

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 The Storage Place					Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 31 Road 5577					Company NAIC Number:	
City Farmington		State New Mexico		ZIP Code 87401		
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) Parcel #2-069-171-236-354 Account R4007903						
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)					Storage Building #1	
A5. Latitude/Longitude: Lat. <u>36° 43' 45.73" N</u> Long. <u>108° 05' 07.58" W</u> Horizontal Datum: <input type="checkbox"/> NAD 1927 <input checked="" type="checkbox"/> 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 <u>1A</u>						
A8. For a building with a crawlspace or enclosure(s):						
a) Square footage of crawlspace or enclosure(s) <u>N/A</u> sq ft						
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade <u>N/A</u>						
c) Total net area of flood openings in A8.b <u>N/A</u> sq in						
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No						
A9. For a building with an attached garage:						
a) Square footage of attached garage <u>N/A</u> sq ft						
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade <u>N/A</u>						
c) Total net area of flood openings in A9.b <u>N/A</u> sq in						
d) Engineered flood openings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION						
B1. NFIP Community Name & Community Number San Juan County/350064				B2. County Name San Juan		B3. State New Mexico
B4. Map/Panel Number 35045C1050	B5. Suffix F	B6. FIRM Index Date 08-05-2010	B7. FIRM Panel Effective/ Revised Date 08-05-2010	B8. Flood Zone(s) A	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth) 5525.90	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input checked="" type="checkbox"/> Other/Source: <u>HEC-RAS</u>						
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input checked="" type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____						
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA						

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 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. 31 Road 5577			Policy Number:
City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

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

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

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

Benchmark Utilized: OPUS Vertical Datum: NAVD 1988

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

NGVD 1929 NAVD 1988 Other/Source: _____

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

Check the measurement used.

- a) Top of bottom floor (including basement, crawlspace, or enclosure floor) _____ 5527.10 feet meters
- b) Top of the next higher floor _____ N/A feet meters
- c) Bottom of the lowest horizontal structural member (V Zones only) _____ N/A feet meters
- d) Attached garage (top of slab) _____ N/A feet meters
- e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) _____ N/A feet meters
- f) Lowest adjacent (finished) grade next to building (LAG) _____ 5527.10 feet meters
- g) Highest adjacent (finished) grade next to building (HAG) _____ 5527.44 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 Professional Engineer			
Company Name Sakura Engineering and Surveying			
Address 125 West Main St.			
City Farmington	State New Mexico		ZIP Code 87401
Signature <i>Paul Martin</i>	Date 06-05-2019	Telephone (505) 320-6767	Ext. 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)

ELEVATION CERTIFICATE

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City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

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

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

- E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).
- a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ feet meters above or below the HAG.
- b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ feet meters above or below the LAG.
- E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ feet meters above or below the HAG.
- E3. Attached garage (top of slab) is _____ feet meters above or below the HAG.
- E4. Top of platform of machinery and/or equipment servicing the building is _____ feet meters above or below the HAG.
- E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? Yes No Unknown. The local official must certify this information in Section G.

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

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

Property Owner or Owner's Authorized Representative's Name

Address	City	State	ZIP Code
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Signature	Date	Telephone
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Comments

Check here if attachments.

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 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. 31 Road 5577			Policy Number:		
City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number		
SECTION G – COMMUNITY INFORMATION (OPTIONAL)					
<p>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.</p> <p>G1. <input type="checkbox"/> 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.)</p> <p>G2. <input type="checkbox"/> A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.</p> <p>G3. <input type="checkbox"/> The following information (Items G4–G10) is provided for community floodplain management purposes.</p>					
G4. Permit Number		G5. Date Permit Issued		G6. Date Certificate of Compliance/Occupancy Issued	
<p>G7. This permit has been issued for: <input type="checkbox"/> New Construction <input type="checkbox"/> Substantial Improvement</p> <p>G8. Elevation of as-built lowest floor (including basement) of the building: _____ <input type="checkbox"/> feet <input type="checkbox"/> meters Datum _____</p> <p>G9. BFE or (in Zone AO) depth of flooding at the building site: _____ <input type="checkbox"/> feet <input type="checkbox"/> meters Datum _____</p> <p>G10. Community's design flood elevation: _____ <input type="checkbox"/> feet <input type="checkbox"/> meters Datum _____</p>					
Local Official's Name			Title		
Community Name			Telephone		
Signature			Date		
Comments (including type of equipment and location, per C2(e), if applicable)					
<input type="checkbox"/> Check here if attachments.					

BUILDING PHOTOGRAPHS

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

ELEVATION CERTIFICATE

See Instructions for Item A6.

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City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

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



Photo One

Photo One Caption South Side (Date Taken 5-9-2019)

Clear Photo One



Photo Two

Photo Two Caption East Side (Date Taken 5-9-2019)

Clear Photo Two

ELEVATION CERTIFICATE

BUILDING PHOTOGRAPHS

Continuation Page

OMB No. 1660-0008
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IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 31 Road 5577			Policy Number:
City Farmington	State New Mexico	ZIP Code 87401	Company NAIC Number

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



Photo Three

Photo Three Caption East & North Side (Date Taken 5-9-2019)

Clear Photo Three

Photo Four

Photo Four Caption

Clear Photo Four

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HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X      X  XXXXXX   XXXX       XXXX       XX       XXXX
X      X  X       X  X       X  X       X  X       X
X      X  X       X           X  X       X  X       X
XXXXXXXX XXXX     X           XXX XXXX   XXXXXX   XXXX
X      X  X       X           X  X       X  X       X
X      X  X       X  X       X  X       X  X       X
X      X  XXXXXX   XXXX       X  X       X  X       XXXXX
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PROJECT DATA

Project Title: Gingrichnew2018
Project File : Gingrichnew2018.prj
Run Date and Time: 10/22/2018 2:23:40 PM

Project in English units

PLAN DATA

Plan Title: Plan 01
Plan File : C:\Users\Scott\Documents\Gingrichnew2018.p01

Geometry Title: gingrich
Geometry File : C:\Users\Scott\Documents\Gingrichnew2018.g01

Flow Title : Flow 03
Flow File : C:\Users\Scott\Documents\Gingrichnew2018.f03

Plan Summary Information:

Number of:	Cross Sections =	17	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

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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 03
Flow File : C:\Users\Scott\Documents\Gingrichnew2018.f03

Flow Data (cfs)

River	Reach	RS	PF 1
Wash	Alignment - (4)	850	2500

Boundary Conditions

River	Reach	Profile	Upstream
Downstream			
Wash	Alignment - (4)	PF 1	Critical
Critical			

GEOMETRY DATA

Geometry Title: gingrich
Geometry File : C:\Users\Scott\Documents\Gingrichnew2018.g01

CROSS SECTION

RIVER: Wash
REACH: Alignment - (4) RS: 850

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INPUT

Description:

Station Elevation Data		num=		60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5533.13	11.63	5533.82	18.62	5533.88	24.85	5533.79	28.43	5534.17
32.95	5533.89	34.7	5534.22	39.03	5533.91	43.05	5534.52	46.59	5534.68
51.98	5534.62	59.84	5534.78	63.72	5534.99	65.99	5534.85	78.33	5534.9
83.98	5535.6	88.73	5535.67	89.94	5536.31	95.53	5536.01	102.29	5536.28
105.6	5535.29	111.09	5532.54	113.65	5532.42	118.25	5531.42	125.1	5529.3
128.66	5527.5	132.07	5526.75	141.01	5527	144.43	5527.32	147.62	5527.29
160.55	5527.89	162.77	5528.7	166.16	5530.79	167.19	5531.03	171.21	5530.48
174.9	5530.41	181.17	5531.43	183.03	5531.56	190.2	5532.66	192.44	5533.65
196.73	5533.14	199.21	5533.8	200.37	5533.74	204.95	5534.43	210.19	5534.28
212.72	5534.62	215.3	5534.53	219.89	5535.06	224.35	5535.91	225.53	5536.44
230.99	5537.6	236.59	5538.38	240.96	5538.79	246.38	5539.63	253.72	5540.51
263.86	5542.06	270.63	5543.52	287.61	5547	290.33	5547.7	300	5548.6

