2017-410

FEMA

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

AND

INSTRUCTIONS

2015 EDITION

OMB No. 1660-0008
Expiration Date: November 30, 2018

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

ELEVATION CERTIFICATE AND INSTRUCTIONS

Paperwork Reduction Act Notice

Public reporting burden for this data collection is estimated to average 3.75 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting this form. 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 the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0008). **NOTE: Do not send your completed form to this address.**

Privacy Act Statement

Authority: Title 44 CFR § 61.7 and 61.8.

Principal Purpose(s): This information is being collected for the primary purpose of estimating the risk premium rates necessary to provide flood insurance for new or substantially improved structures in designated Special Flood Hazard Areas.

Routine Use(s): The information on this form may be disclosed as generally permitted under 5 U.S.C. § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA-003 – National Flood Insurance Program Files System or Records Notice 73 Fed. Reg. 77747 (December 19, 2008); DHS/FEMA/NFIP/LOMA-1 – National Flood Insurance Program (NFIP) Letter of Map Amendment (LOMA) System of Records Notice 71 Fed. Reg. 7990 (February 15, 2006); and upon written request, written consent, by agreement, or as required by law.

Disclosure: The disclosure of information on this form is voluntary; however, failure to provide the information requested may result in the inability to obtain flood insurance through the National Flood Insurance Program or the applicant may be subject to higher premium rates for flood insurance. Information will only be released as permitted by law.

Purpose of the Elevation Certificate

The Elevation Certificate is an important administrative tool of the National Flood Insurance Program (NFIP). It is to be used to provide elevation information necessary to ensure compliance with community floodplain management ordinances, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F).

The Elevation Certificate is required in order to properly rate Post-FIRM buildings, which are buildings constructed after publication of the Flood Insurance Rate Map (FIRM), located in flood insurance Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, and AR/AO. The Elevation Certificate is not required for Pre-FIRM buildings unless the building is being rated under the optional Post-FIRM flood insurance rules.

As part of the agreement for making flood insurance available in a community, the NFIP requires the community to adopt floodplain management regulations that specify minimum requirements for reducing flood losses. One such requirement is for the community to obtain the elevation of the lowest floor (including basement) of all new and substantially improved buildings, and maintain a record of such information. The Elevation Certificate provides a way for a community to document compliance with the community's floodplain management ordinance.

Use of this certificate does not provide a waiver of the flood insurance purchase requirement. Only a LOMA or LOMR-F from the Federal Emergency Management Agency (FEMA) can amend the FIRM and remove the Federal mandate for a lending institution to require the purchase of flood insurance. However, the lending institution has the option of requiring flood insurance even if a LOMA/LOMR-F has been issued by FEMA. The Elevation Certificate may be used to support a LOMA or LOMR-F request. Lowest floor and lowest adjacent grade elevations certified by a surveyor or engineer will be required if the certificate is used to support a LOMA or LOMR-F request. A LOMA or LOMR-F request must be submitted with either a completed FEMA MT-EZ or MT-1 package, whichever is appropriate.

This certificate is used only to certify building elevations. A separate certificate is required for floodproofing. Under the NFIP, non-residential buildings can be floodproofed up to or above the Base Flood Elevation (BFE). A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE. Floodproofing of residential buildings is not permitted under the NFIP unless FEMA has granted the community an exception for residential floodproofed basements. The community must adopt standards for design and construction of floodproofed basements before FEMA will grant a basement exception. For both floodproofed non-residential buildings and residential floodproofed basements in communities that have been granted an exception by FEMA, a floodproofing certificate is required.

Additional guidance can be found in FEMA Publication 467-1, Floodplain Management Bulletin: Elevation Certificate, available on FEMA's website at https://www.fema.gov/media-library/assets/documents/3539?id=1727.

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ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1–9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

A1. Building Owner's Name
Elizabeth Blaylock

Policy Number:

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
964 NM 170

Company NAIC Number:

City: Farmington | State: New Mexico | ZIP Code: 87401

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Parcel #2-076-180-096-456 Account R4004727

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) Residential

A5. Latitude/Longitude: Lat. 36° 51' 41.49" N Long. 108° 12' 23.98" W Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s) N/A sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade N/A

c) Total net area of flood openings in A8.b N/A sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage N/A sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade N/A

c) Total net area of flood openings in A9.b N/A sq in

d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
San Juan County/350064	San Juan	New Mexico

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)
35045C0700	F	08-05-2010	08-05-2010	A	5841.24

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☐ FIS Profile ☐ FIRM ☐ Community Determined ☒ Other/Source: HEC-RAS

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: _____ ☐ CBRS ☐ OPA

ELEVATION CERTIFICATE

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IMPORTANT: In these spaces, copy the corresponding information from Section A.

FOR INSURANCE COMPANY USE

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
964 NM 170

Policy Number:

City	State	ZIP Code
Farmington	New Mexico	87401

Company NAIC Number

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☒ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction

*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: Opus Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below.

☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source:

Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	N/A	☐ feet	☐ meters
b) Top of the next higher floor	N/A	☐ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	N/A	☐ feet	☐ meters
d) Attached garage (top of slab)	N/A	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	N/A	☐ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	5854.44	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	5854.58	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	N/A	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No ☐ Check here if attachments.

Certifier's Name	License Number	
Scott A. Martin	21663	
Title		
Surveyor		
Company Name		
Sakura Engineering and Surveying		
Address		
125 West Main St.		
City	State	ZIP Code
Farmington	New Mexico	87401
Signature	Date	Telephone / Ext.
Scott A Martin	10-16-2017	(505) 564-2139 ext. 2

SCOTT A MARTIN NEW MEXICO 21663 PROFESSIONAL SURVEYOR Place Seal Here

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including type of equipment and location, per C2(e), if applicable)
Set Stake northeast of building site with top of stake at 5854.48 feet.

