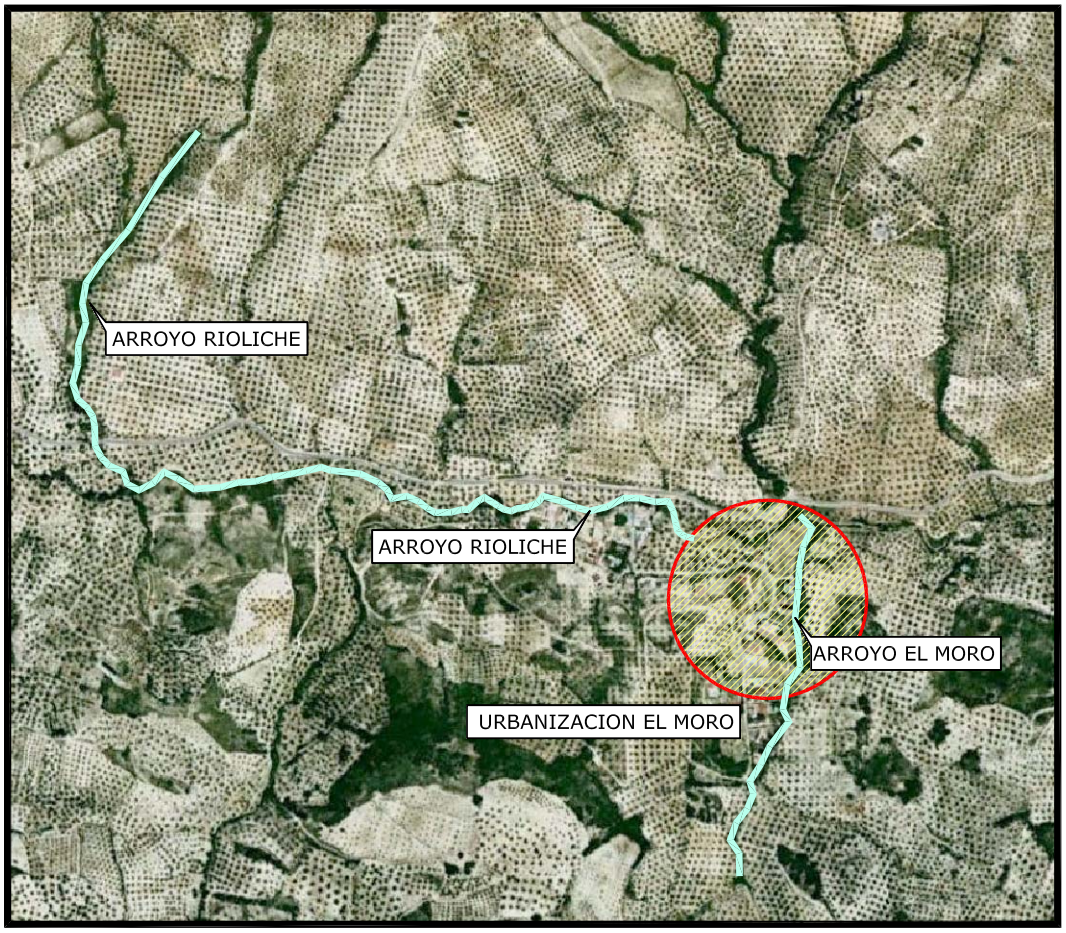
ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)



FECHA
AGOSTO 2013

ENCARGO

PLANEO

REDACCIÓN DEL ESTUDIO

INGESA

INGENIERO DE CAMINOS, C Y P.
LOURDES MARTINEZ JUGUERA

DOCUMENTO NÚMERO 1. MEMORIA

DOCUMENTO NÚMERO 1. MEMORIA

CAPÍTULO 1. GENERALIDADES

1.1.- ANTECEDENTES Y OBJETO

El presente Estudio de Inundabilidad se redacta como complemento al documento del Plan General de Ordenación Urbanística del Término Municipal de Martos en la provincia de Jaén.

El objetivo del mismo es el de estudiar la llanura de inundación para las avenidas ordinaria y extraordinaria de periodo de retorno 5 y 500 años respectivamente de los Arroyos Rioeliche y El Moro, que discurren en las proximidades de la Urbanización El Moro, en Martos (Jaén.

1.2.- ENCARGO

El presente documento se realiza por iniciativa de la empresa Planeo Arquitectura y Urbanismo S.L.P. representada por los arquitectos Antonio Estrella Lara y Jacinta Ortiz Miranda, redactores del mencionado Plan General de Ordenación Urbanística.

1.3.- ENTORNO DE ACTUACIÓN

La Urbanización El Moro linda al norte con el arroyo Rioliche (Eliche según el Organismo de Cuenca y Bieliche según otras fuentes) y al este con un arroyo innominado, que el Organismo de Cuenca denomina El Moro.

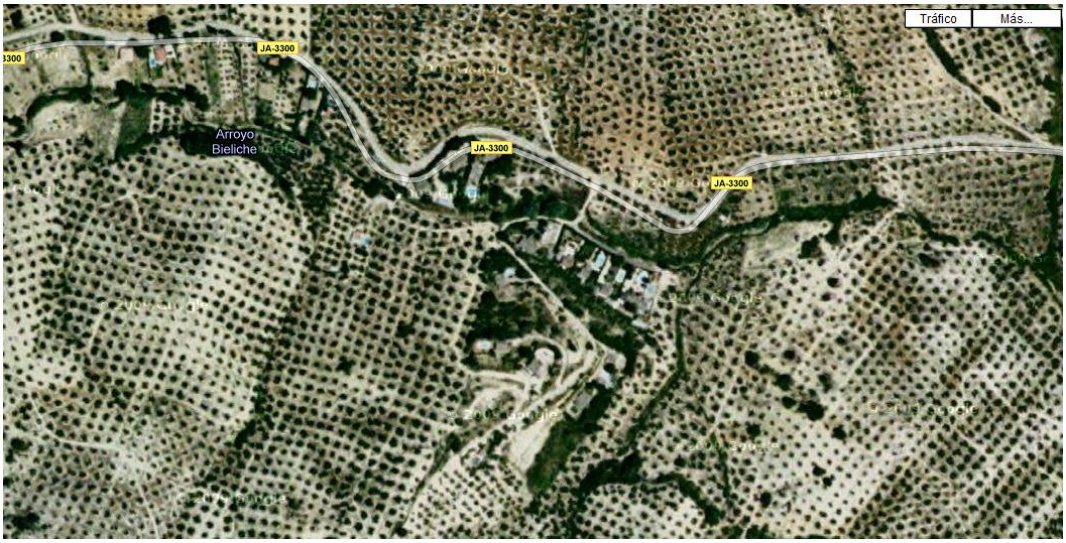


Ilustración 1.- Localización de la zona de estudio. Fuente: Google maps.

Ambos arroyos se encuentran muy encajados en el terreno. La pendiente longitudinal media, obtenida a partir de la topografía con que contamos, resultan ser del 3% para el arroyo Rioliche y del 13 % para El Moro.

La vegetación, como puede comprobarse en las imágenes que siguen, es abundante, aunque en algunos casos, dada la velocidad previsible del agua, el cauce se encuentra bastante limpio.

A continuación se muestran varias imágenes que caracterizan la zona.

Ilustración 2.- Vista del arroyo Rioliche desde la segunda estructura.

Ilustración 3.- Vista del arroyo Rioliche desde el primer cruce (terraza). Se observa el fuerte encaje del mismo en el terreno

Ilustración 4.- Otra vista del arroyo Rioliche en el que se aprecia el cauce pedregoso, las paredes terrizas casi verticales y la existencia de vegetación de ribera.

Ilustración 5.- Vista del arroyo Innominado desde la primera estructura

1.4.- BASES DE PARTIDA Y NORMATIVA DE APLICACIÓN

Como premisas previas se citan las isolíneas, en nuestro caso de precipitaciones máximas en 24h, publicados por la Dirección General de Carreteras en el texto "Máximas Precipitaciones de la España Peninsular" y el período de retorno a considerar.

Al tratarse de un estudio de avenidas, se ha de definir el máximo período de retorno a considerar. Los valores que adoptan los diferentes autores varían según el tipo de cuenca y los daños previsibles, debiendo, además, tenerse en cuenta el criterio que establecen los Organismos competentes en materia hidrológica.

En el caso de cuencas mayores, con cauces ya conformados como es nuestro caso, los períodos de retorno se establecen entre 50 y 100 años pero teniendo en cuenta la normativa de la Agencia Andaluza del Agua, se adopta para este caso el valor límite de 500 años.

Por tanto será el valor correspondiente al periodo de retorno de 500 años el empleado para fijar la llanura de inundación.

Para la determinación del DPH del cauce se ha empleado el periodo de retorno 5 años, si bien según nos indica el Organismo de Cuenca en Jaén, suele estar comprendido entre 2 y 5 años.

En cuanto a normativa es de aplicación la Instrucción 5.2.IC, Orden de 14 de Mayo de 1.990 del Ministerio de Obras Públicas y Urbanismo.

CAPÍTULO 2. TRABAJOS REALIZADOS

2.1.- TOPOGRAFÍA

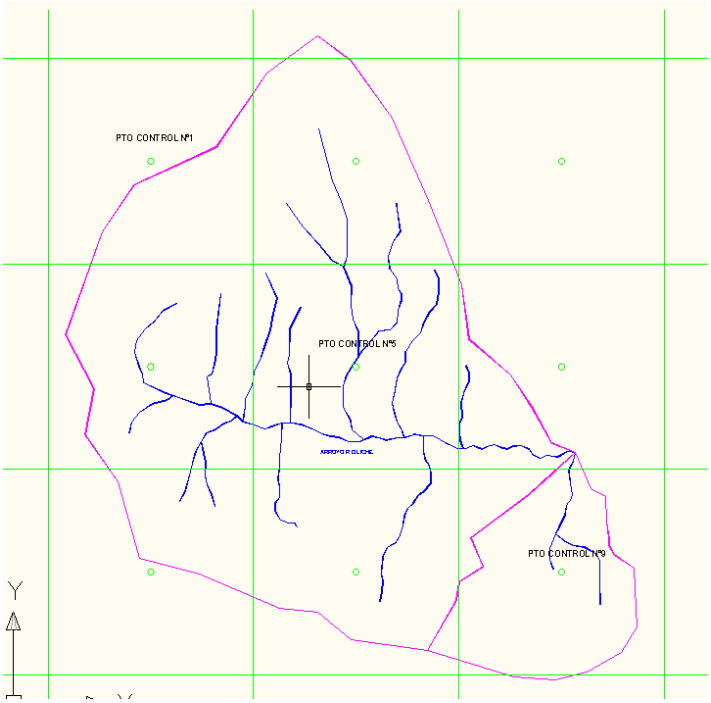
Se ha empleado la cartografía digital 1:2.000 de la Junta de Andalucía, proporcionada por el cliente. Concretamente se ha utilizado la hoja E1-946 17-16.

2.2.- ESTUDIO HIDROLÓGICO

Partiendo, como ya se ha comentado, de las isolíneas, en nuestro caso de precipitaciones máximas en 24h, publicados por la Dirección General de Carreteras en el texto "Máximas Precipitaciones de la España Peninsular", se ha obtenido la lluvia de cálculo para los períodos de retorno considerados.

Dado que la superficie de la cuenca principal es superior a 1 Km^2, se ha considerado una malla de puntos equidistantes 1.000 metros, y se han tanteado nueve puntos de control o característicos.

Ilustración 6.- Malla de puntos de control. Marcados los que se detallan en cálculo.



Se adopta el mayor de los valores obtenidos, es decir, **60 mm/día** para la avenida ordinaria de 5 años y **148 mm/d** para la extraordinaria de 500 años.

Conocida la lluvia de cálculo, es preciso determinar las características físicas de las cuencas receptoras.

Tabla 1. Caracterización de las cuencas

CUENCA	SUPERFICIE (HA)	PTO. ALTO CUENCA (M)	DISTANCIA (M)	PTO. ALTO CAUCE (M)	DIS.CAUCE (M)	PTO.BAJO (M)
ARROYO RIOLICHE	435,26	1.251,9	3.520	1.100	2.736	750
ARROYO EL MORO	6,84	999,5	1.153	870	896	750

Careciéndose, como es lógico, de datos de aforo, el cálculo de caudal lo realizaremos por diversos métodos del tipo de los hidrometeorológicos, de forma que obtengamos una visión lo más amplia posible, que nos permita una definición acertada de los caudales previsibles.

Estos son los caudales resultantes para las avenidas de periodo de retorno 5 y 500 años:

Tabla 2. Resultados de cálculo

CUENCA	Q_5 (m^3/s)		Q_{500} (m^3/s)	
	Método Racional	Método 5.2-IC	Método Racional	Método 5.2-IC
ARROYO RIOLICHE	14,68	22,61	36,20	55,78
ARROYO EL MORO	3,56	5,39	8,78	13,31

Adoptamos como valor de cálculo para el cálculo del DPH y para la llanura de inundación los proporcionados por el método de la Instrucción 5.2 I.C para sendos arroyos.

2.3.- ESTUDIO HIDRÁULICO

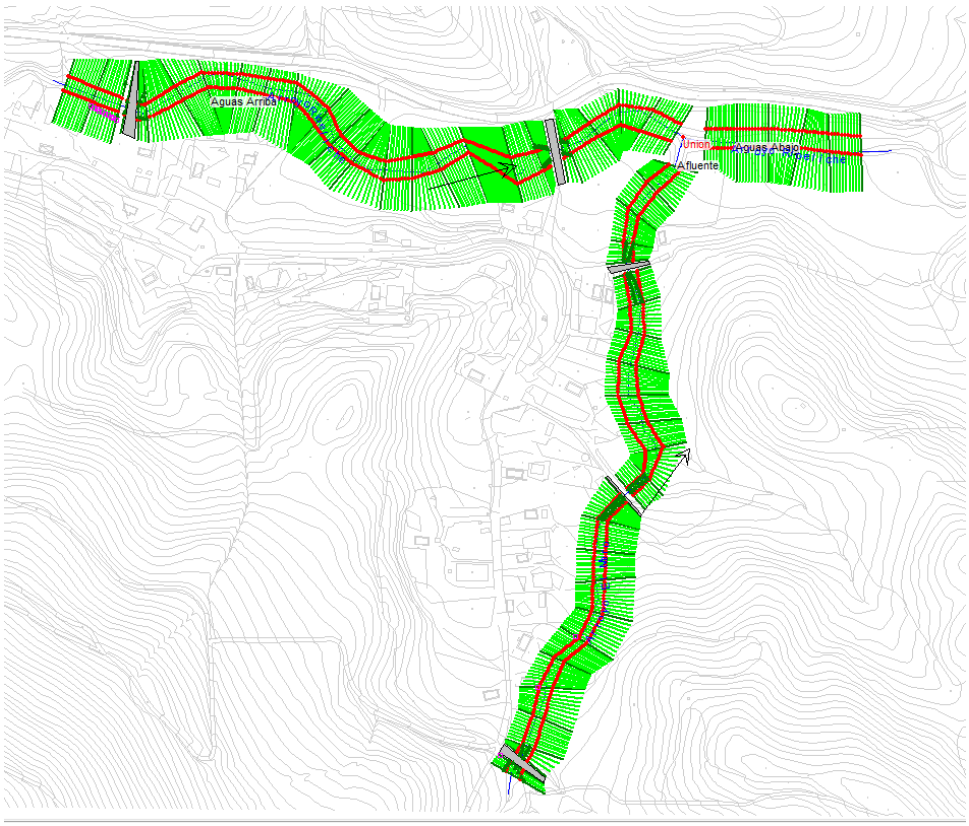
Determinados los caudales circulantes para las avenidas de periodo de retorno 5 y 500 años, procede el cálculo de la vehiculación de los tramos de estudio, empleando los programas informáticos HEC-Geo Ras y Hec-Ras (Sistema de Análisis de Río).

Para el cálculo anterior se ha de partir, además de la topografía del cauce y del caudal circulante, de otro parámetro básico y determinante, el coeficiente de Manning, valor dependiente de las condiciones físicas actuales de toda la llanura de inundación de los arroyos en los tramos de estudio.

2.3.1.- SECCIONES MODELIZADAS

Haremos la descripción como es habitual en el sentido aguas arriba-aguas abajo. Las situaciones y secciones actuales de los cauces (perfiles transversales) quedan reflejadas en el siguiente croquis:

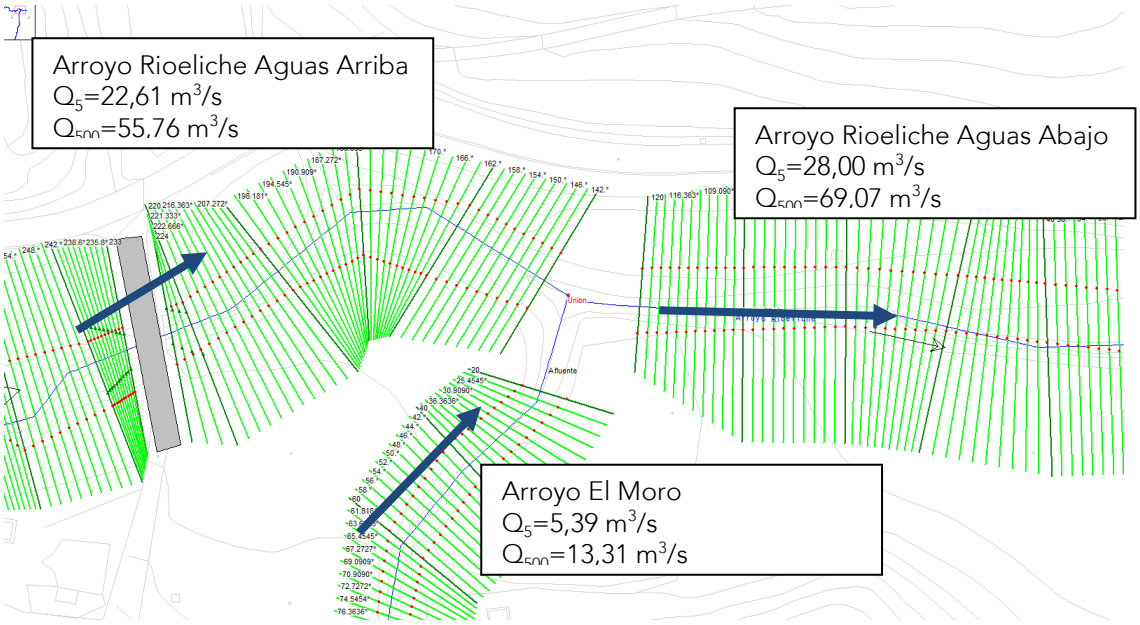
Ilustración 7.- Esquema del Modelo Hidráulico de los arroyos Rioeliche y El Moro.



2.3.1.1.- ARROYO RIOELICHE

El tramo se inicia en la sección 600, punto ubicado aguas arriba del inicio de la zona urbana y discurre de oeste a este. Se ha divido en dos tramos, denominados Aguas Arriba y Aguas Abajo, dado que se ha modelizado el aporte del arroyo El Moro, entre las secciones 140 y 120.

Ilustración 8.- Detalle de la unión modelizada entre los dos arroyos.



En total, se han modelizado 672 metros de arroyo. Se han obtenido de la cartografía 37 secciones transversales que han generado el modelo digital del terreno para el cálculo de la llanura de inundación.

La geometría del Arroyo Rioeliche es muy variable. En general el arroyo está muy encajado con profundidades que rondan los 2,5-5 m. El ancho varía de 4 a 10 metros, en función de lal litologías atravesadas.

Además de las secciones transversales, se han modelizado dos estructuras, entre las secciones 558 y 550, y entre la 232 y 225, respectivamente, en los lugares en los que se ubican actualmente obras de drenaje transversal (ODT en adelante).

2.3.1.2.- ARROYO EL MORO

El tramo se inicia en la sección 460, punto ubicado suficientemente aguas arriba del inicio de la zona urbana y discurre de sur a norte. Finaliza en el arroyo Rioeliche, al que entrega sus aguas entre las secciones 140 y 120 de este último. En total, se han modelizado 450 metros de arroyo.

Se han obtenido de la cartografía 27 secciones transversales que han generado el modelo digital del terreno para el cálculo de la llanura de inundación.

La geometría del Arroyo El Moro es bastante uniforme, encontrándose muy encajado con profundidades que rondan los 2-5 m.

Además de las secciones transversales, se han modelizado tres estructuras, en las secciones 452, 255 y 95, respectivamente, en los lugares en los que se ubican actualmente obras de drenaje transversal (ODT en adelante).

2.3.2.- AVENIDA ORDINARIA DE PERIODO DE RETORNO 5 AÑOS

2.3.2.1.- DATOS DEL MODELO HIDRÁULICO

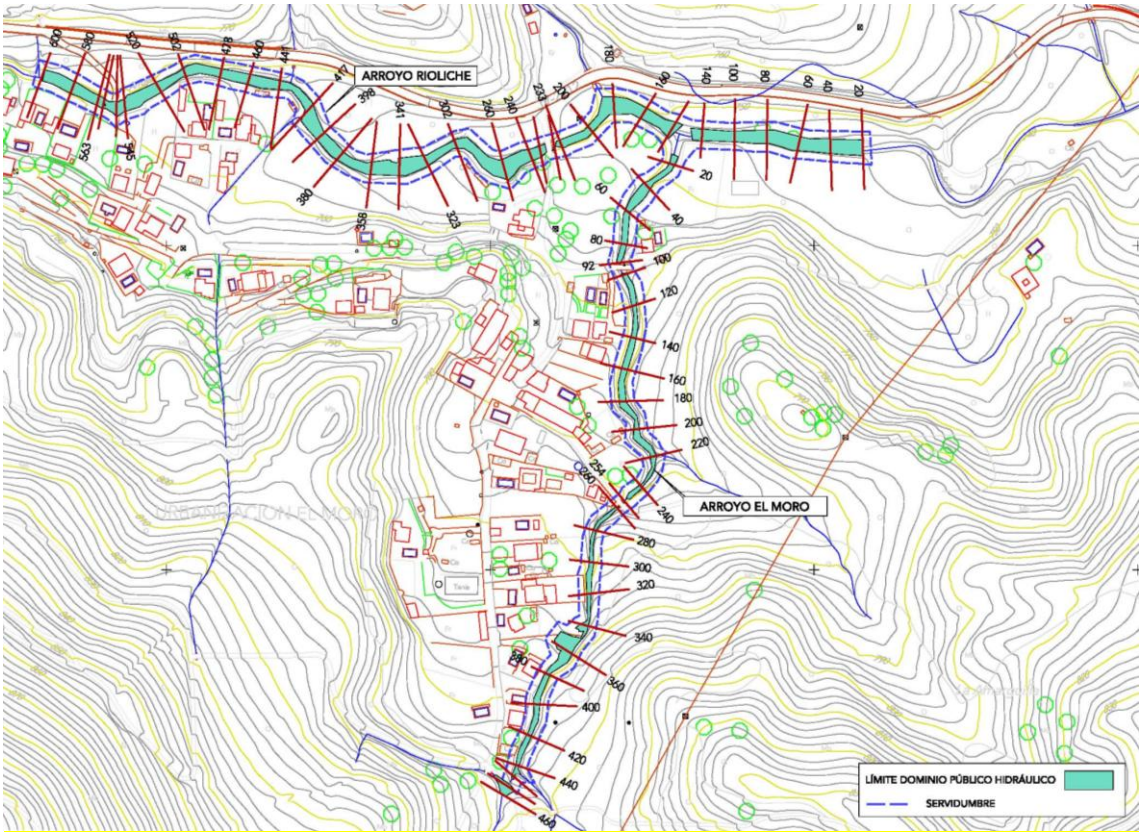
El resumen de los datos obtenidos para el arroyo modelizado se adjunta en la tabla siguiente. Asimismo, se representa la delimitación del DPH que se desprende del estudio realizado, remitiendo a los planos del presente Estudio para consulta de detalle.

Tabla 3. Resumen del modelo para T=5 años en ambos arroyos.

HEC-RAS Plan: ed50 Profile: PF 1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arroyo Rioeliche	Aguas Arriba	600	PF 1	22.61	758.72	760.42	760.42	760.88	0.016635	3.01	7.64	8.37	0.97
Arroyo Rioeliche	Aguas Arriba	580	PF 1	22.61	758.14	759.92	759.94	760.42	0.018574	3.15	7.23	7.89	1.02
Arroyo Rioeliche	Aguas Arriba	563	PF 1	22.61	757.49	758.83	759.13	759.79	0.043390	4.34	5.21	6.17	1.51
Arroyo Rioeliche	Aguas Arriba	559	PF 1	22.61	757.35	758.95	758.95	759.51	0.018644	3.31	6.83	6.73	0.99
Arroyo Rioeliche	Aguas Arriba	554		Culvert									
Arroyo Rioeliche	Aguas Arriba	550	PF 1	22.61	757.14	759.45	759.45	759.95	0.019191	3.15	7.19	9.77	0.99
Arroyo Rioeliche	Aguas Arriba	545	PF 1	22.61	756.99	758.26	758.67	759.54	0.075106	5.01	4.51	6.73	1.95
Arroyo Rioeliche	Aguas Arriba	520	PF 1	22.61	756.62	758.52	758.52	759.02	0.018541	3.15	7.18	7.02	0.99
Arroyo Rioeliche	Aguas Arriba	502	PF 1	22.61	755.95	757.16	757.50	758.25	0.048255	4.62	4.90	5.49	1.56
Arroyo Rioeliche	Aguas Arriba	478	PF 1	22.61	755.17	756.91	757.01	757.62	0.025382	3.73	6.06	5.40	1.12
Arroyo Rioeliche	Aguas Arriba	460	PF 1	22.61	754.19	755.82	756.14	756.85	0.050095	4.50	5.03	6.13	1.58
Arroyo Rioeliche	Aguas Arriba	441	PF 1	22.61	753.17	755.00	755.29	756.01	0.041639	4.45	5.09	4.90	1.39
Arroyo Rioeliche	Aguas Arriba	417	PF 1	22.61	752.64	754.64	754.83	755.28	0.039111	3.55	6.36	9.25	1.37
Arroyo Rioeliche	Aguas Arriba	398	PF 1	22.61	752.07	754.52	754.52	755.03	0.020691	3.18	7.12	6.85	0.99
Arroyo Rioeliche	Aguas Arriba	380	PF 1	22.61	751.45	753.18	753.50	754.18	0.053523	4.42	5.11	6.40	1.58
Arroyo Rioeliche	Aguas Arriba	358	PF 1	22.61	751.11	753.17	753.17	753.62	0.018679	2.98	7.59	8.30	0.99
Arroyo Rioeliche	Aguas Arriba	341	PF 1	22.61	750.82	753.07	752.83	753.31	0.009838	2.18	10.38	11.29	0.73
Arroyo Rioeliche	Aguas Arriba	323	PF 1	22.61	750.23	752.50	752.50	753.03	0.020681	3.21	7.05	6.62	0.99
Arroyo Rioeliche	Aguas Arriba	302	PF 1	22.61	749.85	751.25	751.55	752.26	0.042529	4.46	5.07	5.31	1.46
Arroyo Rioeliche	Aguas Arriba	260	PF 1	22.61	748.84	751.35	750.59	751.45	0.002705	1.42	15.94	12.92	0.41
Arroyo Rioeliche	Aguas Arriba	240	PF 1	22.61	748.37	751.08	750.62	751.35	0.008009	2.32	9.75	7.19	0.64
Arroyo Rioeliche	Aguas Arriba	233	PF 1	22.61	748.22	751.00	750.00	751.20	0.004903	1.95	11.59	6.86	0.48
Arroyo Rioeliche	Aguas Arriba	229		Culvert									
Arroyo Rioeliche	Aguas Arriba	224	PF 1	22.61	748.13	751.00	749.67	751.18	0.004144	1.88	12.02	4.71	0.38
Arroyo Rioeliche	Aguas Arriba	220	PF 1	22.61	748.05	750.14	750.42	751.04	0.039248	4.19	5.39	5.46	1.35
Arroyo Rioeliche	Aguas Arriba	200	PF 1	22.61	747.40	749.31	749.53	750.23	0.035250	4.24	5.33	4.68	1.27
Arroyo Rioeliche	Aguas Arriba	180	PF 1	22.61	746.89	748.81	748.43	749.00	0.005238	1.95	12.00	11.32	0.57
Arroyo Rioeliche	Aguas Arriba	160	PF 1	22.61	746.30	748.20	748.20	748.69	0.018981	3.10	7.29	7.50	1.00
Arroyo Rioeliche	Aguas Arriba	140	PF 1	22.61	745.79	747.85	747.36	748.03	0.004898	1.84	12.26	10.47	0.54
Arroyo Rioeliche	Aguas Abajo	120	PF 1	28.00	745.20	747.45	747.36	747.95	0.015667	3.16	8.86	7.24	0.91
Arroyo Rioeliche	Aguas Abajo	100	PF 1	28.00	744.63	746.91	746.95	747.53	0.020755	3.51	7.97	6.82	1.04
Arroyo Rioeliche	Aguas Abajo	80	PF 1	28.00	744.23	745.94	746.22	746.83	0.039682	4.18	6.70	8.02	1.46
Arroyo Rioeliche	Aguas Abajo	60	PF 1	28.00	743.95	745.85	745.79	746.32	0.012695	2.67	9.39	8.65	0.85
Arroyo Rioeliche	Aguas Abajo	40	PF 1	28.00	743.75	745.51	745.51	746.01	0.014144	2.61	9.20	8.81	0.90
Arroyo Rioeliche	Aguas Abajo	20	PF 1	28.00	742.94	745.06	745.10	745.58	0.018354	3.26	8.83	9.23	1.03
Arroyo El Moro	Afluente	460	PF 1	5.39	796.29	797.25	797.25	797.48	0.022147	2.12	2.54	5.56	1.00
Arroyo El Moro	Afluente	454	PF 1	5.39	796.00	797.08	796.72	797.23	0.003806	1.60	3.17	17.21	0.50
Arroyo El Moro	Afluente	452		Culvert									
Arroyo El Moro	Afluente	447	PF 1	5.39	793.58	793.83	794.48	816.28	9.975622	21.00	0.26	1.79	17.71
Arroyo El Moro	Afluente	440	PF 1	5.39	792.29	792.99	793.49	795.51	0.400993	7.03	0.77	2.18	3.78
Arroyo El Moro	Afluente	420	PF 1	5.39	790.45	791.38	791.66	792.23	0.096012	4.09	1.32	2.84	1.92
Arroyo El Moro	Afluente	400	PF 1	5.39	789.40	790.13	790.33	790.75	0.070671	3.47	1.55	3.83	1.74
Arroyo El Moro	Afluente	380	PF 1	5.39	788.31	789.36	789.49	789.83	0.037035	3.07	1.81	3.49	1.27
Arroyo El Moro	Afluente	360	PF 1	5.39	787.11	787.42	787.55	787.93	0.184207	3.62	1.71	12.77	2.54
Arroyo El Moro	Afluente	340	PF 1	5.39	784.04	784.62	784.86	785.52	0.131974	4.61	1.34	5.14	2.29
Arroyo El Moro	Afluente	320	PF 1	5.39	779.14	779.88	780.27	781.56	0.245634	5.74	0.94	2.58	3.04
Arroyo El Moro	Afluente	300	PF 1	5.39	776.88	777.90	778.20	778.83	0.107353	4.28	1.26	2.61	1.97
Arroyo El Moro	Afluente	280	PF 1	5.39	772.93	773.94	774.37	775.44	0.186596	5.42	0.99	1.95	2.43
Arroyo El Moro	Afluente	260	PF 1	5.39	769.73	770.67	771.06	772.01	0.168063	5.12	1.05	2.20	2.37
Arroyo El Moro	Afluente	255		Culvert									
Arroyo El Moro	Afluente	254	PF 1	5.39	768.88	769.16	770.01	813.92	21.959820	29.64	0.18	1.29	25.16
Arroyo El Moro	Afluente	240	PF 1	5.39	766.64	767.43	767.83	769.08	0.229999	5.68	0.95	2.40	2.88
Arroyo El Moro	Afluente	220	PF 1	5.39	762.84	763.48	763.75	764.61	0.220346	4.72	1.14	4.25	2.90
Arroyo El Moro	Afluente	200	PF 1	5.39	760.96	761.85	762.09	762.60	0.086457	3.83	1.41	3.25	1.85
Arroyo El Moro	Afluente	180	PF 1	5.39	759.32	759.95	760.16	760.63	0.100648	3.65	1.48	4.56	2.05
Arroyo El Moro	Afluente	160	PF 1	5.39	758.19	759.22	759.31	759.61	0.036385	2.80	1.93	3.76	1.25
Arroyo El Moro	Afluente	140	PF 1	5.39	757.15	758.16	758.30	758.66	0.048098	3.13	1.72	3.37	1.40
Arroyo El Moro	Afluente	120	PF 1	5.39	756.00	756.83	757.03	757.46	0.058963	3.54	1.52	2.84	1.54
Arroyo El Moro	Afluente	100	PF 1	5.39	754.59	755.57	755.75	756.25	0.054913	3.66	1.47	3.13	1.51
Arroyo El Moro	Afluente	95		Culvert									
Arroyo El Moro	Afluente	92	PF 1	5.39	753.14	754.64	754.64	755.16	0.041569	3.29	1.72	1.64	0.96
Arroyo El Moro	Afluente	80	PF 1	5.39	752.40	753.18	753.42	753.95	0.096401	3.89	1.38	3.54	1.98
Arroyo El Moro	Afluente	60	PF 1	5.39	751.06	751.79	752.00	752.45	0.072939	3.60	1.50	3.48	1.75
Arroyo El Moro	Afluente	40	PF 1	5.39	749.71	750.19	750.36	750.72	0.096940	3.23	1.67	6.14	1.98
Arroyo El Moro	Afluente	20	PF 1	5.39	746.90	747.74	748.03	748.65	0.109195	4.23	1.27	3.03	2.08

Ilustración 9.- Planta de delimitación del DPH



Resaltar que no se han implementado las ODT actuales ni las modificadas descritas en el Anejo nº2 sino que, debido a la precisión y escala de la topografía empleada, se ha aumentado la sección lo necesario para que no se produzcan vertidos. Es por ello que se recomienda la realización de un modelo hidráulico sobre cartografía de detalle para su correcta comprobación.

2.3.2.2.- INCIDENCIAS CON LA ORDENACIÓN EXISTENTE

El DPH de los arroyos Rioeliche y El Moro Máquinas no afecta ni al suelo urbano ni al urbanizable. Se ha representado en base a la delimitación anterior la zona de servidumbre del arroyo, que en varias zonas está ocupada por edificaciones, debido, como ya se ha comentado, a la proximidad de edificaciones al cauce.

2.3.3.- AVENIDA EXTRAORDINARIA DE PERIODO DE RETORNO 500 AÑOS

2.3.3.1.- DATOS DEL MODELO HIDRÁULICO

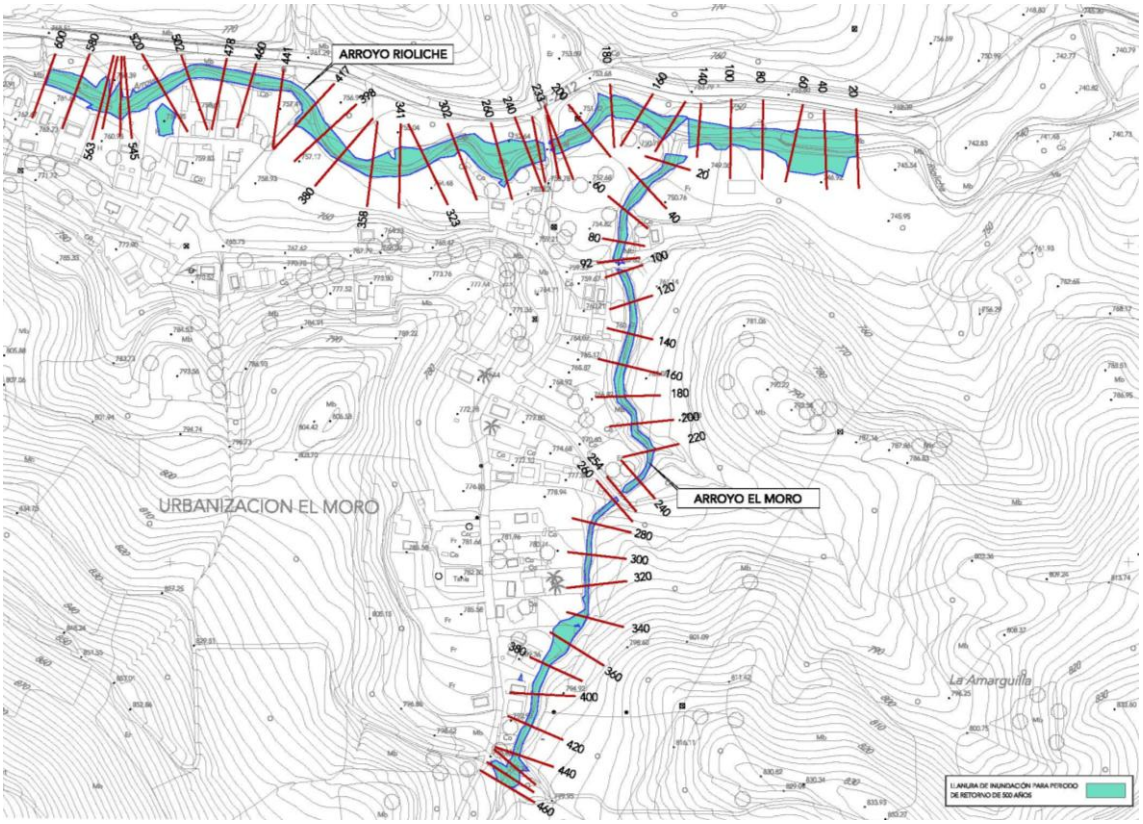
El resumen de los datos obtenidos para el arroyo modelizado se adjunta en la tabla siguiente. Asimismo, se representan la delimitación de la llanura de inundación que se desprende del estudio realizado, remitiendo a los planos del presente Estudio para consulta de detalle.

Tabla 4. Resumen del modelo para T=500 en ambos arroyos.

HEC-RAS Plan: ed50 Profile: PF 2

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arroyo Rioeliche	Aguas Arriba	600	PF 2	55.78	758.72	761.21	761.21	761.92	0.014178	3.80	15.21	10.66	0.96
Arroyo Rioeliche	Aguas Arriba	580	PF 2	55.78	758.14	760.80	760.81	761.44	0.012428	3.63	16.49	13.36	0.90
Arroyo Rioeliche	Aguas Arriba	563	PF 2	55.78	757.49	760.74	760.04	761.00	0.003660	2.38	26.62	23.56	0.50
Arroyo Rioeliche	Aguas Arriba	559	PF 2	55.78	757.35	759.90	759.90	760.83	0.016233	4.27	13.05	9.55	1.00
Arroyo Rioeliche	Aguas Arriba	554		Culvert									
Arroyo Rioeliche	Aguas Arriba	550	PF 2	55.78	757.14	760.29	760.29	761.22	0.015824	4.26	13.09	24.31	0.99
Arroyo Rioeliche	Aguas Arriba	545	PF 2	55.78	756.99	758.83	759.47	760.83	0.061067	6.29	9.05	9.17	1.90
Arroyo Rioeliche	Aguas Arriba	520	PF 2	55.78	756.62	759.40	759.40	760.17	0.016716	3.87	14.41	9.35	0.99
Arroyo Rioeliche	Aguas Arriba	502	PF 2	55.78	755.95	757.98	758.45	759.51	0.039949	5.49	10.16	7.35	1.49
Arroyo Rioeliche	Aguas Arriba	478	PF 2	55.78	755.17	758.05	758.05	758.97	0.018857	4.25	13.13	7.16	1.00
Arroyo Rioeliche	Aguas Arriba	460	PF 2	55.78	754.19	756.45	757.01	758.19	0.050864	5.84	9.56	7.76	1.68
Arroyo Rioeliche	Aguas Arriba	441	PF 2	55.78	753.17	755.97	756.50	757.34	0.033673	5.17	10.78	6.83	1.31
Arroyo Rioeliche	Aguas Arriba	417	PF 2	55.78	752.64	756.03	755.48	756.30	0.004904	2.30	25.07	19.43	0.56
Arroyo Rioeliche	Aguas Arriba	398	PF 2	55.78	752.07	755.42	755.42	756.12	0.015708	3.75	15.28	11.38	0.94
Arroyo Rioeliche	Aguas Arriba	380	PF 2	55.78	751.45	753.85	754.36	755.38	0.045921	5.49	10.22	8.88	1.58
Arroyo Rioeliche	Aguas Arriba	358	PF 2	55.78	751.11	753.79	753.95	754.64	0.023777	4.09	13.64	11.22	1.18
Arroyo Rioeliche	Aguas Arriba	341	PF 2	55.78	750.82	754.03	753.54	754.31	0.005196	2.38	24.19	18.05	0.59
Arroyo Rioeliche	Aguas Arriba	323	PF 2	55.78	750.23	753.43	753.43	754.13	0.018448	3.70	15.09	10.73	0.99
Arroyo Rioeliche	Aguas Arriba	302	PF 2	55.78	749.85	752.16	752.60	753.45	0.030406	5.04	11.21	8.83	1.31
Arroyo Rioeliche	Aguas Arriba	260	PF 2	55.78	748.84	752.76	751.35	752.86	0.001235	1.40	41.37	24.38	0.30
Arroyo Rioeliche	Aguas Arriba	240	PF 2	55.78	748.37	752.50	751.62	752.80	0.004728	2.43	23.54	14.79	0.53
Arroyo Rioeliche	Aguas Arriba	233	PF 2	55.78	748.22	752.34	751.22	752.70	0.004263	2.66	20.94	14.04	0.49
Arroyo Rioeliche	Aguas Arriba	229		Culvert									
Arroyo Rioeliche	Aguas Arriba	224	PF 2	55.78	748.13	752.05	750.87	752.59	0.010078	3.25	17.16	6.88	0.57
Arroyo Rioeliche	Aguas Arriba	220	PF 2	55.78	748.05	750.82	751.28	752.36	0.044177	5.51	10.24	8.80	1.53
Arroyo Rioeliche	Aguas Arriba	200	PF 2	55.78	747.40	750.37	750.80	751.54	0.027550	4.85	12.00	9.97	1.22
Arroyo Rioeliche	Aguas Arriba	180	PF 2	55.78	746.89	748.60	749.14	750.34	0.058643	5.96	9.65	10.41	1.88
Arroyo Rioeliche	Aguas Arriba	160	PF 2	55.78	746.30	749.05	749.05	749.79	0.016954	3.81	14.64	9.81	1.00
Arroyo Rioeliche	Aguas Arriba	140	PF 2	55.78	745.79	749.04	748.15	749.25	0.002663	2.03	28.79	18.27	0.44
Arroyo Rioeliche	Aguas Abajo	120	PF 2	69.07	745.20	748.53	748.48	749.18	0.014209	3.57	19.54	14.82	0.92
Arroyo Rioeliche	Aguas Abajo	100	PF 2	69.07	744.63	747.98	747.98	748.83	0.016873	4.09	16.87	9.78	0.99
Arroyo Rioeliche	Aguas Abajo	80	PF 2	69.07	744.23	746.55	747.12	748.08	0.039127	5.57	13.01	12.91	1.55
Arroyo Rioeliche	Aguas Abajo	60	PF 2	69.07	743.95	746.91	746.72	747.23	0.009045	2.65	27.52	27.64	0.76
Arroyo Rioeliche	Aguas Abajo	40	PF 2	69.07	743.75	746.57	746.49	746.99	0.012186	3.11	24.35	25.17	0.89
Arroyo Rioeliche	Aguas Abajo	20	PF 2	69.07	742.94	745.91	745.93	746.61	0.015771	3.78	18.62	13.86	1.02
Arroyo El Moro	Afluente	460	PF 2	13.31	796.29	797.95	797.65	798.09	0.006220	1.66	8.08	10.67	0.59
Arroyo El Moro	Afluente	454	PF 2	13.31	796.00	797.62	797.30	798.02	0.005905	2.62	4.78	22.53	0.66
Arroyo El Moro	Afluente	452		Culvert									
Arroyo El Moro	Afluente	447	PF 2	13.31	793.58	795.05	795.05	795.68	0.015484	3.50	3.80	10.82	0.99
Arroyo El Moro	Afluente	440	PF 2	13.31	792.29	793.54	793.98	795.08	0.114639	5.50	2.42	3.89	2.22
Arroyo El Moro	Afluente	420	PF 2	13.31	790.45	791.75	792.18	793.09	0.095880	5.13	2.60	3.97	2.02
Arroyo El Moro	Afluente	400	PF 2	13.31	789.40	790.45	790.80	791.53	0.072530	4.60	2.89	4.60	1.85
Arroyo El Moro	Afluente	380	PF 2	13.31	788.31	789.75	790.01	790.51	0.039587	3.99	3.58	5.60	1.39
Arroyo El Moro	Afluente	360	PF 2	13.31	787.11	787.52	787.75	788.44	0.179703	4.21	3.13	14.49	2.61
Arroyo El Moro	Afluente	340	PF 2	13.31	784.04	784.85	785.22	786.06	0.114255	5.34	2.77	7.11	2.22
Arroyo El Moro	Afluente	320	PF 2	13.31	779.14	780.17	780.84	782.88	0.213394	7.31	1.85	3.35	3.03
Arroyo El Moro	Afluente	300	PF 2	13.31	776.88	778.28	778.74	779.78	0.110597	5.43	2.45	3.68	2.12
Arroyo El Moro	Afluente	280	PF 2	13.31	772.93	774.38	775.00	776.65	0.160856	6.67	2.00	2.67	2.42
Arroyo El Moro	Afluente	260	PF 2	13.31	769.73	771.05	771.63	773.25	0.162221	6.57	2.03	3.14	2.51
Arroyo El Moro	Afluente	255		Culvert									
Arroyo El Moro	Afluente	254	PF 2	13.31	768.88	769.46	770.60	787.53	2.973954	18.84	0.71	2.06	10.27
Arroyo El Moro	Afluente	240	PF 2	13.31	766.64	767.71	768.40	770.76	0.266372	7.74	1.72	3.25	3.29
Arroyo El Moro	Afluente	220	PF 2	13.31	762.84	763.68	764.13	765.59	0.229825	6.12	2.18	5.84	3.15
Arroyo El Moro	Afluente	200	PF 2	13.31	760.96	762.22	762.58	763.36	0.078636	4.75	2.80	4.26	1.87
Arroyo El Moro	Afluente	180	PF 2	13.31	759.32	760.19	760.57	761.45	0.106109	4.97	2.68	5.26	2.22
Arroyo El Moro	Afluente	160	PF 2	13.31	758.19	759.61	759.80	760.27	0.039155	3.61	3.69	5.20	1.37
Arroyo El Moro	Afluente	140	PF 2	13.31	757.15	758.58	758.81	759.36	0.045951	3.91	3.40	4.56	1.45
Arroyo El Moro	Afluente	120	PF 2	13.31	756.00	757.27	757.56	758.26	0.056856	4.40	3.03	3.84	1.58
Arroyo El Moro	Afluente	100	PF 2	13.31	754.59	756.10	756.41	757.24	0.039856	4.73	2.81	4.63	1.42
Arroyo El Moro	Afluente	95		Culvert									
Arroyo El Moro	Afluente	92	PF 2	13.31	753.14	755.57	755.57	756.27	0.037841	3.80	3.60	4.35	0.98
Arroyo El Moro	Afluente	80	PF 2	13.31	752.40	753.44	753.86	754.97	0.114633	5.51	2.45	4.69	2.30
Arroyo El Moro	Afluente	60	PF 2	13.31	751.06	752.14	752.49	753.22	0.072091	4.60	2.89	4.46	1.82
Arroyo El Moro	Afluente	40	PF 2	13.31	749.71	750.39	750.68	751.37	0.105665	4.39	3.03	7.44	2.20
Arroyo El Moro	Afluente	20	PF 2	13.31	746.90	749.23	748.51	749.33	0.002714	1.35	9.87	8.41	0.39

Ilustración 10.- Planta de delimitación de la llanura de inundación



2.3.3.2.- COMPATIBILIDAD CON LA ORDENACIÓN URBANÍSTICA

La ordenación urbanística del suelo urbano y urbanizable es compatible con la llanura de inundación estudiada.

En cuanto a la llanura de inundación, establecida para un periodo de retorno de 500 años, no sobrepasa la delimitación de la zona de servidumbre marcada en el plano anterior.

2.4.- ORDENACIÓN DEL ESTUDIO Y DOCUMENTOS DE QUE CONSTA

El presente Estudio se ordena conforme a la siguiente documentación:

DOCUMENTO NÚMERO 1.- **MEMORIA** con 2 Anejos

Anejo número 1.- Estudio Hidrológico

Anejo número 2.- Estudio Hidráulico

DOCUMENTO NÚMERO 2.- **PLANOS**

1.- Situación

2.- Planta topográfica

3.- Cuenca y usos del suelo

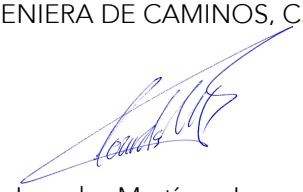
4.- Delimitación del DPH

5.- Llanura de Inundación para T 500 años

2.5.- CONCLUSIÓN

Con cuanto antecede y el resto de documentación que se incorpora al presente Estudio, creemos haber explicitado suficientemente el alcance del presente trabajo y haber cumplimentado el encargo recibido, por lo que sometemos el Estudio a la tramitación correspondiente.

Córdoba, Agosto de 2013
I N G E S A
LA INGENIERA DE CAMINOS, C. Y P.



Fdo: Lourdes Martínez Juguera
Colegiada nº 14.835

ANEJO NÚMERO 1. ESTUDIO HIDROLÓGICO

ANEJO NÚMERO 1. ESTUDIO HIDROLÓGICO

1. INTRODUCCIÓN

El objeto del presente anejo es calcular los caudales circulantes para las avenidas extraordinarias de 5 y 500 años por los arroyos Rioeliche y Moro que discurren por la urbanización El Moro, en Martos, para estudiar posibles afecciones a la ordenación propuesta en el Plan General de Ordenación Urbana del municipio.

2. BASES DE CÁLCULO

2.1. LLUVIA DE CÁLCULO

Partiendo, como ya se ha comentado, de las isolíneas, en nuestro caso de precipitaciones máximas en 24h, publicados por la Dirección General de Carreteras en el texto "Máximas Precipitaciones de la España Peninsular", se ha obtenido la lluvia de cálculo para los períodos de retorno considerados.

2.2. PERIODO DE RETORNO

Al tratarse de un estudio de avenidas, se ha de definir el máximo período de retorno a considerar. Los valores que adoptan los diferentes autores varían según el tipo de cuenca y los daños previsibles, debiendo, además, tenerse en cuenta el criterio que establecen los Organismos competentes en materia hidrológica.

En el caso de cuencas mayores, con cauces ya conformados como es nuestro caso, los períodos de retorno se establecen entre 50 y 100 años pero teniendo en cuenta la normativa de la Agencia Andaluza del Agua, se adopta para este caso el valor límite de 500 años.

Por tanto será el valor correspondiente al periodo de retorno de 500 años el empleado para fijar la llanura de inundación.

Para la determinación del DPH del cauce se ha empleado el periodo de retorno 5 años, si bien según nos indica El Organismo de Cuenca en Jaén, suele estar comprendido entre 2 y 5 años.

Recordar que según el R.D.L. 1/01de 20 de julio, por el que se aprueba el Texto Refundido de la Ley de Aguas, y el R. D. 849/86, de 11 de abril, por el que se aprueba el Reglamento del Dominio Público Hidráulico que desarrolla los títulos preliminar, I, IV, V, VI y VII de la Ley 29/85, de 2 de agosto, de Aguas:

- álveo o cauce natural de una corriente continua o discontinua es el terreno cubierto por las aguas en las máximas crecidas ordinarias.
- Se considerara como caudal de la máxima crecida ordinaria la media de los máximos caudales anuales, en su régimen natural producidos durante diez años consecutivos, que sean representativos del comportamiento hidráulico de la corriente
- Se entiende por riberas las fajas laterales de los cauces públicos situadas por encima del nivel de aguas bajas, y por márgenes los terrenos que lindan con los cauces. Las márgenes están sujetas, en toda su extensión longitudinal:

  a) A una zona de servidumbre de cinco metros de anchura, para uso público que se regulará reglamentariamente.
  b) A una zona de policía de 100 metros de anchura en la que se condicionará el uso del suelo y las actividades que se desarrollen.

2.3. MÉTODO DE LAS "MÁXIMAS PRECIPITACIONES DE LA ESPAÑA PENINSULAR

Para la determinación de estos valores de máximas lluvias diarias se han seguido las siguientes fases:

- Recopilación de datos de las estaciones pluviométricas más significativas
- Tratamiento estadístico de las series de datos, realizando un modelo regional de parámetros y cuantiles
- Análisis de la distribución del valor medio de las series de máximas anuales

Mediante el ajuste estadístico SQRT-ET max de las citadas series de precipitaciones, se han extrapolado los valores al periodo de retorno considerado que se adjuntan en los Apéndices 1A y 2A, " *Método de las Máximas Precipitaciones de la España Peninsular* ", del presente Anejo, mediante la aplicación informática MAXPLU, desarrollada igualmente por la Dirección General de Carreteras. Esta aplicación se basa en la utilización de un sistema GIS de información geográfica tal que, a partir de las coordenadas geográficas o UTM del punto a analizar, transmite los parámetros resultantes de la extrapolación de los resultados del tratamiento estadísticos de los datos reales de las estaciones pluviométricas.

Dado que la superficie de la cuenca principal es superior a 1 Km^2, se ha considerado una malla de puntos equidistantes 1.000 metros, y se han tanteado nueve puntos de control o característicos.

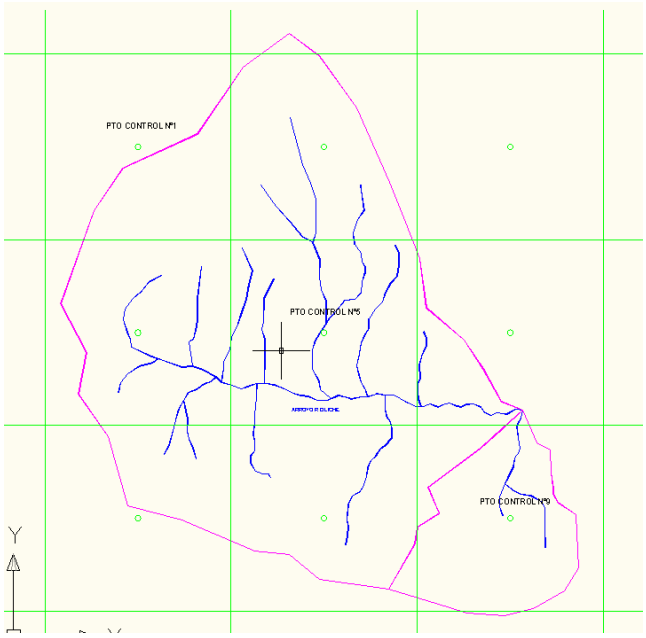
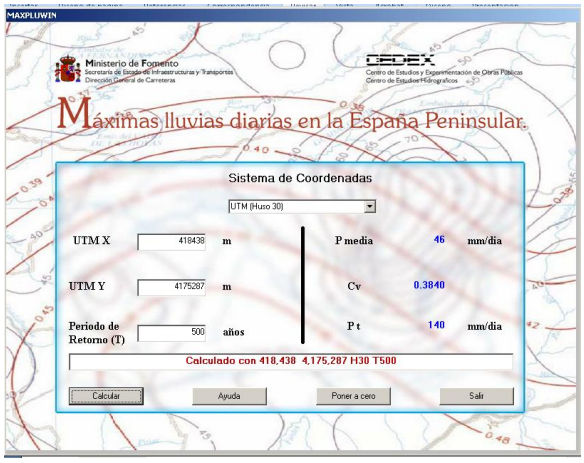


Ilustración 1.- Malla de puntos de control. Marcados los que se detallan en cálculo.

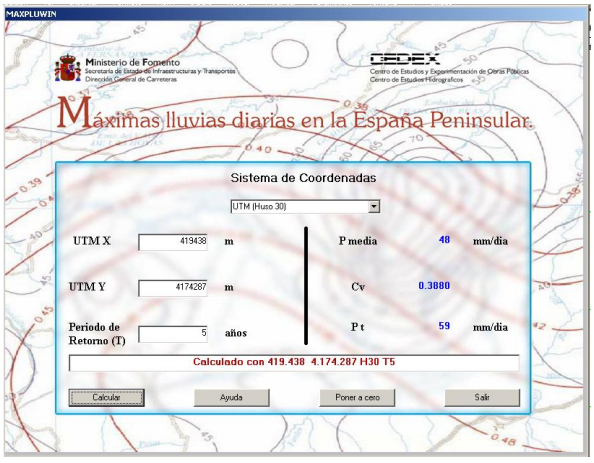
La extrapolación se realiza para los periodos de retorno de 5 y 500 años. El análisis de los datos de los 3 puntos representativos de la cuenca y anteriormente grafiados, así como los resultados numéricos y gráficos obtenidos se adjuntan a continuación.

T= 5 AÑOS

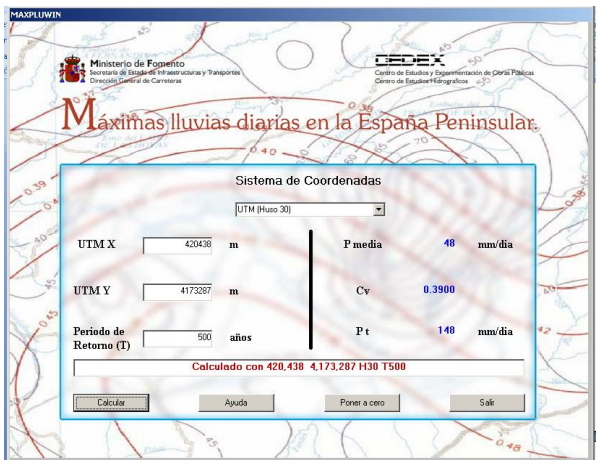
T= 500 AÑOS



Punto de control nº1



Punto de control nº5



Punto de control nº9

A continuación transcribimos la tabla con el valor adoptado:

Tabla 1. Resumen de valores

COORDENADAS UTM DE PTOS ANALIZADOS		PRECIP. MAX DIARIAS PARA EL PERIODO DE RETORNO (mm/día)	
		5	500
PTO CONTROL Nº1	418.438 4.175.287	57	140
PTO CONTROL Nº5	419.438 4.174.287	59	147
PTO CONTROL Nº9	420.438 4.173.287	60	148

Se adopta el mayor de los valores obtenidos, es decir, 60 mm/día para la avenida ordinaria de 5 años y 148 mm/d para la extraordinaria de 500 años.

Conocida la lluvia de cálculo, es preciso determinar las características físicas de la cuenca receptora.

3. CARACTERÍSTICAS DE LA CUENCA

Calculados los valores de la lluvia máxima de cálculo en el apartado anterior, abordaremos la determinación del resto de factores que intervienen en el cálculo del caudal de avenida, en definitiva, las características de las cuencas.

Nos interesan

- la superficie, que se determina sobre los planos a escala 1:10.000 de la Cartografía oficial de la Junta de Andalucía.
- los datos geométricos que determinan la topografía de la cuenca y del cauce: puntos altos, punto bajo y longitudes a recorrer por el agua. Todos ellos se determinan también a partir de la cartografía antes citada.
- el coeficiente de escorrentía, para el cual partimos de los distintos tipos de cultivos existentes en la cuenca con sus extensiones superficiales correspondientes y del tipo de suelo. La cartografía citada y la inspección visual "in situ" son nuestras bases de partida.

No entramos en el cálculo de cada uno de los valores anteriores, puesto que se resumen en la tabla siguiente, así como su correspondiente reseña gráfica materializada en el Plano de Cuencas que se acompaña en el Apéndice 1, donde se determina la divisoria en el punto más bajo del cauce que nos ocupa en la zona de actuación.

Tabla 2. Caracterización de las cuencas

CUENCA	SUPERFICIE (HA)	PTO. ALTO CUENCA (M)	DISTANCIA (M)	PTO. ALTO CAUCE (M)	DIS.CAUCE (M)	PTO.BAJO (M)
ARROYO RIOLICHE	435,26	1.251,9	3.520	1.100	2.736	750
ARROYO EL MORO	6,84	999,5	1.153	870	896	750

4. CÁLCULO DEL CAUDAL DE AVENIDA

Teóricamente el caudal aportado por una cuenca en un punto vendrá determinado por la lluvia correspondiente al tiempo de concentración de la cuenca, afectando a la superficie de la cuenca y reducida por la aplicación de coeficientes de escorrentía.

Según el nivel de seguridad deseable, función lógicamente de los posibles riesgos, se adoptará para la lluvia un periodo de retorno menor o mayor, entre los 10 años y los 1.000 años como valores habituales, adoptados ingenierilmente.

El Organismo de Cuenca exige que se considere para el estudio de inundabilidad la lluvia de periodo de retorno de 500 años por lo que es para este valor para el que desarrollaremos los cálculos del presente Estudio. Como ya se ha comentado, para la determinación del DPH se usará la lluvia de periodo de retorno de 5 años.

De los mapas de Usos del Suelo publicados por la Junta de Andalucía, se ha extraído la información sobre el tipo y uso de los suelos afectados por la cuenca anterior. Esta información se empleará para el cálculo del coeficiente de escorrentía, como más adelante se detallará.

4.1. MÉTODOS DE CÁLCULO

Careciéndose, como es lógico, de datos de aforo, el cálculo de caudal lo realizaremos por métodos empíricos, de acuerdo con las formulaciones habituales para este tipo de estimaciones. Dada la inseguridad de los mismos realizamos el cálculo por diversos métodos del tipo de los hidrometeorológicos, de forma que obtengamos una visión lo más amplia posible, que nos permita una definición acertada de los caudales previsibles.

4.1.1. MÉTODO RACIONAL

La sencilla formulación del Método Racional lo hace muy atrayente para los casos en los que no es preciso estudiar laminación y sólo interese el valor del caudal punta, que en este caso será de cálculo.

La expresión para el cálculo del caudal con este método es la siguiente:

$$Q = \frac{C \times I \times S}{K} \times K' \qquad \text{siendo,}$$

Q = Caudal de cálculo en m^3/seg

C = Coeficiente medio de escorrentía de la cuenca o superficie drenada

I = Intensidad media de precipitación correspondiente al periodo de retorno considerado y a un intervalo igual al tiempo de concentración, en mm/h

S = área de la cuenca en Km^2, a no ser que existan perdidas o aportaciones de importancia, tales como resurgencias o sumideros, en cuyo caso el cálculo del caudal Q deberá justificarse convenientemente.

K = coeficiente que depende de las unidades en las que se consideren los parámetros anteriormente descritos, en nuestro caso y para las unidades consignadas $K = 3,6$

K' = factor de corrección que adopta el valor de 1,2, atendiendo a que la hipótesis de lluvia neta constante admitida en el método racional no es real y en la práctica, existen variaciones en su reparto temporal que favorecen el desarrollo de los caudales punta. Sin embargo, en cuencas pequeñas (Tiempo de Concentración < 6h), la influencia de la variación temporal de la lluvia neta es secundaria y se puede reflejar con el factor K', con lo que la expresión inicial quedaría como sigue:

$$Q = \frac{C \times I \times S}{3,6} \times 1,2$$

En el caso normal de cuencas en las que predomine el tiempo de recorrido de flujo caracterizado por una red de cauces definidos, el tiempo de concentración Tc (horas), se obtiene de la expresión:

$$Tc = 0,3 \times \left[\left(\frac{L}{J^{0,25}} \right)^{0,76} \right]$$

Tc = tiempo de concentración (horas)

L = longitud del cauce principal (kms)

J = pendiente media del cauce principal (m/m)

La intensidad de lluvia correspondiente a una duración t viene determinada por la aplicación de la fórmula de Yarnell y Hattaway, con los coeficientes deducidos por Jaime Nadal para el caso de España, conforme ha sido publicado por el entonces denominado Instituto Eduardo Torroja. Obtenemos:

$I_t = 9,25 \times I_h \times t^{-0,55}$, donde

I_t = Intensidad para una duración del aguacero de (t minutos), en mm

I_h = Intensidad horaria, en mm

t = Duración del aguacero en minutos

Del análisis de los datos de lluvia se obtiene el valor de precipitación máxima diaria para un periodo de retorno determinado, y que en nuestro caso es de 500 años. La distribución de esta lluvia a lo largo del día no es conocida, y como ya se ha citado es constante, es decir que se supone que pasaríamos de datos de precipitación a intensidad, sin más que dividir entre 24 horas. Esta suposición es bastante errónea pues una vez que el aguacero alcanza una duración igual al tiempo de concentración de la cuenca, el caudal aportado por la cuenca no aumenta

considerando que no se interrumpe el normal discurrir de las aguas. Al no disponer de datos suficientes para configurar el hidrograma de la cuenca vertiente para aguaceros de distinta duración y trabajar con valores de precipitación y no de intensidad, diremos que para calcular la Intensidad correspondiente al tiempo de concentración por la fórmula de Yarnell y Hattaway consideraremos que la intensidad horaria es el 25% de la diaria con lo que estamos suponiendo que es posible que las precipitaciones recogidas a lo largo de un día pueden haberse concentrado en tan sólo seis horas. De este modo la expresión que nos permite calcular la intensidad correspondiente a un tiempo de concentración dado queda como sigue:

$$I_t = 9{,}25 \times 0{,}25 \times Pmax_{24h} \times t^{-0{,}55}$$, donde

I_{Tc} = Intensidad correspondiente al tiempo de concentración y periodo de retorno considerados, en mm

Pmáx = Precipitación máxima diaria para el periodo de retorno considerado, en mm

Tc = Tiempo de concentración de la cuenca en estudio, en minutos

El último parámetro que nos queda por definir es el coeficiente de escorrentía que define la proporción de la componente superficial de la precipitación de intensidad I, y depende en líneas generales de las características de suelo, vegetación, topografía y precipitación.

Dado el tipo de cuenca considerado y de conformidad con los valores habituales podemos estimar el coeficiente de escorrentía por:

$$C = \frac{0{,}3 * t}{20 + t}$$

En nuestro caso se ha tomado el coeficiente de escorrentía que resulta de aplicar el método de la 5.2-IC, teniendo presente la prescripción del Organismo de Cuenca de no considerar escorrentías inferiores a 0,65.

Los resultados obtenidos por aplicación de este método a la cuenca estudiada se recogen en el apéndice 2 del presente Documento. A continuación se presenta un resumen:

Tabla 3. Resumen de resultados por el Método Racional

Cuenca	Tc (h)	It_{cmo} (mm)	It_{500} (mm)	C	$Q_{cmo}(m^3/s)$	$Q_{500}(m^3/s)$
ARROYO RIOLICHE	0,89	15,57	38,39	0,65	14,68	36,20
ARROYO EL MORO	0,40	24,02	59,24	0,65	3,56	8,78

4.1.2. MÉTODO DE LA INSTRUCCIÓN DE DRENAJE

Con fecha 23 de Mayo de 1.990, el B.O.E. publicaba la orden de 14 de mayo por la que se aprobaba la Instrucción 5.2 I.C. de Drenaje Superficial, que con independencia de ser concebida para la aplicación al drenaje de Carreteras, significa una aportación, a nuestro juicio muy valiosa, a los métodos de cálculo de avenidas, en casos simplificados de cuencas pequeñas.

Aplicamos también este método a los diferentes casos que nos ocupan, diferenciando como es lógico cada una de las cuencas estudiadas.

El tiempo de concentración es, según este método:

$$Tc = 0.3 \cdot \left(\frac{L}{J^{0.25}} \right)^{0.76}$$

La intensidad que recoge el método de la Instrucción de Carreteras, siempre considerando el periodo de retorno y tiempo de concentración considerados para el cálculo, adopta la siguiente expresión:

$$\frac{I_t}{I_d} = \left(\frac{I_1}{I_d} \right)^{\left(\frac{28^{0,1} - t^{0,1}}{28^{0,1} - 1} \right)}$$ donde,

I_t = intensidad media correspondiente al intervalo de duración t, en mm/h

I_d = intensidad media diaria correspondiente al periodo de retorno considerado Id=Pd/24 en mm/h

P_d = precipitación máxima diaria correspondiente al periodo de retorno considerado

I_1 = la intensidad horaria de precipitación correspondiente a dicho periodo de retorno

El valor del ratio $\frac{I_1}{I_d}$ se determina de la figura 2.2. de la Instrucción 5.2.- I.C, y si hacemos Tc=t en la expresión anterior se obtiene el valor de intensidad a emplear en el cálculo.

Ya se ha citado en a descripción del Método Racional, que el coeficiente de escorrentía, define la proporción de la componente superficial de la precipitación de intensidad, y que depende de la razón entre la precipitación diaria P_d correspondiente al periodo de retorno y el umbral de escorrentía P_0 a partir del cual se inicia esta, este umbral de escorrentía es característico de cada cuenca.

La formulación usada en este método está basada en el método propuesto por la Ley del Soil Conservation Service (USA) para las relaciones lluvia-escorrentía y que se corresponde a las siguientes expresiones:

$E/P = 0$ si $(P/P_0)<1$

$$E/P_0 = \frac{\left[\left(\frac{P}{P_0} \right) - 1 \right]^2}{\left(\frac{P}{P_0} \right) + 4}$$ si $(P/P_0)>=1$

Siendo:

E(mm) = escorrentía igualmente acumulada y provocada por P

P(mm) = precipitación acumulada desde el comienzo del aguacero hasta el instante dado

P_0(mm) = parámetro o umbral de escorrentía que define la precipitación total por debajo de la cual no se produce escorrentía.

El coeficiente de escorrentía C, en un instante dado hasta el cual ha precipitado P y se ha provocado una escorrentía E, se puede obtener derivando las expresiones anteriores:

$$C = \frac{dE}{dP} = \frac{d\left(\frac{E}{P_0}\right)}{d\left(\frac{P}{P_0}\right)} = \frac{\left(\frac{P}{P_0} - 1\right) \times \left[\left(\frac{P}{P_0} + 9\right)\right]}{\left[\left(\frac{P}{P_0}\right) + 4\right]^2}$$

C va creciendo a lo largo del aguacero y su valor medio en un intervalo será mayor que el correspondiente a su origen y menor que el del final. El intervalo objeto de estudio es aquel que proporciona mayor escorrentía y se admite que corresponde al de duración igual al tiempo de concentración y que contiene al máximo del hietograma. Si se conoce el valor de P en dicho instante, la expresión anterior permitirá obtener el coeficiente de escorrentía buscado.

Se ha testado en varias estaciones pluviométricas españolas que puede admitirse una ley del tipo:

Pmáx.intensidad = b x P_d

donde b es un parámetro que refleja la posición relativa del intervalo de máxima intensidad dentro del pluviograma diario, y que puede admitirse que toma un valor de 0,5. Con esto, quedaría fijado el valor del coeficiente de escorrentía a utilizar en función de P_d.

Esta formulación debe ser corregida en los casos de aguaceros con pequeño periodo de retorno puesto que en estos casos no se cumple sistemáticamente la hipótesis básica: el máximo caudal no está asociado al intervalo de máxima intensidad y duración Tc, ya que dicha precipitación quedará absorbida íntegramente por el terreno al ser menor que el umbral de escorrentía.

En estos casos, el intervalo generador del máximo caudal, y con él, el punto intermedio indicativo del coeficiente de escorrentía, se desplazan en el tiempo hacia la zona final del aguacero, en espera de condiciones más desfavorables de la humedad del suelo que las correspondientes al intervalo de máxima intensidad.

Este problema se aborda modificando la ley anterior, resultado de la función derivada, en los entornos de los pequeños valores, haciéndola despegar del eje C = 0 para $P_d = P_0$, para tender posteriormente a confundirse con la curva primitiva, proponiéndose finalmente:

$$C = 0 \qquad \text{si } (P_d/P_0)<1$$

$$C = \frac{dE}{dP} = \frac{d\left(\frac{E}{P_0}\right)}{d\left(\frac{P}{P_0}\right)} = \frac{\left(\frac{P}{P_0} - 1\right) \times \left[\left(\frac{P}{P_0} + 23\right)\right]}{\left[\left(\frac{P}{P_0}\right) + 11\right]^2}$$

La expresión propuesta en la Instrucción de Carreteras 5.2. para el cálculo del caudal, que se recoge en el apartado 2.2., es igual a usada en el método racional descrito en el apartado anterior y es:

$$Q = \frac{C \times I \times S}{3,6} \times 1,2 = Q = \frac{C \times I \times S}{3}$$

Los significados y unidades de las variables son los mismos que se han descrito anteriormente.

Siguiendo las prescripciones de la Agencia Andaluza del Agua, se incluye el factor de corrección K introducido por J.R. Témez cuyo valor es:

$$K = 1 + \frac{Tc^{1.25}}{14 + Tc^{1.25}}$$

Siguiendo con las consideraciones del cálculo del coeficiente de escorrentía diremos que para el caso de cuencas heterogéneas deberán dividirse estas en cuencas parciales cuyos coeficientes parciales de escorrentía se calcularán por separado, reemplazando luego el término C x S de la fórmula anterior por la sumatoria de las cuencas parciales Σ(C x S).

El valor del umbral de escorrentía (P_0), en un sentido determinista, depende de las características de la cuenca y puede obtenerse (basándose en el concepto de "número de curva" del Soil Conservation Service) a partir de la tabla 2-1 de la Instrucción 5.2 I.C. de Drenaje superficial y de los siguientes datos:

- pendiente
- capacidad de infiltración del suelo
- vegetación
- características del laboreo

Para la elección de los umbrales de escorrentía se ha tenido presente que la pendiente media de la cuenca es superior al 3% y que los terrenos se clasifican como tipo C. Con ello, se fijan los siguientes umbrales de escorrentía:

Tabla 4. Umbrales de escorrentía empleados en el cálculo por el Método de la 5.2-IC

Tipo de Terreno-Suelo	BOP MURCIA	5,2-IC	P0
Urbanizada	5	1,5	1,5
Viales	2	1	1
Frutales	19	19	19
Olivar	15	19	15
Regadío	12	12	12
Viñedo	15	12	12
Secano	10	9	9
Bosque denso	22	22	22
Monte Bajo	14	14	14
Pradera	10	14	10
Superficie Erial	8	8	8
Roca permeable	3	3	3
Roca Impermeable	2	2	2

Que dan como resultado la siguiente distribución de usos de suelo y umbrales:

Tabla 5. Resumen de usos de suelos y umbrales de escorrentía

	SUPERFICIE Km²		
Tipo de Terreno-Suelo	P0	SC-01	SC-02
Urbanizada	1.5	0,035	0
Viales	1	0	0
Frutales	19	0	0
Olivar	15	3,08	0,684
Regadío	12	0	0
Viñedo	12	0	0
Secano	9	0	0
Bosque denso	22	0.052	0
Monte Bajo	14	1,141	0
Pradera	10	0,044	0
Superficie Erial	8	0	0
Roca permeable	3	0	0
Roca Impermeable	2	0	0

El valor obtenido de dicha tabla se deberá multiplicar por el coeficiente corrector dado en la figura 2.5. de la mencionada instrucción.

Este coeficiente refleja la variación regional de la humedad habitual en el suelo al comienzo de aguaceros significativo e incluye una mayoración (del orden del 100 %) para evitar sobrevaloraciones del caudal de referencia a causa de ciertas simplificaciones del tratamiento estadístico del Método Hidrometeorológico.

En el caso de que no se conozca con certeza el tipo de terrenos de la cuenca de estudio, se puede tomar simplificadamente un valor conservador de P_0 (sin tener que multiplicarlo luego por el coeficiente de la figura 2-5) igual a 20 mm, salvo en cuencas con rocas o suelos arcillosos muy someros, en las que se podrá tomar igual a 10 mm.

A continuación se extrae el resumen de los resultados obtenidos:

Tabla 6. Resumen de resultados por el Método de la 5.2-IC

Cuenca	Tc (h)	It_{cmo} (mm)	It_{500} (mm)	C*	Q_{cmo} (m^3/s)	Q_{500} (m^3/s)
ARROYO RIOLICHE	1,05	22,40	55,26	0,65	22,61	55,78
ARROYO EL MORO	0,45	35,49	87,56	0,65	5,39	13,31

(*) valor mínimo para el cálculo indicado por el Organismo de Cuenca, de la aplicación de los umbrales parciales de escorrentía se obtiene un valor inferior.

Los resultados obtenidos para cada uno de los periodos de retorno estudiados se recogen en el Apéndice 2 del presente Anejo.

4.2. VALOR ADOPTADO PARA EL QCAL

Como se ha dicho, en el Apéndice 2, se acompañan las salidas correspondientes a los diferentes métodos enunciados anteriormente, conforme al cálculo numérico realizado por ordenador.

Siguiendo las prescripciones del Organismo de Cuenca, se adopta el mayor de los valores, es decir, el del método de la Instrucción de Carreteras 5.2.-IC.