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.9		49.54	50	50.46	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5534.32	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.91	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	5532.41	Reach Len. (ft)	49.54	50.00
50.46				
Crit W.S. (ft)	5532.41	Flow Area (sq ft)	16.33	212.09
13.43				
E.G. Slope (ft/ft)	0.010642	Area (sq ft)	16.33	212.09
13.43				
Q Total (cfs)	2500.00	Flow (cfs)	62.01	2397.62
40.37				
Top Width (ft)	74.90	Top Width (ft)	11.42	49.80
13.69				
Vel Total (ft/s)	10.34	Avg. Vel. (ft/s)	3.80	11.30
3.01				
Max Chl Dpth (ft)	5.66	Hydr. Depth (ft)	1.43	4.26
0.98				
Conv. Total (cfs)	24233.9	Conv. (cfs)	601.0	23241.5
391.4				
Length Wtd. (ft)	49.99	Wetted Per. (ft)	11.84	51.14

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13.84				
Min Ch El (ft)	5526.75	Shear (lb/sq ft)	0.92	2.76
0.64				
Alpha	1.15	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	0.84	3.92
0.08				
C & E Loss (ft)	0.03	Cum SA (acres)	0.75	0.81
0.07				

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 800

INPUT

Description:

Station Elevation Data	num=	60						
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0 5530	4.36 5530.67	9.23 5533.72	14.06 5533.86	17.84 5533.04				
28.09 5532.99	30.85 5533.38	35.54 5533.23	36.93 5533.62	50.3 5533.84				
55.81 5533.56	62.91 5533.98	65.97 5533.84	77.63 5533.83	83.86 5533.25				
90.45 5531.54	94.11 5531.5	97.13 5533.33	98.59 5533.74	103.09 5531.9				
105.51 5530.59	108.8 5531.21	110.16 5530.37	113.31 5529.64	115.91 5529.9				
118.3 5531.21	121.79 5531.4	125.1 5529.45	127.86 5527.52	132.02 5526.47				
134.11 5526.62	136.27 5525.84	144.4 5525.78	153.14 5526.34	161.63 5526.58				
166.13 5528.9	172.37 5531	174.9 5531.55	181.08 5532.52	185.04 5532.45				
187.09 5532.74	189.69 5532.2	196.9 5534.25	201.29 5532.84	203.13 5532.65				
210.73 5533.4	212.24 5534.95	214.8 5534.49	217.83 5534.67	225.19 5535.89				
230.72 5536.29	234.49 5536.81	237.36 5536.8	248.99 5537.67	260.01 5538.84				
272.94 5540.64	277.59 5541.03	286.66 5542.75	292.22 5543.32	300 5543.43				

Manning's n Values	num=	3		
Sta n Val	Sta n Val	Sta n Val		
0 .05	125.1 .035	174.9 .05		

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Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 125.1 174.9 50 50 50 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5533.47	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.81	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	5531.66	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5531.66	Flow Area (sq ft)	29.95	220.51
0.04				
E.G. Slope (ft/ft)	0.009626	Area (sq ft)	29.95	220.51
0.04				
Q Total (cfs)	2500.00	Flow (cfs)	83.29	2416.70
0.02				
Top Width (ft)	82.39	Top Width (ft)	31.89	49.80
0.70				
Vel Total (ft/s)	9.98	Avg. Vel. (ft/s)	2.78	10.96
0.42				
Max Chl Dpth (ft)	5.88	Hydr. Depth (ft)	0.94	4.43
0.05				
Conv. Total (cfs)	25481.2	Conv. (cfs)	848.9	24632.1
0.2				
Length Wtd. (ft)	50.00	Wetted Per. (ft)	35.48	51.67
0.71				
Min Ch El (ft)	5525.78	Shear (lb/sq ft)	0.51	2.56
0.03				
Alpha	1.17	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.45	Cum Volume (acre-ft)	0.81	3.67
0.07				
C & E Loss (ft)	0.08	Cum SA (acres)	0.72	0.75
0.06				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The cross-section end points had to be extended vertically for the computed water surface.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there

is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 750

INPUT

Description:

Station Elevation Data		num=		60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5532.48	3.96	5532.68	11.41	5532.68	15.56	5532.46	17.76	5532.08
20.48	5532.15	25.9	5531.95	27.51	5532.24	38.22	5531.91	40.78	5532.46
43.34	5532	55.4	5532.28	56.83	5532.65	60.06	5532.36	61.48	5532.65
72.41	5533.08	77.29	5531.13	79.13	5530.78	81.38	5529.85	84.27	5529.89
87.34	5529.52	97.31	5529.53	105.73	5529.91	113.67	5529.39	118.22	5529.27
122.95	5529.42	125.1	5529.22	128.22	5528.66	132.13	5526.25	134.96	5525.74
138.36	5525.84	140.54	5524.83	153.04	5524.85	158.47	5525.87	164.46	5528.61
169.15	5529.72	171.36	5530.98	174.91	5531.66	177.33	5532.31	182.9	5532.47
187.98	5531.76	190.36	5531.87	193.61	5532.91	198.68	5533.5	207.82	5533.43
213.44	5533.8	214.74	5534.17	219.84	5534.82	223.06	5534.97	228.21	5535.82
230.85	5535.37	244.49	5536.46	254.31	5537.4	258.04	5537.63	268.61	5537.93
272.94	5537.9	279.61	5538.14	285.79	5538.02	293.09	5538.18	300	5538.83

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.91	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.91		50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5532.73	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.53	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5531.20	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5531.20	Flow Area (sq ft)	73.73	214.14
E.G. Slope (ft/ft)	0.008566	Area (sq ft)	73.73	214.14
Q Total (cfs)	2500.00	Flow (cfs)	268.93	2231.07

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Top Width (ft)	95.40	Top Width (ft)	47.99	47.41
Vel Total (ft/s)	8.68	Avg. Vel. (ft/s)	3.65	10.42
Max Chl Dpth (ft)	6.37	Hydr. Depth (ft)	1.54	4.52
Conv. Total (cfs)	27012.0	Conv. (cfs)	2905.7	24106.3
Length Wtd. (ft)	50.00	Wetted Per. (ft)	48.28	49.59
Min Ch El (ft)	5524.83	Shear (lb/sq ft)	0.82	2.31
Alpha	1.30	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	0.75	3.42
0.07				
C & E Loss (ft)	0.20	Cum SA (acres)	0.68	0.70
0.06				

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

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 700

INPUT

Description:

Station Elevation Data		num=		60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5531.37	8.34	5531.29	9.75	5531.53	11.52	5531.28	17.97	5531.18
20.18	5530.92	24.08	5530.96	28.32	5531.39	30.71	5531.04	33.52	5532.84
36.64	5533.35	37.92	5533.17	44.19	5529.2	46.51	5529.91	48.84	5529.05
53.94	5529.46	58.63	5529.46	66.25	5528.95	70.24	5528.83	75.43	5528.22
88.15	5528.57	89.77	5528.36	93.95	5528.57	103.66	5528.48	105.12	5528.33
109.77	5528.61	114.89	5528.21	120.81	5528.33	122.49	5528.51	125.1	5528.17