ELEVATION CERTIFICATE

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IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 964 NM 170			Policy Number:
City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zones AO and A (without BFE), complete Items E1–E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B,and C. For Items E1–E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).

a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner or Owner's Authorized Representative's Name			
Address	City	State	ZIP Code
Signature	Date	Telephone	
Comments			

☐ Check here if attachments.

ELEVATION CERTIFICATE

OMB No. 1660-0008
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IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 964 NM 170			Policy Number:
City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

SECTION G – COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8–G10. In Puerto Rico only, enter meters.

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate of Compliance/Occupancy Issued

G7. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building: _____ ☐ feet ☐ meters Datum _____

G9. BFE or (in Zone AO) depth of flooding at the building site: _____ ☐ feet ☐ meters Datum _____

G10. Community's design flood elevation: _____ ☐ feet ☐ meters Datum _____

Local Official's Name	Title
Community Name	Telephone
Signature	Date

Comments (including type of equipment and location, per C2(e), if applicable)

☐ Check here if attachments.

ELEVATION CERTIFICATE

BUILDING PHOTOGRAPHS

See Instructions for Item A6.

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IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 964 NM 170			Policy Number:
City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.

Photo One

Photo One Caption

Clear Photo One

Photo Two

Photo Two Caption

Clear Photo Two

ELEVATION CERTIFICATE

BUILDING PHOTOGRAPHS

Continuation Page

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IMPORTANT: In these spaces, copy the corresponding information from Section A.

FOR INSURANCE COMPANY USE

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
964 NM 170

Policy Number:

City	State	ZIP Code
Farmington	New Mexico	87401

Company NAIC Number

If submitting more photographs than will fit on the preceding page, affix the additional photographs below. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8.

