 1	1335	.1	.3
Reach 1	1135	.1	.3
Reach 1	685	.1	.3
Reach 1	325	.1	.3
Reach 1	0	.1	.3