FEMA

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

AND

INSTRUCTIONS

2019 EDITION

OMB No. 1660-0008
Expiration Date: November 30, 2022

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, 500 C Street SW, Washington, DC 20742, 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
Franklin Nelson LLC

Policy Number:

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
19 Road 4255

Company NAIC Number:

City	State	ZIP Code
Navajo Dam	New Mexico	87419

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Parcel #22047176195469 Account R0071102, SAN JUAN RIVER ESTATES NO 1 LOT 5 BLOCK 4 BK.1622 PG.876

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

A5. Latitude/Longitude: Lat. 36°48'7.43"N Long. 107°41'47.59"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 9

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

a) Square footage of crawlspace or enclosure(s) 1850.00 sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade 10

c) Total net area of flood openings in A8.b 420.00 sq in

d) Engineered flood openings? ☐ Yes ☒ No

A9. For a building with an attached garage:

a) Square footage of attached garage 900.00 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)
35045C0800	F	08-05-2010	08-05-2010	A	5667.07

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

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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. 19 Road 4255			Policy Number:
City Navajo Dam	State New Mexico	ZIP Code 87419	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)	5673.3	☒ feet	☐ meters
b) Top of the next higher floor	5675.5	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	N/A	☐ feet	☐ meters
d) Attached garage (top of slab)	5675.0	☒ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	5674.6	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	5674.6	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	5674.8	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support		☐ 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 Scott A. Martin	License Number 24570	
Title Engineer		
Company Name Sakura Engineering and Surveying		
Address 125 West Main St.		
City Farmington	State New Mexico	ZIP Code 87401

Signature	Date	Telephone	Ext.
Scott A Martin	04-19-2022	(505) 564-2139	2

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)
Machinery is propane tank

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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. 19 Road 4255			Policy Number:
City Navajo Dam	State New Mexico	ZIP Code 87419	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 1.1 ☒ feet ☐ meters ☐ above or ☒ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is 1.3 ☐ 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 0.7 ☒ feet ☐ meters ☒ above or ☐ below the HAG.

E3. Attached garage (top of slab) is 0.2 ☐ feet ☐ meters ☒ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is 0.2 ☒ 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
Scott A Martin

Address	City	State	ZIP Code
125 West Main St.	Farmington	New Mexico	87401

Signature	Date	Telephone
Scott A Martin	04-19-2022	(505) 320-6767

Comments

☐ Check here if attachments.

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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. 19 Road 4255			Policy Number:
City Navajo Dam	State New Mexico	ZIP Code 87419	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. 19 Road 4255			Policy Number:
City Navajo Dam	State New Mexico	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.

Photo One

Photo One Caption West Side (Date Taken 02-11-2022) Clear Photo One

Photo Two

Photo Two Caption East Side (Date Taken 02-11-2022) Clear Photo Two

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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. 19 Road 4255			Policy Number:
City Navajo Dam	State New Mexico	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.

Photo Three

Photo Three

Photo Three Caption

Clear Photo Three

Photo Four

Photo Four

Photo Four Caption

Clear Photo Four

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Instructions for Completing the Elevation Certificate

The Elevation Certificate is to be completed by a land surveyor, engineer, or architect who is authorized by law to certify elevation information when elevation information is required for Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, or AR/AO. Community officials who are authorized by law or ordinance to provide floodplain management information may also complete this form. For Zones AO and A (without BFE), a community official, a property owner, or an owner's representative may provide information on this certificate, unless the elevations are intended for use in supporting a request for a LOMA or LOMR-F. Certified elevations must be included if the purpose of completing the Elevation Certificate is to obtain a LOMA or LOMR-F.

The property owner, the owner's representative, or local official who is authorized by law to administer the community floodplain ordinance can complete Section A and Section B. The partially completed form can then be given to the land surveyor, engineer, or architect to complete Section C. The land surveyor, engineer, or architect should verify the information provided by the property owner or owner's representative to ensure that this certificate is complete.

In Puerto Rico only, elevations for building information and flood hazard information may be entered in meters.

SECTION A – PROPERTY INFORMATION

Items A1–A4. This section identifies the building, its location, and its owner. Enter the name(s) of the building owner(s), the building's complete street address, and the lot and block numbers. If the building's address is different from the owner's address, enter the address of the building being certified. If the address is a rural route or a Post Office box number, enter the lot and block numbers, the tax parcel number, the legal description, or an abbreviated location description based on distance and direction from a fixed point of reference. For the purposes of this certificate, "building" means both a building and a manufactured (mobile) home.

A map may be attached to this certificate to show the location of the building on the property. A tax map, FIRM, or detailed community map is appropriate. If no map is available, provide a sketch of the property location, and the location of the building on the property. Include appropriate landmarks such as nearby roads, intersections, and bodies of water. For building use, indicate whether the building is residential, non-residential, an addition to an existing residential or non-residential building, an accessory building (e.g., garage), or other type of structure. Use the Comments area of the appropriate section if needed, or attach additional comments.

Item A5. Provide latitude and longitude coordinates for the center of the front of the building. Use either decimal degrees (e.g., 39.5043°, −110.7585°) or degrees, minutes, seconds (e.g., 39° 30' 15.5", −110° 45' 30.7") format. If decimal degrees are used, provide coordinates to at least 5 decimal places or better. When using degrees, minutes, seconds, provide seconds to at least 1 decimal place or better. The latitude and longitude coordinates must be accurate within 66 feet. When the latitude and longitude are provided by a surveyor, check the "Yes" box in Section D and indicate the method used to determine the latitude and longitude in the Comments area of Section D. If the Elevation Certificate is being certified by other than a licensed surveyor, engineer, or architect, this information is not required. Provide the type of datum used to obtain the latitude and longitude. FEMA prefers the use of NAD 1983.

Item A6. If the Elevation Certificate is being used to obtain flood insurance through the NFIP, the certifier must provide at least 2 photographs showing the front and rear of the building taken within 90 days from the date of certification. The photographs must be taken with views confirming the building description and diagram number provided in Section A. To the extent possible, these photographs should show the entire building including foundation. If the building has split-level or multi-level areas, provide at least 2 additional photographs showing side views of the building. In addition, when applicable, provide a photograph of the foundation showing a representative example of the flood openings or vents. All photographs must be in color and measure at least 3" × 3". Digital photographs are acceptable.

Item A7. Select the diagram on pages 7–9 that best represents the building. Then enter the diagram number and use the diagram to identify and determine the appropriate elevations requested in Items C2.a–h. If you are unsure of the correct diagram, select the diagram that most closely resembles the building being certified.

Item A8.a. Provide the square footage of the crawlspace or enclosure(s) below the lowest elevated floor of an elevated building with or without permanent flood openings. Take the measurement from the outside of the crawlspace or enclosure(s). Examples of elevated buildings constructed with crawlspace and enclosure(s) are shown in Diagrams 6–9

on pages 8–9. Diagrams 2A, 2B, 4, and 9 should be used for a building constructed with a crawlspace floor that is below the exterior grade on all sides.

Items A8.b–d. Enter in Item A8.b the number of permanent flood openings in the crawlspace or enclosure(s) that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. (A permanent flood opening is a flood vent or other opening that allows the free passage of water automatically in both directions without human intervention.) If the interior grade elevation is used, note this in the Comments area of Section D. Estimate the total net area of all such permanent flood openings in square inches, excluding any bars, louvers, or other covers of the permanent flood openings, and enter the total in Item A8.c. If the net area cannot be reasonably estimated, provide the size of the flood openings without consideration of any covers and indicate in the Comments area the type of cover that exists in the flood openings. Indicate in Item A8.d whether the flood openings are engineered. If applicable, attach a copy of the Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES), if you have it. If the crawlspace or enclosure(s) have no permanent flood openings, or if the openings are not within 1.0 foot above adjacent grade, enter "N/A" for not applicable in Items A8.b–c.

Item A9.a. Provide the square footage of the attached garage with or without permanent flood openings. Take the measurement from the outside of the garage.

Items A9.b–d. Enter in Item A9.b the number of permanent flood openings in the attached garage that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. (A permanent flood opening is a flood vent or other opening that allows the free passage of water automatically in both directions without human intervention.) If the interior grade elevation is used, note this in the Comments area of Section D. This includes any openings that are in the garage door that are no higher than 1.0 foot above the adjacent grade. Estimate the total net area of all such permanent flood openings in square inches and enter the total in Item A9.c. If the net area cannot be reasonably estimated, provide the size of the flood openings without consideration of any covers and indicate in the Comments area the type of cover that exists in the flood openings. Indicate in Item A9.d whether the flood openings are engineered. If applicable, attach a copy of the Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES), if you have it. If the garage has no permanent flood openings, or if the openings are not within 1.0 foot above adjacent grade, enter "N/A" for not applicable in Items A9.b–c.

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Complete the Elevation Certificate on the basis of the FIRM in effect at the time of the certification.