Photo Three

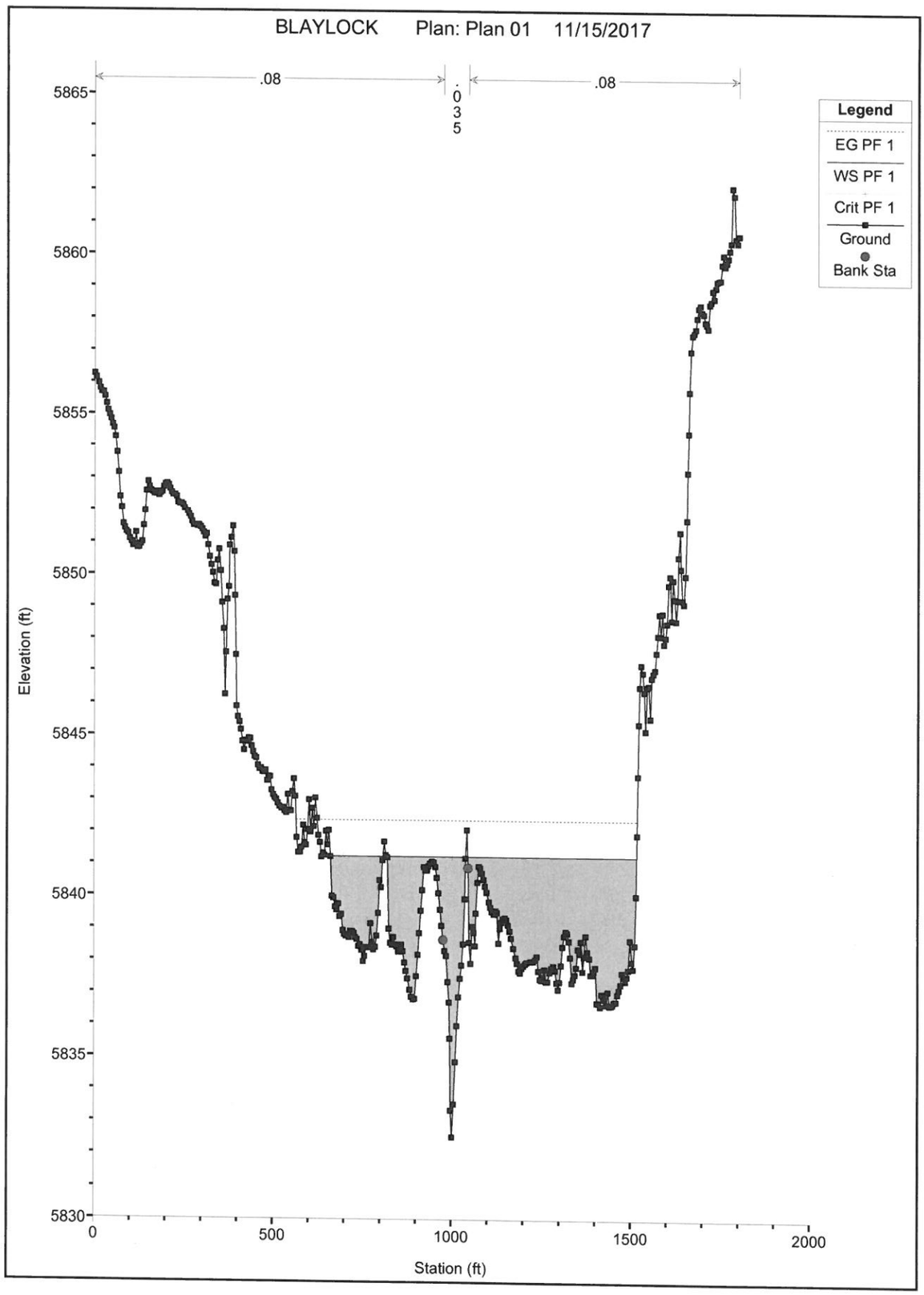
Photo Three Caption

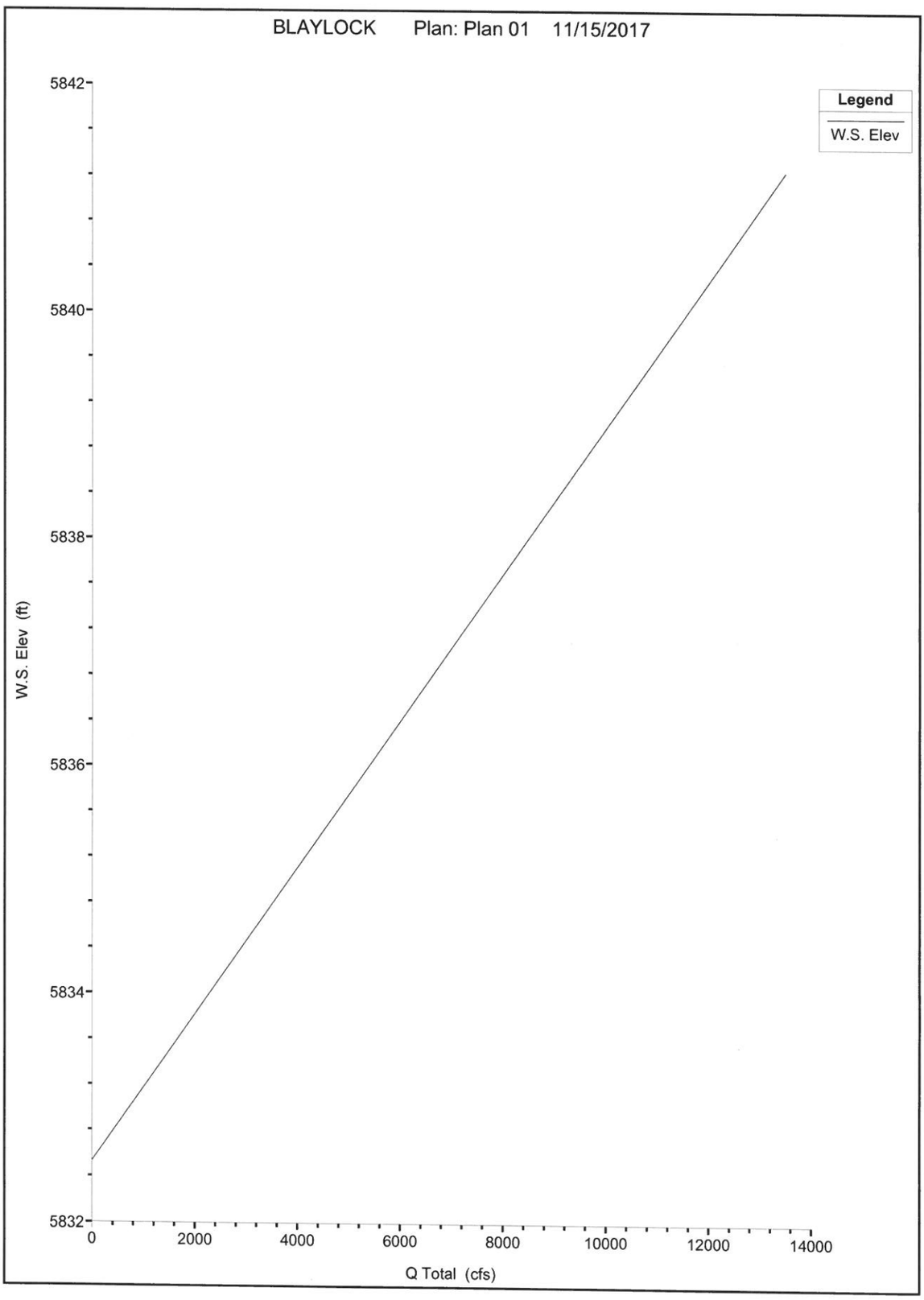
Clear Photo Three

Photo Four

Photo Four Caption

Clear Photo Four


BLAYLOCK Plan: Plan 01 11/15/2017
.08
.035
.08
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
5865
5860
5855
5850
5845
5840
5835
5830
0
500
1000
1500
2000


BLAYLOCK Plan: Plan 01 11/15/2017
Legend
W.S. Elev
5842
5840
5838
5836
5834
5832
W.S. Elev (ft)
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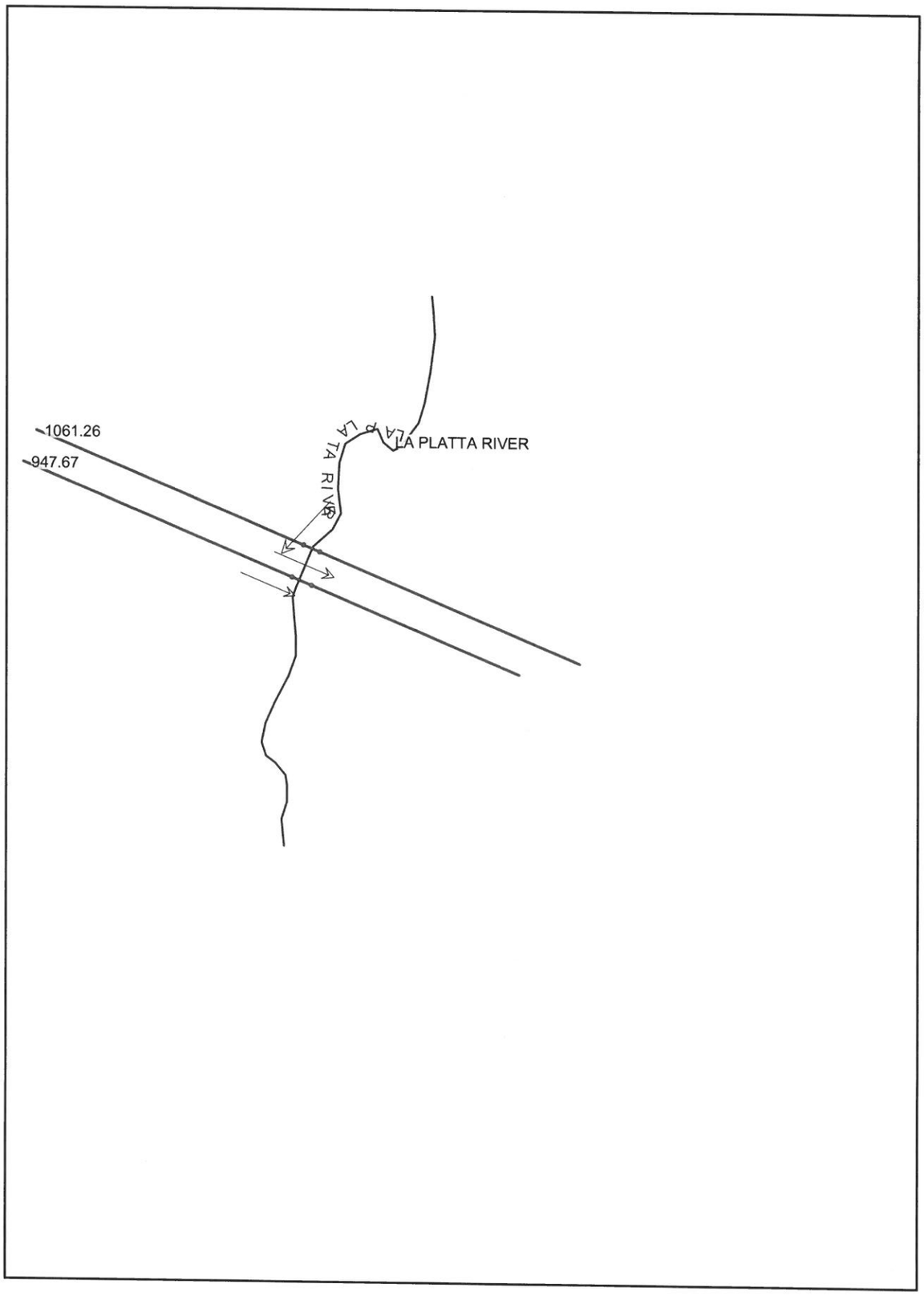
2000
4000
6000
8000
10000
12000
14000
Q Total (cfs)