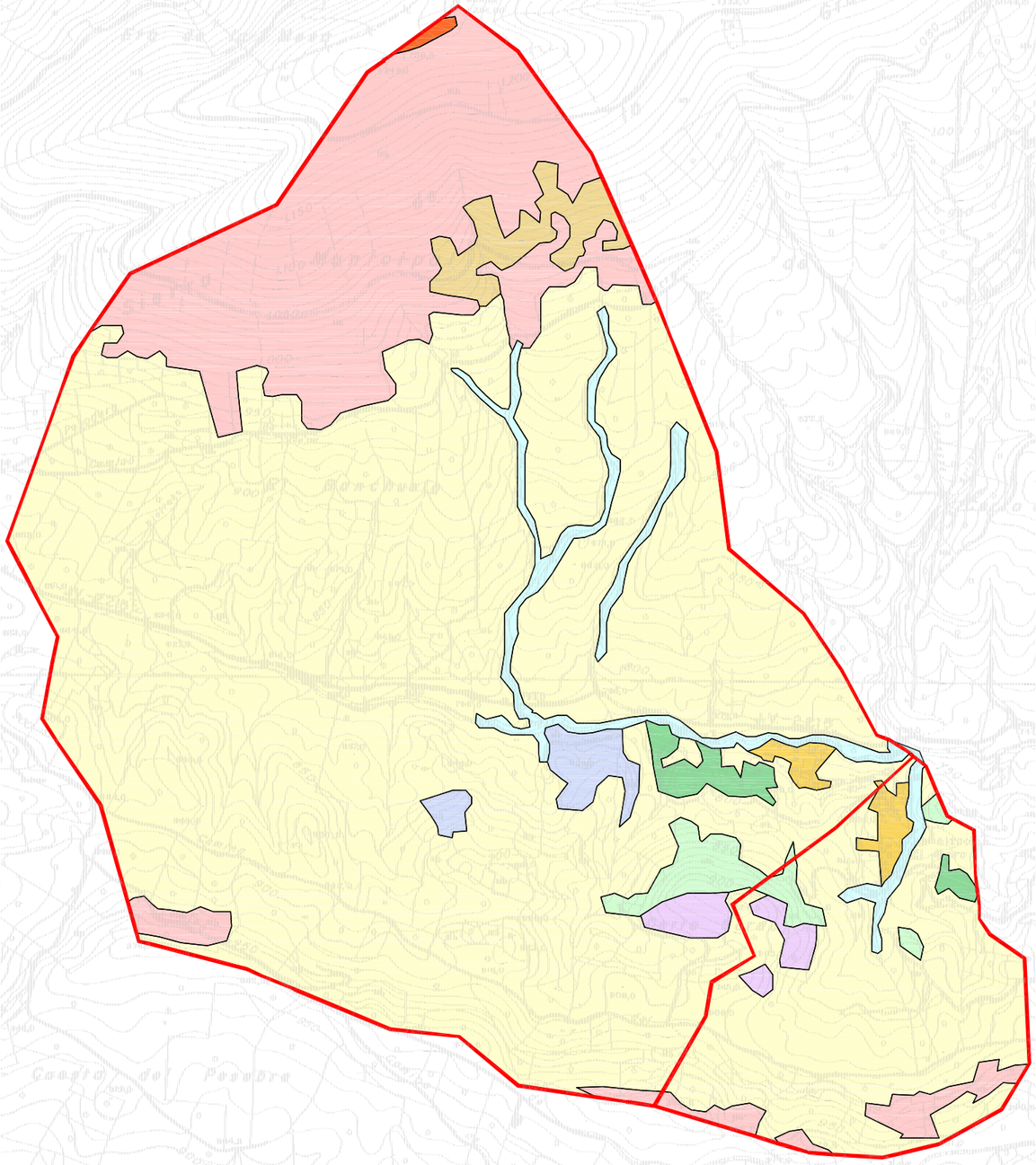
Estos son los caudales resultantes para las avenidas de periodo de retorno 5 y 500 años:

Tabla 7. Resultados de cálculo

CUENCA	Q_5 (m^3/s)		Q_{500} (m^3/s)	
	Método Racional	**Método 5.2-IC**	**Método Racional**	**Método 5.2-IC**
ARROYO RIOLICHE	14,68	**22,61**	36,20	**55,78**
ARROYO EL MORO	3,56	**5,39**	8,78	**13,31**

Adoptamos como valor de cálculo para el cálculo del DPH y para la llanura de inundación los proporcionados por el método de la Instrucción 5.2 I.C para sendos arroyos.

APÉNDICE 1. PLANO DE CUENCAS Y USOS DEL SUELO



ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ JUGUERA, INGENIERO DE CAMINOS, C. Y P.	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA: 1:15.000	DOCUMENTO: PLANOS	TÍTULO: CUENCA Y USOS DEL SUELO	Nº DE ANEJO: 01	FECHA: AGOSTO 2013 — 1 DE 1

APÉNDICE 2. CÁLCULO DEL CAUDAL DE AVENIDA

CÁLCULO DE CAUDALES

Proyecto/Estudio:	INUNDABILIDAD PGOU MARTOS
Identificación de la Cuenca:	ARROYO RIOLICHE
Período de retorno (T):	5
Precipitación máx. correspondiente a T en mm:	60,00

Características de la Cuenca

Superficie (km^2)	Cota Punto Alto Cuenca (m)	Cota Punto Alto Cauce (m)	Cota Punto Bajo Cauce (m)	Long. Cuenca (m)	Long. Cauce (m)
4,352	1.251,9	1.251,9	750,0	3.250,0	2.736,0

	(m/m)	%
Pendiente media de la Cuenca (J)	0,154	15,443
Pendiente Media del Arroyo	0,183	18,344

Cálculo de Caudales por el Método Racional

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cauce (*L*) en km	2,74
Pendiente media (*J*) m/m	0,18
Tiempo de Concentración (*Tc*) en horas	**0,89**

2.- Intensidad por Yarnell y Hattaway

$$I_t = 9{,}25 \times I_h \times t^{-0{,}55}$$

$Pmax_{24h}$	60,00
Intensidad horaria (I_h) =0,25 x $Pmax_{24h}$	15,00
Tc (minutos)	53,38
Intensidad para Tc (I_t) mm	**15,57**

3.- Caudal de cálculo

$$Q = \frac{C \times I \times S}{3{,}6} \times 1{,}2$$

S= Superficicie de la cuenca en km^2	4,35
Intensidad para Tc (I_t)	15,57
*C= Coeficiente de Escorrentía**	0,65
Q por el método Racional(m^3/seg)	14,68

* El coeficiente de escorrentía es el cálculado por el método de la IC-5.2

CÁLCULO DE CAUDALES DRENAJE TRANSVERSAL

Proyecto/Estudio: *INUNDABILIDAD PGOU MARTOS*
Identificación de la Cuenca: *ARROYO RIOLICHE*
Período de retorno (T): *5*
Precipitación máx. correspondiente a T en mm: *60*

Período de retorno (T):

Precipitación máx. correspondiente a T en mm:

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cuenca (*L*) en km	3,25
Pendiente media (*J*) m/m	0,15
Tiempo de Concentración (*Tc*) en horas	**1,05**

2.- Factor de corrección K Témez

$$K = 1 + \frac{Tc^{1.25}}{14 + Tc^{1.25}}$$

***K*=** **1,07039**

3.- Intensidad de cálculo

$$\frac{I_t}{I_d} = \left(\frac{I_1}{I_d} \right)^{\left(\frac{28^{0,1} - t^{0,1}}{28^{0,1} - 1} \right)}$$

Intensidad media diaria = Pmax/24	2,5
Relación Intensidades I_t/I_d fig. 2.2	9,2
t = Tc tiempo de concentración en horas	1,05
Intensidad de cálculo, para *T* y *Tc mm*	**22,40335775**

4.- Coeficiente de Escorrentía

$$C = \frac{dE}{dP} = \frac{d\left(\frac{E}{P_0}\right)}{d\left(\frac{P}{P_0}\right)} = \frac{\left(\frac{P}{P_0} - 1\right) \times \left[\left(\frac{P}{P_0} + 23\right)\right]}{\left[\left(\frac{P}{P_0}\right) + 11\right]^2}$$

Pendiente Media de la Cuenca % 15,44 >3%

Tipo de Terreno-Suelo	$S_i (Km^2)$	P_{oi}	P_{oi} x Corrector	C_i	$C_i \times S_i$
Urbanizada	0,035000	1,5	4,05	0,78	0,0274
Viales	0,000000	1	2,70	0,00	0,0000
Frutales	0,000000	19	25,00	0,00	0,0000
Olivar	3,080000	15	25,00	0,20	0,6100
Regadío	0,000000	12	25,00	0,00	0,0000
Viñedo	0,000000	12	25,00	0,00	0,0000
Secano	0,000000	9	24,30	0,00	0,0000
Bosque denso	0,052000	22	25,00	0,20	0,0103
Monte Bajo	1,141000	14	25,00	0,20	0,2260
Pradera	0,044000	10	25,00	0,20	0,0087
Superficie Erial	0,000000	8	21,60	0,00	0,0000
Roca permeable	0,000000	3	8,10	0,00	0,0000
Roca Impermeable	0,000000	2	5,40	0,00	0,0000
Terreno desconocido	0,000000	20	25,00	0,00	0,0000
Totales	4,352000		***C medio(*)***	**0,20**	**0,8824**

Coeficiente Corrector del Umbral de Escorrentía fig. 2-5: 2,700

Umbral de Escorrentía

(*) Si Cmedio<0,65 se toma el valor 0,65 en el cáculo de caudales

Caudal por el método de la Instrucción de Carreteras(m^3/seg) 22,61

CÁLCULO DE CAUDALES

Proyecto/Estudio:	INUNDABILIDAD PGOU MARTOS
Identificación de la Cuenca:	AFLUENTE INNOMINADO
Período de retorno (T):	5
Precipitación máx. correspondiente a T en mm:	60,00

Características de la Cuenca

Superficie (km^2)	Cota Punto Alto Cuenca (m)	Cota Punto Alto Cauce (m)	Cota Punto Bajo Cauce (m)	Long. Cuenca (m)	Long. Cauce (m)
0,684	999,5	870,0	750,0	1.153,0	896,0

	(m/m)	%
Pendiente media de la Cuenca (J)	0,216	21,639
Pendiente Media del Arroyo	0,134	13,393

Cálculo de Caudales por el Método Racional

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cauce (*L*) en km	0,90
Pendiente media (*J*) m/m	0,13
Tiempo de Concentración (*Tc*) en horas	**0,40**

2.- Intensidad por Yarnell y Hattaway

$$I_t = 9{,}25 \times I_h \times t^{-0{,}55}$$

$Pmax_{24h}$	60,00
Intensidad horaria (I_h) =0,25 x $Pmax_{24h}$	15,00
Tc (minutos)	24,26
Intensidad para Tc (I_t) mm	**24,02**

3.- Caudal de cálculo

$$Q = \frac{C \times I \times S}{3{,}6} \times 1{,}2$$

S= Superficicie de la cuenca en km^2	0,68
Intensidad para Tc (I_t)	24,02
*C= Coeficiente de Escorrentía**	0,65
Q por el método Racional(m^3/seg)	3,56

* El coeficiente de escorrentía es el calculado por el método de la IC-5.2

CÁLCULO DE CAUDALES

Proyecto/Estudio: *INUNDABILIDAD PGOU MARTOS*
Identificación de la Cuenca: *AFLUENTE INNOMINADO*
Período de retorno (T): *5*
Precipitación máx. correspondiente a T en mm: *60*

Período de retorno (T):

Precipitación máx. correspondiente a T en mm:

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cuenca (*L*) en km	1,15
Pendiente media (*J*) m/m	0,22
Tiempo de Concentración (*Tc*) en horas	**0,45**

2.- Factor de corrección K Témez

$$K = 1 + \frac{Tc^{1.25}}{14 + Tc^{1.25}}$$

***K*=** **1,02545**

3.- Intensidad de cálculo

$$\frac{I_t}{I_d} = \left(\frac{I_1}{I_d} \right)^{\left(\frac{28^{0,1} - t^{0,1}}{28^{0,1} - 1} \right)}$$

Intensidad media diaria = Pmax/24	2,5
Relación Intensidades I_t/I_d fig. 2.2	9,2
t = Tc tiempo de concentración en horas	0,45
Intensidad de cálculo, para *T* y *Tc mm*	**35,49920466**

4.- Coeficiente de Escorrentía

$$C = \frac{dE}{dP} = \frac{d\left(\frac{E}{P_0}\right)}{d\left(\frac{P}{P_0}\right)} = \frac{\left(\frac{P}{P_0} - 1\right) \times \left[\left(\frac{P}{P_0} + 23\right)\right]}{\left[\left(\frac{P}{P_0}\right) + 11\right]^2}$$

Pendiente Media de la Cuenca % 21,64 >3%

Tipo de Terreno-Suelo	S_i (Km²)	P_{oi}	P_{oi} x Corrector	C_i	$C_i x S_i$
Urbanizada	0,000000	1,5	4,05	0,00	0,0000
Viales	0,000000	1	2,70	0,00	0,0000
Frutales	0,000000	19	25,00	0,00	0,0000
Olivar	0,684000	15	25,00	0,20	0,1355
Regadío	0,000000	12	25,00	0,00	0,0000
Viñedo	0,000000	12	25,00	0,00	0,0000
Secano	0,000000	9	24,30	0,00	0,0000
Bosque denso	0,000000	22	25,00	0,00	0,0000
Monte Bajo	0,000000	14	25,00	0,00	0,0000
Pradera	0,000000	10	25,00	0,00	0,0000
Superficie Erial	0,000000	8	21,60	0,00	0,0000
Roca permeable	0,000000	3	8,10	0,00	0,0000
Roca Impermeable	0,000000	2	5,40	0,00	0,0000
Terreno desconocido	0,000000	20	25,00	0,00	0,0000
Totales	0,684000		***C medio(*)***	**0,20**	**0,1355**

Coeficiente Corrector del Umbral de Escorrentía fig. 2-5 2,700

Umbral de Escorrentía

(*) Si Cmedio<0,65 se toma el valor 0,65 en el cáculo de caudales

Caudal por el método de la Instrucción de Carreteras(m^3/seg) 5,39

CÁLCULO DE CAUDALES

Proyecto/Estudio:	INUNDABILIDAD PGOU MARTOS
Identificación de la Cuenca:	ARROYO RIOLICHE
Período de retorno (T):	500
Precipitación máx. correspondiente a T en mm:	148,00

Características de la Cuenca

Superficie (km^2)	Cota Punto Alto Cuenca (m)	Cota Punto Alto Cauce (m)	Cota Punto Bajo Cauce (m)	Long. Cuenca (m)	Long. Cauce (m)
4,352	1.251,9	1.251,9	750,0	3.250,0	2.736,0

	(m/m)	%
Pendiente media de la Cuenca (J)	0,154	15,443
Pendiente Media del Arroyo	0,183	18,344

Cálculo de Caudales por el Método Racional

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cauce (*L*) en km	2,74
Pendiente media (*J*) m/m	0,18
Tiempo de Concentración (*Tc*) en horas	**0,89**

2.- Intensidad por Yarnell y Hattaway

$$I_t = 9{,}25 \times I_h \times t^{-0{,}55}$$

$Pmax_{24h}$	148,00
Intensidad horaria (I_h) =0,25 x $Pmax_{24h}$	37,00
Tc (minutos)	53,38
Intensidad para Tc (I_t) mm	**38,39**

3.- Caudal de cálculo

$$Q = \frac{C \times I \times S}{3{,}6} \times 1{,}2$$

S= Superficicie de la cuenca en km^2	4,35
Intensidad para Tc (I_t)	38,39
*C= Coeficiente de Escorrentía**	0,65
Q por el método Racional(m^3/seg)	36,20

* El coeficiente de escorrentía es el calculado por el método de la IC-5.2

CÁLCULO DE CAUDALES DRENAJE TRANSVERSAL

Proyecto/Estudio: *INUNDABILIDAD PGOU MARTOS*
Identificación de la Cuenca: *ARROYO RIOLICHE*
Período de retorno (T): *500*
Precipitación máx. correspondiente a T en mm: *148*

Período de retorno (T):

Precipitación máx. correspondiente a T en mm:

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cuenca (*L*) en km	3,25
Pendiente media (*J*) m/m	0,15
Tiempo de Concentración (*Tc*) en horas	**1,05**

2.- Factor de corrección K Témez

$$K = 1 + \frac{Tc^{1.25}}{14 + Tc^{1.25}}$$

***K*=** **1,07039**

3.- Intensidad de cálculo

$$\frac{I_t}{I_d} = \left(\frac{I_1}{I_d} \right)^{\left(\frac{28^{0,1} - t^{0,1}}{28^{0,1} - 1} \right)}$$

Intensidad media diaria = Pmax/24	6,166666667
Relación Intensidades I_t/I_d fig. 2.2	9,2
t = Tc tiempo de concentración en horas	1,05
Intensidad de cálculo, para *T* y *Tc mm*	**55,26161577**

4.- Coeficiente de Escorrentía

$$C = \frac{dE}{dP} = \frac{d\left(\frac{E}{P_0}\right)}{d\left(\frac{P}{P_0}\right)} = \frac{\left(\frac{P}{P_0} - 1\right) \times \left[\left(\frac{P}{P_0} + 23\right)\right]}{\left[\left(\frac{P}{P_0}\right) + 11\right]^2}$$

Pendiente Media de la Cuenca % 15,44 >3%

Tipo de Terreno-Suelo	$S_i (Km^2)$	P_{oi}	P_{oi} x Corrector	C_i	$C_i \times S_i$
Urbanizada	0,035000	1,5	4,05	0,94	0,0328
Viales	0,000000	1	2,70	0,00	0,0000
Frutales	0,000000	19	25,00	0,00	0,0000
Olivar	3,080000	15	25,00	0,50	1,5308
Regadío	0,000000	12	25,00	0,00	0,0000
Viñedo	0,000000	12	25,00	0,00	0,0000
Secano	0,000000	9	24,30	0,00	0,0000
Bosque denso	0,052000	22	25,00	0,50	0,0258
Monte Bajo	1,141000	14	25,00	0,50	0,5671
Pradera	0,044000	10	25,00	0,50	0,0219
Superficie Erial	0,000000	8	21,60	0,00	0,0000
Roca permeable	0,000000	3	8,10	0,00	0,0000
Roca Impermeable	0,000000	2	5,40	0,00	0,0000
Terreno desconocido	0,000000	20	25,00	0,00	0,0000
Totales	4,352000		***C medio(*)***	**0,50**	**2,1784**

Coeficiente Corrector del Umbral de Escorrentía fig. 2-5 2,700

Umbral de Escorrentía

(*) Si Cmedio<0,65 se toma el valor 0,65 en el cáculo de caudales

Caudal por el método de la Instrucción de Carreteras(m^3/seg) 55,78

CÁLCULO DE CAUDALES

Proyecto/Estudio:	INUNDABILIDAD PGOU MARTOS
Identificación de la Cuenca:	AFLUENTE INNOMINADO
Período de retorno (T):	500
Precipitación máx. correspondiente a T en mm:	148,00

Características de la Cuenca

Superficie (km^2)	Cota Punto Alto Cuenca (m)	Cota Punto Alto Cauce (m)	Cota Punto Bajo Cauce (m)	Long. Cuenca (m)	Long. Cauce (m)
0,684	999,5	870,0	750,0	1.153,0	896,0

	(m/m)	%
Pendiente media de la Cuenca (J)	0,216	21,639
Pendiente Media del Arroyo	0,134	13,393

Cálculo de Caudales por el Método Racional

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cauce (*L*) en km	0,90
Pendiente media (*J*) m/m	0,13
Tiempo de Concentración (*Tc*) en horas	**0,40**

2.- Intensidad por Yarnell y Hattaway

$$I_t = 9{,}25 \times I_h \times t^{-0{,}55}$$

$Pmax_{24h}$	148,00
Intensidad horaria (I_h) =0,25 x $Pmax_{24h}$	37,00
Tc (minutos)	24,26
Intensidad para Tc (I_t) mm	**59,24**

3.- Caudal de cálculo

$$Q = \frac{C \times I \times S}{3{,}6} \times 1{,}2$$

S= Superficicie de la cuenca en km^2	0,68
Intensidad para Tc (I_t)	59,24
*C= Coeficiente de Escorrentía**	0,65
***Q* por el método Racional(m^3/seg)**	8,78

* El coeficiente de escorrentía es el calculado por el método de la IC-5.2

CÁLCULO DE CAUDALES

Proyecto/Estudio: *INUNDABILIDAD PGOU MARTOS*
Identificación de la Cuenca: *AFLUENTE INNOMINADO*
Período de retorno (T): *500*
Precipitación máx. correspondiente a T en mm: *148*

Período de retorno (T):

Precipitación máx. correspondiente a T en mm:

1.- Tiempo de Concentración

$$Tc = 0{,}3 \times \left[\left(\frac{L}{J^{0{,}25}} \right)^{0{,}76} \right]$$

Longitud máxima Cuenca (*L*) en km	1,15
Pendiente media (*J*) m/m	0,22
Tiempo de Concentración (*Tc*) en horas	**0,45**

2.- Factor de corrección K Témez

$$K = 1 + \frac{Tc^{1.25}}{14 + Tc^{1.25}}$$

***K*=** **1,02545**

3.- Intensidad de cálculo

$$\frac{I_t}{I_d} = \left(\frac{I_1}{I_d} \right)^{\left(\frac{28^{0,1} - t^{0,1}}{28^{0,1} - 1} \right)}$$

Intensidad media diaria = Pmax/24	6,166666667
Relación Intensidades I_t/I_d fig. 2.2	9,2
t=Tc tiempo de concentración en horas	0,45
Intensidad de cálculo, para *T* y *Tc mm*	**87,56470483**

4.- Coeficiente de Escorrentía

$$C = \frac{dE}{dP} = \frac{d\left(\frac{E}{P_0}\right)}{d\left(\frac{P}{P_0}\right)} = \frac{\left(\frac{P}{P_0} - 1\right) \times \left[\left(\frac{P}{P_0} + 23\right)\right]}{\left[\left(\frac{P}{P_0}\right) + 11\right]^2}$$

Pendiente Media de la Cuenca % 21,64 >3%

Tipo de Terreno-Suelo	S_i (Km²)	P_{oi}	P_{oi} x Corrector	C_i	$C_i \times S_i$
Urbanizada	0,000000	1,5	4,05	0,00	0,0000
Viales	0,000000	1	2,70	0,00	0,0000
Frutales	0,000000	19	25,00	0,00	0,0000
Olivar	0,684000	15	25,00	0,50	0,3400
Regadío	0,000000	12	25,00	0,00	0,0000
Viñedo	0,000000	12	25,00	0,00	0,0000
Secano	0,000000	9	24,30	0,00	0,0000
Bosque denso	0,000000	22	25,00	0,00	0,0000
Monte Bajo	0,000000	14	25,00	0,00	0,0000
Pradera	0,000000	10	25,00	0,00	0,0000
Superficie Erial	0,000000	8	21,60	0,00	0,0000
Roca permeable	0,000000	3	8,10	0,00	0,0000
Roca Impermeable	0,000000	2	5,40	0,00	0,0000
Terreno desconocido	0,000000	20	25,00	0,00	0,0000
Totales	0,684000		***C medio(*)***	**0,50**	**0,3400**

Coeficiente Corrector del Umbral de Escorrentía fig. 2-5 2,700

Umbral de Escorrentía

(*) Si Cmedio<0,65 se toma el valor 0,65 en el cáculo de caudales

Caudal por el método de la Instrucción de Carreteras(m^3/seg) 13,31

ANEJO NÚMERO 2. ESTUDIO HIDRÁULICO

ANEJO NÚMERO 2. ESTUDIO HIDRÁULICO

1. INTRODUCCIÓN

El objeto del presente Anejo es crear un modelo hidráulico para los arroyos Rioeliche y El Moro que discurren en las proximidades de la Urbanización El Moro, en Martos, para prever el régimen de flujo del mismo para las avenidas ordinaria y extraordinaria o, lo que es lo mismo, para el caudal de cálculo correspondiente a los periodos de retorno de 5 y 500 años. De este modo se fijarán parámetros tales como resguardos, velocidades, alturas de lámina de agua, etc.

Enumerados los datos de partida empleados en la modelización, se expondrán con detalle los pasos dados para obtener los niveles de las avenidas en el arroyo en el tramo de estudio (en especial, modelado de secciones transversales, obras de fábrica, etc.), datos finales que nos permitirán obtener las llanuras de inundación.

2. DATOS DE PARTIDA

2.1. CAUDALES

En el Anejo 1 del presente Estudio se realiza una exposición detallada de los distintos estudios hidrológicos realizados para determinar los caudales circulantes para las avenidas ordinaria y extraordinaria. Los caudales finalmente adoptados son:

Tabla 1. Resultados de cálculo

CUENCA	Q_5 (m^3/s)	Q_{500} (m^3/s)
ARROYO RIOLICHE	22,61	55,78
ARROYO EL MORO	5,39	13,31

2.2. TOPOGRAFÍA

Se ha empleado la cartografía digital 1:2.000 de la Junta de Andalucía, proporcionada por el cliente. Concretamente se ha utilizado la hoja E1-946 17-16.

2.3. ODT

Actualmente, se localizan 5 ODT en los tramos estudiados, 2 en Rioeliche y 3 en El moro.

El Ayuntamiento de Martos nos ha facilitado los datos de dichas ODT, que se resumen a continuación:

ODT N°1 en arroyo Rioeliche

Marco rectangular de 2*1,85 m interiores, con solera de hormigón y estribos de fábrica de bloques de hormigón. I=1,5%

ODT N°2 en arroyo Rioeliche

Marco rectangular de 6*5,46 m interiores, con solera de hormigón y estribos de de hormigón armado. I=1,5%

ODT N°3 en arroyo El Moro

Marco rectangular de 3,75*3,93 m interiores, con solera de hormigón y estribos de hormigón armado. I=3%

ODT N°4 en arroyo El Moro

Badén de hormigón y escalón protegido con escollera. No existe por tanto obra de fábrica en este punto. I=3%

ODT N°5 en arroyo El Moro

Tubería de hormigón de D=800 junto a badén superior. I=3%

Se ha comprobado la capacidad hidráulica de las mismas, y, en los casos en los que no existe capacidad suficiente para vehicular la avenida de los 500 años, se ha estudiado localmente la sección que sería necesaria. Se adjunta tabla resumen.

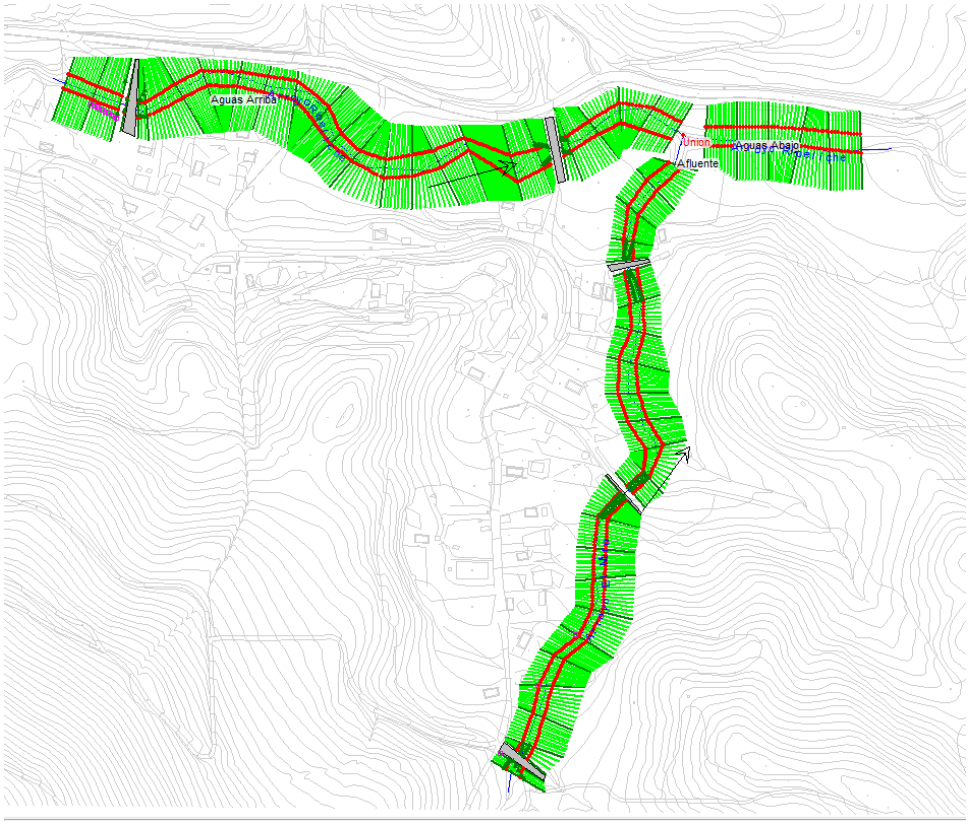
	CAPACIDAD ACTUAL	SECCIÓN PROPUESTA
ODT N°1 en arroyo Rioeliche	Marco rectangular de 2*1,85 m interiores, con solera de hormigón y estribos de fábrica de bloques de hormigón. I=1,5% Q_{max}=18,53 m^3/s	Marco rectangular de 3*2,50 m interiores, suficiente para Q_{500}=55,78 m^3/s
ODT N°2 en arroyo Rioeliche	Marco rectangular de 6*5,46 m interiores, con solera de hormigón y estribos de de hormigón armado. I=1,5% Q_{max}=339,40 m^3/s	ODT actual válida. Lámina de agua de 1,24 m para Q_{500}=55,78 m^3/s
ODT N°3 en arroyo El Moro	Marco rectangular de 3,75*3,93 m interiores, con solera de hormigón y estribos de hormigón armado. I=3% Q_{max}=165,54 m^3/s	ODT actual válida. Lámina de agua de 0,55 m para Q_{500}=13,31 m^3/s
ODT N°4 en arroyo El Moro	Badén de hormigón y escalón protegido con escollera. No existe por tanto obra de fábrica en este punto. I=3%	Marco rectangular de 2*1,50 m interiores, suficiente para Q_{500}=13,31 m^3/s
ODT N°5 en arroyo El Moro	Tubería de hormigón de D=800 junto a badén superior. I=3% Q_{max}=1,98 m^3/s	Marco rectangular de 2*1,50 m interiores, suficiente para Q_{500}=13,31 m^3/s

En el Apéndice 1 se adjunta la comprobación hidráulica de las secciones actuales y de las que se proponen para su modificación, si bien se recomienda la realización de un modelo hidráulico sobre cartografía de detalle para su correcta comprobación.

2.4. SECCIONES MODELIZADAS

Haremos la descripción como es habitual en el sentido aguas arriba-aguas abajo. Las situaciones y secciones actuales de los cauces (perfiles transversales) quedan reflejadas en el siguiente croquis:

Ilustración 1.- Esquema del Modelo Hidráulico de los arroyos Rioeliche y El Moro.

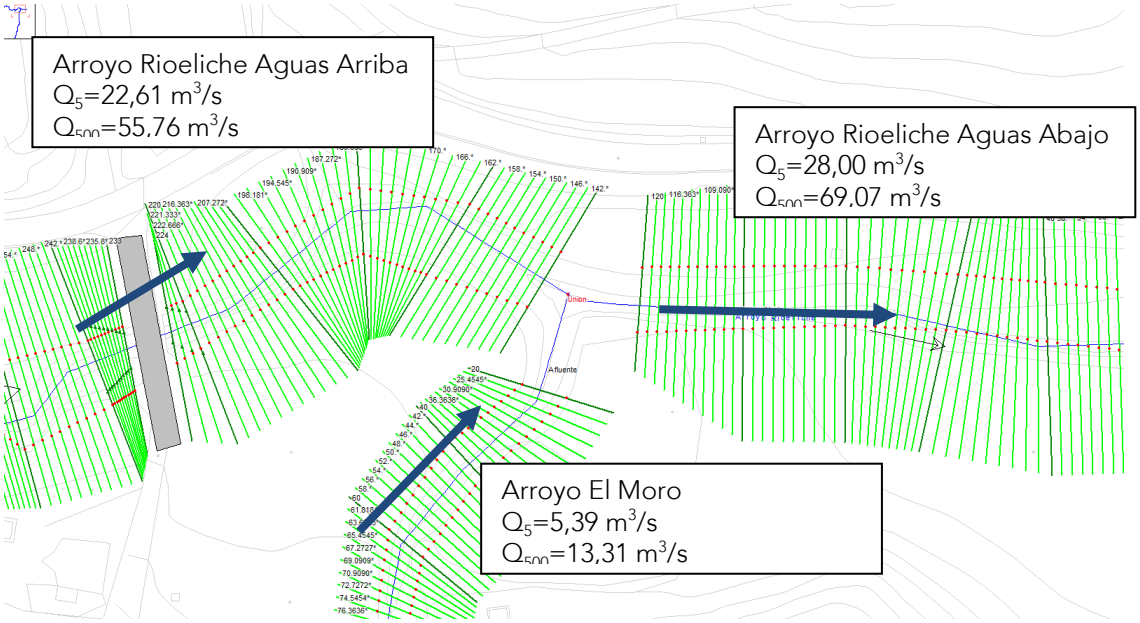


2.4.1. ARROYO RIOELICHE

El tramo se inicia en la sección 600, punto ubicado aguas arriba del inicio de la zona urbana y discurre de oeste a este.

Se ha divido en dos tramos, denominados Aguas Arriba y Aguas Abajo, dado que se ha modelizado el aporte del arroyo El Moro, entre las secciones 140 y 120.

Ilustración 2.- Detalle de la unión modelizada entre los dos arroyos.



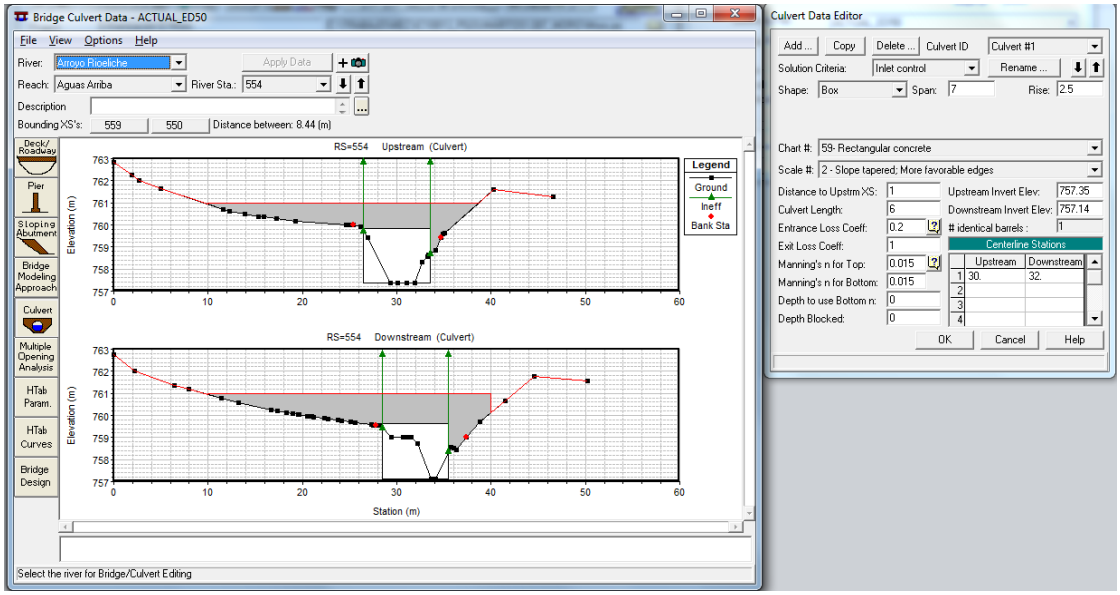
En total, se han modelizado 672 metros de arroyo. Se han obtenido de la cartografía 37 secciones transversales que han generado el modelo digital del terreno para el cálculo de la llanura de inundación.

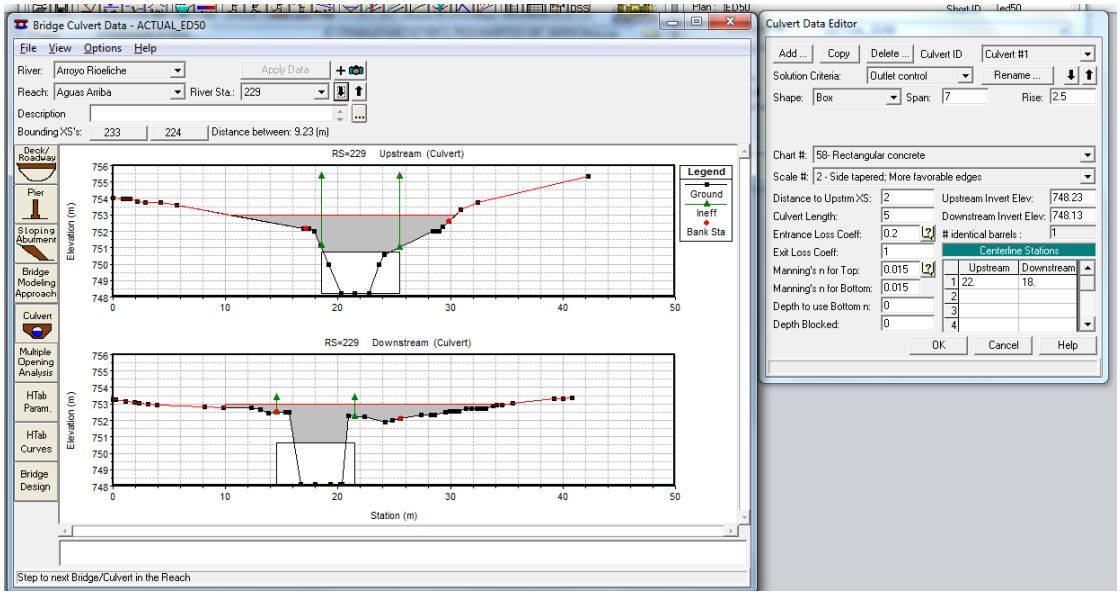
La geometría del Arroyo Rioeliche es muy variable. En general el arroyo está muy encajado con profundidades que rondan los 2,5-5 m. El ancho varía de 4 a 10 metros, en función de lal litologías atravesadas.

Además de las secciones transversales, se han modelizado dos estructuras, entre las secciones 558 y 550, y entre la 232 y 225, respectivamente, en los lugares en los que se ubican actualmente obras de drenaje transversal (ODT en adelante).

Destacar que no se han implementado las ODT modificadas del apartado anterior sino que, debido a la precisión y escala de la topografía empleada, se ha aumentado la sección lo necesario para que no se produzcan vertidos. Es por ello que se recomienda la realización de un modelo hidráulico sobre cartografía de detalle para su correcta comprobación.

Ilustración 3.- Datos y croquis de la ODT modificadas en el Arroyo Rioeliche. Notar que el dibujo tiene la escala Y distorsionada.





2.4.2. ARROYO EL MORO

El tramo se inicia en la sección 460, punto ubicado suficientemente aguas arriba del inicio de la zona urbana y discurre de sur a norte. Finaliza en el arroyo Rioeliche, al que entrega sus aguas entre las secciones 140 y 120 de este último. En total, se han modelizado 450 metros de arroyo.

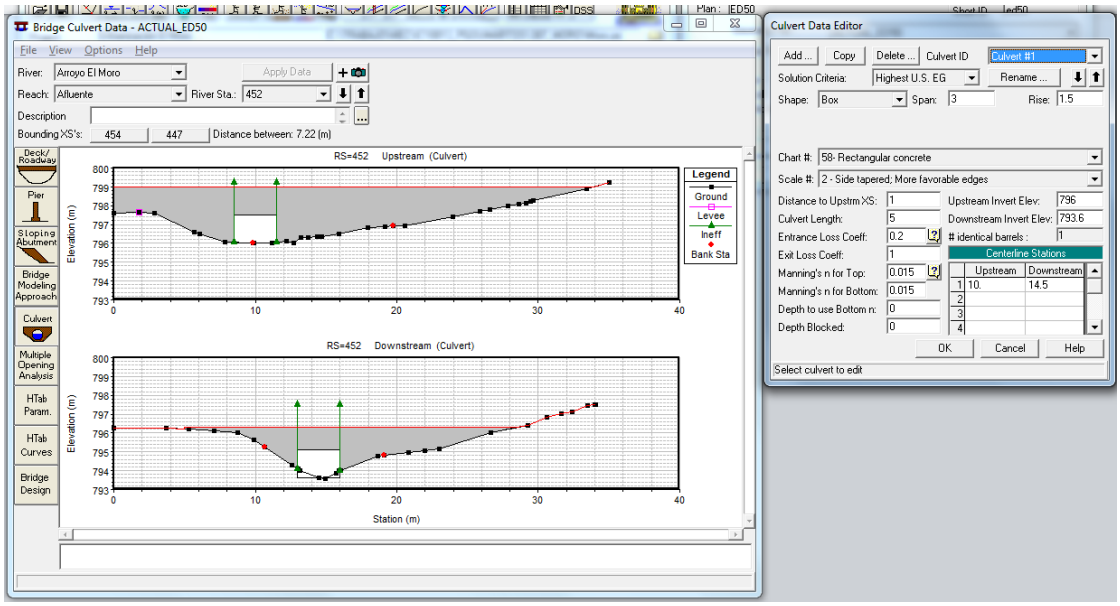
Se han obtenido de la cartografía 27 secciones transversales que han generado el modelo digital del terreno para el cálculo de la llanura de inundación.

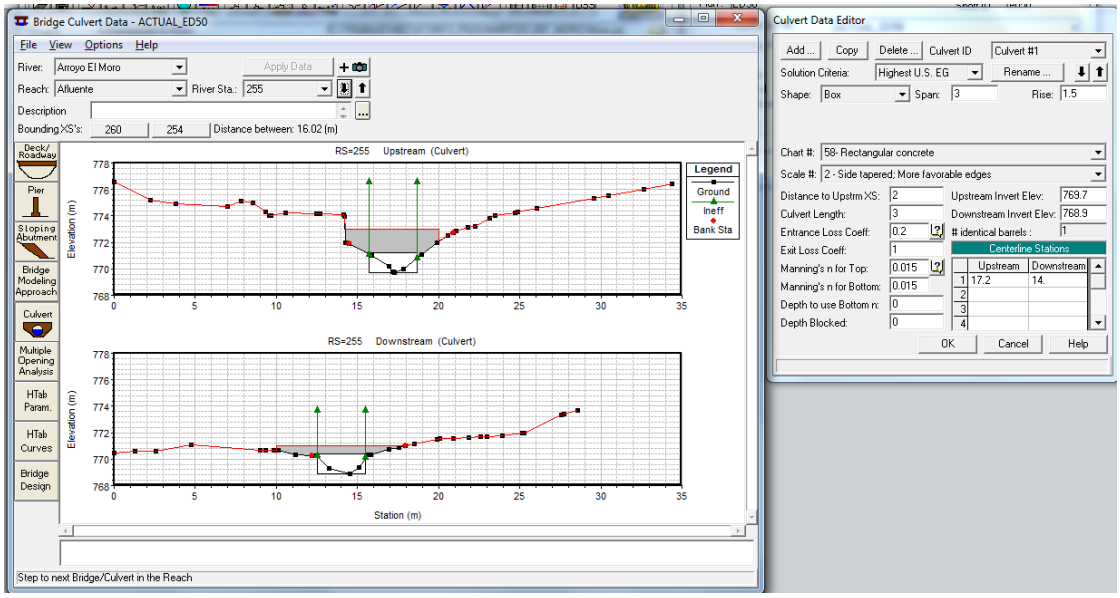
La geometría del Arroyo El Moro es bastante uniforme, encontrándose muy encajado con profundidades que rondan los 2-5 m.

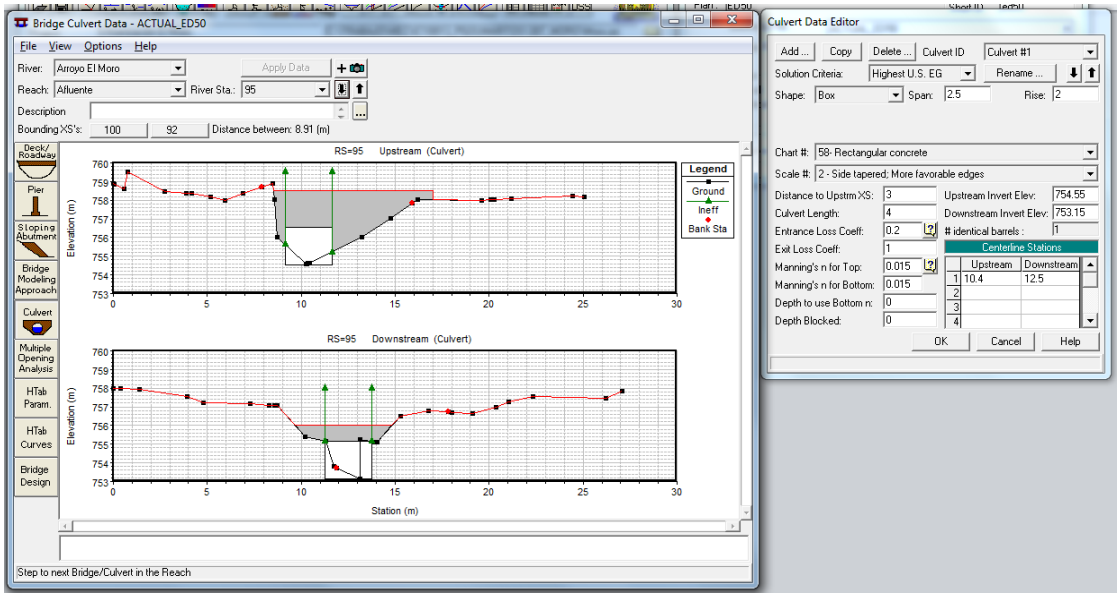
Además de las secciones transversales, se han modelizado tres estructuras, en las secciones 452, 255 y 95, respectivamente, en los lugares en los que se ubican actualmente obras de drenaje transversal (ODT en adelante).

Como ya se comentara para el arroyo Rioeliche, se ha aumentado la sección de las ODT modificadas lo necesario para que no se produzcan vertidos. Es por ello que se recomienda la realización de un modelo hidráulico sobre cartografía de detalle para su correcta comprobación.

Ilustración 4.- Datos y croquis de la ODT modificadas en el Arroyo El Moro. Notar que el dibujo tiene la escala Y distorsionada.







2.5. PENDIENTE LONGITUDINAL

La pendiente longitudinal media, obtenida a partir de la topografía de base, resultan ser del 3% para el arroyo Rioliche y del 13 % para El Moro.

2.6. VEGETACIÓN

La vegetación es abundante, aunque en algunos casos, dada la velocidad previsible del agua, el cauce se encuentra bastante limpio.

Se ha tenido en cuenta la presencia de estas masas arbustivas para la determinación del coeficiente de rugosidad, distinguiendo cauce principal y llanuras de inundación. Más adelante se detallarán los cálculos realizados.

A continuación se muestran varias imágenes que caracterizan la zona.

Ilustración 5.- Vista del arroyo Rioliche desde la segunda estructura.

Ilustración 6.- Vista del arroyo Rioliche desde el primer cruce (terraza). Se observa el fuerte encaje del mismo en el terreno

Ilustración 7.- Otra vista del arroyo Rioliche en el que se aprecia el cauce pedregoso, las paredes terrizas casi verticales y la existencia de vegetación de ribera.

Ilustración 8.- Vista del arroyo El Moro desde la primera estructura

3. METODOLOGÍA DE LA MODELIZACIÓN HIDRÁULICA

3.1. INTRODUCCIÓN

Se ha modelizado el régimen hidráulico de los tramos de estudio de los arroyos Rioleliche y El Moro en la zona próxima a la Urbanización El Moro, en Martos, a través del programa informático HEC-RAS 4.1. del U.S. Arms Corps Of Engineers.

Los cálculos se realizan en régimen estacionario para las avenidas de 5 y 500 años. La primera simulación permitirá determinar el DPH, y la segunda, la llanura de inundación.

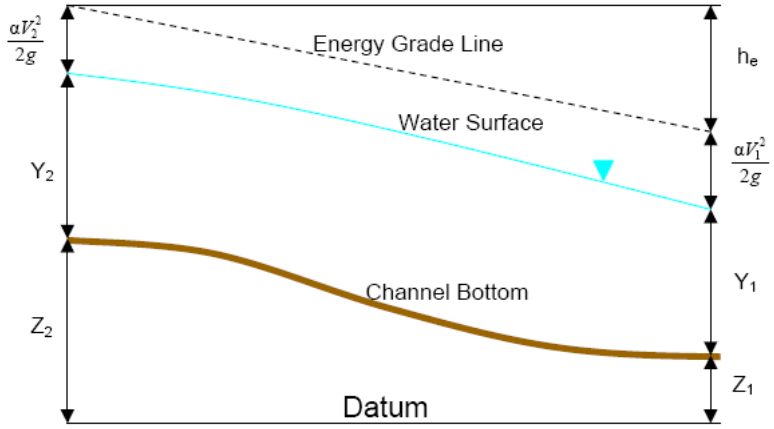
3.2. BASES DE CÁLCULO

El software utilizado realiza los cálculos para un nivel de agua unidimensional en cada sección transversal del cauce en régimen de flujo gradualmente variado. Las hipótesis básicas de partida son:

- Pérdidas de carga valoradas según Manning
- Flujo estacionario, el tiempo no interviene en los cálculos
- Flujo gradualmente variado
- Flujo unidimensional, la altura de la curva de energía es la misma en todos los puntos de la sección
- No se admite cambio de régimen en un mismo cálculo

- La pendiente de la línea de energía es constante entre dos secciones transversales

Ilustración 9.- Modelo de Cálculo



Los niveles del agua en cada sección se calculan a partir de una sección transversal hacia la siguiente mediante la resolución de la ecuación de la Energía con un proceso iterativo llamado "Método de Grados Estándar". La ecuación de la energía se escribe como sigue:

Ecuación 1.- de la Energía

$$WS_2 + \frac{\alpha_2 \cdot V_2^2}{2g} = WS_1 + \frac{\alpha_1 \cdot V_1^2}{2g} + h_e$$

donde:

WS_1, WS_2 elevaciones de superficie de agua en secciones transversales
V_1, V_2 velocidad media (descarga total/área total de caudal)
α_1, α_2 coeficientes de medida de velocidad
g aceleración gravitatoria
h_e pérdidas de energía en cabeza

Las pérdidas de energía principales entre dos secciones transversales se calculan como la suma de las pérdidas de fricción y las de contracción o expansión, y vienen dadas por la expresión:

Ecuación 2.- de Pérdidas

$$h_e = LS_f + C\left|\frac{\alpha_2 \cdot V_2^2}{2g} - \frac{\alpha_1 \cdot V_1^2}{2g}\right|$$

donde

L longitud del tramo de desagüe
S_f pendiente de fricción representativa entre dos secciones
C coeficiente de pérdida por expansión o contracción (hace referencia al trazado en planta del tramo estudiado)

La determinación de la vehiculación total y el coeficiente de velocidad para una sección transversal requieren que el flujo sea subdividido en unidades para las que la velocidad esté

uniformemente distribuida, unidades que vienen marcadas por los puntos de salto del valor n de Manning. La conducción se calcula dentro de cada subdivisión por la siguiente ecuación:

Ecuación 3.- Subdivisión de la sección

$$k = \frac{1.486}{n} \cdot AR^{2/3}$$

donde

K conducción por subdivisión
n coeficiente de rugosidad de Manning por subdivisión
A área de caudal por subdivisión
R radio hidráulico por subdivisión

El coeficiente de velocidad α se calcula basándose en la vehiculación en los tres elementos de caudal: margen izquierdo, margen derecho y canal. Se obtiene con la siguiente ecuación:

Ecuación 4.- Coeficiente de velocidad

$$\alpha = \frac{(A_t)^2 \left[\frac{(K_{lob})^3 + (K_{ch})^3 + (K_{rob})^3}{(A_{lob})^2 \cdot (A_{ch})^2 \cdot (A_{rob})^2} \right]}{(K_t)^3}$$

donde

A_t área total de caudal de sección transversal
A_{lob}, A_{ch}, A_{rob}, áreas de caudal de margen izquierdo, canal principal y margen derecho, respectivamente
K_t conducción total de sección transversal
K_{lob}, K_{ch}, K_{rob}, conducción de margen izquierdo, canal principal y margen derecho, respectivamente

La pérdida de fricción se evalúa como el producto de S_f y L, donde S_f es la pendiente de fricción representativa para un tramo y se calcula como sigue:

Ecuación 5.- Pérdida por fricción

$$S_f = \left(\frac{Q_1 + Q_2}{K_1 + K_2} \right)$$

La elevación de la superficie del agua desconocida en una sección se determina por una solución iterativa de las Ecuaciones 1 y 2. El procedimiento seguido es el siguiente:

1. Se supone una elevación de superficie de agua en la sección aguas arriba
2. Basándose en ese supuesto, se determina la conducción total correspondiente y el frente de velocidad
3. Con los valores del paso 2, se calcula S_f y se resuelve la ecuación 2 para h_e
4. Con los valores de 2 y 3 se resuelve la ecuación 1 para WS_2
5. Comparación del valor calculado de WS_2, con el valor supuesto en el paso 1, repitiendo los pasos hasta que los valores concuerden dentro de 0,003 m

El programa usado está restringido a un número máximo de iteraciones, 40 como máximo, para equilibrar la superficie del agua. Cuando se ha obtenido una cota elevación de superficie de agua 'equilibrada' para una sección transversal, se hacen las revisiones para asegurar que la elevación está en la zona correcta respecto de la profundidad crítica calculada.

En los apéndices que se incluyen al final del presente documento se adjuntan los listados y salidas del programa informático HEC-RAS. Estos constan de: descripción general de los datos de partida del modelo hidráulico, gráficas de las secciones de control introducidas, perfil hidráulico del tramo y perspectiva de la llanura de inundación.

3.3. COEFICIENTES DE ROZAMIENTO

El principal problema que se plantea al analizar un curso de agua natural, como ya hemos comentado, es la estimación del coeficiente de Manning, n, pues son muchos los factores que intervienen en su cálculo.

Al fijar un valor de n, lo que se está estimando es la resistencia al 'escurrimiento' del arroyo, algo realmente intangible.

Los factores que intervienen con mayor influencia son:

Rugosidad de la superficie: se refiere al tamaño y a la forma de los granos del material que forma el perímetro mojado. En corrientes aluviales en donde el material de los granos es fino, tal como la arena, arcilla, marga o cieno, el efecto retardante es mucho menor que donde el material es grueso, tal como cantos rodados o piedras. Cuando el material es fino, el valor de n es bajo y relativamente poco afectado por los cambios de flujo.

Vegetación: puede ser vista como una clase de rugosidad superficial, pues reduce en marcada forma la capacidad del canal y retarda el flujo. Este efecto depende principalmente de la altura, densidad, distribución y tipo de vegetación.

Irregularidad del cauce: comprende irregularidades en el perímetro mojado y variaciones en la sección transversal, tamaño y forma a lo largo de la longitud del cauce. En general, un cambio gradual y uniforme en la sección transversal, tamaño y forma no afectará apreciablemente al valor de n, pero cambios bruscos o alternación de secciones pequeñas y grandes justifican el uso de un valor superior de n.

Alineación del cauce: curvaturas suaves con radios grandes darán un valor relativamente bajo de n, mientras que curvaturas agudas con meandros severos lo aumentarán.

Depósitos y socavaciones: en términos generales, los depósitos pueden cambiar un cauce irregular en uno comparativamente suave y disminuir n, mientras que la erosión puede hacer al revés y aumentar n. Ahora bien, depósitos disparejos tales como barras y ondas de arena son irregularidades del cauce y aumentarán la rugosidad.

Obstrucción: la presencia de pilares de puentes tiende a aumentar n. Depende la naturaleza de la obstrucción, tamaño, forma, número y distribución.

Nivel y caudal: el valor de n en la mayoría de los cauces decrece con el aumento en el nivel y en el caudal.

En cada sección transversal del modelo se han fijado dos valores del rozamiento de Manning, siguiendo las recomendaciones del manual "Hidráulica de los Canales Abiertos" de Ven Te Chow.

$$n = (n_0 + n_1 + n_2 + n_3 + n_4) \cdot m_5$$

Son los que se describen a continuación:

ARROYO RIOELICHE Y EL MORO

Tabla 2. Coeficientes de rozamiento para las márgenes

MÁRGENES		
Variable	Tipo	Valor
Material	Tierra	n0 = 0.02
Irregularidad	Menor	n1 = 0.005
Variaciones	Ocasionales	n2 = 0.005
Obstrucciones	Nula	n3 = 0.00
Vegetación	Baja	n4 = 0.005
Meandros	Menor	m5 = 1
n = 0.035		

Tabla 3. Coeficientes de rozamiento para el canal central

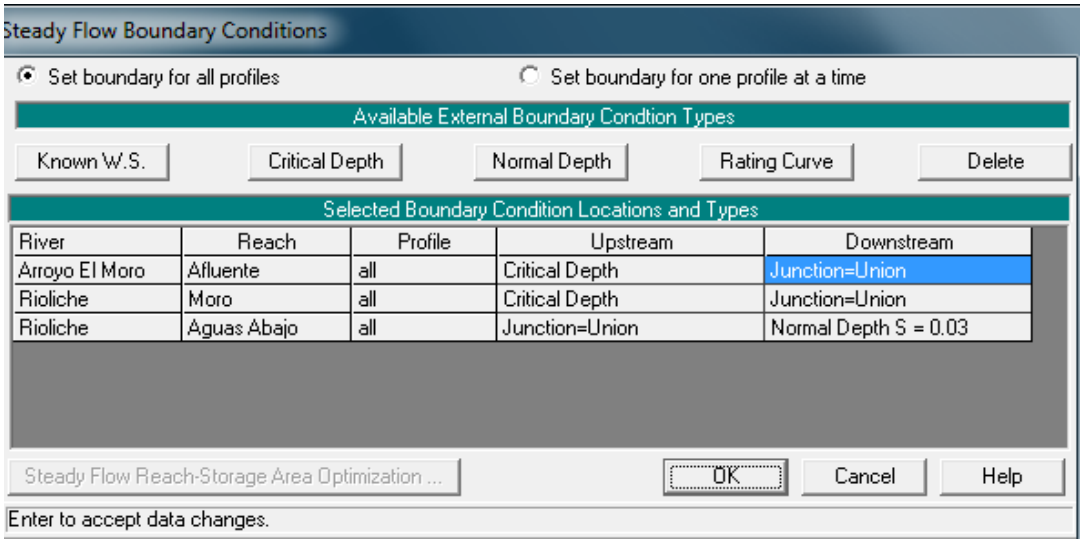
CANAL CENTRAL		
Variable	Tipo	Valor
Material	Tierra	n0 = 0.02
Irregularidad	Menor	n1 = 0.005
Variaciones	Ocasionales	n2 = 0.005
Obstrucciones	Nula	n3= 0.00
Vegetación	Media	n4 = 0.010
Meandros	Menor	m5 = 1
n = 0.040		

3.4. CONDICIONES DE CONTORNO

Las condiciones de contorno se introducen tanto aguas arriba como aguas abajo del tramo modelizado. Son necesarias para el inicio del proceso iterativo de cálculo.

De las alternativas que contempla el programa se ha elegido **el calado crítico** al inicio de los arroyos, y la pendiente del arroyo para el final del tramo, descrita en el apartado 2 del presente Anejo, en ambas simulaciones, es decir, para T5 y para T500. Lógicamente, en la unión de los dos arroyos, se prescribe la compensación de energía como condición de contorno.

Tabla 4. Condiciones de contorno del modelo Hec.



3.5. MODELIZACIÓN DE ESTRUCTURAS

Ya se ha descrito anteriormente que son cinco las estructuras existentes, si bien la primera del arroyo El Moro no afecta al suelo urbano ya que se localiza aguas arriba del sector.

El programa empleado, HEC-RAS, calcula las pérdidas de energía causadas por las estructuras en tres etapas:

- En la primera etapa se calculan las pérdidas que se producen en el tramo inmediatamente aguas abajo de la estructura, donde tiene lugar una expansión del flujo.
- En la segunda se calculan las pérdidas debidas a la propia estructura, que pueden ser modelizadas con diferentes métodos.
- Y en la tercera etapa se calculan las pérdidas que tienen lugar en el tramo inmediatamente aguas arriba de la estructura, donde el flujo se contrae para poder pasar a través del obstáculo.

Las rutinas del programa para puentes y estructuras, permiten realizar un análisis con distintos métodos sin tener que cambiar la geometría de los obstáculos, teniendo en cuenta los tres factores principales que le efecto de la constricción provoca sobre el flujo: la geometría del contorno del cauce, la descarga y el estado del flujo. Estas rutinas tienen la capacidad de simular tanto caudales bajos como altos, flujo en lámina libre o en carga, resolviendo el problema mediante la aplicación de la ecuación de la energía, y con la posibilidad de realizar ajustes en condiciones sumergidas.

3.5.1. METODOLOGÍA PARA LA INTRODUCCIÓN DE LOS DATOS DE LAS ESTRUCTURAS

Para realizar los cálculos de las pérdidas de energía debidas a puentes y/o estructuras, se utilizan cuatro perfiles definidos en el entorno de las mismas.

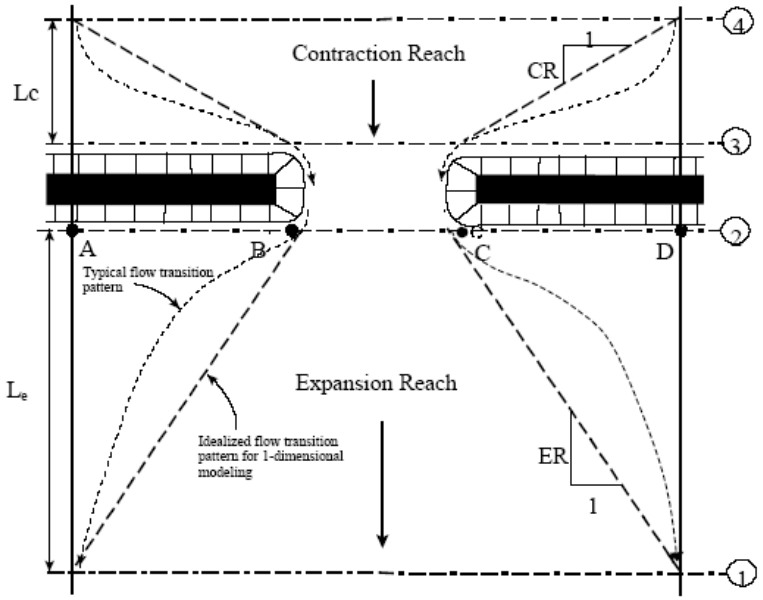


Ilustración 10.- Perfiles de cálculo en estructuras

Perfil 1. Localizado suficientemente aguas abajo de la estructura como para que el flujo no se vea afectado por la misma. El criterio generalizado para localizar este perfil 1, consiste en situarlo a una distancia aguas debajo de la estructura igual al ancho de los vanos que componen la misma.

Perfil 2. Se sitúa inmediatamente aguas abajo de la estructura. En este perfil se considera el caudal útil justo al salir de la estructura.

Perfil 3. Se situará justo aguas arriba de la estructura. La distancia entre el perfil 3 y la estructura será relativamente corta. La distancia reflejará sólo la longitud necesaria para la aceleración brusca y contracción del flujo que tiene lugar en las inmediaciones del paso. Este perfil representa el área de caudal útil justo aguas arriba de la estructura. Ambos perfiles, 2 y 3, tendrán también áreas que obstruyen el flujo.

Perfil 4. Es un perfil aguas arriba de la estructura donde las líneas de flujo son aproximadamente paralelas y la capacidad útil del perfil es completa. Debido a las constricciones en el flujo que puede provocar una distancia más corta, la distancia entre los perfiles 3 y 4 deberá aproximarse a la media del ancho del tablero de la estructura.

La geometría de las estructuras se define a partir de la caracterización de los vanos, estribos y pilas que puedan existir.

- Vanos de la estructura: En este apartado se define la superficie que obstruye al flujo correspondiente a los vanos de la estructura, terraplenes del camino y estribos verticales. Los datos requeridos son: longitud que hay entre la cara aguas arriba de la estructura y el perfil situado inmediatamente aguas arriba de la misma (perfil 3), ancho de la estructura, coeficiente de vertido (es el coeficiente que se usará para el caso de caudal vertiente sobre los vanos de la estructura en la ecuación estándar de vertido), ángulo de esviaje, perfiles aguas arriba y aguas abajo, máxima sobreelevación permitida (es el mayor, ratio permitido para la sobreelevación de la lámina sobre los vanos de la estructura a que se puede llegar durante los cálculos. Si se excede este ratio, el programa cambiará a cálculos basados en la resolución de la ecuación de la energía antes que caudales en carga o vertientes), criterio de sobreelevación (vertedero con perfil en forma trapezoidal o vertedero con perfil tipo Creager) y mínima cota de vertido.
- Pilas de la estructura: la definición de las pilas en el programa se realiza mediante la introducción de la distancia a la que se encuentra el eje para ambas caras de la pila, aguas arriba y aguas abajo, y la introducción de anchos y cotas para definir la geometría de las mismas. El ángulo de esviaje es introducido en grados, correspondientes a la desviación de la línea de pilas respecto de la línea de caudal.
- Estribos de la estructura: los estribos de la estructura se usan como complemento a la información aportada en la definición de los vanos de la estructura. Los estribos se introducen de forma similar a los vanos de la estructura, siendo generalmente para cada estructura, un estribo derecho y otro izquierdo. Los datos para cada estribo consisten en un ángulo de esviaje y la información de distancia y cota. Esta última, representa la rasante superior del estribo. La cota inferior se asume que debe estar en el terreno, y no es necesario introducirla.

3.5.2. SIMULACIÓN HIDRÁULICA DE ESTRUCTURAS

Para caudales bajos del tipo A (flujo en régimen subcrítico), el programa dispone de cuatro métodos para calcular las pérdidas debidas a la presencia de una estructura:

- Ecuación de la energía (método iterativo)
- Equilibrio del momento
- Ecuación de Yarnell
- Método del USGS de Pasos Contraídos

Para caudales en régimen supercrítico del tipo A, el programa dispone de dos métodos para calcular las pérdidas:

- Ecuación de la energía (método iterativo)
- Método de caudales en carga y vertientes

Finalmente, las pérdidas entre perfiles debidas a la contracción y expansión del flujo se determinan mediante cálculos iterativos. La ecuación de Manning se usa para calcular las pérdidas por rozamiento, y las demás pérdidas son descritas en términos de coeficientes que afecta al valor absoluto del cambio de velocidad entre dos perfiles consecutivos. Cuando la velocidad aumenta en sentido hacia agua abajo, se usa un coeficiente de contracción; y cuando la velocidad disminuye en el mismo sentido, se usa un coeficiente de expansión.

Los coeficientes de contracción y expansión son usados para calcular pérdidas de energía asociadas con cambios en la forma de los perfiles del río (o áreas de flujo computables). Las pérdidas debidas a la expansión del flujo son mayores normalmente que las pérdidas por contracción, y las pérdidas de transiciones cortas y bruscas son mayores que las pérdidas de transiciones graduales.

4. ANÁLISIS DE LOS RESULTADOS OBTENIDOS

En este apartado analizaremos las conclusiones a las que se llega con el modelo hidráulico de los dos arroyos. Recordar que, debido a la modelización de la unión entre los arroyos Rioeliche y Moro, el primero se divide en dos tramos: aguas arriba y aguas abajo.

Distinguiremos entre la avenida ordinaria de T=5 años, que servirá para fijar el DPH, y la de T=500, que marcará la llanura de inundación.

4.1. AVENIDA ORDINARIA DE PERIODO DE RETORNO 5 AÑOS

4.1.1. TABLA RESUMEN DE LOS RESULTADOS

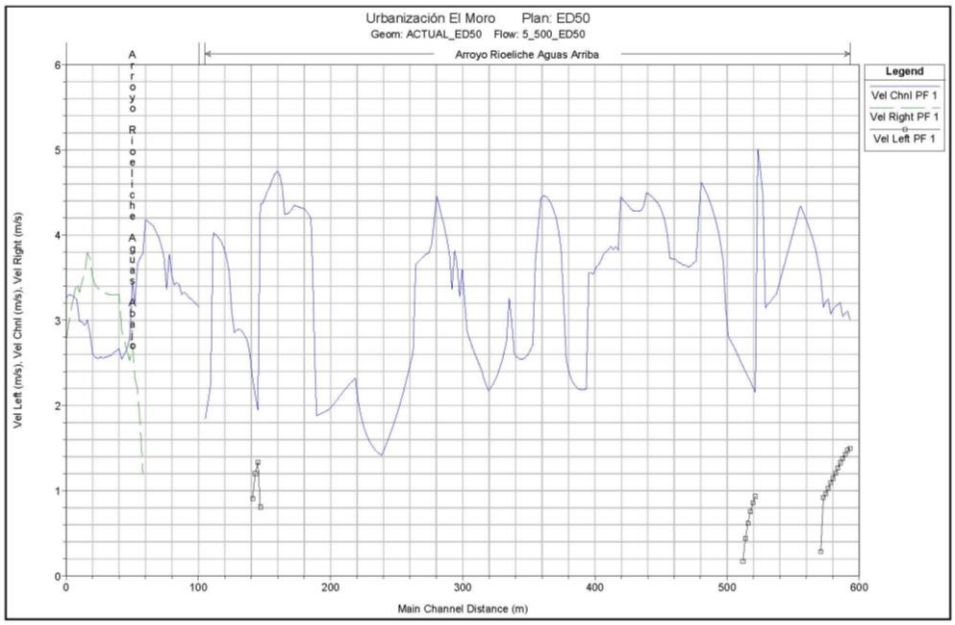
En primer lugar, se adjunta la tabla resumen de los resultados obtenidos, así como las gráficas de velocidades y del nº de Froude. Se aportan solo las secciones extraídas del MDT y no las interpoladas, por simplicidad.

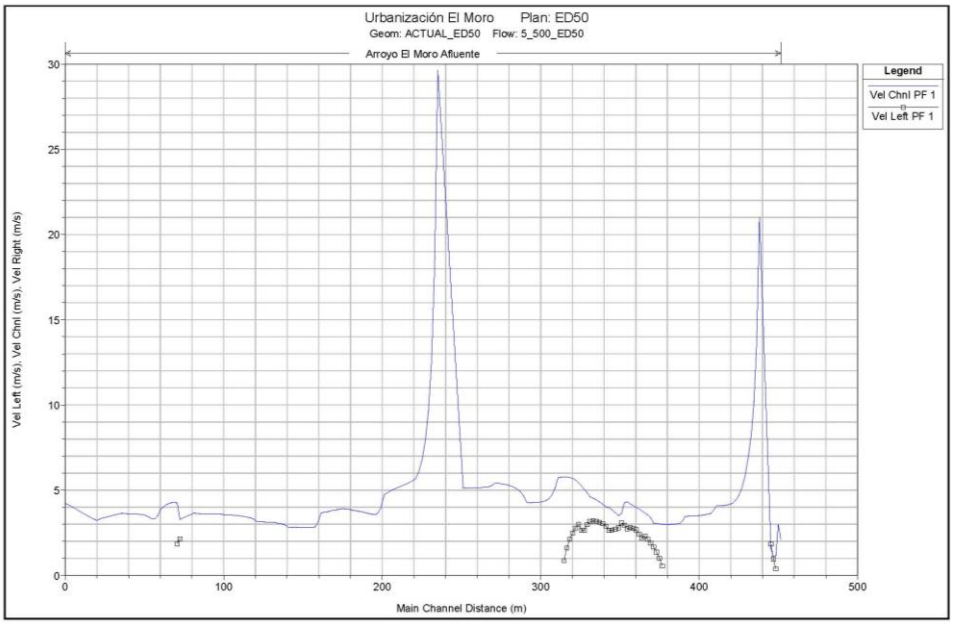
Tabla 5. Resumen del modelo para T=5 años en ambos arroyos.