The information for Section B is obtained by reviewing the FIRM panel that includes the building's location. Information about the current FIRM is available from the Federal Emergency Management Agency (FEMA) by calling 1-800-358-9616. If a Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR-F) has been issued by FEMA, please provide the letter date and case number in the Comments area of Section D or Section G, as appropriate.

For a building in an area that has been annexed by one community but is shown on another community's FIRM, enter the community name and 6-digit number of the annexing community in Item B1, the name of the county or new county, if necessary, in Item B2, and the FIRM index date for the annexing community in Item B6. Enter information from the actual FIRM panel that shows the building location, even if it is the FIRM for the previous jurisdiction, in Items B4, B5, B7, B8, and B9.

If the map in effect at the time of the building's construction was other than the current FIRM, and you have the past map information pertaining to the building, provide the information in the Comments area of Section D.

Item B1. NFIP Community Name & Community Number. Enter the complete name of the community in which the building is located and the associated 6-digit community number. For a newly incorporated community, use the name and 6-digit number of the new community. Under the NFIP, a "community" is any State or area or political subdivision thereof, or any Indian tribe or authorized native organization, that has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction. To determine the current community number, see the NFIP *Community Status Book*, available on FEMA's web site at https://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book, or call 1-800-358-9616.

Item B2. County Name. Enter the name of the county or counties in which the community is located. For an unincorporated area of a county, enter "unincorporated area." For an independent city, enter "independent city."

Item B3. State. Enter the 2-letter state abbreviation (for example, VA, TX, CA).

Items B4–B5. Map/Panel Number and Suffix. Enter the 10-character "Map Number" or "Community Panel Number" shown on the FIRM where the building or manufactured (mobile) home is located. For maps in a county-wide format, the sixth character of the "Map Number" is the letter "C" followed by a 4-digit map number. For maps not in a county-wide format, enter the "Community Panel Number" shown on the FIRM.

Item B6. FIRM Index Date. Enter the effective date or the map revised date shown on the FIRM Index.

Item B7. FIRM Panel Effective/Revised Date. Enter the map effective date or the map revised date shown on the FIRM panel. This will be the latest of all dates shown on the map. The current FIRM panel effective date can be determined by calling 1-800-358-9616.

Item B8. Flood Zone(s). Enter the flood zone, or flood zones, in which the building is located. All flood zones containing the letter "A" or "V" are considered Special Flood Hazard Areas. The flood zones are A, AE, A1–A30, V, VE, V1–V30, AH, AO, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, and AR/AO. Each flood zone is defined in the legend of the FIRM panel on which it appears.

Item B9. Base Flood Elevation(s). Using the appropriate Flood Insurance Study (FIS) Profile, Floodway Data Table, or FIRM panel, locate the property and enter the BFE (or base flood depth) of the building site. If the building is located in more than 1 flood zone in Item B8, list all appropriate BFEs in Item B9. BFEs are shown on a FIRM or FIS Profile for Zones A1–A30, AE, AH, V1–V30, VE, AR, AR/A, AR/AE, AR/A1–A30, AR/AH, and AR/AO; flood depth numbers are shown for Zone AO. Use the AR BFE if the building is located in any of Zones AR/A, AR/AE, AR/A1–A30, AR/AH, or AR/AO. In A or V zones where BFEs are not provided on the FIRM, BFEs may be available from another source. For example, the community may have established BFEs or obtained BFE data from other sources for the building site. For subdivisions and other developments of more than 50 lots or 5 acres, establishment of BFEs is required by the community's floodplain management ordinance. If a BFE is obtained from another source, enter the BFE in Item B9. In an A Zone where BFEs are not available, complete Section E and enter N/A for Section B, Item B9. Enter the BFE to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico).

Item B10. Indicate the source of the BFE that you entered in Item B9. If the BFE is from a source other than FIS Profile, FIRM, or community, describe the source of the BFE.

Item B11. Indicate the elevation datum to which the elevations on the applicable FIRM are referenced as shown on the map legend. The vertical datum is shown in the Map Legend and/or the Notes to Users on the FIRM.

Item B12. Indicate whether the building is located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA). (OPAs are portions of coastal barriers that are owned by Federal, State, or local governments or by certain non-profit organizations and used primarily for natural resources protection.) Federal flood insurance is prohibited in designated CBRS areas or OPAs for buildings or manufactured (mobile) homes built or substantially improved after the date of the CBRS or OPA designation. For the first CBRS designations, that date is October 1, 1983. Information about CBRS areas and OPAs may be obtained on the FEMA web site at https://www.fema.gov/national-flood-insurance-program/coastal-barrier-resources-system.

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

Complete Section C if the building is located in any of Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, or AR/AO, or if this certificate is being used to support a request for a LOMA or LOMR-F. If the building is located in Zone AO or Zone A (without BFE), complete Section E instead. To ensure that all required elevations are obtained, it may be necessary to enter the building (for instance, if the building has a basement or sunken living room, split-level construction, or machinery and equipment).

Surveyors may not be able to gain access to some crawlspaces to shoot the elevation of the crawlspace floor. If access to the crawlspace is limited or cannot be gained, follow one of these procedures.

- Use a yardstick or tape measure to measure the height from the floor of the crawlspace to the "next higher floor," and then subtract the crawlspace height from the elevation of the "next higher floor." If there is no access to the

crawlspace, use the exterior grade next to the structure to measure the height of the crawlspace to the "next higher floor."

- Contact the local floodplain administrator of the community in which the building is located. The community may have documentation of the elevation of the crawlspace floor as part of the permit issued for the building.
- If the property owner has documentation or knows the height of the crawlspace floor to the next higher floor, try to verify this by looking inside the crawlspace through any openings or vents.

In all 3 cases, use the Comments area of Section D to provide the elevation and a brief description of how the elevation was obtained.

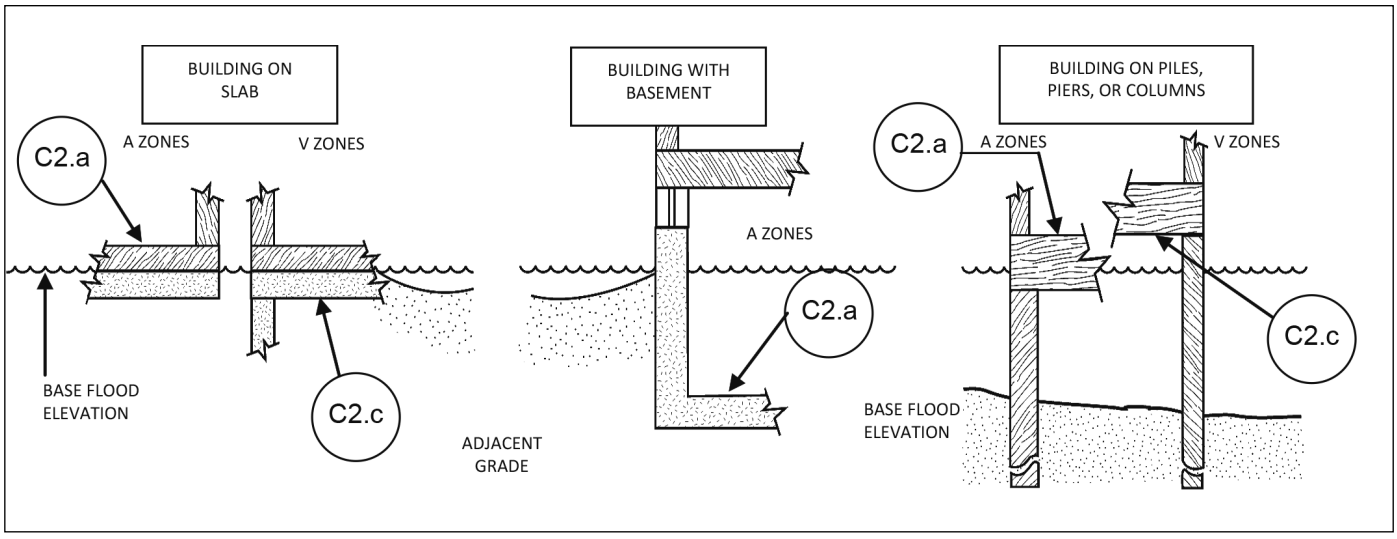
Item C1. Indicate whether the elevations to be entered in this section are based on construction drawings, a building under construction, or finished construction. For either of the first 2 choices, a post-construction Elevation Certificate will be required when construction is complete. If the building is under construction, include only those elevations that can be surveyed in Items C2.a–h. Use the Comments area of Section D to provide elevations obtained from the construction plans or drawings. Select "Finished Construction" only when all machinery and/or equipment such as furnaces, hot water heaters, heat pumps, air conditioners, and elevators and their associated equipment have been installed and the grading around the building is completed.