1061.26
947.67
LA PLATTA RIVER
LA PLATTA RIVER

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
X     X  XXXXXX    XXXX       X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: BLAYLOCK
Project File : BLAYLOCK.prj
Run Date and Time: 11/15/2017 2:27:10 PM

Project in English units

PLAN DATA

Plan Title: Plan 01
Plan File : C:\Users\Scott\Documents\BLAYLOCK.p01

Geometry Title:
Geometry File : C:\Users\Scott\Documents\BLAYLOCK.g02

Flow Title : Flow 02
Flow File : C:\Users\Scott\Documents\BLAYLOCK.f02

Plan Summary Information:

Number of:	Cross Sections	= 2	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 02
Flow File : C:\Users\Scott\Documents\BLAYLOCK.f02

Flow Data (cfs)

River	Reach	RS	PF 1
LA PLATA RIVER	LA PLATTA RIVER	1061.26	13500

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
LA PLATA RIVER	LA PLATTA RIVER	PF 1	Critical	

GEOMETRY DATA

Geometry Title:
Geometry File : C:\Users\Scott\Documents\BLAYLOCK.g02

CROSS SECTION

RIVER: LA PLATA RIVER
REACH: LA PLATTA RIVER RS: 1061.26

INPUT
Description:
Station Elevation Data num= 457

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5856.48	4.25	5856.38	8.41	5856.12	12.68	5855.86	17.64	5855.63
22.04	5855.93	26.22	5856.12	30.37	5856.54	34.45	5856.91	38.99	5856.98
43.07	5857.11	47.42	5857.11	52.6	5857.03	57.34	5856.99	61.67	5857.07
68.66	5857.01	73	5857	77.33	5856.94	81.96	5856.95	86.44	5856.96
90.7	5856.81	96.03	5856.56	100.51	5856.47	105.22	5856.52	109.46	5856.63
113.58	5856.7	120.19	5856.8	124.5	5857.6	128.81	5859.16	133.08	5860.02
137.29	5858.3	141.44	5857.2	145.56	5856.59	149.97	5856.41	154.14	5856.18
158.29	5856	162.38	5855.86	166.62	5855.72	175.34	5855.49	180.32	5855.5
185.26	5855.42	193.93	5855.38	200.95	5855.35	206.05	5855.29	210.2	5855.2
215.64	5855.21	220.89	5855.19	225.23	5855.58	229.39	5855.22	234.05	5854.89
239.94	5854.8	244.28	5854.65	248.9	5854.55	253.1	5854.52	257.29	5854.46
261.79	5854.5	266.26	5854.89	270.65	5854.65	275.76	5854.79	279.92	5854.55
286.22	5853.96	290.3	5853.92	294.55	5853.91	298.79	5853.87	303.13	5854.3
307.42	5853.87	311.71	5853.66	317.95	5853.2	322.63	5853.02	327.57	5853.07
331.73	5853.19	335.89	5853.38	340.36	5853.4	344.73	5853.13	348.82	5852.44
353.05	5851.84	357.31	5851.93	361.63	5851.44	365.95	5850.98	368.19	5849.47
372.35	5848.11	376.45	5846.96	378.71	5848.81	380.87	5850.06	385.03	5850.57
389.29	5849.88	393.61	5851.22	397.81	5851.91	402.09	5851.29	404.16	5849.6
406.24	5847.54	410.51	5846.89	414.67	5846.11	419.04	5845.97	423.51	5846.52
427.67	5846.61	432.15	5846.06	436.31	5844.92	440.41	5844.5	445.26	5844.09
449.52	5844.17	453.67	5844.05	457.84	5844.01	462.18	5843.68	466.52	5843.6
470.83	5843.29	475.19	5843.37	479.41	5842.71	483.86	5842.86	488	5842.66
492.16	5842.45	496.25	5842.63	500.48	5842.75	505.07	5842.49	509.22	5842.56
513.7	5843.59	517.86	5843.13	522.01	5842.17	526.49	5841.87	530.65	5842.09
535.13	5841.92	539.15	5841.08	543.42	5840.99	548.06	5841.07	552.4	5841.97
556.87	5841.83	561.03	5841.7	565.51	5841.63	570.59	5841.78	574.78	5841.54
579.26	5841.37	583.6	5841.25	587.84	5841.31	592.27	5841.27	596.42	5840.98
600.58	5841.11	604.66	5841.26	608.9	5841.28	613.16	5841.12	617.48	5841.08
621.79	5840.91	626.96	5840.86	631.3	5840.82	637.47	5840.97	641.94	5840.93
646.34	5840.92	650.81	5841	654.92	5841.06	659.1	5840.79	663.5	5840.6
669.08	5840.72	673.58	5840.84	677.76	5840.88	681.92	5841.08	686.59	5840.68
690.8	5840.56	695.26	5841.16	699.38	5840.51	704.62	5840.91	708.74	5840.5
712.94	5841	717.1	5840.75	721.28	5840.21	725.61	5840.12	729.8	5840.14
733.95	5840.09	738.03	5840.33	742.36	5840.73	746.52	5840.64	750.86	5840.88
755.15	5840.91	759.44	5840.84	763.56	5841	767.89	5841.41	772.23	5841.65
776.61	5842.59	780.74	5842.25	784.9	5842.58	789.05	5842.33	793.21	5842.34
797.37	5842.47	801.85	5841.98	806	5841.99	810.48	5840.64	814.51	5839.91
818.73	5839.12	823.18	5839.72	827.31	5840.11	833.75	5840.65	837.98	5839.76
842.13	5838.85	846.3	5838.41	851.1	5838.37	855.39	5838.59	859.6	5838.96
865.81	5839.62	870.21	5840.1	874.44	5840.51	878.6	5840.84	882.69	5841.09
889.15	5841.38	895.44	5841.62	899.52	5841.83	903.75	5842.14	908.02	5842.52
912.68	5842.17	916.98	5841.93	921.13	5842.25	925.38	5842.42	930.27	5842.48
934.45	5842.75	938.53	5843.42	942.75	5844.23	947.04	5844.1	951.33	5844.25
955.44	5844.42	957.57	5843.29	959.77	5841.39	961.94	5839.28	964.11	5838.11