HEC-RAS Plan: ed50 Profile: PF 1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arroyo Rioeliche	Aguas Arriba	600	PF 1	22.61	758.72	760.42	760.42	760.88	0.016635	3.01	7.64	8.37	0.97
Arroyo Rioeliche	Aguas Arriba	580	PF 1	22.61	758.14	759.92	759.94	760.42	0.018574	3.15	7.23	7.89	1.02
Arroyo Rioeliche	Aguas Arriba	563	PF 1	22.61	757.49	758.83	759.13	759.79	0.043390	4.34	5.21	6.17	1.51
Arroyo Rioeliche	Aguas Arriba	559	PF 1	22.61	757.35	758.95	758.95	759.51	0.018644	3.31	6.83	6.73	0.99
Arroyo Rioeliche	Aguas Arriba	554		Culvert									
Arroyo Rioeliche	Aguas Arriba	550	PF 1	22.61	757.14	759.45	759.45	759.95	0.019191	3.15	7.19	9.77	0.99
Arroyo Rioeliche	Aguas Arriba	545	PF 1	22.61	756.99	758.26	758.67	759.54	0.075106	5.01	4.51	6.73	1.95
Arroyo Rioeliche	Aguas Arriba	520	PF 1	22.61	756.62	758.52	758.52	759.02	0.018541	3.15	7.18	7.02	0.99
Arroyo Rioeliche	Aguas Arriba	502	PF 1	22.61	755.95	757.16	757.50	758.25	0.048255	4.62	4.90	5.49	1.56
Arroyo Rioeliche	Aguas Arriba	478	PF 1	22.61	755.17	756.91	757.01	757.62	0.025382	3.73	6.06	5.40	1.12
Arroyo Rioeliche	Aguas Arriba	460	PF 1	22.61	754.19	755.82	756.14	756.85	0.050095	4.50	5.03	6.13	1.58
Arroyo Rioeliche	Aguas Arriba	441	PF 1	22.61	753.17	755.00	755.29	756.01	0.041639	4.45	5.09	4.90	1.39
Arroyo Rioeliche	Aguas Arriba	417	PF 1	22.61	752.64	754.64	754.83	755.28	0.039111	3.55	6.36	9.25	1.37
Arroyo Rioeliche	Aguas Arriba	398	PF 1	22.61	752.07	754.52	754.52	755.03	0.020691	3.18	7.12	6.85	0.99
Arroyo Rioeliche	Aguas Arriba	380	PF 1	22.61	751.45	753.18	753.50	754.18	0.053523	4.42	5.11	6.40	1.58
Arroyo Rioeliche	Aguas Arriba	358	PF 1	22.61	751.11	753.17	753.17	753.62	0.018679	2.98	7.59	8.30	0.99
Arroyo Rioeliche	Aguas Arriba	341	PF 1	22.61	750.82	753.07	752.83	753.31	0.009838	2.18	10.38	11.29	0.73
Arroyo Rioeliche	Aguas Arriba	323	PF 1	22.61	750.23	752.50	752.50	753.03	0.020681	3.21	7.05	6.62	0.99
Arroyo Rioeliche	Aguas Arriba	302	PF 1	22.61	749.85	751.25	751.55	752.26	0.042529	4.46	5.07	5.31	1.46
Arroyo Rioeliche	Aguas Arriba	260	PF 1	22.61	748.84	751.35	750.59	751.45	0.002705	1.42	15.94	12.92	0.41
Arroyo Rioeliche	Aguas Arriba	240	PF 1	22.61	748.37	751.08	750.62	751.35	0.008009	2.32	9.75	7.19	0.64
Arroyo Rioeliche	Aguas Arriba	233	PF 1	22.61	748.22	751.00	750.00	751.20	0.004903	1.95	11.59	6.86	0.48
Arroyo Rioeliche	Aguas Arriba	229		Culvert									
Arroyo Rioeliche	Aguas Arriba	224	PF 1	22.61	748.13	751.00	749.67	751.18	0.004144	1.88	12.02	4.71	0.38
Arroyo Rioeliche	Aguas Arriba	220	PF 1	22.61	748.05	750.14	750.42	751.04	0.039248	4.19	5.39	5.46	1.35
Arroyo Rioeliche	Aguas Arriba	200	PF 1	22.61	747.40	749.31	749.53	750.23	0.035250	4.24	5.33	4.68	1.27
Arroyo Rioeliche	Aguas Arriba	180	PF 1	22.61	746.89	748.81	748.43	749.00	0.005238	1.95	12.00	11.32	0.57
Arroyo Rioeliche	Aguas Arriba	160	PF 1	22.61	746.30	748.20	748.20	748.69	0.018981	3.10	7.29	7.50	1.00
Arroyo Rioeliche	Aguas Arriba	140	PF 1	22.61	745.79	747.85	747.36	748.03	0.004898	1.84	12.26	10.47	0.54
Arroyo Rioeliche	Aguas Abajo	120	PF 1	28.00	745.20	747.45	747.36	747.95	0.015667	3.16	8.86	7.24	0.91
Arroyo Rioeliche	Aguas Abajo	100	PF 1	28.00	744.63	746.91	746.95	747.53	0.020755	3.51	7.97	6.82	1.04
Arroyo Rioeliche	Aguas Abajo	80	PF 1	28.00	744.23	745.94	746.22	746.83	0.039682	4.18	6.70	8.02	1.46
Arroyo Rioeliche	Aguas Abajo	60	PF 1	28.00	743.95	745.85	745.79	746.32	0.012695	2.67	9.39	8.65	0.85
Arroyo Rioeliche	Aguas Abajo	40	PF 1	28.00	743.75	745.51	745.51	746.01	0.014144	2.61	9.20	8.81	0.90
Arroyo Rioeliche	Aguas Abajo	20	PF 1	28.00	742.94	745.06	745.10	745.58	0.018354	3.26	8.83	9.23	1.03
Arroyo El Moro	Afluente	460	PF 1	5.39	796.29	797.25	797.25	797.48	0.022147	2.12	2.54	5.56	1.00
Arroyo El Moro	Afluente	454	PF 1	5.39	796.00	797.08	796.72	797.23	0.003806	1.60	3.17	17.21	0.50
Arroyo El Moro	Afluente	452		Culvert									
Arroyo El Moro	Afluente	447	PF 1	5.39	793.58	793.83	794.48	816.28	9.975622	21.00	0.26	1.79	17.71
Arroyo El Moro	Afluente	440	PF 1	5.39	792.29	792.99	793.49	795.51	0.400993	7.03	0.77	2.18	3.78
Arroyo El Moro	Afluente	420	PF 1	5.39	790.45	791.38	791.66	792.23	0.096012	4.09	1.32	2.84	1.92
Arroyo El Moro	Afluente	400	PF 1	5.39	789.40	790.13	790.33	790.75	0.070671	3.47	1.55	3.83	1.74
Arroyo El Moro	Afluente	380	PF 1	5.39	788.31	789.36	789.49	789.83	0.037035	3.07	1.81	3.49	1.27
Arroyo El Moro	Afluente	360	PF 1	5.39	787.11	787.42	787.55	787.93	0.184207	3.62	1.71	12.77	2.54
Arroyo El Moro	Afluente	340	PF 1	5.39	784.04	784.62	784.86	785.52	0.131974	4.61	1.34	5.14	2.29
Arroyo El Moro	Afluente	320	PF 1	5.39	779.14	779.88	780.27	781.56	0.245634	5.74	0.94	2.58	3.04
Arroyo El Moro	Afluente	300	PF 1	5.39	776.88	777.90	778.20	778.83	0.107353	4.28	1.26	2.61	1.97
Arroyo El Moro	Afluente	280	PF 1	5.39	772.93	773.94	774.37	775.44	0.188596	5.42	0.99	1.95	2.43
Arroyo El Moro	Afluente	260	PF 1	5.39	769.73	770.67	771.06	772.01	0.168063	5.12	1.05	2.20	2.37
Arroyo El Moro	Afluente	255		Culvert									
Arroyo El Moro	Afluente	254	PF 1	5.39	768.88	769.16	770.01	813.92	21.959820	29.64	0.18	1.29	25.16
Arroyo El Moro	Afluente	240	PF 1	5.39	766.64	767.43	767.83	769.08	0.229999	5.68	0.95	2.40	2.88
Arroyo El Moro	Afluente	220	PF 1	5.39	762.84	763.48	763.75	764.61	0.220346	4.72	1.14	4.25	2.90
Arroyo El Moro	Afluente	200	PF 1	5.39	760.96	761.85	762.09	762.60	0.086457	3.83	1.41	3.25	1.85
Arroyo El Moro	Afluente	180	PF 1	5.39	759.32	759.95	760.16	760.63	0.100648	3.65	1.48	4.56	2.05
Arroyo El Moro	Afluente	160	PF 1	5.39	758.19	759.22	759.31	759.61	0.036385	2.80	1.93	3.76	1.25
Arroyo El Moro	Afluente	140	PF 1	5.39	757.15	758.16	758.30	758.66	0.048098	3.13	1.72	3.37	1.40
Arroyo El Moro	Afluente	120	PF 1	5.39	756.00	756.83	757.03	757.46	0.058963	3.54	1.52	2.84	1.54
Arroyo El Moro	Afluente	100	PF 1	5.39	754.59	755.57	755.75	756.25	0.054913	3.66	1.47	3.13	1.51
Arroyo El Moro	Afluente	95		Culvert									
Arroyo El Moro	Afluente	92	PF 1	5.39	753.14	754.64	754.64	755.16	0.041569	3.29	1.72	1.64	0.96
Arroyo El Moro	Afluente	80	PF 1	5.39	752.40	753.18	753.42	753.95	0.096401	3.89	1.38	3.54	1.98
Arroyo El Moro	Afluente	60	PF 1	5.39	751.06	751.79	752.00	752.45	0.072939	3.60	1.50	3.48	1.75
Arroyo El Moro	Afluente	40	PF 1	5.39	749.71	750.19	750.36	750.72	0.096940	3.23	1.67	6.14	1.98
Arroyo El Moro	Afluente	20	PF 1	5.39	746.90	747.74	748.03	748.65	0.109195	4.23	1.27	3.03	2.08

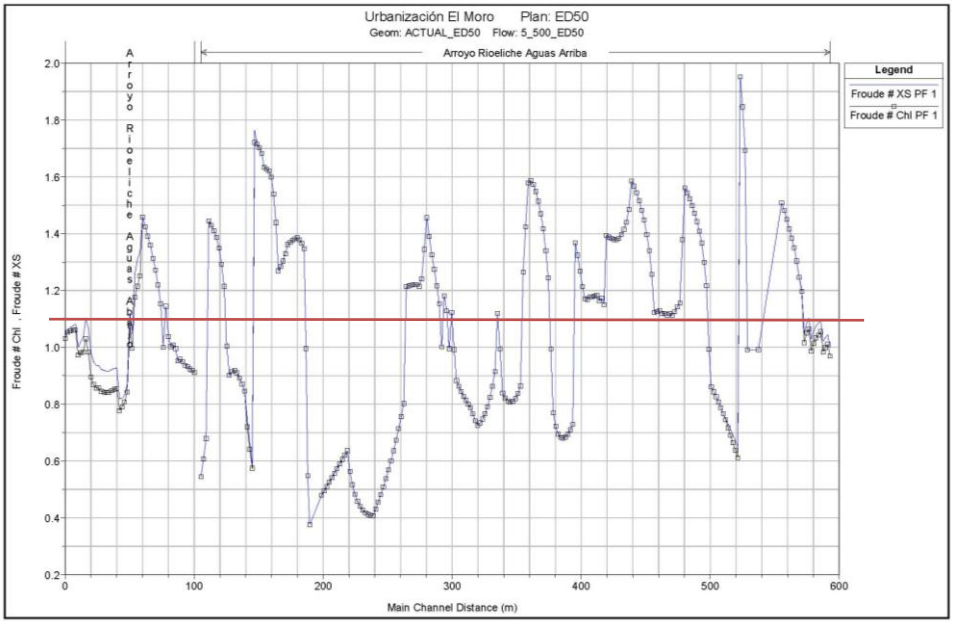
Ilustración 11.- Velocidades para T=5 en ambos arroyos.

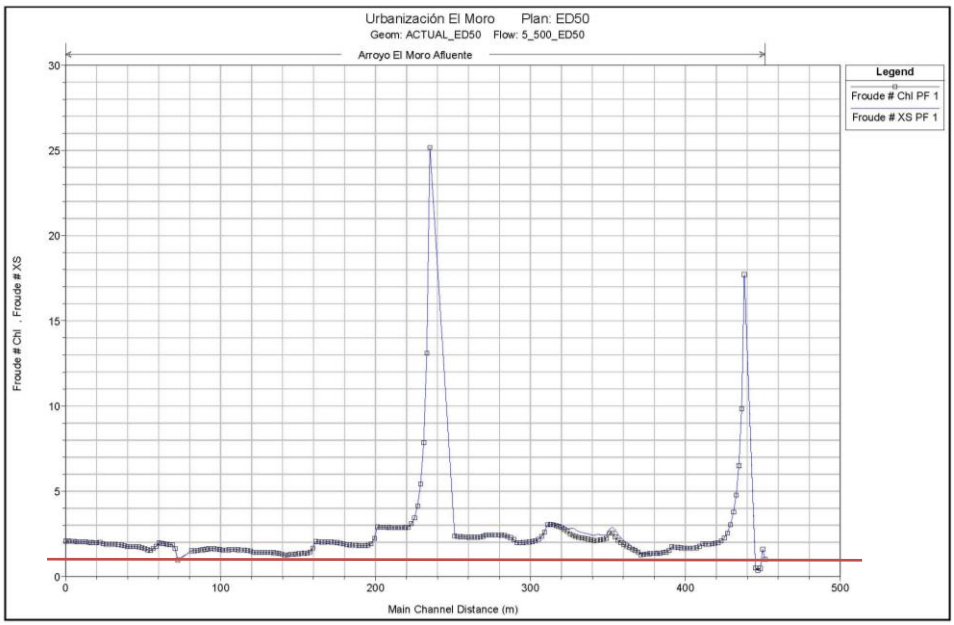




Las velocidades obtenidas en el canal principal son altas entre 3 y 5 m/s, existiendo dos picos que se corresponden con dos de las tres estructuras modelizadas en el arroyo El Moro, dado que la pendiente de este arroyo es muy elevada.

Ilustración 12.- Froude para T=5 en ambos arroyos.





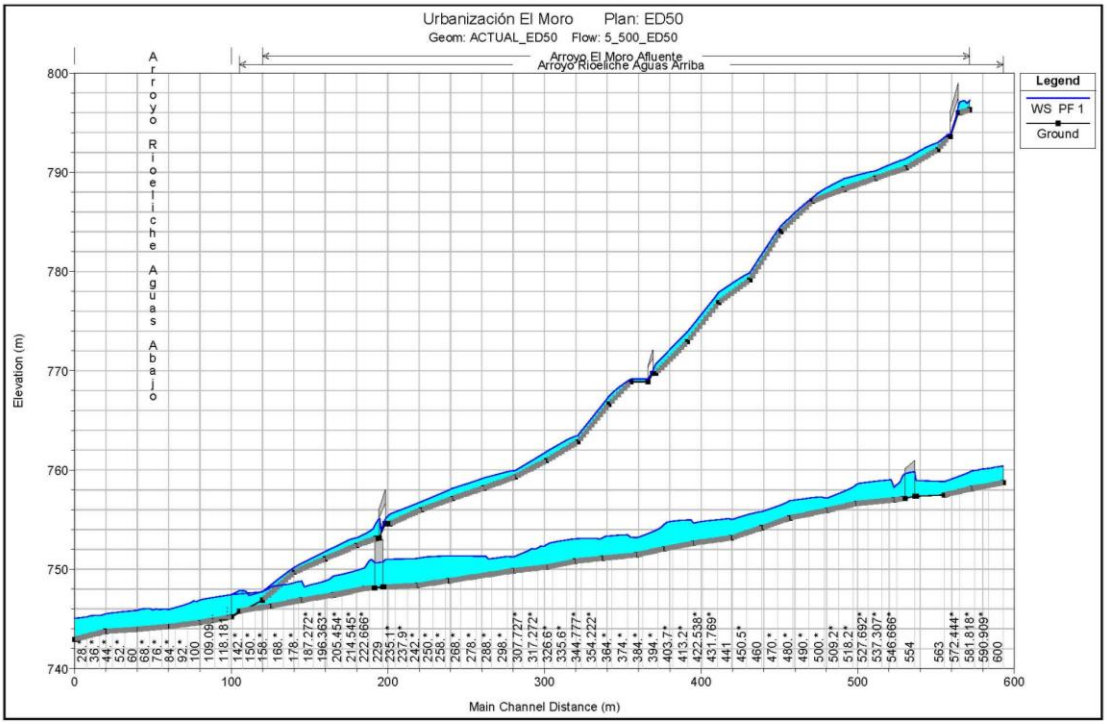
Resaltar que el régimen obtenido en el tramo de estudio del arroyo Rioeliche es muy variable, dados los cambios de sección y de pendiente del cauce. Sin embargo, para el arroyo de El Moro, el régimen es rápido entodo el tramo, disparándose en dos de las tres estructuras modelizadas.

En los apéndices 2.B. a 2.E. del anejo se muestran el perfil hidráulico obtenido y las secciones hidráulicas resultantes, así como una descripción detallada tanto de los datos de partida como de los resultados obtenidos en la modelización.

4.1.2. ANÁLISIS DE COTAS DE INUNDACIÓN

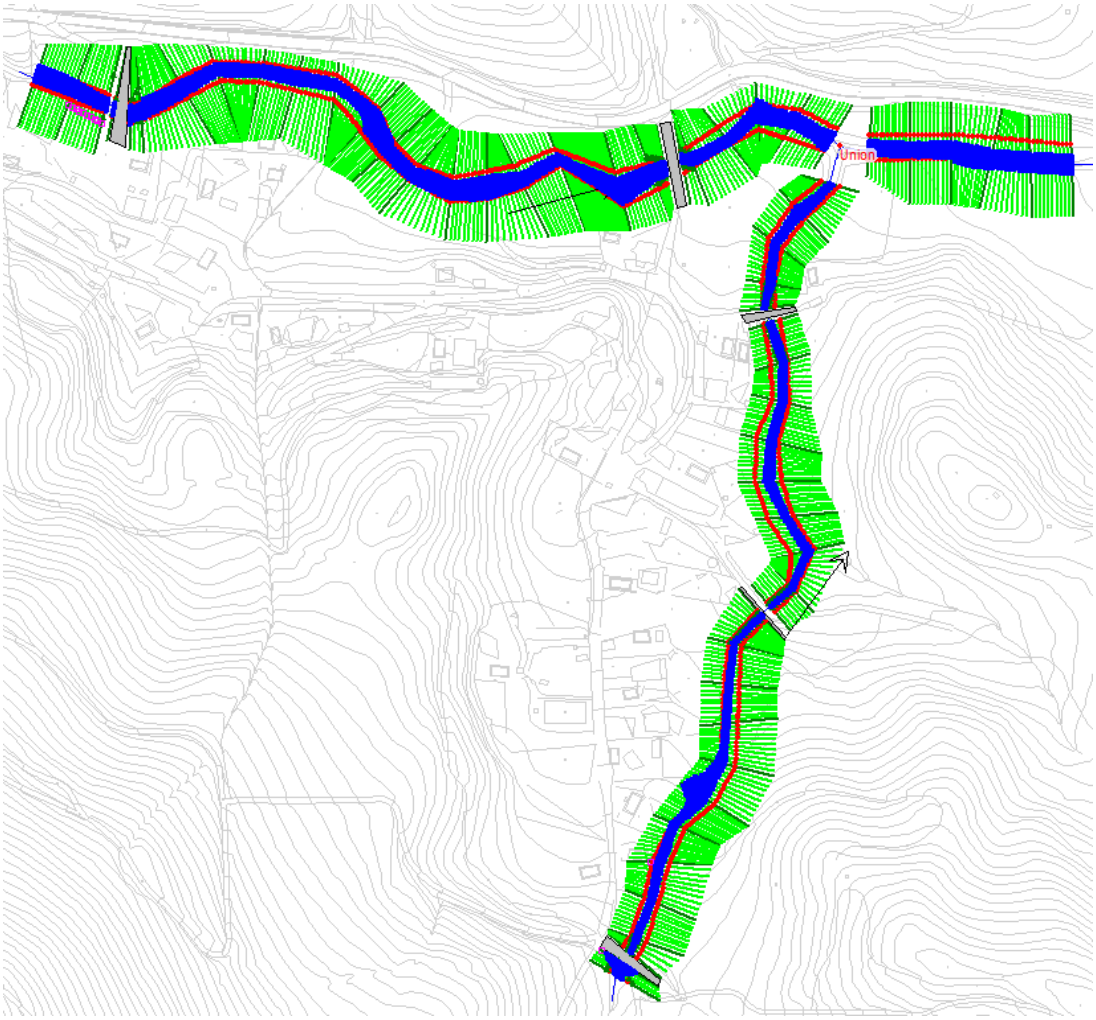
A continuación se muestra el gráfico con las cotas de la llanura de inundación alcanzadas para la avenida ordinaria de 5 años. En el perfil se han combinado los dos arroyos, por lo que se evidencia la fuerte pendiente de El Moro respecto a la de Rioeliche.

Ilustración 13.- Cotas de inundación del modelo para T=5 en ambos arroyos.



De este gráfico se extraen los valores de cota de lámina de agua en cada perfil para poder trasladarlos a planta y dibujar la llanura de inundación.

Ilustración 14.- Esquema en planta con el DPH de ambos arroyos sombreado en azul.



4.2. AVENIDA EXTRAORDINARIA DE PERIODO DE RETORNO 500 AÑOS

4.2.1. TABLA RESUMEN DE LOS RESULTADOS

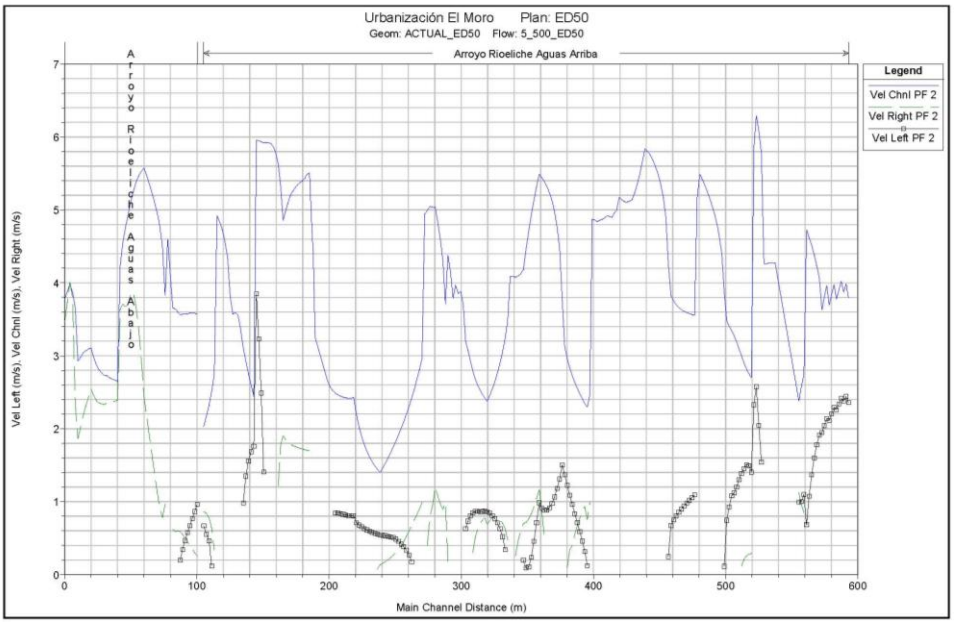
En primer lugar, se adjunta la tabla resumen de los resultados obtenidos, así como las gráficas de velocidades y del nº de Froude.

Tabla 6. Resumen del modelo para T=500 en ambos arroyos.

HEC-RAS Plan: ed50 Profile: PF 2

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arroyo Rioeliche	Aguas Arriba	600	PF 2	55.78	758.72	761.21	761.21	761.92	0.014178	3.80	15.21	10.66	0.96
Arroyo Rioeliche	Aguas Arriba	580	PF 2	55.78	758.14	760.80	760.81	761.44	0.012428	3.63	16.49	13.36	0.90
Arroyo Rioeliche	Aguas Arriba	563	PF 2	55.78	757.49	760.74	760.04	761.00	0.003660	2.38	26.62	23.56	0.50
Arroyo Rioeliche	Aguas Arriba	559	PF 2	55.78	757.35	759.90	759.90	760.83	0.016233	4.27	13.05	9.55	1.00
Arroyo Rioeliche	Aguas Arriba	554		Culvert									
Arroyo Rioeliche	Aguas Arriba	550	PF 2	55.78	757.14	760.29	760.29	761.22	0.015824	4.26	13.09	24.31	0.99
Arroyo Rioeliche	Aguas Arriba	545	PF 2	55.78	756.99	758.83	759.47	760.83	0.061067	6.29	9.05	9.17	1.90
Arroyo Rioeliche	Aguas Arriba	520	PF 2	55.78	756.62	759.40	759.40	760.17	0.016716	3.87	14.41	9.35	0.99
Arroyo Rioeliche	Aguas Arriba	502	PF 2	55.78	755.95	757.98	758.45	759.51	0.039949	5.49	10.16	7.35	1.49
Arroyo Rioeliche	Aguas Arriba	478	PF 2	55.78	755.17	758.05	758.05	758.97	0.018857	4.25	13.13	7.16	1.00
Arroyo Rioeliche	Aguas Arriba	460	PF 2	55.78	754.19	756.45	757.01	758.19	0.050864	5.84	9.56	7.76	1.68
Arroyo Rioeliche	Aguas Arriba	441	PF 2	55.78	753.17	755.97	756.50	757.34	0.033673	5.17	10.78	6.83	1.31
Arroyo Rioeliche	Aguas Arriba	417	PF 2	55.78	752.64	756.03	755.48	756.30	0.004904	2.30	25.07	19.43	0.56
Arroyo Rioeliche	Aguas Arriba	398	PF 2	55.78	752.07	755.42	755.42	756.12	0.015708	3.75	15.28	11.38	0.94
Arroyo Rioeliche	Aguas Arriba	380	PF 2	55.78	751.45	753.85	754.36	755.38	0.045921	5.49	10.22	8.88	1.58
Arroyo Rioeliche	Aguas Arriba	358	PF 2	55.78	751.11	753.79	753.95	754.64	0.023777	4.09	13.64	11.22	1.18
Arroyo Rioeliche	Aguas Arriba	341	PF 2	55.78	750.82	754.03	753.54	754.31	0.005196	2.38	24.19	18.05	0.59
Arroyo Rioeliche	Aguas Arriba	323	PF 2	55.78	750.23	753.43	753.43	754.13	0.018448	3.70	15.09	10.73	0.99
Arroyo Rioeliche	Aguas Arriba	302	PF 2	55.78	749.85	752.16	752.60	753.45	0.030406	5.04	11.21	8.83	1.31
Arroyo Rioeliche	Aguas Arriba	260	PF 2	55.78	748.84	752.76	751.35	752.86	0.001235	1.40	41.37	24.38	0.30
Arroyo Rioeliche	Aguas Arriba	240	PF 2	55.78	748.37	752.50	751.62	752.80	0.004728	2.43	23.54	14.79	0.53
Arroyo Rioeliche	Aguas Arriba	233	PF 2	55.78	748.22	752.34	751.22	752.70	0.004263	2.66	20.94	14.04	0.49
Arroyo Rioeliche	Aguas Arriba	229		Culvert									
Arroyo Rioeliche	Aguas Arriba	224	PF 2	55.78	748.13	752.05	750.87	752.59	0.010078	3.25	17.16	6.88	0.57
Arroyo Rioeliche	Aguas Arriba	220	PF 2	55.78	748.05	750.82	751.28	752.36	0.044177	5.51	10.24	8.80	1.53
Arroyo Rioeliche	Aguas Arriba	200	PF 2	55.78	747.40	750.37	750.80	751.54	0.027550	4.85	12.00	9.97	1.22
Arroyo Rioeliche	Aguas Arriba	180	PF 2	55.78	746.89	748.60	749.14	750.34	0.058643	5.96	9.65	10.41	1.88
Arroyo Rioeliche	Aguas Arriba	160	PF 2	55.78	746.30	749.05	749.05	749.79	0.016954	3.81	14.64	9.81	1.00
Arroyo Rioeliche	Aguas Arriba	140	PF 2	55.78	745.79	749.04	748.15	749.25	0.002663	2.03	28.79	18.27	0.44
Arroyo Rioeliche	Aguas Abajo	120	PF 2	69.07	745.20	748.53	748.48	749.18	0.014209	3.57	19.54	14.82	0.92
Arroyo Rioeliche	Aguas Abajo	100	PF 2	69.07	744.63	747.98	747.98	748.83	0.016873	4.09	16.87	9.78	0.99
Arroyo Rioeliche	Aguas Abajo	80	PF 2	69.07	744.23	746.55	747.12	748.08	0.039127	5.57	13.01	12.91	1.55
Arroyo Rioeliche	Aguas Abajo	60	PF 2	69.07	743.95	746.91	746.72	747.23	0.009045	2.65	27.52	27.64	0.76
Arroyo Rioeliche	Aguas Abajo	40	PF 2	69.07	743.75	746.57	746.49	746.99	0.012186	3.11	24.35	25.17	0.89
Arroyo Rioeliche	Aguas Abajo	20	PF 2	69.07	742.94	745.91	745.93	746.61	0.015771	3.78	18.62	13.86	1.02
Arroyo El Moro	Afluente	460	PF 2	13.31	796.29	797.95	797.65	798.09	0.006220	1.66	8.08	10.67	0.59
Arroyo El Moro	Afluente	454	PF 2	13.31	796.00	797.62	797.30	798.02	0.005905	2.62	4.78	22.53	0.66
Arroyo El Moro	Afluente	452		Culvert									
Arroyo El Moro	Afluente	447	PF 2	13.31	793.58	795.05	795.05	795.68	0.015484	3.50	3.80	10.82	0.99
Arroyo El Moro	Afluente	440	PF 2	13.31	792.29	793.54	793.98	795.08	0.114639	5.50	2.42	3.89	2.22
Arroyo El Moro	Afluente	420	PF 2	13.31	790.45	791.75	792.18	793.09	0.095880	5.13	2.60	3.97	2.02
Arroyo El Moro	Afluente	400	PF 2	13.31	789.40	790.45	790.80	791.53	0.072530	4.60	2.89	4.60	1.85
Arroyo El Moro	Afluente	380	PF 2	13.31	788.31	789.75	790.01	790.51	0.039587	3.99	3.58	5.60	1.39
Arroyo El Moro	Afluente	360	PF 2	13.31	787.11	787.52	787.75	788.44	0.179703	4.21	3.13	14.49	2.61
Arroyo El Moro	Afluente	340	PF 2	13.31	784.04	784.85	785.22	786.06	0.114255	5.34	2.77	7.11	2.22
Arroyo El Moro	Afluente	320	PF 2	13.31	779.14	780.17	780.84	782.88	0.213394	7.31	1.85	3.35	3.03
Arroyo El Moro	Afluente	300	PF 2	13.31	776.88	778.28	778.74	779.78	0.110597	5.43	2.45	3.68	2.12
Arroyo El Moro	Afluente	280	PF 2	13.31	772.93	774.38	775.00	776.65	0.160856	6.67	2.00	2.67	2.42
Arroyo El Moro	Afluente	260	PF 2	13.31	769.73	771.05	771.63	773.25	0.162221	6.57	2.03	3.14	2.51
Arroyo El Moro	Afluente	255		Culvert									
Arroyo El Moro	Afluente	254	PF 2	13.31	768.88	769.46	770.60	787.53	2.973954	18.84	0.71	2.06	10.27
Arroyo El Moro	Afluente	240	PF 2	13.31	766.64	767.71	768.40	770.76	0.266372	7.74	1.72	3.25	3.29
Arroyo El Moro	Afluente	220	PF 2	13.31	762.84	763.68	764.13	765.59	0.229825	6.12	2.18	5.84	3.15
Arroyo El Moro	Afluente	200	PF 2	13.31	760.96	762.22	762.58	763.36	0.078636	4.75	2.80	4.26	1.87
Arroyo El Moro	Afluente	180	PF 2	13.31	759.32	760.19	760.57	761.45	0.106109	4.97	2.68	5.26	2.22
Arroyo El Moro	Afluente	160	PF 2	13.31	758.19	759.61	759.80	760.27	0.039155	3.61	3.69	5.20	1.37
Arroyo El Moro	Afluente	140	PF 2	13.31	757.15	758.58	758.81	759.36	0.045951	3.91	3.40	4.56	1.45
Arroyo El Moro	Afluente	120	PF 2	13.31	756.00	757.27	757.56	758.26	0.056856	4.40	3.03	3.84	1.58
Arroyo El Moro	Afluente	100	PF 2	13.31	754.59	756.10	756.41	757.24	0.039856	4.73	2.81	4.63	1.42
Arroyo El Moro	Afluente	95		Culvert									
Arroyo El Moro	Afluente	92	PF 2	13.31	753.14	755.57	755.57	756.27	0.037841	3.80	3.60	4.35	0.98
Arroyo El Moro	Afluente	80	PF 2	13.31	752.40	753.44	753.86	754.97	0.114633	5.51	2.45	4.69	2.30
Arroyo El Moro	Afluente	60	PF 2	13.31	751.06	752.14	752.49	753.22	0.072091	4.60	2.89	4.46	1.82
Arroyo El Moro	Afluente	40	PF 2	13.31	749.71	750.39	750.68	751.37	0.105665	4.39	3.03	7.44	2.20
Arroyo El Moro	Afluente	20	PF 2	13.31	746.90	749.23	748.51	749.33	0.002714	1.35	9.87	8.41	0.39

Ilustración 15.- Velocidades para T=500 en ambos arroyos.



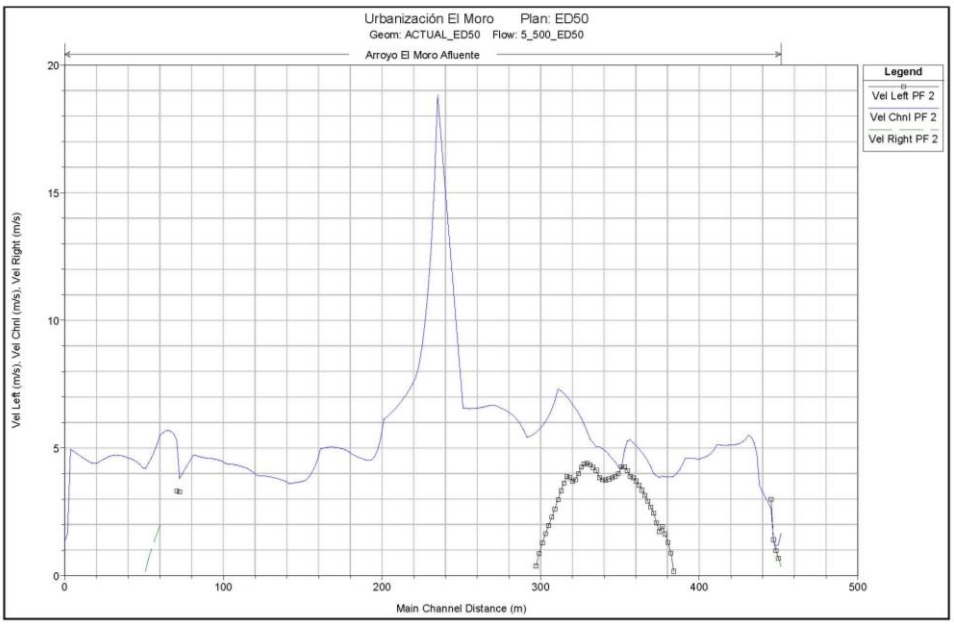
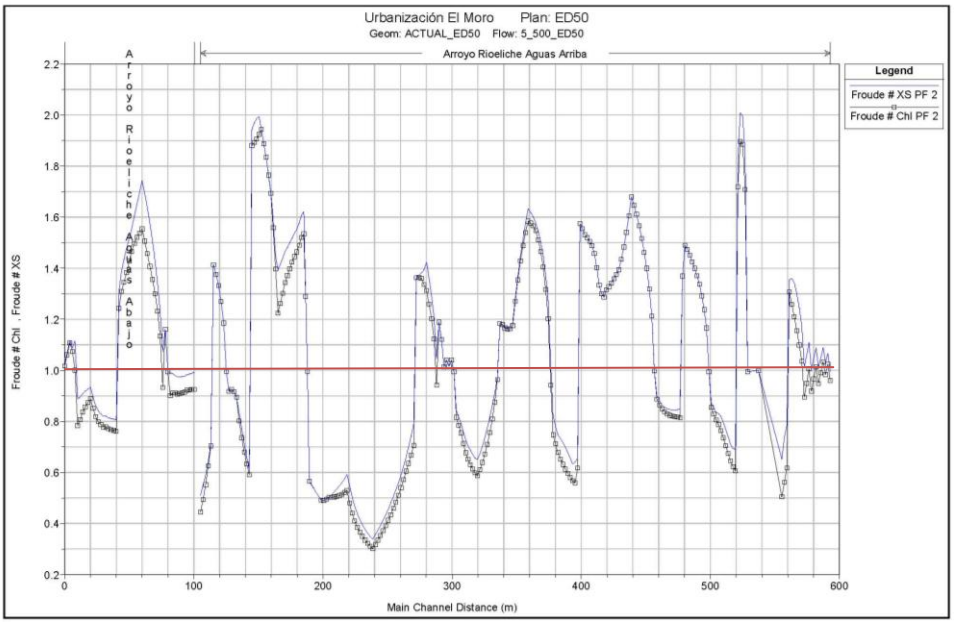
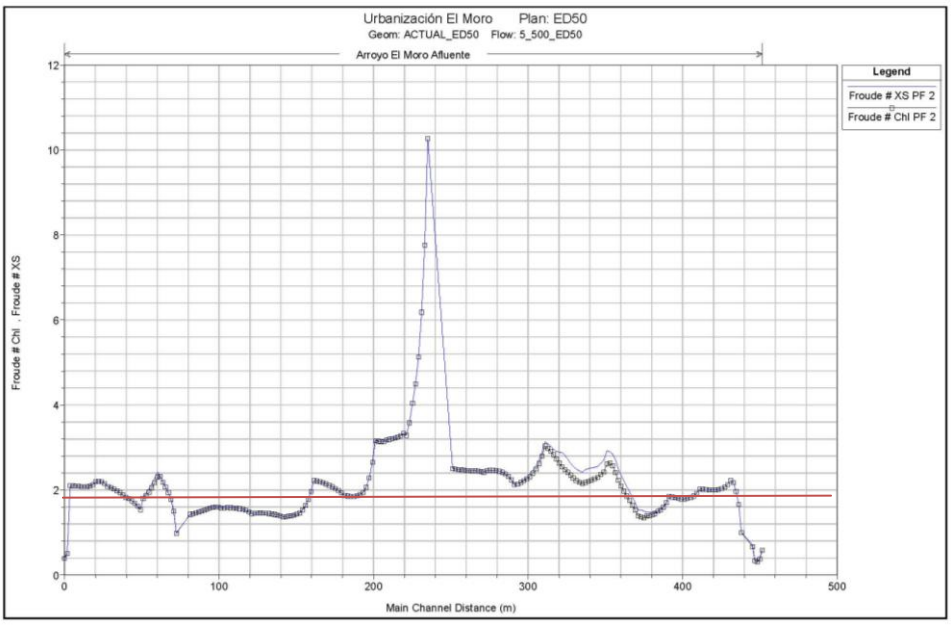


Ilustración 16.- Froude para T=500 en ambos arroyos.





Las velocidades obtenidas en el canal principal son elevadas y oscilan entre 3 y 6 m/s, existiendo un pico de velocidad en el arroyo de El Moro en la segunda ODT modelizada.

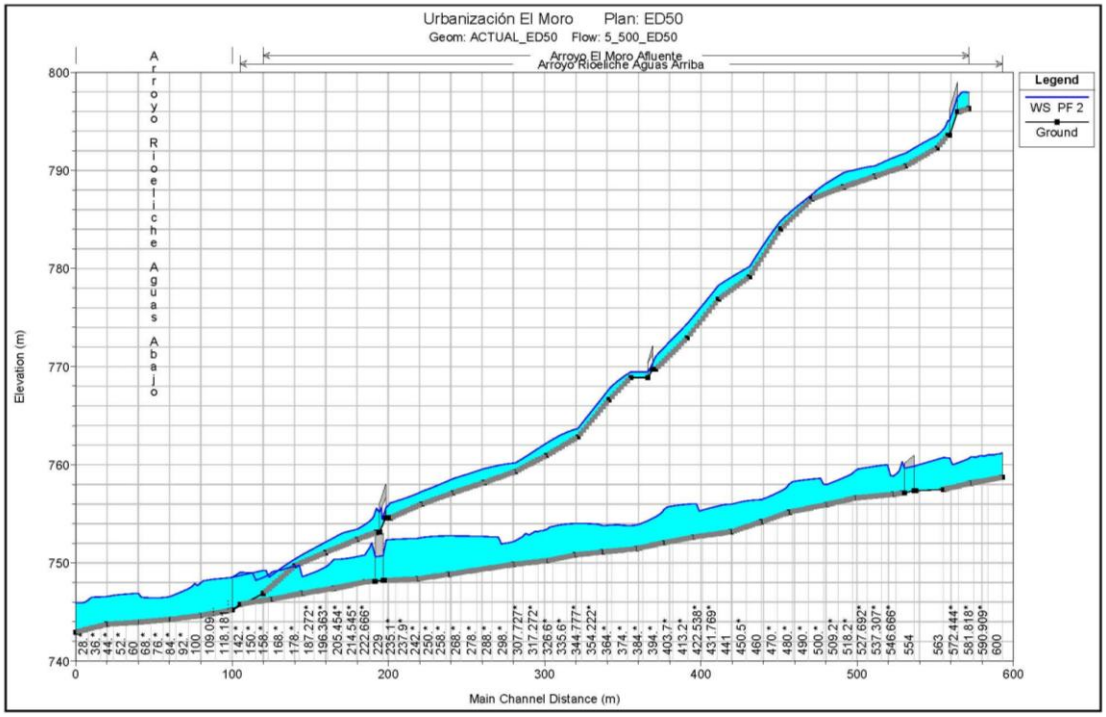
Resaltar que el régimen obtenido en el tramo de estudio del arroyo Rioeliche sigue siendo mixto, mientras que en El Moro es supercrítico en todo el trazado.

En los apéndices 2.B. a 2.E. del anejo se muestran el perfil hidráulico obtenido y las secciones hidráulicas resultantes, así como una descripción detallada tanto de los datos de partida como de los resultados obtenidos en la modelización.

4.2.2. ANÁLISIS DE COTAS DE INUNDACIÓN

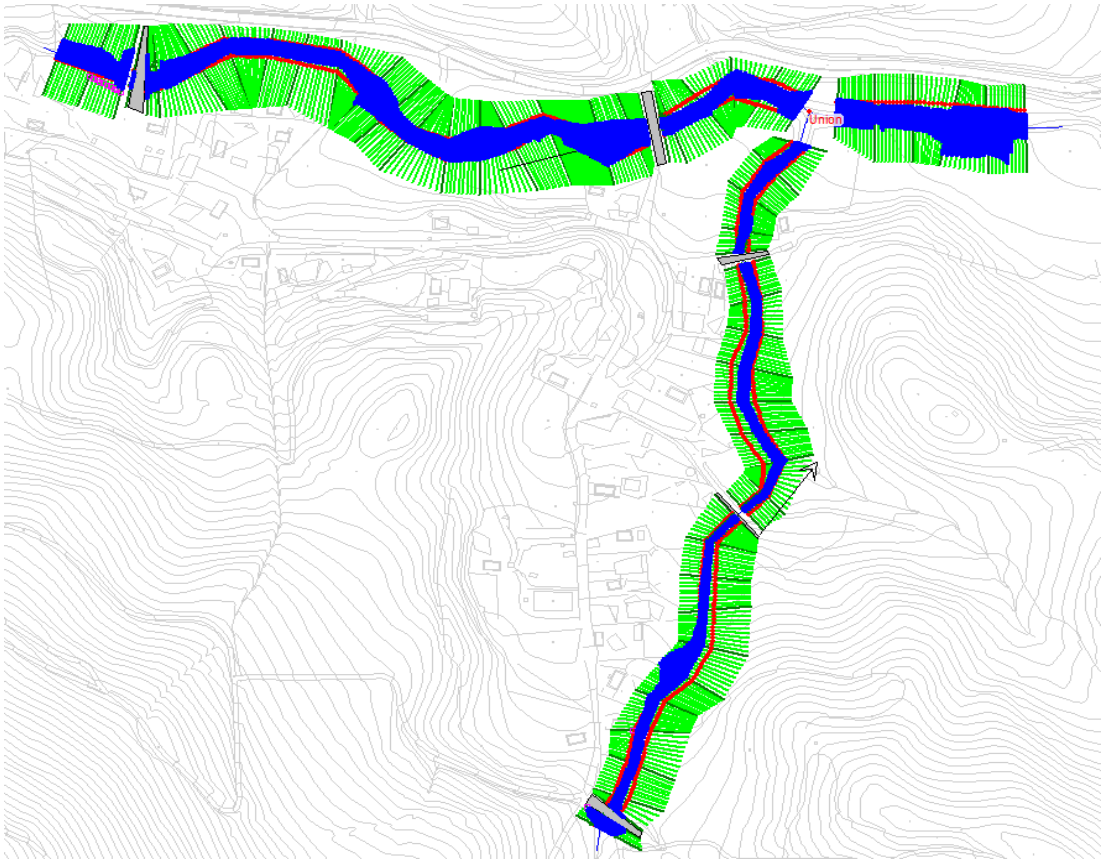
A continuación se muestra el gráfico con las cotas de la llanura de inundación alcanzadas para la avenida extraordinaria de 500 años:

Ilustración 17.- Cotas de inundación del modelo para T=500



De este gráfico se extraen los valores de cota de lámina de agua en cada perfil para poder trasladarlos a planta y dibujar la llanura de inundación.

Ilustración 18.- Esquema en planta con la Llanura de Inundación de ambos arroyos sombreada en azul.



4.3. FUNCIONAMIENTO DE LAS ODT

Se adjuntan a continuación la tabla resumen de las estructuras modelizadas. Reiterar que no se han implementado las ODT modificadas descritas con anterioridad sino que, debido a la precisión y escala de la topografía empleada, se ha aumentado la sección lo necesario para que no se produzcan vertidos. Es por ello que se recomienda la realización de un modelo hidráulico sobre cartografía de detalle para su correcta comprobación.

Tabla 7. Resultados de la modelización de las obras de paso

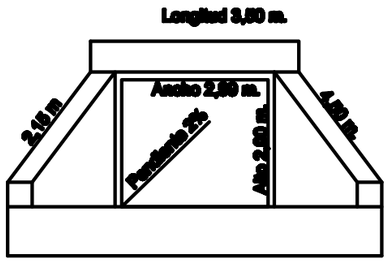
HEC-RAS Plan: ed50

River	Reach	River Sta	Profile	E.G. US.	W.S. US.	E.G. IC	E.G. OC	Min El Weir Flow	Q Culv Group	Q Weir	Delta WS	Culv Vel US	Culv Vel DS
				(m)	(m)	(m)	(m)	(m)	(m3/s)	(m3/s)	(m)	(m/s)	(m/s)
Arroyo Rioeliche	Aguas Arriba	554 Culvert #1	PF 1	759.51	758.95	758.97	759.97	761.00	22.61		0.50	1.29	1.29
Arroyo Rioeliche	Aguas Arriba	554 Culvert #1	PF 2	760.34	759.90	760.34	761.34	761.00	55.78		0.40	3.19	3.19
Arroyo Rioeliche	Aguas Arriba	229 Culvert #1	PF 1	751.20	751.00	750.05	751.20	753.00	22.61		0.01	1.29	1.29
Arroyo Rioeliche	Aguas Arriba	229 Culvert #1	PF 2	752.70	752.34	751.59	752.70	753.00	55.78		0.29	3.19	3.19
Arroyo El Moro	Afluente	452 Culvert #1	PF 1	797.23	797.08	797.23	797.10	799.00	5.39		2.60	2.60	7.96
Arroyo El Moro	Afluente	452 Culvert #1	PF 2	798.02	797.62	798.39	798.02	799.00	13.31		2.56	2.96	2.96
Arroyo El Moro	Afluente	255 Culvert #1	PF 1	772.01	770.67			773.00	5.39		0.67	5.75	6.84
Arroyo El Moro	Afluente	255 Culvert #1	PF 2	773.25	771.05			773.00	13.31		0.45	6.92	7.97
Arroyo El Moro	Afluente	95 Culvert #1	PF 1	756.25	755.57			758.50	5.39		0.93	4.44	1.11
Arroyo El Moro	Afluente	95 Culvert #1	PF 2	757.24	756.10			758.50	13.31		0.54	5.20	2.66

APÉNDICE 1. COMPROBACIÓN DE LAS ODT MODIFICADAS

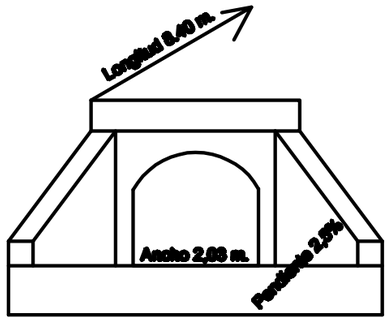
OBRAS EN LAS CASILLAS

OBRA Nº 1
ALZADO



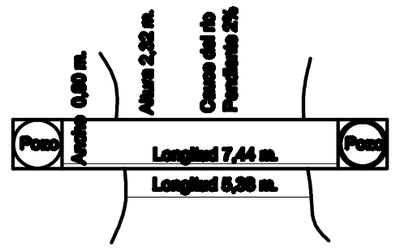
PREFABRICADO DE HORMIGON ARMADO

OBRA Nº 2
ALZADO



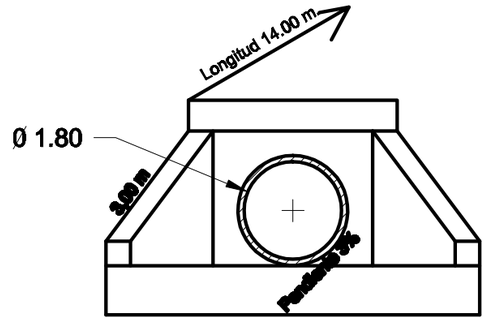
MAMPOSTERIA DE LADRILLO Y PIEDRA

OBRA Nº 3
PLANTA



2 PILARES Y LOSA DE HORMIGON ARMADO

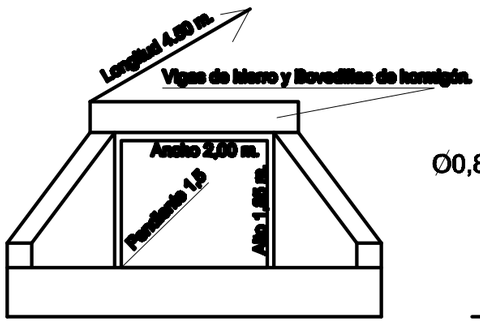
OBRA Nº 4
ALZADO



PREFABRICADO DE HORMIGON ARMADO

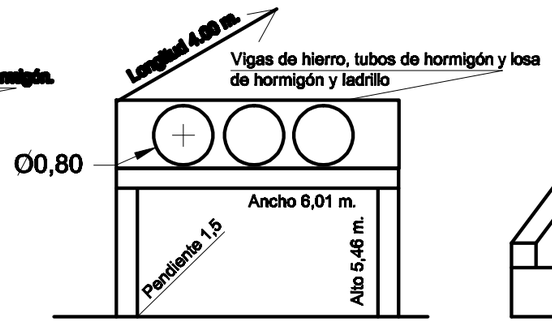
OBRAS EN EL MORO

OBRA Nº 1
ALZADO



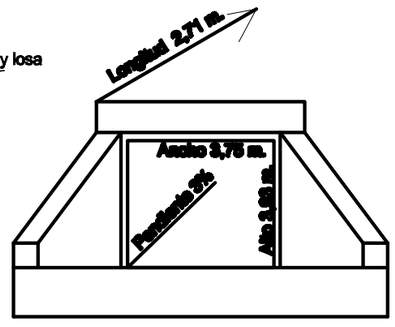
BLOQUES DE HORMIGON ARMADO

OBRA Nº 2
ALZADO



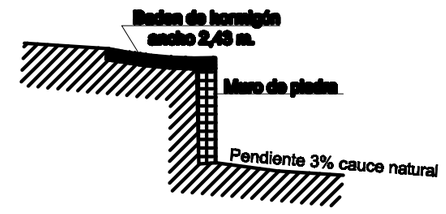
PILARES DE HORMIGÓN ARMADO

OBRA Nº 3
ALZADO



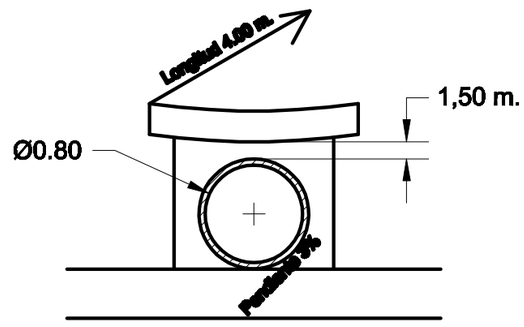
PILARES Y VIGAS DE HORMIGON ARMADO

PERFIL



BADEN HORMIGON EN MURO ESCOLLERA

OBRA Nº 5
ALZADO



BADEN DE HORMIGÓN ANCHO 2,25 m.

Calle Dolores Torres, 41 - 23600 - Martos (Jaén)
Tlfno. 953 70 41 06 * fax 953 55 33 09 - email: urbanismo@martos.es

EXCMO. AYUNTAMIENTO DE MARTOS
Plaza de la Constitución, 1 * 23600 Martos
Tlfno. 953 70 40 05 * fax 953 55 33 09
web: www.martos.es

OBRAS REALIZADAS PARA DRENAJE DE RIOS Y ARROYOS EN LAS CASILLAS Y EN EL MORO EN EL T.M. DE MARTOS

ODT nº1 RIOELICHE ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,01500	m/m
Normal Depth	1,85	m
Height	1,85	m
Bottom Width	2,00	m
Discharge	18,53	m³/s

Results

Flow Area	3,70	m²
Wetted Perimeter	7,70	m
Hydraulic Radius	0,48	m
Top Width	2,00	m
Critical Depth	2,06	m
Percent Full	100,0	%
Critical Slope	0,00771	m/m
Velocity	5,01	m/s
Velocity Head	1,28	m
Specific Energy	3,13	m
Froude Number	1,18	
Discharge Full	18,53	m³/s
Slope Full	0,01500	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	100,00	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	1,85	m
Critical Depth	2,06	m
Channel Slope	0,01500	m/m

GVF Output Data

Critical Slope	0,00771	m/m

ODT nº1 RIOELICHE PROPUESTA

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,02700	m/m
Height	2,50	m
Bottom Width	3,00	m
Discharge	55,78	m³/s

Results

Normal Depth	1,91	m
Flow Area	5,72	m²
Wetted Perimeter	6,81	m
Hydraulic Radius	0,84	m
Top Width	3,00	m
Critical Depth	3,28	m
Percent Full	76,3	%
Critical Slope	0,00696	m/m
Velocity	9,75	m/s
Velocity Head	4,85	m
Specific Energy	6,75	m
Froude Number	2,25	
Discharge Full	63,65	m³/s
Slope Full	0,03515	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	76,29	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	1,91	m
Critical Depth	3,28	m
Channel Slope	0,02700	m/m

GVF Output Data

Critical Slope	0,00696	m/m

ODT nº2 RIOELICHE ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,01500	m/m
Normal Depth	5,46	m
Height	5,46	m
Bottom Width	6,00	m
Discharge	339,40	m³/s

Results

Flow Area	32,76	m²
Wetted Perimeter	22,92	m
Hydraulic Radius	1,43	m
Top Width	6,00	m
Critical Depth	6,88	m
Percent Full	100,0	%
Critical Slope	0,00569	m/m
Velocity	10,36	m/s
Velocity Head	5,47	m
Specific Energy	10,93	m
Froude Number	1,42	
Discharge Full	339,40	m³/s
Slope Full	0,01500	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	100,00	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	5,46	m
Critical Depth	6,88	m
Channel Slope	0,01500	m/m

GVF Output Data

Critical Slope	0,00569	m/m

ODT nº2 RIOELICHE ACTUAL PARA Q500

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,01500	m/m
Height	5,46	m
Bottom Width	6,00	m
Discharge	55,78	m³/s

Results

Normal Depth	1,24	m
Flow Area	7,45	m²
Wetted Perimeter	8,48	m
Hydraulic Radius	0,88	m
Top Width	6,00	m
Critical Depth	2,07	m
Percent Full	22,7	%
Critical Slope	0,00348	m/m
Velocity	7,49	m/s
Velocity Head	2,86	m
Specific Energy	4,10	m
Froude Number	2,15	
Discharge Full	339,40	m³/s
Slope Full	0,55535	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	22,74	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	1,24	m
Critical Depth	2,07	m
Channel Slope	0,01500	m/m

ODT nº2 RIOELICHE ACTUAL PARA Q500

GVF Output Data

Critical Slope	0,00348	m/m

ODT nº3 MORO ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,03000	m/m
Normal Depth	3,93	m
Height	3,93	m
Bottom Width	3,75	m
Discharge	165,54	m³/s

Results

Flow Area	14,74	m²
Wetted Perimeter	15,36	m
Hydraulic Radius	0,96	m
Top Width	3,75	m
Critical Depth	5,84	m
Percent Full	100,0	%
Critical Slope	0,00807	m/m
Velocity	11,23	m/s
Velocity Head	6,43	m
Specific Energy	10,36	m
Froude Number	1,81	
Discharge Full	165,54	m³/s
Slope Full	0,03000	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	100,00	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	3,93	m
Critical Depth	5,84	m
Channel Slope	0,03000	m/m

GVF Output Data

Critical Slope	0,00807	m/m

ODT nº3 MORO ACTUAL PARA Q500

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,03000	m/m
Height	3,93	m
Bottom Width	3,75	m
Discharge	13,31	m³/s

Results

Normal Depth	0,55	m
Flow Area	2,05	m²
Wetted Perimeter	4,84	m
Hydraulic Radius	0,42	m
Top Width	3,75	m
Critical Depth	1,09	m
Percent Full	13,9	%
Critical Slope	0,00395	m/m
Velocity	6,50	m/s
Velocity Head	2,16	m
Specific Energy	2,70	m
Froude Number	2,81	
Discharge Full	165,54	m³/s
Slope Full	4,64082	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	13,89	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	0,55	m
Critical Depth	1,09	m
Channel Slope	0,03000	m/m

GVF Output Data

Critical Slope	0,00395	m/m

ODT nº4 MORO PROPUESTA

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,03000	m/m
Height	1,50	m
Bottom Width	2,00	m
Discharge	13,31	m³/s

Results

Normal Depth	0,94	m
Flow Area	1,87	m²
Wetted Perimeter	3,87	m
Hydraulic Radius	0,48	m
Top Width	2,00	m
Critical Depth	1,65	m
Percent Full	62,4	%
Critical Slope	0,00685	m/m
Velocity	7,11	m/s
Velocity Head	2,58	m
Specific Energy	3,51	m
Froude Number	2,35	
Discharge Full	19,69	m³/s
Slope Full	0,06566	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	62,38	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	0,94	m
Critical Depth	1,65	m
Channel Slope	0,03000	m/m

GVF Output Data

Critical Slope	0,00685	m/m

ODT Nº5 MORO ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,03000	m/m
Normal Depth	0,80	m
Diameter	0,80	m

Results

Discharge	1,98	m³/s
Flow Area	0,50	m²
Wetted Perimeter	2,51	m
Hydraulic Radius	0,20	m
Top Width	0,00	m
Critical Depth	0,77	m
Percent Full	100,0	%
Critical Slope	0,02619	m/m
Velocity	3,95	m/s
Velocity Head	0,80	m
Specific Energy	1,60	m
Froude Number	0,00	
Maximum Discharge	2,14	m³/s
Discharge Full	1,98	m³/s
Slope Full	0,03000	m/m
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	100,00	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	0,80	m
Critical Depth	0,77	m
Channel Slope	0,03000	m/m

GVF Output Data

Critical Slope	0,02619	m/m

ODT nº5 MORO PROPUESTA

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,03000	m/m
Height	1,50	m
Bottom Width	2,00	m
Discharge	13,31	m³/s

Results

Normal Depth	0,94	m
Flow Area	1,87	m²
Wetted Perimeter	3,87	m
Hydraulic Radius	0,48	m
Top Width	2,00	m
Critical Depth	1,65	m
Percent Full	62,4	%
Critical Slope	0,00685	m/m
Velocity	7,11	m/s
Velocity Head	2,58	m
Specific Energy	3,51	m
Froude Number	2,35	
Discharge Full	19,69	m³/s
Slope Full	0,06566	m/m
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0,00	m
Length	0,00	m
Number Of Steps	0	

GVF Output Data

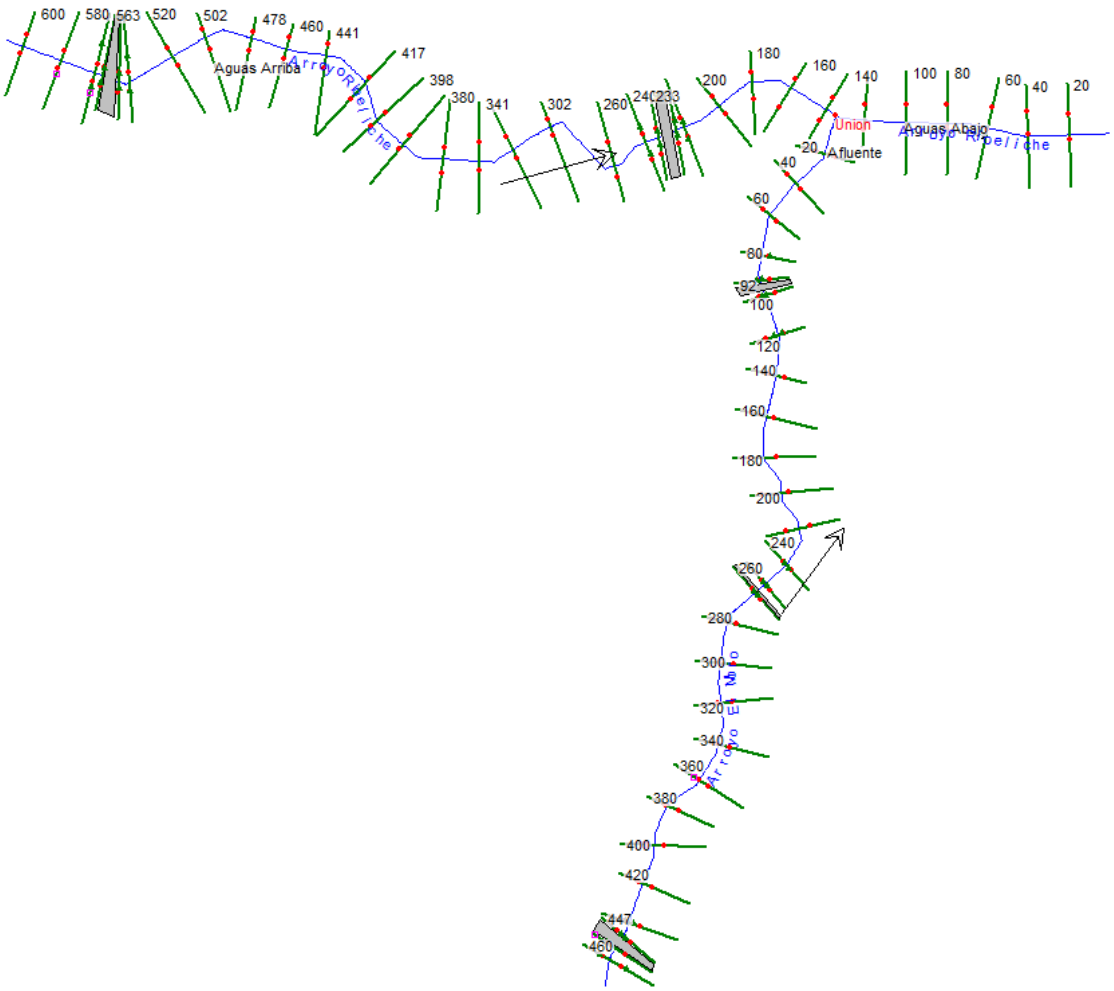
Upstream Depth	0,00	m
Profile Description		
Profile Headloss	0,00	m
Average End Depth Over Rise	0,00	%
Normal Depth Over Rise	62,38	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	0,94	m
Critical Depth	1,65	m
Channel Slope	0,03000	m/m

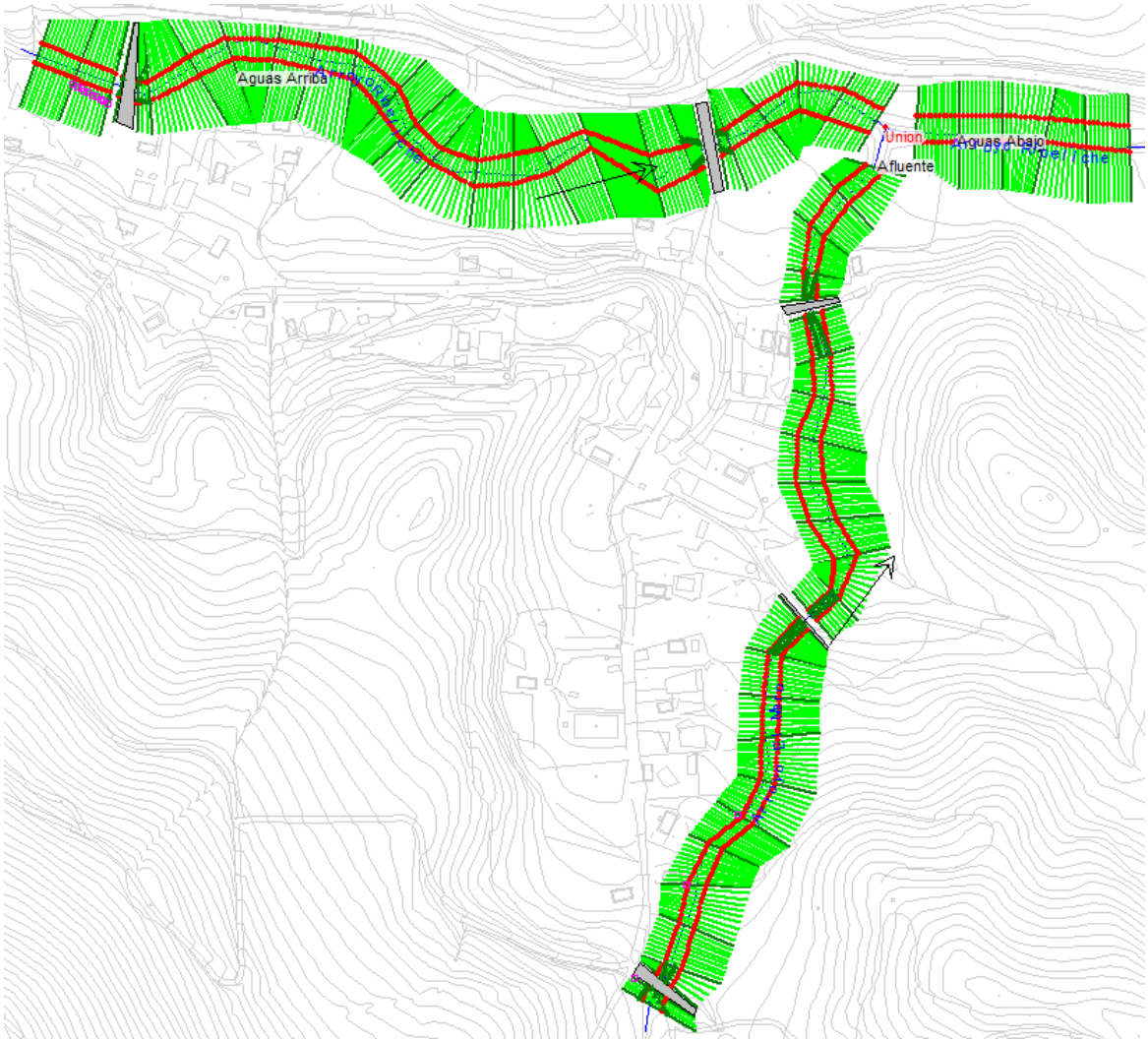
GVF Output Data

Critical Slope	0,00685	m/m

APÉNDICE 2. MODELO HIDRÁULICO DE LOS ARROYOS RIOELICHE Y EL MORO

APÉNDICE 2.A. PLANO DE SITUACIÓN DE LAS ESTACIONES TRANSVERSALES


600
580
563
520
502
478
460
441
417
398
380
341
302
260
240
233
200
180
160
140
100
80
60
40
20
Aguas Arriba
Arroyo Rabelche
Union
Afluente
Aguas Abajo
Arroyo Rabelche
40
60
80
92
100
120
140
160
180
200
240
260
280
300
320
340
360
380
400
420
447
460
Arroyo El Moro


Aguas Arriba
Union
Aguas Abajo
Afluente

APÉNDICE 2.B. LISTADO DE DATOS DEL MODELO HIDRÁULICO

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

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


PROJECT DATA
Project Title: Urbanización El Moro
Project File : Moro.prj
Run Date and Time: 7/24/2013 1:59:12 PM

Project in SI units

Project Description:
ED50



PLAN DATA

Plan Title: ED50
Plan File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\307_MORO\Moro.p03

          Geometry Title: ACTUAL_ED50
          Geometry File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\307_MORO\Moro.g03

          Flow Title    : 5_500_ED50
          Flow File     : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\307_MORO\Moro.f02

Plan Summary Information:
Number of:  Cross Sections =  518    Multiple Openings  =    0
            Culverts       =    5    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance  =  0.005
    Critical depth calculation tolerance =  0.005
    Maximum number of iterations         =  40
    Maximum difference tolerance         =  0.1
    Flow tolerance factor                =  0.01

Computation Options
    Critical depth computed at all cross sections
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Program Selects Appropriate method
    Computational Flow Regime:     Mixed Flow



FLOW DATA

Flow Title: 5_500_ED50
Flow File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\307_MORO\Moro.f02

Flow Data (m3/s)

  River           Reach           RS                  PF 1           PF 2
  Arroyo RioelicheAguas Arriba    600                22.61          55.78
  Arroyo RioelicheAguas Abajo     120                   28          69.07
  Arroyo El Moro  Afluente        460                 5.39          13.31


Boundary Conditions

  River           Reach           Profile                      Upstream                 Downstream

  Arroyo El Moro  Afluente        PF 1                           Critical
  Arroyo El Moro  Afluente        PF 2                           Critical
  Arroyo RioelicheAguas Arriba    PF 1                           Critical
  Arroyo RioelicheAguas Arriba    PF 2                           Critical
  Arroyo RioelicheAguas Abajo     PF 1                                                  Normal S = 0.03
  Arroyo RioelicheAguas Abajo     PF 2                                                  Normal S = 0.03



GEOMETRY DATA

Geometry Title: ACTUAL_ED50
Geometry File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\307_MORO\Moro.g03

Reach Connection Table

  River            Reach              Upstream Boundary    Downstream Boundary

  Arroyo El Moro   Afluente                                   Union
```

```
  Arroyo Rioeliche Aguas Arriba                                 Union
  Arroyo Rioeliche Aguas Abajo          Union


JUNCTION INFORMATION

Name: Union
Description:
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
Arroyo RioelicheAguas Arriba     to Arroyo RioelicheAguas Abajo            5
Arroyo El Moro  Afluente         to Arroyo RioelicheAguas Abajo         19.8

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 460

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  799.47    1.08  799.45       2  799.41    2.87  799.36    4.78   799.2
    5.74   799.1    6.95  798.93    7.85   798.8    9.77  798.45   11.31  798.11
   11.56  798.06   11.77  798.01    11.8     798   11.87  797.97    15.8  796.29
   16.21  796.48    16.6  796.59   20.53  797.62   21.81  797.82   22.46  797.93
   23.21  798.05   23.21  798.08    23.5   798.1   24.34  798.26   27.13  798.78
   27.31  798.81   27.71  798.86   27.96  798.88   28.17   798.9   33.45  799.62
   35.26  799.99   35.71  800.04   36.19  800.09   36.62  800.13   38.46  800.24
    38.8  800.25   39.92  800.21

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.77     .04   21.81    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.77   21.81           1.635   1.553   1.712             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   10.21               F
   24.83   39.92               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 458.5*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 798.997   1.036 798.993   1.919 798.971   2.016 798.968   2.754 798.929
   3.264 798.892   4.586 798.702   5.507 798.555    6.54 798.362   6.668 798.339
    6.94 798.289   7.532 798.193   9.025 797.905   9.374 797.852  10.851 797.586
  11.091 797.547  11.293 797.508  11.315   797.5  11.368 797.477  14.315 796.217
  14.333 796.217  14.808 796.365  15.232 796.448   15.26 796.453  15.934 796.587
  16.316 796.627  16.671 796.757  17.046 796.826  17.471 796.905  17.719 796.952
  18.555 797.129  19.814 797.411  20.029 797.444  20.894 797.547  21.298 797.593
  21.922  797.68   22.21 797.718  22.642 797.786  22.642 797.808  22.921 797.831
  23.728 797.976  26.097 798.392  26.408 798.447  26.581 798.475  26.965 798.525
  27.206 798.548  27.407 798.569  28.298 798.692  29.084 798.799  30.509 799.005
  31.421 799.122   31.98 799.199  32.322 799.251   32.48 799.276  32.584 799.299
  34.218  799.62  34.651 799.674  35.112 799.729  35.525 799.774  36.905 799.889
  37.292 799.924  37.619 799.945  38.695  799.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.293     .04  21.298    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.293  21.298           1.635   1.553   1.712             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  9.7825               F
 21.4975  38.695               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 457.*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 798.525    .992 798.536   1.838 798.533    1.93 798.532   2.637 798.498
   3.126 798.468   4.392 798.204   5.274 798.011   6.263 797.774   6.386 797.747
   6.647 797.689   7.213 797.585   8.643 797.293   8.977 797.255  10.392 797.062
  10.622 797.033  10.815 797.005   10.83     797  10.865 796.985   12.83 796.145
  12.865 796.145  13.405 796.251  13.888 796.312  13.919 796.317  14.686 796.431
  15.121 796.425  15.524 796.605  15.951 796.657  16.434  796.72  16.716 796.758
  17.667 796.923  19.098 797.202  19.343  797.24  20.326 797.328  20.785 797.365
  21.384  797.43   21.66 797.459  22.075 797.521  22.075 797.536  22.342 797.563
  23.116 797.692  25.388 798.065  25.686 798.115  25.852 798.141  26.221  798.19
  26.451 798.216  26.645 798.238  27.498 798.358  28.253 798.459   29.62  798.67
  30.494 798.775   31.03  798.85  31.358 798.904  31.509 798.933  31.609 798.956
  33.177 799.251  33.591 799.308  34.033 799.367   34.43 799.418  35.753 799.563
  36.125 799.607  36.438  799.64   37.47  799.71
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.815    .04  20.785    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.815  20.785           1.635   1.553   1.712             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   9.355               F
  18.165   37.47               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 455.5*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 798.052    .949 798.078   1.757 798.095   1.845 798.096   2.521 798.067
   2.988 798.044   4.198 797.706   5.041 797.466   5.987 797.187   6.104 797.156
   6.353  797.09   6.895 796.978   8.262 796.682   8.581 796.657   9.933 796.538
  10.153  796.52  10.337 796.503  10.362 796.492  11.345 796.073  11.398 796.073
  12.003 796.136  12.544 796.176  12.579  796.18  13.438 796.276  13.925 796.222
  14.377 796.452  14.855 796.489  15.397 796.535  15.713 796.564  16.778 796.716
  18.382 796.992  18.656 797.035  19.758 797.109  20.272 797.137  20.846  797.18
   21.11 797.199  21.507 797.257  21.763 797.294  22.504 797.408  24.679 797.737
  24.965 797.782  25.123 797.806  25.476 797.855  25.697 797.883  25.882 797.908
  26.699 798.024  27.421  798.12   28.73 798.335  29.567 798.427   30.08   798.5
  30.394 798.557  30.539  798.59  30.635 798.613  32.135 798.882  32.532 798.942
  32.955 799.006  33.334 799.062  34.602 799.236  34.957 799.291  35.257 799.335
  36.245  799.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.337    .04  20.272    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.337  20.272           1.635   1.552   1.713             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  8.9275               F
 14.8325  36.245               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 454

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  797.58    1.76  797.66    2.85  797.62    5.71   796.6    6.06  796.49
    7.88  796.07    9.86     796    9.93     796    11.2  796.04   12.19  796.12
   12.73  796.02   13.23   796.3   13.76  796.32   14.36  796.35   14.71  796.37
   15.89  796.51   17.97  796.83   19.19  796.89   19.76  796.91   20.56  796.94
   23.97  797.41    25.9  797.69   26.59  797.78   27.84     798   28.64  798.08
   29.13  798.15   29.43  798.21   29.66  798.27   33.45  798.91   35.02  799.21

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.86    .04   19.76    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.86   19.76            9.04    7.22    4.93             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     8.5               F
    11.5   35.02               F
Left Levee      Station=    1.76      Elevation=

CULVERT


RIVER: Arroyo El Moro
REACH: Afluente           RS: 452

INPUT
Description:
Distance from Upstream XS =       1
Deck/Roadway Width        =       5
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0     799     796      40     799     796

Upstream Bridge Cross Section Data
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  797.58    1.76  797.66    2.85  797.62    5.71   796.6    6.06  796.49
    7.88  796.07    9.86     796    9.93     796    11.2  796.04   12.19  796.12
   12.73  796.02   13.23   796.3   13.76  796.32   14.36  796.35   14.71  796.37
   15.89  796.51   17.97  796.83   19.19  796.89   19.76  796.91   20.56  796.94
   23.97  797.41    25.9  797.69   26.59  797.78   27.84     798   28.64  798.08
   29.13  798.15   29.43  798.21   29.66  798.27   33.45  798.91   35.02  799.21

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.86     .04   19.76    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
          9.86   19.76             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     8.5               F
    11.5   35.02               F
Left Levee      Station=    1.76      Elevation=

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       5   796.3     792      30   796.3     792

Downstream Bridge Cross Section Data
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  796.25    3.71  796.25     5.3   796.2    7.07  796.13    8.74     796
    9.91  795.65   10.67  795.26    12.6  794.28   13.03  794.11   13.18     794
   14.48  793.62   14.97  793.58    15.7  793.88   15.92     794   15.95     794
   16.06     794   18.69  794.78   19.08  794.82   20.84  794.98      22  795.06
   22.99  795.14   26.64     796   26.65     796   29.26  796.42   30.59  796.83
    31.6  797.02   32.41  797.13   33.51  797.45   33.99   797.5   34.03  797.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.67     .04   19.08    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         10.67   19.08             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0      13               F
      16   34.03               F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box     1.5       3
FHWA Chart # 58- Rectangular concrete
FHWA Scale # 2 - Side tapered; More favorable edges
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 1       5     .015     .015        0                  .2                1
Upstream   Elevation =  796
           Centerline Station =  10
Downstream Elevation =  793.6
           Centerline Station =  14.5

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1

  Q Culv Group (m3/s)       5.39    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         2.60
  Q Barrel (m3/s)           5.39    Culv Vel DS (m/s)         7.96
  E.G. US. (m)            797.23    Culv Inv El Up (m)      796.00
  W.S. US. (m)            797.08    Culv Inv El Dn (m)      793.60
  E.G. DS (m)             794.82    Culv Frctn Ls (m)         0.00
  W.S. DS (m)             794.48    Culv Exit Loss (m)        2.21
  Delta EG (m)              2.41    Culv Entr Loss (m)        0.19
  Delta WS (m)              2.60    Q Weir (m3/s)
  E.G. IC (m)             797.23    Weir Sta Lft (m)
  E.G. OC (m)             797.10    Weir Sta Rgt (m)
  Culvert Control          Inlet    Weir Submerg
  Culv WS Inlet (m)       796.69    Weir Max Depth (m)
  Culv WS Outlet (m)      793.83    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.14    Weir Flow Area (m2)
  Culv Crt Depth (m)        0.69    Min El Weir Flow (m)    799.00


Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream
cross
         section.  The program used the solution with the least error.
Note:    The flow in the culvert is entirely supercritical.

CULVERT OUTPUT  Profile #PF 2  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      13.31    Culv Full Len (m)         4.72
  # Barrels                    1    Culv Vel US (m/s)         2.96
  Q Barrel (m3/s)          13.31    Culv Vel DS (m/s)         2.96
  E.G. US. (m)            798.02    Culv Inv El Up (m)      796.00
  W.S. US. (m)            797.62    Culv Inv El Dn (m)      793.60
  E.G. DS (m)             795.68    Culv Frctn Ls (m)         2.27
  W.S. DS (m)             795.05    Culv Exit Loss (m)        0.00
  Delta EG (m)              2.34    Culv Entr Loss (m)        0.13
  Delta WS (m)              2.56    Q Weir (m3/s)
  E.G. IC (m)             798.39    Weir Sta Lft (m)
  E.G. OC (m)             798.02    Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       797.50    Weir Max Depth (m)
  Culv WS Outlet (m)      795.23    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.25    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.26    Min El Weir Flow (m)    799.00
```

```
Note:     The culvert inlet is submerged and the culvert flows full over part or all of its length.  Therefore, the culvert inlet
          equations are not valid and the supercritical result has been discarded.  The outlet answer will be used.