Item C2. A field survey is required for Items C2.a–h. Most control networks will assign a unique identifier for each benchmark. For example, the National Geodetic Survey uses the Permanent Identifier (PID). For the benchmark utilized, provide the PID or other unique identifier assigned by the maintainer of the benchmark. For GPS survey, indicate the benchmark used for the base station, the Continuously Operating Reference Stations (CORS) sites used for an On-line Positioning User Service (OPUS) solution (also attach the OPUS report), or the name of the Real Time Network used.

Also provide the vertical datum for the benchmark elevation. All elevations for the certificate, including the elevations for Items C2.a–h, must use the same datum on which the BFE is based. Show the conversion from the field survey datum used if it differs from the datum used for the BFE entered in Item B9 and indicate the conversion software used. Show the datum conversion, if applicable, in the Comments area of Section D.

For property experiencing ground subsidence, the most recent reference mark elevations must be used for determining building elevations. However, when subsidence is involved, the BFE should not be adjusted. Enter elevations in Items C2.a–h to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico).

Items C2.a–d. Enter the building elevations (excluding the attached garage) indicated by the selected building diagram (Item A7) in Items C2.a–c. If there is an attached garage, enter the elevation for top of attached garage slab in Item C2.d. (Because elevation for top of attached garage slab is self-explanatory, attached garages are not illustrated in the diagrams.) If the building is located in a V zone on the FIRM, complete Item C2.c. If the flood zone cannot be determined, enter elevations for all of Items C2.a–h. For buildings in A zones, elevations a, b, d, and e should be measured at the top of the floor. For buildings in V zones, elevation c must be measured at the bottom of the lowest horizontal structural member of the floor (see drawing below). For buildings elevated on a crawlspace, Diagrams 8 and 9, enter the elevation



of the top of the crawlspace floor in Item C2.a, whether or not the crawlspace has permanent flood openings (flood vents). *If any item does not apply to the building, enter "N/A" for not applicable.*

Item C2.e. Enter the lowest platform elevation of at least 1 of the following machinery and equipment items: elevators and their associated equipment, furnaces, hot water heaters, heat pumps, and air conditioners in an attached garage or enclosure or on an open utility platform that provides utility services for the building. Note that elevations for these specific machinery and equipment items are required in order to rate the building for flood insurance. Local floodplain management officials are required to ensure that all machinery and equipment servicing the building are protected from flooding. Thus, local officials may require that elevation information for all machinery and equipment, including ductwork, be documented on the Elevation Certificate. If the machinery and/or equipment is mounted to a wall, pile, etc., enter the platform elevation of the machinery and/or equipment. Indicate machinery/equipment type and its general location, e.g., on floor inside garage or on platform affixed to exterior wall, in the Comments area of Section D or Section G, as appropriate. *If this item does not apply to the building, enter "N/A" for not applicable.*

Items C2.f–g. Enter the elevation of the ground, sidewalk, or patio slab immediately next to the building. For Zone AO, use the natural grade elevation, if available. This measurement must be to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico) if this certificate is being used to support a request for a LOMA or LOMR-F.

Item C2.h. Enter the lowest grade elevation at the deck support or stairs. For Zone AO, use the natural grade elevation, if available. This measurement must be to the nearest tenth of a foot (nearest tenth of a meter, in Puerto Rico) if this certificate is being used to support a request for a LOMA or LOMR-F.

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

Complete as indicated. This section of the Elevation Certificate may be signed by only a land surveyor, engineer, or architect who is authorized by law to certify elevation information. Place your license number, your seal (as allowed by the State licensing board), your signature, and the date in the box in Section D. You are certifying that the information on this certificate represents your best efforts to interpret the data available and that you understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001. Use the Comments area of Section D to provide datum, elevation, openings, or other relevant information not specified elsewhere on the certificate.

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

Complete Section E if the building is located in Zone AO or Zone A (without BFE). Otherwise, complete Section C instead. Explain in the Section F Comments area if the measurement provided under Items E1–E4 is based on the "natural grade."

Items E1.a and b. Enter in Item E1.a the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico) of the top of the bottom floor (as indicated in the applicable diagram) above or below the highest adjacent grade (HAG). Enter in Item E1.b the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico) of the top of the bottom floor (as indicated in the applicable diagram) above or below the lowest adjacent grade (LAG). For buildings in Zone AO, the community's floodplain management ordinance requires the lowest floor of the building be elevated above the highest adjacent grade at least as high as the depth number on the FIRM. Buildings in Zone A (without BFE) may qualify for a lower insurance rate if an engineered BFE is developed at the site.

Item E2. For Building Diagrams 6–9 with permanent flood openings (see pages 8–9), enter the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico) of the next higher floor or elevated floor (as indicated in the applicable diagram) above or below the highest adjacent grade (HAG).

Item E3. Enter the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico), in relation to the highest adjacent grade next to the building, for the top of attached garage slab. (Because elevation for top of attached garage slab is self-explanatory, attached garages are not illustrated in the diagrams.) *If this item does not apply to the building, enter "N/A" for not applicable.*

Item E4. Enter the height to the nearest tenth of a foot (tenth of a meter in Puerto Rico), in relation to the highest adjacent grade next to the building, of the platform elevation that supports the machinery and/or equipment servicing the building. Indicate machinery/equipment type in the Comments area of Section F. *If this item does not apply to the building, enter "N/A" for not applicable.*

Item E5. For those communities where this base flood depth is not available, the community will need to determine whether the top of the bottom floor is elevated in accordance with the community's floodplain management ordinance.

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

Complete as indicated. This section is provided for certification of measurements taken by a property owner or property owner's representative when responding to Sections A, B, and E. The address entered in this section must be the actual mailing address of the property owner or property owner's representative who provided the information on the certificate.

SECTION G – COMMUNITY INFORMATION (OPTIONAL)

Complete as indicated. The community 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. Section C may be filled in by the local official as provided in the instructions below for Item G1. If the authorized community official completes Sections C, E, or G, complete the appropriate item(s) and sign this section.

Check **Item G1** if Section C is completed with elevation data 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 of the elevation data and the date obtained in the Comments area of Section G. If you are both a community official and a licensed land surveyor, engineer, or architect authorized by law to certify elevation information, and you performed the actual survey for a building in Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/A1–A30, AR/AE, AR/AH, or AR/AO, you must also complete Section D.

Check **Item G2** if information is entered in Section E by the community for a building in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

Check **Item G3** if the information in Items G4–G10 has been completed for community floodplain management purposes to document the as-built lowest floor elevation of the building. Section C of the Elevation Certificate records the elevation of various building components but does not determine the lowest floor of the building or whether the building, as constructed, complies with the community's floodplain management ordinance. This must be done by the community. Items G4–G10 provide a way to document these determinations.

Item G4. Permit Number. Enter the permit number or other identifier to key the Elevation Certificate to the permit issued for the building.

Item G5. Date Permit Issued. Enter the date the permit was issued for the building.

Item G6. Date Certificate of Compliance/Occupancy Issued. Enter the date that the Certificate of Compliance or Occupancy or similar written official documentation of as-built lowest floor elevation was issued by the community as evidence that all work authorized by the floodplain development permit has been completed in accordance with the community's floodplain management laws or ordinances.

Item G7. New Construction or Substantial Improvement. Check the applicable box. "Substantial Improvement" means any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the start of construction of the improvement. The term includes buildings that have incurred substantial damage, regardless of the actual repair work performed.

Item G8. As-built lowest floor elevation. Enter the elevation of the lowest floor (including basement) when the construction of the building is completed and a final inspection has been made to confirm that the building is built in accordance with the permit, the approved plans, and the community's floodplain management laws or ordinances. Indicate the elevation datum used.

Item G9. BFE. Using the appropriate FIRM panel, FIS Profile, or other data source, locate the property and enter the BFE (or base flood depth) of the building site. Indicate the elevation datum used.

Item G10. Community's design flood elevation. Enter the elevation (including freeboard above the BFE) to which the community requires the lowest floor to be elevated. Indicate the elevation datum used.

Enter your name, title, and telephone number, and the name of the community. Sign and enter the date in the appropriate blanks.

Building Diagrams

The following diagrams illustrate various types of buildings. Compare the features of the building being certified with the features shown in the diagrams and select the diagram most applicable. Enter the diagram number in Item A7, the square footage of crawlspace or enclosure(s) and the area of flood openings in square inches in Items A8.a–c, the square footage of attached garage and the area of flood openings in square inches in Items A9.a–c, and the elevations in Items C2.a–h.

In A zones, the floor elevation is taken at the top finished surface of the floor indicated; in V zones, the floor elevation is taken at the bottom of the lowest horizontal structural member (see drawing in instructions for Section C).