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128.43	5527.65	130.74	5526.58	132.56	5524.72	133.72	5524.05	136.74	5524.18
153.02	5523.86	155.45	5524.13	156.28	5524.53	159.77	5527.24	163.21	5528.25
167.4	5530.59	169.99	5531.76	171.38	5531.99	174.9	5532.02	177.21	5531.39
179.35	5531.33	188.88	5532.07	194.06	5532.6	201.35	5533.19	205.51	5533.4
220.46	5533.85	229.04	5534.34	246.06	5535.04	255.11	5535.26	261.86	5535.57
269.59	5535.76	275.07	5536.03	288.64	5536.39	294.01	5536.38	300	5536.6

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.9		50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5531.78	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.85	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5530.93	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)		Flow Area (sq ft)	182.51	226.36
E.G. Slope (ft/ft)	0.004615	Area (sq ft)	182.51	226.36
Q Total (cfs)	2500.00	Flow (cfs)	615.41	1884.59
Top Width (ft)	127.41	Top Width (ft)	84.36	43.05
Vel Total (ft/s)	6.11	Avg. Vel. (ft/s)	3.37	8.33
Max Chl Dpth (ft)	7.07	Hydr. Depth (ft)	2.16	5.26
Conv. Total (cfs)	36799.8	Conv. (cfs)	9058.8	27741.0
Length Wtd. (ft)	50.00	Wetted Per. (ft)	85.28	46.15
Min Ch El (ft)	5523.86	Shear (lb/sq ft)	0.62	1.41
Alpha	1.47	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	0.61	3.17
0.07				
C & E Loss (ft)	0.06	Cum SA (acres)	0.60	0.64
0.06				

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Warning: Divided flow computed for this cross-section.
 Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 650

INPUT

Description:

Station Elevation Data		num=		60							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5529.71	16.91	5529.69	33.98	5529.41	37.37	5529.75	38.77	5530.99		
40.86	5531.04	42.02	5530.35	45.98	5530.68	53.9	5529.62	55.97	5531.04		
57.33	5530.98	60.16	5528.45	63.43	5528.26	65.53	5528.78	68.86	5528.38		
76.24	5528.95	79.53	5528.88	83.42	5528.85	89	5529.34	90.58	5530.25		
92	5530.28	94.35	5528.9	100.16	5528.48	104.47	5528.98	106.44	5528.53		
111.62	5528.97	116.12	5528.23	118.15	5528.47	121.27	5528.13	125.1	5526.67		
128.86	5525.59	130.86	5524.33	133.88	5524.23	135.3	5523.07	147.08	5522.98		
149.85	5522.79	153.14	5522.99	155.06	5523.67	165.27	5530.37	170.11	5530.71		
171.79	5530.33	172.95	5531.51	174.9	5531.97	188.31	5532.48	191.47	5531.2		
194.57	5530.59	205.74	5530.91	207.6	5533.59	208.74	5534.26	212.74	5534.39		
213.88	5534.07	216.7	5531.32	226.49	5531.69	248.71	5533.16	254.46	5533.4		
266.9	5534.13	275.73	5534.88	286.63	5535.54	296.43	5535.83	300	5538.05		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.9		50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5531.45	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.44	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5530.02	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5530.02	Flow Area (sq ft)	102.29	220.15
E.G. Slope (ft/ft)	0.006382	Area (sq ft)	102.29	220.15

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Q Total (cfs)	2500.00	Flow (cfs)	267.81	2232.19
Top Width (ft)	145.25	Top Width (ft)	105.62	39.63
Vel Total (ft/s)	7.75	Avg. Vel. (ft/s)	2.62	10.14
Max Chl Dpth (ft)	7.23	Hydr. Depth (ft)	0.97	5.56
Conv. Total (cfs)	31294.5	Conv. (cfs)	3352.4	27942.1
Length Wtd. (ft)	50.00	Wetted Per. (ft)	107.89	42.59
Min Ch El (ft)	5522.79	Shear (lb/sq ft)	0.38	2.06
Alpha	1.54	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	0.44	2.91
0.07				
C & E Loss (ft)	0.09	Cum SA (acres)	0.49	0.60
0.06				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The cross-section end points had to be extended vertically for the computed water surface.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 600

INPUT

Description:

Station Elevation Data	num=	60					
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	
0 5528.53	6.9 5528.47	9.53 5528.63	18.16 5528.44	21.72 5528.81			
24.28 5529.61	27.51 5528.64	33.11 5528.74	38.89 5528.68	41.25 5530.29			

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42.65	5530.01	44.27	5528.74	51.07	5528.7	61.53	5529.04	68.92	5528.31
72.25	5529.52	75.64	5528.74	77.3	5529.28	79.39	5528.97	82.43	5528.08
94.19	5528.44	97.14	5528.76	101.99	5528.96	105.2	5528.58	108.4	5528.75
110.55	5528.36	113.57	5528.55	116.19	5528.19	119.83	5528.11	121.91	5527.49
125.1	5525.88	127.53	5525.09	128.69	5524.34	131.43	5523.92	135.2	5522.04
144.97	5522.21	146.59	5522.01	150.55	5522	155.51	5524.5	159.32	5526.74
163.1	5529.16	166.42	5529.88	171.09	5528.48	174.5	5528.55	174.9	5528.84
176.59	5529.83	179.62	5530.2	183.34	5530.26	186.27	5529.8	189.38	5529.72
193.05	5529.22	196.67	5529.27	213.57	5530.03	219.38	5530.22	230.33	5530.75
242.87	5531.45	263.33	5532.79	275.71	5533.88	284.71	5534.49	300	5535.05

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0 .05	125.1 .035	174.9 .05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
125.1	174.9	50	50	50	.1	.3	

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5530.85	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.14	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	5529.71	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5529.71	Flow Area (sq ft)	135.34	235.72
5.40				
E.G. Slope (ft/ft)	0.006151	Area (sq ft)	135.34	235.72
5.40				
Q Total (cfs)	2500.00	Flow (cfs)	332.13	2162.37
5.50				
Top Width (ft)	189.48	Top Width (ft)	122.47	48.46
18.55				
Vel Total (ft/s)	6.64	Avg. Vel. (ft/s)	2.45	9.17
1.02				
Max Chl Dpth (ft)	7.71	Hydr. Depth (ft)	1.11	4.86
0.29				
Conv. Total (cfs)	31876.9	Conv. (cfs)	4234.9	27571.8
70.1				
Length Wtd. (ft)	50.00	Wetted Per. (ft)	125.77	51.55
18.83				
Min Ch El (ft)	5522.00	Shear (lb/sq ft)	0.41	1.76
0.11				
Alpha	1.67	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.31	2.65

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0.07
 C & E Loss (ft) 0.03 Cum SA (acres) 0.36 0.55
 0.05

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The cross-section end points had to be extended vertically for the computed water surface.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 550

INPUT

Description:

Station Elevation Data		num=		60							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5531.12	4.37	5530.44	7.46	5528.03	8.71	5527.85	20.25	5527.8		
27.97	5528.04	29.32	5528.83	32.11	5528.66	33.55	5527.92	49.08	5527.65		
52.8	5528.49	56.06	5528.51	58.15	5527.32	62.34	5527.39	64.86	5529.4		
67.98	5529.78	69.53	5529.44	71.56	5527.16	76.12	5526.9	81.41	5526.85		
83.96	5528.89	85.81	5529.13	88.15	5527.01	93.73	5527.23	96.91	5527.96		
101.87	5528.54	106.52	5528.23	109.72	5528.64	112.15	5528.04	115.61	5528.58		
118.37	5528.02	125.1	5525.18	129.77	5523.94	132.07	5523.75	134.43	5521.9		
137.61	5521.63	139.54	5521.94	141.47	5521.14	146.29	5520.7	149.08	5520.87		
153.03	5522.24	154.46	5521.85	157.01	5522.87	163.93	5527.14	166.01	5528.13		
169.32	5528.34	172.01	5527.69	174.9	5527.74	176.98	5527.93	179.35	5529.61		
189.05	5530.12	192.33	5529.81	194.4	5528.46	202.92	5528.69	235.98	5530.15		
246.9	5530.51	252.8	5530.85	264.56	5531.78	279.24	5533.11	300	5534.03		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.9		50.58	50	49.42	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

