DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

ELEVATION CERTIFICATE

IMPORTANT: FOLLOW THE INSTRUCTIONS ON PAGES 9-16

OMB Control Number: 1660-0008
Expiration: 11/30/2018

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

FORM INSURANCE COMPANY USE

A1. Building Owner's Name RICHARD W. LUOMA

Policy Number:

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
3 ROAD 4254

Company NAIC Number:

City NAVAJO DAM | State NM | Zip Code 87419

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
SAN JUAN RIVER ESTATES SUBDIVISION NO. 1, LOT 4 BLK 4.

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

A5. Latitude/Longitude: Lat. 36 48 09.93 Long. 107 41 47.15 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 9

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

a) Square footage of crawlspace or enclosure(s) 2124 sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade 0

c) Total net area of flood openings in A8.b 0 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
35045C / 0800	F	08/05/2010	08/05/2010	A	5669.65

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

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ○ Construction Drawings* ○ Building Under Construction* ◉ Finished Construction

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.

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

Benchmark Utilized: GPS / OPUS Vertical Datum: NAVD88

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)	5672	45	◉ feet ○ meters
b) Top of the next higher floor	5676	32	◉ 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)	5674	68	◉ feet ○ meters
f) Lowest adjacent (finished) grade next to building (LAG)	5673	81	◉ feet ○ meters
g) Highest adjacent (finished) grade next to building (HAG)	5674	78	◉ feet ○ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	5676	22	◉ feet ○ meters

ELEVATION CERTIFICATE

OMB Control Number: 1660-0008
Expiration: 11/30/2018

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.*

◯ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor?
◉ Yes ◯ No

Certifier's Name	License Number
PAUL F. MARTIN	8548

Title	Company Name	State	Zip Code
LICENSED ENGINEER	SAKURA ENGINEERING & SURVEYING		
Address: 125 W. MAIN, SUITE A	City: FARMINGTON	NM	87401
Signature: Paul F Martin	Date: 6-17-16	Telephone: 505-564-2139	

PAUL FRANCIS MARTIN NEW MEXICO 8548 REGISTERED PROFESSIONAL ENGINEER PLACE SEAL HERE

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

Comments (including type of equipment and location , per C2(e), if applicable)" ELEVATION FOR C2.e IS FOR A OUTSIDE AIR CONDITION UNIT NEXT TO THE EAST WALL OF SUBJECT HOUSE. LAG IS THE SW CORNER OF HOUSE. HAG IS THE NE CORNER OF HOUSE. HOT WATER HEATER INSIDE HOUSE, ELEVATION IS 5676.32

Signature Paul F Martin Date 6-17-16

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 8 -9 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.

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

☐ Check here if attachments.

BUILDING PHOTOGRAPHS

See instructions for Item A6

OMB Control Number: 1660-0008
Expiration: 11/30/2018

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. 3 ROAD 4254			Policy Number:
City NAVAJO DAM	State NM	Zip Code 87419	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.

FRONT

RIGHT

BUILDING PHOTOGRAPHS

Continuation Page

OMB Control Number: 1660-0008
Expiration: 11/30/2018

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FORM INSURANCE COMPANY USE
Building Street Address (including Apt., Unit,Suite, and/or Bldg. No.) or P.O.Route and Box No. 3 ROAD 4254			Policy Number:
City NAVAJO DAM	State NM	Zip Code 87419	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.

REAR

LEFT

HEC-RAS Version 4.1.0 Jan 2010
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: 3 ROAD 4254 NAVAJO DAM
Project File : 3ROAD4254NAVAJO.prj
Run Date and Time: 6/15/2016 4:18:36 PM

Project in English units

****

PLAN DATA

Plan Title: 3 ROAD 4254 NAVAJO DAM
Plan File : z:\A. Project File\A. Projects\F. FEMA Elevation Certificates (FECs)\2016\3ROAD4254NAVAJO.p01

Geometry Title: 3 ROAD 4254 NAVAJO DAM
Geometry File : z:\A. Project File\A. Projects\F. FEMA Elevation Certificates (FECs)\2016\3ROAD4254NAVAJO.g01

Flow Title : 3 ROAD 4254 NAVAJO DAM
Flow File : z:\A. Project File\A. Projects\F. FEMA Elevation Certificates (FECs)\2016\3ROAD4254NAVAJO.f01