DIAGRAM 1A

All slab-on-grade single- and multiple-floor buildings (other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least 1 side.*

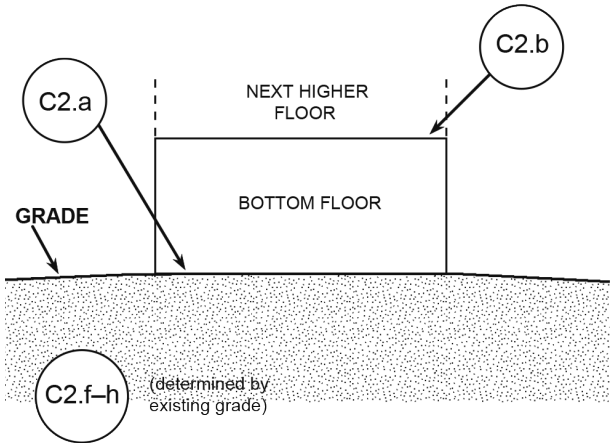


DIAGRAM 1B

All raised-slab-on-grade or slab-on-stem-wall-with-fill single- and multiple-floor buildings (other than split-level), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least 1 side.*

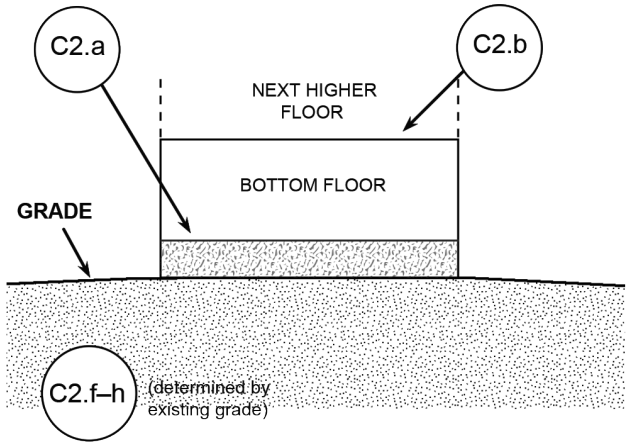


DIAGRAM 2A

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

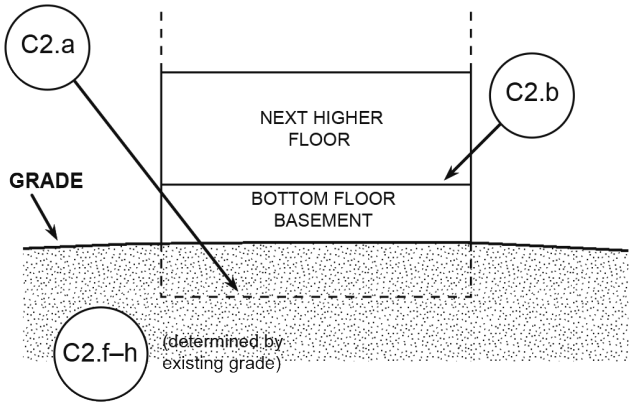
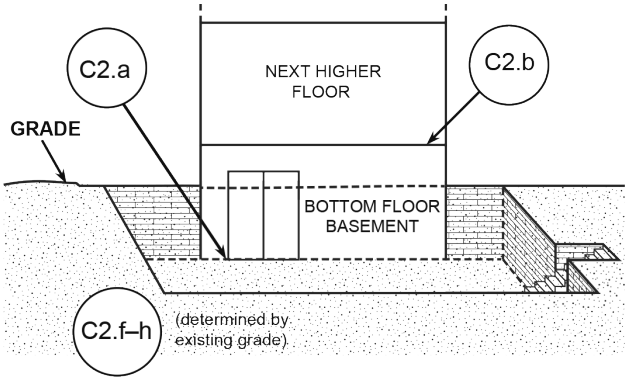


DIAGRAM 2B

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides; most of the height of the walls is below ground level on all sides; and the door and area of egress are also below ground level on all sides.*



* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

Building Diagrams

DIAGRAM 3

All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (excluding garage) is at or above ground level (grade) on at least 1 side.*

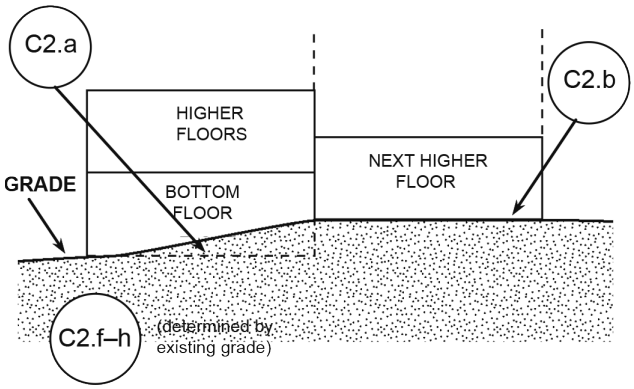


DIAGRAM 4

All split-level buildings (other than slab-on-grade), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

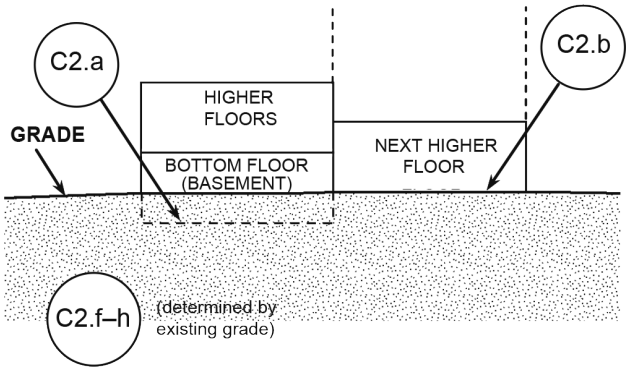


DIAGRAM 5

All buildings elevated on piers, posts, piles, columns, or parallel shear walls. No obstructions below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is open, with no obstruction to flow of floodwaters (open lattice work and/or insect screening is permissible).

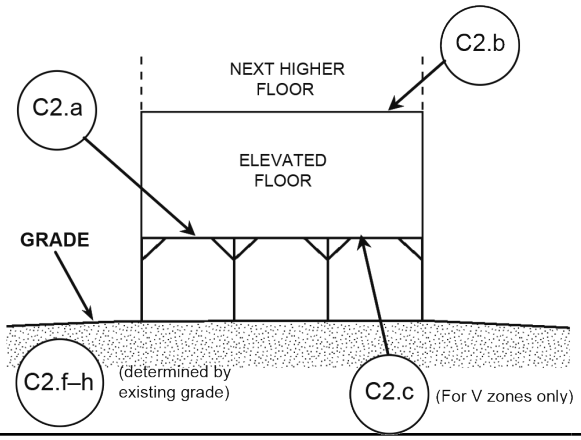
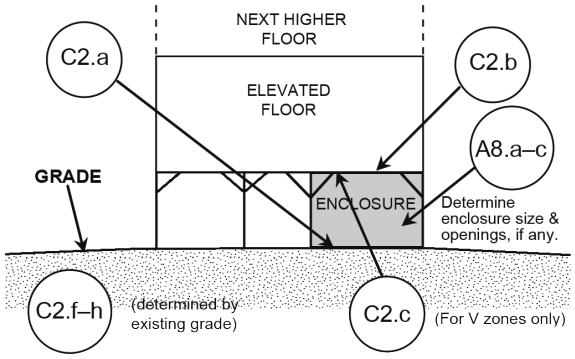


DIAGRAM 6

All buildings elevated on piers, posts, piles, columns, or parallel shear walls with full or partial enclosure below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.



* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

** An "opening" is a permanent opening that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of 2 openings is required for enclosures or crawlspaces. The openings shall provide a total net area of not less than 1 square inch for every square foot of area enclosed, excluding any bars, louvers, or other covers of the opening. Alternatively, an Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES) must be submitted to document that the design of the openings will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening; openings may be installed in doors. Openings shall be on at least 2 sides of the enclosed area. If a building has more than 1 enclosed area, each area must have openings to allow floodwater to directly enter. The bottom of the openings must be no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. For more guidance on openings, see NFIP Technical Bulletin 1.

Building Diagrams

DIAGRAM 7

All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least 1 side is at or above grade. The principal use of this building is located in the elevated floors of the building.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.

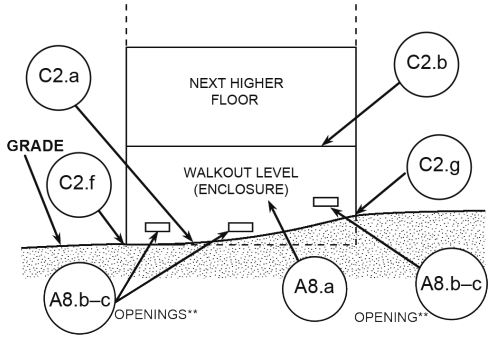


DIAGRAM 8

All buildings elevated on a crawlspace with the floor of the crawlspace at or above grade on at least 1 side, with or without an attached garage.

Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the crawlspace is with or without openings** present in the walls of the crawlspace. Indicate information about crawlspace size and openings in Section A – Property Information.

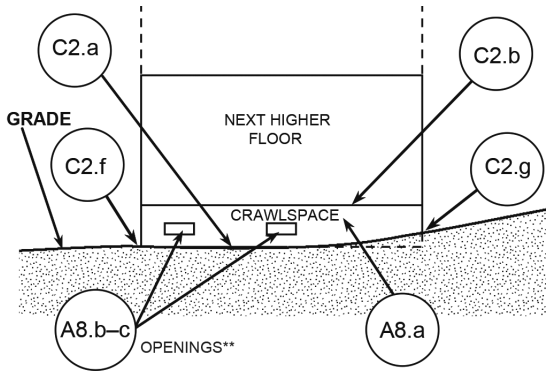
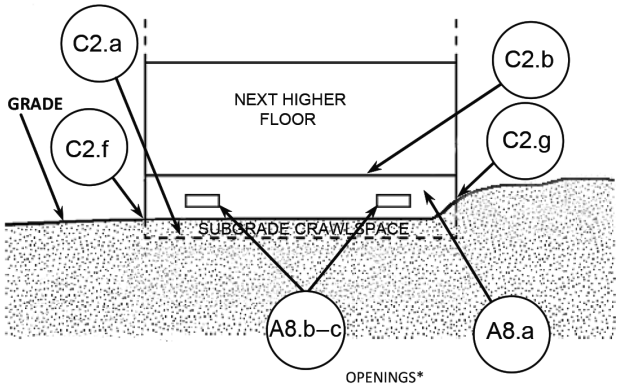


DIAGRAM 9

All buildings (other than split-level) elevated on a sub-grade crawlspace, with or without attached garage.

Distinguishing Feature – The bottom (crawlspace) floor is below ground level (grade) on all sides.* (If the distance from the crawlspace floor to the top of the next higher floor is more than 5 feet, or the crawlspace floor is more than 2 feet below the grade [LAG] on all sides, use Diagram 2A or 2B.)



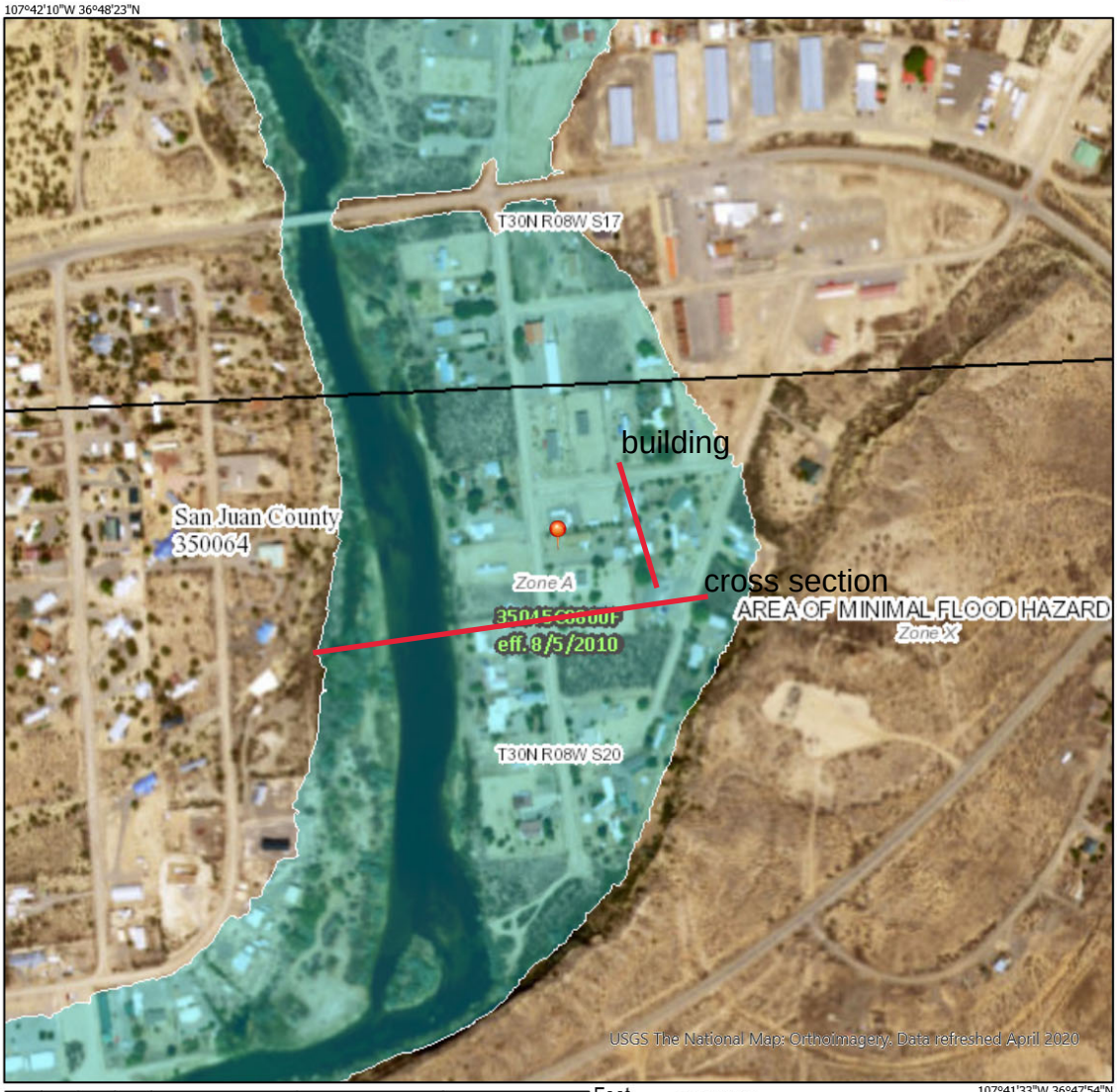
* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

** An "opening" is a permanent opening that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of 2 openings is required for enclosures or crawlspaces. The openings shall provide a total net area of not less than 1 square inch for every square foot of area enclosed, excluding any bars, louvers, or other covers of the opening. Alternatively, an Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES) must be submitted to document that the design of the openings will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening; openings may be installed in doors. Openings shall be on at least 2 sides of the enclosed area. If a building has more than 1 enclosed area, each area must have openings to allow floodwater to directly enter. The bottom of the openings must be no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. For more guidance on openings, see NFIP Technical Bulletin 1.

National Flood Hazard Layer FIRMette

FEMA

107°42'10"W 36°48'23"N



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

1:6,000

107°41'33"W 36°47'54"N

Legend

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

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

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

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

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

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

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

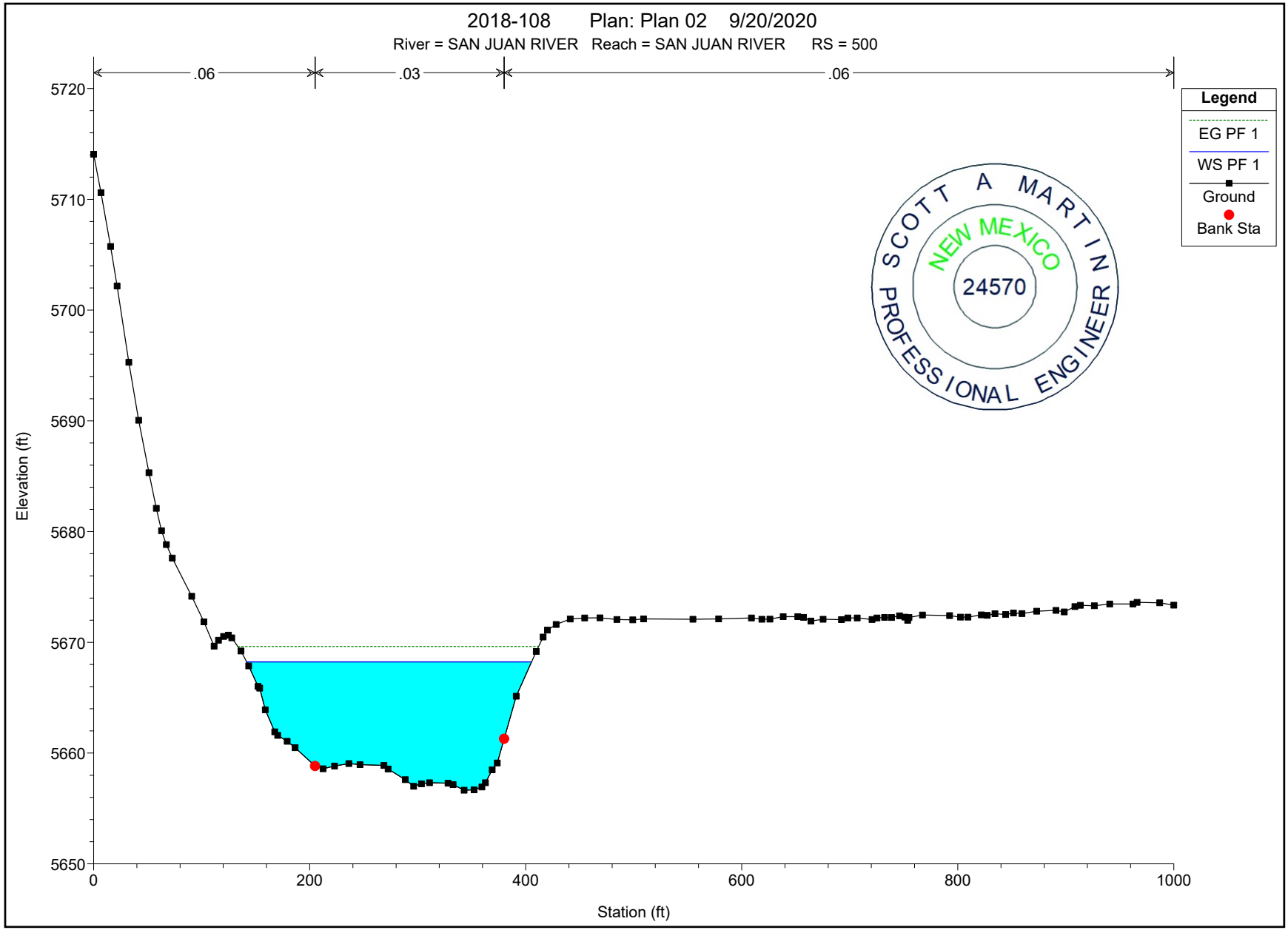
N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/4/2020 at 6:35 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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