		Element	Left OB	Channel
E.G. Elev (ft)	5529.93			
Right OB				
Vel Head (ft)	1.46	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	5528.47	Reach Len. (ft)	50.58	50.00
49.42				
Crit W.S. (ft)	5528.47	Flow Area (sq ft)	76.69	229.81
1.54				
E.G. Slope (ft/ft)	0.007890	Area (sq ft)	76.69	229.81
1.54				
Q Total (cfs)	2500.00	Flow (cfs)	188.04	2309.38
2.58				
Top Width (ft)	149.69	Top Width (ft)	96.52	49.80
3.37				
Vel Total (ft/s)	8.12	Avg. Vel. (ft/s)	2.45	10.05
1.68				
Max Chl Dpth (ft)	7.77	Hydr. Depth (ft)	0.79	4.61
0.46				
Conv. Total (cfs)	28145.5	Conv. (cfs)	2117.0	25999.5
29.0				
Length Wtd. (ft)	50.02	Wetted Per. (ft)	100.30	52.83
3.56				
Min Ch El (ft)	5520.70	Shear (lb/sq ft)	0.38	2.14
0.21				
Alpha	1.42	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	0.18	2.38
0.06				
C & E Loss (ft)	0.10	Cum SA (acres)	0.24	0.49
0.04				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

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CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 500

INPUT

Description:

Station Elevation Data		num=		60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5527.46	2.98	5527.61	4.37	5529.19	6.13	5529.4	9.21	5527.48
19.88	5527.2	36.67	5526.98	45.88	5527.07	48.71	5526.88	51.63	5527.03
58.04	5526.76	63.78	5526.66	73.58	5526.74	76.75	5526.52	82.59	5526.39
85.52	5526.58	88.59	5527.05	92.16	5527.06	94.86	5527.28	99.21	5526.76
106.19	5527.01	109.7	5527.3	111.67	5527.14	113.03	5527.58	116.74	5528.18
119.52	5528.15	120.92	5527.63	125.1	5525.31	127.4	5524.55	129.21	5522.99
132.21	5522.39	134.71	5520.3	137.73	5519.68	140.97	5519.94	144.51	5519.81
154.39	5520.46	159.12	5522.53	162.8	5524.52	167.01	5527.15	169.99	5528.05
174.89	5527.46	185.23	5527.71	192.24	5527.71	201.71	5527.9	215.55	5528.39
221.97	5528.51	228.66	5528.82	232.2	5532.04	233.78	5532.46	237.98	5530.25
239.72	5529.54	241.36	5529.47	256.91	5531.05	263.39	5532.1	270.89	5533.55
277.61	5533.94	280.58	5534.39	284.89	5534.7	289.4	5534.77	300	5535.6

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.89	.05

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	125.1	174.89		50	50	50		.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5528.96	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.43	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5526.53	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5526.53	Flow Area (sq ft)	1.90	199.42
E.G. Slope (ft/ft)	0.011611	Area (sq ft)	1.90	199.42
Q Total (cfs)	2500.00	Flow (cfs)	3.12	2496.88
Top Width (ft)	51.17	Top Width (ft)	10.26	40.91
Vel Total (ft/s)	12.42	Avg. Vel. (ft/s)	1.64	12.52

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Max Chl Dpth (ft)	6.85	Hydr. Depth (ft)	0.19	4.87
Conv. Total (cfs)	23201.2	Conv. (cfs)	28.9	23172.3
Length Wtd. (ft)	50.00	Wetted Per. (ft)	10.58	44.04
Min Ch El (ft)	5519.68	Shear (lb/sq ft)	0.13	3.28
Alpha	1.02	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	0.14	2.14
0.06				
C & E Loss (ft)	0.03	Cum SA (acres)	0.17	0.44
0.04				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 450

INPUT

Description:

Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5526.91	3.84	5526.88	8.05	5527.08	26.62	5527.04	36.61	5526.9
41.8	5526.48	45.2	5526.6	50.54	5526.28	58.17	5526.16	61.32	5526.46
63.12	5526.15	65.7	5526.32	72.4	5526.2	73.94	5526.39	80.25	5526.39
97.95	5526.79	104.96	5526.78	109.52	5526.98	113.2	5528.83	114.6	5529.2
117.35	5528.9	118.94	5528.11	125.1	5524.01	128.2	5522.46	130.97	5521.59
133.04	5519.64	135.15	5518.76	139.04	5518.9	140.22	5519.33	149	5519.23
151.05	5519.01	154.07	5519.74	156.09	5521.04	158.66	5522.32	163.27	5525.6
166.97	5526.92	171.81	5527.89	174.9	5526.75	177.58	5526.76	184.8	5527.1
199.27	5527.14	221.15	5527.58	232.08	5527.99	235.96	5527.68	237.12	5528.11
238.96	5528.13	247.25	5528.9	251	5529.06	252.87	5529.6	256.04	5529.58

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258.77 5529.99 261.63 5529.95 266.37 5530.48 269.19 5532.98 270.59 5533.27
 277.04 5533.85 281.73 5535.02 289.96 5536.61 293.87 5537.13 300 5537.54

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .05 125.1 .035 174.9 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 125.1 174.9 50 50 50 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel
E.G. Elev (ft)	5528.25	Element		
Right OB				
Vel Head (ft)	2.35	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5525.90	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5525.75	Flow Area (sq ft)	2.69	202.50
E.G. Slope (ft/ft)	0.010465	Area (sq ft)	2.69	202.50
Q Total (cfs)	2500.00	Flow (cfs)	6.99	2493.01
Top Width (ft)	41.87	Top Width (ft)	2.85	39.02
Vel Total (ft/s)	12.18	Avg. Vel. (ft/s)	2.59	12.31
Max Chl Dpth (ft)	7.14	Hydr. Depth (ft)	0.95	5.19
Conv. Total (cfs)	24438.3	Conv. (cfs)	68.3	24369.9
Length Wtd. (ft)	50.00	Wetted Per. (ft)	3.42	42.43
Min Ch El (ft)	5518.76	Shear (lb/sq ft)	0.52	3.12
Alpha	1.02	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	0.14	1.91
0.06				
C & E Loss (ft)	0.08	Cum SA (acres)	0.17	0.39
0.04				

CROSS SECTION

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RIVER: Wash
 REACH: Alignment - (4) RS: 400

INPUT

Description:

Station Elevation Data		num=		60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5526.43	8.39	5526.23	15.08	5526.24	20.91	5526.06	24.55	5526.08
30.47	5525.96	45.89	5525.87	49.92	5525.77	60.95	5525.78	73.23	5525.71
81.04	5525.76	84.73	5525.91	95.11	5525.93	104.95	5526.51	107.81	5526.57
108.98	5526.78	112.19	5528.49	113.34	5528.77	116.52	5528.72	117.92	5528.22
120.02	5526.9	121.88	5526.4	123.04	5525.52	124.65	5523.82	125.09	5523.67
125.63	5523.41	127.42	5521.51	129.51	5520.54	130.72	5520.34	132.5	5518.97
133.69	5518.5	144.04	5518.6	149.57	5518	152.05	5518.26	153.73	5519.14
155.07	5520.38	157.55	5521.68	161.38	5524.56	163.88	5526.17	169.88	5528.16
171.02	5528	172.41	5527.37	174.9	5526.66	177.16	5526.39	182.59	5526.58
193.81	5526.63	201.26	5526.56	221.04	5526.89	227.63	5527.06	239.34	5527.67
247.61	5528.28	251.99	5528.81	260.11	5529.43	263.73	5529.83	267.49	5530.54
271.27	5531.7	276.77	5533.1	279.5	5533.34	290.19	5533.49	300	5533.7