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: 3 ROAD 4254 NAVAJO DAM
Flow File : z:\A. Project File\A. Projects\F. FEMA Elevation Certificates (FECs)\2016\3ROAD4254NAVAJO.f01

Flow Data (cfs)

River	Reach	RS	PF 1
SAN JUAN	1	150	18908
SAN JUAN	1	100	18908

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
SAN JUAN	1	PF 1		Critical

GEOMETRY DATA

Geometry Title: 3 ROAD 4254 NAVAJO DAM
Geometry File : z:\A. Project File\A. Projects\F. FEMA Elevation Certificates (FECs)\2016\3ROAD4254NAVAJO.g01

CROSS SECTION

RIVER: SAN JUAN
REACH: 1 RS: 150

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5677.88	36.7	5676.44	96	5675.48	223.2	5674.13	318.7	5674.18
436.8	5674.25	554.8	5674.3	566.9	5674.6	583.8	5674.26	588.6	5673.73
598.4	5673.2	805.8	5667.88	826.2	5664.02	848.8	5661.75	1035.4	5661.7
1060	5663.98	1084	5668.57	1099.3	5675.55	1117.2	5680.05	1135.5	5685.83

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	805.8	.03	1135.5	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
805.8	1135.5	50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5671.08	Element	Left OB	Channel
Vel Head (ft)	1.43	Wt. n-Val.	0.060	0.030

W.S. Elev (ft)	5669.65	Reach Len. (ft)	50.00	50.00	50.00
Crit W.S. (ft)	5667.81	Flow Area (sq ft)	60.83	1955.98	
E.G. Slope (ft/ft)	0.002855	Area (sq ft)	60.83	1955.98	
Q Total (cfs)	18908.00	Flow (cfs)	74.08	18833.92	
Top Width (ft)	349.43	Top Width (ft)	68.87	280.56	
Vel Total (ft/s)	9.38	Avg. Vel. (ft/s)	1.22	9.63	
Max Chl Dpth (ft)	7.95	Hydr. Depth (ft)	0.88	6.97	
Conv. Total (cfs)	353899.7	Conv. (cfs)	1386.6	352513.1	
Length Wtd. (ft)	50.00	Wetted Per. (ft)	68.89	281.81	
Min Ch El (ft)	5661.70	Shear (lb/sq ft)	0.16	1.24	
Alpha	1.05	Stream Power (lb/ft s)	1135.50	0.00	
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	0.03	1.93	
C & E Loss (ft)	0.13	Cum SA (acres)	0.04	0.31	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: SAN JUAN
REACH: 1 RS: 100

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5676.07	16	5674.92	34	5674.7	73	5674.23	155.2	5674.05
182.5	5673.15	521.5	5673.06	528.6	5672.96	537.6	5674.17	558	5673.88
563.6	5672.96	571.9	5673.48	779.7	5672.58	788	5671.76	795.7	5666.28
803.7	5663.95	816.6	5661.74	999	5661.73	1033	5664.5	1054	5669.43
1087	5677.39	1126.3	5693.98						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	779.7	.03	1126.3	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
779.7	1126.3	50	50	50	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5670.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.78	Wt. n-Val.		0.030	
W.S. Elev (ft)	5667.95	Reach Len. (ft)			
Crit W.S. (ft)	5667.95	Flow Area (sq ft)		1412.76	
E.G. Slope (ft/ft)	0.007482	Area (sq ft)		1412.76	
Q Total (cfs)	18908.00	Flow (cfs)		18908.00	
Top Width (ft)	254.32	Top Width (ft)		254.32	
Vel Total (ft/s)	13.38	Avg. Vel. (ft/s)		13.38	
Max Chl Dpth (ft)	6.22	Hydr. Depth (ft)		5.56	
Conv. Total (cfs)	218588.5	Conv. (cfs)		218588.5	
Length Wtd. (ft)		Wetted Per. (ft)		255.88	
Min Ch El (ft)	5661.73	Shear (lb/sq ft)		2.58	
Alpha	1.00	Stream Power (lb/ft s)	1126.30	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:SAN JUAN