968.45 5839.68 969.38 5840.05 973.87 5841.4 976.04 5840.37 980.19 5838.44
984.35 5836.65 988.43 5834.83 992.67 5832.95 996.93 5832.94 1001.25 5833.03
1006.12 5833.15 1010.36 5834.09 1014.51 5835.66 1018.68 5837.3 1023.09 5839.26
1025.18 5840.38 1028.07 5840.9 1032.41 5841.18 1036.74 5841.26 1041.03 5840.51
1045.42 5840.85 1049.61 5840.69 1054.09 5841 1058.29 5841.2 1062.76 5840.9
1066.97 5841.53 1071.43 5840.46 1073.6 5839.27 1075.77 5838.15 1080.04 5839.31
1084.44 5840.36 1088.62 5841.02 1092.77 5841.09 1096.85 5840.8 1098.95 5841.92
1103.2 5841.88 1107.58 5843.41 1112.02 5842.74 1114.09 5841.56 1116.22 5839.85
1118.26 5838.51 1122.39 5838.53 1126.72 5838.15 1131.06 5838.07 1135.4 5838.35
1139.73 5840.56 1144 5841.14 1148.4 5840.74 1152.58 5839.76 1156.73 5838.41
1160.81 5837.89 1165.06 5838.35 1169.3 5838.7 1178.05 5838.47 1182.22 5838.01
1186.35 5838.22 1192.85 5838.41 1197.04 5838.57 1201.18 5838.71 1205.62 5838.66
1209.8 5838.18 1213.89 5837.87 1218.1 5838.11 1222.39 5838.38 1226.68 5838.78
1231.03 5839.27 1235.5 5839.89 1239.66 5840.55 1244.14 5840.32 1248.3 5840.09
1252.42 5839.9 1256.81 5839.77 1261 5839.88 1265.15 5838.27 1269.82 5838.19
1274.52 5838.24 1278.68 5838.09 1283.16 5838.45 1287.31 5838.62 1291.42 5838.71
1295.84 5839.31 1300 5838.2 1304.16 5837.8 1308.24 5838.16 1312.48 5838.41
1316.86 5838.26 1322.62 5838.29 1326.84 5838.06 1330.92 5838.69 1335.1 5838.47
1339.44 5840.13 1343.69 5841.17 1347.76 5841.21 1352.21 5840.85 1356.39 5842.66
1358.51 5843.86 1362.68 5843.56 1366.76 5844.33 1370.99 5844.59 1375.26 5844.74
1379.57 5844.43 1383.89 5844.16 1388.37 5844.75 1392.62 5844.77 1397.01 5844.46
1401.16 5844.16 1405.64 5845.29 1409.67 5844.73 1413.89 5843.92 1418.34 5844.97
1422.47 5845.01 1426.64 5845 1430.72 5845.48 1434.95 5845.91 1439.22 5845.64
1443.7 5845.35 1445.87 5844.1 1450.09 5843.87 1454.12 5845.4 1458.35 5845.46
1462.79 5844.18 1467.46 5844.02 1473.95 5843.96 1479.26 5843.97 1483.67 5844.03
1487.99 5844.42 1492.41 5844.38 1497.35 5844.12 1501.82 5844.38 1506.02 5844.26
1510.49 5844.3 1515.02 5844.51 1519.49 5845.24 1524.17 5845.06 1530.37 5845.08
1534.52 5844.9 1539 5844.73 1543.16 5845.93 1547.27 5847.42 1552.11 5847.93
1556.38 5848.41 1560.53 5848.77 1565 5849.65 1569.38 5848.26 1573.54 5847.66
1578.02 5847.01 1584.05 5847.67 1588.54 5847.95 1594.65 5847.99 1598.81 5848.12
1602.96 5848.43 1607.12 5847.88 1611.23 5846.86 1615.64 5849.53 1617.67 5850.68
1621.83 5851.89 1625.99 5851.27 1630.15 5851.82 1634.4 5852.01 1638.78 5851.62
1642.94 5851.69 1647.42 5852.44 1651.57 5851.03 1655.7 5850.06 1660.09 5848.27
1664.28 5847.18 1668.88 5846.55 1673.32 5846.68 1677.8 5846.88 1681.95 5847.01
1686.43 5848.18 1690.59 5849.49 1694.7 5849.91 1699.12 5850.89 1703.35 5853.05
1707.79 5853.85 1711.97 5854.36 1716.46 5854.39 1720.65 5854.3 1725.12 5852.7
1727.3 5851.53 1731.48 5852.03 1735.98 5852.89 1740.16 5854.46 1744.32 5854.19
1748.47 5856.14 1752.63 5857.33 1756.79 5858.78 1761.27 5860.33 1765.68 5860.67
1769.9 5861.39 1774.06 5861.6 1778.26 5861.78 1782.59 5862.36 1786.74 5862.08
1790.9 5862.22 1794.98 5862.59 1799.22 5862.34 1804.27 5862.44 1808.92 5862.79
1813.39 5863.18 1817.55 5862.85 1822.03 5862.96 1826.19 5863.47 1830.82 5863.33
1835.1 5863.45 1839.78 5863.8 1843.98 5863.84 1846.02 5865.32 1850.17 5865.12
1854.33 5864.35 1858.81 5864.71 1862.97 5864.97 1867.08 5865.64 1871.49 5865.38
1875.66 5867.45 1879.81 5867.86 1883.9 5866.63 1888.14 5867.36 1892.39 5866.56
1894.63 5867.58 1898.78 5867.48 1903.26 5867.51 1907.42 5867.86 1911.54 5868.07
1915.93 5868.93 1920.13 5869.51 1924.61 5869.38 1928.8 5870.82 1933.28 5871.85
1937.48 5870.83 1941.64 5869.94 1945.8 5869.68 1952.19 5869.51 1956.35 5869.47
1970.42 5869.51 1972.31 5869.53