2018-108 Plan: Plan 02 9/20/2020
River = SAN JUAN RIVER Reach = SAN JUAN RIVER RS = 500
.06
.03
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
SCOTT A MARTIN
NEW MEXICO
24570
PROFESSIONAL ENGINEER
Elevation (ft)
5720
5710
5700
5690
5680
5670
5660
5650
0
200
400
600
800
1000
Station (ft)

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
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PROJECT DATA
Project Title: 2018-108
Project File : 2018-108.prj
Run Date and Time: 9/20/2020 12:41:21 PM

Project in English units

PLAN DATA

Plan Title: Plan 02
Plan File : C:\Users\Scott\Documents\2018-108.p02

Geometry Title: Geom 01
Geometry File : C:\Users\Scott\Documents\2018-108.g01

Flow Title : Flow 02
Flow File : C:\Users\Scott\Documents\2018-108.f02

Plan Summary Information:
Number of: Cross Sections = 6 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\2018-108.f02

Flow Data (cfs)

River	Reach	RS	PF 1
SAN JUAN RIVER	SAN JUAN RIVER	500	18908
SAN JUAN RIVER	SAN JUAN RIVER	400	18908

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
SAN JUAN RIVER	SAN JUAN RIVER	PF 1	Critical	Critical

GEOMETRY DATA

Geometry Title: Geom 01
Geometry File : C:\Users\Scott\Documents\2018-108.g01

CROSS SECTION

RIVER: SAN JUAN RIVER
REACH: SAN JUAN RIVER RS: 500

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5714.07	6.849976	5710.61	5.65997	5705.74	21.67999	5702.17	32.62	5695.29
41.67999	5690.05	51.23999	5685.31	57.98999	5682.16	2.84998	5680.08	67.35999	5678.83
72.83002	5677.61	90.82001	5674.16	102.08	5671.85	111.5	5669.66	115.62	5670.19
120.26	5670.53	124.73	5670.65	127.84	5670.4	136.45	5669.22	143.56	5667.87
152.19	5666.02	153.75	5665.86	158.85	5663.91	167.69	5661.92	170.44	5661.6
179.18	5661.06	186.51	5660.49	205	5658.83	212.39	5658.58	223.07	5658.83
236.26	5659.05	246.57	5658.96	268.72	5658.88	272.59	5658.56	288.44	5657.6
296.29	5657	303.5	5657.22	311.01	5657.32	328.02	5657.28	332.74	5657.15
342.93	5656.65	352.22	5656.68	359.41	5656.94	362.71	5657.32	369	5658.49
373.72	5659.11	379.99	5661.29	391.22	5665.14	409.73	5669.18	416.11	5670.48
420.04	5671.1	428.16	5671.61	441.28	5672.1	454.57	5672.2	468.75	5672.21
484.46	5672.06	499.1	5672.03	509.07	5672.12	554.85	5672.08	578.67	5672.11
608.98	5672.2	618.67	5672.08	626.05	5672.09	638.43	5672.32	651.88	5672.32
657.26	5672.25	664.04	5671.92	675.38	5672.08	692.28	5672.05	698.3	5672.2
706.93	5672.2	720.63	5672.06	725.27	5672.2	732.29	5672.25	738.7	5672.24
746.08	5672.39	751.01	5672.28	753.62	5671.99	754.81	5672.24	767.36	5672.47
792.39	5672.41	802.56	5672.27	809.39	5672.27	821.82	5672.48	827.31	5672.44
834.48	5672.58	844.34	5672.51	851.53	5672.65	859.39	5672.6	873.02	5672.81
890.89	5672.88	898.53	5672.75	908.46	5673.23	913.48	5673.34	926.41	5673.3
940.67	5673.46	962.12	5673.46	966.06	5673.61	986.99	5673.57	1000	5673.36

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	205	.03	379.99	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
205 379.99 100.01 100 100.61 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5669.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.40	Wt. n-Val.	0.060	0.030	0.060
W.S. Elev (ft)	5668.23	Reach Len. (ft)	100.01	100.00	100.61
Crit W.S. (ft)		Flow Area (sq ft)	370.43	1781.80	78.26
E.G. Slope (ft/ft)	0.001789	Area (sq ft)	370.43	1781.80	78.26
Q Total (cfs)	18908.00	Flow (cfs)	1246.79	17491.95	169.26
Top Width (ft)	263.74	Top Width (ft)	63.35	174.99	25.40
Vel Total (ft/s)	8.48	Avg. Vel. (ft/s)	3.37	9.82	2.16
Max Chl Dpth (ft)	11.58	Hydr. Depth (ft)	5.85	10.18	3.08
Conv. Total (cfs)	447082.6	Conv. (cfs)	29480.6	413599.8	4002.2
Length Wtd. (ft)	100.01	Wetted Per. (ft)	64.30	175.63	26.38
Min Ch El (ft)	5656.65	Shear (lb/sq ft)	0.64	1.13	0.33
Alpha	1.25	Stream Power (lb/ft s)	1000.00	0.00	0.00
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	3.00	18.94	1.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.61	2.10	0.35

CROSS SECTION

RIVER: SAN JUAN RIVER
REACH: SAN JUAN RIVER RS: 450

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5714.12	6.849976	5710.65	15.65997	5705.79	21.67999	5702.22	32.62	5695.34
41.67999	5690.15	1.23999	5685.36	57.98999	5682.15	62.84998	5680.13	67.35999	5678.88
72.83002	5677.66	90.82001	5674.21	102.08	5671.9	111.5	5669.71	115.62	5670.24
120.26	5670.58	124.73	5670.7	127.84	5670.45	136.45	5669.27	143.56	5667.92
152.19	5666.07	153.75	5665.91	158.85	5663.96	167.69	5661.97	170.44	5661.65
179.18	5661.11	186.51	5660.54	205	5658.88	212.39	5658.63	223.07	5658.88
236.26	5659.1	246.57	5659.01	268.72	5658.93	272.59	5658.61	288.44	5657.65
296.29	5657.05	303.5	5657.27	311.01	5657.37	328.02	5657.33	332.74	5657.2
342.93	5656.7	352.22	5656.73	359.41	5656.99	362.71	5657.37	369	5658.54
373.72	5659.16	379.99	5661.34	391.22	5665.19	409.73	5669.23	416.11	5670.53
420.04	5671.15	428.16	5671.66	441.28	5672.15	454.57	5672.25	468.75	5672.26
484.46	5672.11	499.1	5672.08	509.07	5672.17	554.85	5672.13	578.67	5672.16
608.98	5672.25	618.67	5672.13	626.05	5672.14	638.43	5672.37	651.88	5672.37
657.26	5672.3	664.04	5671.97	675.38	5672.13	692.28	5672.1	698.3	5672.25
706.93	5672.25	720.63	5672.11	725.27	5672.25	732.29	5672.3	738.7	5672.29
746.08	5672.44	751.01	5672.33	753.62	5672.04	754.81	5672.29	767.36	5672.52
792.39	5672.46	802.56	5672.32	809.39	5672.32	821.82	5672.53	827.31	5672.49
834.48	5672.63	844.34	5672.56	851.53	5672.7	859.39	5672.65	873.02	5672.86
890.89	5672.93	898.53	5672.8	908.46	5673.28	913.48	5673.39	926.41	5673.35
940.67	5673.51	962.12	5673.51	966.06	5673.66	986.99	5673.62	1000	5673.41