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.09	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	125.09	174.9		50	50	50		.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5527.71	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.09	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5525.62	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5525.02	Flow Area (sq ft)	2.36	214.98
E.G. Slope (ft/ft)	0.008452	Area (sq ft)	2.36	214.98
Q Total (cfs)	2500.00	Flow (cfs)	5.53	2494.47
Top Width (ft)	40.12	Top Width (ft)	2.18	37.94
Vel Total (ft/s)	11.50	Avg. Vel. (ft/s)	2.34	11.60
Max Chl Dpth (ft)	7.62	Hydr. Depth (ft)	1.08	5.67

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Conv. Total (cfs)	27193.0	Conv. (cfs)	60.2	27132.8
Length Wtd. (ft)	50.00	Wetted Per. (ft)	2.97	41.94
Min Ch El (ft)	5518.00	Shear (lb/sq ft)	0.42	2.70
Alpha	1.02	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	0.13	1.67
0.06				
C & E Loss (ft)	0.00	Cum SA (acres)	0.16	0.35
0.04				

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 350

INPUT

Description:

Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5525.9	15.04	5525.84	29.59	5525.88	36.95	5525.83	40.57	5525.66
48.34	5525.55	58.15	5525.52	63.4	5525.4	68.5	5525.41	79.36	5525.26
82.8	5525.11	90.78	5525.09	100.92	5525.33	106.31	5525.95	110.49	5526.01
111.96	5526.36	114.42	5527.73	115.81	5528.17	118.04	5528.02	119.32	5527.43
125.1	5523.88	129.48	5520.87	130.8	5519.82	132.61	5519.94	133.8	5519.43
134.91	5518.13	135.64	5517.86	140.72	5517.59	146.03	5518.18	151.8	5517.98
154.37	5518.25	155.49	5518.85	157.65	5520.55	159.41	5522.23	162.18	5524.1
164.53	5525.89	166.8	5527.14	171.41	5527.47	174.9	5526.46	176.97	5526.12
181.36	5526.05	185.74	5526.18	187.56	5526.51	189.44	5526.23	193.11	5526.32
200.98	5526.13	206.19	5526.18	219.64	5526.18	230.94	5526.38	242.08	5526.78
246.87	5527.15	259.98	5527.78	264.41	5528.07	266.95	5528.59	272.25	5529.94
281.48	5531.17	282.87	5531.18	287.91	5531.79	295.07	5532.82	300	5533.35

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
125.1	174.9	50	50	50	.1	.3	

CROSS SECTION OUTPUT Profile #PF 1

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E.G. Elev (ft)	5527.27	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.08	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5525.19	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5524.62	Flow Area (sq ft)	2.46	215.68
E.G. Slope (ft/ft)	0.008656	Area (sq ft)	2.46	215.68
Q Total (cfs)	2500.00	Flow (cfs)	3.15	2496.85
Top Width (ft)	54.92	Top Width (ft)	16.40	38.52
Vel Total (ft/s)	11.46	Avg. Vel. (ft/s)	1.28	11.58
Max Chl Dpth (ft)	7.60	Hydr. Depth (ft)	0.15	5.60
Conv. Total (cfs)	26870.3	Conv. (cfs)	33.8	26836.4
Length Wtd. (ft)	50.00	Wetted Per. (ft)	16.78	42.98
Min Ch El (ft)	5517.59	Shear (lb/sq ft)	0.08	2.71
Alpha	1.02	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	0.13	1.42
0.06				
C & E Loss (ft)	0.05	Cum SA (acres)	0.15	0.30
0.04				

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 300

INPUT

Description:

Station		Elevation Data		num=		60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5525.49	9.82	5525.47	13.81	5525.31	23.57	5525.12	35.36	5525.12		
40.71	5525.19	47.46	5525.12	56.04	5524.91	60.42	5524.92	64.54	5524.8		

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70.28	5524.84	82.77	5524.53	88.11	5524.45	98.1	5524.45	100.67	5524.54
110.64	5525.47	115.94	5528	117.38	5528.27	119.13	5528.13	125.09	5524.38
126.56	5523.22	127.9	5522.53	130.94	5519.76	132.12	5519.39	134.91	5519.07
136.47	5517.77	137.83	5517.38	140.34	5517.44	145.42	5517.19	151.71	5517.32
153.79	5517.49	155.94	5518.16	158.77	5520.07	160.67	5521.95	163.25	5523.91
164.84	5524.79	169.24	5526.21	171.56	5527.2	172.41	5527.26	174.9	5525.93
177.49	5525.24	183.45	5525.31	190.99	5525.5	194.84	5525.39	200.4	5525.53
208.86	5525.59	220.43	5525.57	229.37	5525.69	244.44	5526.16	253.25	5526.34
263.26	5526.37	274.41	5526.58	279.66	5526.73	286.71	5526.77	289.13	5527.04
291.05	5527.8	293.63	5529.44	295.96	5531.3	297.71	5532.16	300	5532.9

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.09	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.09	174.9		50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5526.72	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.56	Wt. n-Val.		0.035
W.S. Elev (ft)	5524.16	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5524.16	Flow Area (sq ft)		194.77
E.G. Slope (ft/ft)	0.012081	Area (sq ft)		194.77
Q Total (cfs)	2500.00	Flow (cfs)		2500.00
Top Width (ft)	38.33	Top Width (ft)		38.33
Vel Total (ft/s)	12.84	Avg. Vel. (ft/s)		12.84
Max Chl Dpth (ft)	6.97	Hydr. Depth (ft)		5.08
Conv. Total (cfs)	22744.9	Conv. (cfs)		22744.9
Length Wtd. (ft)	50.00	Wetted Per. (ft)		42.69
Min Ch El (ft)	5517.19	Shear (lb/sq ft)		3.44
Alpha	1.00	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.13	1.18

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0.06
 C & E Loss (ft) 0.04 Cum SA (acres) 0.14 0.26
 0.04

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 250

INPUT

Description:

Station Elevation Data		num=		60							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5524.92	7.63	5524.78	21.94	5524.64	26.72	5524.51	35.18	5524.43		
50.12	5524.34	59.19	5524.22	63.75	5524.09	74.61	5523.99	80.09	5523.8		
85.4	5523.76	89.55	5523.87	93.75	5523.78	96.39	5523.38	103.18	5523.25		
106.86	5524.24	109.84	5524.67	112.6	5524.78	117.02	5527.1	118.6	5527.5		
121.4	5527.38	123.41	5526.49	125.09	5525.35	125.09	5525.34	132.19	5520.69		
134.02	5519.02	135.7	5518	138.24	5517.14	139.46	5517.04	142.43	5517.36		
144.93	5517.39	149.27	5516.95	152.45	5516.85	157.68	5517	159.96	5517.7		
161.78	5519.06	163.11	5520.58	171.01	5526.32	173.16	5526.97	174.9	5526.39		
177.48	5525.01	178.71	5524.68	183.27	5524.59	187.73	5524.84	202.9	5524.95		
206.93	5524.88	216.93	5525.13	221.55	5525.36	235.67	5525.74	246.68	5526.22		
252.67	5526.4	271.16	5526.77	278.31	5527.11	280.98	5527.52	283.17	5528.27		
285.01	5529.26	289.12	5532.18	290.7	5532.91	293.15	5532.89	300	5533.23		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.09	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.09	174.9		51.28	50	48.72	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

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E.G. Elev (ft)	5526.05	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.44	Wt. n-Val.	0.050	0.035
W.S. Elev (ft)	5523.61	Reach Len. (ft)	51.28	50.00
48.72				
Crit W.S. (ft)	5523.61	Flow Area (sq ft)	2.41	199.24
E.G. Slope (ft/ft)	0.011550	Area (sq ft)	2.41	199.24
Q Total (cfs)	2500.00	Flow (cfs)	3.05	2496.95
Top Width (ft)	49.19	Top Width (ft)	9.64	39.55
Vel Total (ft/s)	12.40	Avg. Vel. (ft/s)	1.26	12.53
Max Chl Dpth (ft)	6.76	Hydr. Depth (ft)	0.25	5.04
Conv. Total (cfs)	23261.7	Conv. (cfs)	28.4	23233.3
Length Wtd. (ft)	50.03	Wetted Per. (ft)	9.71	43.77
Min Ch El (ft)	5516.85	Shear (lb/sq ft)	0.18	3.28
Alpha	1.02	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.13	0.96
0.06				
C & E Loss (ft)	0.24	Cum SA (acres)	0.14	0.21
0.04				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program

defaulted to critical depth.