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	969.38	.035	1028.07	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
969.38	1028.07	113.59	113.59	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5844.57	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.35	Wt. n-Val.	0.080	0.035
0.080				
W.S. Elev (ft)	5843.22	Reach Len. (ft)	113.59	113.59
113.59				
Crit W.S. (ft)	5843.22	Flow Area (sq ft)	967.85	402.83
1219.60				
E.G. Slope (ft/ft)	0.008742	Area (sq ft)	967.85	402.83
1219.60				
Q Total (cfs)	13500.00	Flow (cfs)	2794.33	5558.76
5146.91				
Top Width (ft)	854.08	Top Width (ft)	467.90	58.69
327.49				
Vel Total (ft/s)	5.21	Avg. Vel. (ft/s)	2.89	13.80
4.22				
Max Chl Dpth (ft)	10.28	Hydr. Depth (ft)	2.07	6.86
3.72				
Conv. Total (cfs)	144386.4	Conv. (cfs)	29886.2	59452.5
55047.7				
Length Wtd. (ft)	113.59	Wetted Per. (ft)	471.93	62.15
333.41				
Min Ch El (ft)	5832.94	Shear (lb/sq ft)	1.12	3.54
2.00				
Alpha	3.20	Stream Power (lb/ft s)	3.23	48.82
8.43				
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	2.13	0.90
3.46				
C & E Loss (ft)	0.07	Cum SA (acres)	1.01	0.16
1.04				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical
depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

CROSS SECTION

RIVER: LA PLATA RIVER
REACH: LA PLATTA RIVER RS: 947.67

INPUT
Description:
Station Elevation Data num= 418

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5856.25	4.53	5856.13	11.08	5855.96	15.56	5855.79	19.84	5855.68
24.51	5855.67	28.91	5855.53	33.15	5855.31	37.29	5855.1	41.46	5854.96
45.69	5854.83	50.1	5854.66	54.12	5854.54	58.35	5854.27	62.8	5853.78
67.01	5853.15	71.47	5852.39	75.68	5852.06	80.14	5851.55	84.48	5851.43
88.77	5851.32	93.15	5851.27	97.75	5851.1	102.81	5851	107.24	5850.88
111.39	5850.91	115.55	5851.29	119.64	5850.82	123.87	5850.83	128.55	5850.93
132.79	5851	136.87	5851.5	141.03	5851.97	145.19	5852.58	149.52	5852.88
153.72	5852.71	158.19	5852.59	162.53	5852.55	166.87	5852.49	171.95	5852.52
176.13	5852.56	180.26	5852.45	184.5	5852.52	189.22	5852.56	193.37	5852.71
197.53	5852.8	202.33	5852.83	206.8	5852.78	210.96	5852.65	215.14	5852.54
219.6	5852.47	224.71	5852.47	228.87	5852.41	233.35	5852.23	238.54	5852.2
242.75	5852.2	247.09	5852.15	251.43	5852.05	259.6	5851.96	263.89	5851.87
268.43	5851.78	272.51	5851.64	276.84	5851.53	287.02	5851.5	292.01	5851.53
296.55	5851.47	300.63	5851.4	304.99	5851.3	309.25	5851.17	313.42	5851.26
317.55	5850.91	321.89	5850.55	326.23	5850.29	330.25	5850.05	334.73	5849.73
339.52	5849.69	343.84	5850.43	348.16	5850.78	352.42	5850.11	356.58	5849.13
360.92	5848.3	365.11	5846.26	367.24	5847.57	371.4	5849.22	375.48	5849.62
377.58	5850.91	381.74	5851.14	386.22	5851.5	390.45	5850.71	392.61	5849.34
394.85	5847.49	396.88	5845.9	401.03	5845.57	405.37	5845.41	409.56	5845.18
413.72	5844.81	418.37	5844.54	422.62	5844.83	427.05	5844.8	431.2	5844.91
435.36	5844.9	439.44	5844.67	443.68	5844.49	447.94	5844.34	452.26	5844.3
456.68	5844.07	461.37	5843.96	465.52	5843.98	469.69	5843.87	473.92	5843.86
478.32	5843.92	482.8	5843.59	486.96	5843.73	491.43	5843.72	495.69	5843.29
499.84	5843.15	503.86	5843.06	508.35	5843.01	512.93	5842.88	517.47	5842.79
523.41	5842.73	527.87	5842.75	532.2	5842.65	536.51	5842.59	540.88	5843.16
545.21	5842.66	549.55	5842.65	553.67	5843.25	557.84	5843.65	561.92	5843.1
566.15	5841.81	570.42	5841.35	575.51	5841.36	579.9	5841.51	584.09	5842.2
588.23	5841.65	592.32	5841.58	596.57	5842.06	600.81	5843	605.15	5841.99
609.44	5842.73	613.73	5842.16	618.08	5843.06	622.55	5842.42	626.71	5841.89