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	205	.03	379.99	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
205 379.99 100.01 100 100.61 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5669.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.51	Wt. n-Val.	0.060	0.030	0.060
W.S. Elev (ft)	5667.91	Reach Len. (ft)	100.01	100.00	100.61
Crit W.S. (ft)		Flow Area (sq ft)	347.34	1717.00	69.18
E.G. Slope (ft/ft)	0.002034	Area (sq ft)	347.34	1717.00	69.18

Q Total (cfs)	18908.00	Flow (cfs)	1219.38	17534.87	153.75
Top Width (ft)	260.10	Top Width (ft)	61.41	174.99	23.70
Vel Total (ft/s)	8.86	Avg. Vel. (ft/s)	3.51	10.21	2.22
Max Chl Dpth (ft)	11.21	Hydr. Depth (ft)	5.66	9.81	2.92
Conv. Total (cfs)	419282.3	Conv. (cfs)	27039.7	388833.3	3409.4
Length Wtd. (ft)	100.01	Wetted Per. (ft)	62.32	175.63	24.64
Min Ch El (ft)	5656.70	Shear (lb/sq ft)	0.71	1.24	0.36
Alpha	1.24	Stream Power (lb/ft s)	1000.00	0.00	0.00
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	2.18	14.92	0.83
C & E Loss (ft)	0.03	Cum SA (acres)	0.47	1.70	0.29

CROSS SECTION

RIVER: SAN JUAN RIVER
REACH: SAN JUAN RIVER RS: 400

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5714.37	6.849976	5710.91	5.65997	5706.04	21.67999	5702.47	32.62	5695.59
41.67999	5690.35	51.23999	5685.61	57.98999	5682.46	2.84998	5680.38	67.35999	5679.13
72.83002	5677.91	90.82001	5674.46	102.08	5672.15	111.5	5669.96	115.62	5670.49
120.26	5670.83	124.73	5670.95	127.84	5670.7	136.45	5669.52	143.56	5668.17
152.19	5666.32	153.75	5666.16	158.85	5664.21	167.69	5662.22	170.44	5661.9
179.18	5661.36	186.51	5660.79	205	5659.13	212.39	5658.88	223.07	5659.13
236.26	5659.35	246.57	5659.26	268.72	5659.18	272.59	5658.86	288.44	5657.9
296.29	5657.3	303.5	5657.52	311.01	5657.62	328.02	5657.58	332.74	5657.45
342.93	5656.95	352.22	5656.98	359.41	5657.24	362.71	5657.62	369	5658.79
373.72	5659.41	379.99	5661.59	391.22	5665.44	409.73	5669.48	416.11	5670.78
420.04	5671.4	428.16	5671.91	441.28	5672.4	454.57	5672.5	468.75	5672.51
484.46	5672.36	499.1	5672.33	509.07	5672.42	554.85	5672.38	578.67	5672.41
608.98	5672.5	618.67	5672.38	626.05	5672.39	638.43	5672.62	651.88	5672.62
657.26	5672.55	664.04	5672.22	675.38	5672.38	692.28	5672.35	698.3	5672.5
706.93	5672.5	720.63	5672.36	725.27	5672.5	732.29	5672.55	738.7	5672.54
746.08	5672.69	751.01	5672.58	753.62	5672.29	754.81	5672.54	767.36	5672.77
792.39	5672.71	802.56	5672.57	809.39	5672.57	821.82	5672.78	827.31	5672.74
834.48	5672.88	844.34	5672.81	851.53	5672.95	859.39	5672.9	873.02	5673.11
890.89	5673.18	898.53	5673.05	908.46	5673.53	913.48	5673.64	926.41	5673.6
940.67	5673.76	962.12	5673.76	966.06	5673.91	986.99	5673.87	1000	5673.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	205	.03	379.99	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
205	379.99	100.01	100	100.61	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5669.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.85	Wt. n-Val.	0.060	0.030	0.060
W.S. Elev (ft)	5667.31	Reach Len. (ft)	100.01	100.00	100.61
Crit W.S. (ft)		Flow Area (sq ft)	296.37	1566.87	50.53
E.G. Slope (ft/ft)	0.002792	Area (sq ft)	296.37	1566.87	50.53
Q Total (cfs)	18908.00	Flow (cfs)	1147.58	17640.24	120.19
Top Width (ft)	252.17	Top Width (ft)	57.40	174.99	19.77
Vel Total (ft/s)	9.88	Avg. Vel. (ft/s)	3.87	11.26	2.38
Max Chl Dpth (ft)	10.35	Hydr. Depth (ft)	5.16	8.95	2.56
Conv. Total (cfs)	357830.7	Conv. (cfs)	21717.7	333838.5	2274.5
Length Wtd. (ft)	100.01	Wetted Per. (ft)	58.23	175.63	20.62
Min Ch El (ft)	5656.95	Shear (lb/sq ft)	0.89	1.56	0.43
Alpha	1.22	Stream Power (lb/ft s)	1000.00	0.00	0.00
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	1.44	11.15	0.69
C & E Loss (ft)	0.02	Cum SA (acres)	0.33	1.29	0.24

CROSS SECTION

RIVER: SAN JUAN RIVER
REACH: SAN JUAN RIVER RS: 300

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5725.59	10.16992	5723.87	23.09998	5721.43	28.77997	5720.19	35.90997	5718.43
38.12	5717.74	50.23999	5713.44	55.38995	5711.47	62.22998	5708.56	67.09998	5706.21
76.12	5701.24	82.60999	5697.25	88.53998	5693.49	8.24994	5687.52	103.33	5684.73
107.15	5682.87	114.95	5679.32	122.7	5676.65	124.48	5676.22	132.2	5673.53
149.47	5667.81	55.2599	5666.6	162.34	5665.36	175.2	5663.38	179.6299	5663.08
188.27	5662.02	202.45	5660.07	206.4	5659.38	210.17	5659.28	224.6	5658.99
230.41	5659.05	245.2	5658.69	256.28	5658.18	267.6	5657.38	272.5599	5657.15
276.8099	5657.21	287.73	5657.69	295.11	5657.65	310.58	5657.76	316.93	5658.08
328.36	5658.16	346.66	5658.02	361.8	5657.74	365.7	5657.49	372.96	5657.74
386.27	5659.42	393.02	5660.95	403.3099	5663.24	419.28	5666.6	429.77	5668.33
439.87	5669.68	449.2499	5670.65	464.28	5671.87	485.08	5672.2	497.83	5672.24
513.9	5672.08	518.52	5672.4	524.15	5672.65	32.0599	5672.75	41.4399	5672.68
548.49	5672.54	550.89	5672.64	566.6899	5672.84	582.22	5672.98	600.2999	5672.86
609.02	5672.29	615.24	5672.56	25.8199	5672.5	640	5672.19	641.85	5672.39
652.35	5672.62	663.79	5672.67	671.5599	5672.58	675.5699	5672.28	680.48	5672.39
708.9299	5672.65	743.58	5672.78	778.16	5672.79	797.21	5672.99	830.48	5673
850.04	5673.06	858.84	5673.15	874.5599	5673.19	894.02	5673.32	907.54	5673.53
916.65	5673.76	933.0099	5674.03	950.29	5673.99	969.42	5673.74	982.8199	5673.43
985.4	5673.25	991.61	5673.21	998.79	5673.45	1004.24	5673.42	1008.6	5673.22
1014.14	5673.49	1022.11	5673.67	1027.82	5673.94	1038.5	5674.29	1050.84	5674.38

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	210.17	.03	393.02	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
210.17	393.02	120.04	100	74.51	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5668.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.79	Wt. n-Val.	0.060	0.030	0.060
W.S. Elev (ft)	5667.07	Reach Len. (ft)	120.04	100.00	74.51
Crit W.S. (ft)		Flow Area (sq ft)	242.82	1622.72	86.27
E.G. Slope (ft/ft)	0.002697	Area (sq ft)	242.82	1622.72	86.27
Q Total (cfs)	18908.00	Flow (cfs)	813.45	17868.98	225.57
Top Width (ft)	269.17	Top Width (ft)	57.19	182.85	29.13
Vel Total (ft/s)	9.69	Avg. Vel. (ft/s)	3.35	11.01	2.61
Max Chl Dpth (ft)	9.92	Hydr. Depth (ft)	4.25	8.87	2.96
Conv. Total (cfs)	364069.7	Conv. (cfs)	15662.8	344063.5	4343.3
Length Wtd. (ft)	100.28	Wetted Per. (ft)	57.77	183.22	29.77
Min Ch El (ft)	5657.15	Shear (lb/sq ft)	0.71	1.49	0.49
Alpha	1.23	Stream Power (lb/ft s)	1050.84	0.00	0.00
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	0.82	7.49	0.53
C & E Loss (ft)	0.10	Cum SA (acres)	0.20	0.88	0.18