CROSS SECTION

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RIVER: Wash
 REACH: Alignment - (4) RS: 200

INPUT

Description:

Station Elevation Data		num=		60							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5524.18	6.02	5524.1	11.33	5524.13	14.48	5524.03	34.04	5523.74		
42.22	5523.56	47.02	5523.55	53.42	5523.32	59.27	5523.22	73.22	5523.08		
83.38	5522.81	89.57	5522.8	97.7	5522.3	100.02	5522.54	103.09	5522.3		
105.44	5521.69	107.71	5521.54	108.83	5521.73	110.44	5522.43	113.14	5523.03		
114.76	5523.88	117.71	5525.97	118.62	5526.44	121.14	5526.71	122.92	5526.08		
125.1	5524.7	129.23	5522.3	131.52	5520.65	133.45	5519.02	134.45	5518.76		
135.71	5519.13	138.86	5519.37	142.04	5517.42	146.13	5517.15	150.69	5517.23		
161.1	5517.85	166.39	5518.08	168.42	5518.43	170.01	5518.94	171.14	5520.65		
172.13	5521.62	173.39	5522.29	174.9	5523.5	177.36	5524.55	182.95	5525.74		
184.57	5525.9	187.74	5524.9	190.24	5524.51	195.91	5524.81	200.97	5524.93		
206.62	5524.87	211.97	5524.35	215.64	5524.3	230.54	5525.5	239.19	5526.49		
244.64	5526.97	255.77	5528.25	263.96	5529.09	286.43	5531.22	300	5532.59		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.9		50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5525.20	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.64	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	5523.56	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5523.56	Flow Area (sq ft)	48.73	229.05
0.00				
E.G. Slope (ft/ft)	0.008423	Area (sq ft)	48.73	229.05
0.00				
Q Total (cfs)	2500.00	Flow (cfs)	102.03	2397.97
0.00				
Top Width (ft)	119.96	Top Width (ft)	71.98	47.84
0.14				
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)	2.09	10.47
0.25				
Max Chl Dpth (ft)	6.41	Hydr. Depth (ft)	0.68	4.79
0.03				

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Conv. Total (cfs) 0.0	27239.4	Conv. (cfs)	1111.7	26127.6
Length Wtd. (ft) 0.16	50.00	Wetted Per. (ft)	72.46	52.01
Min Ch El (ft) 0.01	5517.15	Shear (lb/sq ft)	0.35	2.32
Alpha 0.00	1.30	Stream Power (lb/ft s)	300.00	0.00
Frctn Loss (ft) 0.06	0.46	Cum Volume (acre-ft)	0.10	0.71
C & E Loss (ft) 0.04	0.02	Cum SA (acres)	0.09	0.16

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.

Warning: Divided flow computed for this cross-section.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 150

INPUT

Description:

Station	Elevation	Data	num=	60					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5523.13	4.56	5523.01	12.39	5523.04	15.88	5522.94	21.16	5522.98
27.09	5522.79	34.15	5522.81	41.11	5522.71	55.9	5522.42	67.79	5522.1
75.05	5521.84	77.12	5521.83	83.72	5521.62	91.65	5521.14	98.32	5520.69
102.58	5520.32	106.9	5520.03	112.2	5519.56	119.71	5519.02	125.09	5518.55
129.69	5518.16	136.46	5517.67	144.95	5517.38	159.88	5517.42	164.66	5517.5
171.69	5517.83	174.9	5518.31	176.48	5518.65	180.52	5519.29	186.65	5520.1
190.08	5520.64	197.83	5521.56	203.96	5522.24	207.38	5522.38	211.44	5522.99
214.41	5523.71	217.59	5523.55	220.36	5523.47	227.75	5523.89	228.98	5524.09
237.49	5524.57	240.14	5524.81	242	5525.15	247.19	5525.09	256.99	5526.25
259.3	5526.35	261.75	5526.26	263.99	5526.67	265.79	5526.81	267.88	5527.22

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270.23 5527.49 272.38 5527.58 276.92 5528.32 282.02 5528.4 286.49 5528.86
 289.62 5529.01 291.71 5529.36 294.54 5529.58 297.22 5530.05 300 5530.16

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .05 125.09 .035 174.9 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 125.09 174.9 50 50 50 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

	5523.19	Element	Left OB	Channel
E.G. Elev (ft)	5523.19	Element	Left OB	Channel
Right OB				
Vel Head (ft)	1.57	Wt. n-Val.	0.050	0.035
0.050				
W.S. Elev (ft)	5521.63	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5521.63	Flow Area (sq ft)	60.33	197.33
35.97				
E.G. Slope (ft/ft)	0.010283	Area (sq ft)	60.33	197.33
35.97				
Q Total (cfs)	2500.00	Flow (cfs)	232.51	2124.61
142.88				
Top Width (ft)	114.95	Top Width (ft)	41.60	49.81
23.54				
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)	3.85	10.77
3.97				
Max Chl Dpth (ft)	4.25	Hydr. Depth (ft)	1.45	3.96
1.53				
Conv. Total (cfs)	24653.5	Conv. (cfs)	2292.9	20951.7
1409.0				
Length Wtd. (ft)	50.00	Wetted Per. (ft)	41.72	49.89
23.78				
Min Ch El (ft)	5517.38	Shear (lb/sq ft)	0.93	2.54
0.97				
Alpha	1.39	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	0.03	0.47
0.04				
C & E Loss (ft)	0.06	Cum SA (acres)	0.02	0.11
0.02				

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth

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for the water surface and continued on with the calculations.

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 100

INPUT

Description:

Station Elevation Data		num=		60							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5521.93	17.3	5521.49	35.69	5521.33	50.65	5521.39	64.49	5521.13		
80.63	5521.03	86.52	5521.22	90.86	5521.2	99.96	5521.38	106.78	5521.26		
116.63	5521.46	120.44	5521.35	122.22	5520.91	125.1	5519.63	126.59	5519.08		
130.65	5516.89	133.16	5516.41	135.43	5514.74	138.08	5513.91	143.13	5513.61		
154.53	5513.47	158.09	5513.16	160.97	5513.2	165.68	5512.9	169.11	5513.13		
172.95	5513.67	174.9	5514.31	176.15	5514.75	184.77	5520.45	186.21	5521.04		
189.82	5521.44	196.85	5521.56	200.27	5521.71	205.01	5521.33	206.53	5521.37		
213.61	5522.03	222.45	5522.53	227.97	5522.76	230.74	5523.09	234.53	5523.21		
236.38	5523.48	241.16	5523.6	244.08	5523.46	247.3	5524.05	252.91	5524.01		
255.98	5524.23	257.76	5524.77	261.17	5524.32	263.73	5524.79	268.49	5526.21		
272.31	5526.8	274.81	5526.92	278.03	5527.58	283.38	5527.5	286.44	5528.05		
289.15	5528.16	292.55	5528.96	294.37	5529.99	297.12	5530.85	300	5529.96		

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	125.1	174.9		50	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5520.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.12	Wt. n-Val.		0.035