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 447

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  796.25    3.71  796.25     5.3   796.2    7.07  796.13    8.74     796
    9.91  795.65   10.67  795.26    12.6  794.28   13.03  794.11   13.18     794
   14.48  793.62   14.97  793.58    15.7  793.88   15.92     794   15.95     794
   16.06     794   18.69  794.78   19.08  794.82   20.84  794.98      22  795.06
   22.99  795.14   26.64     796   26.65     796   29.26  796.42   30.59  796.83
    31.6  797.02   32.41  797.13   33.51  797.45   33.99   797.5   34.03  797.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.67     .04   19.08    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.67   19.08             .48   1.727   3.372             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0      13               F
      16   34.03               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 445.25*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   796.2    .543 796.208   2.618 796.188   3.749 796.156   5.356 796.075
   5.537 796.065   6.506 795.971   7.145 795.918   8.832 795.731   9.086 795.661
  10.014 795.355  10.783  794.98  11.202 794.773  12.571 794.049   12.97 793.874
  12.985 793.864  13.109 793.775  14.313 793.343  14.767 793.258  15.562 793.644
  15.802 793.783  15.835  793.79  15.954 793.814  16.326 793.966  16.816 794.176
  18.818 794.846  19.154 794.914  19.243  794.93  20.824 795.216  21.125 795.235
  21.376 795.247  22.366 795.367  23.424 795.504  23.886 795.614  26.756 796.243
  27.328  796.37  27.339  796.37  28.924 796.639  29.091 796.668  29.668 796.763
  30.131 796.838  31.553 797.216  32.633 797.412    33.5 797.537  34.421  797.77
  34.676 797.836   35.19   797.9  35.232  797.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.783     .04  19.243    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.783  19.243             .48   1.727   3.372             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  12.755               F
 16.0525  35.232               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 443.5*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  796.15    .549 796.165   2.645 796.125   3.788 796.063   5.412  795.95
   5.594 795.936   6.574 795.787   7.219 795.707   8.924 795.462    9.18 795.397
  10.119  795.06  10.895   794.7  11.281 794.515  12.542 793.817  12.909 793.639
  12.923 793.629  13.037  793.55  14.147 793.066  14.565 792.935  15.425 793.409
  15.684 793.566  15.719  793.58  15.849 793.629  16.251 793.831  16.781 794.117
  18.946 794.912  19.309 795.016  19.405  795.04  21.089 795.477   21.41  795.49
  21.677 795.498  22.731 795.674  23.859 795.868  24.351 795.986  27.408 796.612
  28.017  796.74  28.028 796.741  29.716 797.039  29.894 797.072  30.509 797.175
  31.001 797.256  32.516 797.601  33.667 797.803   34.59 797.944  35.571  798.16
  35.843 798.222  36.389 798.301  36.435  798.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.895     .04  19.405    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.895  19.405             .48   1.727   3.372             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   12.51               F
  16.105  36.435               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 441.75*
```

```
INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   796.1    .554 796.122   2.673 796.062   3.827 795.969   5.468 795.825
   5.652 795.808   6.642 795.604   7.294 795.495   9.016 795.193   9.275 795.134
  10.223 794.765  11.007  794.42  11.361 794.258  12.513 793.586  12.849 793.403
  12.862 793.394  12.966 793.325   13.98 792.789  14.363 792.612  15.287 793.173
  15.566  793.35  15.604  793.37  15.743 793.443  16.175 793.695  16.745 794.059
  19.074 794.978  19.465 795.118  19.567  795.15  21.355 795.739  21.695 795.745
  21.979 795.749  23.097 795.981  24.294 796.232  24.815 796.358  28.059 796.981
  28.705 797.109  28.717 797.111  30.508  797.44  30.697 797.476  31.349 797.588
  31.872 797.674   33.48 797.987    34.7 798.195  35.679 798.351   36.72  798.55
  37.009 798.608  37.589 798.701  37.638  798.71

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.007     .04  19.567    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.007  19.567             .48   1.727   3.372             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  12.265               F
 16.1575  37.638               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 440

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  796.05     .56  796.08     2.7     796    5.71  795.68    6.71  795.42
    9.37  794.87   11.12  794.14   11.44     794    12.8  793.16   14.16  792.29
    16.1  793.56   16.71     794   19.62  795.22   19.73  795.26   21.62     796
   22.28     796   25.28  796.73   28.71  797.35    31.3  797.84    31.5  797.88
   32.19     798   37.87  798.94   38.84  799.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.12     .04   19.73    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.12   19.73           2.101       2   1.867             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   12.02               F
   16.21   38.84               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 438.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 795.915    .557 795.925   1.884 795.839   2.687 795.754   3.067  795.69
   3.538 795.637   4.554 795.549   5.682 795.433   6.677 795.193   7.694 794.996
   9.324 794.696  10.583 794.225  11.065 794.022  11.382 793.883  11.596 793.754
    11.9 793.557  12.731 793.014  14.079 792.106  15.985 793.326  16.492 793.682
  16.584 793.747  17.866 794.292  19.012 794.795  19.442 794.983   19.55 795.025
  21.214 795.718  21.447 795.809   22.11 795.833  24.977 796.565  25.121 796.601
  26.147 796.806  26.553 796.889  27.027 796.974  28.564 797.252  31.164 797.742
  31.364 797.782  32.057 797.903  37.165 798.758  37.758 798.855  38.732 799.024

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.065     .04   19.55    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.065   19.55           2.101       2   1.867             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 436.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  795.78    .554  795.77   1.875 795.648   2.673 795.509   3.052 795.422
   3.521 795.365   4.531 795.298   5.654 795.187   6.644 794.966   7.656 794.783
   9.277 794.522  10.531 794.107   11.01 793.904  11.325 793.766  11.537 793.641
  11.838 793.436  12.661 792.868  13.998 791.922  15.869 793.093  16.367 793.432
  16.457 793.494  17.716 794.038  18.842 794.553  19.264 794.746   19.37  794.79
   21.04 795.527  21.274 795.617  21.939 795.666  24.817 796.434  24.962 796.473
  25.992 796.698    26.4  796.79  26.875 796.875  28.418 797.154  31.027 797.645
  31.229 797.684  31.924 797.807  37.051 798.674  37.647 798.771  38.624 798.938

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.01     .04   19.37    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
        11.01   19.37            2.101       2   1.867             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 434.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 795.645    .552 795.615   1.866 795.457    2.66 795.263   3.037 795.153
   3.503 795.093   4.508 795.047   5.625  794.94    6.61 794.738   7.618  794.57
   9.231 794.348  10.478  793.99  10.955 793.786  11.267 793.649  11.477 793.529
  11.775 793.315  12.592 792.722  13.917 791.738  15.754 792.859  16.243 793.182
  16.331  793.24  17.567 793.783  18.672 794.312  19.086 794.509   19.19 794.555
  20.866 795.336  21.101 795.426  21.769 795.499  24.657 796.304  24.803 796.344
  25.837 796.589  26.246 796.692  26.724 796.775  28.271 797.056  30.891 797.547
  31.093 797.586  31.791  797.71  36.937  798.59  37.535 798.686  38.516 798.852

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.955     .04   19.19    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.955   19.19            2.101       2   1.867             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 432.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  795.51    .549 795.459   1.856 795.266   2.647 795.017   3.021 794.884
   3.486 794.821   4.486 794.796   5.597 794.694   6.577 794.511   7.579 794.357
   9.185 794.174  10.426 793.873    10.9 793.668  11.209 793.531  11.417 793.416
  11.713 793.195  12.523 792.576  13.836 791.554  15.638 792.626  16.118 792.932
  16.205 792.987  17.417 793.528  18.502  794.07  18.908 794.273   19.01  794.32
  20.693 795.145  20.928 795.234  21.598 795.332  24.498 796.173  24.644 796.216
  25.681 796.481  26.092 796.593  26.572 796.676  28.125 796.958  30.754 797.449
  30.957 797.489  31.658 797.613  36.823 798.505  37.423 798.602  38.408 798.766

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    10.9     .04   19.01    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          10.9   19.01            2.101       2   1.867             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 430.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 795.375    .546 795.304   1.847 795.075   2.633 794.772   3.006 794.615
   3.468 794.549   4.463 794.545   5.569 794.447   6.544 794.284   7.541 794.144
   9.138     794  10.373 793.756  10.845  793.55  11.151 793.414  11.358 793.303
  11.651 793.074  12.453  792.43  13.755  791.37  15.523 792.392  15.993 792.681
  16.078 792.734  17.268 793.274  18.331 793.828   18.73 794.036   18.83 794.085
  20.519 794.954  20.756 795.043  21.428 795.165  24.338 796.042  24.485 796.087
  25.526 796.372  25.939 796.494   26.42 796.577  27.979  796.86  30.618 797.352
  30.822 797.391  31.525 797.516  36.709 798.421  37.312 798.517    38.3  798.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.845     .04   18.83    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.845   18.83            2.101       2   1.867             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 428.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  795.24    .543 795.149   1.837 794.884    2.62 794.526   2.991 794.346
    3.45 794.278   4.441 794.294   5.541 794.201   6.511 794.057   7.503 793.931
   9.092 793.826   10.32 793.639   10.79 793.432  11.094 793.297  11.298 793.191
  11.589 792.953  12.384 792.284  13.674 791.186  15.407 792.158  15.869 792.431
  15.952 792.481  17.118 793.019  18.161 793.587  18.552 793.799   18.65  793.85
  20.345 794.764  20.583 794.852  21.258 794.999  24.179 795.912  24.325 795.958
  25.371 796.264  25.785 796.395  26.268 796.477  27.833 796.763  30.482 797.254
  30.686 797.293  31.392  797.42  36.596 798.337    37.2 798.433  38.192 798.594

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.79     .04   18.65    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.79   18.65            2.101       2   1.867             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 426.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 795.105    .541 794.994   1.828 794.693   2.607  794.28   2.976 794.077
   3.433 794.006   4.418 794.043   5.512 793.954   6.478  793.83   7.465 793.719
   9.046 793.653  10.268 793.522  10.735 793.314  11.036  793.18  11.239 793.078
  11.527 792.832  12.314 792.138  13.593 791.002  15.292 791.925  15.744 792.181
  15.826 792.228  16.969 792.764  17.991 793.345  18.374 793.562   18.47 793.615
  20.171 794.573   20.41  794.66  21.087 794.832  24.019 795.781  24.166  795.83
  25.216 796.155  25.631 796.296  26.116 796.378  27.687 796.665  30.345 797.156
   30.55 797.195  31.259 797.323  36.482 798.253  37.088 798.348  38.084 798.508

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.735     .04   18.47    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.735   18.47            2.101       2   1.867             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 424.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  794.97    .538 794.839   1.819 794.502   2.593 794.035    2.96 793.808
   3.415 793.734   4.395 793.792   5.484 793.708   6.444 793.602   7.426 793.506
   8.999 793.479  10.215 793.404   10.68 793.196  10.978 793.063  11.179 792.965
  11.464 792.711  12.245 791.992  13.512 790.818  15.176 791.691  15.619 791.931
  15.699 791.974  16.819 792.509  17.821 793.103  18.196 793.325   18.29  793.38
  19.998 794.382  20.237 794.469  20.917 794.665  23.859 795.651  24.007 795.701
   25.06 796.047  25.477 796.198  25.964 796.279  27.541 796.567  30.209 797.059
  30.415 797.097  31.126 797.226  36.368 798.168  36.977 798.264  37.976 798.422

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.68     .04   18.29    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.68   18.29            2.101       2   1.867             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 422.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 794.835    .535 794.684   1.809 794.311    2.58 793.789   2.945 793.539
   3.398 793.462   4.373 793.541   5.456 793.461   6.411 793.375   7.388 793.293
   8.953 793.305  10.163 793.287  10.625 793.078   10.92 792.946   11.12 792.853
  11.402 792.591  12.176 791.846  13.431 790.634  15.061 791.457  15.495  791.68
  15.573 791.721   16.67 792.255   17.65 792.862  18.018 793.089   18.11 793.145
  19.824 794.191  20.064 794.278  20.746 794.498    23.7 795.521  23.848 795.573
  24.905 795.938  25.324 796.099  25.812 796.179  27.395 796.469  30.072 796.961
  30.279 796.999  30.993 797.129  36.254 798.084  36.865 798.179  37.868 798.336

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.625     .04   18.11    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.625   18.11            2.101       2   1.867             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 420

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   794.7     1.8  794.12    2.93  793.27    3.38  793.19    4.35  793.29
    7.35  793.08   10.11  793.17   10.57  792.96   11.06  792.74   11.34  792.47
   13.35  790.45   15.37  791.43   16.52     792   17.48  792.62   17.93  792.91
   19.65     794   23.54  795.39   24.75  795.83   25.17     796   25.66  796.08
   36.14     798   37.76  798.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.57     .04   17.93    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.57   17.93            1.619    1.99   2.646             .1      .3
```

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 418.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	794.351	.564	794.188	1.375	793.952	1.835	793.818	1.989	793.714
2.459	793.401	2.98	793.051	3.446	792.973	3.979	793.02	4.434	793.058
5.037	793.017	6.335	792.927	6.813	792.894	7.493	792.852	7.932	792.865
8.051	792.868	8.675	792.912	9.622	792.983	10.306	792.973	10.775	792.763
11.085	792.627	11.274	792.545	11.326	792.499	11.412	792.417	11.559	792.277
12.117	791.727	12.573	791.301	13.606	790.345	14.047	790.553	15.167	791.077
15.656	791.332	15.794	791.405	16.824	791.943	17.505	792.39	17.798	792.575
18.255	792.863	19.026	793.342	19.977	793.919	20.596	794.14	22.305	794.748
23.873	795.27	24.676	795.543	25.084	795.681	25.505	795.839	25.996	795.917
31.068	796.815	31.859	796.952	32.659	797.091	36.49	797.742	36.828	797.791
37.529	797.894	38.112	797.984						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	10.775	.04	18.255	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
10.775	18.255	1.619	1.99	2.646	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 416.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	794.002	.574	793.854	1.401	793.638	1.87	793.516	2.027	793.423
2.506	793.142	3.036	792.826	3.511	792.755	4.054	792.795	4.519	792.826
5.133	792.785	6.456	792.694	6.943	792.661	7.635	792.624	8.083	792.635
8.205	792.638	8.84	792.706	9.805	792.818	10.502	792.775	10.98	792.566
11.295	792.431	11.488	792.35	11.541	792.307	11.628	792.224	11.778	792.084
12.347	791.535	12.811	791.133	13.862	790.24	14.31	790.445	15.447	790.957
15.943	791.235	16.082	791.314	17.128	791.887	17.819	792.347	18.116	792.53
18.58	792.816	19.352	793.286	20.305	793.837	20.925	794.059	22.636	794.665
24.205	795.15	25.01	795.404	25.419	795.532	25.84	795.678	26.331	795.755
31.411	796.622	32.202	796.752	33.003	796.883	36.84	797.484	37.178	797.53
37.88	797.628	38.464	797.718						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	10.98	.04	18.58	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
10.98	18.58	1.619	1.99	2.646	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 414.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	793.653	.585	793.519	1.427	793.325	1.905	793.214	2.065	793.131
2.553	792.883	3.093	792.602	3.577	792.538	4.13	792.571	4.603	792.594
5.229	792.553	6.576	792.461	7.073	792.429	7.778	792.396	8.234	792.406
8.358	792.409	9.005	792.5	9.989	792.654	10.698	792.578	11.185	792.369
11.506	792.234	11.702	792.155	11.756	792.115	11.845	792.031	11.997	791.89
12.576	791.343	13.048	790.965	14.118	790.135	14.572	790.337	15.726	790.837
16.229	791.137	16.371	791.222	17.431	791.83	18.133	792.303	18.435	792.486
18.905	792.769	19.678	793.23	20.632	793.756	21.253	793.978	22.966	794.582
24.538	795.031	25.344	795.264	25.753	795.383	26.175	795.518	26.667	795.592
31.753	796.43	32.546	796.552	33.348	796.675	37.189	797.227	37.528	797.268
38.232	797.362	38.816	797.452						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.185	.04	18.905	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11.185	18.905	1.619	1.99	2.646	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 412.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	793.304	.596	793.185	1.453	793.011	1.94	792.912	2.103	792.84
2.599	792.624	3.15	792.377	3.642	792.32	4.206	792.346	4.687	792.362
5.325	792.321	6.697	792.228	7.202	792.196	7.92	792.168	8.385	792.176
8.511	792.179	9.17	792.295	10.172	792.489	10.894	792.381	11.39	792.172
11.717	792.038	11.916	791.96	11.97	791.923	12.061	791.838	12.217	791.697

```
  12.805 791.151  13.286 790.797  14.374  790.03  14.835 790.229  16.005 790.718
  16.516 791.039  16.659  791.13  17.735 791.774  18.447  792.26  18.753 792.441
   19.23 792.722  20.004 793.175  20.959 793.674  21.581 793.897  23.297 794.498
  24.871 794.911  25.678 795.125  26.087 795.234  26.509 795.357  27.002 795.429
  32.095 796.237  32.889 796.352  33.692 796.467  37.539 796.969  37.878 797.007
  38.583 797.096  39.168 797.186

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.39     .04   19.23    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.39   19.23            1.619    1.99   2.646             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 410.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 792.955    .606 792.851   1.479 792.698   1.975  792.61   2.141 792.548
   2.646 792.365   3.207 792.153   3.708 792.103   4.282 792.122   4.772  792.13
   5.421 792.089   6.817 791.995   7.332 791.963   8.063  791.94   8.535 791.947
   8.664 791.949   9.335 792.089  10.355 792.324   11.09 792.184  11.595 791.975
  11.927 791.842   12.13 791.765  12.185 791.731  12.278 791.645  12.436 791.504
  13.034  790.96  13.523  790.63   14.63 789.925  15.097  790.12  16.284 790.598
  16.802 790.941  16.948 791.039  18.039 791.717  18.761 792.217  19.071 792.396
  19.555 792.675   20.33 793.119  21.287 793.593  21.909 793.815  23.627 794.415
  25.203 794.791  26.011 794.986  26.421 795.085  26.844 795.196  27.338 795.266
  32.438 796.044  33.233 796.151  34.037  796.26  37.889 796.711  38.229 796.746
  38.934  796.83   39.52  796.92

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.595     .04  19.555    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.595  19.555            1.619    1.99   2.646             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 408.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 792.606    .617 792.517   1.505 792.384   2.009 792.308   2.179 792.256
   2.693 792.106   3.263 791.928   3.773 791.886   4.357 791.898   4.856 791.898
   5.517 791.857   6.938 791.762   7.461 791.731   8.205 791.712   8.686 791.718
   8.817 791.719     9.5 791.883  10.538 792.159  11.286 791.986    11.8 791.778
  12.138 791.645  12.344  791.57    12.4 791.538  12.494 791.452  12.655 791.311
  13.263 790.768   13.76 790.462  14.886  789.82   15.36 790.012  16.563 790.479
  17.089 790.844  17.236 790.947  18.343 791.661  19.075 792.173  19.389 792.351
   19.88 792.628  20.656 793.063  21.614 793.511  22.237 793.734  23.958 794.332
  25.536 794.671  26.345 794.847  26.756 794.936  27.179 795.035  27.673 795.104
   32.78 795.851  33.576 795.951  34.382 796.052  38.239 796.453  38.579 796.485
  39.285 796.564  39.872 796.654

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    11.8     .04   19.88    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          11.8   19.88            1.619    1.99   2.646             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 406.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 792.257    .628 792.183   1.532 792.071   2.044 792.006   2.216 791.965
    2.74 791.847    3.32 791.704   3.839 791.668   4.433 791.673   4.941 791.666
   5.612 791.626   7.058 791.529   7.591 791.498   8.348 791.484   8.837 791.488
    8.97 791.489   9.665 791.677  10.721 791.994  11.483 791.789  12.005 791.581
  12.348 791.449  12.558 791.375  12.615 791.346  12.711 791.259  12.874 791.118
  13.492 790.576  13.998 790.294  15.142 789.715  15.622 789.904  16.842 790.359
  17.375 790.746  17.525 790.855  18.646 791.604  19.388  792.13  19.708 792.306
  20.205 792.581  20.982 793.007  21.941  793.43  22.565 793.653  24.288 794.249
  25.868 794.551  26.679 794.708   27.09 794.787  27.514 794.875  28.009 794.941
  33.123 795.658   33.92 795.751  34.726 795.844  38.589 796.196  38.929 796.224
  39.636 796.298  40.224 796.388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.005     .04  20.205    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.005  20.205            1.619    1.99   2.646             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo El Moro
REACH: Afluente          RS: 404.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.908    .639 791.848   1.558 791.757   2.079 791.704   2.254 791.673
   2.786 791.588   3.377 791.479   3.904 791.451   4.509 791.449   5.025 791.434
   5.708 791.394   7.179 791.296   7.721 791.265    8.49 791.256   8.988 791.259
   9.124  791.26    9.83 791.472  10.904  791.83  11.679 791.592   12.21 791.384
  12.559 791.253  12.772 791.179   12.83 791.154  12.927 791.066  13.093 790.924
  13.722 790.384  14.235 790.126  15.398  789.61  15.885 789.796  17.122 790.239
  17.661 790.648  17.813 790.763   18.95 791.548  19.702 792.087  20.026 792.262
   20.53 792.534  21.308 792.952  22.269 793.348  22.894 793.572  24.619 794.166
  26.201 794.431  27.013 794.568  27.424 794.638  27.849 794.714  28.344 794.778
  33.465 795.466  34.263 795.551  35.071 795.636  38.938 795.938  39.279 795.962
  39.988 796.032  40.576 796.122

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   12.21     .04   20.53    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         12.21   20.53            1.619    1.99   2.646             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 402.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.559    .649 791.514   1.584 791.444   2.114 791.402   2.292 791.382
   2.833 791.329   3.433 791.255    3.97 791.233   4.584 791.224   5.109 791.202
   5.804 791.162   7.299 791.063    7.85 791.033   8.633 791.028   9.139 791.029
   9.277  791.03   9.995 791.266  11.087 791.665  11.875 791.395  12.415 791.187
  12.769 791.056  12.986 790.984  13.045 790.962  13.144 790.873  13.312 790.731
  13.951 790.192  14.473 789.958  15.654 789.505  16.147 789.688  17.401  790.12
  17.948 790.551  18.102 790.672  19.254 791.491  20.016 792.043  20.344 792.217
  20.855 792.487  21.634 792.896  22.596 793.267  23.222 793.491  24.949 794.083
  26.534 794.311  27.346 794.429  27.759 794.489  28.184 794.553   28.68 794.616
  33.808 795.273  34.607  795.35  35.415 795.428  39.288  795.68   39.63 795.701
  40.339 795.766  40.928 795.856

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.415     .04  20.855    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.415  20.855            1.619    1.99   2.646             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 400

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  791.21     .66  791.18    1.61  791.13    2.33  791.09    2.88  791.07
    3.49  791.03    4.66     791     5.9  790.93    7.42  790.83    7.98   790.8
    9.29   790.8    9.43   790.8   10.16  791.06   11.27   791.5   12.62  790.99
   12.98  790.86   13.26  790.77   13.36  790.68   14.18     790   14.71  789.79
   15.91   789.4   16.41  789.58   17.68     790   18.39  790.58   20.33     792
   21.18  792.44   21.96  792.84   23.55  793.41   25.28     794   27.68  794.29
   34.15  795.08   34.95  795.15   35.76  795.22   39.98  795.44   40.69   795.5
   41.28  795.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   12.62     .04   21.18    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         12.62   21.18            2.108   1.821    1.14             .1       .3
Left Levee      Station=    11.3      Elevation=   791.5

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 398.181*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.285    .487 791.276    .648 791.265   1.582 791.198   2.289 791.145
    2.83 791.114   3.429 791.063   4.578 791.009   5.797 790.916    7.29  790.79
    7.84  790.75    8.87 790.725   9.127  790.72   9.265 790.717   9.982 790.939
  10.623  791.16  11.073 791.322  11.219  791.27  11.876 791.013  12.399 790.805
  12.737 790.681  12.999 790.594  13.093  790.51  13.861 789.877  14.358 789.677
  15.483 789.301  15.987 789.493  17.268 789.948  17.984 790.517  17.998 790.526
  18.154  790.64  19.941 791.891  20.614 792.233  20.798 792.325  21.575 792.714
  21.699 792.759  23.157 793.281  23.197 793.294  24.821 793.828   24.88 793.847
  27.269 794.147  27.964 794.235  28.666 794.323  30.185  794.51  32.165 794.766
   33.71 794.971  33.788 794.979  34.302 795.029  34.506 795.049  35.312 795.128
```

```
  39.513 795.407   40.22 795.475  40.807 795.568

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.399     .04  20.798    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.399  20.798            2.108   1.821    1.14             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 396.363*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.359    .478 791.364    .637 791.351   1.554 791.266   2.248 791.199
   2.779 791.157   3.368 791.096   4.497 791.017   5.693 790.903    7.16  790.75
   7.701   790.7   8.712 790.651   8.965  790.64     9.1 790.635   9.804 790.818
  10.433 791.002  10.875 791.144  11.019 791.096  11.664 790.835  12.178 790.621
  12.493 790.502  12.738 790.418  12.825 790.341  13.542 789.755  14.006 789.564
  15.055 789.202  15.564 789.407  16.856 789.897  17.578 790.453  17.592 790.463
   17.75 790.576  19.552 791.783  20.231 792.121  20.416 792.211  21.189 792.588
  21.313 792.633  22.765 793.151  22.804 793.165  24.421 793.676  24.479 793.695
  26.858 794.004  27.549 794.094  28.248 794.185   29.76 794.372  31.731 794.641
  33.269 794.862  33.348 794.871  33.859 794.926  34.062 794.949  34.864 795.036
  39.046 795.375   39.75 795.451  40.335 795.546

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.178     .04  20.416    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.178  20.416            2.108   1.821    1.14             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 394.545*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.434    .469 791.453    .625 791.436   1.525 791.333   2.208 791.254
   2.729 791.201   3.307  791.13   4.415 791.026    5.59 790.889    7.03  790.71
   7.561 790.649   8.554 790.576   8.802  790.56   8.935 790.552   9.626 790.696
  10.244 790.844  10.678 790.966  10.819 790.922  11.453 790.656  11.957 790.436
   12.25 790.322  12.477 790.242  12.558 790.171  13.224 789.632  13.654 789.451
  14.628 789.103  15.141  789.32  16.444 789.845  17.172  790.39  17.186 790.399
  17.345 790.512  19.163 791.674  19.847 792.008  20.035 792.096  20.804 792.463
  20.927 792.507  22.372 793.022  22.412 793.035  24.021 793.524  24.079 793.542
  26.446  793.86  27.135 793.954  27.831 794.046  29.336 794.234  31.298 794.517
  32.829 794.753  32.907 794.763  33.415 794.823  33.618 794.848  34.417 794.944
  38.579 795.342   39.28 795.426  39.862 795.525

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.957     .04  20.035    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.957  20.035            2.108   1.821    1.14             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 392.727*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.508    .461 791.541    .614 791.521   1.497 791.401   2.167 791.309
   2.678 791.245   3.246 791.163   4.334 791.035   5.487 790.875     6.9  790.67
   7.421 790.599   8.396 790.502    8.64  790.48    8.77 790.469   9.449 790.575
  10.055 790.686  10.481 790.788  10.619 790.748  11.241 790.478  11.736 790.252
  12.006 790.143  12.216 790.066  12.291 790.001  12.905  789.51  13.302 789.338
  14.201 789.004  14.718 789.233  16.032 789.793  16.766 790.326   16.78 790.335
  16.941 790.448  18.773 791.566  19.464 791.896  19.653 791.982  20.419 792.337
  20.541 792.381   21.98 792.892  22.019 792.906  23.621 793.373  23.679 793.389
  26.035 793.717  26.721 793.813  27.413 793.908  28.911 794.096  30.864 794.392
  32.388 794.644  32.466 794.655  32.972  794.72  33.174 794.747  33.969 794.853
  38.113  795.31   38.81 795.401  39.389 795.503

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.736     .04  19.653    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.736  19.653            2.108   1.821    1.14             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 390.909*

INPUT
```

```
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.583    .452  791.63    .602 791.606   1.469 791.469   2.126 791.363
   2.628 791.289   3.185 791.196   4.252 791.044   5.384 790.861   6.771  790.63
   7.282 790.549   8.238 790.427   8.477 790.401   8.605 790.386   9.271 790.454
   9.866 790.528  10.284  790.61  10.419 790.574   11.03   790.3  11.515 790.067
  11.763 789.964  11.955  789.89  12.023 789.832  12.586 789.387   12.95 789.225
  13.774 788.905  14.295 789.147   15.62 789.742  16.361 790.263  16.375 790.272
  16.537 790.384  18.384 791.457   19.08 791.784  19.271 791.867  20.033 792.211
  20.155 792.255  21.587 792.763  21.626 792.776  23.221 793.221  23.278 793.236
  25.624 793.574  26.306 793.673  26.995  793.77  28.487 793.958  30.431 794.268
  31.948 794.535  32.025 794.547  32.529 794.617   32.73 794.647  33.521 794.761
  37.646 795.277   38.34 795.376  38.916 795.481

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.515     .04  19.271    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.515  19.271            2.108   1.821    1.14             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 389.090*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.657    .443 791.718    .591 791.692   1.441 791.536   2.085 791.418
   2.578 791.332   3.123 791.229   4.171 791.052    5.28 790.848   6.641  790.59
   7.142 790.499    8.08 790.353   8.314 790.321    8.44 790.304   9.093 790.332
   9.676  790.37  10.086 790.432  10.219   790.4  10.818 790.121  11.295 789.883
  11.519 789.785  11.694 789.714  11.756 789.662  12.267 789.265  12.598 789.112
  13.346 788.805  13.872  789.06  15.208  789.69  15.955 790.199  15.969 790.208
  16.132  790.32  17.995 791.349  18.697 791.672  18.889 791.753  19.648 792.085
   19.77 792.129  21.195 792.634  21.234 792.647   22.82 793.069  22.878 793.083
  25.213 793.431  25.892 793.532  26.578 793.632  28.062  793.82  29.997 794.143
  31.507 794.426  31.584  794.44  32.086 794.515  32.285 794.546  33.073 794.669
  37.179 795.244   37.87 795.352  38.444 795.459

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.295     .04  18.889    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.295  18.889            2.108   1.821    1.14             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 387.272*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.732    .435 791.806    .579 791.777   1.413 791.604   2.044 791.473
   2.527 791.376   3.062 791.262   4.089 791.061   5.177 790.834   6.511 790.551
   7.002 790.449   7.922 790.278   8.152 790.241   8.275 790.221   8.915 790.211
   9.487 790.212   9.889 790.254   10.02 790.226  10.606 789.943  11.074 789.698
  11.276 789.606  11.433 789.538  11.489 789.492  11.949 789.142  12.246 788.999
  12.919 788.706  13.449 788.973  14.796 789.638  15.549 790.135  15.563 790.144
  15.728 790.256  17.606  791.24  18.314 791.559  18.507 791.638  19.263 791.959
  19.384 792.004  20.802 792.504  20.841 792.518   22.42 792.917  22.477 792.931
  24.801 793.288  25.477 793.392   26.16 793.493  27.638 793.682  29.564 794.018
  31.067 794.317  31.143 794.332  31.643 794.412  31.841 794.445  32.626 794.577
  36.712 795.212    37.4 795.327  37.971 795.437

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.074     .04  18.507    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.074  18.507            2.108   1.821    1.14             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 385.454*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.806    .426 791.895    .568 791.862   1.385 791.672   2.004 791.527
   2.477  791.42   3.001 791.295   4.007  791.07   5.074  790.82   6.381 790.511
   6.863 790.398   7.764 790.204   7.989 790.161   8.109 790.138   8.737  790.09
   9.298 790.054   9.692 790.076    9.82 790.052  10.395 789.765  10.853 789.514
  11.032 789.426  11.172 789.362  11.221 789.323   11.63 789.019  11.894 788.886
  12.492 788.607  13.026 788.887  14.384 789.587  15.143 790.072  15.157 790.081
  15.323 790.192  17.217 791.132   17.93 791.447  18.125 791.524  18.877 791.833
  18.998 791.878   20.41 792.375  20.448 792.388   22.02 792.765  22.077 792.778
   24.39 793.145  25.063 793.251  25.743 793.355  27.213 793.544   29.13 793.894
  30.626 794.208  30.703 794.224    31.2 794.309  31.397 794.344  32.178 794.485
  36.245 795.179   36.93 795.302  37.498 795.415

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.853     .04  18.125    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.853  18.125            2.108   1.821    1.14             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 383.636*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.881    .417 791.983    .556 791.947   1.356  791.74   1.963 791.582
   2.426 791.463    2.94 791.329   3.926 791.079   4.971 790.807   6.251 790.471
   6.723 790.348   7.606 790.129   7.826 790.081   7.944 790.055   8.559 789.969
   9.109 789.896   9.495 789.898    9.62 789.878  10.183 789.587  10.632 789.329
  10.789 789.247  10.911 789.186  10.954 789.153  11.311 788.897  11.542 788.773
  12.065 788.508  12.603   788.8  13.972 789.535  14.737 790.009  14.752 790.017
  14.919 790.128  16.828 791.023  17.547 791.335  17.744 791.409  18.492 791.707
  18.612 791.752  20.017 792.246  20.055 792.259   21.62 792.614  21.677 792.625
  23.979 793.001  24.649 793.111  25.325 793.217  26.789 793.406  28.697 793.769
  30.186 794.099  30.262 794.116  30.756 794.206  30.953 794.244   31.73 794.393
  35.778 795.147  36.459 795.278  37.025 795.394

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.632     .04  17.744    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.632  17.744            2.108   1.821    1.14             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 381.818*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.956    .409 792.072    .544 792.033   1.328 791.807   1.922 791.637
   2.376 791.507   2.879 791.362   3.844 791.087   4.867 790.793   6.121 790.431
   6.583 790.298   7.448 790.055   7.664 790.001   7.779 789.973   8.382 789.847
   8.919 789.738   9.297  789.72    9.42 789.704   9.972 789.408  10.411 789.145
  10.545 789.068  10.649  789.01  10.687 788.984  10.992 788.774   11.19  788.66
  11.637 788.409   12.18 788.714   13.56 789.483  14.331 789.945  14.346 789.954
  14.514 790.064  16.439 790.915  17.163 791.222  17.362 791.295  18.107 791.582
  18.226 791.626  19.625 792.116  19.663 792.129   21.22 792.462  21.276 792.472
  23.568 792.858  24.234 792.971  24.908 793.078  26.364 793.268  28.263 793.645
  29.745 793.991  29.821 794.008  30.313 794.103  30.509 794.143  31.282 794.302
  35.312 795.114  35.989 795.253  36.553 795.372

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.411     .04  17.362    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.411  17.362            2.108   1.821    1.14             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 380

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  792.03      .4  792.16    7.29  789.98    8.73  789.58    9.22  789.53
    9.76  789.23   10.19  788.96   11.21  788.31   13.94  789.89   14.11     790
   16.78  791.11   16.98  791.18   17.84   791.5   19.27     792   20.82  792.31
   23.82  792.83   24.49  792.94   25.94  793.13   27.83  793.52   29.38   793.9
   29.87     794   36.08  795.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.19     .04   16.98    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.19   16.98            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 378.181*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.644    .364 791.762    .636 791.659   1.324 791.464   3.859  790.74
   7.483 789.739   8.398 789.517   8.971 789.372   9.477 789.322  10.035 789.044
  10.479 788.795  11.447 788.201  13.526 789.377  13.783 789.523  14.149 789.753
  14.317  789.87  15.615 790.496  16.959 791.052  17.057 791.087  17.157 791.121
  18.012 791.431  19.432 791.918  20.972 792.235   21.19 792.275  21.672 792.349
  22.412  792.48  23.142 792.626  23.951 792.798  24.611 792.932  26.057 793.189
```

```
  26.413 793.276  27.934 793.601  29.474 793.985  29.748 794.043  29.961 794.088
  33.973  794.98  36.129 795.468

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.479     .04  17.157    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.479  17.157            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 376.363*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 791.257    .327 791.364    .608 791.241   1.319 791.063   3.935  790.39
   7.675 789.498   8.621   789.3   9.211 789.164   9.734 789.114   10.31 788.858
  10.768 788.629  11.685 788.092  13.741 789.228  13.995 789.371  14.358 789.617
  14.524  789.74  15.809 790.446  17.139 790.995  17.235 791.029  17.335 791.062
  18.183 791.363  19.594 791.836  21.123  792.16   21.34 792.201  21.819 792.266
  22.554 792.399  23.278 792.563  24.083 792.765  24.738 792.925  26.174 793.247
  26.527 793.349  28.039 793.683  29.568  794.07   29.84  794.13  30.052 794.175
  34.037 795.082  36.178 795.586

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.768     .04  17.335    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.768  17.335            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 374.545*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 790.871    .291 790.965    .581 790.823   1.314 790.661   4.011  790.04
   7.868 789.257   8.843 789.084   9.452 788.956   9.991 788.906  10.584 788.672
  11.057 788.464  11.922 787.983  13.957 789.079  14.208 789.219  14.567  789.48
  14.731 789.611  16.002 790.397  17.318 790.937  17.413 790.971  17.512 791.003
  18.355 791.294  19.756 791.754  21.275 792.085   21.49 792.128  21.966 792.184
  22.696 792.318  23.415 792.501  24.214 792.733  24.865 792.917  26.291 793.306
  26.642 793.421  28.143 793.764  29.662 794.155  29.932 794.216  30.142 794.263
  34.101 795.184  36.227 795.705

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.057     .04  17.512    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.057  17.512            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 372.727*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 790.485    .255 790.567    .553 790.405   1.308  790.26   4.087  789.69
   8.061 789.016   9.065 788.867   9.692 788.748  10.247 788.698  10.859 788.486
  11.346 788.298  12.159 787.874  14.172 788.931  14.421 789.066  14.776 789.344
  14.938 789.481  16.196 790.347  17.497 790.879  17.592 790.914  17.689 790.944
  18.526 791.225  19.918 791.673  21.426  792.01   21.64 792.054  22.113 792.101
  22.838 792.237  23.552 792.438  24.345 792.701  24.992  792.91  26.409 793.365
  26.757 793.493  28.248 793.846  29.756  794.24  30.025 794.303  30.233 794.351
  34.164 795.286  36.276 795.823

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.346     .04  17.689    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.346  17.689            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 370.909*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 790.098    .218 790.169    .526 789.987   1.303 789.859   4.163  789.34
   8.253 788.774   9.287  788.65   9.933  788.54  10.504  788.49  11.134   788.3
  11.635 788.133  12.396 787.765  14.387 788.782  14.634 788.914  14.984 789.207
  15.146 789.351  16.389 790.297  17.677 790.822   17.77 790.856  17.866 790.885
  18.698 791.156   20.08 791.591  21.578 791.935   21.79 791.981  22.259 792.018
```

```
  22.979 792.156  23.689 792.376  24.477 792.668  25.119 792.903  26.526 793.423
  26.872 793.566  28.352 793.927   29.85 794.325  30.117  794.39  30.324 794.439
  34.228 795.388  36.325 795.941

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.635     .04  17.866    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.635  17.866            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 369.090*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 789.712    .182 789.771    .498 789.569   1.297 789.457    4.24  788.99
   8.446 788.533   9.509 788.434  10.173 788.332  10.761 788.282  11.409 788.114
  11.925 787.967  12.634 787.655  14.603 788.633  14.846 788.762  15.193  789.07
  15.353 789.221  16.583 790.248  17.856 790.764  17.948 790.798  18.044 790.825
  18.869 791.088  20.241 791.509  21.729  791.86   21.94 791.907  22.406 791.935
  23.121 792.075  23.826 792.313  24.608 792.636  25.245 792.896  26.643 793.482
  26.986 793.638  28.457 794.008  29.944  794.41  30.209 794.477  30.415 794.526
  34.292  795.49  36.375 796.059

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.925     .04  18.044    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.925  18.044            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 367.272*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 789.326    .145 789.373     .47 789.151   1.292 789.056   4.316  788.64
   8.639 788.292   9.731 788.217  10.414 788.124  11.018 788.073  11.684 787.929
  12.214 787.802  12.871 787.546  14.818 788.485  15.059 788.609  15.402 788.934
   15.56 789.091  16.776 790.198  18.035 790.706  18.127 790.741  18.221 790.766
  19.041 791.019  20.403 791.427  21.881 791.785   22.09 791.834  22.553 791.852
  23.263 791.994  23.963  792.25   24.74 792.603  25.372 792.889   26.76 793.541
  27.101 793.711  28.561  794.09  30.038 794.495  30.301 794.563  30.505 794.614
  34.355 795.592  36.424 796.177

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.214     .04  18.221    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.214  18.221            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 365.454*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 788.939    .109 788.975    .443 788.734   1.286 788.654   4.392  788.29
   8.831 788.051   9.954     788  10.654 787.916  11.275 787.865  11.958 787.743
  12.503 787.636  13.108 787.437  15.034 788.336  15.272 788.457  15.611 788.797
  15.767 788.962   16.97 790.149  18.215 790.649  18.305 790.683  18.398 790.707
  19.212  790.95  20.565 791.345  22.032  791.71   22.24  791.76    22.7 791.769
  23.405 791.913  24.099 792.188  24.871 792.571  25.499 792.882  26.877 793.599
  27.216 793.783  28.666 794.171  30.132  794.58  30.393  794.65  30.596 794.702
  34.419 795.694  36.473 796.295

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.503     .04  18.398    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.503  18.398            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 363.636*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 788.553    .073 788.576    .415 788.316   1.281 788.253   4.468  787.94
   9.024  787.81  10.176 787.783  10.895 787.708  11.532 787.657  12.233 787.557
  12.792 787.471  13.345 787.328  15.249 788.187  15.485 788.305   15.82 788.661
  15.974 788.832  17.163 790.099  18.394 790.591  18.483 790.625  18.575 790.648
```

```
  19.384 790.881  20.727 791.263  22.184 791.635   22.39 791.687  22.846 791.686
  23.546 791.832  24.236 792.125  25.002 792.539  25.626 792.874  26.994 793.658
  27.331 793.855   28.77 794.252  30.226 794.665  30.486 794.737  30.687 794.789
  34.483 795.796  36.522 796.414

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.792     .04  18.575    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.792  18.575            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 361.818*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 788.166    .036 788.178    .388 787.898   1.275 787.851   4.544  787.59
   9.217 787.569  10.398 787.567  11.136   787.5  11.788 787.449  12.508 787.371
  13.081 787.305  13.583 787.219  15.465 788.039  15.697 788.152  16.029 788.524
  16.181 788.702  17.357  790.05  18.574 790.533  18.662 790.568  18.753 790.589
  19.555 790.813  20.889 791.182  22.335  791.56   22.54 791.613  22.993 791.603
  23.688 791.751  24.373 792.063  25.134 792.506  25.753 792.867  27.111 793.716
  27.445 793.928  28.875 794.334  30.321  794.75  30.578 794.823  30.778 794.877
  34.546 795.898  36.571 796.532

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.081     .04  18.753    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.081  18.753            1.821   1.834   1.433             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 360

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  787.78     .36  787.48    1.27  787.45    4.62  787.24   10.62  787.35
   13.37  787.14   13.82  787.11   15.68  787.89   15.91     788   16.24  788.39
   17.55     790   18.84  790.51   18.93  790.53   22.69  791.54   23.14  791.52
   23.83  791.67   24.51     792   25.88  792.86   27.56     794   30.67  794.91
   34.61     796   36.62  796.65

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   13.37     .04   18.93    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         13.37   18.93            1.809   1.992   2.506             .1       .3
Left Levee      Station=   10.63      Elevation=   787.4

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 358.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 787.529    .324 787.259   1.218 787.226   2.197 787.164   4.511 787.023
   5.669 787.038  10.409 787.064  11.038 787.013  11.915 786.951  12.271 786.926
  13.112 786.855  13.236 786.843  13.524 786.811  13.596 786.809  13.652 786.803
  13.864 786.907  15.392 787.646   15.54 787.717  15.596 787.747  15.773 787.839
  16.108 788.221  17.437 789.793  17.513 789.826  18.747 790.275  18.838 790.294
  20.045 790.599  20.438 790.696  21.346 790.911  22.627 791.281   23.08 791.285
  23.414 791.366  23.732 791.435  23.776 791.445  24.461 791.778  24.892 792.042
  25.841 792.612  26.446 793.003  27.534  793.71  28.925 794.135  29.637 794.349
  30.668 794.663  31.452  794.89  34.639 795.783  35.139 795.944  35.429 796.038
  35.485 796.057  35.841 796.174  36.664 796.446

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.112     .04  18.838    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.112  18.838            1.809   1.992   2.506             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 356.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 787.278    .288 787.038   1.167 787.003   2.128  786.94   4.403 786.806
    5.54 786.815  10.198 786.778  10.816 786.725  11.678 786.668  12.027 786.646
  12.854  786.57  12.999 786.552  13.335 786.506  13.419 786.504  13.484 786.496
```

```
  13.699 786.616   15.25 787.463  15.399 787.544  15.456 787.577  15.636 787.677
  15.976 788.051  17.325 789.586  17.401 789.623  18.653  790.04  18.746 790.058
  19.962 790.345  20.358 790.435  21.273 790.623  22.564 791.023  23.021  791.05
  23.357  791.14  23.677 791.208  23.721 791.221  24.412 791.555  24.846 791.815
  25.803 792.365  26.412  792.74  27.509 793.421   28.91 793.865  29.627 794.088
  30.667 794.416  31.456 794.654  34.667 795.567  35.171 795.728  35.463 795.823
   35.52 795.843  35.878 795.963  36.708 796.242

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.854     .04  18.746    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.854  18.746            1.809   1.992   2.506             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 354.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 787.027    .252 786.817   1.115 786.779    2.06 786.716   4.294 786.589
   5.412 786.592   9.987 786.492  10.594 786.437  11.441 786.386  11.784 786.367
  12.596 786.285  12.761 786.262  13.145   786.2  13.241   786.2  13.316 786.189
  13.534 786.325  15.107  787.28  15.259 787.371  15.317 787.407  15.499 787.515
  15.844 787.882  17.212 789.379   17.29 789.421   18.56 789.805  18.654 789.822
   19.88 790.092  20.279 790.175    21.2 790.335  22.501 790.764  22.961 790.815
    23.3 790.913  23.623 790.982  23.667 790.996  24.363 791.333  24.801 791.588
  25.764 792.117  26.378 792.476  27.483 793.131  28.895 793.596  29.617 793.827
  30.665 794.168   31.46 794.419  34.696  795.35  35.203 795.512  35.498 795.608
  35.555 795.629  35.916 795.751  36.752 796.038

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.596     .04  18.654    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.596  18.654            1.809   1.992   2.506             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 352.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 786.776    .216 786.596   1.064 786.555   1.991 786.493   4.185 786.372
   5.283 786.369   9.776 786.207  10.372 786.149  11.203 786.104   11.54 786.087
  12.338     786  12.524 785.972  12.956 785.894  13.064 785.896  13.148 785.882
  13.369 786.035  14.965 787.097  15.119 787.198  15.177 787.238  15.362 787.354
  15.712 787.712    17.1 789.172  17.179 789.218  18.467 789.569  18.562 789.586
  19.797 789.839  20.199 789.914  21.127 790.047  22.438 790.505  22.901  790.58
  23.243 790.687  23.568 790.756  23.613 790.771  24.314 791.111  24.755 791.361
  25.726  791.87  26.344 792.212  27.457 792.842   28.88 793.326  29.608 793.566
  30.663 793.921  31.465 794.183  34.724 795.133  35.236 795.296  35.533 795.392
   35.59 795.415  35.954 795.539  36.796 795.834

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.338     .04  18.562    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.338  18.562            1.809   1.992   2.506             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 350.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 786.525     .18 786.375   1.012 786.331   1.923 786.269   4.077 786.155
   5.154 786.146   9.565 785.921   10.15 785.861  10.966 785.821  11.297 785.808
   12.08 785.715  12.287 785.682  12.767 785.589  12.887 785.592   12.98 785.575
  13.204 785.744  14.822 786.915  14.978 787.025  15.038 787.068  15.225 787.192
   15.58 787.543  16.987 788.965  17.067 789.015  18.373 789.334   18.47  789.35
  19.714 789.586  20.119 789.653  21.054 789.759  21.054 789.769  22.375 790.247
  22.842 790.345  23.185 790.461  23.513  790.53  23.558 790.546  24.264 790.888
  24.709 791.134  25.687 791.622   26.31 791.948  27.432 792.552  28.865 793.057
  29.598 793.305  30.661 793.674  31.469 793.948  34.753 794.917  35.268  795.08
  35.567 795.177  35.625 795.201  35.991 795.328   36.84  795.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   12.08     .04   18.47    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.08   18.47            1.809   1.992   2.506             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
```

```
REACH: Afluente          RS: 348.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 786.274    .144 786.154    .961 786.108   1.854 786.045   3.968 785.938
   5.025 785.923   9.354 785.635   9.928 785.572  10.729 785.539  11.054 785.528
  11.822  785.43  12.049 785.391  12.577 785.283  12.709 785.287  12.812 785.268
   13.04 785.453   14.68 786.732  14.838 786.852  14.898 786.899  15.089 787.031
  15.448 787.373  16.875 788.758  16.956 788.812   18.28 789.099  18.378 789.114
  19.631 789.333  20.039 789.393  20.981 789.471  20.981 789.483  22.311 789.988
  22.782  790.11  23.128 790.235  23.459 790.304  23.504 790.322  24.215 790.666
  24.663 790.907  25.649 791.375  26.276 791.685  27.406 792.263   28.85 792.788
  29.588 793.044   30.66 793.427  31.473 793.712  34.781   794.7  35.301 794.864
  35.602 794.961   35.66 794.987  36.029 795.116  36.884 795.426

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.822     .04  18.378    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.822  18.378            1.809   1.992   2.506             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 346.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 786.023    .108 785.933    .909 785.884   1.786 785.821   3.859 785.721
   4.896   785.7   9.142 785.349   9.706 785.284  10.492 785.257   10.81 785.249
  11.564 785.145  11.812 785.101  12.388 784.977  12.532 784.983  12.644 784.961
  12.875 785.162  14.537 786.549  14.698 786.679  14.759 786.729  14.952 786.869
  15.316 787.204  16.762 788.551  16.844 788.609  18.187 788.864  18.286 788.878
  19.548  789.08  19.959 789.132  20.909 789.184  20.909 789.198  22.248 789.729
  22.723 789.875  23.071 790.009  23.404 790.078   23.45 790.097  24.166 790.444
  24.617 790.681   25.61 791.127  26.242 791.421   27.38 791.973  28.835 792.518
  29.579 792.783  30.658 793.179  31.477 793.477   34.81 794.483  35.333 794.648
  35.636 794.746  35.695 794.772  36.067 794.905  36.928 795.222

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.564     .04  18.286    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.564  18.286            1.809   1.992   2.506             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 344.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 785.772    .072 785.712    .858  785.66   1.717 785.598    3.75 785.504
   4.768 785.476   8.931 785.063   9.484 784.996  10.254 784.975  10.567 784.969
  11.306  784.86  11.575 784.811  12.199 784.671  12.355 784.679  12.476 784.654
   12.71 784.872  14.395 786.366  14.557 786.505  14.619 786.559  14.815 786.708
  15.184 787.035   16.65 788.344  16.733 788.406  18.093 788.629  18.194 788.642
  19.466 788.826   19.88 788.871  20.836 788.896  20.836 788.912  22.185 789.471
  22.663  789.64  23.014 789.782  23.349 789.852  23.395 789.872  24.117 790.222
  24.572 790.454  25.571  790.88  26.208 791.157  27.355 791.683   28.82 792.249
  29.569 792.522  30.656 792.932  31.482 793.241  34.838 794.266  35.365 794.432
  35.671 794.531   35.73 794.558  36.105 794.693  36.972 795.018

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.306     .04  18.194    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.306  18.194            1.809   1.992   2.506             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 342.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 785.521    .036 785.491    .806 785.436   1.649 785.374   3.642 785.287
   4.639 785.253    8.72 784.777   9.262 784.708  10.017 784.692  10.323  784.69
  11.048 784.575  11.337  784.52  12.009 784.366  12.177 784.374  12.308 784.347
  12.545 784.581  14.252 786.183  14.417 786.332   14.48  786.39  14.678 786.546
  15.052 786.865  16.537 788.137  16.621 788.203      18 788.393  18.102 788.406
  19.383 788.573    19.8 788.611  20.763 788.608  20.763 788.626  22.122 789.212
  22.603 789.405  22.957 789.556  23.295 789.626  23.341 789.647  24.068 789.999
  24.526 790.227  25.533 790.632  26.174 790.894  27.329 791.394  28.805 791.979
   29.56 792.261  30.654 792.685  31.486 793.006  34.867  794.05  35.398 794.216
  35.705 794.315  35.765 794.344  36.142 794.482  37.016 794.814

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .035  11.048     .04  18.102    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.048  18.102            1.809   1.992   2.506             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 340

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  785.27    1.58  785.15    4.51  785.03    9.04  784.42    9.78  784.41
   10.08  784.41   10.79  784.29    11.1  784.23   11.82  784.06      12  784.07
   12.14  784.04   12.38  784.29   14.11     786   14.34  786.22   16.51     788
   18.01  788.17    19.3  788.32   19.72  788.35   20.69  788.32   20.69  788.34
    22.9  789.33   23.24   789.4   24.48     790   26.14  790.63   28.79  791.71
   29.55     792   31.49  792.77   35.43     794   35.74   794.1    35.8  794.13
   36.18  794.27   37.06  794.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.79     .04   18.01    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.79   18.01            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 338.181*

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 785.169   1.587 785.033   2.687 784.973   4.242 784.852   4.529 784.834
   6.622 784.532   8.618 784.181   9.078 784.109   9.821 784.072  10.122 784.061
  10.231 784.041  10.711 783.919  10.835 783.895   11.13  783.83  11.146 783.826
  11.868 783.631  12.048  783.63  12.188 783.595  12.429 783.835  13.649 784.989
  14.169 785.524  14.342 785.697    14.4 785.755  15.025   786.3  16.582 787.537
  16.733  787.56   18.09 787.715  18.748 787.792   19.38 787.876    19.8 787.914
  20.114 787.914  20.473 787.908  20.771 787.902  20.771  787.92  22.981 788.837
  23.321 788.903  24.123 789.261  24.562 789.458  25.977 789.956  26.222 790.042
  28.873 791.045  29.633 791.314  30.026 791.459  30.126 791.496  30.185 791.518
  30.375 791.588  31.574 792.038  34.742 792.983  34.852 793.015  35.515 793.209
  35.825 793.302  35.885  793.33  36.265 793.461  36.647 793.599  37.145 793.777

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.835     .04   18.09    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.835   18.09            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 336.363*

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 785.068   1.593 784.915   2.699 784.841    4.26 784.661   4.548 784.639
    6.65 784.315   8.655 783.881   9.116 783.797   9.862 783.735  10.165 783.712
  10.274  783.69  10.756 783.527  10.881 783.499  11.176 783.427  11.192 783.423
  11.915 783.202  12.096  783.19  12.236 783.149  12.479 783.379  13.705 784.489
  14.228 785.048  14.402 785.229   14.46  785.29  15.089  785.87  16.654 787.073
  16.806 787.103   18.17 787.259  18.828 787.338  19.461 787.432  19.881 787.479
  20.195 787.487  20.554 787.488  20.852 787.484  20.852 787.501  23.063 788.344
  23.403 788.406  24.204 788.735  24.644 788.915   26.06 789.374  26.305 789.454
  28.956 790.379  29.717 790.628  30.109 790.762  30.209 790.796  30.269 790.817
  30.458 790.883  31.658 791.306  34.827 792.206  34.937 792.236    35.6 792.418
   35.91 792.505   35.97 792.531   36.35 792.652  36.732  792.78  37.231 792.945

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.881     .04   18.17    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.881   18.17            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 334.545*

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.967     1.6 784.798    2.71 784.708   4.278 784.471   4.567 784.443
   6.678 784.098   8.691 783.581   9.154 783.486   9.904 783.397  10.207 783.364
  10.317 783.339  10.801 783.135  10.926 783.104  11.222 783.024  11.238 783.019
  11.963 782.773  12.144 782.749  12.285 782.704  12.528 782.924  13.762  783.99
  14.287 784.571  14.462 784.762   14.52 784.825  15.152  785.44  16.726  786.61
```

```
  16.879 786.646   18.25 786.804  18.908 786.884  19.541 786.988  19.961 787.043
  20.275 787.061  20.635 787.067  20.932 787.067  20.932 787.081  23.144 787.851
  23.484 787.909  24.286 788.209  24.726 788.373  26.142 788.792  26.387 788.866
  29.039 789.714    29.8 789.943  30.193 790.065  30.292 790.097  30.352 790.117
  30.542 790.177  31.742 790.574  34.912  791.43  35.022 791.458  35.685 791.626
  35.995 791.708  36.055 791.731  36.436 791.843  36.818 791.961  37.316 792.112

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.926     .04   18.25    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.926   18.25            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 332.727*

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.866   1.607 784.681   2.721 784.576   4.295 784.281   4.586 784.248
   6.706  783.88   8.727 783.281   9.192 783.174   9.945 783.059   10.25 783.015
   10.36 782.987  10.845 782.743  10.972 782.708  11.268 782.621  11.284 782.615
   12.01 782.344  12.192 782.309  12.333 782.258  12.578 782.468  13.818  783.49
  14.345 784.095  14.521 784.294   14.58 784.359  15.216  785.01  16.797 786.146
  16.951 786.189   18.33 786.348  18.989  786.43  19.621 786.544  20.042 786.607
  20.356 786.635  20.715 786.646  21.013 786.649  21.013 786.662  23.226 787.358
  23.566 787.412  24.368 787.683  24.807  787.83  26.224 788.211  26.469 788.278
  29.122 789.048  29.883 789.257  30.276 789.368  30.376 789.397  30.436 789.416
  30.625 789.471  31.825 789.843  34.997 790.654  35.106 790.679   35.77 790.835
   36.08  790.91   36.14 790.931  36.521 791.034  36.903 791.142  37.402 791.279

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.972     .04   18.33    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.972   18.33            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 330.909*

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.765   1.613 784.563   2.732 784.444   4.313 784.091   4.605 784.052
   6.733 783.663   8.763 782.981    9.23 782.863   9.986 782.721  10.292 782.666
  10.402 782.636   10.89 782.351  11.017 782.313  11.314 782.218   11.33 782.212
  12.058 781.914  12.239 781.869  12.381 781.813  12.627 782.013  13.874  782.99
  14.404 783.619  14.581 783.826  14.641 783.894  15.279  784.58  16.869 785.683
  17.024 785.732   18.41 785.893  19.069 785.975  19.702   786.1  20.122 786.172
  20.437 786.208  20.796 786.225  21.094 786.231  21.094 786.242  23.307 786.865
  23.647 786.916   24.45 787.157  24.889 787.288  26.306 787.629  26.552  787.69
  29.205 788.383  29.967 788.571   30.36 788.671  30.459 788.697  30.519 788.715
  30.709 788.765  31.909 789.111  35.081 789.878  35.191 789.901  35.855 790.044
  36.165 790.113  36.225 790.132  36.606 790.225  36.988 790.323  37.487 790.446

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.017     .04   18.41    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.017   18.41            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 329.090*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.665    1.62 784.446   2.744 784.311   4.331 783.901   4.624 783.857
   6.761 783.446   8.799 782.681   9.268 782.552  10.027 782.384  10.335 782.318
  10.445 782.285  10.935  781.96  11.063 781.917   11.36 781.815  11.376 781.808
  12.105 781.485  12.287 781.429  12.429 781.367  12.677 781.557   13.93  782.49
  14.463 783.143  14.641 783.359  14.701 783.429  15.343  784.15  16.941 785.219
  17.097 785.275   18.49 785.437  19.149 785.521  19.782 785.656  20.203 785.736
  20.517 785.782  20.877 785.804  21.175 785.813  23.388 786.372  23.729 786.419
  24.531 786.631  24.971 786.745  26.389 787.048  26.634 787.102  29.289 787.717
   30.05 787.885  30.443 787.974  30.543 787.998  30.603 788.014  30.792 788.059
  31.993 788.379  35.166 789.101  35.276 789.122   35.94 789.253   36.25 789.315
  36.311 789.332  36.691 789.416  37.073 789.504  37.573 789.614

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.063     .04   18.49    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.063   18.49            1.475   1.825   2.303             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo El Moro
REACH: Afluente          RS: 327.272*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.564   1.627 784.328   2.755 784.179   4.349 783.711   4.643 783.661
   6.789 783.229   8.835 782.381   9.307  782.24  10.068 782.046  10.377 781.969
  10.488 781.934   10.98 781.568  11.108 781.522  11.406 781.412  11.423 781.404
  12.153 781.056  12.335 780.988  12.477 780.922  12.726 781.102  13.986  781.99
  14.522 782.666  14.701 782.891  14.761 782.964  15.406  783.72  17.013 784.756
  17.169 784.818   18.57 784.982  19.229 785.067  19.863 785.211  20.283 785.301
  20.598 785.356  20.957 785.383  21.255 785.396   23.47 785.878   23.81 785.922
  24.613 786.105  25.053 786.203  26.471 786.466  26.716 786.513  29.372 787.052
  30.133 787.199  30.526 787.278  30.626 787.298  30.686 787.313  30.876 787.353
  32.077 787.647  35.251 788.325  35.361 788.344  36.025 788.461  36.336 788.518
  36.396 788.532  36.776 788.607  37.159 788.685  37.658 788.781

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.108     .04   18.57    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.108   18.57            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 325.454*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.463   1.633 784.211   2.766 784.047   4.367 783.521   4.662 783.466
   6.817 783.012   8.872  782.08   9.345 781.929   10.11 781.708   10.42  781.62
  10.531 781.583  11.025 781.176  11.154 781.126  11.452 781.009  11.469 781.001
    12.2 780.627  12.383 780.548  12.525 780.476  12.776 780.647  14.042  781.49
  14.581  782.19  14.761 782.423  14.821 782.499   15.47  783.29  17.085 784.293
  17.242 784.361   18.65 784.526  19.309 784.613  19.943 784.767  20.364 784.865
  20.678 784.929  21.038 784.963  21.336 784.978  23.551 785.385  23.892 785.425
  24.695 785.578  25.135  785.66  26.553 785.885  26.799 785.925  29.455 786.387
  30.216 786.513   30.61 786.581   30.71 786.599   30.77 786.612  30.959 786.648
  32.161 786.915  35.336 787.549  35.446 787.565   36.11  787.67  36.421  787.72
  36.481 787.733  36.862 787.799  37.244 787.867  37.744 787.948

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.154     .04   18.65    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.154   18.65            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 323.636*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.362    1.64 784.094   2.777 783.915   4.384  783.33   4.681  783.27
   6.844 782.794   8.908  781.78   9.383 781.617  10.151 781.371  10.462 781.271
  10.574 781.232   11.07 780.784  11.199 780.731  11.498 780.606  11.515 780.597
  12.248 780.198  12.431 780.108  12.574 780.031  12.825 780.191  14.098  780.99
   14.64 781.714   14.82 781.955  14.881 782.034  15.533  782.86  17.157 783.829
  17.315 783.904   18.73 784.071   19.39 784.158  20.023 784.323  20.444 784.429
  20.759 784.503  21.119 784.542  21.417  784.56  23.633 784.892  23.973 784.928
  24.777 785.052  25.217 785.118  26.635 785.303  26.881 785.337  29.538 785.721
    30.3 785.828  30.693 785.884  30.793 785.899  30.853 785.912  31.043 785.942
  32.245 786.183   35.42 786.773   35.53 786.787  36.195 786.879  36.506 786.923
  36.566 786.933  36.947  786.99  37.329 787.048  37.829 787.115

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.199     .04   18.73    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.199   18.73            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 321.818*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 784.261   1.647 783.976   2.789 783.782   4.402  783.14     4.7 783.074
   6.872 782.577   8.944  781.48   9.421 781.306  10.192 781.033  10.505 780.922
  10.617 780.881  11.115 780.392  11.245 780.335  11.544 780.203  11.561 780.193
  12.295 779.769  12.479 779.668  12.622 779.585  12.875 779.736  14.154  780.49
  14.699 781.238   14.88 781.488  14.941 781.568  15.597  782.43  17.229 783.366
  17.387 783.447   18.81 783.615   19.47 783.704  20.104 783.879  20.525 783.994
  20.839 784.076  21.199 784.121  21.498 784.142  23.714 784.399  24.055 784.431
  24.858 784.526  25.299 784.576  26.718 784.722  26.963 784.749  29.621 785.056
```

```
  30.383 785.142  30.777 785.187  30.877   785.2  30.937 785.211  31.126 785.236
  32.329 785.451  35.505 785.996  35.615 786.008   36.28 786.088  36.591 786.125
  36.651 786.133  37.032 786.181  37.415 786.229  37.915 786.283

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.245     .04   18.81    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.245   18.81            1.475   1.825   2.303             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 320

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  784.16     2.8  783.65    4.42  782.95     6.9  782.36    8.98  781.18
   10.66  780.53   11.16     780   11.29  779.94   11.59   779.8   12.67  779.14
   14.21  779.99   14.22     780   14.94  781.02   15.66     782   17.46  782.99
   18.89  783.16   19.55  783.25   20.92  783.65   21.28   783.7   24.94     784
    26.8  784.14   30.86  784.49   30.96   784.5   31.02  784.51   31.21  784.53
   35.59  785.22    35.7  785.23    37.5  785.41      38  785.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.29     .04   18.89    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.29   18.89            2.177   1.983    1.61             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 318.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 783.784   2.804 783.308   4.426 782.668   5.648   782.4   6.063 782.305
   6.566 782.197    6.91 782.117   8.993 781.014   9.647 780.773  10.675 780.357
  11.176 779.848  11.306 779.786  11.628 779.627  11.699 779.583  12.292 779.223
  12.785 778.914  13.261   779.2  14.164 779.723  14.298   779.8  15.016 780.776
  15.723 781.706  16.721 782.277  17.125 782.506  17.492 782.696  18.897  782.87
  19.554 782.962  20.918 783.345  21.276 783.396   24.92 783.727  24.995 783.733
  26.771 783.877  27.664 783.958  30.405 784.209  30.813 784.249  30.913  784.26
  30.972  784.27  31.162 784.292   32.49 784.507  35.522 785.001  35.631 785.013
  35.701  785.02  37.423 785.201  37.817 785.235  37.921 785.244

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.306     .04   18.897    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.306  18.897            2.177   1.983    1.61             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 316.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 783.408   2.808 782.966   4.433 782.387   5.656  782.14   6.071 782.049
   6.576 781.953    6.92 781.874   9.005 780.848   9.661  780.62   10.69 780.183
  11.192 779.696  11.322 779.632  11.665 779.455  11.741 779.407  12.374 779.025
    12.9 778.688  13.367 778.994  14.255 779.532  14.387  779.61  15.091 780.532
  15.786 781.412  16.766 781.995  17.164 782.228  17.524 782.403  18.904  782.58
  19.558 782.674  20.916  783.04  21.272 783.092    24.9 783.453  24.975 783.461
  26.743 783.613  27.631 783.698   30.36 783.964  30.766 784.008  30.865  784.02
  30.925  784.03  31.113 784.054  32.436 784.274  35.454 784.783  35.563 784.795
  35.632 784.804  37.347 784.992  37.738 785.029  37.842 785.038

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.322     .04  18.904    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.322  18.904            2.177   1.983    1.61             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 314.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 783.032   2.812 782.624   4.439 782.105   5.664  781.88    6.08 781.793
   6.585 781.709   6.929 781.632   9.018 780.682   9.674 780.466  10.705  780.01
  11.207 779.544  11.338 779.478  11.703 779.282  11.784 779.231  12.456 778.827
  13.015 778.462  13.474 778.787  14.346  779.34  14.475  779.42  15.167 780.288
```

```
  15.849 781.118  16.812 781.713  17.202 781.949  17.555 782.109  18.911  782.29
  19.562 782.386  20.914 782.734  21.269 782.787  24.879  783.18  24.954 783.188
  26.714  783.35  27.598 783.438  30.315 783.718  30.719 783.767  30.818  783.78
  30.877  783.79  31.065 783.816  32.381 784.041  35.386 784.564  35.494 784.578
  35.563 784.587   37.27 784.784   37.66 784.823  37.763 784.832

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.338     .04  18.911    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.338  18.911            2.177   1.983    1.61             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 312.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 782.656   2.816 782.282   4.445 781.823   5.672  781.62   6.089 781.537
   6.594 781.465   6.939 781.389   9.031 780.516   9.688 780.312   10.72 779.836
  11.223 779.393  11.354 779.324   11.74 779.109  11.826 779.055  12.538 778.629
   13.13 778.236   13.58  778.58  14.436 779.149  14.563  779.23  15.242 780.044
  15.912 780.824  16.857 781.431   17.24 781.671  17.587 781.815  18.918     782
  19.566 782.098  20.911 782.429  21.265 782.483  24.859 782.907  24.933 782.915
  26.686 783.087  27.566 783.178   30.27 783.473  30.673 783.526  30.771  783.54
   30.83 783.551  31.016 783.578  32.327 783.808  35.317 784.345  35.425  784.36
  35.494  784.37  37.193 784.575  37.581 784.617  37.684 784.626

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.354     .04  18.918    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.354  18.918            2.177   1.983    1.61             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 310.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  782.28    2.82 781.941   4.451 781.542    5.68  781.36   6.097 781.281
   6.604 781.221   6.949 781.146   9.044  780.35   9.702 780.159  10.736 779.663
  11.239 779.241   11.37  779.17  11.778 778.936  11.868  778.88   12.62 778.431
  13.245  778.01  13.687 778.374  14.527 778.957  14.651 779.041  15.318   779.8
  15.975  780.53  16.903 781.149  17.278 781.392  17.619 781.522  18.925  781.71
   19.57  781.81  20.909 782.124  21.261 782.179  24.839 782.634  24.913 782.643
  26.657 782.823  27.533 782.919  30.225 783.227  30.626 783.285  30.723   783.3
  30.782 783.311  30.968 783.339  32.272 783.575  35.249 784.127  35.357 784.143
  35.425 784.153  37.116 784.366  37.503 784.411  37.605  784.42

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.37     .04  18.925    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.37  18.925            2.177   1.983    1.61             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 308.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 781.904   2.824 781.599   4.458  781.26   5.688   781.1   6.106 781.024
   6.613 780.977   6.959 780.903   9.056 780.184   9.715 780.005  10.751 779.489
  11.255 779.089  11.386 779.016  11.815 778.764  11.911 778.704  12.702 778.232
   13.36 777.784  13.794 778.167  14.617 778.766   14.74 778.851  15.394 779.556
  16.039 780.237  16.948 780.867  17.317 781.114  17.651 781.228  18.932  781.42
  19.574 781.522  20.907 781.819  21.257 781.875  24.819  782.36  24.892  782.37
  26.628  782.56  27.501 782.659   30.18 782.982  30.579 783.044  30.676  783.06
  30.734 783.071  30.919 783.101  32.218 783.342  35.181 783.908  35.288 783.925
  35.356 783.937   37.04 784.157  37.424 784.205  37.526 784.214

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.386     .04  18.932    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.386  18.932            2.177   1.983    1.61             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 306.*

INPUT
Description:
Station Elevation Data    num=      44
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 781.528   2.828 781.257   4.464 780.979   5.696  780.84   6.114 780.768
   6.622 780.732   6.968  780.66   9.069 780.018   9.729 779.851  10.766 779.316
  11.271 778.937  11.402 778.862  11.853 778.591  11.953 778.528  12.784 778.034
  13.475 777.558    13.9  777.96  14.708 778.574  14.828 778.661  15.469 779.312
  16.102 779.943  16.994 780.586  17.355 780.835  17.683 780.935  18.939  781.13
  19.578 781.234  20.905 781.514  21.254 781.571  24.798 782.087  24.872 782.098
    26.6 782.296  27.468 782.399  30.135 782.736  30.532 782.803  30.629  782.82
  30.687 782.831  30.871 782.863  32.163 783.109  35.113 783.689  35.219 783.708
  35.287  783.72  36.963 783.949  37.346 783.998  37.447 784.008

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.402     .04  18.939    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.402  18.939            2.177   1.983    1.61             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 304.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 781.152   2.832 780.915    4.47 780.697   5.704  780.58   6.123 780.512
   6.631 780.488   6.978 780.418   9.082 779.852   9.743 779.697  10.781 779.142
  11.287 778.785  11.418 778.708   11.89 778.418  11.995 778.352  12.866 777.836
   13.59 777.332  14.007 777.753  14.799 778.383  14.916 778.471  15.545 779.068
  16.165 779.649  17.039 780.304  17.393 780.557  17.715 780.641  18.946  780.84
  19.582 780.946  20.903 781.208   21.25 781.266  24.778 781.814  24.851 781.825
  26.571 782.033  27.435 782.139   30.09 782.491  30.485 782.562  30.581  782.58
  30.639 782.591  30.822 782.625  32.109 782.876  35.045 783.471  35.151 783.491
  35.218 783.503  36.886  783.74  37.267 783.792  37.368 783.802

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.418     .04  18.946    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.418  18.946            2.177   1.983    1.61             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 302.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 780.776   2.836 780.573   4.476 780.415   5.712  780.32   6.131 780.256
   6.641 780.244   6.988 780.175   9.095 779.686   9.756 779.544  10.796 778.969
  11.302 778.633  11.434 778.554  11.928 778.246  12.038 778.176  12.948 777.638
  13.705 777.106  14.113 777.547  14.889 778.191  15.004 778.281   15.62 778.823
  16.228 779.355  17.085 780.022  17.432 780.279  17.746 780.347  18.953  780.55
  19.586 780.658  20.901 780.903  21.246 780.962  24.758 781.541  24.831 781.553
  26.543  781.77  27.403  781.88  30.045 782.245  30.438 782.321  30.534  782.34
  30.592 782.351  30.774 782.387  32.054 782.643  34.977 783.252  35.082 783.273
  35.149 783.287  36.809 783.531  37.189 783.586  37.289 783.596

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.434     .04  18.953    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.434  18.953            2.177   1.983    1.61             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 300

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   780.4    5.72  780.06    6.14     780    6.65     780    9.77  779.39
   10.82  778.79   11.45   778.4   12.08     778   13.03  777.44   13.82  776.88
   14.22  777.34   14.98     778   17.13  779.74   17.47     780   18.96  780.26
   24.81  781.28   27.37  781.62      30     782      32  782.41   35.08  783.07
   37.11  783.38   37.21  783.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.45     .04   18.96    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.45   18.96            2.118   1.991   1.821             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 298.*

INPUT
Description:
```

```
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 780.237   1.789 780.133   5.703 779.864   6.121 779.804   6.397   779.8
   6.417 779.799    6.63 779.788   6.664  779.78    9.74 779.071   9.986 778.931
  10.119 778.855  10.263 778.769  10.787 778.459  11.415  778.06  12.044 777.651
  12.705 777.249  12.992 777.067  13.517  776.68  13.781 776.485  14.172 776.932
  14.372 777.108  14.915  777.59  15.037 777.691  15.213 777.865  15.955 778.574
  17.018 779.394   17.35 779.637  18.807  779.91  19.139 779.973  19.927 780.123
   20.85 780.285  21.827  780.45  24.733 780.949  24.937 780.976  27.327 781.291
  27.536 781.321  28.728 781.507  29.991 781.684  30.816 781.844   31.47  781.98
  32.017 782.089  32.698 782.231  33.863 782.461  35.137 782.718  35.422  782.76
    36.3 782.884  37.134 782.998  37.194 783.006  37.295 783.016

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.415     .04  18.807    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.415  18.807            2.118   1.991   1.821             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 296.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 780.074   1.784 779.973   5.685 779.669   6.102 779.608   6.377   779.6
   6.397 779.598   6.609 779.576   6.643 779.567    9.71 778.752   9.955 778.613
  10.088 778.538  10.232 778.448  10.754 778.128   11.38  777.72  12.008 777.302
  12.667 776.888  12.955 776.695  13.478 776.292  13.742  776.09  14.124 776.524
  14.319   776.7  14.851 777.179   14.97 777.281  15.142 777.483  15.866 778.288
  16.905 779.049   17.23 779.274  18.654  779.56   18.99  779.63  19.789 779.792
  20.724 779.957  21.713  780.12  24.657 780.617  24.863 780.645  27.283 780.962
  27.495 780.992  28.702 781.194  29.982 781.368  30.817 781.521   31.48 781.661
  32.034 781.769  32.723 781.907  33.903 782.122  35.194 782.366  35.483 782.406
  36.372 782.522  37.217 782.625  37.277 782.633   37.38 782.642

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.38     .04  18.654    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.38  18.654            2.118   1.991   1.821             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 294.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 779.911   1.778 779.812   5.668 779.473   6.084 779.412   6.357   779.4
   6.378 779.397   6.589 779.363   6.623 779.353    9.68 778.434   9.924 778.296
  10.057 778.221    10.2 778.127  10.721 777.797  11.345  777.38  11.972 776.954
   12.63 776.527  12.917 776.322   13.44 775.904  13.703 775.695  14.076 776.116
  14.267 776.291  14.786 776.769  14.903 776.871   15.07 777.102  15.778 778.002
  16.793 778.703   17.11 778.912  18.501  779.21  18.841 779.286   19.65 779.462
  20.597  779.63  21.599  779.79   24.58 780.286  24.789 780.315   27.24 780.633
  27.454 780.663  28.677 780.881  29.973 781.052  30.819 781.199   31.49 781.342
  32.051 781.448  32.749 781.584  33.944 781.783  35.252 782.014  35.544 782.053
  36.445 782.161    37.3 782.252  37.361 782.259  37.465 782.268