631.19	5841.67	635.35	5841.21	639.47	5841.34	643.86	5841.27	648.05	5842.02
652.19	5841.59	656.28	5842.05	660.53	5841.23	664.77	5840	669.11	5839.95
673.4	5839.67	677.69	5839.58	681.81	5839.77	686.14	5839.37	690.48	5839.44
694.85	5838.94	699.15	5838.82	703.43	5838.77	707.82	5838.79	712.1	5838.73
716.61	5838.92	721.05	5838.91	725.53	5838.86	730.01	5838.73	734.63	5838.67
738.84	5838.45	742.92	5838.51	747.46	5838.33	751.79	5837.98	755.91	5838.14
760.07	5838.41	768.38	5838.41	772.54	5839.16	776.7	5838.58	780.86	5838.35
785.88	5838.43	790.01	5838.78	794.18	5839.48	798.26	5840.5	802.49	5840.28
806.76	5841.12	811.24	5841.7	815.5	5841.28	819.87	5841.21	824.03	5839
828.51	5838.56	832.67	5838.5	837.14	5838.74	841.62	5838.51	845.78	5838.45
850.26	5838.29	854.76	5838.29	858.89	5838.5	863.05	5838.3	867.52	5837.95
871.68	5837.69	875.82	5837.45	882.24	5837.1	886.7	5836.88	892.2	5836.8
896.31	5836.82	901.1	5837.53	905.13	5838.19	909.36	5838.87	913.8	5839.56
917.94	5840.2	922.47	5840.91	926.81	5840.81	931.49	5840.81	935.64	5840.94
939.78	5841.03	945.24	5841.08	949.92	5841.06	954.19	5840.92	958.5	5840.59
962.83	5840.11	967.08	5839.6	971.25	5839.1	975.59	5838.66	979.78	5838.32
984.57	5838.16	988.6	5837.35	992.82	5836.71	995.1	5835.59	997.27	5833.35
1001.52	5832.53	1005.95	5833.54	1010.28	5834.86	1014.62	5835.98	1019.11	5836.88
1023.24	5837.46	1027.63	5837.87	1031.82	5838.53	1036.3	5839.94	1038.47	5841.19
1042.74	5842.08	1045.98	5840.9	1048.2	5838.58	1052.56	5837.93	1056.78	5839.08
1061.23	5838.9	1065.36	5838.48	1067.4	5839.5	1071.56	5840.45	1075.72	5840.94
1079.88	5840.89	1084.35	5840.73	1088.51	5840.54	1092.99	5840.33	1097.01	5840.14
1103.51	5839.85	1107.7	5839.68	1111.86	5839.54	1117.62	5839.47	1121.94	5839.57
1126.2	5839.52	1130.61	5838.57	1134.79	5839.03	1138.94	5839.22	1143.02	5839.32
1147.96	5839.36	1152.3	5839.29	1156.63	5839.14	1160.97	5838.95	1165.21	5838.73
1171.66	5838.41	1177.95	5838.12	1182.03	5837.95	1186.37	5837.71	1190.53	5837.65
1194.85	5837.8	1199.48	5837.87	1204.71	5837.93	1209.08	5837.97	1219.68	5838
1227.39	5838.01	1232.84	5838.06	1237.22	5838.16	1241.38	5837.71	1245.86	5837.45
1250.01	5837.42	1254.16	5837.53	1258.54	5837.76	1262.71	5837.38	1266.86	5837.38
1273.04	5837.67	1277.2	5837.8	1283.27	5837.86	1287.67	5837.73	1292.14	5837.35
1296.25	5837.14	1300.43	5837.37	1304.83	5837.89	1309.05	5838.47	1313.13	5838.8
1317.67	5838.94	1321.97	5838.9	1326.13	5838.65	1330.28	5838.14	1334.76	5837.34
1338.92	5837.46	1343.05	5837.6	1347.43	5837.83	1351.63	5838.4	1356.31	5838.26
1360.44	5838.63	1364.78	5837.7	1369.11	5838.16	1373.14	5838.81	1377.62	5838.32
1383.9	5838.12	1387.98	5837.6	1392.19	5837.6	1396.48	5837.71	1400.77	5837.83
1404.89	5836.73	1409.22	5836.71	1414.39	5836.61	1418.72	5837	1422.91	5836.96
1427.19	5836.84	1431.34	5836.67	1435.61	5837.07	1439.78	5836.63	1444.23	5836.64
1448.61	5836.66	1452.77	5836.74	1458.29	5836.76	1462.68	5836.99	1466.84	5837.12
1470.98	5837.3	1475.35	5837.66	1479.56	5837.54	1484.43	5837.4	1488.59	5837.54
1493.07	5837.75	1497.22	5838.68	1501.7	5838	1506.08	5837.79	1510.34	5838.52
1514.66	5840.05	1516.73	5841.94	1518.97	5843.79	1521.21	5845.41	1523.24	5846.56
1527.39	5847.24	1531.72	5847.01	1535.92	5846.41	1540.08	5845.2	1544.23	5846.56
1548.39	5846.6	1552.55	5845.59	1557.03	5846.85	1561.18	5846.99	1565.66	5847.1
1569.82	5847.63	1573.94	5848.16	1578.34	5848.84	1582.52	5848.15	1586.67	5848.86
1590.75	5847.91	1595	5848.11	1599.24	5848.55	1603.58	5849.75	1607.88	5850.03
1612.16	5848.65	1616.28	5849.91	1620.62	5849.32	1624.83	5848.63	1629.29	5849.29
1631.46	5850.62	1635.66	5851.4	1637.9	5850.26	1642.3	5849.28	1646.48	5849.16
1650.63	5850.04	1654.71	5851.77	1656.81	5853.25	1658.96	5854.48	1661.06	5855.77