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0.050				
W.S. Elev (ft)	5518.36	Reach Len. (ft)	50.00	50.00
50.00				
Crit W.S. (ft)	5518.36	Flow Area (sq ft)		205.38
14.66				
E.G. Slope (ft/ft)	0.011260	Area (sq ft)		205.38
14.66				
Q Total (cfs)	2500.00	Flow (cfs)		2430.06
69.94				
Top Width (ft)	53.69	Top Width (ft)		46.98
6.71				
Vel Total (ft/s)	11.36	Avg. Vel. (ft/s)		11.83
4.77				
Max Chl Dpth (ft)	5.46	Hydr. Depth (ft)		4.37
2.18				
Conv. Total (cfs)	23560.2	Conv. (cfs)		22901.1
659.1				
Length Wtd. (ft)	50.00	Wetted Per. (ft)		48.25
7.87				
Min Ch El (ft)	5512.90	Shear (lb/sq ft)		2.99
1.31				
Alpha	1.06	Stream Power (lb/ft s)	300.00	0.00
0.00				
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)		0.24
0.01				
C & E Loss (ft)	0.01	Cum SA (acres)		0.05
0.01				

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Wash
 REACH: Alignment - (4) RS: 50

INPUT

Description:
 Station Elevation Data num= 60

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Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	5521.79	6.22	5521.96	13.74	5521.51	31.9	5521.43	34.53	5521.51
47.14	5521.36	53.75	5521.09	67.55	5520.91	74.6	5521.09	83.74	5521.46
92.03	5521.37	102.79	5521.63	107.42	5521.41	109.16	5521.55	112.04	5521.31
117.27	5521.21	123.76	5520.91	125.1	5520.62	129.62	5517.8	136.2	5514.07
138.94	5513.11	142.69	5512.87	145.03	5512.46	150.41	5512.35	155.31	5511.96
162.88	5511.94	167.03	5512.08	170.78	5512.8	174.9	5514.91	182.37	5519.45
183.96	5519.81	189.38	5519.71	192.26	5519.32	194.25	5519.34	199.65	5518.79
203.29	5519.08	204.89	5519.59	215.52	5520.3	217.39	5520.7	221.03	5522.1
227.23	5522.23	229.4	5522.45	238.99	5522.94	247.51	5523.61	252.29	5524.11
256.8	5524.78	259	5525.31	260.56	5526.4	262.41	5526.8	264.23	5525.69
266.76	5526.05	268.78	5525.91	271.76	5526.32	278.61	5526.72	285.8	5528.01
288.61	5528.73	291.77	5528.97	294.7	5528.68	297.18	5529.41	300	5529.79

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.05	125.1	.035	174.9	.05

Bank Sta:	Left	Right	Coeff	Contr.	Expan.
	125.1	174.9	.1	.3	

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	5519.83	Element	Left OB	Channel
Right OB				
Vel Head (ft)	2.22	Wt. n-Val.		0.035
0.050				
W.S. Elev (ft)	5517.61	Reach Len. (ft)		
Crit W.S. (ft)	5517.61	Flow Area (sq ft)		206.48
5.98				
E.G. Slope (ft/ft)	0.011016	Area (sq ft)		206.48
5.98				
Q Total (cfs)	2500.00	Flow (cfs)		2479.50
20.50				
Top Width (ft)	49.38	Top Width (ft)		44.94
4.44				
Vel Total (ft/s)	11.77	Avg. Vel. (ft/s)		12.01
3.43				
Max Chl Dpth (ft)	5.67	Hydr. Depth (ft)		4.59
1.35				
Conv. Total (cfs)	23819.0	Conv. (cfs)		23623.7
195.3				
Length Wtd. (ft)		Wetted Per. (ft)		46.67
5.19				
Min Ch El (ft)	5511.94	Shear (lb/sq ft)		3.04
0.79				

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Alpha	1.03	Stream Power (lb/ft s)	300.00	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:Wash

Reach	River Sta.	n1	n2	n3
Alignment - (4)	850	.05	.035	.05
Alignment - (4)	800	.05	.035	.05
Alignment - (4)	750	.05	.035	.05
Alignment - (4)	700	.05	.035	.05
Alignment - (4)	650	.05	.035	.05
Alignment - (4)	600	.05	.035	.05
Alignment - (4)	550	.05	.035	.05
Alignment - (4)	500	.05	.035	.05
Alignment - (4)	450	.05	.035	.05
Alignment - (4)	400	.05	.035	.05
Alignment - (4)	350	.05	.035	.05
Alignment - (4)	300	.05	.035	.05
Alignment - (4)	250	.05	.035	.05
Alignment - (4)	200	.05	.035	.05
Alignment - (4)	150	.05	.035	.05
Alignment - (4)	100	.05	.035	.05
Alignment - (4)	50	.05	.035	.05

SUMMARY OF REACH LENGTHS

River: Wash

Reach	River Sta.	Left	Channel	Right
Alignment - (4)	850	49.54	50	50.46
Alignment - (4)	800	50	50	50
Alignment - (4)	750	50	50	50
Alignment - (4)	700	50	50	50

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Alignment - (4)	650	50	50	50
Alignment - (4)	600	50	50	50
Alignment - (4)	550	50.58	50	49.42
Alignment - (4)	500	50	50	50
Alignment - (4)	450	50	50	50
Alignment - (4)	400	50	50	50
Alignment - (4)	350	50	50	50
Alignment - (4)	300	50	50	50
Alignment - (4)	250	51.28	50	48.72
Alignment - (4)	200	50	50	50
Alignment - (4)	150	50	50	50
Alignment - (4)	100	50	50	50
Alignment - (4)	50			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Wash

Reach	River Sta.	Contr.	Expan.
Alignment - (4)	850	.1	.3
Alignment - (4)	800	.1	.3
Alignment - (4)	750	.1	.3
Alignment - (4)	700	.1	.3
Alignment - (4)	650	.1	.3
Alignment - (4)	600	.1	.3
Alignment - (4)	550	.1	.3
Alignment - (4)	500	.1	.3
Alignment - (4)	450	.1	.3
Alignment - (4)	400	.1	.3
Alignment - (4)	350	.1	.3
Alignment - (4)	300	.1	.3
Alignment - (4)	250	.1	.3
Alignment - (4)	200	.1	.3
Alignment - (4)	150	.1	.3
Alignment - (4)	100	.1	.3
Alignment - (4)	50	.1	.3

ERRORS WARNINGS AND NOTES

Errors Warnings and Notes for Plan : Plan 01

River: Wash Reach: Alignment - (4) RS: 850 Profile: PF 1

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

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 800 Profile: PF 1

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

Warning:Divided flow computed for this cross-section.

Warning:The cross-section end points had to be extended vertically for the computed water surface.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 750 Profile: PF 1

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

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 700 Profile: PF 1

Warning:Divided flow computed for this cross-section.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

River: Wash Reach: Alignment - (4) RS: 650 Profile: PF 1

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

Warning:Divided flow computed for this cross-section.

Warning:The cross-section end points had to be extended vertically for the computed water surface.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 600 Profile: PF 1

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

Warning:Divided flow computed for this cross-section.

Warning:The cross-section end points had to be extended vertically for the computed water surface.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 550 Profile: PF 1

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

Warning:Divided flow computed for this cross-section.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 500 Profile: PF 1

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

Warning:Divided flow computed for this cross-section.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 350 Profile: PF 1

Warning:Divided flow computed for this cross-section.

River: Wash Reach: Alignment - (4) RS: 300 Profile: PF 1

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

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 250 Profile: PF 1

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

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Warning:Divided flow computed for this cross-section.