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.345     .04  18.501    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.345  18.501            2.118   1.991   1.821             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 292.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 779.748   1.773 779.652    5.65 779.278   6.065 779.216   6.338   779.2
   6.358 779.196   6.569 779.151   6.603  779.14   9.651 778.115   9.894 777.978
  10.026 777.904  10.169 777.806  10.688 777.466   11.31  777.04  11.936 776.605
  12.593 776.166  12.879 775.949  13.401 775.516  13.664   775.3  14.029 775.708
  14.214 775.882  14.721 776.358  14.835 776.461  14.999  776.72   15.69 777.716
   16.68 778.357   16.99 778.549  18.348  778.86  18.692 778.942  19.511 779.132
   20.47 779.303  21.485  779.46  24.503 779.954  24.715 779.984  27.197 780.304
  27.414 780.334  28.652 780.568  29.964 780.737   30.82 780.876    31.5 781.024
  32.068 781.127  32.775  781.26  33.985 781.444  35.309 781.662  35.605   781.7
  36.517 781.799  37.382 781.879  37.445 781.885   37.55 781.894

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.31     .04  18.348    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.31  18.348            2.118   1.991   1.821             .1      .3
```

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 290.*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	779.585	1.767	779.492	5.633	779.082	6.046	779.021	6.318	779
6.338	778.995	6.548	778.939	6.582	778.927	9.621	777.796	9.863	777.66
9.995	777.586	10.137	777.485	10.655	777.135	11.275	776.7	11.9	776.256
12.556	775.805	12.842	775.577	13.363	775.129	13.625	774.905	13.981	775.301
14.162	775.474	14.656	775.948	14.767	776.051	14.927	776.338	15.602	777.43
16.568	778.012	16.87	778.186	18.195	778.51	18.544	778.599	19.373	778.801
20.343	778.976	21.371	779.13	24.426	779.623	24.64	779.653	27.153	779.976
27.373	780.005	28.626	780.255	29.955	780.421	30.822	780.553	31.51	780.705
32.085	780.807	32.801	780.937	34.026	781.105	35.366	781.309	35.666	781.346
36.589	781.438	37.465	781.505	37.528	781.512	37.635	781.52		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.275	.04	18.195	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11.275	18.195	2.118	1.991	1.821	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 288.*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	779.422	1.762	779.331	5.615	778.886	6.027	778.825	6.298	778.8
6.319	778.794	6.528	778.727	6.562	778.713	9.591	777.477	9.832	777.342
9.964	777.269	10.106	777.164	10.622	776.804	11.24	776.36	11.864	775.907
12.519	775.444	12.804	775.204	13.324	774.741	13.586	774.51	13.933	774.893
14.11	775.065	14.592	775.537	14.7	775.64	14.856	775.957	15.513	777.144
16.456	777.666	16.75	777.823	18.042	778.16	18.395	778.255	19.234	778.471
20.217	778.649	21.256	778.8	24.35	779.292	24.566	779.323	27.11	779.647
27.333	779.676	28.601	779.942	29.946	780.105	30.824	780.231	31.52	780.386
32.102	780.486	32.827	780.614	34.067	780.766	35.423	780.957	35.726	780.993
36.661	781.076	37.548	781.132	37.612	781.138	37.72	781.146		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.24	.04	18.042	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11.24	18.042	2.118	1.991	1.821	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 286.*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	779.259	1.756	779.171	5.598	778.691	6.009	778.629	6.279	778.6
6.299	778.593	6.508	778.515	6.541	778.5	9.561	777.159	9.802	777.024
9.933	776.952	10.074	776.843	10.588	776.473	11.205	776.02	11.828	775.559
12.482	775.083	12.766	774.831	13.286	774.353	13.547	774.115	13.885	774.485
14.057	774.656	14.527	775.127	14.632	775.23	14.784	775.575	15.425	776.858
16.343	777.32	16.63	777.46	17.889	777.81	18.246	777.911	19.096	778.141
20.09	778.322	21.142	778.47	24.273	778.96	24.492	778.992	27.067	779.318
27.292	779.347	28.576	779.629	29.937	779.789	30.825	779.908	31.53	780.067
32.119	780.166	32.853	780.29	34.108	780.427	35.481	780.605	35.787	780.64
36.733	780.715	37.631	780.759	37.696	780.765	37.805	780.772		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.205	.04	17.889	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11.205	17.889	2.118	1.991	1.821	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 284.*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	779.096	1.751	779.011	5.58	778.495	5.99	778.433	6.259	778.4
6.279	778.392	6.487	778.302	6.521	778.287	9.531	776.84	9.771	776.706
9.902	776.635	10.043	776.522	10.555	776.142	11.17	775.68	11.791	775.21
12.444	774.722	12.729	774.458	13.247	773.966	13.508	773.72	13.837	774.077
14.005	774.247	14.462	774.716	14.565	774.82	14.713	775.193	15.337	776.572
16.231	776.975	16.51	777.097	17.736	777.46	18.097	777.567	18.957	777.811
19.963	777.994	21.028	778.14	24.196	778.629	24.418	778.661	27.023	778.989
27.251	779.018	28.551	779.316	29.928	779.473	30.827	779.585	31.54	779.748

```
  32.136 779.845  32.878 779.967  34.148 780.088  35.538 780.253  35.848 780.287
  36.806 780.353  37.714 780.386   37.78 780.391   37.89 780.398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.17     .04  17.736    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.17  17.736            2.118   1.991   1.821             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 282.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 778.933   1.745  778.85   5.563   778.3   5.971 778.237    6.24   778.2
    6.26 778.191   6.467  778.09     6.5 778.073   9.501 776.521   9.741 776.388
   9.871 776.317  10.011 776.201  10.522 775.811  11.135  775.34  11.755 774.861
  12.407 774.361  12.691 774.086  13.209 773.578  13.469 773.325  13.789 773.669
  13.952 773.839  14.397 774.306  14.498  774.41  14.641 774.812  15.248 776.286
  16.118 776.629   16.39 776.735  17.583  777.11  17.949 777.224  18.819  777.48
  19.837 777.667  20.914  777.81   24.12 778.297  24.344 778.331   26.98  778.66
  27.211 778.689  28.525 779.003  29.919 779.157  30.828 779.263   31.55 779.429
  32.154 779.524  32.904 779.643  34.189 779.749  35.595 779.901  35.909 779.933
  36.878 779.992  37.797 780.013  37.863 780.017  37.975 780.024

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.135     .04  17.583    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.135  17.583            2.118   1.991   1.821             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 280

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  778.77    1.74  778.69    6.22     778    6.24  777.99    6.48  777.86
    9.71  776.07    9.84     776    9.98  775.88    11.1     775   12.37     774
   13.17  773.19   13.43  772.93    13.9  773.43   14.43     774   14.57  774.43
   15.16     776   17.43  776.76    17.8  776.88   18.68  777.15   19.71  777.34
    20.8  777.48   24.27     778   27.17  778.36    28.5  778.69   30.83  778.94
   31.56  779.11   32.93  779.32   34.23  779.41   35.97  779.58   36.95  779.63
   37.88  779.64   38.06  779.65

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    11.1     .04  17.43    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.1   17.43            2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   11.89               F
   14.46   38.06               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 278.181*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 778.571   1.784 778.375   1.808  778.37   3.062 778.175   5.609 777.805
   6.292 777.751   6.376 777.738   6.396 777.729   6.642 777.606   6.886 777.482
   7.497 777.115   7.666 777.006   7.786 776.951   8.493 776.619   9.953 775.897
  10.004 775.873  10.087 775.833  10.181 775.761   10.23 775.724  11.378  774.92
  11.384 774.906  11.388 774.727  11.407 774.715   12.59 773.805  12.701 773.719
  13.502 772.933  13.516 772.917  13.688 772.727   13.73  772.69  13.781 772.639
  14.247 773.114  14.349 773.219  14.773 773.669  14.911  774.07  15.496 775.543
  15.628 775.593  16.622 775.982  17.387 776.267  17.747 776.395   17.97  776.47
  18.106 776.516  18.958 776.785  19.023 776.798   19.72 776.925  19.955 776.975
  21.011 777.147  21.025 777.149  21.515 777.234  23.354 777.517  23.621 777.559
  24.371 777.675  25.386 777.807   27.18 778.039  28.468 778.355  30.607 778.597
  30.724 778.611  31.431 778.775  31.942 778.856  32.758 778.985  34.017 779.084
  35.131 779.202  35.702 779.264  36.651 779.324  37.552 779.347  37.726 779.359

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.407     .04  17.747    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.407  17.747            2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       012.23636               F
14.84545  37.726               F

CROSS SECTION
```

```
RIVER: Arroyo El Moro
REACH: Afluente          RS: 276.363*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 778.372   1.827 778.061   1.852 778.054   3.136 777.853   5.746 777.494
   6.446  777.49   6.532 777.477   6.553 777.468   6.805 777.353   7.055 777.236
    7.68 776.831   7.853 776.706   7.977 776.661   8.701 776.379  10.197 775.725
  10.249 775.703  10.333 775.666   10.43 775.601   10.48 775.567  11.656  774.84
  11.667 774.813  11.676 774.455  11.715 774.431  12.919 773.525  13.032 773.437
  13.848 772.661  13.862 772.644  14.037 772.432   14.08   772.4  14.132 772.348
  14.594 772.798  14.695 772.897  15.115 773.338  15.253 773.711  15.833 775.085
  15.963 775.142  16.949 775.584  17.707 775.895  18.065 776.029   18.28 776.106
  18.411 776.151  19.236 776.419  19.299 776.433  19.973 776.554  20.201 776.611
  21.222 776.813  21.236 776.816  21.709 776.911  23.488 777.191  23.747 777.234
  24.473  777.35  25.454 777.485   27.19 777.718  28.436  778.02  30.505 778.268
  30.619 778.282  31.303 778.441  31.797 778.522  32.586  778.65  33.804 778.759
  34.882 778.882  35.435 778.947  36.353 779.018  37.224 779.055  37.393 779.068

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.715     .04  18.065    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.715  18.065           2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       012.58273               F
15.23091  37.393               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 274.545*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 778.173   1.871 777.746   1.896 777.738   3.211  777.53   5.883 777.184
   6.599 777.229   6.688 777.215   6.709 777.207   6.967 777.099   7.223  776.99
   7.864 776.548   8.041 776.405   8.167 776.371   8.909 776.139   10.44 775.552
  10.493 775.532   10.58   775.5  10.679 775.441   10.73  775.41  11.935  774.76
  11.951 774.719  11.965 774.182  12.022 774.146  13.248 773.244  13.363 773.156
  14.194  772.39  14.208 772.371  14.386 772.137   14.43  772.11  14.483 772.057
  14.941 772.481  15.041 772.575  15.458 773.007  15.594 773.351  16.169 774.628
  16.298  774.69  17.275 775.185  18.027 775.523  18.382 775.664   18.59 775.742
  18.717 775.787  19.514 776.054  19.574 776.068  20.226 776.184  20.446 776.246
  21.433  776.48  21.446 776.483  21.904 776.588  23.623 776.865  23.873 776.909
  24.574 777.025  25.523 777.162    27.2 777.397  28.404 777.685  30.403 777.938
  30.513 777.952  31.174 778.106  31.651 778.187  32.415 778.315  33.592 778.433
  34.633 778.562  35.167 778.631  36.054 778.712  36.896 778.762  37.059 778.777

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.022     .04  18.382    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.022  18.382           2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       012.92909               F
15.61636  37.059               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 272.727*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 777.974   1.914 777.431   1.941 777.422   3.286 777.208    6.02 776.873
   6.753 776.968   6.844 776.954   6.866 776.946    7.13 776.845   7.391 776.743
   8.047 776.264   8.228 776.104   8.357 776.081   9.116   775.9  10.683  775.38
  10.738 775.362  10.826 775.333  10.928 775.281   10.98 775.254  12.213  774.68
  12.235 774.625  12.253 773.909  12.329 773.862  13.577 772.964  13.694 772.875
   14.54 772.119  14.554 772.098  14.736 771.843   14.78  771.82  14.834 771.766
  15.288 772.165  15.387 772.253    15.8 772.676  15.935 772.992  16.505 774.171
  16.633 774.239  17.602 774.787  18.348 775.152  18.699 775.298    18.9 775.378
  19.022 775.422  19.791 775.688   19.85 775.703  20.479 775.813  20.691 775.881
  21.644 776.147  21.657  776.15  22.098 776.264  23.758  776.54  23.999 776.584
  24.676   776.7  25.591 776.839   27.21 777.075  28.372  777.35  30.302 777.608
  30.408 777.623  31.046 777.772  31.506 777.852  32.243  777.98  33.379 778.108
  34.383 778.242  34.899 778.314  35.756 778.406  36.568 778.469  36.725 778.486

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.329     .04  18.699    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.329  18.699           2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       013.27545               F
16.00182  36.725               F
```

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 270.909*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	777.775	1.958	777.117	1.985	777.106	3.361	776.885	6.157	776.563
6.907	776.707	6.999	776.692	7.022	776.685	7.292	776.591	7.56	776.497
8.23	775.981	8.415	775.804	8.548	775.791	9.324	775.66	10.927	775.207
10.982	775.192	11.073	775.166	11.177	775.121	11.231	775.097	12.491	774.6
12.518	774.532	12.541	773.636	12.636	773.577	13.906	772.683	14.025	772.593
14.885	771.848	14.9	771.825	15.085	771.548	15.13	771.53	15.185	771.475
15.635	771.849	15.733	771.931	16.142	772.344	16.277	772.632	16.842	773.713
16.969	773.788	17.929	774.389	18.668	774.78	19.016	774.933	19.21	775.014
19.328	775.058	20.069	775.323	20.126	775.339	20.732	775.443	20.937	775.516
21.855	775.813	21.867	775.818	22.293	775.941	23.892	776.214	24.125	776.259
24.777	776.375	25.66	776.516	27.22	776.754	28.34	777.015	30.2	777.278
30.302	777.294	30.917	777.437	31.361	777.518	32.071	777.645	33.166	777.782
34.134	777.921	34.632	777.998	35.457	778.1	36.24	778.176	36.392	778.195

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.636	.04	19.016	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
12.636 19.016 2.455 1.835 .989 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	13.62182		F
16.38727	36.392		F

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 269.090*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	777.576	2.002	776.802	2.029	776.79	3.436	776.563	6.294	776.252
7.061	776.446	7.155	776.431	7.178	776.424	7.454	776.338	7.728	776.251
8.414	775.697	8.603	775.503	8.738	775.501	9.532	775.42	11.17	775.035
11.227	775.021	11.32	774.999	11.425	774.961	11.481	774.941	12.769	774.52
12.802	774.438	12.829	773.364	12.944	773.293	14.235	772.403	14.356	772.312
15.231	771.576	15.246	771.552	15.434	771.253	15.48	771.24	15.535	771.185
15.982	771.533	16.08	771.609	16.485	772.013	16.618	772.273	17.178	773.256
17.304	773.336	18.256	773.991	18.988	774.408	19.334	774.567	19.52	774.65
19.634	774.693	20.347	774.957	20.401	774.974	20.985	775.072	21.182	775.152
22.066	775.48	22.078	775.485	22.487	775.617	24.027	775.888	24.25	775.934
24.879	776.05	25.728	776.194	27.23	776.433	28.308	776.68	30.098	776.949
30.197	776.965	30.789	777.103	31.216	777.183	31.899	777.31	32.953	777.457
33.885	777.601	34.364	777.681	35.158	777.794	35.912	777.884	36.058	777.905

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.944	.04	19.334	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
12.944 19.334 2.455 1.835 .989 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	13.96818		F
16.77273	36.058		F

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 267.272*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	777.376	2.045	776.487	2.073	776.474	3.511	776.24	6.431	775.942
7.215	776.185	7.311	776.169	7.335	776.163	7.617	776.084	7.897	776.005
8.597	775.414	8.79	775.202	8.929	775.211	9.739	775.18	11.413	774.862
11.472	774.851	11.566	774.832	11.674	774.8	11.731	774.784	13.047	774.44
13.085	774.345	13.117	773.091	13.251	773.008	14.564	772.122	14.687	772.03
15.577	771.305	15.592	771.279	15.783	770.959	15.83	770.95	15.886	770.894
16.329	771.216	16.426	771.288	16.827	771.682	16.959	771.913	17.515	772.799
17.639	772.885	18.583	773.593	19.309	774.037	19.651	774.202	19.83	774.286
19.939	774.329	20.625	774.592	20.677	774.609	21.238	774.702	21.427	774.787
22.277	775.147	22.288	775.152	22.682	775.294	24.162	775.563	24.376	775.61
24.98	775.725	25.796	775.871	27.24	776.112	28.276	776.345	29.997	776.619
30.091	776.635	30.66	776.768	31.071	776.848	31.728	776.975	32.74	777.131
33.636	777.281	34.096	777.365	34.86	777.488	35.584	777.591	35.725	777.614

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	13.251	.04	19.651	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
13.251 19.651 2.455 1.835 .989 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent

```
       014.31455               F
17.15818  35.725               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 265.454*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 777.177   2.089 776.173   2.117 776.158   3.585 775.918   6.569 775.631
   7.369 775.923   7.467 775.908   7.491 775.902   7.779  775.83   8.065 775.759
    8.78  775.13   8.978 774.902   9.119  774.92   9.947  774.94  11.657 774.689
  11.716 774.681  11.813 774.666  11.923  774.64  11.981 774.628  13.325  774.36
  13.369 774.251  13.405 772.818  13.558 772.724  14.893 771.842  15.018 771.749
  15.923 771.034  15.938 771.006  16.132 770.664   16.18  770.66  16.237 770.603
  16.676   770.9  16.772 770.966   17.17 771.351  17.301 771.554  17.851 772.341
  17.974 772.434   18.91 773.195  19.629 773.665  19.968 773.836   20.14 773.922
  20.245 773.965  20.903 774.227  20.953 774.244  21.491 774.331  21.673 774.422
  22.488 774.813  22.499 774.819  22.876  774.97  24.296 775.237  24.502 775.285
  25.082   775.4  25.865 775.548   27.25 775.791  28.244  776.01  29.895 776.289
  29.986 776.306  30.532 776.433  30.926 776.514  31.556  776.64  32.528 776.806
  33.387 776.961  33.828 777.048  34.561 777.182  35.256 777.298  35.391 777.323

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.558     .04  19.968    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.558  19.968            2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       014.66091               F
17.54364  35.391               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 263.636*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 776.978   2.132 775.858   2.162 775.842    3.66 775.595   6.706 775.321
   7.522 775.662   7.623 775.646   7.647 775.641   7.942 775.577   8.233 775.512
   8.963 774.847   9.165 774.601   9.309  774.63  10.155   774.7    11.9 774.517
  11.961 774.511  12.059 774.499  12.172  774.48  12.231 774.471  13.604  774.28
  13.653 774.157  13.694 772.545  13.865 772.439  15.222 771.561   15.35 771.468
  16.268 770.763  16.284 770.733  16.482 770.369   16.53  770.37  16.588 770.312
  17.023 770.584  17.118 770.644  17.513  771.02  17.642 771.194  18.187 771.884
   18.31 771.983  19.236 772.796  19.949 773.293  20.285 773.471   20.45 773.558
   20.55   773.6  21.181 773.861  21.229  773.88  21.744 773.961  21.918 774.058
  22.698  774.48  22.709 774.486  23.071 774.647  24.431 774.911  24.628  774.96
  25.183 775.075  25.933 775.225   27.26  775.47  28.212 775.675  29.793 775.959
   29.88 775.977  30.403 776.099   30.78 776.179  31.384 776.305  32.315  776.48
  33.138  776.64  33.561 776.732  34.262 776.876  34.928 777.005  35.057 777.032

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.865     .04  20.285    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.865  20.285            2.455   1.835    .989             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       015.00727               F
17.92909  35.057               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 261.818*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 776.779   2.176 775.543   2.206 775.526   3.735 775.273   6.843  775.01
   7.676 775.401   7.779 775.385   7.804  775.38   8.104 775.323   8.402 775.266
   9.147 774.563   9.353 774.301     9.5  774.34  10.362  774.46  12.143 774.344
  12.205  774.34  12.306 774.332  12.421  774.32  12.481 774.315  13.882   774.2
  13.936 774.064  13.982 772.273  14.173 772.155  15.551 771.281  15.681 771.186
  16.614 770.491   16.63  770.46  16.831 770.075   16.88  770.08  16.939 770.021
   17.37 770.268  17.464 770.322  17.855 770.689  17.983 770.835  18.524 771.427
  18.645 771.531  19.563 772.398   20.27 772.922  20.603 773.105   20.76 773.194
  20.856 773.236  21.458 773.496  21.504 773.515  21.997  773.59  22.163 773.693
  22.909 774.147   22.92 774.153  23.265 774.323  24.565 774.586  24.754 774.635
  25.285  774.75  26.002 774.903   27.27 775.149   28.18  775.34  29.692  775.63
  29.775 775.648  30.274 775.764  30.635 775.845  31.212  775.97  32.102 776.154
  32.889  776.32  33.293 776.416  33.964  776.57    34.6 776.713  34.724 776.741

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.173     .04  20.603    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.173  20.603            2.455   1.835    .989             .1       .3
```

```
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       015.35364               F
18.31455  34.724               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 260

INPUT
Description:
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  776.58    2.25  775.21    3.81  774.95    6.98   774.7    7.83  775.14
    8.57  775.02    9.33  774.28    9.54     774    9.69  774.05   10.57  774.22
   12.45  774.17   12.67  774.16   14.16  774.12   14.22  773.97   14.27     772
   14.48  771.87   15.88     771   16.96  770.22   17.18  769.78   17.23  769.79
   17.29  769.73   17.81     770   18.98  771.08   19.89     772   20.59  772.55
   20.92  772.74   21.07  772.83   21.78  773.15   22.25  773.22   23.13  773.82
   23.46     774    24.7  774.26   24.88  774.31   26.07  774.58   29.59   775.3
   30.49  775.51   32.64     776   34.39  776.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   14.48    .04   20.92    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         14.48   20.92            16.99   16.02   16.15             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    15.7               F
    18.7   34.39               F

CULVERT


RIVER: Arroyo El Moro
REACH: Afluente           RS: 255

INPUT
Description:
Distance from Upstream XS =       2
Deck/Roadway Width        =       3
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      10     773     769      20     773     769

Upstream Bridge Cross Section Data
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  776.58    2.25  775.21    3.81  774.95    6.98   774.7    7.83  775.14
    8.57  775.02    9.33  774.28    9.54     774    9.69  774.05   10.57  774.22
   12.45  774.17   12.67  774.16   14.16  774.12   14.22  773.97   14.27     772
   14.48  771.87   15.88     771   16.96  770.22   17.18  769.78   17.23  769.79
   17.29  769.73   17.81     770   18.98  771.08   19.89     772   20.59  772.55
   20.92  772.74   21.07  772.83   21.78  773.15   22.25  773.22   23.13  773.82
   23.46     774    24.7  774.26   24.88  774.31   26.07  774.58   29.59   775.3
   30.49  775.51   32.64     776   34.39  776.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   14.48    .04   20.92    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         14.48   20.92            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    15.7               F
    18.7   34.39               F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      10     771     766      20     771     766

Downstream Bridge Cross Section Data
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  770.44    1.31   770.6    2.56  770.61    4.75  771.07       9  770.69
    9.36  770.69    9.82  770.68   10.14  770.64   11.21  770.36    12.2  770.28
   12.31  770.27   12.49  770.27   13.23  769.27   14.53  768.88   15.09  769.34
   15.64  770.35   15.81  770.35   16.92  770.75   17.57   770.9   17.97  770.99
   18.48  771.12   19.91  771.49   20.08  771.54   20.92  771.59   21.85  771.63
   22.61  771.68   22.99   771.7   23.95  771.74   25.16  771.98   25.25     772
   25.26     772   27.57  773.36   27.73  773.43   28.57   773.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    12.2    .04   17.97    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
          12.2   17.97            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    12.5               F
    15.5   28.57               F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
```

```
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box     1.5       3
FHWA Chart # 58- Rectangular concrete
FHWA Scale # 2 - Side tapered; More favorable edges
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  2       3     .015     .015        0                  .2               1
Upstream   Elevation =  769.7
           Centerline Station =  17.2
Downstream Elevation =  768.9
           Centerline Station =  14

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1

  Q Culv Group (m3/s)       5.39    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         5.75
  Q Barrel (m3/s)           5.39    Culv Vel DS (m/s)         6.84
  E.G. US. (m)            772.01    Culv Inv El Up (m)      769.70
  W.S. US. (m)            770.67    Culv Inv El Dn (m)      768.90
  E.G. DS (m)             770.36    Culv Frctn Ls (m)         0.15
  W.S. DS (m)             770.01    Culv Exit Loss (m)        1.18
  Delta EG (m)              1.65    Culv Entr Loss (m)        0.31
  Delta WS (m)              0.67    Q Weir (m3/s)
  E.G. IC (m)                       Weir Sta Lft (m)
  E.G. OC (m)                       Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       770.01    Weir Max Depth (m)
  Culv WS Outlet (m)      769.16    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.18    Weir Flow Area (m2)
  Culv Crt Depth (m)        0.69    Min El Weir Flow (m)    773.00


Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream
cross
         section.  The program used the solution with the least error.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT  Profile #PF 2  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      13.31    Culv Full Len (m)         1.46
  # Barrels                   1    Culv Vel US (m/s)         6.92
  Q Barrel (m3/s)          13.31    Culv Vel DS (m/s)         7.97
  E.G. US. (m)            773.25    Culv Inv El Up (m)      769.70
  W.S. US. (m)            771.05    Culv Inv El Dn (m)      768.90
  E.G. DS (m)             771.23    Culv Frctn Ls (m)         0.09
  W.S. DS (m)             770.60    Culv Exit Loss (m)        1.46
  Delta EG (m)              2.02    Culv Entr Loss (m)        0.46
  Delta WS (m)              0.45    Q Weir (m3/s)
  E.G. IC (m)                       Weir Sta Lft (m)
  E.G. OC (m)                       Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       770.34    Weir Max Depth (m)
  Culv WS Outlet (m)      769.46    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.31    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.26    Min El Weir Flow (m)    773.00


Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream
cross
         section.  The program used the solution with the least error.
Note:     The culvert inlet is submerged and the culvert flows full over part or all of its length.  Therefore, the
culvert inlet
         equations are not valid and the supercritical result has been discarded.  The outlet answer will be used.

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 254

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  770.44    1.31   770.6    2.56  770.61    4.75  771.07       9  770.69
    9.36  770.69    9.82  770.68   10.14  770.64   11.21  770.36    12.2  770.28
   12.31  770.27   12.49  770.27   13.23  769.27   14.53  768.88   15.09  769.34
   15.64  770.35   15.81  770.35   16.92  770.75   17.57   770.9   17.97  770.99
   18.48  771.12   19.91  771.49   20.08  771.54   20.92  771.59   21.85  771.63
   22.61  771.68   22.99   771.7   23.95  771.74   25.16  771.98   25.25     772
   25.26     772   27.57  773.36   27.73  773.43   28.57   773.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    12.2     .04   17.97    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          12.2   17.97           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    12.5               F
    15.5   28.57               F

CROSS SECTION
```

```
RIVER: Arroyo El Moro
REACH: Afluente          RS: 252.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 770.209    .348 770.246   1.318 770.353   2.575 770.368   3.092 770.464
   3.991 770.629   4.778 770.763   9.053 770.396   9.415 770.393   9.877  770.38
  10.199 770.343  11.276 770.092  12.271 770.014  12.401 769.986  12.512 769.973
  12.694 769.967  13.337 769.206   13.44 769.076  13.748 768.961   14.75  768.56
  15.305 768.992   15.85 769.894  16.019 769.906  17.051 770.297  17.119 770.324
  17.558 770.445  17.763 770.543  17.959 770.637   18.16 770.743  18.204 770.849
  18.728 770.979  19.958  771.29  20.197 771.349  20.371 771.398  21.234  771.47
  22.189 771.536  22.969 771.604   23.36 771.635  24.345 771.702  25.588 771.949
  25.681 771.969  25.691 771.969  26.619 772.456  27.008 772.656  28.063 773.193
  28.227 773.256  29.004 773.478   29.09 773.501

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.401     .04   18.16    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.401   18.16           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       012.84286               F
15.85714   29.09               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 250.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 769.977     .35  770.01   1.325 770.105    2.59 770.127    3.11  770.21
   4.014 770.353   4.806 770.455   9.105 770.103    9.47 770.096   9.935  770.08
  10.259 770.045  11.341 769.825  12.343 769.749  12.603 769.691  12.715 769.677
  12.897 769.665  13.546 769.005  13.649 768.883   13.96 768.745   14.97  768.24
   15.52 768.644  16.061 769.439  16.228 769.462  17.251  769.87  17.318 769.897
  17.754 770.037  17.957 770.187  18.151 770.329   18.35 770.496  18.439 770.707
  18.976 770.838  20.238  771.15  20.483 771.209  20.662 771.256  21.548 771.349
  22.528 771.441  23.329 771.529  23.729 771.569  24.741 771.663  26.016 771.917
  26.111 771.938  26.122 771.938  27.074  772.38  27.473 772.556  28.556 773.026
  28.725 773.082  29.521 773.284   29.61 773.303

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.603     .04   18.35    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.603   18.35           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       013.18571               F
16.21428   29.61               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 248.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 769.746    .352 769.774   1.333 769.858   2.605 769.885   3.128 769.956
   4.037 770.076   4.833 770.148   9.158 769.809   9.524 769.798   9.992  769.78
  10.318 769.748  11.407 769.557  12.414 769.483  12.804 769.397  12.917  769.38
  13.101 769.362  13.755 768.804  13.859 768.689  14.172 768.528   15.19  767.92
  15.735 768.296  16.271 768.983  16.437 769.018  17.451 769.442  17.517 769.471
  17.949  769.63   18.15  769.83  18.343 770.021   18.54 770.249  18.673 770.566
  19.224 770.698  20.519  771.01   20.77 771.068  20.953 771.114  21.861 771.229
  22.867 771.347  23.688 771.453  24.099 771.504  25.136 771.625  26.444 771.886
  26.542 771.906  26.552 771.907  27.529 772.304  27.939 772.457  29.049 772.859
  29.222 772.908  30.039 773.089   30.13 773.104

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.804     .04   18.54    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.804   18.54           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       013.52857               F
16.57143   30.13               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 246.*

INPUT
Description:
Station Elevation Data    num=      48
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 769.514    .354 769.538   1.341 769.611    2.62 769.644   3.146 769.702
    4.06   769.8   4.861  769.84   9.211 769.515   9.579 769.501   10.05 769.479
  10.377  769.45  11.473 769.289  12.486 769.217  13.006 769.103  13.119 769.084
  13.305 769.059  13.964 768.603  14.069 768.496  14.384 768.311   15.41   767.6
   15.95 767.947  16.481 768.528  16.645 768.573  17.651 769.014  17.717 769.045
  18.144 769.222  18.344 769.474  18.535 769.713   18.73 770.001  18.907 770.424
  19.472 770.557  20.799  770.87  21.056 770.927  21.245 770.972  22.175 771.108
  23.205 771.252  24.047 771.378  24.468 771.438  25.532 771.586  26.872 771.854
  26.972 771.875  26.983 771.877  27.985 772.228  28.404 772.358  29.542 772.693
  29.719 772.734  30.557 772.894   30.65 772.906

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.006    .04   18.73    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.006   18.73           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
        013.87143              F
16.92857   30.65              F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 244.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 769.283    .356 769.302   1.348 769.363   2.635 769.402   3.164 769.448
   4.084 769.523   4.889 769.533   9.263 769.221   9.634 769.204  10.107 769.179
  10.437 769.153  11.538 769.022  12.557 768.951  13.207 768.809  13.322 768.787
  13.509 768.757  14.172 768.402  14.278 768.302  14.596 768.094   15.63  767.28
  16.166 767.599  16.692 768.072  16.854 768.129   17.85 768.586  17.916 768.619
  18.339 768.815  18.537 769.117  18.726 769.406   18.92 769.754  19.141 770.283
   19.72 770.416  21.079  770.73  21.343 770.787  21.536  770.83  22.489 770.988
  23.544 771.158  24.407 771.302  24.838 771.372  25.927 771.548    27.3 771.823
  27.403 771.844  27.414 771.846   28.44 772.152  28.869 772.259  30.035 772.526
  30.217 772.561  31.075 772.699   31.17 772.707

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.207    .04   18.92    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.207   18.92           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
        014.21429              F
17.28572   31.17              F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 242.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 769.051    .358 769.066   1.356 769.116    2.65 769.161   3.182 769.194
   4.107 769.247   4.917 769.225   9.316 768.928   9.689 768.907  10.165 768.879
  10.496 768.855  11.604 768.754  12.629 768.686  13.409 768.514  13.524  768.49
  13.712 768.454  14.381 768.201  14.488 768.109  14.808 767.877   15.85  766.96
  16.381 767.251  16.902 767.617  17.063 767.685   18.05 768.158  18.115 768.192
  18.535 768.407  18.731 768.761  18.918 769.098   19.11 769.507  19.376 770.141
  19.968 770.275   21.36  770.59  21.629 770.646  21.827 770.688  22.803 770.867
  23.883 771.064  24.766 771.226  25.208 771.307  26.323 771.509  27.729 771.792
  27.833 771.813  27.845 771.815  28.895 772.076  29.335 772.159  30.528 772.359
  30.714 772.387  31.592 772.505   31.69 772.509

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.409    .04   19.11    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.409   19.11           1.946    1.98   2.023             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
        014.55714              F
17.64286   31.69              F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 240

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.82     .36  768.83     3.2  768.94    4.13  768.97    12.7  768.42
   13.61  768.22   14.59     768   15.02  767.66   16.07  766.64   18.25  767.73
   18.73     768   19.11  768.79    19.3  769.26   19.61     770   21.64  770.45
   29.35     772    29.8  772.06   32.11  772.31   32.21  772.31

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   13.61     .04    19.3    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         13.61    19.3             .559   1.819   3.025             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    14.9               F
      18   32.21               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 238.181*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.802    .351  768.81   1.341 768.841   3.123 768.899   3.931 768.921
    4.03 768.923   5.924 768.801   9.085  768.58   11.21 768.453  11.701 768.423
  12.352 768.384  12.394 768.382  12.405 768.379  12.618 768.326  13.282  768.16
   14.24 767.853  14.445 767.783  14.956 767.387  15.016 767.333  15.256 767.104
  15.563 766.846  16.203 766.295  16.476  766.43  17.757 767.032  18.429  767.34
   18.92 767.592  19.308 768.316  19.411 768.544  19.502 768.747  19.816 769.431
  20.607 769.612  20.943  769.69  21.873 769.922  22.684 770.109  24.257 770.445
  24.867 770.581   25.07 770.622  29.242 771.503  29.686 771.601  30.142 771.675
  30.533 771.729  32.482 771.961  32.584 771.963

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.282     .04  19.502    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.282  19.502             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 236.363*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.784    .343 768.789   1.308 768.813   3.046 768.858   3.834 768.875
   3.931 768.876   5.777 768.757    8.86 768.522  10.933 768.407  11.412 768.381
  12.047 768.346  12.088 768.344  12.099 768.342  12.306 768.282  12.954   768.1
  14.063 767.668  14.301 767.567  14.892 767.115  14.961 767.055   15.24 766.794
  15.594 766.528  16.335 765.949  16.614 766.087  17.922 766.663  18.609  766.95
  19.109 767.185  19.506 767.842  19.611 768.049  19.704 768.235  20.022 768.862
  20.823 769.051  21.163 769.134  22.106 769.394  22.927 769.607  24.522 769.968
  25.139 770.118  25.345  770.16  29.572 771.094  30.021 771.202  30.483 771.289
   30.88 771.356  32.855 771.611  32.957 771.615

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.954     .04  19.704    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.954  19.704             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 234.545*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.765    .334 768.768   1.275 768.785   2.969 768.818   3.737 768.828
   3.831  768.83   5.631 768.713   8.636 768.464  10.656 768.362  11.123 768.339
  11.742 768.307  11.781 768.305  11.792 768.304  11.994 768.239  12.625  768.04
  13.886 767.483  14.156  767.35  14.828 766.842  14.907 766.776  15.223 766.483
  15.626 766.211  16.468 765.604  16.752 765.744  18.088 766.293  18.788  766.56
  19.299 766.777  19.703 767.368  19.811 767.553  19.905 767.722  20.228 768.292
  21.039 768.489  21.384 768.578  22.339 768.866  23.171 769.105  24.786  769.49
  25.412 769.655   25.62 769.698  29.902 770.684  30.357 770.803  30.825 770.904
  31.226 770.983  33.227 771.262  33.331 771.268

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.625     .04  19.905    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.625  19.905             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 232.727*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.747    .325 768.748   1.242 768.757   2.891 768.777    3.64 768.782
   3.732 768.783   5.485 768.669   8.411 768.406  10.379 768.317  10.834 768.296
```

```
  11.436 768.269  11.475 768.267  11.486 768.266  11.682 768.195  12.297  767.98
  13.709 767.297  14.012 767.133  14.764  766.57  14.852 766.498  15.206 766.173
  15.658 765.893  16.601 765.258  16.891 765.401  18.253 765.924  18.967 766.171
  19.489 766.369  19.901 766.893  20.011 767.058  20.107 767.209  20.434 767.723
  21.256 767.928  21.605 768.022  22.572 768.338  23.415 768.603   25.05 769.013
  25.684 769.192  25.895 769.235  30.232 770.275  30.692 770.405  31.166 770.519
  31.573  770.61  33.599 770.912  33.705 770.921

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.297     .04  20.107    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.297  20.107             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 230.909*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.729    .317 768.727   1.209 768.729   2.814 768.736   3.543 768.736
   3.632 768.736   5.338 768.625   8.187 768.348  10.102 768.272  10.545 768.254
  11.131 768.231  11.169 768.229  11.179 768.228  11.371 768.152  11.969  767.92
  13.532 767.112  13.867 766.916    14.7 766.297  14.797  766.22   15.19 765.862
   15.69 765.576  16.734 764.913  17.029 765.058  18.418 765.555  19.147 765.781
  19.678 765.962  20.099 766.419  20.211 766.563  20.309 766.696   20.64 767.154
  21.472 767.367  21.826 767.466  22.805  767.81  23.658 768.101  25.314 768.535
  25.956 768.729   26.17 768.773  30.561 769.866  31.028 770.006  31.508 770.133
   31.92 770.237  33.972 770.563  34.078 770.574

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.969     .04  20.309    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.969  20.309             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 229.090*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.711    .308 768.707   1.176 768.701   2.737 768.695   3.446  768.69
   3.532 768.689   5.192 768.581   7.962  768.29   9.825 768.226  10.256 768.212
  10.826 768.192  10.863 768.191  10.873  768.19  11.059 768.108  11.641  767.86
  13.355 766.927  13.723   766.7  14.636 766.025  14.743 765.941  15.173 765.552
  15.721 765.258  16.866 764.567  17.168 764.715  18.584 765.186  19.326 765.391
  19.868 765.554  20.297 765.945   20.41 766.067  20.511 766.184  20.846 766.585
  21.688 766.806  22.046  766.91  23.038 767.283  23.902 767.599  25.579 768.058
  26.229 768.266  26.445 768.311  30.891 769.456  31.363 769.607  31.849 769.748
  32.266 769.864  34.344 770.213  34.452 770.226

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.641     .04  20.511    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.641  20.511             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 227.272*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.693    .299 768.686   1.143 768.672    2.66 768.654   3.349 768.644
   3.433 768.642   5.045 768.536   7.738 768.232   9.548 768.181   9.967 768.169
  10.521 768.154  10.556 768.153  10.747 768.064  11.313   767.8  13.178 766.741
  13.578 766.483  14.572 765.752  14.688 765.663  15.156 765.242  15.753  764.94
  16.999 764.222  17.306 764.372  18.749 764.817  19.506 765.001  20.057 765.146
  20.494 765.471   20.61 765.572  20.713 765.671  21.052 766.015  21.905 766.245
  22.267 766.354  23.271 766.755  24.146 767.098  25.843  767.58  26.501 767.802
   26.72 767.849  31.221 769.047  31.699 769.208  32.191 769.362  32.613 769.492
  34.716 769.864  34.825 769.879

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.313     .04  20.713    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.313  20.713             .559   1.819   3.025             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 225.454*

INPUT
```

```
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.675    .291 768.666   1.109 768.644   2.583 768.614   3.251 768.598
   3.333 768.596   4.899 768.492   7.513 768.174   9.271 768.136   9.677 768.127
  10.216 768.115   10.25 768.115  10.435 768.021  10.985  767.74  13.001 766.556
  13.433 766.266  14.508 765.479  14.634 765.385   15.14 764.931  15.785 764.623
  17.132 763.876  17.445 764.029  18.914 764.448  19.685 764.611  20.247 764.739
  20.692 764.997   20.81 765.076  20.915 765.158  21.258 765.446  22.121 765.684
  22.488 765.798  23.504 766.227  24.389 766.596  26.107 767.103  26.773 767.339
  26.995 767.387  31.551 768.638  32.035 768.809  32.532 768.977   32.96 769.119
  35.088 769.514  35.199 769.532

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.985     .04  20.915    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.985  20.915             .559   1.819   3.025             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 223.636*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.656    .282 768.645   1.076 768.616   2.506 768.573   3.154 768.552
   3.234 768.549   4.753 768.448   7.289 768.116   8.994 768.091   9.388 768.085
    9.91 768.077   9.944 768.076  10.124 767.977  10.656  767.68  12.824 766.371
  13.289 766.049  14.444 765.207  14.579 765.107  15.123 764.621  15.817 764.305
  17.265 763.531  17.583 763.686  19.079 764.078  19.864 764.221  20.437 764.331
   20.89 764.523   21.01 764.581  21.116 764.645  21.463 764.877  22.337 765.122
  22.709 765.242  23.737 765.699  24.633 766.094  26.371 766.625  27.045 766.876
   27.27 766.924   31.88 768.229   32.37  768.41  32.874 768.592  33.307 768.746
  35.461 769.165  35.573 769.185

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.656     .04  21.116    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.656  21.116             .559   1.819   3.025             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 221.818*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.638    .273 768.625   1.043 768.588   2.428 768.532   3.057 768.506
   3.134 768.502   4.606 768.404   7.064 768.058   8.717 768.045   9.099 768.042
   9.605 768.038   9.638 768.038   9.812 767.934  10.328  767.62  12.647 766.185
  13.144 765.833   14.38 764.934  14.525 764.828  15.107  764.31  15.848 763.988
  17.397 763.185  17.722 763.343  19.245 763.709  20.044 763.831  20.626 763.923
  21.088 764.049   21.21 764.085  21.318 764.133  21.669 764.308  22.554 764.561
  22.929 764.686   23.97 765.171  24.876 765.592  26.636 766.148  27.318 766.413
  27.545 766.462   32.21 767.819  32.706 768.011  33.216 768.206  33.653 768.373
  35.833 768.815  35.946 768.837

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.328     .04  21.318    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.328  21.318             .559   1.819   3.025             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 220

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.62    1.01  768.56    2.96  768.46    4.46  768.36    6.84     768
    8.44     768    8.81     768     9.3     768    9.34     768     9.5  767.89
      10  767.56   12.47     766   14.47  764.55   15.09     764   15.88  763.67
   17.53  762.84   17.86     763   19.41  763.34   21.41  763.59   21.52  763.62
   21.88  763.74   22.77     764   23.15  764.13   25.12  765.09    26.9  765.67
   27.59  765.95   27.82     766   32.54  767.41      34     768   36.32  768.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035      10     .04   21.52    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           10   21.52           2.046   1.997   1.724             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 218.*
```

```
INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.645    .974 768.594   2.856 768.509   4.303 768.423   5.047  768.32
   6.599 768.121   8.143 768.141   8.204 768.142     8.5 768.148   8.973 768.156
   9.011 768.157   9.166 768.061    9.32 767.969   9.648 767.738  11.296 766.555
  11.734 766.245  12.176 765.965   12.96 765.405  14.177 764.525  14.224 764.485
  14.823  763.89  14.858 763.856  15.212  763.67  15.667 763.482  17.215 762.724
  17.356 762.652   17.68  762.82  18.363 763.006  18.802 763.125   18.92 763.158
  19.204 763.231   21.17 763.567  21.278   763.6  21.654 763.743  21.903 763.829
  22.585 764.029  22.982 764.163  24.728 764.969  25.042 765.116  25.525 765.274
  26.452 765.577  26.903 765.713  27.624 765.981  27.864 766.032  32.799 767.412
  34.157 767.915  34.326 767.978  35.285 768.174  36.751 768.471

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.648     .04  21.278    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.648  21.278            2.046   1.997   1.724             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 216.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.67    .939 768.627   2.752 768.558   4.146 768.486   4.863 768.397
   6.358 768.242   7.846 768.282   7.904 768.284    8.19 768.295   8.645 768.313
   8.682 768.314   8.831 768.232    8.98 768.153   9.296 767.916  10.982 766.567
  11.431 766.218  11.883 765.931  12.684 765.364  13.929 764.467  13.977  764.42
   14.59 763.749  14.627 763.713  14.988 763.485  15.454 763.293  17.038 762.539
  17.182 762.464  17.501 762.639  18.172  762.86  18.603     763  18.719 763.039
  18.998 763.122   20.93 763.544  21.036  763.58  21.429 763.746  21.688 763.848
    22.4 764.058  22.814 764.196  24.636 764.995  24.963 765.141  25.468 765.307
  26.435 765.624  26.905 765.756  27.658 766.013  27.909 766.064  33.058 767.415
  34.475 767.896  34.651 767.956  35.652 768.155  37.182 768.452

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.296     .04  21.036    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.296  21.036            2.046   1.997   1.724             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 214.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.695    .903 768.661   2.647 768.607   3.989 768.549   4.679 768.473
   6.118 768.363   7.549 768.424   7.605 768.426    7.88 768.443   8.318 768.469
   8.354 768.472   8.497 768.403    8.64 768.338   8.944 768.094  10.668 766.578
  11.127 766.191  11.589 765.896  12.409 765.324  13.682 764.408  13.731 764.355
  14.358 763.608  14.395 763.569  14.765 763.299  15.241 763.105  16.861 762.354
  17.008 762.276  17.321 762.459   17.98 762.714  18.403 762.875  18.518 762.921
  18.792 763.013   20.69 763.521  20.794  763.56  21.203 763.749  21.474 763.867
  22.215 764.087  22.646 764.229  24.544 765.021  24.885 765.167  25.411  765.34
  26.419 765.671  26.908 765.799  27.692 766.044  27.953 766.096  33.317 767.417
  34.793 767.876  34.977 767.934  36.019 768.136  37.613 768.433

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.944     .04  20.794    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.944  20.794            2.046   1.997   1.724             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 212.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.72    .868 768.695   2.543 768.656   3.832 768.612   4.495  768.55
   5.877 768.485   7.252 768.565   7.306 768.568    7.57  768.59   7.991 768.626
   8.025 768.629   8.162 768.574     8.3 768.522   8.592 768.272  10.354  766.59
  10.823 766.164  11.296 765.861  12.133 765.283  13.435  764.35  13.485  764.29
  14.125 763.467  14.163 763.425  14.541 763.113  15.028 762.917  16.684 762.169
  16.834 762.088  17.142 762.278  17.789 762.567  18.204  762.75  18.317 762.802
  18.586 762.904  20.449 763.498  20.552  763.54  20.977 763.752  21.259 763.886
  22.029 764.116  22.478 764.261  24.452 765.046  24.807 765.192  25.354 765.372
  26.402 765.718  26.911 765.843  27.726 766.076  27.998 766.128  33.576 767.419
  35.111 767.857  35.302 767.912  36.387 768.116  38.044 768.414

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.592     .04  20.552    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.592  20.552            2.046   1.997   1.724             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 210.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.745    .832 768.729   2.439 768.705   3.675 768.675   4.311 768.627
   5.636 768.606   6.955 768.706   7.007  768.71   7.259 768.738   7.663 768.782
   7.696 768.786   7.828 768.745    7.96 768.707    8.24  768.45   10.04 766.602
  10.519 766.136  11.002 765.827  11.858 765.243  13.187 764.292  13.238 764.225
  13.893 763.326  13.932 763.281  14.318 762.928  14.815 762.728  16.506 761.985
   16.66   761.9  16.962 762.098  17.597 762.421  18.005 762.625  18.116 762.683
  18.38 762.795  20.209 763.474   20.31  763.52  20.752 763.755  21.044 763.905
  21.844 764.145  22.311 764.294   24.36 765.072  24.729 765.218  25.296 765.405
  26.385 765.765  26.913 765.886   27.76 766.107  28.042 766.159  33.836 767.422
  35.429 767.837  35.628 767.889  36.754 768.097  38.475 768.395

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    8.24     .04   20.31    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.24   20.31            2.046   1.997   1.724             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 208.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.77    .797 768.762   2.335 768.754   3.518 768.738   4.127 768.703
   5.395 768.727   6.657 768.847   6.707 768.852   6.949 768.885   7.336 768.939
   7.367 768.943   7.494 768.917    7.62 768.892   7.888 768.628   9.726 766.613
  10.215 766.109  10.708 765.792  11.582 765.202   12.94 764.233  12.992  764.16
   13.66 763.184    13.7 763.138  14.094 762.742  14.602  762.54  16.329   761.8
  16.486 761.712  16.782 761.917  17.406 762.275  17.806   762.5  17.914 762.565
  18.174 762.686  19.969 763.451  20.068   763.5  20.526 763.757  20.829 763.924
  21.659 764.174  22.143 764.327  24.268 765.097   24.65 765.243  25.239 765.438
  26.368 765.812  26.916 765.929  27.794 766.139  28.087 766.191  34.095 767.424
  35.747 767.818  35.953 767.867  37.121 768.078  38.906 768.376

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.888     .04  20.068    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.888  20.068            2.046   1.997   1.724             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 206.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.795    .761 768.796   2.231 768.802   3.361 768.801   3.942  768.78
   5.155 768.848    6.36 768.988   6.408 768.994   6.639 769.033   7.008 769.095
   7.039   769.1   7.159 769.088    7.28 769.076   7.536 768.806   9.412 766.625
   9.911 766.082  10.415 765.758  11.307 765.162  12.692 764.175  12.746 764.095
  13.428 763.043  13.468 762.994  13.871 762.557  14.389 762.351  16.152 761.615
  16.312 761.524  16.603 761.737  17.214 762.129  17.607 762.375  17.713 762.446
  17.968 762.577  19.729 763.428  19.826  763.48  20.301  763.76  20.614 763.943
  21.474 764.203  21.975  764.36  24.176 765.123  24.572 765.269  25.182 765.471
  26.351 765.859  26.919 765.972  27.828  766.17  28.131 766.223  34.354 767.426
  36.066 767.798  36.279 767.845  37.488 768.058  39.337 768.357

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.536     .04  19.826    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.536  19.826            2.046   1.997   1.724             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 204.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.82    .726  768.83   2.126 768.851   3.204 768.864   3.758 768.857
   4.914 768.969   6.063  769.13   6.109 769.136   6.329 769.181   6.681 769.252
    6.71 769.257   6.825 769.259    6.94 769.261   7.184 768.984   9.098 766.637
   9.608 766.055  10.121 765.723  11.031 765.121  12.445 764.117  12.499  764.03
  13.195 762.902  13.237  762.85  13.647 762.371  14.176 762.163  15.975  761.43
```

```
  16.138 761.336  16.423 761.556  17.023 761.982  17.408  762.25  17.512 762.327
  17.762 762.468  19.489 763.405  19.584  763.46  20.075 763.763    20.4 763.962
  21.289 764.232  21.807 764.393  24.084 765.149  24.494 765.295  25.125 765.504
  26.334 765.906  26.921 766.015  27.862 766.202  28.176 766.255  34.613 767.429
  36.384 767.779  36.604 767.823  37.856 768.039  39.768 768.338

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.184     .04  19.584    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.184  19.584            2.046   1.997   1.724             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 202.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.845     .69 768.863   2.022   768.9   3.047 768.926   3.574 768.933
   4.673  769.09   5.766 769.271   5.809 769.278   6.019 769.328   6.354 769.408
   6.381 769.415    6.49  769.43     6.6 769.445   6.832 769.162   8.784 766.648
   9.304 766.027   9.827 765.688  10.756 765.081  12.197 764.058  12.253 763.965
  12.963 762.761  13.005 762.707  13.424 762.186  13.963 761.975  15.797 761.245
  15.964 761.148  16.243 761.376  16.831 761.836  17.209 762.125  17.311 762.209
  17.556 762.359  19.249 763.382  19.342  763.44  19.849 763.766  20.185 763.981
  21.104 764.261  21.639 764.426  23.992 765.174  24.415  765.32  25.067 765.537
  26.317 765.953  26.924 766.059  27.896 766.233   28.22 766.287  34.872 767.431
  36.702 767.759   36.93 767.801  38.223 768.019  40.199 768.319

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.832     .04  19.342    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.832  19.342            2.046   1.997   1.724             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 200

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  768.87    3.39  769.01    5.51  769.42    6.26  769.63    6.48  769.34
    8.47  766.66       9     766   10.48  765.04   11.95     764   12.73  762.62
    13.2     762   15.62  761.06   15.79  760.96   16.64  761.69   17.01     762
   17.11  762.09   17.35  762.25    19.1  763.42   19.97     764    23.9   765.2
   25.01  765.57    26.3     766   37.02  767.74   38.59     768   40.63   768.3

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    6.48     .04    19.1    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          6.48    19.1            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 198.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.636   3.516 768.714   3.893 768.772   4.733 768.857   5.715 768.947
   6.493 769.077    6.63  768.91   6.721 768.795   8.645 766.257   9.157 765.629
    9.45 765.433   9.624 765.318   9.813 765.191  10.587 764.668  12.008 763.632
  12.469 762.841  12.762  762.35  13.217 761.779   13.63 761.618  15.556 760.889
   15.72 760.796  16.446 761.342  16.657 761.499  17.064 761.796  17.167 761.875
  17.439 762.076  17.964 762.462  18.084 762.543  18.324 762.708  18.674  762.96
  19.367 763.431  19.401 763.454  20.123 763.938  20.225 763.999  24.107 765.131
  24.549 765.271  25.203 765.478  26.477 765.882  29.111 766.305  30.646 766.551
  36.156 767.432  37.062 767.582  38.613 767.843  40.627 768.148

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.721     .04  19.367    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.721  19.367            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 196.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.402   3.642 768.418   4.033 768.464   4.902 768.477    5.92 768.475
   6.726 768.525   6.868 768.364   6.962  768.25   8.819 765.854   9.314 765.258
```

```
   9.596 765.063   9.765 764.949   9.947 764.822  10.695 764.297  12.067 763.265
  12.511 762.526  12.794  762.08  13.233 761.559  13.632 761.403  15.491 760.718
   15.65 760.632  16.443 761.159  16.673 761.308  17.118 761.591   17.23 761.667
  17.528 761.902  18.101 762.355  18.232 762.445  18.495  762.63  18.877 762.921
  19.634 763.442  19.667 763.464  20.381 763.945  20.481 763.999  24.314 765.062
  24.751 765.193  25.396 765.387  26.653 765.763  29.254 766.176   30.77 766.416
   36.21 767.273  37.105 767.424  38.635 767.686  40.624 767.996

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.962     .04  19.634    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.962  19.634            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 194.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 768.168   3.768 768.122   4.173 768.156   5.072 768.098   6.125 768.002
   6.958 767.972   7.106 767.819   7.203 767.705   8.994  765.45    9.47 764.888
   9.743 764.692   9.905 764.581  10.081 764.453  10.802 763.925  12.125 762.897
  12.553  762.21  12.827  761.81   13.25 761.338  13.634 761.188  15.427 760.547
   15.58 760.468   16.44 760.975   16.69 761.117  17.173 761.387  17.294 761.459
  17.616 761.729  18.239 762.248  18.381 762.347  18.666 762.551  19.079 762.883
  19.901 763.453  19.934 763.475  20.638 763.952  20.737     764   24.52 764.994
  24.952 765.116  25.589 765.295   26.83 765.645  29.397 766.048  30.894 766.282
  36.264 767.114  37.147 767.265  38.658 767.529  40.621 767.844

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.203     .04  19.901    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.203  19.901            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 192.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 767.934   3.894 767.827   4.312 767.848   5.242 767.718    6.33  767.53
   7.191  767.42   7.344 767.273   7.444  767.16   9.168 765.047   9.627 764.517
    9.89 764.322  10.046 764.212  10.215 764.084   10.91 763.554  12.183  762.53
  12.596 761.894  12.859  761.54  13.266 761.118  13.637 760.972  15.363 760.375
   15.51 760.304  16.437 760.792  16.706 760.926  17.227 761.182  17.358  761.25
  17.705 761.555  18.376 762.141  18.529 762.249  18.836 762.472  19.282 762.844
  20.168 763.464  20.201 763.486  20.896 763.958  20.993     764  24.727 764.925
  25.153 765.038  25.782 765.203  27.007 765.526   29.54  765.92  31.017 766.147
  36.317 766.955  37.189 767.107   38.68 767.371  40.618 767.692

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.444     .04  20.168    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.444  20.168            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 190.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   767.7    4.02 767.531   4.452  767.54   5.411 767.338   6.535 767.057
   7.424 766.867   7.581 766.728   7.685 766.615   9.343 764.644   9.784 764.146
  10.037 763.952  10.187 763.843  10.349 763.715  11.017 763.182  12.241 762.162
  12.638 761.579  12.891  761.27  13.283 760.897  13.639 760.757  15.298 760.204
   15.44  760.14  16.435 760.608  16.723 760.735  17.281 760.978  17.422 761.042
  17.432 761.052  17.794 761.381  18.513 762.034  18.678 762.151  19.007 762.394
  19.485 762.805  20.435 763.475  20.467 763.496  21.153 763.965  21.249     764
  24.934 764.856  25.354  764.96  25.974 765.112  27.184 765.408  29.684 765.792
  31.141 766.013  36.371 766.796  37.231 766.949  38.703 767.214  40.615  767.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.685     .04  20.435    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.685  20.435            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 188.*

INPUT
```

```
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 767.466   4.146 767.235   4.592 767.232   5.581 766.959    6.74 766.585
   7.657 766.315   7.819 766.182   7.926  766.07   9.517 764.241   9.941 763.775
  10.183 763.581  10.327 763.475  10.483 763.346  11.124 762.811    12.3 761.794
  12.681 761.263  12.923 760.999  13.299 760.676  13.641 760.542  15.234 760.033
   15.37 759.976  16.432 760.424  16.739 760.544  17.335 760.773  17.485 760.833
  17.496 760.845  17.883 761.207  18.651 761.927  18.826 762.053  19.177 762.315
  19.688 762.766  20.702 763.486  20.734 763.507   21.41 763.972  21.506     764
  25.141 764.787  25.555 764.882  26.167  765.02   27.36 765.289  29.827 765.663
  31.265 765.878  36.425 766.636  37.274 766.791  38.725 767.057  40.612 767.388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.926     .04  20.702    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.926  20.702            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 186.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 767.232   4.273 766.939   4.731 766.924   5.751 766.579   6.944 766.112
    7.89 765.762   8.057 765.637   8.167 765.525   9.692 763.838  10.098 763.404
   10.33 763.211  10.468 763.106  10.618 762.977  11.232 762.439  12.358 761.427
  12.723 760.947  12.956 760.729  13.316 760.456  13.643 760.326   15.17 759.862
    15.3 759.812  16.429 760.241  16.756 760.353  17.389 760.569  17.549 760.625
  17.561 760.637  17.972 761.033  18.788 761.821  18.975 761.954  19.348 762.236
  19.891 762.727  20.969 763.497      21 763.518  21.668 763.979  21.762     764
  25.348 764.718  25.756 764.804  26.36 764.928  27.537 765.171   29.97 765.535
  31.389 765.744  36.479 766.477  37.316 766.633  38.748   766.9  40.609 767.236

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.167     .04  20.969    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.167  20.969            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 184.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 766.998   4.399 766.643   4.871 766.616   5.921 766.199   7.149  765.64
   8.123 765.209   8.295 765.091   8.408  764.98   9.866 763.435  10.255 763.034
  10.477 762.841  10.609 762.737  10.752 762.608  11.339 762.068  12.416 761.059
  12.765 760.631  12.988 760.459  13.332 760.235  13.646 760.111  15.105 759.691
   15.23 759.648  16.426 760.057  16.772 760.162  17.444 760.365  17.613 760.417
  17.625 760.429  18.061 760.859  18.925 761.714  19.123 761.856  19.519 762.157
  20.094 762.688  21.236 763.508  21.267 763.529  21.925 763.986  22.018     764
  25.554 764.649  25.958 764.726  26.553 764.836  27.714 765.052  30.113 765.407
  31.512 765.609  36.532 766.318  37.358 766.474  38.771 766.743  40.606 767.084

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.408     .04  21.236    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.408  21.236            1.948   1.989   1.845             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 182.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 766.764   4.525 766.347    5.01 766.308    6.09  765.82   7.354 765.167
   8.355 764.657   8.532 764.546   8.649 764.435  10.041 763.031  10.411 762.663
  10.623  762.47  10.749 762.369  10.886 762.239  11.446 761.696  12.474 760.692
  12.808 760.316   13.02 760.189  13.349 760.015  13.648 759.895  15.041 759.519
   15.16 759.484  16.423 759.874  16.789 759.971  17.498  760.16  17.676 760.208
   17.69 760.222  18.149 760.686  19.063 761.607  19.272 761.758  19.689 762.079
  20.297 762.649  21.503 763.519  21.533 763.539  22.183 763.993  22.274     764
  25.761 764.581  26.159 764.648  26.746 764.745   27.89 764.934  30.257 765.278
  31.636 765.475  36.586 766.159    37.4 766.316  38.793 766.586  40.603 766.932

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.649     .04  21.503    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.649  21.503            1.948   1.989   1.845             .1      .3

CROSS SECTION
```

RIVER: Arroyo El Moro
REACH: Afluente RS: 180

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	766.53	5.15	766	6.26	765.44	8.77	764	8.89	763.89
10.77	762.1	10.89	762	11.02	761.87	12.85	760	13.65	759.68
15.09	759.32	16.42	759.69	17.74	760	19.2	761.5	19.42	761.66
19.86	762	20.5	762.61	21.77	763.53	21.8	763.55	22.44	764
22.53	764	26.36	764.57	30.4	765.15	31.76	765.34	36.64	766
40.6	766.78								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	8.89	.04	21.77	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
8.89	21.77	2.197	1.823	1.674	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 178.181*

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	766.407	3.289	766.141	5.122	765.859	5.32	765.756	6.226	765.314
6.399	765.219	6.727	765.033	7.594	764.531	8.722	763.879	8.842	763.773
9.668	763.016	10.755	762.008	10.877	761.908	11.01	761.779	11.967	760.832
12.018	760.779	12.41	760.402	12.872	759.956	13.686	759.622	15.152	759.217
16.427	759.594	17.692	759.915	19.091	761.323	19.302	761.475	19.314	761.485
19.724	761.798	20.337	762.372	20.373	762.397	20.532	762.535	21.555	763.386
21.585	763.41	22.233	763.842	22.324	763.845	25.205	764.332	26.203	764.507
26.475	764.553	28.989	764.915	30.295	765.104	31.672	765.298	35.748	765.856
36.614	765.974	38.44	766.323	40.625	766.758				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	8.842	.04	21.555	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
8.842	21.555	2.197	1.823	1.674	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 176.363*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	766.285	3.271	766.092	5.094	765.718	5.291	765.612	6.192	765.188
6.364	765.097	6.69	764.915	7.552	764.411	8.675	763.758	8.794	763.655
9.634	762.914	10.74	761.916	10.865	761.815	10.999	761.689	11.973	760.756
12.025	760.702	12.424	760.34	12.894	759.911	13.723	759.564	15.214	759.115
16.433	759.497	17.644	759.831	18.982	761.146	19.184	761.29	19.196	761.299
19.588	761.595	20.175	762.133	20.208	762.157	20.36	762.314	21.339	763.243
21.348	763.257	21.37	763.27	22.026	763.684	22.118	763.69	25.036	764.241
26.046	764.444	26.322	764.498	28.867	764.866	30.189	765.058	31.584	765.256
35.711	765.827	36.588	765.947	38.437	766.29	40.649	766.736		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	8.794	.04	21.339	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
8.794	21.339	2.197	1.823	1.674	.1	.3

CROSS SECTION

RIVER: Arroyo El Moro
REACH: Afluente RS: 174.545*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	766.162	3.253	766.042	5.066	765.577	5.262	765.469	6.158	765.061
6.329	764.975	6.653	764.796	7.511	764.291	8.627	763.637	8.745	763.538
9.6	762.813	10.726	761.824	10.852	761.723	10.989	761.598	11.98	760.68
12.032	760.624	12.438	760.278	12.916	759.867	13.759	759.505	15.275	759.012
16.44	759.401	17.595	759.746	18.874	760.969	19.066	761.105	19.078	761.114
19.451	761.393	20.012	761.895	20.044	761.918	20.189	762.092	21.124	763.099
21.133	763.117	21.155	763.13	21.819	763.526	21.913	763.535	24.866	764.15
25.889	764.381	26.168	764.443	28.745	764.816	30.084	765.012	31.496	765.214
35.675	765.799	36.562	765.92	38.434	766.258	40.674	766.715		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	8.745	.04	21.124	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
8.745	21.124	2.197	1.823	1.674	.1	.3

```
CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 172.727*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 766.039   3.235 765.993   5.038 765.436   5.233 765.325   6.124 764.935
   6.294 764.853   6.617 764.678    7.47 764.171    8.58 763.516   8.697 763.421
   9.566 762.711  10.711 761.732  10.839 761.631  10.978 761.508  11.986 760.604
   12.04 760.546  12.452 760.215  12.938 759.823  13.795 759.447  15.337 758.909
  16.446 759.305  17.547 759.661  18.765 760.792  18.948  760.92  18.959 760.928
  19.315  761.19  19.849 761.656   19.88 761.678  20.018 761.871  20.908 762.956
  20.917 762.977   20.94 762.989  21.612 763.368  21.707 763.381  24.697 764.058
  25.732 764.318  26.015 764.387  28.623 764.767  29.978 764.965  31.407 765.171
  35.638  765.77  36.536 765.894  38.431 766.226  40.698 766.693

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.697     .04  20.908    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.697  20.908            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 170.909*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 765.916   3.218 765.944    5.01 765.295   5.204 765.182    6.09 764.809
   6.259 764.731    6.58  764.56   7.428 764.051   8.532 763.395   8.649 763.304
   9.533 762.609  10.696  761.64  10.827 761.539  10.968 761.417  11.992 760.527
  12.047 760.468  12.466 760.153   12.96 759.778  13.831 759.389  15.399 758.806
  16.453 759.209  17.499 759.577  18.656 760.615   18.83 760.735  18.841 760.743
  19.179 760.988  19.686 761.418  19.716 761.438  19.847 761.649  20.693 762.812
  20.702 762.838  20.725 762.849  21.405  763.21  21.501 763.226  24.527 763.967
  25.575 764.254  25.861 764.332  28.501 764.717  29.873 764.919  31.319 765.129
  35.601 765.742   36.51 765.867  38.428 766.194  40.723 766.671

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.649     .04  20.693    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.649  20.693            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 169.090*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 765.794     3.2 765.895   4.983 765.154   5.175 765.038   6.056 764.682
   6.224 764.609   6.543 764.441   7.387  763.93   8.485 763.274   8.601 763.186
   9.499 762.508  10.681 761.548  10.814 761.446  10.958 761.327  11.999 760.451
  12.054  760.39   12.48 760.091  12.982 759.734  13.868 759.331  15.461 758.704
   16.46 759.112  17.451 759.492  18.547 760.438  18.713  760.55  19.043 760.785
  19.524  761.18  19.551 761.199  19.676 761.428  20.477 762.668  20.487 762.698
   20.51 762.709  21.199 763.052  21.295 763.071  24.358 763.876  25.418 764.191
  25.708 764.277  28.379 764.668  29.767 764.873  31.231 765.087  35.564 765.713
  36.484 765.841  38.425 766.161  40.747 766.649

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.601     .04  20.477    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.601  20.477            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 167.272*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 765.671   3.182 765.846   4.955 765.013   5.146 764.894   6.023 764.556
   6.189 764.487   6.507 764.323   7.346  763.81   8.437 763.154   8.553 763.069
   9.465 762.406  10.666 761.456  10.801 761.354  10.947 761.236  12.005 760.375
  12.061 760.312  12.494 760.029  13.005 759.689  13.904 759.273  15.523 758.601
  16.466 759.016  17.403 759.407  18.439 760.261  18.595 760.365  18.907 760.583
  19.361 760.941  19.387 760.959  19.505 761.206  20.262 762.525  20.271 762.559
  20.294 762.569  20.992 762.893   21.09 762.916  24.188 763.785  25.261 764.128
  25.554 764.221  28.258 764.618  29.662 764.827  31.143 765.045  35.527 765.684
  36.459 765.814  38.422 766.129  40.772 766.627

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .035   8.553     .04  20.262    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.553  20.262            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 165.454*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 765.548   3.164 765.797   4.927 764.872   5.117 764.751   5.989  764.43
   6.155 764.366    6.47 764.205   7.304  763.69    8.39 763.033   8.505 762.952
   9.431 762.305  10.651 761.363  10.788 761.262  10.937 761.145  12.011 760.299
  12.068 760.234  12.508 759.967  13.027 759.645   13.94 759.214  15.585 758.498
  16.473  758.92  17.355 759.323   18.33 760.084  18.477 760.181  18.771  760.38
  19.198 760.703  19.223 760.719  19.333 760.985  20.046 762.381  20.056 762.419
  20.079 762.429  20.785 762.735  20.884 762.761  24.019 763.694  25.104 764.065
  25.401 764.166  28.136 764.569  29.556 764.781  31.055 765.003   35.49 765.656
  36.433 765.788  38.419 766.097  40.796 766.605

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.505     .04  20.046    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.505  20.046            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 163.636*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 765.425   3.146 765.748   4.899 764.732   5.088 764.607   5.955 764.304
    6.12 764.244   6.433 764.087   7.263  763.57   8.342 762.912   8.456 762.835
   9.398 762.203  10.637 761.271  10.776 761.169  10.926 761.055  12.017 760.222
  12.076 760.156  12.522 759.904  13.049 759.601  13.976 759.156  15.646 758.395
   16.48 758.824  17.306 759.238  18.221 759.907  18.359 759.996  18.634 760.178
  19.035 760.464  19.059 760.479  19.162 760.763  19.831 762.237  19.841 762.279
  19.864 762.289  20.578 762.577  20.678 762.606  23.849 763.602  24.947 764.002
  25.247 764.111  28.014 764.519  29.451 764.734  30.967 764.961  35.454 765.627
  36.407 765.761  38.416 766.065  40.821 766.584

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.456     .04  19.831    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.456  19.831            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 161.818*

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 765.303   3.128 765.699   4.871 764.591   5.059 764.464   5.921 764.177
   6.085 764.122   6.397 763.968   7.221  763.45   8.295 762.791   8.408 762.717
   9.364 762.102  10.622 761.179  10.763 761.077  10.916 760.964  12.024 760.146
  12.083 760.078  12.536 759.842  13.071 759.556  14.013 759.098  15.708 758.293
  16.486 758.727  17.258 759.153  18.112  759.73  18.241 759.811  18.498 759.976
  18.873 760.226  18.894  760.24  18.991 760.542  19.615 762.094  19.625  762.14
  19.649 762.148  20.371 762.419  20.472 762.451   23.68 763.511   24.79 763.939
  25.094 764.055  27.892  764.47  29.345 764.688  30.879 764.919  35.417 765.599
  36.381 765.735  38.413 766.032  40.845 766.562

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.408     .04  19.615    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.408  19.615            2.197   1.823   1.674             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 160

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  765.18    3.11  765.65    5.03  764.32    6.05     764    6.36  763.85
    7.18  763.33    8.36   762.6    9.33     762   12.03  760.07   12.09     760
   12.55  759.78   15.77  758.19   18.13  759.63   18.73     760   18.82  760.32
    19.4  761.95   19.41     762   23.51  763.42   24.94     764   27.77  764.42
   35.38  765.57   38.41     766   40.87  766.54

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    8.36     .04    19.4    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.36    19.4             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 158.181*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   764.9   3.187 765.214   3.427 765.058   3.548 764.975   3.725 764.867
   5.155 763.996   6.201  763.71   6.518 763.576   7.359 763.107   8.351 762.568
   8.496 762.478   8.568 762.433   9.497 761.855  10.562 761.095  11.873  760.13
  12.082 759.978   12.14 759.912   12.58  759.69  14.065 758.922  15.304  758.28
  15.664 758.095  16.202 758.414  17.303  759.06  18.083 759.532  18.685   759.9
  18.698 759.907   18.79 760.204  19.385 761.725  19.394  761.77  21.165 762.403
  22.261 762.849  23.303 763.265   23.67 763.433  24.666 763.835  26.919 764.191
  27.364 764.259   34.62 765.393  37.427 765.807  37.508 765.819  39.854 766.331

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.568     .04  19.385    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.568  19.385             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 156.363*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.62   3.265 764.778   3.511 764.628   3.634 764.543   3.815 764.447
   5.281 763.672   6.351 763.421   6.677 763.301   7.538 762.885   8.554 762.405
   8.702 762.312   8.776 762.265   9.664  761.71  10.682 760.986  11.935 760.034
  12.135 759.886   12.19 759.823  12.611 759.601  14.029  758.83  15.214 758.185
  15.557 758.001  16.109 758.318  17.237 758.954  18.035 759.433  18.653 759.807
  18.666 759.814   18.76 760.088  19.369 761.499  19.378 761.541  21.063 762.163
  22.105 762.656  23.096 763.111  23.445  763.29  24.393 763.669  26.535  764.03
  26.959 764.098  33.859 765.216  36.529 765.626  36.607 765.638  38.837 766.122

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.776     .04  19.369    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.776  19.369             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 154.545*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.34   3.342 764.342   3.594 764.198    3.72 764.112   3.906 764.028
   5.406 763.347   6.502 763.131   6.835 763.027   7.716 762.662   8.757 762.243
   8.909 762.146   8.985 762.098   9.831 761.565  10.802 760.876  11.997 759.938
  12.187 759.794   12.24 759.735  12.641 759.511  13.994 758.738  15.123  758.09
  15.451 757.906  16.016 758.221   17.17 758.848  17.988 759.335   18.62 759.714
  18.633 759.721   18.73 759.972  19.354 761.274  19.362 761.311   20.96 761.922
  21.949 762.463  22.889 762.956   23.22 763.146  24.119 763.504  26.151  763.87
  26.553 763.937  33.099 765.039  35.632 765.446  35.705 765.457  37.821 765.913

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.985     .04  19.354    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.985  19.354             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 152.727*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.06    3.42 763.906   3.677 763.769   3.807  763.68   3.996 763.608
   5.531 763.023   6.653 762.842   6.994 762.753   7.895  762.44    8.96  762.08
   9.115 761.981   9.193 761.931   9.998  761.42  10.921 760.767  12.058 759.842
   12.24 759.702  12.289 759.646  12.671 759.421  13.958 758.646  15.033 757.995
  15.345 757.812  15.922 758.125  17.104 758.742  17.941 759.236  18.588 759.621
  18.601 759.629    18.7 759.856  19.338 761.048  19.346 761.081  20.858 761.682
  21.793  762.27  22.682 762.801  22.995 763.003  23.845 763.339  25.767  763.71
  26.147 763.776  32.338 764.862  34.734 765.265  34.803 765.276  36.805 765.704
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.193     .04  19.338    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.193  19.338             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 150.909*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.78   3.497  763.47    3.76 763.339   3.893 763.249   4.087 763.188
   5.656 762.699   6.803 762.552   7.152 762.479   8.074 762.217   9.163 761.917
   9.321 761.815   9.401 761.764  10.165 761.275  11.041 760.657   12.12 759.746
  12.292  759.61  12.339 759.558  12.702 759.331  13.923 758.553  14.943   757.9
  15.238 757.717  15.829 758.028  17.038 758.636  17.894 759.138  18.555 759.528
  18.569 759.536   18.67  759.74  19.323 760.823   19.33 760.851  20.755 761.442
  21.637 762.077  22.475 762.647   22.77  762.86  23.571 763.173  25.383  763.55
  25.742 763.615  31.578 764.685  33.836 765.084  33.902 765.095  35.788 765.495

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.401     .04  19.323    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.401  19.323             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 149.090*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   763.5   3.575 763.034   3.844 762.909   3.979 762.817   4.177 762.768
   5.782 762.374   6.954 762.262    7.31 762.204   8.253 761.995   9.365 761.754
   9.528 761.649   9.609 761.596  10.332  761.13  11.161 760.548  12.182  759.65
  12.344 759.518  12.389  759.47  12.732 759.241  13.887 758.461  14.852 757.805
  15.132 757.623  15.736 757.932  16.972  758.53  17.846 759.039  18.523 759.435
  18.537 759.443   18.64 759.624  19.307 760.597  19.314 760.622  20.653 761.202
  21.481 761.884  22.268 762.492  22.545 762.716  23.298 763.008  24.999  763.39
  25.336 763.454  30.817 764.508  32.939 764.904      33 764.914  34.772 765.285