CROSS SECTION

RIVER: SAN JUAN RIVER
REACH: SAN JUAN RIVER RS: 200

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5723.98	8.409973	5722.48	19.19995	5720.65	21.73999	5720.42	5.57001	5720.69
30.87	5720.76	37.79999	5720.67	40.66998	5720.86	42.02997	5720.59	52.02997	5716.72
56.12	5714.92	59.26996	5713.31	63.66998	5710.71	66.70996	5708.66	70.94	5705.5
76.17999	5701.19	88.82001	5690.18	90.46997	5689.08	102.27	5682.86	110.5	5678.4
118.61	5674.37	125.35	5671.4	129.69	5669.69	135.05	5667.82	142.13	5665.57
144.98	5664.8	153.09	5663.32	163.61	5661.16	169.96	5660.05	174.66	5659.58
182.46	5659.28	197.39	5658.91	208.38	5658.68	220.55	5658.53	230.19	5658.56
233.57	5658.48	247.46	5658.4	257.94	5658.27	269.49	5658	282.43	5657.58
291.29	5657.15	305.59	5656.9	310.06	5656.67	313.36	5656.37	333.25	5656.26
343.46	5656.67	346.8	5656.88	352.59	5657.44	361.38	5658.58	366.91	5659.5
375.48	5660.74	394.0099	5663.34	396.34	5663.5	406.49	5664.55	412.19	5665.3
420.6	5666.06	441.1	5668.06	451.15	5668.96	462.98	5669.91	466.62	5670.12
473.8	5670.83	482.43	5671.49	500.79	5672	508.97	5672.15	12.6899	5672.23
530.78	5672.61	550.05	5672.7	568.14	5672.74	583.1899	5672.83	607	5672.9
628.66	5672.88	652.63	5673.24	660.62	5673.25	668.23	5673.19	669.79	5673.04
676.34	5673.06	693.11	5673.38	704.23	5673.5	711.67	5673.45	715.67	5673.56
731.4	5673.51	732.73	5673.62	57.3199	5673.98	760.02	5673.89	771.18	5674
800.6	5674	810.74	5673.85	816.15	5673.91	828.97	5673.94	831.37	5673.99
843.88	5674	854.15	5673.95	865.35	5673.55	869.77	5673.3	874.81	5672.88
884.87	5673.49	896.62	5673.77	913.84	5673.72	925.36	5673.75	934.04	5673.88

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	174.66	.03	375.48	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
174.66	375.48	100.98	100	102.43	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5668.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.46	Wt. n-Val.	0.060	0.030	0.060
W.S. Elev (ft)	5667.07	Reach Len. (ft)	100.98	100.00	102.43
Crit W.S. (ft)	5664.48	Flow Area (sq ft)	159.14	1825.56	161.54
E.G. Slope (ft/ft)	0.002109	Area (sq ft)	159.14	1825.56	161.54
Q Total (cfs)	18908.00	Flow (cfs)	469.82	18065.06	373.12
Top Width (ft)	293.49	Top Width (ft)	37.24	200.82	55.43
Vel Total (ft/s)	8.81	Avg. Vel. (ft/s)	2.95	9.90	2.31
Max Chl Dpth (ft)	10.81	Hydr. Depth (ft)	4.27	9.09	2.91
Conv. Total (cfs)	411764.1	Conv. (cfs)	10231.4	393407.2	8125.6
Length Wtd. (ft)	100.07	Wetted Per. (ft)	38.04	201.16	55.80
Min Ch El (ft)	5656.26	Shear (lb/sq ft)	0.55	1.19	0.38
Alpha	1.21	Stream Power (lb/ft s)	934.04	0.00	0.00
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.27	3.53	0.32
C & E Loss (ft)	0.17	Cum SA (acres)	0.07	0.44	0.11

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 RIVER
REACH: SAN JUAN RIVER   RS: 100

INPUT
Description:
Station Elevation Data   num=   100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5725.21	4.26001	5723.52	9.929993	5720.79	15.12	5717.79	18.69	5715.44
24.04999	5711.48	29.27002	5707.18	33.53003	5703.41	38.46997	5698.84	5.17999	5692.02
50.76001	5687.59	59.03998	5681.41	62.04999	5679.23	69.38	5674.25	71.48999	5673.1
80.67999	5667.91	84.73999	5666.52	100.26	5661.74	104.74	5660.43	108.38	5659.52
112	5658.93	119.37	5657.98	123.2	5657.64	125.48	5657.56	144.42	5657.53
149.83	5657.59	154.28	5657.75	158.68	5657.73	165.55	5657.85	178.81	5658.26
189.31	5658.45	198.86	5658.49	204.52	5658.44	214.92	5658.15	224.72	5657.63
233.34	5657.41	240.57	5657.66	248.62	5658.01	254.22	5657.92	262.42	5657.91
272.74	5658.33	279.16	5658.52	284.57	5658.86	296.8	5659.94	305.94	5660.76
308.3	5660.86	311.28	5661.18	319.15	5662.25	326.5	5663.32	333.26	5664.45
346.89	5666.54	355.22	5667.67	362.07	5668.48	368.87	5669.17	376.46	5669.74
384.15	5669.9	395.78	5669.98	401.56	5669.97	428.1	5670.62	438.68	5670.74
446.28	5670.79	456.12	5670.77	464.67	5671.06	472.4	5671.23	479.3	5671.32
484.49	5671.33	490.54	5671.53	498.26	5671.7	503.41	5671.88	519.01	5672.3
540.39	5672.69	548.64	5672.86	571.05	5673.16	580.48	5673.61	599.02	5673.85
612.33	5673.98	617.52	5673.9	628.27	5673.91	647.7	5674.17	654.13	5674.21
668.01	5674.19	677.97	5674.36	685.13	5674.35	687.71	5674.56	695.27	5675.5
699.36	5675.88	702.66	5676.06	705.96	5676.1	711.26	5675.86	716.72	5675.26
721.25	5674.58	723.74	5674.32	728.86	5673.96	735.92	5673.74	750.84	5673.69
762.33	5673.95	770.68	5674.06	787.34	5674.17	797.5	5674.12	800	5674.19

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	112	.03	296.8	.06

Bank Sta: Left	Right	Coeff Contr.	Expan.
112	296.8	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	5668.01	Element			
Vel Head (ft)	3.16	Wt. n-Val.	0.060	0.030	0.060
W.S. Elev (ft)	5664.85	Reach Len. (ft)			
Crit W.S. (ft)	5664.85	Flow Area (sq ft)	70.63	1250.21	108.90
E.G. Slope (ft/ft)	0.006735	Area (sq ft)	70.63	1250.21	108.90
Q Total (cfs)	18908.00	Flow (cfs)	306.45	18165.52	436.03
Top Width (ft)	245.69	Top Width (ft)	21.83	184.80	39.06
Vel Total (ft/s)	13.22	Avg. Vel. (ft/s)	4.34	14.53	4.00
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)	3.24	6.77	2.79
Conv. Total (cfs)	230395.1	Conv. (cfs)	3734.1	221347.9	5313.1
Length Wtd. (ft)		Wetted Per. (ft)	22.65	184.99	39.39
Min Ch El (ft)	5657.41	Shear (lb/sq ft)	1.31	2.84	1.16
Alpha	1.16	Stream Power (lb/ft s)	800.00	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 RIVER

Reach	River Sta.	n1	n2	n3
SAN JUAN RIVER	500	.06	.03	.06
SAN JUAN RIVER	450	.06	.03	.06
SAN JUAN RIVER	400	.06	.03	.06
SAN JUAN RIVER	300	.06	.03	.06
SAN JUAN RIVER	200	.06	.03	.06
SAN JUAN RIVER	100	.06	.03	.06

SUMMARY OF REACH LENGTHS

River: SAN JUAN RIVER

Reach	River Sta.	Left	Channel	Right
SAN JUAN RIVER	500	100.01	100	100.61
SAN JUAN RIVER	450	100.01	100	100.61
SAN JUAN RIVER	400	100.01	100	100.61
SAN JUAN RIVER	300	120.04	100	74.51
SAN JUAN RIVER	200	100.98	100	102.43
SAN JUAN RIVER	100			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: SAN JUAN RIVER

Reach	River Sta.	Contr.	Expan.
SAN JUAN RIVER	500	.1	.3
SAN JUAN RIVER	450	.1	.3
SAN JUAN RIVER	400	.1	.3
SAN JUAN RIVER	300	.1	.3
SAN JUAN RIVER	200	.1	.3
SAN JUAN RIVER	100	.1	.3

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Plan 02

River: SAN JUAN RIVER Reach: SAN JUAN RIVER   RS: 200   Profile: PF 1
     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.