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:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 200 Profile: PF 1

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

Warning:Divided flow computed for this cross-section.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

River: Wash Reach: Alignment - (4) RS: 150 Profile: PF 1

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

Warning: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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

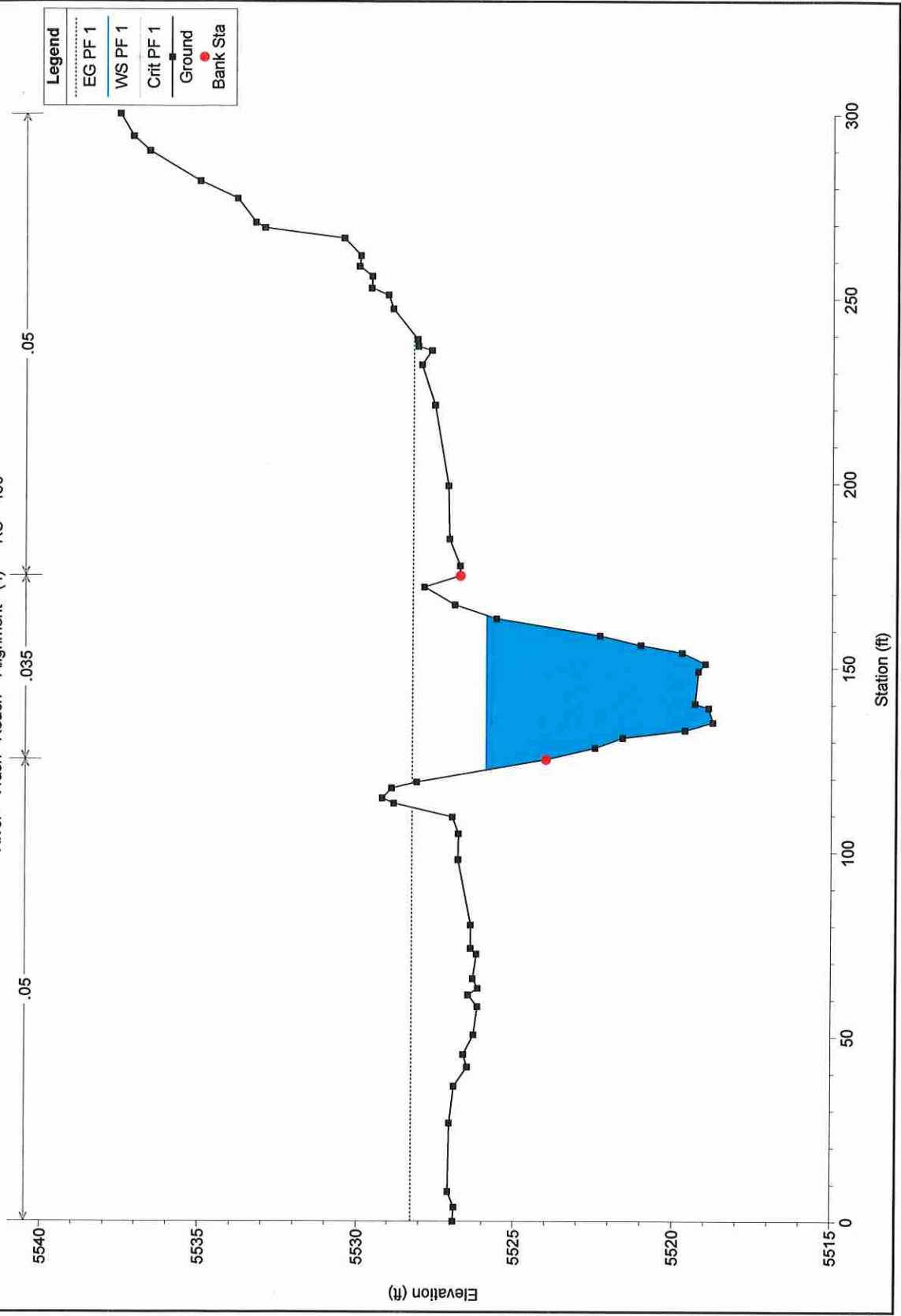
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

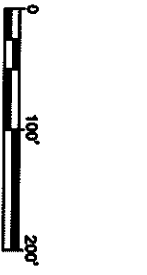
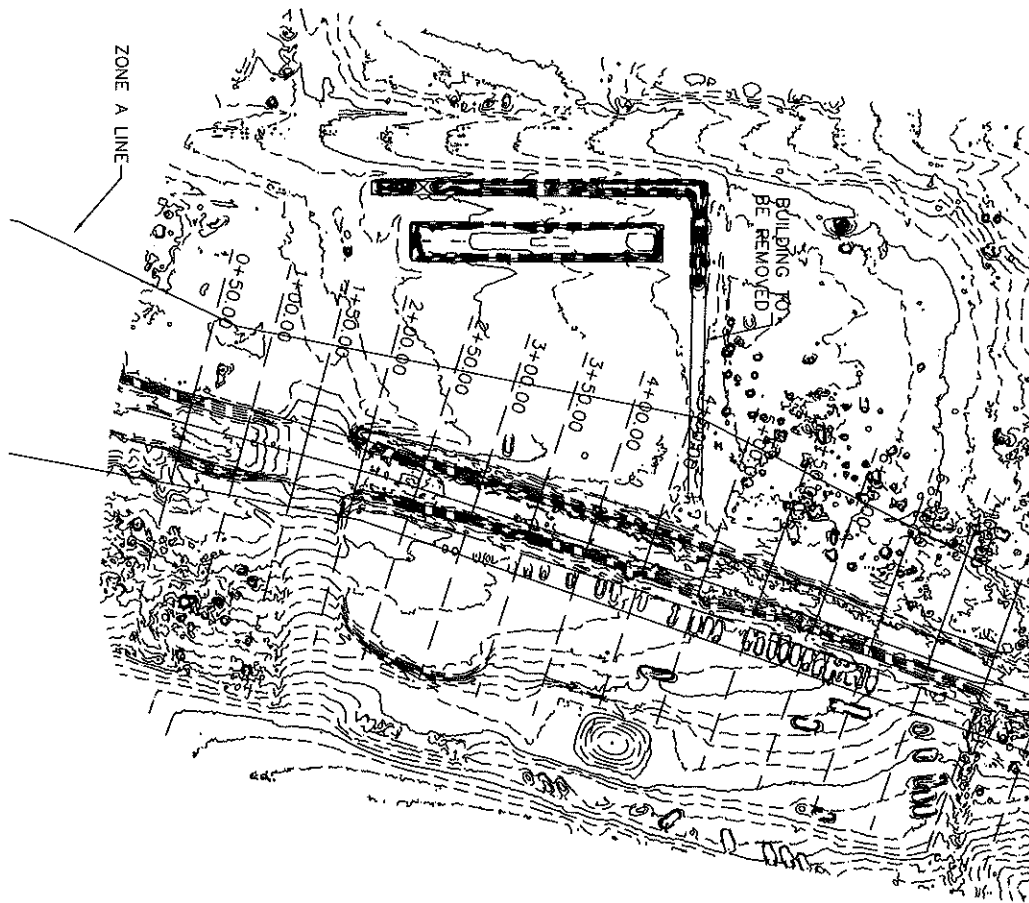
River: Wash Reach: Alignment - (4) RS: 100 Profile: PF 1

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

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

Gingrichnew2018 Plan: Plan 01 10/22/2018
 River = Wash Reach = Alignment - (4) RS = 450





SCALE: 1" = 100'

Z:\A. Project File\A. Projects\F. FEMA Elevation Certificates (FECs)\2013\2013-200 JAMES GINGERICH\BFE SURVEYnew.dwg

1 OF 1 SHEETS 7	DATE: NOVEMBER 9, 2018 DRAWN BY: [blank] CHECKED BY: [blank] ZONE: [blank]	<p>Sakura Engineering 125 WEST WALK STREET • FARMINGTON, NEW MEXICO 87401 PHONE: 505.264.2139</p>	31 Rd 5577 Farmington NM James Gingerich (The Storage Place)	CAD FILE
	ELOMA			