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.609     .04  19.307    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.609  19.307             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 147.272*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.22   3.652 762.598   3.927 762.479   4.065 762.386   4.268 762.349
   5.907  762.05   7.105 761.973   7.469  761.93   8.432 761.772   9.568 761.591
   9.734 761.483   9.817 761.429  10.499 760.986  11.281 760.438  12.243 759.554
  12.397 759.426  12.439 759.381  12.762 759.152  13.852 758.369  14.762  757.71
  15.025 757.528  15.643 757.836  16.905 758.424  17.799 758.941   18.49 759.342
  18.504  759.35   18.61 759.508  19.292 760.372  19.299 760.392   20.55 760.961
  21.324 761.691  22.061 762.337   22.32 762.573  23.024 762.842  24.615  763.23
   24.93 763.294  30.057 764.331  32.041 764.723  32.098 764.732  33.755 765.076

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.817     .04  19.292    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.817  19.292             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 145.454*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.94    3.73 762.162    4.01 762.049   4.151 761.954   4.358 761.929
   6.032 761.726   7.255 761.683   7.627 761.656    8.61  761.55   9.771 761.428
   9.941 761.317  10.025 761.262  10.666 760.841  11.401 760.329  12.305 759.458
  12.449 759.334  12.489 759.293  12.793 759.062  13.816 758.277  14.671 757.615
  14.919 757.434   15.55 757.739  16.839 758.318  17.752 758.842  18.458 759.249
  18.472 759.257   18.58 759.393  19.276 760.146  19.283 760.162  20.448 760.721
  21.168 761.499  21.854 762.183  22.095  762.43   22.75 762.677  24.232  763.07
  24.525 763.133  29.297 764.154  31.143 764.542  31.197 764.551  32.739 764.867
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.025     .04  19.276    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.025  19.276             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 143.636*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.66   3.807 761.726   4.093  761.62   4.238 761.523   4.449 761.509
   6.157 761.402   7.406 761.393   7.785 761.381   8.789 761.327   9.974 761.266
  10.147 761.152  10.234 761.095  10.833 760.696   11.52 760.219  12.367 759.362
  12.502 759.242  12.539 759.204  12.823 758.972  13.781 758.184  14.581  757.52
  14.813 757.339  15.456 757.643  16.773 758.212  17.705 758.744  18.425 759.156
   18.44 759.164   18.55 759.277  19.261 759.921  19.267 759.932  20.345 760.481
  21.012 761.306  21.646 762.028   21.87 762.287  22.476 762.512  23.848  762.91
  24.119 762.972  28.536 763.977  30.245 764.361  30.295  764.37  31.723 764.658

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.234     .04  19.261    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.234  19.261             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 141.818*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.38   3.884  761.29   4.177  761.19   4.324 761.091   4.539  761.09
   6.283 761.077   7.557 761.104   7.944 761.107   8.968 761.105  10.177 761.103
  10.354 760.986  10.442 760.927      11 760.551   11.64  760.11  12.428 759.266
  12.554  759.15  12.588 759.116  12.853 758.882  13.745 758.092   14.49 757.425
  14.706 757.245  15.363 757.546  16.706 758.106  17.657 758.646  18.393 759.063
  18.408 759.072   18.52 759.161  19.245 759.695  20.243  760.24  20.856 761.113
  21.439 761.873  21.645 762.143  22.203 762.346  23.464  762.75  23.713 762.811
  27.776   763.8  29.348 764.181  29.393 764.189  30.706 764.449

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.442     .04  19.245    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.442  19.245             1.85   1.819   1.815             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 140

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   762.1    4.26  760.76    4.41  760.66    4.63  760.67    4.64  760.67
   10.38  760.94   10.56  760.82   10.65  760.76   11.76     760   12.49  759.17
   13.71     758    14.4  757.33    14.6  757.15   15.27  757.45   16.64     758
   18.36  758.97   19.23  759.47   20.14     760    20.7  760.92   21.42     762
   23.08  762.59   28.45     764   29.69  764.24

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.65     .04   19.23    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.65   19.23            1.389       2   2.695             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 138.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.896    .602 761.717    .752 761.684    1.88 761.358   4.166   760.7
   4.313  760.61   4.528 760.619   8.222 760.784   8.887 760.814  10.152 760.871
  10.328 760.763  10.416 760.709  10.431   760.7  10.745 760.512  11.335 760.172
  11.569 760.022  12.053 759.523  12.328   759.2   13.07 758.437  13.571 757.935
  13.595 757.911  14.312 757.222   14.52 757.035  14.549 757.048  14.607 757.072
  14.927 757.206  15.168 757.306  15.711  757.51   16.06 757.652  16.492 757.837
  18.154 758.803  18.995   759.3  19.251 759.456  19.508  759.64  19.914 759.906
   20.48 760.811  20.607 760.997  21.165 761.754  21.208 761.811  22.885 762.363
  25.094 762.909  26.999 763.375   28.31 763.702  29.563 763.937
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.416     .04  18.995    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.416  18.995            1.389       2   2.695             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 136.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.692    .588 761.527    .735  761.51   1.838  761.22   4.073 760.639
   4.216  760.56   4.427 760.568   8.038 760.722   8.687 760.749   9.924 760.801
  10.096 760.706  10.182 760.658  10.198  760.65  10.523 760.481  11.136 760.189
  11.379 760.044  11.881 759.576  12.165 759.229  12.935 758.388  13.455 757.846
  13.481 757.822  14.224 757.114   14.44  756.92  14.468 756.933  14.524 756.954
  14.833 757.073  15.065 757.163   15.59 757.345  15.927 757.483  16.343 757.674
  17.948 758.636   18.76  759.13  19.019 759.294  19.278 759.515  19.689 759.812
   20.26 760.702  20.388 760.886  20.953  761.57  20.995 761.621   22.69 762.137
  24.921 762.653  26.846 763.091   28.17 763.404  29.436 763.634

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.182     .04  18.76    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.182   18.76            1.389       2   2.695             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 134.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.488    .575 761.338    .718 761.337   1.796 761.083   3.979 760.579
   4.119 760.509   4.325 760.518   7.853 760.659   8.488 760.684   9.696 760.732
   9.864 760.649   9.948 760.607   9.964   760.6  10.302 760.449  10.936 760.207
  11.188 760.067  11.708 759.629  12.003 759.259  12.801  758.34  13.339 757.758
  13.366 757.733  14.137 757.006   14.36 756.805  14.387 756.817  14.441 756.836
  14.739  756.94  14.963 757.019  15.469 757.179  15.793 757.314  16.195 757.511
  17.742 758.469  18.525  758.96  18.787 759.132  19.048 759.389  19.463 759.718
  20.041 760.592   20.17 760.776   20.74 761.386  20.783 761.432  22.494  761.91
  24.749 762.398  26.692 762.807  28.031 763.106  29.309 763.331

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.948     .04  18.525    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.948  18.525            1.389       2   2.695             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 132.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.284    .561 761.148    .701 761.163   1.753 760.945   3.886 760.518
   4.022 760.459   4.223 760.467   7.668 760.596   8.288  760.62   9.468 760.663
   9.632 760.592   9.714 760.556   9.731  760.55   10.08 760.418  10.737 760.224
  10.997 760.089  11.535 759.682  11.841 759.289  12.667 758.291  13.224  757.67
  13.251 757.644  14.049 756.898   14.28  756.69  14.306 756.702  14.358 756.718
  14.645 756.807   14.86 756.875  15.348 757.014   15.66 757.144  16.047 757.349
  17.537 758.302   18.29  758.79  18.554 758.971  18.819 759.263  19.238 759.625
  19.821 760.483  19.951 760.665  20.527 761.202   20.57 761.242  22.299 761.683
  24.576 762.143  26.539 762.523  27.891 762.808  29.182 763.028

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.714     .04  18.29    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.714   18.29            1.389       2   2.695             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 130.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  761.08    .548 760.958    .684 760.989   1.711 760.808   3.792 760.458
   3.926 760.409   4.121 760.416   7.484 760.534   8.088 760.555    9.24 760.593
     9.4 760.534    9.48 760.505   9.497   760.5   9.858 760.387  10.537 760.242
  10.806 760.111  11.363 759.735  11.679 759.318  12.532 758.243  13.108 757.581
  13.137 757.555  13.961  756.79    14.2 756.575  14.225 756.587  14.275   756.6
```

```
   14.55 756.674  14.758 756.732  15.226 756.848  15.527 756.975  15.899 757.186
  17.331 758.135  18.055  758.62  18.322 758.809  18.589 759.138  19.012 759.531
  19.601 760.374  19.733 760.554  20.314 761.019  20.358 761.053  22.104 761.457
  24.403 761.887  26.386  762.24  27.751  762.51  29.055 762.725

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.48     .04  18.055    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.48  18.055            1.389       2   2.695             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 128.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.876    .534 760.769    .668 760.815   1.669  760.67   3.698 760.398
   3.829 760.359    4.02 760.365   7.299 760.471   7.889  760.49   9.012 760.524
   9.168 760.477   9.246 760.454   9.264  760.45   9.637 760.355  10.338  760.26
  10.616 760.133   11.19 759.788  11.516 759.348  12.398 758.194  12.992 757.493
  13.022 757.466  13.873 756.682   14.12  756.46  14.144 756.471  14.192 756.482
  14.456 756.541  14.655 756.588  15.105 756.682  15.393 756.806   15.75 757.023
  17.125 757.968   17.82  758.45   18.09 758.647  18.359 759.012  18.786 759.437
  19.381 760.265  19.514 760.443  20.101 760.835  20.146 760.863  21.909  761.23
  24.231 761.632  26.233 761.956  27.611 762.212  28.928 762.422

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.246     .04   17.82    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.246   17.82            1.389       2   2.695             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 126.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.672    .521 760.579    .651 760.641   1.627 760.533   3.605 760.337
   3.732 760.309   3.918 760.314   7.114 760.408   7.689 760.425   8.784 760.455
   8.936  760.42   9.012 760.403    9.03   760.4   9.415 760.324  10.138 760.277
  10.425 760.156  11.018 759.841  11.354 759.378  12.263 758.146  12.877 757.405
  12.907 757.377  13.785 756.574   14.04 756.345  14.063 756.356  14.109 756.364
  14.362 756.409  14.553 756.444  14.984 756.517   15.26 756.637  15.602  756.86
  16.919 757.801  17.585  758.28  17.857 758.485  18.129 758.887  18.561 759.343
  19.161 760.156  19.296 760.332  19.888 760.651  19.933 760.674  21.713 761.003
  24.058 761.376   26.08 761.672  27.471 761.914  28.801 762.119

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.012     .04  17.585    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.012  17.585            1.389       2   2.695             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 124.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.468    .507 760.389    .634 760.468   1.584 760.395   3.511 760.277
   3.635 760.259   3.816 760.263   6.929 760.345   7.489  760.36   8.555 760.385
   8.704 760.363   8.778 760.352   8.797  760.35   9.193 760.293   9.939 760.295
  10.234 760.178  10.845 759.894  11.192 759.407  12.129 758.097  12.761 757.317
  12.792 757.288  13.698 756.466   13.96  756.23  13.982 756.241  14.026 756.246
  14.268 756.276  14.451   756.3  14.863 756.351  15.127 756.468  15.454 756.697
  16.713 757.634   17.35  758.11  17.625 758.324    17.9 758.761  18.335 759.249
  18.941 760.047  19.077 760.222  19.676 760.467  19.721 760.484  21.518 760.777
  23.885 761.121  25.926 761.388  27.332 761.616  28.674 761.816

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.778     .04   17.35    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.778   17.35            1.389       2   2.695             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 122.*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 760.264    .494   760.2    .617 760.294   1.542 760.258   3.418 760.216
   3.538 760.208   3.714 760.213   6.745 760.283    7.29 760.295   8.327 760.316
   8.472 760.306   8.544 760.301   8.563    760.3   8.972 760.261   9.739 760.312
  10.043   760.2  10.673 759.947   11.03 759.437  11.994 758.049  12.646 757.228
  12.678 757.199   13.61 756.358   13.88 756.115  13.901 756.125  13.943 756.128
  14.174 756.143  14.348 756.157  14.741 756.186  14.993 756.299  15.305 756.534
  16.507 757.467  17.115  757.94  17.392 758.162   17.67 758.636   18.11 759.155
  18.722 759.938  18.859 760.111  19.463 760.284  19.509 760.295  21.323  760.55
  23.713 760.865  25.773 761.104  27.192 761.318  28.547 761.513

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.544     .04  17.115    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.544  17.115            1.389       2   2.695             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 120

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  760.06     .48  760.01      .6  760.12     1.5  760.12    6.56  760.22
    7.09  760.23    8.31  760.25    8.33  760.25    8.75  760.23    9.54  760.33
    10.5     760   10.51     760   10.52  759.99   10.52  759.98   11.86     758
   12.53  757.14    13.8     756   13.82  756.01   13.86  756.01   14.08  756.01
   14.62  756.02   14.86  756.13   16.88  757.77   17.16     758   17.44  758.51
   18.64     760   19.25   760.1   23.54  760.61   25.62  760.82   28.42  761.21

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    8.31     .04   16.88    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.31   16.88            1.835    1.82   1.828             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    12.4               F
   16.28   28.42               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 118.181*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.953    .031 759.948    .478 759.888    .597 759.983    .806 760.065
   1.493 760.033   2.848 759.994   4.074 760.007   4.388 760.012   5.403 760.012
   6.231 760.013   6.531 760.028   7.058 760.055   7.246 760.065   8.273 760.109
   8.292 760.109   8.691 760.097   9.442 760.198  10.315 759.898  10.545 759.507
  10.827 758.925  11.617  757.78  12.259 756.967  13.476 755.872  13.501 755.882
  13.544 755.884   13.58 755.885  13.781   755.9  14.361 755.953  14.619 756.073
  15.206 756.521  16.108 757.233  16.791 757.775   17.05 757.987  17.308 758.454
  18.416  759.82  19.021 759.911  22.137  760.25  22.695 760.313  22.914 760.337
  23.274 760.377   23.91 760.438  25.337 760.576  27.434 760.853  28.113 760.935

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.273     .04  16.791    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.273  16.791            1.835    1.82   1.828             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       012.10454               F
15.85909  28.113               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 116.363*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.845    .031 759.839    .476 759.766    .594 759.847    .803 760.009
   1.487 759.945   2.835 759.842   4.055 759.842   4.368 759.847   5.379 759.827
   6.203 759.811   6.501 759.837   7.026 759.881   7.214 759.896   8.235 759.968
   8.253 759.969   8.632 759.964   9.344 760.066  10.129 759.796  10.348  759.36
  10.619 758.633  11.374  757.56  11.988 756.794  13.153 755.744  13.183 755.754
  13.229 755.757  13.267 755.759  13.482  755.79  14.103 755.887  14.379 756.016
  15.007 756.469  15.971 757.211  16.702 757.781  16.939 757.975  17.176 758.397
  18.193  759.64  18.792 759.721  21.882 760.026  22.435 760.086  22.652 760.107
  23.009 760.145  23.639 760.201  25.053 760.333  27.133 760.592  27.805 760.661

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.235     .04  16.702    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.235  16.702            1.835    1.82   1.828             .1      .3
Ineffective Flow     num=       2
```

```
   Sta L   Sta R    Elev  Permanent
       011.80909               F
15.43818  27.805               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 114.545*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.738    .031  759.73    .474 759.645    .592 759.711    .799 759.954
    1.48 759.858   2.823  759.69   4.037 759.677   4.348 759.682   5.355 759.642
   6.175  759.61   6.472 759.645   6.995 759.706   7.181 759.728   8.198 759.827
   8.215 759.828   8.573  759.83   9.245 759.935   9.944 759.695  10.152 759.213
   10.41  758.34  11.131  757.34  11.717 756.621  12.829 755.615   12.84 755.615
  12.864 755.627  12.913 755.631  12.954 755.634  13.183  755.68  13.844  755.82
  14.138  755.96  14.807 756.417  15.834  757.19  16.613 757.786  16.829 757.962
  17.044 758.341  17.969  759.46  18.563 759.532  21.626 759.802  22.174 759.859
  22.389 759.878  22.743 759.912  23.368 759.964   24.77 760.089  26.831 760.331
  27.498 760.386

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.198     .04  16.613    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.198  16.613           1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       011.51364               F
15.01727  27.498               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 112.727*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.631    .031 759.622    .471 759.523    .589 759.574    .795 759.898
   1.473 759.771    2.81 759.537   4.018 759.513   4.328 759.517    5.33 759.457
   6.147 759.409   6.442 759.453   6.963 759.532   7.149 759.559   8.161 759.686
   8.177 759.687   8.514 759.697   9.147 759.803   9.758 759.593   9.955 759.067
  10.201 758.048  10.888  757.12  11.447 756.448  12.505 755.487   12.52 755.487
  12.546 755.499  12.598 755.505  12.641 755.508  12.884  755.57  13.586 755.754
  13.898 755.903  14.607 756.365  15.697 757.169  16.524 757.792  16.718 757.949
  16.912 758.285  17.745  759.28  18.335 759.343   21.37 759.578  21.914 759.631
  22.127 759.648  22.478 759.679  23.097 759.728  24.487 759.845   26.53 760.069
  27.191 760.112

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.161     .04  16.524    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.161  16.524           1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       011.21818               F
14.59636  27.191               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 110.909*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.524    .031 759.513    .469 759.401    .586 759.438    .792 759.843
   1.466 759.684   2.797 759.385       4 759.348   4.309 759.351   5.306 759.271
   6.118 759.208   6.413 759.262   6.931 759.357   7.116 759.391   8.124 759.545
   8.139 759.547   8.455 759.564   9.049 759.671   9.573 759.491   9.759  758.92
   9.992 757.755  10.645   756.9  11.176 756.275  12.182 755.359    12.2 755.359
  12.227 755.371  12.238 755.374  12.282 755.378  12.328 755.383  12.585  755.46
  13.327 755.687  13.657 755.846  14.408 756.313  15.561 757.148  16.435 757.797
  16.608 757.936   16.78 758.228  17.522   759.1  18.106 759.154  21.114 759.354
  21.653 759.404  21.865 759.418  22.212 759.447  22.826 759.491  24.203 759.601
  26.229 759.808  26.884 759.837

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.124     .04  16.435    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.124  16.435           1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.92273               F
14.17546  26.884               F

CROSS SECTION
```

```
RIVER: Arroyo El Moro
REACH: Afluente          RS: 109.090*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.416    .031 759.404    .467 759.279    .583 759.302    .788 759.787
    1.46 759.596   2.784 759.232   3.982 759.183   4.289 759.186   5.282 759.086
    6.09 759.006   6.383  759.07   6.899 759.182   7.083 759.222   8.086 759.405
     8.1 759.406   8.396 759.431   8.951 759.539   9.387 759.389   9.562 758.773
   9.784 757.463  10.402  756.68  10.905 756.102  11.858 755.231   11.88 755.231
  11.909 755.243   11.92 755.246  11.967 755.252  12.015 755.257  12.286  755.35
  13.069 755.621  13.417 755.789  14.208  756.26  15.424 757.126  16.345 757.803
  16.497 757.924  16.649 758.172  17.298  758.92  17.877 758.965  20.859  759.13
  21.393 759.177  21.602 759.189  21.947 759.214  22.555 759.254   23.92 759.358
  25.927 759.547  26.576 759.563

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.086    .04  16.345    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.086  16.345            1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.62727               F
13.75455  26.576               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 107.272*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.309    .031 759.295    .465 759.158    .581 759.165    .785 759.732
   1.453 759.509   2.771  759.08   3.963 759.019   4.269 759.021   5.257 758.901
   6.062 758.805   6.354 758.879   6.867 759.008   7.051 759.054   8.049 759.264
   8.062 759.266   8.337 759.297   8.853 759.407   9.202 759.287   9.366 758.627
   9.575  757.17  10.159  756.46  10.634  755.93  11.535 755.103   11.56 755.103
   11.59 755.116  11.602 755.119  11.651 755.125  11.702 755.132  11.987  755.24
   12.81 755.554  13.176 755.733  14.008 756.208  15.287 757.105  16.256 757.808
  16.387 757.911  16.517 758.116  17.075  758.74  17.648 758.775  20.603 758.906
  21.132 758.949   21.34 758.959  21.681 758.981  22.284 759.017  23.637 759.114
  25.626 759.285  26.269 759.288

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.049    .04  16.256    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.049  16.256            1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.33182               F
13.33364  26.269               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 105.454*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.202     .03 759.186    .463 759.036    .578 759.029    .781 759.676
   1.446 759.422   2.758 758.927   3.945 758.854   4.249 758.856   5.233 758.716
   6.034 758.604   6.325 758.687   6.836 758.833   7.018 758.885   8.012 759.123
   8.024 759.125   8.278 759.164   8.755 759.275   9.016 759.185   9.169  758.48
   9.366 756.878   9.916  756.24  10.363 755.757  11.211 754.975   11.24 754.975
  11.272 754.988  11.284 754.992  11.336 754.999  11.389 755.006  11.688 755.129
  12.552 755.488  12.936 755.676  13.809 756.156   15.15 757.084  16.167 757.814
  16.276 757.898  16.385 758.059  16.851  758.56  17.419 758.586  20.347 758.682
  20.872 758.722  21.077 758.729  21.416 758.749  22.013  758.78  23.353  758.87
  25.324 759.024  25.962 759.014

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.012    .04  16.167    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.012  16.167            1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.03636               F
12.91273  25.962               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente          RS: 103.636*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 759.095     .03 759.078    .461 758.914    .575 758.893    .777 759.621
   1.439 759.335   2.746 758.775   3.927 758.689    4.23  758.69   5.209  758.53
   6.006 758.403   6.295 758.495   6.804 758.659   6.985 758.717   7.975 758.982
   7.986 758.984   8.218 759.031   8.656 759.144   8.831 759.084   8.973 758.333
   9.157 756.585   9.673  756.02  10.092 755.584  10.887 754.846   10.92 754.846
  10.953  754.86  10.966 754.865   11.02 754.873  11.076 754.881  11.389 755.019
  12.293 755.421  12.695 755.619  13.609 756.104  15.014 757.063  16.078 757.819
  16.166 757.886  16.253 758.003  16.627  758.38   17.19 758.397  20.091 758.458
  20.611 758.495  20.815 758.499   21.15 758.516  21.742 758.544   23.07 758.626
  25.023 758.763  25.655 758.739

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.975     .04  16.078    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.975  16.078           1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       09.740909               F
12.49182  25.655               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 101.818*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.987     .03 758.969    .458 758.792    .573 758.756    .774 759.565
   1.433 759.247   2.733 758.622   3.908 758.525    4.21 758.525   5.184 758.345
   5.978 758.201   6.266 758.304   6.772 758.484   6.953 758.548   7.937 758.841
   7.947 758.844   8.159 758.898   8.558 759.012   8.645 758.982   8.776 758.187
   8.949 756.292    9.43   755.8   9.822 755.411  10.564 754.718    10.6 754.718
  10.635 754.732  10.648 754.737  10.705 754.746  10.763 754.755   11.09 754.909
  12.035 755.355  12.455 755.562   13.41 756.052  14.877 757.041  15.989 757.825
  16.055 757.873  16.121 757.947  16.404   758.2  16.961 758.208  19.836 758.234
  20.351 758.267  20.552  758.27  20.885 758.284  21.471 758.307  22.787 758.383
  24.721 758.501  25.347 758.465

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.937     .04  15.989    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.937  15.989           1.835    1.82   1.828             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       09.445455               F
12.07091  25.347               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 100

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  758.88     .03  758.86     .57  758.62     .77  759.51    2.72  758.47
    3.89  758.36    4.19  758.36    5.16  758.16    5.95     758    6.92  758.38
     7.9   758.7    8.46  758.88    8.58  758.04    8.74     756   10.24  754.59
   10.28  754.59   10.33  754.61   10.45  754.63   13.21     756   14.74  757.02
    15.9  757.83   16.18  758.02   19.58  758.01   20.09  758.04   20.29  758.04
    21.2  758.07   24.42  758.24   25.04  758.19

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035     7.9     .04    15.9    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           7.9    15.9           8.57    8.91    8.74             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    9.15               F
   11.65   25.04               F

CULVERT


RIVER: Arroyo El Moro
REACH: Afluente           RS: 95

INPUT
Description:
Distance from Upstream XS =       3
Deck/Roadway Width        =       4
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       8   758.5     754      17   758.5     754

Upstream Bridge Cross Section Data
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  758.88     .03  758.86     .57  758.62     .77  759.51    2.72  758.47
    3.89  758.36    4.19  758.36    5.16  758.16    5.95     758    6.92  758.38
```

```
     7.9   758.7    8.46  758.88    8.58  758.04    8.74     756   10.24  754.59
   10.28  754.59   10.33  754.61   10.45  754.63   13.21     756   14.74  757.02
    15.9  757.83   16.18  758.02   19.58  758.01   20.09  758.04   20.29  758.04
    21.2  758.07   24.42  758.24   25.04  758.19

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035     7.9    .04    15.9    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
           7.9    15.9            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    9.15               F
   11.65   25.04               F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       8     756     752      17     756     752

Downstream Bridge Cross Section Data
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  757.98      .4  757.98    1.41  757.92    3.93  757.55    4.79  757.23
    7.28  757.16    8.28  757.09    8.56  757.07    8.74  757.06   10.23  755.42
   11.33  755.14   11.75   753.8   11.89  753.73   13.12  753.14   13.13  755.27
   13.88  755.12   14.03  755.09   15.28  756.52   16.76  756.77   17.81  756.72
   18.04  756.71   19.11  756.65   20.37  756.98   21.05  757.26   22.34  757.55
   26.22  757.46   27.07  757.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.89    .04   17.81    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         11.89   17.81            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   11.25               F
   13.75   27.07               F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       2     2.5
FHWA Chart # 58- Rectangular concrete
FHWA Scale # 2 - Side tapered; More favorable edges
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  3       4     .015     .015        0                  .2               1
Upstream   Elevation =  754.55
           Centerline Station =  10.4
Downstream Elevation =  753.15
           Centerline Station =  12.5

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1

  Q Culv Group (m3/s)       5.39    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         4.44
  Q Barrel (m3/s)           5.39    Culv Vel DS (m/s)         1.11
  E.G. US. (m)            756.25    Culv Inv El Up (m)      754.55
  W.S. US. (m)            755.57    Culv Inv El Dn (m)      753.15
  E.G. DS (m)             755.16    Culv Frctn Ls (m)         0.88
  W.S. DS (m)             754.64    Culv Exit Loss (m)        0.00
  Delta EG (m)              1.09    Culv Entr Loss (m)        0.21
  Delta WS (m)              0.93    Q Weir (m3/s)
  E.G. IC (m)                       Weir Sta Lft (m)
  E.G. OC (m)                       Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       755.04    Weir Max Depth (m)
  Culv WS Outlet (m)      755.10    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.18    Weir Flow Area (m2)
  Culv Crt Depth (m)        0.78    Min El Weir Flow (m)    758.50


Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CULVERT OUTPUT  Profile #PF 2  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      13.31    Culv Full Len (m)         2.18
  # Barrels                    1    Culv Vel US (m/s)         5.20
  Q Barrel (m3/s)          13.31    Culv Vel DS (m/s)         2.66
  E.G. US. (m)            757.24    Culv Inv El Up (m)      754.55
  W.S. US. (m)            756.10    Culv Inv El Dn (m)      753.15
  E.G. DS (m)             756.27    Culv Frctn Ls (m)         0.68
  W.S. DS (m)             755.57    Culv Exit Loss (m)        0.00
  Delta EG (m)              0.97    Culv Entr Loss (m)        0.29
  Delta WS (m)              0.54    Q Weir (m3/s)
  E.G. IC (m)                       Weir Sta Lft (m)
  E.G. OC (m)                       Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       755.57    Weir Max Depth (m)
  Culv WS Outlet (m)      755.15    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.32    Weir Flow Area (m2)
```

```
  Culv Crt Depth (m)        1.42    Min El Weir Flow (m)    758.50

Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 92

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  757.98      .4  757.98    1.41  757.92    3.93  757.55    4.79  757.23
    7.28  757.16    8.28  757.09    8.56  757.07    8.74  757.06   10.23  755.42
   11.33  755.14   11.75   753.8   11.89  753.73   13.12  753.14   13.13  755.27
   13.88  755.12   14.03  755.09   15.28  756.52   16.76  756.77   17.81  756.72
   18.04  756.71   19.11  756.65   20.37  756.98   21.05  757.26   22.34  757.55
   26.22  757.46   27.07  757.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.89     .04   17.81    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.89   17.81           2.021   1.739   1.197             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   11.25               F
   13.75   27.07               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 90.2857*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  757.59    .383 757.587    1.35 757.529   3.762 757.196   4.585 756.916
   6.968  756.84   7.341 756.814   7.925  756.78   8.193 756.764   8.366 756.756
   9.909  755.27  10.891 755.027  11.251 753.879  11.371 753.819  11.383 753.817
    11.5 753.769   11.75 753.601  12.891 753.034  13.056 753.086   13.27  754.98
  13.913 754.851  14.041 754.826  15.113 756.051  16.381 756.266  17.281 756.223
  17.601 756.331  17.949  756.62   18.06 756.701  18.093 756.731  18.217 756.707
  18.316 756.696  19.352 756.571   19.41 756.581  20.105 756.795  20.572 756.919
  21.231 757.182   22.48 757.474  22.614 757.476  26.238 757.376  27.061 757.704

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.371     .04  17.281    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.371  17.281           2.021   1.739   1.197             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       011.07143               F
13.88857  27.061               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 88.5714*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   757.2    .366 757.195   1.289 757.139   3.593 756.842    4.38 756.602
   6.656 756.519   7.012 756.495   7.571 756.469   7.827 756.457   7.991 756.451
   9.587  755.12  10.453 754.914  10.753 753.957  10.853 753.907  10.876 753.904
   11.11 753.807   11.61 753.473  12.663 752.929  12.991 753.031   13.41  754.69
  13.946 754.583  14.053 754.561  14.946 755.583  16.003 755.761  16.753 755.726
  17.393 755.943  18.087  756.52   18.31 756.683  18.376 756.743  18.496 756.699
  18.591 756.682  19.594 756.492   19.65 756.495  20.323 756.735  20.775 756.858
  21.412 757.104  22.621 757.398   22.75 757.405  26.256 757.292  27.053 757.559

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.853     .04  16.753    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.853  16.753           2.021   1.739   1.197             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.89286               F
14.02714  27.053               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 86.8571*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0  756.81    .349 756.802   1.229 756.748   3.425 756.487   4.175 756.288
   6.345 756.199   6.684 756.176   7.216 756.159    7.46 756.151   7.617 756.147
   9.266  754.97  10.014 754.801  10.254 754.036  10.334 753.996  10.369 753.991
   10.72 753.846   11.47 753.344  12.434 752.823  12.927 752.977   13.55   754.4
  13.979 754.314  14.064 754.297  14.779 755.114  15.624 755.257  16.224 755.229
  17.184 755.554  18.226  756.42   18.56 756.664  18.659 756.754  18.775 756.691
  18.867 756.668  19.836 756.414   19.89  756.41   20.54 756.676  20.977 756.797
  21.593 757.026  22.761 757.322  22.886 757.334  26.275 757.207  27.044 757.413

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.334     .04  16.224    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.334  16.224           2.021   1.739   1.197             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.71429               F
14.16571  27.044               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 85.1428*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  756.42    .331  756.41   1.168 756.358   3.257 756.133   3.969 755.974
   6.033 755.879   6.355 755.857   6.862 755.848   7.094 755.844   7.243 755.843
   8.944  754.82   9.576 754.689   9.756 754.114   9.816 754.084   9.861 754.079
   10.33 753.884   11.33 753.216  12.206 752.717  12.863 752.923   13.69  754.11
  14.011 754.046  14.076 754.033  14.611 754.646  15.246 754.753  15.696 754.731
  16.976 755.166  18.364  756.32   18.81 756.646  18.941 756.766  19.054 756.683
  19.142 756.654  20.078 756.335   20.13 756.325  20.758 756.617  21.179 756.736
  21.774 756.948  22.901 757.246  23.022 757.263  26.293 757.123  27.036 757.267

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.816     .04  15.696    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.816  15.696           2.021   1.739   1.197             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.53571               F
14.30429  27.036               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 83.4285*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  756.03    .314 756.017   1.108 755.967   3.088 755.779   3.764  755.66
   5.721 755.558   6.027 755.538   6.507 755.538   6.727 755.538   6.869 755.539
   8.623  754.67   9.137 754.576   9.257 754.193   9.297 754.173   9.354 754.166
    9.94 753.923   11.19 753.087  11.977 752.611  12.799 752.869   13.83  753.82
  14.044 753.777  14.087 753.769  14.444 754.177  14.867 754.249  15.167 754.234
  16.767 754.777  18.503  756.22   19.06 756.627  19.224 756.777  19.332 756.676
  19.418 756.639   20.32 756.256   20.37  756.24  20.975 756.558  21.381 756.675
  21.954  756.87  23.041  757.17  23.158 757.192  26.311 757.039  27.027 757.121

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.297     .04  15.167    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.297  15.167           2.021   1.739   1.197             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.35714               F
14.44286  27.027               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 81.7142*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.64    .297 755.624   1.048 755.576    2.92 755.425   3.559 755.346
   5.409 755.238   5.698 755.219   6.152 755.228   6.361 755.231   6.494 755.234
   8.301  754.52   8.699 754.463   8.759 754.271   8.779 754.261   8.847 754.253
    9.55 753.961   11.05 752.959  11.749 752.506  12.734 752.814   13.97  753.53
  14.077 753.509  14.099 753.504  14.277 753.709  14.489 753.744  14.639 753.737
  16.559 754.389  18.641  756.12   19.31 756.609  19.507 756.789  19.611 756.668
  19.694 756.625  20.562 756.177   20.61 756.155  21.193 756.499  21.584 756.614
  22.135 756.792  23.182 757.094  23.294 757.121  26.329 756.955  27.019 756.976

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.779     .04  14.639    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.779  14.639            2.021   1.739   1.197             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       010.17857               F
14.58143  27.019               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 80

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.25    5.37   754.9    6.12  754.93    7.98  754.37    8.26  754.35
    8.34  754.34    9.16     754   10.91  752.83   11.52   752.4   12.67  752.76
   14.11  753.24   16.35     754   18.78  756.02   19.56  756.59   19.79   756.8
   19.89  756.66   20.85  756.07   21.41  756.44   23.43  757.05   27.01  756.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    8.26     .04   14.11    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.26   14.11            2.248   1.844   1.405             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0      10               F
   14.72   27.01               F

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 78.1818*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.03   5.486 754.722   5.832 754.735   6.253 754.756     6.5 754.693
   6.913 754.586   7.754 754.366   8.153  754.24   8.439 754.207   8.521 754.194
   9.357 753.845   9.913 753.487  10.248 753.248  10.332 753.189  10.533  753.06
  11.142 752.685  11.588 752.396  11.697 752.323  11.764 752.278  11.955 752.343
  12.925 752.674   12.99 752.716  13.048 752.755  13.129 752.836  13.567 752.947
  14.179 753.106  14.525 753.201  15.381 753.453  15.923 753.611   16.77  753.87
  17.207 754.192  19.219 755.752  19.804 756.153  20.003 756.285  20.234 756.477
  20.334  756.35  20.375 756.327  21.288  755.89  21.299 755.884  21.862 756.217
  22.506  756.39  23.892 756.771  24.551 756.735  24.675 756.721  24.951 756.714
  26.521 756.672  27.491 756.653

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.439     .04  14.525    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.439  14.525            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 76.3636*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.81   5.603 754.544   5.956 754.557   6.385 754.581   6.638 754.528
    7.06 754.436   7.919 754.244   8.326 754.109   8.618 754.065   8.701 754.049
   9.554  753.69  10.121 753.338  10.462  753.08  10.547 753.017  10.752 752.891
  11.373  752.54  11.828  752.27  11.939   752.2  12.007 752.156  12.211  752.23
   13.24 752.606  13.309 752.671  13.372 752.731  13.457 752.868  13.922 752.953
  14.572 753.081  14.939 753.162    15.8 753.376  16.345  753.51  17.196 753.742
  17.636 754.028  19.657 755.483  20.246 755.859  20.445 755.979  20.678 756.153
  20.779  756.04   20.82  756.02  21.738 755.703  21.748 755.697  22.314 755.995
  22.961 756.147  24.355 756.492  25.017 756.461  25.142  756.44  25.419 756.443
  26.997 756.455  27.972 756.475

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.618     .04  14.939    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.618  14.939            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 74.5454*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.59   5.719 754.366    6.08 754.378   6.518 754.407   6.776 754.364
   7.206 754.287   8.084 754.123   8.499 753.979   8.797 753.922   8.882 753.903
   9.751 753.535  10.328 753.189  10.676 752.912  10.763 752.845  10.972 752.722
  11.605 752.396  12.068 752.145  12.181 752.076  12.251 752.035  12.466 752.116
```

```
  13.556 752.539  13.629 752.627  13.695 752.708  13.785 752.901  14.278  752.96
  14.965 753.055  15.354 753.123  16.219   753.3  16.766 753.409  17.622 753.614
  18.064 753.864  20.096 755.215  20.687 755.566  20.888 755.674  21.121  755.83
  21.223 755.729  21.264 755.712  22.187 755.516  22.198 755.511  22.766 755.772
  23.417 755.904  24.817 756.213  25.483 756.186  25.608 756.159  25.887 756.171
  27.472 756.238  28.453 756.298

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.797     .04  15.354    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.797  15.354            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 72.7272*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.37   5.836 754.188   6.204   754.2   6.651 754.233   6.914   754.2
   7.353 754.137   8.248 754.001   8.672 753.848   8.976 753.779   9.063 753.757
   9.948  753.38  10.536 753.041  10.891 752.745  10.979 752.673  11.192 752.553
  11.836 752.251  12.308 752.019  12.424 751.953  12.495 751.913  12.722 752.003
  13.871 752.472  13.948 752.583  14.018 752.684  14.113 752.933  14.633 752.966
  15.358 753.029  15.768 753.084  16.638 753.224  17.188 753.308  18.048 753.486
  18.492   753.7  20.534 754.947  21.129 755.273   21.33 755.368  21.565 755.506
  21.667 755.419  21.709 755.404  22.636 755.329  22.647 755.324  23.218  755.55
  23.872 755.661   25.28 755.934  25.949 755.912  26.075 755.878  26.355   755.9
  27.948 756.021  28.934 756.121

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.976     .04  15.768    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.976  15.768            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 70.9090*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.15   5.952  754.01   6.327 754.021   6.783 754.059   7.052 754.036
     7.5 753.987   8.413  753.88   8.845 753.718   9.155 753.636   9.243 753.611
  10.145 753.225  10.744 752.892  11.105 752.577  11.195 752.501  11.412 752.384
  12.068 752.106  12.549 751.894  12.666  751.83  12.738 751.791  12.977  751.89
  14.187 752.404  14.268 752.538  14.341 752.661  14.441 752.966  14.988 752.972
  15.751 753.004  16.183 753.045  17.056 753.148   17.61 753.207  18.474 753.358
   18.92 753.535  20.973 754.679  21.571  754.98  21.773 755.063  22.009 755.183
  22.111 755.109  22.153 755.096  23.085 755.142  23.096 755.138   23.67 755.327
  24.328 755.418  25.742 755.655  26.415 755.637  26.541 755.597  26.823 755.628
  28.424 755.803  29.415 755.944

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.155     .04  16.183    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.155  16.183            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 69.0909*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  753.93   6.069 753.832   6.451 753.843   6.916 753.884    7.19 753.871
   7.646 753.838   8.577 753.758   9.018 753.587   9.335 753.494   9.424 753.466
  10.341  753.07  10.951 752.743  11.319 752.409  11.411  752.33  11.631 752.215
  12.299 751.961  12.789 751.768  12.908 751.707  12.982 751.669  13.233 751.776
  14.502 752.337  14.587 752.494  14.664 752.637  14.769 752.998  15.344 752.978
  16.144 752.978  16.597 753.005  17.475 753.071  18.031 753.105    18.9  753.23
  19.349 753.371  21.411  754.41  22.012 754.686  22.215 754.758  22.453  754.86
  22.556 754.799  22.598 754.789  23.534 754.955  23.545 754.952  24.123 755.105
  24.783 755.175  26.205 755.376  26.881 755.363  27.008 755.315   27.29 755.357
    28.9 755.586  29.895 755.766

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.335     .04  16.597    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.335  16.597            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 67.2727*
```

```
INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  753.71   6.185 753.655   6.575 753.664   7.049  753.71   7.328 753.707
   7.793 753.688   8.742 753.636   9.191 753.457   9.514 753.351   9.605  753.32
  10.538 752.915  11.159 752.595  11.533 752.241  11.627 752.158  11.851 752.046
  12.531 751.816  13.029 751.642  13.151 751.583  13.225 751.547  13.488 751.663
  14.818 752.269  14.907  752.45  14.987 752.614  15.097  753.03  15.699 752.985
  16.537 752.952  17.012 752.966  17.894 752.995  18.453 753.004  19.326 753.102
  19.777 753.207   21.85 754.142  22.454 754.393  22.658 754.452  22.896 754.536
      23 754.489  23.042 754.481  23.983 754.768  23.995 754.765  24.575 754.882
  25.238 754.932  26.667 755.097  27.347 755.088  27.474 755.034  27.758 755.086
  29.376 755.369  30.376 755.589

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.514     .04  17.012    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.514  17.012            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 65.4545*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  753.49   6.301 753.477   6.699 753.486   7.182 753.536   7.466 753.543
    7.94 753.539   8.906 753.515   9.364 753.326   9.693 753.208   9.785 753.174
  10.735 752.759  11.367 752.446  11.747 752.073  11.842 751.986  12.071 751.877
  12.762 751.672  13.269 751.517  13.393  751.46  13.469 751.425  13.744  751.55
  15.133 752.202  15.226 752.405  15.311  752.59  15.426 753.063  16.054 752.991
  16.931 752.927  17.426 752.927  18.313 752.919  18.875 752.903  19.752 752.974
  20.205 753.043  22.289 753.874  22.895   754.1  23.101 754.147   23.34 754.213
  23.444 754.178  23.487 754.173  24.433 754.581  24.444 754.579  25.027 754.659
  25.694 754.689   27.13 754.818  27.812 754.814  27.941 754.753  28.226 754.814
  29.852 755.152  30.857 755.412

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.693     .04  17.426    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.693  17.426            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 63.6363*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  753.27   6.418 753.299   6.822 753.307   7.314 753.362   7.604 753.379
   8.087 753.389   9.071 753.393   9.537 753.196   9.872 753.065   9.966 753.028
  10.932 752.604  11.575 752.297  11.962 751.906  12.058 751.814  12.291 751.708
  12.994 751.527   13.51 751.391  13.635 751.337  13.713 751.304  13.999 751.437
  15.449 752.135  15.546 752.361  15.634 752.567  15.754 753.095  16.409 752.997
  17.324 752.901  17.841 752.888  18.732 752.843  19.297 752.802  20.178 752.846
  20.633 752.878  22.727 753.605  23.337 753.807  23.543 753.841  23.784 753.889
  23.889 753.868  23.931 753.865  24.882 754.394  24.893 754.392  25.479 754.437
  26.149 754.446  27.592 754.538  28.278 754.539  28.407 754.472  28.694 754.543
  30.328 754.934  31.338 755.235

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.872     .04  17.841    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.872  17.841            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 61.8181*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  753.05   6.534 753.121   6.946 753.129   7.447 753.187   7.742 753.214
   8.233  753.24   9.235 753.272    9.71 753.065  10.051 752.923  10.147 752.883
  11.129 752.449  11.782 752.149  12.176 751.738  12.274 751.642   12.51 751.539
  13.226 751.382   13.75 751.266  13.878 751.213  13.956 751.182  14.255 751.323
  15.764 752.067  15.865 752.317  15.957 752.544  16.082 753.128  16.765 753.004
  17.717 752.876  18.255 752.849  19.151 752.766  19.718 752.701  20.604 752.718
  21.062 752.714  23.166 753.337  23.778 753.513  23.986 753.536  24.228 753.566
  24.333 753.558  24.376 753.558  25.331 754.207  25.342 754.206  25.931 754.214
  26.605 754.203  28.055 754.259  28.744 754.265  28.874 754.191  29.162 754.271
  30.804 754.717  31.819 755.057

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.051     .04  18.255    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.051  18.255            2.248   1.844   1.405             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 60

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.83    7.07  752.95    7.88  753.05    8.38  753.09     9.4  753.15
   10.23  752.78   11.99     752   12.39  751.57   12.49  751.47   12.73  751.37
   13.99  751.14   14.12  751.09    14.2  751.06   14.51  751.21   16.08     752
   16.28  752.52   16.41  753.16   17.12  753.01   18.11  752.85   18.67  752.81
   18.68  752.81   19.57  752.69   20.14   752.6   21.03  752.59   21.49  752.55
   24.22  753.22   24.82  753.25   25.78  754.02   27.06  753.96   29.21  753.99
   29.34  753.91   29.63     754   31.28   754.5    32.3  754.88

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.23     .04   18.67    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.23   18.67            2.211   1.977   1.818             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 58.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.728   3.612 752.758   5.122 752.755   7.029 752.772   7.213 752.792
   7.834 752.848   8.331 752.874   9.345 752.907   10.17 752.557  11.975 751.808
  12.271 751.521  12.385  751.41  12.487 751.319  12.734 751.225  14.026     751
  14.159 750.953  14.241 750.925   14.55 751.066  15.095 751.325  16.115 751.795
  16.314 752.265  16.444 752.841  16.814 752.773  17.152 752.726  17.287 752.713
  18.139 752.635  18.697  752.63  18.707 752.631  18.854 752.622  19.612 752.531
  20.191 752.449  21.095 752.438  21.563 752.401  24.337 752.999  24.947 753.025
  25.923 753.717  26.265 753.702  27.224 753.661  29.409 753.684  29.499 753.635
  29.541 753.612  29.836 753.695  30.242 753.806  30.539 753.888  30.923 753.993
  31.512 754.156  31.885 754.282  32.549 754.507

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.17     .04   18.697    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.17  18.697            2.211   1.977   1.818             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 56.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.626    3.59 752.623   5.092 752.592   6.987 752.594    7.17  752.61
   7.788 752.646   8.282 752.658    9.29 752.664   10.11 752.334   11.96 751.615
  12.263 751.352   12.38  751.25  12.485 751.167  12.737  751.08  14.061  750.86
  14.198 750.816  14.282  750.79   14.59 750.922  15.133 751.164   16.15  751.59
  16.349 752.009  16.478 752.523  16.847 752.465  17.184 752.442  17.319 752.438
  18.168 752.421  18.724  752.45  18.734 752.451  18.884 752.454  19.653 752.371
  20.242 752.297  21.161 752.286  21.636 752.253  24.455 752.779  25.074 752.801
  26.066 753.413  26.414 753.399  27.387 753.361  29.607 753.378  29.699 753.334
  29.742 753.314  30.041  753.39  30.454 753.491  30.756 753.566  31.146 753.661
  31.745 753.812  32.123 753.927  32.798 754.134

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.11     .04   18.724    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.11  18.724            2.211   1.977   1.818             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 54.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.524   3.569 752.489   5.062 752.429   6.946 752.416   7.128 752.429
   7.741 752.445   8.233 752.442   9.235 752.421   10.05 752.111  11.944 751.423
  12.255 751.183  12.375 751.091  12.482 751.016  12.741 750.936  14.097  750.72
  14.237  750.68  14.323 750.655   14.63 750.779  15.172 751.004  16.185 751.385
  16.383 751.754  16.512 752.204   16.88 752.157  17.216 752.158   17.35 752.164
  18.196 752.207  18.751  752.27  18.761 752.272  18.913 752.286  19.695 752.212
  20.293 752.146  21.226 752.134  21.709 752.104  24.572 752.558  25.202 752.576
  26.208  753.11  26.562 753.097  27.551 753.062  29.806 753.072  29.899 753.034
```

```
  29.942 753.017  30.247 753.084  30.666 753.176  30.973 753.244  31.369  753.33
  31.977 753.468  32.362 753.573  33.047 753.761

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.05     .04  18.751    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.05  18.751            2.211   1.977   1.818             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 52.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.422   3.548 752.355   5.031 752.266   6.904 752.239   7.085 752.248
   7.695 752.243   8.183 752.226   9.179 752.178    9.99 751.888  11.929 751.231
  12.247 751.014   12.37 750.931   12.48 750.865  12.744 750.791  14.133  750.58
  14.276 750.543  14.364  750.52   14.67 750.635   15.21 750.843   16.22  751.18
  16.418 751.498  16.546 751.886  16.913 751.849  17.247 751.875  17.381 751.889
  18.225 751.992  18.778  752.09  18.789 752.093  18.943 752.118  19.737 752.053
  20.344 751.995  21.292 751.982  21.782 751.955   24.69 752.338  25.329 752.351
  26.351 752.806   26.71 752.794  27.715 752.762  30.005 752.767  30.099 752.733
  30.143 752.719  30.452 752.779  30.878 752.861  31.189 752.922  31.592 752.999
   32.21 753.124    32.6 753.218  33.296 753.388

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.99     .04  18.778    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.99  18.778            2.211   1.977   1.818             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 50.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.32   3.527 752.221   5.001 752.104   6.863 752.061   7.043 752.066
   7.649 752.041   8.134  752.01   9.124 751.935    9.93 751.665  11.914 751.039
  12.239 750.845  12.365 750.771  12.477 750.713  12.748 750.646  14.168  750.44
  14.315 750.406  14.405 750.385   14.71 750.491  15.248 750.683  16.256 750.976
  16.452 751.243   16.58 751.567  16.945 751.541  17.279 751.591  17.413 751.614
  18.254 751.778  18.805  751.91  18.816 751.913  18.972  751.95  19.778 751.893
  20.395 751.843  21.357  751.83  21.855 751.806  24.807 752.117  25.456 752.127
  26.494 752.503  26.859 752.492  27.878 752.463  30.203 752.461  30.299 752.433
  30.344 752.421  30.658 752.474   31.09 752.546  31.406   752.6  31.815 752.667
  32.442  752.78  32.838 752.863  33.545 753.015

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.93     .04  18.805    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.93  18.805            2.211   1.977   1.818             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 48.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.218   3.505 752.087   4.971 751.941   6.821 751.883       7 751.885
   7.603 751.839   8.085 751.794   9.069 751.692    9.87 751.442  11.899 750.846
  12.232 750.676   12.36 750.611  12.475 750.562  12.752 750.501  14.204   750.3
  14.354 750.269  14.446  750.25   14.75 750.347  15.287 750.522  16.291 750.771
  16.487 750.987  16.614 751.248  16.978 751.233  17.311 751.307  17.444 751.339
  18.283 751.563  18.832  751.73  18.843 751.734  19.002 751.782   19.82 751.734
  20.446 751.692  21.423 751.678  21.928 751.657  24.924 751.896  25.583 751.902
  26.637   752.2  27.007  752.19  28.042 752.163  30.402 752.155    30.5 752.132
  30.545 752.123  30.863 752.169  31.302  752.23  31.623 752.278  32.038 752.336
  32.674 752.435  33.077 752.509  33.794 752.642

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.87     .04  18.832    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.87  18.832            2.211   1.977   1.818             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 46.*

INPUT
Description:
Station Elevation Data    num=      48
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.116   3.484 751.953   4.941 751.778    6.78 751.705   6.958 751.704
   7.556 751.637   8.036 751.578   9.014 751.449    9.81 751.219  11.883 750.654
  12.224 750.507  12.355 750.451  12.472 750.411  12.755 750.357   14.24  750.16
  14.393 750.132  14.487 750.115   14.79 750.203  15.325 750.362  16.326 750.566
  16.521 750.732  16.649  750.93  17.011 750.924  17.343 751.023  17.476 751.064
  18.311 751.349  18.859  751.55   18.87 751.555  19.031 751.614  19.862 751.575
  20.497 751.541  21.488 751.526  22.001 751.509  25.042 751.676   25.71 751.677
   26.78 751.896  27.155 751.887  28.206 751.864  30.601 751.849    30.7 751.832
  30.746 751.826  31.069 751.864  31.514 751.915   31.84 751.956  32.261 752.004
  32.907 752.091  33.315 752.154  34.043 752.269

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.81     .04  18.859    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.81  18.859            2.211   1.977   1.818             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 44.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.014   3.463 751.818    4.91 751.615   6.738 751.527   6.915 751.523
    7.51 751.436   7.987 751.362   8.959 751.206    9.75 750.996  11.868 750.462
  12.216 750.338   12.35 750.292   12.36 750.288   12.47 750.259  12.759 750.212
  14.275  750.02  14.432 749.995  14.528  749.98   14.83 750.059  15.363 750.201
  16.361 750.361  16.556 750.476  16.683 750.611  17.044 750.616  17.375 750.739
  17.507  750.79   18.34 751.134  18.886  751.37  18.897 751.375  19.061 751.446
  19.903 751.415  20.548 751.389  21.554 751.375  22.073  751.36  25.159 751.455
  25.837 751.453  26.922 751.593  27.303 751.585  28.369 751.564  30.799 751.543
    30.9 751.531  30.946 751.528  31.274 751.558  31.726   751.6  32.056 751.634
  32.484 751.673  33.139 751.747  33.553 751.799  34.292 751.896

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.75     .04  18.886    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.75  18.886            2.211   1.977   1.818             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 42.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 751.912   3.441 751.684    4.88 751.453   6.697 751.349   6.873 751.341
   7.464 751.234   7.938 751.145   8.904 750.963    9.69 750.773  11.853  750.27
  12.208 750.169  12.345 750.132  12.355 750.129  12.467 750.108  12.762 750.067
  14.311  749.88  14.471 749.858  14.569 749.845   14.87 749.915  15.402 750.041
  16.396 750.156   16.59 750.221  16.717 750.293  17.077 750.308  17.407 750.455
  17.539 750.515  18.369  750.92  18.913  751.19  18.924 751.196   19.09 751.278
  19.945 751.256  20.598 751.238  21.619 751.223  22.146 751.211  25.277 751.234
  25.965 751.228  27.065 751.289  27.452 751.282  28.533 751.265  30.998 751.237
    31.1 751.231  31.147  751.23   31.48 751.253  31.938 751.285  32.273 751.312
  32.707 751.341  33.371 751.403  33.792 751.445  34.541 751.523

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.69     .04  18.913    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.69  18.913            2.211   1.977   1.818             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 40

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.81    3.42  751.55    4.85  751.29    6.83  751.16    9.63  750.55
    12.2     750   12.35  749.97   14.61  749.71   15.44  749.88   17.11     750
   17.57  750.24   18.94  751.01   19.12  751.11    27.6  750.98    31.3  750.93
   32.15  750.97   32.49  750.99   32.93  751.01   34.03  751.09   34.79  751.15

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.63     .04  18.94    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.63   18.94            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 38.1818*
```

```
INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.69   1.177 751.605   3.468 751.439   4.856 751.206   4.918 751.196
   6.926 751.068   7.096 751.034   9.739 750.505   9.765   750.5   9.801 750.493
  12.173 749.883  12.294 749.852  12.441 749.816   12.88 749.744  13.323 749.674
  14.665 749.455  15.506 749.646  15.578 749.654  16.878 749.797    17.2 749.833
  17.666 750.072  18.476 750.517  19.055 750.835  19.229 750.931  19.828 750.937
  26.957 750.835    27.4 750.828  30.965 750.782  31.784 750.818  32.111 750.836
  32.535 750.854  33.595 750.927  34.327 750.981

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.765     .04  19.055    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.765  19.055            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 36.3636*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.57   1.193 751.489   3.516 751.328   4.924 751.112   4.986 751.102
   7.022 750.976   7.194 750.945   9.874 750.455   9.901  750.45   9.936 750.444
  12.269  749.74  12.387 749.704  12.533 749.663  12.964  749.57    13.4 749.482
  14.719 749.199  15.572 749.412  15.645 749.422  16.963 749.618  17.289 749.666
  17.762 749.904  18.583 750.345  19.171 750.661  19.338 750.751  19.914 750.773
  26.773 750.682  27.199 750.676  30.629 750.633  31.417 750.666  31.732 750.682
   32.14 750.698   33.16 750.763  33.865 750.812

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.901     .04  19.171    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.901  19.171            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 34.5454*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.45   1.209 751.372   3.564 751.217   4.991 751.017   5.055 751.008
   7.118 750.884   7.293 750.855  10.009 750.404  10.036   750.4  10.071 750.394
  12.364 749.596  12.481 749.556  12.624 749.509  13.048 749.395  13.476  749.29
  14.774 748.944  15.639 749.178  15.712 749.191  17.048 749.438  17.379 749.499
  17.859 749.737  18.691 750.174  19.286 750.486  19.447 750.572      20 750.609
   26.59  750.53  26.999 750.524  30.294 750.485  31.051 750.514  31.354 750.528
  31.745 750.542  32.725   750.6  33.402 750.643

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.036     .04  19.286    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.036  19.286            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 32.7272*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.33   1.226 751.256   3.612 751.106   5.058 750.922   5.123 750.914
   7.214 750.792   7.391 750.766  10.144 750.354  10.172  750.35  10.206 750.345
   12.46 749.453  12.575 749.408  12.715 749.355  13.132 749.221  13.553 749.097
  14.828 748.688  15.705 748.944  15.779  748.96  17.133 749.258  17.469 749.331
  17.955 749.569  18.798 750.002  19.402 750.312  19.556 750.393  20.087 750.446
  26.406 750.377  26.798 750.372  29.958 750.337  30.684 750.362  30.975 750.374
   31.35 750.386   32.29 750.436  32.939 750.474

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.172     .04  19.402    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.172  19.402            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 30.9090*

INPUT
Description:
Station Elevation Data    num=      33
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.21   1.242 751.139   3.661 750.995   5.126 750.828   5.191  750.82
    7.31 750.701   7.489 750.676  10.279 750.303  10.307   750.3  10.341 750.296
  12.556  749.31  12.669 749.261  12.806 749.201  13.216 749.047   13.63 748.905
  14.883 748.433  15.771  748.71  15.847 748.728  17.219 749.078  17.559 749.164
  18.051 749.401  18.906  749.83  19.517 750.137  19.664 750.213  20.173 750.282
  26.222 750.225  26.598  750.22  29.623 750.189  30.318 750.209  30.596  750.22
  30.956  750.23  31.855 750.273  32.476 750.305

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.307     .04  19.517    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.307  19.517            1.228   1.833    2.43             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 29.0909*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  751.09   1.258 751.023   3.709 750.883   5.193 750.733   5.259 750.726
   7.406 750.609   7.588 750.587  10.415 750.253  10.443  750.25  10.476 750.246
  12.652 749.167  12.762 749.113  12.898 749.048    13.3 748.872  13.706 748.712
  14.937 748.177  15.837 748.476  15.914 748.497  17.304 748.899  17.648 748.997
  18.147 749.233  19.013 749.659  19.633 749.963  19.773 750.034  20.259 750.118
  26.038 750.072  26.397 750.068  29.287  750.04  29.951 750.057  30.217 750.066
  30.561 750.074   31.42 750.109  32.014 750.135

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.443     .04  19.633    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.443  19.633            1.228   1.833    2.43             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 27.2727*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  750.97   1.275 750.906   3.757 750.772   5.261 750.639   5.328 750.632
   7.502 750.517   7.686 750.498   10.55 750.202  10.578   750.2  10.611 750.197
  12.747 749.023  12.856 748.965  12.989 748.894  13.384 748.698  13.783  748.52
  14.992 747.922  15.904 748.242  15.981 748.266  17.389 748.719  17.738  748.83
  18.243 749.066   19.12 749.487  19.748 749.788  19.882 749.855  20.345 749.955
  25.855  749.92  26.197 749.917  28.952 749.892  29.585 749.905  29.838 749.912
  30.166 749.919  30.985 749.946  31.551 749.966

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.578     .04  19.748    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.578  19.748            1.228   1.833    2.43             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 25.4545*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  750.85   1.291  750.79   3.805 750.661   5.328 750.544   5.396 750.539
   7.599 750.425   7.785 750.408  10.685 750.152  10.714  750.15  10.745 750.148
  12.843  748.88   12.95 748.817   13.08  748.74  13.468 748.523   13.86 748.327
  15.046 747.666   15.97 748.008  16.048 748.034  17.474 748.539  17.828 748.663
  18.339 748.898  19.228 749.315  19.864 749.614  19.991 749.675  20.431 749.791
  25.671 749.767  25.996 749.765  28.617 749.744  29.219 749.753  29.459 749.758
  29.771 749.763   30.55 749.782  31.088 749.797

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.714     .04  19.864    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.714  19.864            1.228   1.833    2.43             .1       .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 23.6363*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  750.73   1.307 750.673   3.853  750.55   5.395 750.449   5.464 750.445
   7.695 750.333   7.883 750.319   10.82 750.101  10.849   750.1   10.88 750.099
```

```
  12.939 748.737  13.043 748.669  13.171 748.587  13.552 748.349  13.937 748.135
  15.101 747.411  16.036 747.774  16.116 747.803   17.56 748.359  17.917 748.496
  18.436  748.73  19.335 749.143  19.979 749.439    20.1 749.496  20.518 749.627
  25.487 749.615  25.796 749.613  28.281 749.596  28.852 749.601  29.081 749.604
  29.376 749.607  30.115 749.619  30.625 749.628

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.849     .04  19.979    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.849  19.979            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 21.8181*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  750.61   1.324 750.557   3.901 750.439   5.463 750.355   5.532 750.351
   7.791 750.241   7.982 750.229  10.955 750.051  10.985  750.05  11.015 750.049
  13.034 748.593  13.137 748.521  13.263 748.433  13.636 748.174  14.013 747.942
  15.155 747.155  16.102  747.54  16.183 747.571  17.645  748.18  18.007 748.328
  18.532 748.562  19.443 748.972  20.095 749.265  20.209 749.316  20.604 749.464
  25.304 749.462  25.596 749.461  27.946 749.447  28.486 749.449  28.702  749.45
  28.981 749.451   29.68 749.455  30.163 749.459

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.985     .04  20.095    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.985  20.095            1.228   1.833    2.43             .1      .3

CROSS SECTION


RIVER: Arroyo El Moro
REACH: Afluente           RS: 20

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  750.49    1.34  750.44    5.53  750.26    8.08  750.14   11.09     750
   11.12     750   11.15     750   13.13  748.45   13.72     748   14.09  747.75
   15.21   746.9   16.25  747.34   17.73     748   19.55   748.8   20.21  749.09
   20.69   749.3   25.12  749.31    29.7  749.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.12     .04   20.21    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.12   20.21             5.49   19.94    9.83             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 600

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.26     .64     764    3.37  763.37    8.79     762   10.92  760.51
   11.57     760   11.89   759.9    12.2  759.81    16.8  758.72   17.03  758.96
   17.84  759.57   18.09  759.76   18.47     760   19.71  760.56   20.84  761.41
   21.54  761.45   28.86  761.88   33.11  763.22   33.84  763.62   36.84  765.28
   38.68  765.28   38.88  765.28   42.79  764.97

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.89     .04   21.54    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.89   21.54            1.953   1.827   1.822             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 598.181*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.24    .679 764.001   1.382 763.859   1.414 763.855   1.758 763.783
   2.057  763.72   2.127 763.697   2.675 763.555   3.574 763.328   5.063 762.923
    7.68 762.295   9.322 761.894   11.58 760.478  12.112 760.106   12.27  759.99
  12.609 759.879  12.914 759.788  14.012 759.512  17.435 758.667   17.67 758.898
   18.49 759.497  18.743 759.684  19.128 759.923  20.033 760.339  20.202 760.414
  20.383 760.503  20.452 760.556  20.978 760.962  21.103 761.054  21.527 761.368
  22.235 761.452  23.907 761.639  24.947 761.742  29.542 761.929  33.784 763.093
  34.512 763.447  35.638     764  36.902 764.627  37.507  764.94  37.565 764.941
  37.595 765.094  39.343 765.093  39.543 765.093  42.233 764.897  42.926 764.866
  43.374 764.848  43.445 764.845
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.609     .04  22.235    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.609  22.235            1.953   1.827   1.822             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 596.363*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.22    .717 764.002   1.461 763.871   1.494 763.869   1.858 763.801
   2.174  763.74   2.248 763.709   2.827 763.545   3.778 763.285   5.351 762.831
   8.118 762.198   9.853 761.789  12.241 760.446  12.803 760.095  12.969 759.981
  13.328 759.858  13.628 759.765  14.707 759.479  18.071 758.615   18.31 758.836
   19.14 759.424  19.396 759.607  19.786 759.845  20.701 760.274  20.873 760.348
  21.056 760.446  21.126   760.5  21.658 760.922  21.785 761.012  22.214 761.326
  22.931 761.454  24.599 761.729  25.637 761.875  30.223 761.978  34.457 762.966
  35.185 763.274  36.308 763.756   37.57 764.309  38.173   764.6  38.231 764.602
  38.262 764.907  40.006 764.905  40.206 764.905   42.89 764.727  43.582  764.72
   44.03  764.72  44.101 764.721

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.328     .04  22.931    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.328  22.931            1.953   1.827   1.822             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 594.545*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   764.2    .756 764.003    1.54 763.883   1.575 763.884   1.958 763.818
   2.292  763.76    2.37 763.722    2.98 763.534   3.981 763.243    5.64 762.738
   8.556 762.102  10.385 761.683  12.901 760.414  13.494 760.085  13.669 759.971
  14.047 759.837  14.341 759.743  15.402 759.446  18.706 758.562   18.95 758.774
   19.79 759.352  20.049 759.531  20.443 759.768   21.37 760.209  21.544 760.283
  21.729 760.389  21.799 760.444  22.338 760.882  22.466 760.971  22.901 761.285
  23.626 761.455  25.292 761.819  26.327 762.008  30.905 762.028  35.131 762.839
  35.857 763.102  36.979 763.512  38.238 763.992   38.84  764.26  38.898 764.263
  38.928 764.721   40.67 764.718  40.868 764.717  43.548 764.557  44.239 764.575
  44.685 764.592  44.756 764.596

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.047     .04  23.626    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.047  23.626            1.953   1.827   1.822             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 592.727*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.18    .795 764.004   1.618 763.895   1.656 763.898   2.058 763.836
   2.409  763.78   2.491 763.734   3.132 763.524   4.185 763.201   5.929 762.646
   8.994 762.005  10.916 761.577  13.562 760.383  14.185 760.074  14.369 759.962
  14.766 759.816  15.055  759.72  16.097 759.412  19.342 758.509   19.59 758.712
   20.44 759.279  20.702 759.455  21.101 759.691  22.039 760.144  22.214 760.218
  22.402 760.332  22.473 760.389  23.019 760.841  23.148 760.929  23.587 761.243
  24.322 761.457  25.984 761.909  27.018 762.141  31.587 762.077  35.805 762.712
  36.529 762.929  37.649 763.268  38.905 763.674  39.507  763.92  39.564 763.924
  39.595 764.535  41.333  764.53  41.531  764.53  44.206 764.388  44.895 764.429
  45.341 764.464  45.412 764.472

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.766     .04  24.322    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.766  24.322            1.953   1.827   1.822             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 590.909*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.16    .834 764.005   1.697 763.907   1.736 763.913   2.159 763.854
```

```
   2.526   763.8   2.612 763.746   3.285 763.513   4.389 763.158   6.218 762.554
   9.432 761.909  11.448 761.472  14.222 760.351  14.875 760.064  15.069 759.952
  15.485 759.795  15.769 759.698  16.791 759.379  19.977 758.456   20.23 758.651
   21.09 759.206  21.356 759.378  21.759 759.613  22.708 760.079  22.885 760.152
  23.075 760.275  23.147 760.333  23.699 760.801   23.83 760.888  24.274 761.201
  25.017 761.459  26.676 761.999  27.708 762.273  32.268 762.126  36.478 762.584
  37.202 762.756  38.319 763.024  39.573 763.356  40.173 763.581  40.231 763.585
  40.261 764.348  41.996 764.343  42.194 764.342  44.864 764.218  45.551 764.283
  45.996 764.337  46.067 764.347

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.485     .04  25.017    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.485  25.017            1.953   1.827   1.822             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 589.090*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.14    .872 764.006   1.776  763.92   1.817 763.927   2.259 763.871
   2.643  763.82   2.733 763.759   3.437 763.503   4.593 763.116   6.506 762.461
    9.87 761.812   11.98 761.366  14.883 760.319  15.566 760.053  15.768 759.943
  16.205 759.775  16.483 759.676  17.486 759.346  20.613 758.404  20.624 758.404
  20.871 758.589   21.74 759.133  22.009 759.302  22.417 759.536  23.376 760.014
  23.556 760.087  23.748 760.219  23.821 760.278  24.379 760.761  24.511 760.847
  24.961 761.159  25.713 761.461  27.368 762.089  28.398 762.406   32.95 762.175
  37.152 762.457  37.874 762.583  38.989  762.78  40.241 763.039   40.84 763.241
  40.897 763.245  40.928 764.162  42.659 764.156  42.857 764.155  45.521 764.048
  46.208 764.138  46.652 764.209  46.723 764.223

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.205     .04  25.713    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.205  25.713            1.953   1.827   1.822             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 587.272*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.12    .911 764.007   1.855 763.932   1.897 763.942   2.359 763.889
   2.761  763.84   2.855 763.771    3.59 763.492   4.797 763.073   6.795 762.369
  10.308 761.716  12.511  761.26  15.543 760.287  16.257 760.042  16.468 759.933
  16.924 759.754  17.197 759.653  18.181 759.313  21.248 758.351  21.261 758.351
  21.511 758.527   22.39  759.06  22.662 759.225  23.074 759.459  24.045  759.95
  24.227 760.022  24.421 760.162  24.495 760.222  25.059 760.721  25.193 760.805
  25.648 761.118  26.408 761.463  28.061 762.179  29.089 762.539  33.632 762.224
  37.826  762.33  38.546  762.41  39.659 762.536  40.909 762.721  41.507 762.901
  41.564 762.906  41.594 763.975  43.322 763.968   43.52 763.967  46.179 763.879
  46.864 763.992  47.308 764.081  47.378 764.098

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.924     .04  26.408    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.924  26.408            1.953   1.827   1.822             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 585.454*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   764.1     .95 764.008   1.934 763.944   1.978 763.956   2.459 763.907
   2.878  763.86   2.976 763.783   3.742 763.482   5.001 763.031   7.084 762.277
  10.746 761.619  13.043 761.155  16.203 760.255  16.948 760.032  17.168 759.924
  17.643 759.733   17.91 759.631  18.876  759.28  21.884 758.298  21.898 758.298
  22.151 758.465   23.04 758.987  23.315 759.149  23.732 759.382  24.714 759.885
  24.898 759.956  25.094 760.105  25.169 760.167  25.739 760.681  25.875 760.764
  26.335 761.076  27.104 761.465  28.753  762.27  29.779 762.672  34.313 762.273
  38.499 762.203  39.218 762.237  40.329 762.292  41.577 762.403  42.173 762.561
   42.23 762.567  42.261 763.789  43.986 763.781  44.183  763.78  46.837 763.709
  47.521 763.847  47.963 763.953  48.034 763.974

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  17.643     .04  27.104    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        17.643  27.104            1.953   1.827   1.822             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 583.636*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.08    .988 764.009   2.012 763.956   2.059 763.971    2.56 763.925
   2.995  763.88   3.097 763.795   3.895 763.471   5.204 762.989   7.373 762.185
  11.184 761.523  13.574 761.049  16.864 760.223  17.638 760.021  17.868 759.914
  18.362 759.712  18.624 759.608   19.57 759.246  22.519 758.245  22.535 758.245
  22.791 758.403   23.69 758.914  23.968 759.073   24.39 759.304  25.383  759.82
  25.568 759.891  25.767 760.048  25.842 760.111   26.42  760.64  26.557 760.723
  27.022 761.034  27.799 761.466  29.445  762.36  30.469 762.804  34.995 762.323
  39.173 762.076  39.891 762.065      41 762.048  42.244 762.085   42.84 762.221
  42.897 762.228  42.927 763.603  44.649 763.594  44.845 763.592  47.495 763.539
  48.177 763.701  48.619 763.826  48.689 763.849

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.362     .04  27.799    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.362  27.799            1.953   1.827   1.822             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 581.818*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.06   1.027  764.01   2.091 763.968   2.139 763.985    2.66 763.942
   3.113   763.9   3.219 763.808   4.047 763.461   5.408 762.946   7.661 762.092
  11.622 761.427  14.106 760.943  17.524 760.191  18.329 760.011  18.567 759.905
  19.081 759.691  19.338 759.586  20.265 759.213  23.155 758.193  23.173 758.193
  23.431 758.341   24.34 758.842  24.621 758.996  25.048 759.227  26.051 759.755
  26.239 759.825   26.44 759.991  26.516 760.056    27.1   760.6  27.238 760.681
  27.709 760.992  28.495 761.468  30.138  762.45  31.16 762.937  35.677 762.372
  39.847 761.949  40.563 761.892   41.67 761.804  42.912 761.768  43.507 761.881
  43.563 761.889  43.594 763.416  45.312 763.406  45.508 763.405  48.152  763.37
  48.834 763.556  49.274 763.698  49.345 763.725

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.081     .04  28.495    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.081  28.495            1.953   1.827   1.822             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 580

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.04    2.17  763.98    2.22     764    2.76  763.96    3.23  763.92
    3.34  763.82     4.2  763.45    7.95     762   12.06  761.33   19.02     760
    19.8  759.67   20.96  759.18   23.79  758.14   23.81  758.14   26.72  759.69
   26.91  759.76   27.19     760   27.78  760.56   27.92  760.64   29.19  761.47
   30.83  762.54   31.85  763.07   42.34  761.56   43.58  761.45   44.23  761.55
   44.26  763.23   48.81   763.2   49.49  763.41   49.93  763.57      50   763.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    19.8     .04   29.19    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         19.8   29.19            1.731   1.939   2.103             .1       .3
Right Levee     Station=   31.85      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 578.111*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.93   2.232 763.805   2.283 763.821   2.838 763.768   3.322 763.717
   3.435 763.624   3.604 763.556   4.319 763.276   7.511 762.144   8.011 761.967
   8.176 761.909  11.123 761.445  11.377 761.407  12.402 761.253  19.314 760.047
   19.56 760.005  19.715 759.948  19.944 759.862  20.362 759.708  20.522 759.648
  20.665 759.595  21.466 759.215   21.55 759.176  22.847 758.635  23.268 758.483
  24.448 758.068  24.466 758.068  26.646 759.172   26.85 759.276  27.053 759.389
  27.317 759.534  27.503 759.609  27.777  759.84  28.355 760.376  28.492 760.456
  29.737 761.276  29.858 761.355  31.374 762.288  32.393 762.794  32.643  762.77
  33.453 762.694   34.81 762.577  37.371 762.233  42.866 761.511  44.104  761.41
  44.753 761.497  44.783  762.99  46.839 762.971  49.326 762.966  50.005 763.155
  50.079 763.179  50.445 763.301  50.514 763.328

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .035  20.362     .04  29.737    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.362  29.737           1.731   1.939   2.103             .1       .3
Right Levee     Station=32.66444      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 576.222*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.82   2.293  763.63   2.346 763.642   2.917 763.576   3.413 763.514
    3.53 763.429   3.703 763.363   4.439 763.101   7.718 762.039   8.232 761.873
   8.401 761.819   11.43 761.357  11.691 761.321  12.745 761.175  19.847 760.049
    20.1 760.011   20.26 759.959  20.495 759.881  20.924 759.746  21.088 759.692
  21.235 759.646  22.054 759.216   22.14 759.172  23.468 758.556  23.899 758.403
  25.106 757.996  25.121 757.996  27.256  759.02  27.456 759.117  27.655 759.232
  27.913 759.378  28.096 759.457  28.364  759.68   28.93 760.191  29.065 760.272
  30.283 761.081  30.405 761.161  31.918 762.035  32.935 762.517  33.185 762.506
  33.994 762.471  35.348 762.432  37.906 762.114  43.393 761.463  44.629  761.37
  45.277 761.443  45.307  762.75  47.359 762.726  49.843 762.732   50.52 762.901
  50.594 762.922  50.959 763.031  51.029 763.056