1665.44 5857.04 1669.6 5857.54 1674.08 5857.61 1678.23 5857.73 1682.36 5858.08
1686.75 5858.39 1691 5858.48 1695.42 5858.27 1700.62 5858.21 1704.78 5857.95
1708.93 5857.88 1713.09 5857.75 1717.25 5858.51 1721.37 5858.59 1725.77 5858.93
1729.95 5858.68 1734.1 5859.02 1738.18 5859.22 1743.12 5859.25 1747.46 5859.26
1751.79 5859.75 1756.13 5860.04 1760.46 5859.7 1765.22 5859.81 1769.48 5859.95
1773.63 5860.19 1777.65 5860.42 1782.21 5862.14 1786.33 5861.9 1790.49 5860.55
1795.47 5860.42 1799.76 5860.64 1800 5860.64

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	975.59	.035	1045.98	.08

Bank Sta: Left	Right	Coeff Contr.	Expan.
975.59	1045.98	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5842.38	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.13	Wt. n-Val.	0.080	0.035
0.080				
W.S. Elev (ft)	5841.24	Reach Len. (ft)		
Crit W.S. (ft)	5841.24	Flow Area (sq ft)	667.04	289.08
1432.97				
E.G. Slope (ft/ft)	0.015322	Area (sq ft)	667.04	289.08
1432.97				
Q Total (cfs)	13500.00	Flow (cfs)	2573.11	4034.75
6892.14				
Top Width (ft)	840.59	Top Width (ft)	306.51	64.09
469.99				
Vel Total (ft/s)	5.65	Avg. Vel. (ft/s)	3.86	13.96
4.81				
Max Chl Dpth (ft)	8.71	Hydr. Depth (ft)	2.18	4.51
3.05				
Conv. Total (cfs)	109063.5	Conv. (cfs)	20787.6	32595.9
55680.1				
Length Wtd. (ft)		Wetted Per. (ft)	308.30	66.79
473.58				
Min Ch El (ft)	5832.53	Shear (lb/sq ft)	2.07	4.14
2.89				
Alpha	2.28	Stream Power (lb/ft s)	7.98	57.79
13.92				
Frctn Loss (ft)		Cum Volume (acre-ft)		
C & E Loss (ft)		Cum SA (acres)		

Warning: Divided flow computed for this cross-section.

SUMMARY OF MANNING'S N VALUES

River:LA PLATA RIVER

Reach	River Sta.	n1	n2	n3
LA PLATTA RIVER	1061.26	.08	.035	.08
LA PLATTA RIVER	947.67	.08	.035	.08

SUMMARY OF REACH LENGTHS

River: LA PLATA RIVER

Reach	River Sta.	Left	Channel	Right
LA PLATTA RIVER	1061.26	113.59	113.59	113.59
LA PLATTA RIVER	947.67			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: LA PLATA RIVER

Reach	River Sta.	Contr.	Expan.
LA PLATTA RIVER	1061.26	.1	.3
LA PLATTA RIVER	947.67	.1	.3

Post-Processing Service Based on RTX Technology

TrimbleRTX.com

Contributor:	sakura@sakuraeng.com
Reference Name:	BLAYLOCK.14O
Upload Date:	10/17/2017 22:24:29 UTC
Report Time Frame:	
Start Time:	10/17/2017 16:42:00 UTC
End Time:	10/17/2017 17:51:00 UTC
Observation File Type(s):	RINEX
Observation File(s):	BLAYLOCK.14O
Antenna:	
Name:	LEIGS15 NONE
Height:	1.072 m
Reference:	Bottom of antenna mount
Receiver Name:	LEICA GS15
Coordinate Systems:	NAD83 & ITRF2014
Tectonic Plate:	North America
Tectonic Plate Model:	MORVEL56
Processing Interval:	30 s

Statistics

# Total Obs	# Usable Obs	# Used Obs	Percent
139	139	135	97

Used Satellites

# Total Satellites:	20
GPS:	G02 G05 G12 G13 G15 G18 G20 G21 G25 G26 G29
GLONASS:	R01 R02 R08 R15 R16 R17 R18 R23 R24

Processing Results

NAD83 at Epoch 1997.0		
Coordinate	**Value**	**σ**
X	-1596739.873 m	0.064 m
Y	-4854713.555 m	0.023 m
Z	3806116.597 m	0.021 m
Latitude	36° 51' 41.69738" N	0.024 m
Longitude	108° 12' 22.67011" W	0.061 m
El. Height	1671.118 m	0.028 m

ITRF2014 at Epoch 2017.79		
Coordinate	**Value**	**σ**
X	-1596740.734 m	0.064 m
Y	-4854712.252 m	0.023 m
Z	3806116.399 m	0.021 m
Latitude	36° 51' 41.71110" N	0.024 m
Longitude	108° 12' 22.71955" W	0.061 m
El. Height	1670.224 m	0.028 m

Report Information

Trimble RTX Solution ID:	14279729
Solution Type:	Static
Software Version:	6.1.4.17185
Creation Date:	10/17/2017 22:24:43 UTC