Reach	River Sta.	n1	n2	n3
1	150	.06	.03	.06
1	100	.06	.03	.06

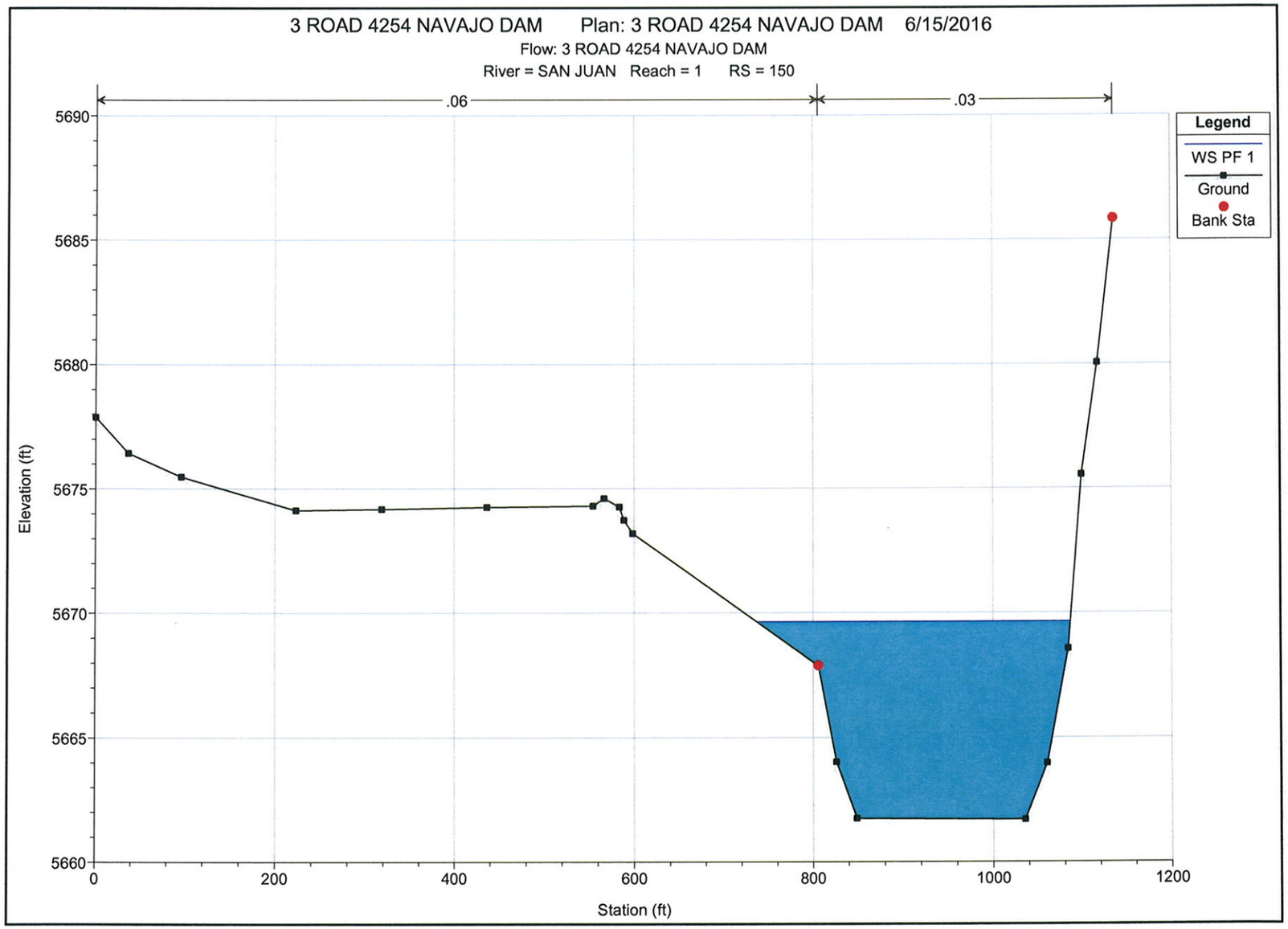
SUMMARY OF REACH LENGTHS

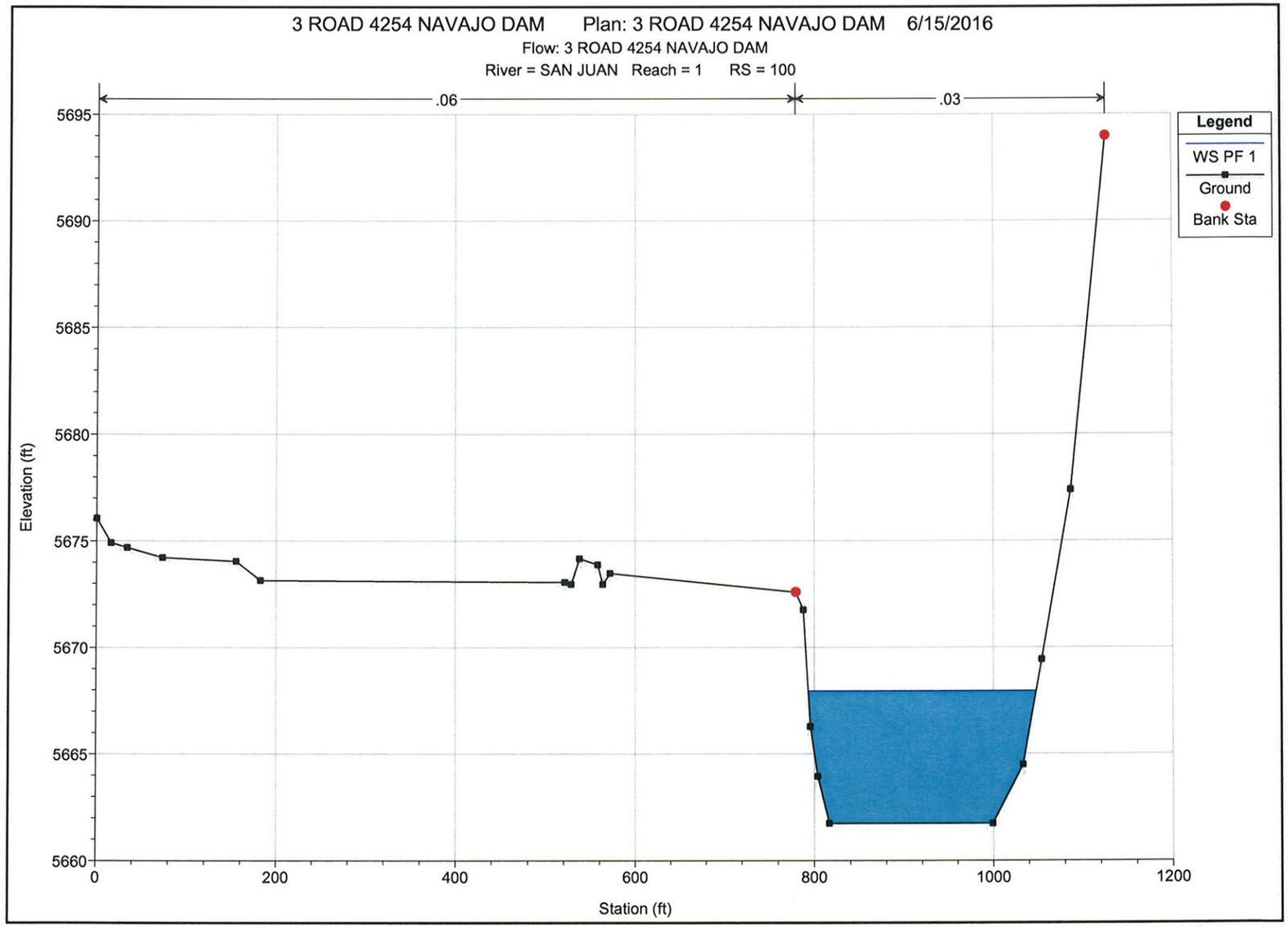
River: SAN JUAN

Reach	River Sta.	Left	Channel	Right
1	150	50	50	50
1	100	50	50	50

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: SAN JUAN

Reach	River Sta.	Contr.	Expan.
1	150	.1	.3
1	100	.1	.3


3 ROAD 4254 NAVAJO DAM Plan: 3 ROAD 4254 NAVAJO DAM 6/15/2016
Flow: 3 ROAD 4254 NAVAJO DAM
River = SAN JUAN Reach = 1 RS = 150
.06
.03
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
5690
5685
5680
5675
5670
5665
5660
0
200
400
600
800
1000
1200
Station (ft)


3 ROAD 4254 NAVAJO DAM Plan: 3 ROAD 4254 NAVAJO DAM 6/15/2016
Flow: 3 ROAD 4254 NAVAJO DAM
River = SAN JUAN Reach = 1 RS = 100
.06
.03
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
5695
5690
5685
5680
5675
5670
5665
5660
0
200
400
600
800
1000
1200
Station (ft)