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.924     .04  30.283    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.924  30.283           1.731   1.939   2.103             .1       .3
Right Levee     Station=33.47889      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 574.333*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.71   2.355 763.455   2.409 763.464   2.995 763.384   3.505  763.31
   3.625 763.233   3.803 763.169   4.558 762.927   7.926 761.933   8.453 761.778
   8.627 761.728  11.737 761.269  12.005 761.235  13.087 761.098   20.38 760.051
   20.64 760.016  20.804 759.971  21.046 759.901  21.487 759.783  21.654 759.736
  21.804 759.697  22.642 759.216   22.73 759.169  24.088 758.476  24.529 758.322
  25.763 757.923  25.777 757.923  27.867 758.867  28.062 758.957  28.257 759.075
   28.51 759.222  28.688 759.305  28.951  759.52  29.506 760.007  29.637 760.088
   30.83 760.887  30.951 760.966  32.462 761.783  33.478 762.241  33.727 762.243
  34.535 762.248  35.887 762.288  38.441 761.995  43.919 761.414  45.153 761.329
    45.8  761.39   45.83  762.51  47.879 762.481  50.359 762.498  51.036 762.646
  51.109 762.665  51.474 762.762  51.543 762.783

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  21.487     .04  30.83    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.487   30.83           1.731   1.939   2.103             .1       .3
Right Levee     Station=34.29333      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 572.444*

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   763.6   2.416  763.28   2.472 763.285   3.073 763.192   3.597 763.107
   3.719 763.037   3.902 762.976   4.677 762.752   8.133 761.828   8.674 761.683
   8.853 761.638  12.044  761.18  12.319 761.149   13.43 761.021  20.914 760.052
   21.18 760.021  21.348 759.982  21.597 759.921  22.049 759.821   22.22  759.78
  22.373 759.747   23.23 759.217   23.32 759.165  24.708 758.397  25.159 758.242
  26.421 757.851  26.432 757.851  28.477 758.714  28.668 758.798  28.859 758.917
  29.107 759.066  29.281 759.154  29.539  759.36  30.081 759.823  30.209 759.903
  31.377 760.692  31.498 760.772  33.007  761.53   34.02 761.965  34.269 761.979
  35.075 762.025  36.426 762.143  38.976 761.876  44.445 761.366  45.678 761.289
  46.324 761.336  46.353 762.269  48.399 762.236  50.875 762.264  51.551 762.391
  51.624 762.407  51.988 762.492  52.058 762.511

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  22.049     .04  31.377    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        22.049  31.377           1.731   1.939   2.103             .1       .3
Right Levee     Station=35.10778      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 570.555*

INPUT
```

```
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.49   2.478 763.106   2.535 763.106   3.152 762.999   3.689 762.904
   3.814 762.842   4.002 762.783   4.796 762.578    8.34 761.722   8.895 761.589
   9.079 761.547  12.352 761.092  12.633 761.063  13.772 760.944  21.447 760.054
   21.72 760.026  21.893 759.994  22.147 759.941  22.611 759.859  22.786 759.824
  22.943 759.798  23.818 759.218   23.91 759.161  25.329 758.318  25.789 758.161
  27.079 757.779  29.088 758.561  29.275 758.638  29.462  758.76  29.703  758.91
  29.874 759.002  30.126 759.199  30.656 759.639  30.782 759.719  31.923 760.498
  32.044 760.578  33.551 761.278  34.563 761.688  34.811 761.715  35.616 761.802
  36.965 761.998  39.511 761.757  44.972 761.317  46.202 761.249  46.847 761.283
  46.877 762.029  48.919 761.991  51.391  762.03  52.066 762.136   52.14  762.15
  52.503 762.223  52.572 762.239

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  22.611     .04  31.923    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        22.611  31.923           1.731   1.939   2.103             .1       .3
Right Levee     Station=35.92222      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 568.666*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.38    2.54 762.931   2.598 762.927    3.23 762.807    3.78 762.701
   3.909 762.646   4.101  762.59   4.916 762.403   8.548 761.617   9.116 761.494
   9.304 761.457  12.659 761.004  12.948 760.977  14.115 760.866   21.98 760.055
   22.26 760.032  22.437 760.005  22.698 759.961  23.173 759.897  23.352 759.868
  23.512 759.848  24.406 759.218    24.5 759.157  25.949 758.238  26.419 758.081
  27.737 757.707  29.698 758.408  29.881 758.479  30.064 758.602    30.3 758.754
  30.467 758.851  30.713 759.039  31.231 759.454  31.354 759.535   32.47 760.303
  32.591 760.383  34.095 761.025  35.105 761.412  35.354 761.451  36.157 761.579
  37.504 761.854  40.046 761.637  45.498 761.269  46.726 761.209   47.37  761.23
    47.4 761.789   49.44 761.745  51.908 761.796  52.581 761.882  52.655 761.892
  53.017 761.953  53.087 761.967

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.173     .04   32.47    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.173   32.47           1.731   1.939   2.103             .1       .3
Right Levee     Station=36.73667      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 566.777*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.27   2.601 762.756   2.661 762.749   3.309 762.615   3.872 762.498
   4.004  762.45   4.201 762.396   5.035 762.229   8.755 761.511   9.338 761.399
    9.53 761.366  12.966 760.916  13.262 760.892  14.457 760.789  22.513 760.057
  22.801 760.037  22.981 760.017  23.249  759.98  23.736 759.934  23.918 759.912
  24.081 759.899  24.994 759.219   25.09 759.153  26.569 758.159   27.05 758.001
  28.394 757.634  30.309 758.256  30.487 758.319  30.666 758.445  30.897 758.598
   31.06 758.699    31.3 758.879  31.806  759.27  31.927 759.351  33.017 760.109
  33.137 760.189  34.639 760.773  35.648 761.135  35.896 761.188  36.698 761.356
  38.042 761.709   40.58 761.518  46.024  761.22  47.251 761.168  47.894 761.176
  47.923 761.549   49.96   761.5  52.424 761.562  53.097 761.627   53.17 761.635
  53.532 761.684  53.601 761.694

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.736     .04  33.017    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.736  33.017           1.731   1.939   2.103             .1       .3
Right Levee     Station=37.55111      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 564.888*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.16   2.663 762.581   2.724  762.57   3.387 762.423   3.964 762.295
   4.099 762.254     4.3 762.203   5.154 762.054   8.963 761.406   9.559 761.305
   9.756 761.276  13.273 760.828  13.576 760.806    14.8 760.712  23.047 760.058
  23.341 760.042  23.526 760.028  23.799     760  24.298 759.972  24.484 759.956
  24.651 759.949  25.582 759.219   25.68 759.149   27.19 758.079   27.68  757.92
  29.052 757.562  30.919 758.103  31.094  758.16  31.268 758.287  31.493 758.442
  31.653 758.548  31.887 758.719  32.382 759.086  32.499 759.167  33.563 759.914
  33.684 759.994  35.183 760.521   36.19 760.859  36.438 760.924  37.239 761.133
  38.581 761.565  41.115 761.399   46.55 761.172  47.775 761.128  48.417 761.123
  48.447 761.309   50.48 761.255   52.94 761.328  53.612 761.372  53.685 761.377
```

```
  54.046 761.415  54.116 761.422

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.298     .04  33.563    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.298  33.563           1.731   1.939   2.103             .1      .3
Right Levee     Station=38.36555      Elevation=

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 563

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.05     4.4  762.01    9.17   761.3    9.78  761.21   13.58  760.74
   13.89  760.72   23.58  760.06   24.07  760.04   24.35  760.02   24.86  760.01
   25.05     760   25.22     760   26.17  759.22   27.81     758   28.31  757.84
   29.71  757.49   31.53  757.95    31.7     758   31.87  758.13   34.11  759.72
   34.23   759.8   36.98  760.66   37.78  760.91   39.12  761.42   41.65  761.28
      51  761.01    54.2  761.12   54.63  761.15

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   24.86     .04   34.11    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         24.86   34.11            6.89   18.01   23.18             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   15.33               F
    36.8   54.63               F
Right Levee     Station=   39.18      Elevation=  761.43

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 559

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.85     1.9  762.26    2.72     762    5.03  761.66   11.62  760.71
    12.3  760.62   13.91  760.48   15.34  760.39   15.92  760.35   17.26  760.28
   19.29  760.18    24.6     760   24.91     760   25.36     760   25.43     760
   26.17  759.92   26.92  759.44   29.31  757.35   30.11  757.35   31.04  757.35
   31.87  757.35   32.68  758.33   33.22  758.57   33.36  758.63   34.08  758.83
    34.7  759.41   34.89  759.58    35.1  759.65   40.25  761.59   46.58  761.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   25.43     .04    34.7    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         25.43    34.7            2.57    8.44   11.29             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    26.5               F
    33.5   46.58               F

CULVERT


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 554

INPUT
Description:
Distance from Upstream XS =       1
Deck/Roadway Width        =       6
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      10     761     757      40     761     757

Upstream Bridge Cross Section Data
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.85     1.9  762.26    2.72     762    5.03  761.66   11.62  760.71
    12.3  760.62   13.91  760.48   15.34  760.39   15.92  760.35   17.26  760.28
   19.29  760.18    24.6     760   24.91     760   25.36     760   25.43     760
   26.17  759.92   26.92  759.44   29.31  757.35   30.11  757.35   31.04  757.35
   31.87  757.35   32.68  758.33   33.22  758.57   33.36  758.63   34.08  758.83
    34.7  759.41   34.89  759.58    35.1  759.65   40.25  761.59   46.58  761.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   25.43     .04    34.7    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         25.43    34.7             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    26.5               F
    33.5   46.58               F
```

```
Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      10     761     757      40     761     757

Downstream Bridge Cross Section Data
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.74    2.17     762    6.44  761.37    7.93  761.21    11.4  760.77
   13.24  760.59   16.65  760.24   17.34  760.19   18.28  760.12   18.93  760.07
   19.53  760.03   19.63  760.03   20.51  759.97   20.56  759.97      21  759.94
    21.2  759.93   22.34  759.87    22.7  759.85   23.74  759.78   24.15  759.76
   25.15   759.7   25.56  759.67    27.3  759.57   27.53  759.56   27.77  759.55
   28.32  759.53   29.38     759   30.65     759      31     759   31.26     759
    31.5     759   32.17  758.73   33.68  757.14   34.11  757.14   35.75  758.58
   36.06  758.52    36.3  758.43   37.41  759.01   38.77  759.72   41.52  760.66
   44.58  761.75   50.22  761.56

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   27.77    .04   37.41    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         27.77   37.41            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    28.5               F
    35.5   50.22               F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box     2.5       7
FHWA Chart # 59- Rectangular concrete
FHWA Scale # 2 - Slope tapered; More favorable edges
Solution Criteria = Inlet control
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  1       6     .015     .015        0                  .2               1
Upstream   Elevation =  757.35
           Centerline Station =  30
Downstream Elevation =  757.14
           Centerline Station =  32

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      22.61    Culv Full Len (m)         6.00
  # Barrels                   1    Culv Vel US (m/s)         1.29
  Q Barrel (m3/s)          22.61    Culv Vel DS (m/s)         1.29
  E.G. US. (m)            759.51    Culv Inv El Up (m)      757.35
  W.S. US. (m)            758.95    Culv Inv El Dn (m)      757.14
  E.G. DS (m)             759.95    Culv Frctn Ls (m)         0.00
  W.S. DS (m)             759.45    Culv Exit Loss (m)        0.00
  Delta EG (m)              0.44    Culv Entr Loss (m)        0.02
  Delta WS (m)              0.50    Q Weir (m3/s)
  E.G. IC (m)             758.97    Weir Sta Lft (m)
  E.G. OC (m)             759.97    Weir Sta Rgt (m)
  Culvert Control          Inlet    Weir Submerg
  Culv WS Inlet (m)       759.85    Weir Max Depth (m)
  Culv WS Outlet (m)      759.87    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.47    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.02    Min El Weir Flow (m)    761.00


Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Warning: During the supercritical analysis, the program could not balance the energy equation during the forewater
calculations
         inside of the culvert.  The program assumed critical depth at the outlet and continued on.
Warning: The inlet is submerged and the outlet computations indicate that the culvert would flow full over all or part
of its length.
         The program would normally default to the outlet answer.  However, the user has requested that the inlet
answer be
         used.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note:    During the supercritical calculations a hydraulic jump occurred at the inlet of (going into) the culvert.

CULVERT OUTPUT  Profile #PF 2  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      55.78    Culv Full Len (m)         6.00
  # Barrels                   1    Culv Vel US (m/s)         3.19
  Q Barrel (m3/s)          55.78    Culv Vel DS (m/s)         3.19
  E.G. US. (m)            760.34    Culv Inv El Up (m)      757.35
  W.S. US. (m)            759.90    Culv Inv El Dn (m)      757.14
  E.G. DS (m)             761.22    Culv Frctn Ls (m)         0.00
  W.S. DS (m)             760.29    Culv Exit Loss (m)        0.00
  Delta EG (m)              0.88    Culv Entr Loss (m)        0.10
  Delta WS (m)              0.40    Q Weir (m3/s)
  E.G. IC (m)             760.34    Weir Sta Lft (m)
  E.G. OC (m)             761.34    Weir Sta Rgt (m)
  Culvert Control          Inlet    Weir Submerg
  Culv WS Inlet (m)       759.85    Weir Max Depth (m)
  Culv WS Outlet (m)      759.64    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.83    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.86    Min El Weir Flow (m)    761.00
```

```
Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Warning: During the supercritical analysis, the program could not balance the energy equation during the forewater
calculations
         inside of the culvert.  The program assumed critical depth at the outlet and continued on.
Warning: The inlet is submerged and the outlet computations indicate that the culvert would flow full over all or part
of its length.
         The program would normally default to the outlet answer.  However, the user has requested that the inlet
answer be
         used.
Note:    During the supercritical calculations a hydraulic jump occurred inside of the culvert.

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 550

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.74    2.17     762    6.44  761.37    7.93  761.21    11.4  760.77
   13.24  760.59   16.65  760.24   17.34  760.19   18.28  760.12   18.93  760.07
   19.53  760.03   19.63  760.03   20.51  759.97   20.56  759.97      21  759.94
    21.2  759.93   22.34  759.87    22.7  759.85   23.74  759.78   24.15  759.76
   25.15   759.7   25.56  759.67    27.3  759.57   27.53  759.56   27.77  759.55
   28.32  759.53   29.38     759   30.65     759      31     759   31.26     759
    31.5     759   32.17  758.73   33.68  757.14   34.11  757.14   35.75  758.58
   36.06  758.52    36.3  758.43   37.41  759.01   38.77  759.72   41.52  760.66
   44.58  761.75   50.22  761.56

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   27.77     .04   37.41    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.77   37.41             .557    1.91   2.473             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    28.5               F
    35.5   50.22               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 548.333*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   762.7     .34 762.579   1.761 762.093   2.169 761.979   2.462 761.935
   2.652 761.913   6.438  761.38   7.927  761.21   8.236 761.171   9.297 761.048
  11.396 760.803  13.235 760.624  16.644 760.281  17.334 760.225  18.273 760.148
  18.923 760.094  19.523 760.048  19.574 760.047  19.623 760.045  19.814 760.031
  20.135  760.01  20.503 759.984  20.525 759.983  20.553 759.983  20.805 759.969
  20.975 759.954  20.992 759.953  21.192 759.941  21.455 759.924  21.956 759.896
  22.332 759.875  22.416  759.87  22.692 759.856  23.387 759.815  23.731 759.761
  24.141 759.702  25.141  759.55  25.551 759.484  26.919 759.278   27.29 759.222
   27.52  759.19   27.76 759.157  28.264 759.098  29.142 758.701  29.236 758.658
    30.4 758.554  30.633 758.533   30.72 758.526  30.959 758.507  31.179  758.49
  31.793 758.261  33.177  757.09  33.463  757.09  34.366 757.708  35.292 758.362
   35.34 758.403  35.695 758.478   35.97 758.508   37.24  759.31  37.476 759.458
  38.673 760.088  38.737 760.114   41.35 760.649  41.495 760.687  41.571 760.708
  41.658 760.733  41.822 760.773  42.012 760.816  42.148 760.847   42.23 760.865
  42.375 760.898  42.411 760.906   42.43  760.91  42.502 760.926  42.693 760.976
  42.856 761.019  44.525 761.392  44.796 761.455  45.251 761.447  45.823 761.438
   46.24 761.433  46.548 761.426  46.757 761.425   46.93 761.421  48.962 761.361
   50.74  761.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   27.76     .04   37.24    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.76   37.24             .557    1.91   2.473             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   25.56               F
36.04333   50.74               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 546.666*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.66     .34 762.535   1.761 762.046   2.168 761.957   2.461 761.912
   2.651 761.896   6.435 761.389   7.924 761.209   8.233  761.17   9.293 761.059
  11.392 760.835   13.23 760.657  16.638 760.321  17.328 760.261  18.267 760.177
  18.916 760.118  19.516 760.067  19.567 760.063  19.616 760.061  19.807 760.046
  20.127 760.025  20.495 759.998  20.517 759.997  20.545 759.996  20.797 759.984
  20.968 759.967  20.985 759.966  21.185 759.951  21.448 759.932  21.948 759.903
  22.324  759.88  22.408 759.875  22.684 759.862  23.378 759.828  23.723 759.743
  24.133 759.644  25.132 759.399  25.542 759.297   26.91 758.964   27.28 758.874
   27.51  758.82   27.75 758.763  28.208 758.667  29.006  758.35  29.091 758.317
  30.149 758.108  30.362 758.067  30.441 758.053  30.657 758.015  30.857 757.979
```

```
  31.415 757.791  32.673  757.04  32.817  757.04  33.833 757.584  34.876 758.181
   34.93 758.225   35.33 758.437  35.639 758.586   37.07  759.61  37.318 759.789
  38.577 760.455  38.643 760.487   41.39 760.709  41.543 760.738  41.623 760.756
  41.714 760.776  41.886 760.802  42.086 760.823  42.229 760.838  42.315 760.848
  42.468 760.864  42.506 760.868  42.525  760.87  42.601 760.878  42.801 760.913
  42.973 760.945  44.728 761.126  45.012 761.159  45.491 761.159  46.091 761.159
   46.53 761.161  46.854 761.158  47.074 761.162  47.255 761.161  49.391 761.106
   51.26   761.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   27.75     .04   37.07    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.75   37.07             .557    1.91   2.473             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   22.62               F
36.58667   51.26               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 545

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.62     .34  762.49    1.76     762    2.46  761.89    2.65  761.88
    8.23  761.17    9.29  761.07   19.56  760.08    19.8  760.06   20.12  760.04
   20.51  760.01   20.79     760   20.96  759.98   21.44  759.94   21.94  759.91
    22.4  759.88   23.37  759.84    26.9  758.65   27.74  758.37   28.87     758
   30.09   757.6   32.17  756.99    33.3  757.46   34.46     758    36.9  759.91
   37.16  760.12   38.55  760.86   41.43  760.77   41.59  760.79   41.77  760.82
   41.95  760.83   41.96  760.83   42.16  760.83   42.31  760.83    42.4  760.83
   42.56  760.83    42.6  760.83   42.62  760.83    42.7  760.83   42.71  760.83
   42.91  760.85   43.09  760.87   44.93  760.86   45.73  760.87   46.36  760.88
   46.82  760.89   47.16  760.89   47.39   760.9   47.58   760.9   49.82  760.85
   51.78  760.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   27.74     .04    36.9    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.74    36.9             .972   1.865   2.647             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   19.68               F
   37.13   51.78               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 543.076*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.736    .333 762.611    .606 762.517   1.723 762.126   2.408 762.008
   2.594 761.994   4.879 761.664   6.321 761.442   8.057 761.221   9.094 761.121
  19.148 760.132  19.383 760.112  19.697 760.091  20.078  760.06  20.352 760.049
  20.431  760.04  20.519 760.029  20.989 759.988  21.478 759.956  21.929 759.924
  22.878 759.879  25.916 758.887  26.334 758.738  27.156 758.448  28.031 758.143
  28.277 758.056  29.487 757.631  30.577 757.277  31.551 756.962   32.03  757.16
  32.711 757.439  33.902  757.98  34.451 758.386  34.474 758.405  35.928  759.56
  36.408 759.898  36.683 760.093  38.153 760.778   40.39 760.721    41.2 760.694
  41.369 760.712   41.56 760.739   41.75 760.747  41.761 760.747  41.973 760.746
  42.131 760.745  42.226 760.745  42.396 760.744  42.438 760.744  42.459 760.743
  42.544 760.743  42.554 760.743  42.766  760.76  42.956 760.778  44.209 760.766
  44.903 760.771  45.749  760.79  46.416 760.807  46.774 760.818  46.903 760.823
  47.262 760.828  47.506 760.841  47.707 760.844  50.076 760.835  51.233 760.863
   52.15 760.858

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  27.156     .04  36.408    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        27.156  36.408             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 541.153*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.852    .326 762.731    .593 762.641   1.686 762.253   2.356 762.126
   2.538 762.108   4.774 761.744   6.185 761.489   7.884 761.272   8.899 761.172
  18.737 760.184  18.967 760.163  19.273 760.142  19.647 760.111  19.915 760.098
  19.992 760.089  20.078 760.078  20.538 760.036  21.016 760.002  21.457 759.969
  22.386 759.918  25.359 758.979  25.768 758.826  26.572 758.527   27.44 758.204
  27.684 758.113  28.885 757.662  29.965 757.275  30.932 756.933  31.424 757.136
  32.122 757.418  33.344 757.961  33.908 758.354  33.931 758.373  35.423 759.576
  35.915 759.887  36.206 760.065  37.757 760.696  40.116 760.647   40.97 760.619
```

```
  41.149 760.634   41.35 760.657  41.551 760.664  41.562 760.664  41.785 760.662
  41.952  760.66  42.053 760.659  42.231 760.658  42.276 760.657  42.298 760.657
  42.388 760.656  42.399 760.656  42.622 760.671  42.823 760.686  44.145 760.668
  44.876 760.681  45.769  760.71  46.472 760.734  46.849 760.749  46.985 760.755
  47.365 760.767  47.621 760.782  47.833 760.789  50.333 760.819  51.553 760.864
   52.52 760.845

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  26.572     .04  35.915    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        26.572  35.915             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 539.230*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev      Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev
       0 762.968    .319 762.852     .58 762.764   1.649 762.379   2.305 762.244
   2.483 762.222   4.669 761.825   6.049 761.535    7.71 761.323   8.703 761.222
  18.325 760.236   18.55 760.215   18.85 760.193  19.215 760.161  19.477 760.147
  19.553 760.138  19.637 760.128  20.086 760.084  20.555 760.048  20.986 760.013
  21.894 759.957  24.802 759.072  25.201 758.914  25.988 758.605  26.849 758.266
  27.091 758.169  28.282 757.693  29.354 757.274  30.312 756.905  30.817 757.112
  31.533 757.397  32.787 757.941  33.364 758.322  33.388 758.342  34.918 759.592
  35.423 759.875  35.728 760.038   37.36 760.614  39.842 760.574  40.741 760.543
  40.928 760.556   41.14 760.576  41.351 760.581  41.363 760.581  41.598 760.578
  41.774 760.575  41.879 760.574  42.067 760.571  42.114 760.571  42.138  760.57
  42.231 760.569  42.243 760.569  42.478 760.581  42.689 760.594   44.08  760.57
  44.849 760.592  45.788  760.63  46.528 760.662  46.925  760.68  47.068 760.688
  47.467 760.705  47.737 760.724   47.96 760.733  50.589 760.804  51.872 760.865
   52.89 760.833

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.988     .04  35.423    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.988  35.423             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 537.307*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev      Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev
       0 763.085    .311 762.973    .567 762.888   1.612 762.505   2.253 762.361
   2.427 762.336   4.564 761.905   5.913 761.582   7.537 761.373   8.508 761.273
  17.913 760.288  18.133 760.267  18.426 760.243  18.783 760.211   19.04 760.196
  19.113 760.187  19.195 760.177  19.635 760.133  20.093 760.095  20.514 760.058
  21.403 759.997  24.245 759.165  24.635 759.002  25.405 758.684  26.258 758.327
  26.499 758.225   27.68 757.724  28.742 757.272  29.693 756.876   30.21 757.088
  30.944 757.376  32.229 757.921  32.821  758.29  32.846 758.311  34.414 759.608
  34.931 759.864  35.251 760.011  36.963 760.532  39.568   760.5  40.511 760.468
  40.708 760.478   40.93 760.495  41.151 760.498  41.164 760.498   41.41 760.494
  41.595  760.49  41.706 760.488  41.903 760.485  41.952 760.484  41.977 760.484
  42.075 760.482  42.088 760.482  42.334 760.491  42.556 760.501  44.015 760.472
  44.822 760.503  45.808  760.55  46.584 760.589      47 760.611   47.15 760.621
  47.569 760.643  47.852 760.665  48.086 760.677  50.846 760.788  52.192 760.867
   53.26 760.821

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.405     .04  34.931    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.405  34.931             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 535.384*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev      Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev
       0 763.201    .304 763.093    .554 763.011   1.575 762.632   2.201 762.479
   2.371  762.45   4.459 761.986   5.777 761.628   7.364 761.424   8.312 761.324
  17.502 760.339  17.716 760.318  18.003 760.294  18.352 760.262  18.602 760.245
  18.674 760.237  18.754 760.226  19.184 760.181  19.631 760.141  20.043 760.102
  20.911 760.036  23.688 759.258  24.069  759.09  24.821 758.762  25.667 758.389
  25.906 758.281  27.077 757.755  28.131 757.271  29.074 756.848  29.604 757.063
  30.355 757.355  31.671 757.901  32.277 758.258  32.303  758.28  33.909 759.623
  34.438 759.852  34.774 759.984  36.567  760.45  39.293 760.427  40.281 760.392
  40.487   760.4   40.72 760.414  40.952 760.415  40.965 760.415  41.223 760.409
  41.416 760.405  41.532 760.403  41.738 760.399   41.79 760.398  41.816 760.397
  41.919 760.395  41.932 760.395   42.19 760.402  42.422 760.409   43.95 760.374
  44.795 760.413  45.827  760.47   46.64 760.516  47.076 760.542  47.233 760.554
  47.671 760.581  47.968 760.606  48.213 760.622  51.102 760.773  52.512 760.868
   53.63 760.808
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.821     .04  34.438    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.821  34.438             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 533.461*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.317    .297 763.214    .541 763.135   1.538 762.758   2.149 762.597
   2.315 762.564   4.354 762.066   5.641 761.675   7.191 761.475   8.117 761.375
   17.09 760.391    17.3  760.37  17.579 760.345   17.92 760.312  18.165 760.294
  18.235 760.286  18.313 760.275  18.733 760.229  19.169 760.187  19.571 760.147
  20.419 760.075   23.13 759.351  23.503 759.178  24.237 758.841  25.076  758.45
  25.313 758.338  26.474 757.786   27.52  757.27  28.455 756.819  28.997 757.039
  29.767 757.334  31.113 757.882  31.734 758.225   31.76 758.249  33.404 759.639
  33.946 759.841  34.297 759.956   36.17 760.369  39.019 760.354  40.051 760.316
  40.267 760.322  40.509 760.332  40.752 760.332  40.766 760.332  41.035 760.325
  41.237  760.32  41.359 760.318  41.574 760.312  41.628 760.311  41.655 760.311
  41.763 760.308  41.776 760.308  42.046 760.312  42.288 760.317  43.885 760.276
  44.768 760.324  45.846  760.39  46.695 760.443  47.151 760.473  47.315 760.486
  47.774  760.52  48.084 760.547   48.34 760.566  51.358 760.757  52.832  760.87
      54 760.796

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.237     .04  33.946    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.237  33.946             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 531.538*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.433     .29 763.335    .528 763.259   1.501 762.884   2.098 762.715
    2.26 762.678   4.249 762.147   5.505 761.721   7.017 761.526   7.921 761.426
  16.678 760.443  16.883 760.422  17.156 760.396  17.488 760.362  17.727 760.343
  17.796 760.335  17.872 760.325  18.281 760.277  18.708 760.233    19.1 760.191
  19.927 760.114  22.573 759.443  22.937 759.266  23.653 758.919  24.485 758.511
   24.72 758.394  25.872 757.817  26.908 757.268  27.835 756.791   28.39 757.015
  29.178 757.313  30.556 757.862  31.191 758.193  31.217 758.217  32.899 759.655
  33.454 759.829  33.819 759.929  35.773 760.287  38.745  760.28  39.821 760.241
  40.046 760.244  40.299 760.251  40.552 760.249  40.566 760.249  40.848 760.241
  41.058 760.236  41.185 760.232   41.41 760.226  41.466 760.225  41.494 760.224
  41.607 760.221  41.621 760.221  41.902 760.222  42.155 760.225   43.82 760.178
  44.741 760.234  45.866  760.31  46.751 760.371  47.227 760.404  47.398 760.419
  47.876 760.458  48.199 760.489  48.466  760.51  51.615 760.742  53.151 760.871
   54.37 760.784

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.653     .04  33.454    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.653  33.454             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 529.615*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.549    .283 763.455    .515 763.382   1.464  763.01   2.046 762.833
   2.204 762.792   4.144 762.227   5.369 761.768   6.844 761.577   7.726 761.477
  16.267 760.495  16.466 760.473  16.732 760.447  17.057 760.413  17.289 760.392
  17.356 760.384  17.431 760.374   17.83 760.325  18.246 760.279  18.628 760.236
  19.435 760.153  22.016 759.536  22.371 759.354  23.069 758.998  23.894 758.573
  24.127  758.45  25.269 757.848  26.297 757.267  27.216 756.762  27.783 756.991
  28.589 757.292  29.998 757.842  30.647 758.161  30.674 758.186  32.394 759.671
  32.962 759.818  33.342 759.902  35.376 760.205  38.471 760.207  39.592 760.165
  39.826 760.166  40.089  760.17  40.353 760.166  40.367 760.166   40.66 760.157
   40.88 760.151  41.011 760.147  41.246  760.14  41.304 760.138  41.333 760.137
   41.45 760.134  41.465 760.134  41.758 760.133  42.021 760.133  43.755  760.08
  44.714 760.145  45.885  760.23  46.807 760.298  47.302 760.335  47.481 760.352
  47.978 760.396  48.315  760.43  48.593 760.455  51.871 760.726  53.471 760.873
   54.74 760.772

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.069     .04  32.962    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.069  32.962             .972   1.865   2.647             .1       .3
```

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 527.692*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	763.665	.276	763.576	.502	763.506	1.427	763.137	1.994	762.951
2.148	762.906	4.04	762.308	5.234	761.814	6.671	761.628	7.53	761.527
15.855	760.547	16.049	760.525	16.309	760.498	16.625	760.463	16.852	760.441
16.917	760.433	16.99	760.423	17.379	760.373	17.784	760.325	18.157	760.28
18.943	760.192	21.459	759.629	21.805	759.442	22.485	759.076	23.304	758.634
23.534	758.506	24.666	757.879	25.686	757.266	26.597	756.734	27.177	756.967
28	757.272	29.44	757.823	30.104	758.129	30.131	758.155	31.889	759.687
32.469	759.806	32.865	759.875	34.98	760.123	38.197	760.134	39.362	760.089
39.605	760.088	39.879	760.089	40.153	760.083	40.168	760.083	40.473	760.073
40.701	760.066	40.838	760.061	41.081	760.054	41.142	760.052	41.173	760.051
41.294	760.047	41.309	760.047	41.614	760.043	41.888	760.041	43.69	759.982
44.687	760.056	45.905	760.15	46.863	760.225	47.378	760.266	47.563	760.285
48.08	760.334	48.43	760.371	48.719	760.399	52.128	760.711	53.791	760.874
55.11	760.759								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	22.485	.04	32.469	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
22.485	32.469	.972 1.865	2.647	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 525.769*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	763.782	.268	763.697	.489	763.629	1.39	763.263	1.942	763.069
2.092	763.02	3.935	762.388	5.098	761.861	6.498	761.679	7.335	761.578
15.443	760.599	15.633	760.577	15.885	760.549	16.193	760.513	16.414	760.49
16.478	760.482	16.549	760.472	16.928	760.422	17.322	760.371	17.685	760.325
18.451	760.232	20.902	759.722	21.238	759.53	21.902	759.155	22.713	758.696
22.941	758.563	24.064	757.91	25.074	757.264	25.978	756.705	26.57	756.943
27.411	757.251	28.882	757.803	29.56	758.097	29.589	758.124	31.385	759.703
31.977	759.795	32.388	759.847	34.583	760.041	37.923	760.06	39.132	760.014
39.385	760.01	39.669	760.007	39.953	760	39.969	759.999	40.285	759.989
40.522	759.981	40.664	759.976	40.917	759.967	40.98	759.965	41.012	759.964
41.138	759.96	41.154	759.96	41.47	759.953	41.754	759.948	43.625	759.884
44.66	759.966	45.924	760.07	46.919	760.152	47.453	760.197	47.646	760.217
48.183	760.273	48.546	760.312	48.846	760.343	52.384	760.695	54.111	760.876
55.48	760.747								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	21.902	.04	31.977	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
21.902	31.977	.972 1.865	2.647	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 523.846*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	763.898	.261	763.817	.476	763.753	1.353	763.389	1.89	763.187
2.036	763.134	3.83	762.469	4.962	761.907	6.325	761.73	7.139	761.629
15.032	760.651	15.216	760.628	15.462	760.6	15.762	760.564	15.977	760.54
16.039	760.532	16.107	760.521	16.476	760.47	16.86	760.417	17.214	760.369
17.959	760.271	20.344	759.814	20.672	759.618	21.318	759.233	22.122	758.757
22.348	758.619	23.461	757.941	24.463	757.263	25.358	756.677	25.963	756.918
26.822	757.23	28.324	757.783	29.017	758.064	29.046	758.092	30.88	759.718
31.485	759.783	31.91	759.82	34.186	759.959	37.648	759.987	38.902	759.938
39.164	759.932	39.459	759.926	39.754	759.917	39.77	759.916	40.098	759.905
40.343	759.896	40.491	759.891	40.753	759.881	40.818	759.879	40.851	759.878
40.982	759.873	40.998	759.872	41.326	759.864	41.62	759.856	43.56	759.786
44.633	759.877	45.943	759.99	46.975	760.08	47.529	760.128	47.728	760.15
48.285	760.211	48.662	760.254	48.973	760.288	52.641	760.68	54.43	760.877
55.85	760.735								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	21.318	.04	31.485	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
21.318	31.485	.972 1.865	2.647	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 521.923*

INPUT

```
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 764.014    .254 763.938    .463 763.876   1.315 763.516   1.839 763.304
   1.981 763.249   3.725 762.549   4.826 761.953   6.151 761.781   6.944  761.68
   14.62 760.703  14.799  760.68  15.038  760.65   15.33 760.614  15.539 760.589
  15.599 760.581  15.666 760.571  16.025 760.518  16.399 760.464  16.743 760.414
  17.468  760.31  19.787 759.907  20.106 759.707  20.734 759.312  21.531 758.819
  21.756 758.675  22.859 757.972  23.851 757.261  24.739 756.648  25.357 756.894
  26.233 757.209  27.767 757.763  28.473 758.032  28.503 758.061  30.375 759.734
  30.992 759.772  31.433 759.793   33.79 759.877  37.374 759.913  38.673 759.863
  38.944 759.854  39.249 759.845  39.554 759.834  39.571 759.833   39.91 759.821
  40.164 759.811  40.317 759.805  40.588 759.795  40.656 759.792   40.69 759.791
  40.826 759.786  40.843 759.785  41.182 759.774  41.487 759.764  43.495 759.688
  44.606 759.788  45.963  759.91  47.031 760.007  47.604 760.059  47.811 760.083
  48.387 760.149  48.777 760.195  49.099 760.232  52.897 760.665   54.75 760.879
   56.22 760.722

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.734     .04  30.992    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.734  30.992             .972   1.865   2.647             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 520

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  764.13     .45     764    3.62  762.63    4.69     762   15.16  760.63
   19.23     760   20.15  759.39   20.94  758.88   22.26     758   23.24  757.26
   24.12  756.62   24.75  756.87   27.93     758   27.96  758.03   29.87  759.75
    30.5  759.76    37.1  759.84   43.43  759.59   47.68  759.99   55.07  760.88
   56.59  760.71

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   20.15     .04    30.5    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.15    30.5            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 518.2*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 764.086    .424 763.958   2.078 763.233   3.409 762.652   4.417 762.061
   7.025 761.674  11.453 760.988  13.328 760.686  14.276 760.528  16.061  760.19
  18.109 759.834  18.975 759.263  19.206 759.115  19.753 758.746  19.794 758.718
  21.054 757.851  21.698 757.356   22.02 757.133  22.887 756.553  23.523  756.78
  24.431 757.071  24.517 757.099  24.755  757.19   26.72 757.987  26.751 758.017
  26.868 758.122   27.82 759.007  28.267 759.422  28.671 759.761  29.305 759.791
  30.678 759.856  36.034 759.882  36.477 759.864  40.955 759.669  42.488 759.557
   44.17 759.633  44.554 759.666  46.379 759.821  46.821 759.865  50.498 760.313
  51.564 760.637  54.355 760.934  54.651 760.905  55.905 760.781

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.975     .04  29.305    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.975  29.305            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 516.4*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 764.042    .398 763.916    1.95 763.225   3.198 762.674   4.143 762.122
    6.59  761.71  10.744 760.954  12.502 760.609  13.392 760.426  15.066 760.043
  16.987 759.669    17.8 759.136  18.027 758.991  18.567 758.613  18.607 758.584
  19.848 757.702  20.483 757.205    20.8 757.005  21.654 756.486  22.295 756.689
  23.209 756.951  23.295 756.977  23.534 757.074  25.511 757.974  25.541 758.003
  25.659 758.108  26.617 759.026  27.067 759.457  27.473 759.772   28.11 759.822
  29.509 759.935  34.968 759.923   35.42 759.904  39.983  759.69  41.546 759.525
   43.26  759.52  43.651 759.551  45.511 759.693  45.962  759.74  49.709 760.201
  50.796 760.724  53.641 760.988  53.942 760.962   55.22 760.852

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    17.8     .04   28.11    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.8   28.11            2.371   1.851   1.282             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 514.6*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.998    .371 763.875   1.821 763.216   2.987 762.695    3.87 762.184
   6.155 761.746  10.034  760.92  11.677 760.533  12.508 760.323  14.072 759.897
  15.866 759.503  16.625 759.009  16.849 758.867   17.38 758.479   17.42  758.45
  18.643 757.553  19.268 757.054   19.58 756.878  20.421 756.419  21.068 756.599
  21.986 756.831  22.073 756.855  22.314 756.959  24.301 757.961  24.332  757.99
  24.451 758.095  25.413 759.045  25.866 759.491  26.274 759.784  26.915 759.853
  28.341 760.014  33.902 759.965  34.362 759.945  39.011  759.71  40.603 759.492
   42.35 759.408  42.748 759.435  44.644 759.565  45.102 759.615  48.921  760.09
  50.028 760.811  52.926 761.042  53.233 761.019  54.535 760.923

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.625     .04  26.915    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.625  26.915            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 512.8*

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.954    .345 763.833   1.692 763.208   2.776 762.717   3.596 762.245
    5.72 761.783   9.325 760.885  10.852 760.457  11.624 760.221  13.077  759.75
  14.745 759.337   15.45 758.882  15.671 758.743  16.194 758.346  16.233 758.315
  17.437 757.404  18.052 756.904  18.359 756.751  19.188 756.352   19.84 756.509
  20.764 756.711  20.851 756.733  21.093 756.843  23.092 757.948  23.123 757.977
  23.242 758.081   24.21 759.065  24.665 759.525  25.076 759.795   25.72 759.884
  27.172 760.094  32.836 760.006  33.305 759.986   38.04  759.73  39.661 759.459
   41.44 759.295  41.846  759.32  43.776 759.438  44.243 759.489  48.132 759.979
  49.259 760.898  52.211 761.096  52.524 761.077   53.85 760.994

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   15.45     .04   25.72    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.45   25.72            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 511.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.91    .319 763.791   1.563   763.2   2.565 762.739   3.323 762.306
   5.285 761.819   8.616 760.851  10.026 760.381   10.74 760.119  12.083 759.603
  13.623 759.172  14.275 758.755  14.492 758.619  15.007 758.212  15.046 758.181
  16.231 757.255  16.837 756.753  17.139 756.623  17.955 756.285  17.965 756.285
  18.613 756.418  19.542 756.591  19.629 756.611  19.873 756.728  21.882 757.935
  21.913 757.964  22.033 758.068  23.007 759.084  23.464 759.559  23.877 759.806
  24.525 759.915  26.003 760.173   31.77 760.048  32.247 760.026  37.068  759.75
  38.719 759.427   40.53 759.183  40.943 759.205  42.908  759.31  43.384 759.364
  47.343 759.867  48.491 760.985  51.496  761.15  51.815 761.134  53.165 761.065

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.275     .04  24.525    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.275  24.525            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 509.2*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.866    .293 763.749   1.435 763.192   2.353 762.761   3.049 762.367
    4.85 761.855   7.907 760.817   9.201 760.305   9.856 760.017  11.088 759.457
  12.502 759.006    13.1 758.628  13.314 758.496  13.821 758.078  13.859 758.047
  15.025 757.107  15.622 756.603  15.919 756.496  16.722 756.218  16.734 756.218
  17.385 756.328  18.319  756.47  18.407 756.489  18.652 756.612  20.673 757.922
  20.704  757.95  20.825 758.054  21.803 759.103  22.263 759.593  22.679 759.817
   23.33 759.946  24.835 760.253  30.704  760.09   31.19 760.067  36.097  759.77
  37.777 759.394   39.62  759.07  40.041  759.09  42.041 759.182  42.525 759.239
  46.555 759.756  47.723 761.072  50.782 761.204  51.106 761.191   52.48 761.136

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   13.1     .04   23.33    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          13.1   23.33            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 507.4*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.822    .266 763.707   1.306 763.184   2.142 762.783   2.776 762.428
   4.415 761.891   7.198 760.783   8.376 760.229   8.972 759.915  10.094  759.31
  11.381  758.84  11.925 758.501  12.135 758.372  12.634 757.945  12.671 757.913
  13.819 756.958  14.406 756.452  14.699 756.369  15.489 756.151  15.503 756.151
  16.158 756.237  17.097  756.35  17.186 756.366  17.432 756.497  19.463  757.91
  19.495 757.937  19.616 758.041    20.6 759.122  21.062 759.627   21.48 759.829
  22.135 759.977  23.666 760.332  29.638 760.131  30.132 760.108  35.125  759.79
  36.834 759.362   38.71 758.958  39.138 758.975  41.173 759.054  41.666 759.114
  45.766 759.644  46.955 761.159  50.067 761.258  50.397 761.248  51.795 761.207

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.925     .04  22.135    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.925  22.135            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 505.6*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.778     .24 763.666   1.177 763.176   1.931 762.804   2.502 762.489
    3.98 761.927   6.488 760.748   7.551 760.152   8.088 759.812   9.099 759.163
  10.259 758.674   10.75 758.374  10.957 758.248  11.448 757.811  11.484 757.779
  12.613 756.809  13.191 756.301  13.479 756.241  14.256 756.084  14.272 756.084
   14.93 756.147  15.875  756.23  15.964 756.244  16.211 756.381  18.254 757.897
  18.285 757.924  18.407 758.027  19.397 759.141  19.862 759.662  20.282  759.84
   20.94 760.008  22.497 760.411  28.572 760.173  29.075 760.149  34.153  759.81
  35.892 759.329    37.8 758.845  38.235  758.86  40.305 758.926  40.807 758.989
  44.977 759.533  46.186 761.246  49.352 761.312  49.688 761.305   51.11 761.278

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.75     .04   20.94    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.75   20.94            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 503.8*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.734    .214 763.624   1.049 763.168    1.72 762.826   2.229 762.551
   3.545 761.964   5.779 760.714   6.725 760.076   7.204  759.71   8.105 759.017
   9.138 758.509   9.575 758.247   9.778 758.124  10.261 757.678  10.297 757.644
  11.408  756.66  11.975 756.151  12.259 756.114  13.023 756.017  13.041 756.017
  13.703 756.057  14.652  756.11  14.742 756.122  14.991 756.266  17.044 757.884
  17.076 757.911  17.199 758.013  18.193 759.161  18.661 759.696  19.083 759.851
  19.745 760.039  21.329 760.491  27.506 760.214  28.017 760.189  33.182  759.83
   34.95 759.296   36.89 758.733  37.333 758.745  39.438 758.798  39.947 758.864
  44.189 759.421  45.418 761.333  48.638 761.366  48.979 761.363  50.425 761.349

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.575     .04  19.745    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.575  19.745            2.371   1.851   1.282             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 502

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.69     .92  763.16    3.11     762    5.07  760.68     5.9     760
    7.11  758.87     8.4  758.12     8.6     758    9.11  757.51   10.76     756
   11.79  755.95   11.81  755.95   13.43  755.99   13.52     756   13.77  756.15
   15.99     758   16.99  759.18   17.46  759.73   18.55  760.07   20.16  760.57
   26.96  760.23   32.21  759.85   35.98  758.62   36.43  758.63   38.57  758.67
    43.4  759.31   44.65  761.42   48.27  761.42   49.74  761.42

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035     8.4     .04   18.55    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           8.4   18.55            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 500.*

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.593    .908  763.08   1.454 762.795   3.071 761.943   5.006 760.665
   5.188  760.52   5.826 760.011    6.13 759.736   6.759  759.15    7.02 758.902
   8.294  758.11   8.491  757.98   8.721 757.753   8.994 757.479   9.871 756.639
  10.621  755.97  10.925 755.945  11.637 755.885  11.655 755.885  13.269 755.962
  13.359 755.973  13.608 756.117  13.641 756.143   14.41 756.752  15.097 757.353
  15.821 757.985  15.959 758.151  16.511 758.762  16.729 759.004   16.76 759.039
  16.817 759.102  17.285 759.615  17.426 759.659  18.372 759.948  19.974 760.437
  23.694 760.337  26.743 760.185  31.819 759.827  31.969 759.814  34.327 759.062
  34.695 758.954  35.721 758.641  36.169 758.648  36.308  758.65  37.067 758.659
  37.846 758.672  38.299  758.68  38.321 758.683  39.859  758.87  41.082  759.02
  41.419 759.061  43.052  759.26  43.095 759.265  43.107 759.267  43.537 759.936
  43.885 760.532  44.351  761.29  45.445 761.368  47.954 761.377  49.417 761.382

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.294     .04  18.372    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.294  18.372            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 498.*

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.497    .897     763   1.436 762.723   3.032 761.886   4.942 760.649
   5.122 760.511   5.751 760.023   6.052  759.76   6.672 759.183   6.931 758.934
   8.188   758.1   8.383 757.961   8.609 757.729   8.878 757.448   9.742 756.581
  10.482 755.941  10.782 755.904  11.483  755.82    11.5  755.82  13.109 755.933
  13.198 755.946  13.446 756.083  13.479 756.108  14.246 756.684   14.93 757.312
  15.651  757.97   15.79 758.137  16.339 758.708  16.556 758.933  16.587 758.965
  16.644 759.024  17.111 759.501   17.25 759.543  18.193 759.827  19.788 760.305
   23.49 760.291  26.526  760.14  31.578 759.792  31.727 759.778  34.074 759.048
  34.441 758.952  35.462 758.662  35.908 758.666  36.046 758.667  36.801 758.671
  37.578 758.683  38.028  758.69   38.05 758.692  39.581 758.863  40.798 758.999
  41.134 759.036  42.759 759.217  42.801 759.222  42.814 759.223  43.242 759.831
  43.588 760.435  44.052  761.16  45.141 761.317  47.639 761.333  49.095 761.343

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.188     .04  18.193    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.188  18.193            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 496.*

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   763.4    .885  762.92   1.417  762.65   2.992 761.829   4.878 760.634
   5.056 760.502   5.677 760.034   5.974 759.784   6.586 759.216   6.841 758.966
   8.082  758.09   8.274 757.941   8.497 757.705   8.763 757.416   9.614 756.522
  10.343 755.911  10.639 755.864  11.33 755.755  11.345 755.755  12.948 755.905
  13.037 755.919  13.285  756.05  13.317 756.073  14.081 756.616  14.763 757.271
  15.482 757.956   15.62 758.123  16.167 758.653  16.384 758.862  16.415 758.892
  16.471 758.946  16.936 759.387  17.075 759.428  18.015 759.705  19.603 760.172
  23.287 760.245  26.308 760.094  31.337 759.758  31.486 759.742  33.822 759.033
  34.187  758.95  35.203 758.683  35.647 758.684  35.785 758.684  36.536 758.683
  37.309 758.694  37.757   758.7  37.779 758.702  39.303 758.856  40.514 758.978
  40.848 759.011  42.466 759.175  42.508 759.179   42.52  759.18  42.947 759.727
  43.291 760.337  43.753  761.03  44.836 761.265  47.323  761.29  48.772 761.305

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.082     .04  18.015    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.082  18.015            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 494.*

INPUT
```

```
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.303    .874  762.84   1.398 762.578   2.953 761.772   4.814 760.619
    4.99 760.493   5.603 760.045   5.896 759.808     6.5 759.248   6.752 758.997
   7.977  758.08   8.165 757.921   8.385 757.681   8.647 757.385   9.486 756.464
  10.204 755.881  10.496 755.823  11.177  755.69   11.19  755.69  12.788 755.877
  12.876 755.892  13.123 756.017  13.155 756.038  13.917 756.547  14.596  757.23
  15.312 757.941   15.45  758.11  15.995 758.598  16.211  758.79  16.242 758.818
  16.298 758.868  16.762 759.272    16.9 759.313  17.837 759.583  19.417 760.039
  23.084 760.199  26.091 760.049  31.096 759.724  31.244 759.706  33.569 759.018
  33.933 758.947  34.944 758.704  35.386 758.703  35.523 758.702  36.271 758.695
   37.04 758.704  37.487  758.71  37.508 758.712  39.025 758.848   40.23 758.957
  40.563 758.987  42.174 759.132  42.215 759.136  42.227 759.137  42.652 759.623
  42.994  760.24  43.454   760.9  44.532 761.213  47.007 761.247   48.45 761.267

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.977     .04  17.837    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.977  17.837            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 492.*

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.207    .862  762.76    1.38 762.506   2.914 761.715   4.751 760.604
   4.923 760.484   5.528 760.057   5.818 759.832   6.414 759.281   6.662 759.029
   7.871  758.07   8.057 757.902   8.273 757.657   8.531 757.354   9.358 756.406
  10.065 755.852  10.353 755.783  11.023 755.625  11.035 755.625  12.627 755.848
  12.715 755.865  12.961 755.983  12.993 756.003  13.752 756.479  14.429 757.189
  15.143 757.926   15.28 758.096  15.823 758.543  16.038 758.719  16.069 758.745
  16.125  758.79  16.587 759.158  16.725 759.197  17.658 759.462  19.231 759.906
  22.881 760.153  25.874 760.004  30.855  759.69  31.003  759.67  33.317 759.003
  33.679 758.945  34.686 758.725  35.125 758.721  35.261 758.719  36.006 758.706
  36.771 758.715  37.216  758.72  37.237 758.722  38.747 758.841  39.947 758.936
  40.278 758.962  41.881 759.089  41.922 759.092  41.934 759.093  42.356 759.519
  42.698 760.142  43.155  760.77  44.228 761.162  46.691 761.204  48.128 761.228

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.871     .04  17.658    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.871  17.658            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 490.*

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  763.11     .85 762.679   1.361 762.434   2.875 761.658   4.687 760.589
   4.857 760.474   5.454 760.068   5.739 759.856   6.327 759.314   6.573 759.061
   7.765  758.06   7.948 757.882   8.161 757.633   8.415 757.323   9.229 756.348
   9.927 755.822  10.209 755.743   10.87  755.56   10.88  755.56  12.466  755.82
  12.554 755.838  12.799  755.95  12.831 755.969  13.587  756.41  14.262 757.147
  14.973 757.911   15.11 758.082  15.651 758.489  15.866 758.648  15.896 758.671
  15.952 758.712  16.413 759.043   16.55 759.082   17.48  759.34  19.045 759.774
  22.678 760.107  25.657 759.959  30.615 759.655  30.761 759.634  33.065 758.989
  33.425 758.943  34.427 758.746  34.864 758.739      35 758.736  35.741 758.718
  36.503 758.726  36.945  758.73  36.966 758.731  38.469 758.834  39.663 758.915
  39.992 758.938  41.588 759.046  41.629 759.049  41.641  759.05  42.061 759.415
  42.401 760.045  42.856  760.64  43.924  761.11  46.376 761.161  47.805  761.19

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.765     .04   17.48    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.765   17.48            2.299    1.98    .299             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 488.*

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 763.013    .839 762.599   1.343 762.361   2.836 761.601   4.623 760.573
   4.791 760.465    5.38 760.079   5.661  759.88   6.241 759.346   6.483 759.093
   7.659  758.05    7.84 757.862   8.049 757.609     8.3 757.292   9.101  756.29
   9.788 755.792  10.066 755.702  10.717 755.495  12.306 755.791  12.394 755.811
  12.638 755.917  12.669 755.934  13.423 756.342  14.095 757.106  14.804 757.897
   14.94 758.069  15.479 758.434  15.693 758.576  15.724 758.598  15.779 758.634
  16.238 758.929  16.375 758.967  17.302 759.218   18.86 759.641  22.475  760.06
   25.44 759.913  30.374 759.621   30.52 759.597  32.812 758.974  33.171 758.941
  34.168 758.767  34.603 758.757  34.738 758.754  35.476  758.73  36.234 758.736
  36.674  758.74  36.695 758.741  38.191 758.827  39.379 758.894  39.707 758.913
```

```
  41.295 759.004  41.336 759.006  41.348 759.007  41.766 759.311  42.104 759.947
  42.557  760.51   43.62 761.058   46.06 761.117  47.483 761.152

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.659     .04  17.302    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.659  17.302            2.299    1.98    .299             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 486.*

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.917    .827 762.519   1.324 762.289   2.797 761.544   4.559 760.558
   4.725 760.456   5.305 760.091   5.583 759.904   6.155 759.379   6.393 759.125
   7.553  758.04   7.731 757.843   7.938 757.585   8.184  757.26   8.973 756.232
   9.649 755.763   9.923 755.662  10.563  755.43  12.145 755.763  12.233 755.784
  12.476 755.884  12.508 755.899  13.258 756.274  13.928 757.065  14.634 757.882
   14.77 758.055  15.307 758.379  15.521 758.505  15.551 758.524  15.607 758.556
  16.064 758.814    16.2 758.851  17.123 759.097  18.674 759.508  22.272 760.014
  25.222 759.868  30.133 759.587  30.278 759.561   32.56 758.959  32.917 758.939
  33.909 758.789  34.342 758.775  34.476 758.771  35.211 758.742  35.965 758.747
  36.403  758.75  36.424 758.751  37.912 758.819  39.095 758.873  39.421 758.888
  41.002 758.961  41.043 758.963  41.054 758.963  41.471 759.207  41.807  759.85
  42.258  760.38  43.316 761.007  45.744 761.074   47.16 761.113

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.553     .04  17.123    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.553  17.123            2.299    1.98    .299             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 484.*

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.82    .816 762.439   1.306 762.217   2.757 761.487   4.495 760.543
   4.659 760.447   5.231 760.102   5.505 759.928   6.069 759.412   6.304 759.157
   7.448  758.03   7.622 757.823   7.826 757.562   8.068 757.229   8.845 756.174
    9.51 755.733    9.78 755.621   10.41 755.365  11.985 755.735  12.072 755.757
  12.314  755.85  12.346 755.864  13.094 756.205  13.761 757.024  14.465 757.867
    14.6 758.041  15.136 758.324  15.348 758.434  15.378 758.451  15.434 758.478
  15.889   758.7  16.025 758.736  16.945 758.975  18.488 759.376  22.069 759.968
  25.005 759.823  29.892 759.553  30.037 759.525  32.307 758.944  32.662 758.937
   33.65  758.81  34.081 758.793  34.215 758.788  34.945 758.754  35.696 758.758
  36.132  758.76  36.153 758.761  37.634 758.812  38.811 758.853  39.136 758.864
  40.709 758.918  40.749  758.92  40.761  758.92  41.176 759.102   41.51 759.752
  41.959  760.25  43.012 760.955  45.429 761.031  46.838 761.075

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.448     .04  16.945    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.448  16.945            2.299    1.98    .299             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 482.*

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.723    .804 762.359   1.287 762.145   2.718  761.43   4.431 760.528
   4.592 760.438   5.157 760.113   5.426 759.952   5.982 759.445   6.214 759.189
   7.342  758.02   7.514 757.804   7.714 757.538   7.952 757.198   8.716 756.116
   9.371 755.704   9.636 755.581  10.257   755.3  11.824 755.706  11.911  755.73
  12.152 755.817  12.184  755.83  12.929 756.137  13.594 756.982  14.295 757.852
   14.43 758.027  14.964 758.269  15.175 758.363  15.205 758.377  15.261   758.4
  15.714 758.585   15.85 758.621  16.767 758.853  18.302 759.243  21.866 759.922
  24.788 759.778  29.652 759.518  29.795 759.489  32.055  758.93  32.408 758.934
  33.391 758.831   33.82 758.811  33.953 758.805   34.68 758.766  35.428 758.769
  35.861  758.77  35.882  758.77  37.356 758.805  38.528 758.832  38.851 758.839
  40.416 758.875  40.456 758.876  40.468 758.877   40.88 758.998  41.214 759.655
   41.66  760.12  42.708 760.903  45.113 760.988  46.515 761.037

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.342     .04  16.767    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.342  16.767            2.299    1.98    .299             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 480.*

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.627    .792 762.279   1.269 762.072   2.679 761.373   4.367 760.512
   4.526 760.429   5.082 760.125   5.348 759.976   5.896 759.477   6.125 759.221
   7.236  758.01   7.405 757.784   7.602 757.514   7.836 757.167   8.588 756.058
   9.232 755.674   9.493  755.54  10.103 755.235  11.663 755.678   11.75 755.703
   11.99 755.784  12.022 755.795  12.765 756.068  13.427 756.941  14.126 757.838
   14.26 758.014  14.792 758.215  15.003 758.291  15.033 758.304  15.088 758.322
   15.54 758.471  15.675 758.505  16.588 758.732  18.116  759.11  21.663 759.876
  24.571 759.733  29.411 759.484  29.554 759.453  31.802 758.915  32.154 758.932
  33.132 758.852  33.559  758.83  33.692 758.823  34.415 758.778  35.159 758.779
   35.59  758.78  35.611  758.78  37.078 758.797  38.244 758.811  38.565 758.815
  40.123 758.833  40.163 758.833  40.175 758.833  40.585 758.894  40.917 759.557
  41.361  759.99  42.404 760.852  44.797 760.944  46.193 760.998

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.236     .04  16.588    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.236  16.588            2.299    1.98    .299             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 478

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.53    1.25     762    4.46  760.42    5.27     760    5.81  759.51
    7.13     758    7.49  757.49    8.46     756    9.35   755.5    9.95  755.17
   11.86  755.76    12.6     756   13.26   756.9   14.09     758   14.62  758.16
   14.83  758.22   14.86  758.23    15.5  758.39   16.41  758.61   21.46  759.83
   29.17  759.45   31.55   758.9    31.9  758.93   33.43  758.84   34.15  758.79
   34.89  758.79   35.34  758.79    36.8  758.79   37.96  758.79   38.28  758.79
   39.83  758.79   39.87  758.79   40.29  758.79   40.62  759.46    42.1   760.8
   45.87  760.96

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    7.13     .04   16.41    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          7.13   16.41            2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 476.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.407   1.246 761.866   1.633 761.675   2.773 761.108   3.656 760.667
   4.046 760.471   4.445 760.268   5.253  759.84   5.791 759.368   6.162 758.964
   6.603 758.459   7.107 757.884   7.498 757.349   7.616 757.177   8.035 756.617
   8.554 755.924   9.523 755.403  10.085 755.105  10.176 755.061  12.059 755.718
  12.618  755.92  12.789 755.979   13.17 756.468   13.44 756.825  14.259 757.878
  14.781 758.068  14.988 758.141  15.018 758.152  15.579 758.322  15.649 758.338
  16.547 758.536  16.699 758.569  17.262 758.692  18.013 758.856  21.505 759.634
  24.371 759.518  25.638 759.459  29.076 759.297  29.157  759.28  30.728 758.943
   31.28 758.828  31.413 758.802  31.756 758.834  33.157 758.781  33.259 758.781
  33.966 758.772  34.692 758.808  35.134 758.831  36.568 758.903  37.707  758.96
  38.021 758.976  38.588 759.004  39.104 759.004  39.543 758.991  39.582  758.99
  39.994 758.978  40.318 759.564  41.772 760.711  42.963 760.721  44.699 760.784
  45.473 760.848

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.107     .04  16.547    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.107  16.547            2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 474.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.283   1.242 761.732   1.628  761.54   2.764 760.969   3.644 760.523
   4.033 760.324   4.431 760.117   5.236  759.68   5.772 759.225   6.142 758.843
   6.582  758.34   7.083 757.769   7.507 757.208   7.634  757.03   8.087 756.501
   8.648 755.848   9.695 755.305  10.303 754.995  10.401 754.952  12.259 755.675
   12.81 755.896  12.978 755.959  13.354 756.409   13.62  756.75  14.427 757.756
  14.943 757.977  15.147 758.061  15.176 758.074  15.729 758.272  15.798 758.286
  16.683 758.461  16.833  758.49  17.386 758.598  18.123 758.742   21.55 759.438
  24.363 759.349  25.607 759.295  28.981 759.144  29.061 759.129  30.604 758.825
  31.145 758.724  31.275 758.704  31.612 758.738  32.987 758.716  33.087 758.721
```

```
  33.781 758.754  34.494 758.827  34.928 758.871  36.335 759.016  37.453  759.13
  37.761 759.162  38.318 759.219  38.825 759.219  39.255 759.193  39.294  759.19
  39.699 759.166  40.017 759.667  41.443 760.622  42.613 760.591  44.317 760.641
  45.077 760.736

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.083     .04  16.683    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.083  16.683             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 472.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  762.16   1.238 761.598   1.622 761.406   2.755 760.831   3.632  760.38
    4.02 760.178   4.416 759.965   5.218  759.52   5.753 759.083   6.121 758.723
    6.56 758.222    7.06 757.653   7.515 757.067   7.652 756.883   8.138 756.385
   8.742 755.773   9.868 755.208  10.521 754.884  10.627 754.843  12.458 755.633
  13.001 755.872  13.167 755.938  13.537 756.351    13.8 756.675  14.596 757.634
  15.104 757.885  15.305 757.982  15.334 757.996  15.879 758.221  15.948 758.234
   16.82 758.387  16.967 758.412  17.509 758.504  18.232 758.627  21.596 759.242
  24.356 759.181  25.576 759.132  28.887 758.991  28.965 758.977  30.479 758.707
   31.01 758.621  31.138 758.606  31.469 758.642  32.817 758.651  32.916 758.662
  33.597 758.735  34.296 758.845  34.722 758.912  36.103 759.128    37.2   759.3
  37.502 759.348  38.048 759.433  38.545 759.433  38.968 759.394  39.006  759.39
  39.403 759.353  39.715 759.771  41.115 760.534  42.262 760.461  43.934 760.498
   44.68 760.623

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    7.06     .04  16.82    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          7.06   16.82             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 470.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 762.037   1.234 761.464   1.617 761.272   2.746 760.692    3.62 760.237
   4.006 760.032   4.402 759.813   5.201 759.359   5.734  758.94   6.101 758.602
   6.538 758.103   7.037 757.538   7.524 756.926    7.67 756.735    8.19  756.27
   8.836 755.697   10.04  755.11  10.739 754.773  10.852 754.734  12.657  755.59
  13.193 755.849  13.356 755.917  13.721 756.292   13.98 756.599  14.764 757.512
  15.265 757.793  15.464 757.903  15.492 757.918  16.029 758.171  16.097 758.182
  16.957 758.312  17.101 758.333  17.633  758.41  18.342 758.513  21.641 759.046
  24.348 759.012  25.545 758.968  28.793 758.837  28.869 758.826  30.354 758.589
  30.875 758.517      31 758.508  31.325 758.546  32.648 758.586  32.744 758.603
  33.412 758.717  34.098 758.864  34.516 758.953   35.87 759.241  36.946  759.47
  37.243 759.534  37.779 759.648  38.266 759.648  38.681 759.595  38.718 759.591
  39.107 759.541  39.414 759.875  40.786 760.445  41.912 760.331  43.552 760.355
  44.283 760.511

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.037     .04  16.957    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         7.037  16.957             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 468.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.913    1.23  761.33   1.611 761.137   2.736 760.554   3.608 760.093
   3.993 759.885   4.387 759.661   5.184 759.199   5.715 758.798   6.081 758.482
   6.517 757.984   7.013 757.422   7.532 756.785   7.688 756.588   8.242 756.154
    8.93 755.621  10.213 755.013  10.957 754.663  11.078 754.626  12.856 755.548
  13.384 755.825  13.545 755.896  13.905 756.234   14.16 756.524  14.933  757.39
  15.426 757.701  15.622 757.823   15.65  757.84  16.179 758.121  16.246  758.13
  17.093 758.238  17.235 758.254  17.756 758.316  18.451 758.398  21.686  758.85
   24.34 758.844  25.514 758.805  28.698 758.684  28.773 758.675  30.229 758.472
   30.74 758.414  30.863  758.41  31.181  758.45  32.478 758.521  32.573 758.543
  33.228 758.699  33.901 758.882   34.31 758.993  35.638 759.354  36.693  759.64
  36.984  759.72  37.509 759.862  37.987 759.862  38.393 759.797   38.43 759.791
  38.812 759.729  39.112 759.978  40.458 760.356  41.562 760.201   43.17 760.212
  43.887 760.399

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   7.013     .04  17.093    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
        7.013  17.093             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 466.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  761.79   1.225 761.196   1.606 761.003   2.727 760.415   3.596  759.95
    3.98 759.739   4.372  759.51   5.167 759.039   5.696 758.655   6.061 758.361
   6.495 757.866    6.99 757.307   7.541 756.644   7.706 756.441   8.294 756.038
   9.024 755.545  10.386 754.915  11.175 754.552  11.303 754.517  13.056 755.505
  13.576 755.801  13.735 755.876  14.089 756.175   14.34 756.449  15.102 757.268
  15.588  757.61   15.78 757.744  15.808 757.762  16.329 758.071  16.395 758.078
   17.23 758.163  17.368 758.176   17.88 758.222  18.561 758.284  21.731 758.654
  24.333 758.675  25.483 758.641  28.604 758.531  28.677 758.524  30.104 758.354
  30.605  758.31  30.725 758.312  31.037 758.354  32.309 758.455  32.401 758.484
  33.043 758.681  33.703   758.9  34.104 759.034  35.405 759.467  36.439 759.811
  36.724 759.905  37.239 760.077  37.708 760.077  38.106 759.998  38.142 759.991
  38.516 759.917   38.81 760.082   40.13 760.267  41.211  760.07  42.787 760.069
   43.49 760.287

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    6.99     .04   17.23    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          6.99   17.23             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 464.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.667   1.221 761.062   1.601 760.869   2.718 760.277   3.584 759.807
   3.967 759.593   4.358 759.358   5.149 758.879   5.677 758.513    6.04 758.241
   6.473 757.747   6.967 757.191   7.549 756.504   7.724 756.294   8.346 755.922
   9.118 755.469  10.558 754.818  11.394 754.441  11.529 754.408  13.255 755.463
  13.767 755.777  13.924 755.855  14.272 756.117   14.52 756.374   15.27 757.146
  15.749 757.518  15.939 757.665  15.966 757.683   16.48  758.02  16.544 758.026
  17.367 758.089  17.502 758.097  18.003 758.128  18.671 758.169  21.777 758.458
  24.325 758.507  25.452 758.477   28.51 758.378  28.582 758.372   29.98 758.236
   30.47 758.207  30.588 758.214  30.894 758.258  32.139  758.39   32.23 758.425
  32.859 758.663  33.505 758.919  33.898 759.074  35.173 759.579  36.186 759.981
  36.465 760.091  36.969 760.291  37.428 760.291  37.819 760.199  37.854 760.191
   38.22 760.104  38.509 760.185  39.801 760.179  40.861  759.94  42.405 759.926
  43.093 760.174

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.967     .04  17.367    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.967  17.367             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 462.*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.543   1.217 760.928   1.595 760.734   2.709 760.138   3.572 759.663
   3.953 759.446   4.343 759.206   5.132 758.719   5.658  758.37    6.02  758.12
   6.452 757.629   6.943 757.076   7.558 756.363   7.742 756.147   8.398 755.806
   9.212 755.393  10.731  754.72  11.612 754.331  11.754 754.299  13.454  755.42
  13.959 755.754  14.113 755.834  14.456 756.058    14.7 756.299  15.439 757.024
   15.91 757.426  16.097 757.585  16.124 757.605   16.63  757.97  16.694 757.974
  17.503 758.014  17.636 758.019  18.127 758.034   18.78 758.055  21.822 758.262
  24.318 758.338  25.421 758.314  28.415 758.225  28.486 758.221  29.855 758.118
  30.335 758.103  30.451 758.116   30.75 758.162   31.97 758.325  32.058 758.365
  32.674 758.645  33.307 758.937  33.692 759.115   34.94 759.692  35.932 760.151
  36.206 760.277    36.7 760.506  37.149 760.506  37.531   760.4  37.566 760.391
  37.925 760.292  38.207 760.289  39.473  760.09   40.51  759.81  42.022 759.783
  42.697 760.062

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.943     .04  17.503    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.943  17.503             2.06   1.971   1.804             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 460

INPUT
Description:
```

```
Station Elevation Data    num=      31
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  761.42    1.59   760.6     2.7     760    3.56  759.52    3.94   759.3
       6     758    6.43  757.51    6.92  756.96    7.76     756    8.45  755.69
   11.83  754.22   11.98  754.19   14.15  755.73   14.64     756   16.26  757.51
   16.78  757.92   17.64  757.94   17.77  757.94   18.25  757.94   18.89  757.94
   24.31  758.17   25.39  758.15   28.39  758.07   29.73     758    30.2     758
    31.8  758.26   36.43  760.72   36.87  760.72   40.16  759.68   41.64  759.64
    42.3  759.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    6.92     .04   17.64    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          6.92   17.64            1.787   1.945   2.568             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 458.1*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.237   1.571  760.46   2.668 759.893   3.517  759.44   3.893 759.233
    5.22 758.437   5.928 758.013   6.353 757.562   6.467 757.443   6.837  757.02
   7.031 756.794   7.685 756.032   7.907 755.911   8.017 755.858   8.382 755.678
  10.083 754.861  10.774 754.566  11.794 754.122  11.945 754.088  12.308 754.362
  12.766 754.686  13.621 755.352  14.113 755.731  14.154 755.759  14.652 756.021
  14.847 756.189  16.301   757.4  16.831 757.774  17.706 757.799  17.722 757.799
   17.84 757.802  18.333 757.816  18.992 757.835  21.819  758.02  22.291 758.031
  22.659 758.039  24.147 758.086  24.566 758.103  24.603 758.102  24.995 758.098
  25.677 758.094  28.763 758.055  30.141 758.007  30.625 758.012   32.27 758.263
  32.716 758.475  35.485 759.795  36.181 760.111  36.453 760.236  37.032 760.518
  37.485 760.527  37.653 760.484  37.941 760.402  38.581 760.248  38.861 760.099
  39.197 759.926   40.59 759.585  40.686 759.563  40.869 759.512  40.886 759.512
  41.102 759.507  41.614 759.494  42.094 759.483  42.391 759.476  42.798 759.643
   43.07 759.755

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.837     .04  17.706    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.837  17.706            1.787   1.945   2.568             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 456.2*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 761.054   1.552  760.32   2.635 759.786   3.475  759.36   3.845 759.166
   5.157 758.422   5.856 758.026   6.276 757.613   6.388 757.505   6.754  757.08
   6.949 756.847    7.61 756.064   7.834 755.921   7.945 755.864   8.313 755.667
   10.03 754.766  10.728 754.473  11.757 754.024   11.91 753.986  12.279  754.28
  12.745  754.61  13.615 755.347  14.116 755.761  14.157 755.787  14.665 756.043
  14.863 756.201  16.343  757.29  16.881 757.627  17.772 757.658  17.788 757.658
  17.909 757.665  18.417 757.693  19.093  757.73  21.999 757.983  22.484 757.987
  22.862 757.987  24.392  758.02  24.823 758.036  24.861 758.035  25.263 758.034
  25.964 758.039  29.136  758.04  30.552 758.013  31.049 758.024   32.74 758.267
  33.199  758.46  36.044  759.67   36.76 759.942  37.039 760.051  37.635 760.315
    38.1 760.335  38.273 760.301  38.569 760.224  39.227 760.112  39.515 759.902
   39.86 759.659  41.291 759.405  41.389 759.389  41.578 759.344  41.595 759.344
  41.817 759.339  42.343 759.328  42.837 759.318  43.142 759.312   43.56 759.461
   43.84  759.56

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.754     .04  17.772    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.754  17.772            1.787   1.945   2.568             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 454.3*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.871   1.533 760.181   2.603 759.679   3.432  759.28   3.798 759.098
   5.094 758.406   5.784 758.039   6.199 757.665    6.31 757.567   6.671  757.14
   6.868   756.9   7.535 756.096   7.761 755.931   7.873  755.87   8.245 755.655
   9.978  754.67  10.682  754.38  11.721 753.927  11.875 753.884   12.25 754.199
  12.724 754.533  13.609 755.341  14.119 755.791  14.161 755.816  14.677 756.064
  14.879 756.212  16.384 757.181  16.932 757.481  17.838 757.517  17.855 757.517
  17.979 757.527    18.5 757.569  19.195 757.625  22.179 757.947  22.677 757.942
  23.066 757.935  24.637 757.954  25.079 757.969  25.118 757.969  25.532  757.97
  26.252 757.983  29.509 758.025  30.963  758.02  31.474 758.035  33.211  758.27
  33.682 758.445  36.604 759.545  37.338 759.773  37.626 759.865  38.237 760.113
  38.715 760.142  38.892 760.117  39.196 760.046  39.872 759.977  40.168 759.704
  40.522 759.392  41.992 759.224  42.093 759.215  42.287 759.176  42.304 759.176
```

```
  42.532 759.172  43.073 759.162   43.58 759.154  43.893 759.148  44.323 759.278
   44.61 759.365

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.671     .04  17.838    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.671  17.838            1.787   1.945   2.568             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 452.4*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.688   1.514 760.041    2.57 759.572   3.389   759.2   3.751 759.031
    5.03 758.391   5.712 758.052   6.122 757.717   6.231 757.629   6.588   757.2
   6.787 756.952    7.46 756.129   7.688 755.941   7.801 755.875   8.176 755.643
   9.925 754.574  10.636 754.288  11.684 753.829   11.84 753.782  12.222 754.118
  12.704 754.457  13.604 755.335  14.122 755.821  14.165 755.844   14.69 756.085
  14.895 756.223  16.425 757.071  16.983 757.335  17.904 757.376  17.921 757.376
  18.049 757.389  18.584 757.445  19.297  757.52  22.359  757.91   22.87 757.898
  23.269 757.883  24.881 757.888  25.336 757.902  25.375 757.902    25.8 757.905
  26.539 757.927  29.882  758.01  31.375 758.027  31.898 758.047  33.681 758.273
  34.164  758.43  37.163  759.42  37.917 759.604  38.212  759.68   38.84  759.91
   39.33 759.949  39.512 759.933  39.824 759.868  40.518 759.842  40.821 759.506
  41.185 759.124  42.693 759.044  42.797 759.042  42.996 759.008  43.014 759.008
  43.248 759.004  43.803 758.996  44.323 758.989  44.645 758.984  45.085 759.095
   45.38  759.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.588     .04  17.904    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.588  17.904            1.787   1.945   2.568             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 450.5*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.505   1.495 759.901   2.538 759.465   3.347  759.12   3.704 758.964
   4.967 758.376    5.64 758.065   6.044 757.769   6.153  757.69   6.505  757.26
   6.706 757.005   7.385 756.161   7.615 755.951    7.73 755.881   8.108 755.632
   9.873 754.479   10.59 754.195  11.648 753.731  11.805  753.68  12.193 754.036
  12.683 754.381  13.598 755.329  14.125 755.851  14.169 755.873  14.702 756.107
  14.911 756.234  16.467 756.961  17.033 757.188   17.97 757.235  17.988 757.235
  18.119 757.252  18.667 757.322  19.398 757.415  22.539 757.873  23.064 757.853
  23.473 757.831  25.126 757.821  25.592 757.835  25.633 757.835  26.068 757.841
  26.826 757.871  30.254 757.995  31.786 758.033  32.323 758.059  34.151 758.276
  34.647 758.415  37.723 759.295  38.496 759.435  38.798 759.495  39.442 759.708
  39.945 759.757  40.132 759.749  40.452  759.69  41.163 759.707  41.474 759.308
  41.847 758.857  43.394 758.863  43.501 758.868  43.705  758.84  43.723  758.84
  43.963 758.837  44.532  758.83  45.065 758.824  45.396  758.82  45.848 758.913
   46.15 758.975

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.505     .04  17.97    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.505   17.97            1.787   1.945   2.568             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 448.6*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.322   1.476 759.761   2.506 759.358   3.304 759.041   3.656 758.897
   4.903 758.361   5.568 758.078   5.967  757.82   6.074 757.752   6.422  757.32
   6.625 757.058    7.31 756.193   7.542 755.961   7.658 755.887   8.039  755.62
    9.82 754.383  10.544 754.102  11.611 753.633   11.77 753.578  12.165 753.955
  12.662 754.305  13.592 755.323  14.128 755.881  14.172 755.902  14.715 756.128
  14.926 756.245  16.508 756.851  17.084 757.042  18.036 757.094  18.054 757.094
  18.188 757.114   18.75 757.198    19.5  757.31  22.719 757.837  23.257 757.808
  23.676 757.779  25.371 757.755  25.849 757.768   25.89 757.768  26.337 757.777
  27.113 757.815  30.627  757.98  32.197  758.04  32.747 758.071  34.621  758.28
  35.129   758.4  38.282  759.17  39.075 759.266  39.385  759.31  40.045 759.505
   40.56 759.564  40.751 759.565  41.079 759.512  41.808 759.571  42.127 759.111
   42.51 758.589  44.095 758.682  44.205 758.695  44.413 758.672  44.433 758.672
  44.679  758.67  45.262 758.664  45.808 758.659  46.147 758.656   46.61  758.73
   46.92  758.78

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.422     .04  18.036    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.422  18.036             1.787   1.945   2.568             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 446.7*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 760.139   1.457 759.621   2.473 759.252   3.261 758.961   3.609  758.83
    4.84 758.346   5.496 758.091    5.89 757.872   5.996 757.814   6.339  757.38
   6.544 757.111   7.235 756.225   7.469  755.97   7.586 755.893   7.971 755.608
   9.768 754.287  10.498 754.009  11.575 753.536  11.735 753.476  12.136 753.874
  12.642 754.229  13.587 755.318  14.131  755.91  14.176  755.93  14.727 756.149
  14.942 756.256   16.55 756.741  17.135 756.896  18.102 756.953  18.121 756.953
  18.258 756.976  18.834 757.074  19.602 757.205    22.9   757.8   23.45 757.764
   23.88 757.726  25.616 757.689  26.105   757.7  26.148 757.701  26.605 757.713
  27.401  757.76      31 757.965  32.608 758.047  33.172 758.083  35.092 758.283
  35.612 758.385  38.842 759.045  39.654 759.097  39.971 759.125  40.647 759.303
  41.175 759.372  41.371 759.381  41.707 759.334  42.454 759.436   42.78 758.913
  43.172 758.322  44.797 758.502  44.909 758.521  45.122 758.504  45.142 758.504
  45.394 758.502  45.991 758.498  46.551 758.494  46.898 758.492  47.373 758.548
   47.69 758.585

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.339     .04  18.102    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.339  18.102             1.787   1.945   2.568             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 444.8*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.956   1.437 759.481   2.441 759.145   3.218 758.881   3.562 758.762
   4.777  758.33   5.424 758.104   5.813 757.924   5.917 757.876   6.256  757.44
   6.462 757.164    7.16 756.257   7.396  755.98   7.514 755.898   7.902 755.596
   9.715 754.191  10.452 753.916  11.539 753.438    11.7 753.374  12.107 753.793
  12.621 754.152  13.581 755.312  14.134  755.94   14.18 755.959   14.74 756.171
  14.958 756.268  16.591 756.632  17.185 756.749  18.168 756.812  18.187 756.812
  18.328 756.839  18.917 756.951  19.703    757.1  23.08 757.763  23.643 757.719
  24.083 757.674   25.86 757.623  26.361 757.633  26.405 757.634  26.873 757.648
  27.688 757.704  31.373  757.95  33.019 758.053  33.597 758.094  35.562 758.286
  36.095  758.37  39.401  758.92  40.232 758.928  40.557  758.94  41.249   759.1
   41.79 759.179  41.991 759.198  42.335 759.156  43.099 759.301  43.434 758.715
  43.835 758.055  45.498 758.321  45.612 758.347  45.831 758.336  45.851 758.336
  46.109 758.335  46.721 758.332  47.294  758.33  47.649 758.328  48.135 758.365
   48.46  758.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.256     .04  18.168    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.256  18.168             1.787   1.945   2.568             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 442.9*

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.773   1.418 759.342   2.409 759.038   3.176 758.801   3.515 758.695
   4.713 758.315   5.352 758.117   5.736 757.976   5.839 757.938   6.173   757.5
   6.381 757.217   7.085 756.289   7.323  755.99   7.442 755.904   7.834 755.585
   9.663 754.096  10.406 753.823  11.502  753.34  11.665 753.272  12.079 753.711
  12.601 754.076  13.576 755.306  14.137  755.97  14.184 755.987  14.752 756.192
  14.974 756.279  16.632 756.522  17.236 756.603  18.234 756.671  18.254 756.671
  18.397 756.701  19.001 756.827  19.805 756.995   23.26 757.727  23.837 757.675
  24.287 757.622  26.105 757.556  26.618 757.566  26.663 757.567  27.142 757.584
  27.975 757.648  31.746 757.935   33.43  758.06  34.021 758.106  36.032 758.289
  36.577 758.355  39.961 758.795  40.811 758.759  41.144 758.755  41.852 758.898
  42.405 758.986   42.61 759.014  42.962 758.978  43.745 759.165  44.087 758.518
  44.497 757.787  46.199 758.141  46.316 758.174   46.54 758.168  46.561 758.168
  46.825 758.167   47.45 758.166  48.037 758.165    48.4 758.164  48.898 758.183
   49.23 758.195

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   6.173     .04  18.234    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         6.173  18.234             1.787   1.945   2.568             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
```

REACH: Aguas Arriba RS: 441

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.59	4.65	758.3	5.76	758	6.09	757.56	6.3	757.27
7.25	756	7.37	755.91	9.61	754	10.36	753.73	11.63	753.17
12.05	753.63	12.58	754	13.57	755.3	14.14	756	14.99	756.29
18.3	756.53	18.32	756.53	23.44	757.69	24.03	757.63	24.49	757.57
26.35	757.49	26.92	757.5	27.41	757.52	37.06	758.34	40.52	758.67
41.39	758.59	41.73	758.57	43.23	758.83	43.59	758.8	44.39	759.03
44.74	758.32	45.16	757.52	46.9	757.96	47.02	758	47.27	758
47.54	758	48.18	758	48.78	758	49.66	758	50	758

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	6.09	.04	18.3	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
6.09	18.3	2.447	1.858	.107	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 439.153*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.456	.35	759.373	.764	759.276	5.334	758.149	5.891	758.015
6.608	757.851	6.986	757.44	7.049	757.358	7.19	757.16	8.018	756.033
8.112	755.909	8.229	755.821	9.535	754.704	9.972	754.337	10.404	753.971
11.132	753.694	12.365	753.129	12.385	753.15	12.803	753.587	13.355	753.97
13.763	754.473	14.331	755.161	14.388	755.227	14.983	755.877	15.869	756.151
16.024	756.161	17.729	756.294	19.027	756.416	19.322	756.44	19.341	756.44
20.603	756.721	23.09	757.287	23.572	757.39	23.978	757.476	24.372	757.56
24.587	757.539	24.952	757.505	25.404	757.449	25.526	757.444	26.719	757.407
27.232	757.39	27.792	757.404	28.273	757.426	31.147	757.678	33.393	757.871
37.756	758.241	40.625	758.512	41.156	758.563	42.011	758.496	42.345	758.481
43.819	758.732	44.173	758.707	44.959	758.926	45.303	758.273	45.716	757.538
47.425	757.958	47.543	757.995	47.642	757.996	47.789	757.996	48.054	757.997
48.683	757.998	49.273	757.999	50.137	758	50.294	758	50.472	758

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	6.986	.04	19.322	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
6.986	19.322	2.447	1.858	.107	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 437.307*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.322	.395	759.241	.862	759.146	6.019	757.998	6.647	757.861
7.455	757.701	7.882	757.32	7.943	757.245	8.08	757.049	8.883	755.936
8.975	755.818	9.088	755.731	10.354	754.646	10.779	754.296	11.197	753.942
11.903	753.657	13.099	753.088	13.12	753.109	13.555	753.543	14.131	753.939
14.555	754.434	15.147	755.093	15.206	755.155	15.825	755.754	16.748	756.011
16.909	756.022	18.685	756.169	20.037	756.322	20.343	756.35	20.362	756.35
21.602	756.621	24.045	757.18	24.519	757.274	24.917	757.353	25.305	757.43
25.516	757.411	25.874	757.379	26.318	757.328	26.438	757.324	27.61	757.301
28.114	757.29	28.664	757.308	29.137	757.332	31.96	757.587	34.166	757.779
38.452	758.141	41.271	758.405	41.792	758.457	42.632	758.403	42.96	758.391
44.408	758.634	44.756	758.614	45.528	758.822	45.866	758.226	46.271	757.556
47.951	757.955	48.066	757.991	48.164	757.992	48.308	757.993	48.568	757.994
49.186	757.995	49.765	757.997	50.615	758	50.769	758	50.943	758

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	7.882	.04	20.343	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
7.882	20.343	2.447	1.858	.107	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 435.461*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.188	.44	759.109	.96	759.016	6.703	757.847	7.403	757.708
8.303	757.552	8.778	757.2	8.837	757.132	8.97	756.939	9.748	755.839
9.837	755.727	9.946	755.642	11.174	754.587	11.585	754.254	11.991	753.913
12.675	753.621	13.834	753.048	13.856	753.068	14.308	753.5	14.906	753.909
15.347	754.394	15.963	755.026	16.024	755.082	16.668	755.632	17.627	755.872
17.795	755.883	19.641	756.043	21.046	756.228	21.365	756.26	21.384	756.261
22.601	756.521	25	757.073	25.465	757.158	25.857	757.23	26.237	757.3
26.444	757.283	26.796	757.254	27.232	757.208	27.35	757.204	28.501	757.196
28.996	757.19	29.536	757.211	30	757.238	32.773	757.497	34.939	757.688

```
  39.148 758.042  41.916 758.298  42.428  758.35  43.253 758.309  43.575 758.302
  44.997 758.536  45.338 758.522  46.097 758.717  46.428 758.179  46.827 757.574
  48.476 757.953   48.59 757.986  48.685 757.988  48.827 757.989  49.083  757.99
  49.689 757.993  50.258 757.996  51.092 757.999  51.243     758  51.415     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   8.778     .04  21.365    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         8.778  21.365            2.447   1.858    .107             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 433.615*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 759.055    .485 758.977   1.058 758.887   7.387 757.696   8.159 757.554
    9.15 757.403   9.675  757.08   9.732 757.018    9.86 756.829  10.614 755.742
  10.699 755.636  10.805 755.553  11.994 754.528  12.392 754.213  12.784 753.884
  13.447 753.585  14.568 753.007  14.591 753.028  15.061 753.457  15.682 753.878
   16.14 754.355  16.778 754.958  16.842 755.009   17.51 755.509  18.507 755.732
   18.68 755.744  20.597 755.918  22.055 756.134  22.386  756.17  22.405 756.171
    23.6 756.421  25.955 756.965  26.412 757.042  26.796 757.107  27.169  757.17
  27.373 757.155  27.718 757.128  28.147 757.087  28.262 757.083  29.392  757.09
  29.877 757.091  30.408 757.115  30.864 757.144  33.585 757.406  35.712 757.596
  39.844 757.942  42.562 758.191  43.064 758.244  43.874 758.215   44.19 758.212
  45.586 758.439  45.921 758.429  46.665 758.613  46.991 758.132  47.382 757.591
  49.001  757.95  49.113 757.982  49.207 757.985  49.346 757.985  49.597 757.987
  50.192 757.991  50.751 757.994   51.57 757.999  51.718     758  51.886     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.675     .04  22.386    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.675  22.386            2.447   1.858    .107             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 431.769*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.921     .53 758.846   1.156 758.757   8.071 757.546   8.914   757.4
   9.998 757.253  10.571  756.96  10.626 756.905   10.75 756.718  11.479 755.645
  11.562 755.545  11.664 755.464  12.813  754.47  13.198 754.171  13.578 753.855
  14.218 753.549  15.303 752.966  15.326 752.987  15.813 753.413  16.457 753.848
  16.932 754.315  17.594 754.891   17.66 754.936  18.353 755.386  19.386 755.593
  19.566 755.604  21.553 755.793  23.065 756.041  23.408  756.08  23.426 756.081
  24.599 756.321   26.91 756.858  27.358 756.926  27.735 756.984  28.102  757.04
  28.301 757.026  28.641 757.003  29.061 756.966  29.174 756.963  30.283 756.985
  30.759 756.991   31.28 757.019  31.727  757.05  34.398 757.315  36.485 757.504
   40.54 757.843  43.207 758.084    43.7 758.137  44.495 758.122  44.805 758.122
  46.175 758.341  46.504 758.336  47.234 758.509  47.554 758.085  47.938 757.609
  49.527 757.948  49.636 757.977  49.728 757.981  49.865 757.982  50.111 757.984
  50.696 757.988  51.244 757.993  52.047 757.999  52.193     758  52.358     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.571     .04  23.408    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.571  23.408            2.447   1.858    .107             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 429.923*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.787    .575 758.714   1.254 758.627   8.756 757.395    9.67 757.246
  10.846 757.104  11.467  756.84   11.52 756.792   11.64 756.608  12.344 755.548
  12.424 755.453  12.523 755.374  13.633 754.411  14.005  754.13  14.371 753.826
   14.99 753.512  16.038 752.925  16.062 752.946  16.566  753.37  17.233 753.817
  17.724 754.276   18.41 754.823  18.478 754.864  19.196 755.263  20.265 755.453
  20.451 755.465  22.509 755.667  24.074 755.947  24.429  755.99  24.447 755.991
  25.598 756.221  27.865 756.751  28.305 756.811  28.675 756.861  29.034  756.91
   29.23 756.898  29.563 756.878  29.975 756.845  30.086 756.842  31.174 756.879
  31.641 756.891  32.152 756.923  32.591 756.956  35.211 757.225  37.258 757.412
  41.236 757.743  43.852 757.978  44.336 758.031  45.116 758.028   45.42 758.033
  46.764 758.243  47.087 758.243  47.803 758.404  48.117 758.038  48.493 757.627
  50.052 757.945  50.159 757.972   50.25 757.977  50.383 757.978  50.625 757.981
  51.199 757.986  51.736 757.991  52.525 757.999  52.667     758  52.829     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.467     .04  24.429    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
        11.467  24.429            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 428.076*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.653     .62 758.582   1.352 758.498    9.44 757.244  10.426 757.092
  11.693 756.955  12.363  756.72  12.414 756.679   12.53 756.497  13.209 755.451
  13.286 755.362  13.382 755.285  14.452 754.352  14.811 754.089  15.165 753.797
  15.762 753.476  16.772 752.885  16.797 752.905  17.319 753.327  18.008 753.787
  18.516 754.237  19.226 754.755  19.296 754.791  20.038 755.141  21.144 755.314
  21.337 755.326  23.465 755.542  25.084 755.853  25.451   755.9  25.468 755.901
  26.597  756.12   28.82 756.644  29.251 756.695  29.614 756.738  29.967  756.78
  30.159  756.77  30.485 756.752  30.889 756.725  30.998 756.722  32.064 756.773
  32.523 756.791  33.024 756.826  33.454 756.862  36.024 757.134  38.031  757.32
  41.932 757.644  44.498 757.871  44.972 757.924  45.736 757.934  46.035 757.943
  47.353 758.145  47.669 758.151  48.372   758.3   48.68 757.992  49.049 757.645
  50.577 757.943  50.683 757.968  50.771 757.973  50.902 757.975   51.14 757.977
  51.702 757.984  52.229  757.99  53.002 757.998  53.142     758  53.301     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.363     .04  25.451    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.363  25.451            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 426.230*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.519    .665  758.45    1.45 758.368  10.124 757.093  11.181 756.939
  12.541 756.805  13.259   756.6  13.309 756.566   13.42 756.387  14.074 755.355
  14.149 755.271  14.241 755.196  15.272 754.293  15.618 754.047  15.958 753.768
  16.533  753.44  17.507 752.844  17.533 752.864  18.071 753.283  18.784 753.756
  19.309 754.197  20.041 754.688  20.115 754.718  20.881 755.018  22.023 755.174
  22.222 755.186  24.421 755.417  26.093 755.759  26.472  755.81   26.49 755.812
  27.595  756.02  29.775 756.536  30.198 756.579  30.553 756.615  30.899  756.65
  31.087 756.641  31.407 756.627  31.803 756.604   31.91 756.602  32.955 756.668
  33.405 756.691  33.896  756.73  34.318 756.768  36.836 757.043  38.805 757.229
  42.628 757.545  45.143 757.764  45.608 757.817  46.357 757.841   46.65 757.854
  47.942 758.047  48.252 758.058  48.941 758.196  49.242 757.945  49.604 757.663
  51.103  757.94  51.206 757.963  51.293 757.969  51.421 757.971  51.654 757.974
  52.205 757.981  52.722 757.988  53.479 757.998  53.617     758  53.772     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.259     .04  26.472    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.259  26.472            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 424.384*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.385     .71 758.318   1.548 758.239  10.808 756.942  11.937 756.785
  13.388 756.656  14.155  756.48  14.203 756.453   14.31 756.277  14.939 755.258
  15.011  755.18  15.099 755.106  16.092 754.235  16.424 754.006  16.752  753.74
  17.305 753.404  18.242 752.803  18.268 752.823  18.824  753.24  19.559 753.726
  20.101 754.158  20.857  754.62  20.933 754.646  21.723 754.895  22.902 755.035
  23.108 755.047  25.376 755.291  27.102 755.665  27.494  755.72  27.511 755.722
  28.594  755.92   30.73 756.429  31.144 756.463  31.493 756.492  31.831  756.52
  32.016 756.513  32.329 756.502  32.717 756.483  32.822 756.481  33.846 756.562
  34.287 756.591  34.768 756.634  35.181 756.674  37.649 756.953  39.578 757.137
  43.324 757.445  45.788 757.657  46.244 757.711  46.978 757.747  47.265 757.764
  48.531 757.949  48.835 757.965   49.51 758.092  49.805 757.898   50.16 757.681
  51.628 757.938  51.729 757.958  51.814 757.965   51.94 757.967  52.168 757.971
  52.708 757.979  53.214 757.987  53.957 757.998  54.091     758  54.244     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.155     .04  27.494    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.155  27.494            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 422.538*

INPUT
Description:
```

```
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.252    .755 758.186   1.646 758.109  11.493 756.791  12.693 756.631
  14.236 756.507  15.052  756.36  15.097 756.339    15.2 756.166  15.805 755.161
  15.873 755.089  15.958 755.017  16.911 754.176  17.231 753.964  17.545 753.711
  18.076 753.367  18.976 752.762  19.004 752.783  19.577 753.197  20.335 753.695
  20.893 754.118  21.673 754.553  21.751 754.573  22.566 754.772  23.782 754.896
  23.993 754.908  26.332 755.166  28.112 755.571  28.515  755.63  28.532 755.632
  29.593  755.82  31.685 756.322  32.091 756.347  32.432 756.369  32.764  756.39
  32.944 756.385  33.251 756.376  33.631 756.362  33.734 756.361  34.737 756.457
  35.169 756.492   35.64 756.538  36.045  756.58  38.462 756.862  40.351 757.045
  44.021 757.346  46.434  757.55   46.88 757.604  47.599 757.653   47.88 757.675
   49.12 757.851  49.418 757.872  50.079 757.987  50.368 757.851  50.715 757.699
  52.153 757.935  52.252 757.954  52.336 757.962  52.459 757.964  52.682 757.968
  53.211 757.977  53.707 757.985  54.434 757.998  54.566     758  54.715     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.052     .04  28.515    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.052  28.515            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 420.692*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 758.118      .8 758.054   1.744 757.979  12.177  756.64  13.449 756.477
  15.084 756.357  15.948  756.24  15.991 756.226   16.09 756.056   16.67 755.064
  16.736 754.998  16.817 754.928  17.731 754.117  18.037 753.923  18.339 753.682
  18.848 753.331  19.711 752.722  19.739 752.742   20.33 753.153   21.11 753.665
  21.685 754.079  22.489 754.485  22.569    754.5  23.408 754.649  24.661 754.756
  24.879 754.769  27.288 755.041  29.121 755.478  29.537  755.54  29.553 755.542
  30.592  755.72   32.64 756.215  33.037 756.232  33.371 756.246  33.696  756.26
  33.873 756.257  34.173 756.251  34.546 756.242  34.646 756.241  35.628 756.351
  36.051 756.392  36.512 756.442  36.908 756.486  39.275 756.771  41.124 756.953
  44.717 757.246  47.079 757.444  47.516 757.498   48.22  757.56  48.495 757.585
  49.709 757.753      50  757.78  50.648 757.883  50.931 757.804  51.271 757.717
  52.679 757.933  52.776 757.949  52.857 757.958  52.978  757.96  53.196 757.964
  53.714 757.974    54.2 757.984  54.912 757.997  55.041     758  55.187     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.948     .04  29.537    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.948  29.537            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 418.846*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 757.984    .845 757.922   1.842  757.85  12.861 756.489  14.204 756.324
  15.931 756.208  16.844  756.12  16.886 756.113   16.98 755.946  17.535 754.967
  17.598 754.907  17.676 754.838   18.55 754.059  18.844 753.881  19.132 753.653
   19.62 753.295  20.445 752.681  20.475 752.701  21.082  753.11  21.886 753.634
  22.478 754.039  23.304 754.418  23.387 754.427  24.251 754.527   25.54 754.617
  25.764 754.629  28.244 754.915  30.131 755.384  30.558  755.45  30.574 755.452
  31.591  755.62  33.595 756.107  33.984 756.116  34.311 756.123  34.628  756.13
  34.801 756.128  35.095 756.125   35.46 756.121  35.558  756.12  36.519 756.246
  36.932 756.292  37.384 756.345  37.772 756.392  40.087 756.681  41.897 756.862
  45.413 757.147  47.725 757.337  48.152 757.391  48.841 757.466   49.11 757.496
  50.298 757.656  50.583 757.687  51.216 757.779  51.494 757.757  51.826 757.734
  53.204  757.93  53.299 757.945  53.379 757.954  53.497 757.956  53.711 757.961
  54.217 757.972  54.692 757.982  55.389 757.997  55.515     758  55.658     758

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.844     .04  30.558    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.844  30.558            2.447   1.858    .107             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 417

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  757.85     .89  757.79    1.94  757.72   14.96  756.17   17.74     756
   17.78     756    18.4  754.87   19.37     754   19.65  753.84   21.18  752.64
   21.21  752.66   23.27     754   24.12  754.35   26.65  754.49    29.2  754.79
   31.14  755.29   31.58  755.36   32.59  755.52   34.55     756   34.93     756
   35.25     756   35.73     756   36.47     756   37.41  756.14    40.9  756.59
   42.67  756.77   48.37  757.23    53.9  757.95   55.99     758   56.13     758

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   17.74     .04   31.58    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.74   31.58             1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 415.1*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 757.736    .466 757.702    .926 757.674   2.019  757.61   6.137  757.18
   8.156 756.964   9.938 756.768  15.054 756.206   15.57 756.136  15.964 756.102
  16.489 756.055  17.021  756.01  18.249 755.904  18.463 755.885  18.505 755.883
  19.163 754.838  20.191 754.012  20.469 753.865  20.488 753.854  21.733 752.882
   22.11 752.583  22.138 752.602   23.34   753.4  24.072 753.888   24.87 754.237
  26.715 754.413  27.246  754.46   29.64 754.813  29.946   754.9  31.462 755.328
  31.875 755.406  32.159 755.465   32.86 755.572  34.773 756.015  35.143 756.018
  35.455 756.019  35.924 756.022  36.646 756.026  37.563 756.158  39.127 756.353
  40.968 756.582  42.694 756.754  43.025 756.781  45.154 756.951  48.255 757.199
   48.69 757.253  52.445 757.728  53.452 757.859   53.65 757.883  53.852 757.888
  54.342   757.9  54.639 757.907  55.689 757.934  55.826 757.934

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.463     .04  31.875    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.463  31.875             1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 413.2*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 757.622    .484 757.584    .963 757.559   2.098   757.5   6.377 757.111
   8.475  756.91  10.327 756.721  15.644 756.183  16.179 756.102  16.589 756.057
  17.134 755.995  17.688 755.936  18.963 755.796  19.186  755.77  19.231 755.766
  19.925 754.807  21.012 754.023  21.305  753.88  21.326 753.868  22.641 752.845
   23.04 752.526  23.066 752.544   24.19 753.308  24.875 753.776  25.621 754.124
  27.346 754.367  27.842 754.429  30.081 754.837  30.367 754.925  31.784 755.366
   32.17 755.452  32.447 755.525  33.131 755.624  34.995 756.031  35.357 756.035
  35.661 756.039  36.117 756.044  36.821 756.053  37.716 756.176  39.241 756.359
  41.035 756.575  42.719 756.738  43.041 756.764  45.117 756.929  48.141 757.167
  48.564 757.218  52.226 757.667  53.207 757.795  53.401 757.817  53.597 757.822
  54.075 757.834  54.364 757.839  55.389 757.867  55.522 757.868

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.186     .04   32.17    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.186   32.17             1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 411.3*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 757.508    .502 757.466    .999 757.443   2.177 757.389   6.618 757.042
   8.794 756.857  10.716 756.675  16.233  756.16  16.789 756.068  17.214 756.013
   17.78 755.934  18.354 755.861  19.678 755.688  19.909 755.655  19.956  755.65
  20.688 754.775  21.833 754.035  22.142 753.895  22.164 753.881   23.55 752.808
   23.97 752.469  23.995 752.486   25.04 753.216  25.677 753.664  26.371 754.011
  27.976 754.321  28.438 754.399  30.521  754.86  30.787 754.951  32.106 755.405
  32.465 755.498  32.735 755.584  33.401 755.676  35.218 756.046   35.57 756.053
  35.866 756.058  36.311 756.066  36.997 756.079  37.868 756.193  39.355 756.366
  41.103 756.567  42.743 756.722  43.057 756.747   45.08 756.906  48.026 757.136
  48.439 757.184  52.006 757.606  52.962  757.73  53.151  757.75  53.342 757.755
  53.808 757.767   54.09 757.772  55.088 757.801  55.218 757.802

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.909     .04  32.465    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.909  32.465             1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 409.4*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 757.394    .521 757.348   1.035 757.327   2.256 757.279   6.858 756.973
   9.114 756.803  11.105 756.629  16.823 756.137  17.399 756.034  17.839 755.968
  18.426 755.874  19.021 755.787  20.392  755.58  20.632  755.54  20.682 755.533
  21.451 754.743  22.654 754.047  22.979  753.91  23.002 753.895  24.458 752.771
    24.9 752.412  24.923 752.429   25.89 753.123   26.48 753.552  27.122 753.897
  28.607 754.275  29.034 754.368  30.961 754.883  31.207 754.976  32.427 755.443
   32.76 755.544  33.023 755.644  33.671 755.729   35.44 756.062  35.783  756.07
  36.072 756.078  36.505 756.089  37.173 756.106  38.021 756.211  39.468 756.372
   41.17  756.56  42.768 756.707  43.073  756.73  45.043 756.884  47.911 757.105
  48.313 757.149  51.787 757.545  52.718 757.666  52.902 757.684  53.088 757.689
  53.541   757.7  53.816 757.705  54.788 757.734  54.914 757.736

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.632     .04   32.76    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.632   32.76            1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 407.5*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  757.28    .539  757.23   1.071 757.212   2.335 757.169   7.098 756.904
   9.433 756.749  11.494 756.582  17.412 756.115  18.009     756  18.464 755.923
  19.072 755.813  19.687 755.712  21.107 755.471  21.355 755.425  21.407 755.416
  22.214 754.712  23.475 754.059  23.816 753.925   23.84 753.909  25.367 752.735
   25.83 752.355  25.851 752.371   26.74 753.031  27.282  753.44  27.872 753.784
  29.237 754.229   29.63 754.338  31.402 754.906  31.628 755.002  32.749 755.481
  33.055  755.59  33.311 755.703  33.942 755.781  35.663 756.077  35.996 756.088
  36.277 756.097  36.699 756.111  37.348 756.132  38.174 756.229  39.582 756.378
  41.238 756.552  42.792 756.691  43.089 756.714  45.005 756.862  47.797 757.073
  48.188 757.114  51.567 757.485  52.473 757.602  52.652 757.617  52.833 757.622
  53.274 757.633  53.542 757.637  54.487 757.668   54.61  757.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  21.355     .04  33.055    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.355  33.055            1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 405.6*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 757.166    .557 757.112   1.108 757.096   2.414 757.059   7.339 756.836
   9.753 756.695  11.883 756.536  18.002 756.092  18.618 755.966  19.089 755.879
  19.717 755.752  20.354 755.638  21.822 755.363  22.078  755.31  22.132 755.299
  22.976  754.68  24.297 754.071  24.653  753.94  24.678 753.923  26.276 752.698
   26.76 752.298  26.779 752.313   27.59 752.939  28.084 753.328  28.623 753.671
  29.868 754.183  30.226 754.307  31.842  754.93  32.048 755.028  33.071 755.519
   33.35 755.636  33.598 755.762  34.212 755.833  35.885 756.092   36.21 756.105
  36.483 756.116  36.892 756.133  37.524 756.158  38.327 756.247  39.696 756.385
  41.306 756.544  42.816 756.675  43.105 756.697  44.968 756.839  47.682 757.042
  48.062 757.079  51.348 757.424  52.228 757.537  52.402 757.551  52.578 757.556
  53.008 757.567  53.267  757.57  54.186 757.601  54.306 757.604

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  22.078     .04  33.35    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        22.078   33.35            1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 403.7*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 757.052    .575 756.994   1.144  756.98   2.493 756.949   7.579 756.767
  10.072 756.641  12.273 756.489  18.591 756.069  19.228 755.932  19.715 755.834
  20.363 755.692   21.02 755.563  22.536 755.255  22.801 755.195  22.858 755.182
  23.739 754.648  25.118 754.082   25.49 753.955  25.516 753.936  27.184 752.661
   27.69 752.241  27.707 752.255   28.44 752.847  28.887 753.216  29.373 753.558
  30.498 754.138  30.822 754.277  32.282 754.953  32.469 755.053  33.393 755.558
  33.645 755.682  33.886 755.822  34.482 755.885  36.108 756.108  36.423 756.123
  36.688 756.136  37.086 756.155    37.7 756.185  38.479 756.265  39.809 756.391
  41.373 756.537  42.841 756.659  43.122  756.68  44.931 756.817  47.567 757.011
  47.937 757.044  51.128 757.363  51.984 757.473  52.153 757.484  52.324  757.49
  52.741   757.5  52.993 757.502  53.886 757.535  54.002 757.538

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  22.801     .04  33.645    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        22.801  33.645            1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 401.8*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.938    .594 756.876    1.18 756.865   2.573 756.839   7.819 756.698
  10.391 756.588  12.662 756.443  19.181 756.046  19.838 755.898   20.34 755.789
  21.009 755.631  21.687 755.489  23.251 755.146  23.524  755.08  23.583 755.066
  24.502 754.617  25.939 754.094  26.326  753.97  26.353  753.95  28.093 752.624
   28.62 752.184  28.635 752.197   29.29 752.754  29.689 753.104  30.124 753.445
  31.129 754.092  31.418 754.247  32.723 754.976  32.889 755.079  33.715 755.596
   33.94 755.728  34.174 755.881  34.753 755.937   36.33 756.123  36.636 756.141
  36.894 756.155   37.28 756.177  37.876 756.211  38.632 756.282  39.923 756.397
  41.441 756.529  42.865 756.643  43.138 756.663  44.894 756.795  47.453 756.979
  47.811  757.01  50.909 757.302  51.739 757.409  51.903 757.418  52.069 757.423
  52.474 757.433  52.719 757.435  53.585 757.468  53.698 757.472

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.524     .04   33.94    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.524   33.94            1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 399.9*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.824    .612 756.758   1.216 756.749   2.652 756.728    8.06 756.629
  10.711 756.534  13.051 756.396   19.77 756.023  20.447 755.864  20.965 755.745
  21.654 755.571  22.353 755.414  23.965 755.038  24.247 754.965  24.309 754.949
  25.264 754.585   26.76 754.106  27.163 753.985  27.191 753.964  29.001 752.587
   29.55 752.127  29.564 752.139   30.14 752.662  30.492 752.992  30.874 753.332
  31.759 754.046  32.014 754.216  33.163     755   33.31 755.104  34.037 755.634
  34.235 755.774  34.462 755.941  35.023 755.989  36.553 756.138  36.849 756.158
  37.099 756.175  37.474 756.199  38.051 756.238  38.785   756.3  40.036 756.404
  41.508 756.521   42.89 756.627  43.154 756.647  44.857 756.772  47.338 756.948
  47.686 756.975  50.689 757.241  51.495 757.344  51.654 757.352  51.815 757.356
  52.207 757.367  52.444 757.367  53.285 757.402  53.394 757.406

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.247     .04  34.235    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.247  34.235            1.884   1.896   1.502             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 398

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  756.71     .63  756.64     8.3  756.56   11.03  756.48   13.44  756.35
   20.36     756   21.59   755.7    22.3  755.51   23.02  755.34   24.68  754.93
   24.97  754.85      28     754   29.91  752.55   30.48  752.07   30.99  752.57
   32.39     754   33.73  755.13   34.53  755.82   34.75     756   40.15  756.41
   43.17  756.63   44.82  756.75   47.56  756.94   50.47  757.18   51.25  757.28
   51.56  757.29   51.94   757.3   52.17   757.3   53.09  757.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   24.97     .04   34.53    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         24.97   34.53            1.548   1.939    2.25             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 396.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.642    .632 756.579   1.304 756.573   2.841 756.556    6.49 756.515
   7.308 756.503   7.415 756.502   7.532   756.5   8.329 756.488  11.068 756.401
  13.487 756.272  14.129  756.24  16.591 756.096  20.431 755.851  21.665  755.56
  22.377 755.378    23.1 755.213   24.23 754.944  24.766 754.806  25.057 754.723
  25.609 754.565   28.17 753.848  29.012 753.263  30.042 752.548  30.132 752.481
  30.149 752.468   30.24 752.394  30.718 752.001  31.191 752.461  31.874 753.152
   32.49 753.773  32.637 753.896  33.734 754.877  33.951 755.075  34.477 755.556
  34.693 755.772  34.892 755.814  36.432 756.115  40.208 756.406  42.505 756.577
```

```
  43.288 756.635  44.971  756.76   45.04 756.765  47.766  756.96  50.733 757.207
  51.529 757.305  51.845 757.317  52.233  757.33  52.467 757.333  53.406 757.379

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.057     .04  34.477    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.057  34.477            1.548   1.939    2.25             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 394.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.574    .634 756.519   1.308 756.512   2.851 756.495   6.513  756.45
   7.333 756.435    7.44 756.434   7.558 756.431   8.358 756.416  11.107 756.323
  13.533 756.195  14.178 756.163  16.648 755.999  20.501 755.701   21.74 755.421
  22.455 755.246   23.18 755.086  24.313 754.826  24.851 754.682  25.143 754.597
   25.71  754.43   28.34 753.696  29.204 753.149  30.262 752.479  30.354 752.413
  30.372 752.399  30.465 752.326  30.956 751.932  31.392 752.352  32.023 752.982
  32.591 753.547  32.726 753.659  33.738 754.624  33.938 754.818  34.423 755.291
  34.644 755.551  34.847 755.613  36.417   756.1  40.267 756.402  42.608  756.58
  43.407 756.641  45.122 756.771  45.192 756.776  47.971 756.981  50.997 757.234
  51.808 757.329   52.13 757.344  52.525  757.36  52.765 757.366  53.721 757.418

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.143     .04  34.423    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.143  34.423            1.548   1.939    2.25             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 392.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.507    .637 756.458   1.313 756.452   2.861 756.435   6.535 756.386
   7.358 756.367   7.466 756.366   7.584 756.362   8.386 756.343  11.145 756.244
   13.58 756.117  14.227 756.085  16.706 755.902  20.572 755.552  21.815 755.281
  22.532 755.113   23.26 754.958  24.397 754.708  24.937 754.557   25.23  754.47
  25.812 754.296  28.509 753.544  29.397 753.035  30.482 752.411  30.576 752.344
  30.594 752.331   30.69 752.258  31.193 751.863  31.593 752.243  32.171 752.811
  32.691  753.32  32.815 753.422  33.743 754.371  33.926 754.561   34.37 755.027
  34.595 755.329  34.801 755.413  36.401 756.086  40.325 756.398  42.711 756.583
  43.525 756.646  45.274 756.781  45.345 756.786  48.177 757.001   51.26 757.261
  52.087 757.354  52.415 757.371  52.818 757.391  53.062 757.399  54.037 757.457

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   25.23     .04   34.37    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         25.23   34.37            1.548   1.939    2.25             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 390.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.439    .639 756.398   1.317 756.392   2.871 756.374   6.558 756.322
   7.384 756.299   7.492 756.299    7.61 756.294   8.415 756.271  11.183 756.166
  13.627  756.04  14.276 756.008  16.763 755.805  20.643 755.403   21.89 755.141
   22.61 754.981   23.34 754.831  24.481  754.59  25.023 754.433  25.317 754.343
  25.913 754.162  28.679 753.392  29.589 752.921  30.701 752.343  30.799 752.276
  30.817 752.262  30.915  752.19  31.431 751.794  31.794 752.134  32.319 752.641
  32.792 753.093  32.904 753.185  33.747 754.117  33.913 754.304  34.317 754.762
  34.546 755.108  34.756 755.212  36.386 756.072  40.383 756.394  42.814 756.586
  43.644 756.651  45.425 756.791  45.497 756.797  48.383 757.022  51.524 757.287
  52.366 757.378  52.701 757.398  53.111 757.421  53.359 757.431  54.352 757.496

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.317     .04  34.317    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.317  34.317            1.548   1.939    2.25             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 388.*

INPUT
Description:
Station Elevation Data    num=      50
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.371    .641 756.337   1.322 756.331   2.881 756.313    6.58 756.257
   7.409 756.231   7.517 756.231   7.636 756.225   8.444 756.199  11.221 756.087
  13.673 755.962  14.325  755.93   16.82 755.708  20.713 755.254  21.965 755.002
  22.687 754.849  23.419 754.704  24.565 754.472  25.108 754.309  25.403 754.217
  26.014 754.027  28.849  753.24  29.781 752.807  30.921 752.274  31.021 752.207
   31.04 752.194   31.14 752.122  31.669 751.726  31.996 752.025  32.467 752.471
  32.892 752.867  32.993 752.948  33.751 753.864    33.9 754.047  34.263 754.498
  34.496 754.886  34.711 755.012  36.371 756.057  40.442 756.389  42.918 756.588
  43.762 756.656  45.576 756.802   45.65 756.808  48.588 757.042  51.787 757.314
  52.645 757.403  52.986 757.425  53.403 757.451  53.656 757.464  54.668 757.534

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.403     .04  34.263    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.403  34.263            1.548   1.939    2.25             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 386.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.303    .643 756.277   1.326 756.271   2.891 756.252   6.603 756.193
   7.434 756.164   7.543 756.163   7.662 756.156   8.473 756.127   11.26 756.009
   13.72 755.885  14.373 755.853  16.878 755.611  20.784 755.104   22.04 754.862
  22.764 754.717  23.499 754.577  24.649 754.354  25.194 754.185   25.49  754.09
  26.116 753.893  29.019 753.088  29.973 752.693  31.141 752.206  31.243 752.138
  31.262 752.125  31.365 752.054  31.907 751.657  32.197 751.916  32.615 752.301
  32.993  752.64  33.082 752.711  33.755 753.611  33.888 753.791   34.21 754.233
  34.447 754.664  34.666 754.811  36.356 756.043   40.5 756.385  43.021 756.591
   43.88 756.661  45.727 756.812  45.802 756.818  48.794 757.062  52.051 757.341
  52.924 757.428  53.271 757.452  53.696 757.481  53.954 757.497  54.983 757.573

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   25.49     .04   34.21    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         25.49   34.21            1.548   1.939    2.25             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 384.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.236    .645 756.216   1.331 756.211     2.9 756.192   6.625 756.129
   7.459 756.096   7.569 756.095   7.688 756.087   8.502 756.055  11.298  755.93
  13.767 755.807  14.422 755.775  16.935 755.514  20.855 754.955  22.115 754.722
  22.842 754.584  23.579  754.45  24.732 754.236   25.28  754.06  25.577 753.963
  26.217 753.759  29.188 752.936  30.166 752.578  31.361 752.137  31.465  752.07
  31.485 752.057   31.59 751.986  32.144 751.588  32.398 751.807  32.764  752.13
  33.093 752.413  33.172 752.474  33.759 753.358  33.875 753.534  34.157 753.969
  34.398 754.443   34.62 754.611   36.34 756.029  40.559 756.381  43.124 756.594
  43.999 756.667  45.878 756.823  45.955 756.829      49 757.083  52.314 757.368
  53.203 757.452  53.556 757.479  53.989 757.512  54.251  757.53  55.299 757.612

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.577     .04  34.157    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.577  34.157            1.548   1.939    2.25             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 382.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.168    .647 756.156   1.335  756.15    2.91 756.131   6.648 756.064
   7.485 756.028   7.594 756.028   7.714 756.019    8.53 755.982  11.336 755.852
  13.813  755.73  14.471 755.698  16.993 755.417  20.925 754.806  22.189 754.583
  22.919 754.452  23.659 754.322  24.816 754.118  25.365 753.936  25.663 753.837
  26.319 753.624  29.358 752.784  30.358 752.464   31.58 752.068  31.687 752.001
  31.707 751.988  31.815 751.918  32.382 751.519  32.599 751.698  32.912  751.96
  33.194 752.186  33.261 752.237  33.763 753.105  33.863 753.277  34.103 753.704
  34.349 754.221  34.575  754.41  36.325 756.014  40.617 756.377  43.227 756.597
  44.117 756.672  46.029 756.833  46.107 756.839  49.205 757.103  52.578 757.395
  53.482 757.477  53.841 757.506  54.282 757.542  54.548 757.563  55.614 757.651

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.663     .04  34.103    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.663  34.103            1.548   1.939    2.25             .1      .3
```

```
CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 380

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   756.1    1.34  756.09    2.92  756.07    6.67     756    7.51  755.96
    7.62  755.96    7.74  755.95   14.52  755.62   17.05  755.32    24.9     754
   25.75  753.71   26.42  753.49   30.55  752.35    31.8     752   31.93  751.92
   32.04  751.85   32.62  751.45   33.06  751.79   33.35     752   33.85  753.02
   34.05  753.44    34.3     754   34.53  754.21   36.31     756   43.33   756.6
   46.26  756.85   55.93  757.69

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   25.75     .04   34.05    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         25.75   34.05             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 378.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.084    .844 756.076    1.33 756.071   2.468 756.054   2.898  756.05
   6.137 756.003    6.62 755.994   7.453 755.956   7.562 755.956   7.682 755.947
   8.237 755.922  12.783 755.637   14.41 755.553   16.42  755.32  16.921 755.262
  24.712 754.007  25.555 753.737  25.637 753.712  25.813 753.654  26.216 753.518
  28.133 752.965  30.286 752.343  30.862 752.175  30.991 752.136  31.307 752.034
  31.518 751.966  31.646 751.885  31.755 751.814  32.127 751.553  32.326 751.419
  32.721   751.7   32.79 751.749  32.901 751.826  32.975 751.874  33.104 751.951
   33.28 752.059  33.402 752.246  33.933 753.065  34.195  753.48  34.441 753.997
  34.546 754.089  34.668 754.194  36.422 755.864  39.122 756.142  42.019 756.441
   43.34  756.56  46.227 756.819  49.316 757.101  55.756 757.696

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.555     .04  34.195    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.555  34.195             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 376.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.067    .838 756.058    1.32 756.052   2.449 756.033   2.876  756.03
    6.09 755.997   6.569 755.988   7.397 755.953   7.505 755.953   7.623 755.944
   8.174  755.92  12.686 755.574  14.301 755.485  16.295  755.26  16.792 755.204
  24.524 754.014  25.361 753.765  25.442  753.74  25.615 753.683  26.012 753.546
    27.9 752.976  30.022 752.336   30.59 752.163  30.717 752.123  31.028 752.009
  31.236 751.932  31.363  751.85  31.469 751.779  31.836 751.517  32.033 751.388
   32.52 751.717  32.605 751.774  32.742 751.861  32.833 751.916  32.992     752
   33.21 752.118  33.361   752.3  34.017 753.111  34.339  753.52  34.582 753.993
  34.686  754.08  34.805 754.178  36.533 755.727  39.193  756.05  42.048 756.397
  43.349  756.52  46.194 756.789  49.237  757.08  55.583 757.703

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  25.361     .04  34.339    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.361  34.339             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 374.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.051    .831 756.041    1.31 756.033    2.43 756.011   2.854  756.01
   6.044  755.99   6.519 755.982    7.34 755.949   7.447 755.949   7.565 755.941
   8.112 755.919  12.589 755.512  14.191 755.418   16.17   755.2  16.664 755.146
  24.336 754.021  25.166 753.792  25.246 753.769  25.417 753.713  25.807 753.574
  27.668 752.988  29.759  752.33  30.318 752.152  30.443 752.109   30.75 751.984
  30.955 751.899  31.079 751.815  31.184 751.743  31.546  751.48  31.739 751.357
  32.319 751.734   32.42 751.799  32.584 751.896  32.692 751.959  32.881 752.049
   33.14 752.176   33.32 752.354    34.1 753.156  34.484  753.56  34.723  753.99
  34.825 754.071  34.943 754.162  36.645 755.591  39.265 755.958  42.077 756.353
  43.359  756.48  46.161 756.758  49.159 757.059  55.409 757.709

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```

```
       0    .035  25.166     .04  34.484    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.166  34.484             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 372.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.035    .825 756.023     1.3 756.014   2.412  755.99   2.832 755.991
   5.997 755.984   6.468 755.976   7.283 755.946    7.39 755.945   7.506 755.938
   8.049 755.918  12.491 755.449  14.081 755.351  16.045  755.14  16.535 755.088
  24.148 754.027  24.972 753.819   25.05 753.798  25.218 753.743  25.603 753.602
  27.436 752.999  29.495 752.323  30.045  752.14  30.169 752.095  30.471 751.958
  30.673 751.865  30.795  751.78  30.899 751.707  31.255 751.444  31.445 751.326
  32.118 751.751  32.235 751.824  32.425 751.932   32.55 752.001  32.769 752.098
   33.07 752.235  33.279 752.409  34.183 753.202  34.628   753.6  34.864 753.987
  34.965 754.062   35.08 754.145  36.757 755.455  39.337 755.865  42.106 756.309
  43.368  756.44  46.128 756.728   49.08 757.038  55.235 757.715

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.972     .04  34.628    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.972  34.628             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 370.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.018    .819 756.006   1.289 755.995   2.393 755.968    2.81 755.971
    5.95 755.978   6.418  755.97   7.226 755.942   7.332 755.942   7.448 755.935
   7.986 755.917  12.394 755.386  13.971 755.284   15.92  755.08  16.406  755.03
  23.959 754.034  24.777 753.846  24.854 753.827   25.02 753.772  25.399  753.63
  27.204 753.011  29.231 752.316  29.773 752.129  29.895 752.082  30.192 751.933
  30.391 751.831  30.512 751.745  30.614 751.672  30.964 751.408  31.152 751.295
  31.917 751.768   32.05 751.849  32.266 751.968  32.409 752.044  32.658 752.147
      33 752.294  33.237 752.463  34.266 753.247  34.773  753.64  35.005 753.984
  35.104 754.053  35.218 754.129  36.868 755.318  39.409 755.773  42.136 756.265
  43.378   756.4  46.095 756.697  49.002 757.017  55.062 757.722

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.777     .04  34.773    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.777  34.773             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 368.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 756.002    .812 755.988   1.279 755.977   2.374 755.947   2.788 755.951
   5.904 755.971   6.368 755.964    7.17 755.939   7.275 755.938   7.389 755.932
   7.924 755.916  12.297 755.324  13.862 755.216  15.795  755.02  16.277 754.971
  23.771 754.041  24.583 753.874  24.659 753.856  24.822 753.802  25.195 753.659
  26.971 753.022  28.967 752.309  29.501 752.117   29.62 752.068  29.914 751.907
  30.109 751.797  30.228 751.711  30.328 751.636  30.674 751.372  30.858 751.265
  31.715 751.785  31.865 751.875  32.107 752.003  32.267 752.087  32.547 752.196
   32.93 752.353  33.196 752.518   34.35 753.293  34.917  753.68  35.145  753.98
  35.243 754.044  35.355 754.113   36.98 755.182  39.481 755.681  42.165 756.221
  43.388 756.361  46.062 756.666  48.923 756.996  54.888 757.728

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.583     .04  34.917    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.583  34.917             .409   1.991   2.868             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 366.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.985    .806  755.97   1.269 755.958   2.355 755.926   2.766 755.931
   5.857 755.965   6.317 755.957   7.113 755.935   7.217 755.934   7.331  755.93
   7.861 755.915  12.199 755.261  13.752 755.149   15.67  754.96  16.148 754.913
  23.583 754.048  24.388 753.901  24.463 753.885  24.623 753.832  24.991 753.687
```

```
  26.739 753.034  28.704 752.302  29.229 752.106  29.346 752.054  29.635 751.882
  29.827 751.763  29.944 751.676  30.043 751.601  30.383 751.335  30.565 751.234
  31.514 751.802   31.68   751.9  31.948 752.039  32.126 752.129  32.435 752.244
   32.86 752.411  33.155 752.572  34.433 753.339  35.062  753.72  35.286 753.977
  35.383 754.036  35.493 754.097  37.092 755.045  39.553 755.589  42.194 756.177
  43.397 756.321  46.029 756.636  48.844 756.974  54.715 757.735

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.388     .04  35.062    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.388  35.062             .409   1.991   2.868             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 364.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev      Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev
       0 755.969    .799 755.953   1.259 755.939   2.336 755.904   2.744 755.911
    5.81 755.959   6.267 755.951   7.056 755.932   7.159 755.931   7.272 755.927
   7.798 755.913  12.102 755.198  13.642 755.082  15.545   754.9  16.019 754.855
  23.395 754.055  24.194 753.928  24.267 753.913  24.425 753.861  24.786 753.715
  26.507 753.045   28.44 752.296  28.957 752.094  29.072 752.041  29.356 751.856
  29.546  751.73  29.661 751.641  29.758 751.565  30.092 751.299  30.271 751.203
  31.313 751.819  31.495 751.925   31.79 752.074  31.984 752.172  32.324 752.293
   32.79  752.47  33.114 752.627  34.516 753.384  35.206  753.76  35.427 753.974
  35.522 754.027  35.631 754.081  37.203 754.909  39.624 755.497  42.223 756.132
  43.407 756.281  45.996 756.605  48.766 756.953  54.541 757.741

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  24.194     .04  35.206    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.194  35.206             .409   1.991   2.868             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 362.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev      Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev
       0 755.953    .793 755.935   1.249  755.92   2.318 755.883   2.721 755.891
   5.763 755.953   6.216 755.945   6.999 755.928   7.102 755.927   7.214 755.924
   7.735 755.912  12.005 755.135  13.533 755.015   15.42  754.84  15.891 754.797
  23.207 754.062  23.999 753.955  24.071 753.942  24.227 753.891  24.582 753.743
  26.275 753.057  28.176 752.289  28.684 752.083  28.798 752.027  29.077 751.831
  29.264 751.696  29.377 751.606  29.473 751.529  29.801 751.263  29.977 751.172
  31.112 751.836   31.31  751.95  31.631  752.11  31.843 752.215  32.213 752.342
   32.72 752.529  33.072 752.681  34.599 753.429  35.351   753.8  35.568 753.971
  35.661 754.018  35.768 754.065  37.315 754.773  39.696 755.404  42.252 756.088
  43.416 756.241  45.963 756.574  48.687 756.932  54.367 757.747

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.999     .04  35.351    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.999  35.351             .409   1.991   2.868             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 360.*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev      Sta    Elev      Sta    Elev     Sta    Elev     Sta    Elev
       0 755.936    .786 755.918   1.239 755.901   2.299 755.861   2.699 755.872
   5.717 755.946   6.166 755.939   6.943 755.925   7.044 755.923   7.155 755.921
   7.673 755.911  11.907 755.073  13.423 754.948  15.295  754.78  15.762 754.739
  23.019 754.069  23.805 753.983  23.876 753.971  24.028  753.92  24.378 753.771
  26.042 753.068  27.912 752.282  28.412 752.071  28.524 752.014  28.799 751.805
  28.982 751.662  29.093 751.571  29.187 751.494  29.511 751.226  29.684 751.141
  30.911 751.853  31.125 751.975  31.472 752.145  31.701 752.257  32.101 752.391
  32.651 752.588  33.031 752.736  34.683 753.475  35.495  753.84  35.709 753.967
  35.801 754.009  35.906 754.048  37.427 754.636  39.768 755.312  42.281 756.044
  43.426 756.201   45.93 756.544  48.609 756.911  54.194 757.754

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.805     .04  35.495    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.805  35.495             .409   1.991   2.868             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 358
```

```
INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.92     .78   755.9    2.28  755.84    5.67  755.94    7.61  755.91
   11.81  755.01   15.17  754.72   23.61  754.01   23.68     754   23.83  753.95
   25.81  753.08   28.14  752.06   28.25     752   28.52  751.78   29.22  751.19
   29.39  751.11   30.71  751.87   30.94     752   31.56   752.3   31.99  752.44
   32.99  752.79   35.64  753.88   35.94     754   39.84  755.22   42.31     756
   48.53  756.89   54.02  757.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   23.61     .04   35.64    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         23.61   35.64            1.686   1.936   2.332             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 356.111*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.866    .763 755.843   2.229 755.781   4.241 755.823   4.974 755.838
   5.544 755.848   7.441 755.804    7.98 755.694   9.178 755.449  11.548 754.966
  14.833 754.679  19.199 754.306  23.086 753.949  23.162 753.937  23.327 753.888
  23.821 753.695  25.238 753.142  25.497 753.042  26.073 752.819  26.691 752.624
  27.856 752.122   28.05 752.036  28.171 751.972  28.379 751.816  28.467 751.751
  28.973 751.367  29.234 751.166   29.42 751.078  30.662 751.797  30.879 751.921
  31.462 752.208  31.867 752.347  31.889 752.355  32.808 752.696  32.953 752.759
  33.695 753.093  35.301 753.817  35.605 753.965  35.859  754.07   39.56  755.13
  41.757 755.765  42.065 755.853  44.692 756.208  48.372 756.728  50.175 757.007
  50.869 757.121  51.364 757.207  53.939 757.649

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  23.086     .04  35.301    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.086  35.301            1.686   1.936   2.332             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 354.222*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.811    .745 755.786   2.179 755.722   4.144 755.745   4.861 755.753
   5.418 755.756   7.272 755.698   7.799 755.596    8.97 755.369  11.285 754.923
  14.496 754.638  18.763 754.268  22.561 753.888  22.645 753.875  22.823 753.825
  23.361 753.638  24.902 753.101  25.183 753.004   25.81 752.787  26.482 752.644
  27.749 752.107   27.96 752.012  28.091 751.944  28.318 751.786  28.413 751.722
  28.964 751.344  29.247 751.141   29.45 751.046  30.614 751.725  30.817 751.841
  31.364 752.116  31.743 752.254  31.764 752.262  32.625 752.603  32.761 752.664
  33.457 753.007  34.962 753.753  35.271  753.93  35.528 754.061   39.28 755.039
  41.507 755.625  41.819 755.706  44.483 756.046  48.214 756.566  50.042 756.843
  50.745 756.962  51.247 757.056  53.858 757.538

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  22.561     .04  34.962    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        22.561  34.962            1.686   1.936   2.332             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 352.333*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.757    .728  755.73   2.128 755.663   4.048 755.667   4.748 755.669
   5.292 755.664   7.103 755.592   7.618 755.498   8.761  755.29  11.023  754.88
  14.159 754.598  18.327  754.23  22.037 753.827  22.127 753.812   22.32 753.763
  22.901 753.581  24.566 753.059   24.87 752.965  25.548 752.756  26.273 752.665
  27.642 752.092   27.87 751.988  28.012 751.916  28.257 751.757   28.36 751.694
  28.955  751.32  29.261 751.117   29.48 751.013  30.566 751.652  30.756 751.762
  31.266 752.024   31.62 752.161  31.639 752.169  32.443 752.509   32.57 752.569
  33.219 752.922  34.623  753.69  34.936 753.895  35.197 754.052      39 754.949
  41.258 755.486  41.574 755.559  44.274 755.884  48.056 756.404  49.909 756.678
  50.621 756.803   51.13 756.905  53.777 757.427

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  22.037     .04  34.623    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        22.037  34.623            1.686   1.936   2.332             .1      .3
```

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 350.444*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.702	.711	755.673	2.077	755.604	3.952	755.589	4.635	755.584
5.166	755.572	6.934	755.485	7.436	755.4	8.553	755.21	10.761	754.836
13.822	754.557	17.891	754.191	21.512	753.766	21.609	753.75	21.817	753.7
22.44	753.524	24.23	753.018	24.556	752.927	25.285	752.725	26.064	752.686
27.535	752.077	27.78	751.964	27.933	751.888	28.196	751.727	28.306	751.665
28.946	751.297	29.275	751.092	29.51	750.981	30.518	751.58	30.694	751.683
31.168	751.933	31.496	752.068	31.514	752.076	32.26	752.415	32.378	752.474
32.981	752.837	34.284	753.627	34.601	753.86	34.866	754.044	38.72	754.859
41.008	755.347	41.329	755.412	44.065	755.721	47.898	756.243	49.776	756.513
50.498	756.645	51.014	756.754	53.696	757.316				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	21.512	.04	34.284	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
21.512	34.284	1.686	1.936	2.332	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 348.555*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.648	.693	755.616	2.027	755.545	3.855	755.511	4.522	755.499
5.04	755.48	6.765	755.379	7.255	755.302	8.344	755.13	10.498	754.792
13.485	754.516	17.455	754.153	20.988	753.704	21.091	753.687	21.313	753.638
21.98	753.468	23.894	752.976	24.243	752.889	25.022	752.694	25.855	752.707
27.428	752.061	27.69	751.94	27.853	751.859	28.134	751.698	28.253	751.636
28.937	751.274	29.288	751.068	29.54	750.949	30.47	751.508	30.633	751.604
31.07	751.841	31.373	751.975	31.389	751.983	32.078	752.322	32.186	752.379
32.743	752.751	33.946	753.563	34.267	753.826	34.535	754.035	38.44	754.769
40.758	755.207	41.083	755.265	43.856	755.559	47.739	756.081	49.643	756.349
50.374	756.486	50.897	756.603	53.614	757.204				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.988	.04	33.946	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.988	33.946	1.686	1.936	2.332	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 346.666*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.593	.676	755.559	1.976	755.486	3.759	755.434	4.409	755.414
4.914	755.388	6.596	755.273	7.074	755.204	8.136	755.05	10.236	754.749
13.148	754.475	17.018	754.115	20.463	753.643	20.574	753.625	20.81	753.575
21.52	753.411	23.558	752.935	23.93	752.851	24.759	752.663	25.647	752.728
27.321	752.046	27.601	751.916	27.774	751.831	28.073	751.668	28.199	751.607
28.927	751.25	29.302	751.043	29.57	750.917	30.423	751.435	30.571	751.524
30.972	751.749	31.249	751.882	31.265	751.889	31.895	752.228	31.995	752.284
32.505	752.666	33.607	753.5	33.932	753.791	34.204	754.026	38.16	754.679
40.509	755.068	40.838	755.118	43.647	755.397	47.581	755.919	49.509	756.184
50.251	756.327	50.78	756.453	53.533	757.093				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.463	.04	33.607	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.463	33.607	1.686	1.936	2.332	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 344.777*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.539	.659	755.502	1.925	755.427	3.663	755.356	4.296	755.329
4.788	755.296	6.427	755.167	6.893	755.106	7.927	754.97	9.974	754.706
12.811	754.434	16.582	754.077	19.939	753.582	20.056	753.562	20.307	753.513
21.06	753.354	23.222	752.893	23.616	752.812	24.496	752.632	25.438	752.748
27.214	752.031	27.511	751.892	27.695	751.803	28.012	751.639	28.146	751.579
28.918	751.227	29.316	751.019	29.6	750.884	30.375	751.362	30.51	751.445
30.873	751.657	31.126	751.789	31.14	751.796	31.713	752.134	31.803	752.19
32.266	752.581	33.268	753.437	33.597	753.756	33.872	754.017	37.88	754.588
40.259	754.929	40.593	754.971	43.438	755.235	47.423	755.757	49.376	756.019

```
  50.127 756.168  50.663 756.302  53.452 756.982

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.939     .04  33.268    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.939  33.268            1.686   1.936   2.332             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 342.888*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.484    .641 755.445   1.875 755.368   3.566 755.278   4.183 755.245
   4.662 755.204   6.258 755.061   6.711 755.008   7.719  754.89   9.711 754.662
  12.474 754.394  16.146 754.038  19.414 753.521  19.538   753.5  19.803  753.45
    20.6 753.297  22.886 752.852  23.303 752.774  24.233 752.601  25.229 752.769
  27.107 752.015  27.421 751.868  27.615 751.775  27.951 751.609  28.092  751.55
  28.909 751.203   29.33 750.994   29.63 750.852  30.327  751.29  30.448 751.366
  30.775 751.565  31.002 751.696  31.015 751.703   31.53  752.04  31.612 752.095
  32.028 752.495  32.929 753.373  33.263 753.721  33.541 754.009    37.6 754.498
   40.01 754.789  40.347 754.824  43.229 755.072  47.265 755.595  49.243 755.855
  50.004 756.009  50.547 756.151  53.371 756.871

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.414     .04  32.929    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.414  32.929            1.686   1.936   2.332             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 341

INPUT
Description:
Station Elevation Data    num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.43    3.47   755.2    4.07  755.16    6.53  754.91    7.51  754.81
   15.71     754   18.89  753.46   20.14  753.24   22.55  752.81   23.97  752.57
   25.02  752.79      27     752   27.89  751.58    28.9  751.18   29.66  750.82
   30.89  751.61   31.42     752   31.79  752.41   32.59  753.31   33.21     754
   39.76  754.65   43.02  754.91   49.11  755.69   49.88  755.85   50.43     756
   53.29  756.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   18.89     .04   32.59    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.89   32.59             .565    1.81   2.982             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 339.2*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.436   3.455 755.198   4.052 755.156   6.501 754.909   7.477 754.811
  13.319 754.236  14.173 754.153  15.641 754.008  16.495 753.869  18.807  753.46
  20.035 753.237  22.402 752.802  23.797 752.558  24.151 752.619  24.829 752.732
  25.689 752.396  26.774 751.948  27.648 751.528   28.64  751.12  28.981 750.956
  29.387 750.761  29.525 750.856  30.629 751.617  30.907 751.832   30.99 751.947
  31.164 752.125  31.368 752.402  31.537  752.57  32.345 753.383  32.982 754.007
  34.604 754.156  35.798 754.265  39.017 754.556  39.711 754.617  42.865  754.84
   43.06 754.854  43.527 754.907  49.317 755.623  50.108 755.776  50.673 755.917
  53.611 756.635

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.807     .04  32.345    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.807  32.345             .565    1.81   2.982             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 337.4*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.442    3.44 755.196   4.034 755.153   6.473 754.909   7.444 754.811
   13.26 754.242   14.11 754.161  15.572 754.016  16.422 753.883  18.724  753.46
   19.93 753.234  22.255 752.795  23.625 752.546  23.972 752.592  24.638 752.674
  25.483 752.352  26.548 751.896  27.406 751.476  28.381 751.061  28.716 750.896
  29.114 750.702  29.254 750.804  30.368 751.623  30.649 751.851  30.733 752.021
```

```
  30.908  752.25  31.114 752.579  31.285 752.729    32.1 753.456  32.754 754.014
  34.419 754.155  35.645 754.258  38.949 754.528  39.662 754.583    42.9 754.786
    43.1 754.799  43.579 754.846  49.523 755.556  50.336 755.702  50.916 755.835
  53.932  756.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.724     .04    32.1    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.724    32.1             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 335.6*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.448   3.424 755.194   4.016 755.149   6.444 754.908   7.411 754.812
  13.201 754.248  14.048 754.168  15.503 754.024   16.35 753.898  18.641  753.46
  19.825 753.232  22.107 752.787  23.452 752.534  23.793 752.566  24.447 752.617
  25.276 752.308  26.322 751.844  27.165 751.424  28.121 751.001   28.45 750.837
  28.841 750.643  28.982 750.753  30.106  751.63   30.39 751.869  30.475 752.095
  30.651 752.374   30.86 752.757  31.032 752.889  31.855 753.529  32.526 754.021
  34.234 754.155  35.492  754.25  38.882 754.501  39.613  754.55  42.935 754.731
  43.141 754.743  43.632 754.786   49.73 755.489  50.563 755.628  51.158 755.753
  54.253 756.385

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.641     .04  31.855    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.641  31.855             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 333.8*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.454   3.409 755.191   3.998 755.146   6.415 754.908   7.378 754.813
  13.143 754.254  13.985 754.175  15.434 754.032  16.277 753.913  18.558  753.46
   19.72 753.229   21.96 752.779   23.28 752.523  23.614 752.539  24.255 752.559
   25.07 752.264  26.096 751.792  26.923 751.372  27.862 750.941  28.184 750.777
  28.568 750.584   28.71 750.701  29.845 751.636  30.132 751.888  30.217 752.168
  30.395 752.499  30.605 752.935  30.779 753.049   31.61 753.602  32.298 754.028
  34.049 754.154  35.339 754.243  38.815 754.474  39.564 754.517   42.97 754.677
  43.181 754.687  43.684 754.725  49.937 755.422  50.791 755.554  51.401  755.67
  54.574  756.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.558     .04   31.61    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.558   31.61             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 332.*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.46   3.394 755.189   3.981 755.142   6.387 754.907   7.345 754.813
  13.084  754.26  13.923 754.183  15.365  754.04  16.204 753.927  18.475  753.46
  19.615 753.226  21.812 752.772  23.107 752.511  23.435 752.513  24.064 752.501
  24.863  752.22   25.87  751.74  26.681  751.32  27.602 750.882  27.919 750.718
  28.295 750.525  28.438 750.649  29.584 751.643  29.873 751.907  29.959 752.242
  30.139 752.624  30.351 753.112  30.527 753.208  31.365 753.675   32.07 754.036
  33.864 754.153  35.186 754.236  38.747 754.446  39.515 754.484  43.005 754.622
  43.221 754.631  43.737 754.664  50.144 755.355  51.019  755.48  51.644 755.587
  54.895 756.135

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.475     .04  31.365    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.475  31.365             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 330.2*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 755.466   3.379 755.187   3.963 755.139   6.358 754.907   7.312 754.814
  13.025 754.266   13.86  754.19  15.296 754.049  16.131 753.942  18.392  753.46
   19.51 753.223  21.665 752.764  22.934 752.499  23.256 752.486  23.873 752.443
  24.656 752.176  25.644 751.688  26.439 751.268  27.342 750.822  27.653 750.658
  28.022 750.466  28.167 750.597  29.323 751.649  29.614 751.925  29.701 752.315
  29.883 752.749  30.097  753.29  30.274 753.368   31.12 753.748  31.842 754.043
   33.68 754.153  35.032 754.229   38.68 754.419  39.466  754.45   43.04 754.568
  43.261 754.576   43.79 754.603   50.35 755.288  51.247 755.406  51.887 755.505
  55.216  756.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.392     .04   31.12    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.392   31.12             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 328.4*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.472   3.363 755.185   3.945 755.135   6.329 754.906   7.279 754.814
  12.966 754.272  13.798 754.198  15.227 754.057  16.058 753.956  18.309  753.46
  19.405  753.22  21.517 752.756  22.762 752.487  23.077  752.46  23.682 752.386
   24.45 752.132  25.417 751.636  26.198 751.216  27.083 750.763  27.387 750.599
  27.749 750.407  27.895 750.545  29.061 751.656  29.356 751.944  29.443 752.389
  29.627 752.874  29.843 753.467  30.021 753.528  30.875 753.821  31.614  754.05
  33.495 754.152  34.879 754.222  38.612 754.392  39.417 754.417  43.075 754.513
  43.301  754.52  43.842 754.542  50.557 755.221  51.474 755.332   52.13 755.422
  55.537 755.885

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.309     .04  30.875    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.309  30.875             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 326.6*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.478   3.348 755.183   3.927 755.132     6.3 754.905   7.246 754.815
  12.908 754.278  13.735 754.205  15.158 754.065  15.986 753.971  18.226  753.46
    19.3 753.217  21.369 752.749  22.589 752.475  22.898 752.433  23.491 752.328
  24.243 752.088  25.191 751.584  25.956 751.164  26.823 750.703  27.121 750.539
  27.476 750.348  27.623 750.494    28.8 751.662  29.097 751.963  29.186 752.463
  29.371 752.998  29.588 753.645  29.769 753.688   30.63 753.894  31.386 754.057
   33.31 754.151  34.726 754.214  38.545 754.365  39.368 754.384   43.11 754.459
  43.341 754.464  43.895 754.482  50.764 755.154  51.702 755.258  52.372  755.34
  55.858  755.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.226     .04   30.63    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.226   30.63             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 324.8*

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.484   3.333 755.181   3.909 755.128   6.272 754.905   7.213 754.816
  12.849 754.284  13.673 754.213  15.089 754.073  15.913 753.985  18.143  753.46
  19.195 753.215  21.222 752.741  22.416 752.463  22.719 752.407    23.3  752.27
  24.037 752.044  24.965 751.532  25.714 751.112  26.564 750.643  26.856  750.48
  27.203 750.289  27.352 750.442  28.539 751.669  28.839 751.981  28.928 752.536
  29.114 753.123  29.334 753.822  29.516 753.847  30.385 753.967  31.158 754.064
  33.125 754.151  34.573 754.207  38.477 754.337  39.319  754.35  43.145 754.404
  43.382 754.409  43.947 754.421   50.97 755.087   51.93 755.184  52.615 755.257
  56.179 755.635

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.143     .04  30.385    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.143  30.385             .565    1.81   2.982             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 323
```

```
INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.49   12.79  754.29   13.61  754.22   15.84     754   18.06  753.46
   22.54  752.38   23.83     752   26.59  750.42   26.93  750.23   27.08  750.39
   28.58     752   28.67  752.61   29.08     754   30.14  754.04   32.94  754.15
   34.42   754.2   38.41  754.31   43.18  754.35      44  754.36    56.5  755.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   18.06    .04   30.14    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.06   30.14            2.221   1.931   1.706             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 321.090*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.484   8.654 754.641  12.188 754.287  12.969 754.215  14.404 754.065
  15.094 753.979   17.21 753.425  20.173 752.655  20.543 752.559  21.469 752.299
  22.698 751.892  24.185 751.004  25.323 750.371  25.358 750.352  25.646 750.195
  25.697 750.243  25.802 750.343  26.973 751.453  27.363 751.855  27.456 752.419
  27.883 753.723  28.134 753.756  28.985 753.838  29.273 753.865  31.857 753.997
  32.698 754.036  33.375 754.067  34.378 754.106  35.218 754.139   35.77 754.159
  36.674 754.209  37.467  754.23  38.267 754.239  40.603 754.285   42.36 754.329
  43.107  754.35  43.201 754.351  44.227 754.432  46.396 754.605  51.564 755.015
  52.188 755.064  52.997 755.128  53.437 755.162  54.109 755.226  55.309 755.342
  56.021 755.415

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   17.21    .04   28.985    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.21  28.985            2.221   1.931   1.706             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 319.181*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.477   8.227 754.644  11.586 754.284  12.329  754.21  13.693 754.058
  14.349 753.958   16.36 753.389  19.171 752.602  19.522 752.503    20.4 752.219
  21.566 751.785  22.977 750.904  24.056 750.322  24.089 750.305  24.363 750.161
  24.415 750.205  24.525 750.296  25.741 751.308  26.145 751.711  26.243 752.228
  26.686 753.446  26.947 753.502  27.831 753.636  28.126 753.678  30.774 753.844
  31.636 753.895   32.33 753.933  33.358 753.986  34.219 754.028  34.785 754.055
  35.712 754.129  36.525 754.151  37.344 754.161  39.739 754.235  41.539 754.308
  42.306 754.341  42.401 754.341  43.454 754.412  45.676 754.564  50.974 754.919
  51.614 754.961  52.442 755.017  52.893 755.046  53.582 755.113  54.812 755.238
  55.542 755.319

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   16.36    .04   27.831    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         16.36  27.831            2.221   1.931   1.706             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 317.272*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.471     7.8 754.647  10.984 754.281  11.688 754.206  12.981 754.052
  13.603 753.938   15.51 753.354  18.168 752.548  18.501 752.447  19.331 752.138
  20.434 751.677  21.768 750.803  22.789 750.274  22.821 750.258  23.079 750.126
  23.133 750.167  23.247 750.249  24.509 751.162  24.928 751.566  25.029 752.037
  25.488  753.17   25.76 753.248  26.676 753.435  26.979 753.492  29.692 753.691
  30.574 753.753  31.285   753.8  32.339 753.865  33.221 753.917    33.8  753.95
   34.75 754.049  35.582 754.071  36.421 754.083  38.874 754.184  40.719 754.286
  41.504 754.332  41.602 754.332   42.68 754.392  44.957 754.522  50.383 754.824
  51.039 754.859  51.887 754.906  52.349  754.93  53.055 755.001  54.315 755.134
  55.063 755.224

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   15.51    .04   26.676    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.51  26.676            2.221   1.931   1.706             .1      .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 315.363*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.465   7.372  754.65  10.382 754.278  11.048 754.201   12.27 754.045
  12.858 753.917   14.66 753.318  17.166 752.495  17.479 752.391  18.263 752.057
  19.302 751.569   20.56 750.703  21.522 750.225  21.552  750.21  21.795 750.092
  21.852 750.128   21.97 750.201  23.276 751.017  23.711 751.422  23.815 751.845
  24.291 752.893  24.572 752.995  25.522 753.233  25.831 753.305  28.609 753.538
  29.513 753.611  30.241 753.667  31.319 753.744  32.222 753.806  32.815 753.845
  33.787 753.969  34.639 753.992  35.499 754.005   38.01 754.134  39.898 754.265
  40.702 754.323  40.802 754.323  41.906 754.371  44.237 754.481  49.793 754.728
  50.464 754.757  51.333 754.796  51.806 754.813  52.528 754.888  53.818 755.029
  54.584 755.128

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   14.66     .04  25.522    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         14.66  25.522            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 313.454*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.458   6.945 754.652    9.78 754.276  10.407 754.196  11.559 754.039
  12.112 753.896   13.81 753.283  16.164 752.441  16.458 752.336  17.194 751.976
   18.17 751.462  19.351 750.603  20.255 750.176  20.283 750.163  20.512 750.057
   20.57  750.09  20.692 750.154  22.044 750.872  22.494 751.277  22.602 751.654
  23.094 752.616  23.385 752.741  24.367 753.031  24.684 753.119  27.526 753.385
  28.451  753.47  29.196 753.533  30.299 753.624  31.223 753.695   31.83  753.74
  32.825 753.889  33.697 753.912  34.576 753.927  37.146 754.083  39.078 754.244
    39.9 754.314  40.003 754.313  41.132 754.351  43.517 754.439  49.203 754.633
  49.889 754.654  50.778 754.685  51.262 754.697  52.001 754.776  53.321 754.925
  54.105 755.033

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   13.81     .04  24.367    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         13.81  24.367            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 311.545*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.452   6.517 754.655   9.178 754.273   9.767 754.191  10.847 754.032
  11.367 753.875   12.96 753.247  15.162 752.388  15.437  752.28  16.125 751.895
  17.037 751.354  18.143 750.502  18.988 750.127  19.014 750.116  19.228 750.023
  19.288 750.052  19.414 750.107  20.812 750.726  21.276 751.132  21.388 751.463
  21.897 752.339  22.197 752.488  23.213 752.829  23.537 752.932  26.443 753.232
  27.389 753.328  28.151   753.4  29.279 753.503  30.224 753.584  30.845 753.635
  31.862 753.809  32.754 753.833  33.653 753.849  36.281 754.033  38.258 754.223
  39.099 754.305  39.204 754.304  40.359 754.331  42.798 754.398  48.612 754.537
  49.314 754.552  50.223 754.574  50.718 754.581  51.474 754.663  52.824 754.821
  53.625 754.937

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   12.96     .04  23.213    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         12.96  23.213            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 309.636*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.445    6.09 754.658   8.576  754.27   9.126 754.186  10.136 754.026
  10.621 753.854   12.11 753.212  14.159 752.334  14.415 752.224  15.056 751.814
  15.905 751.247  16.934 750.402  17.721 750.079  17.745 750.069  17.945 749.988
  18.007 750.013  18.137  750.06  19.579 750.581  20.059 750.988  20.174 751.272
    20.7 752.063   21.01 752.234  22.058 752.627  22.389 752.746   25.36  753.08
  26.327 753.186  27.106 753.266  28.259 753.383  29.225 753.474   29.86  753.53
    30.9 753.729  31.812 753.753  32.731 753.771  35.417 753.982  37.437 754.202
  38.297 754.296  38.404 754.295  39.585 754.311  42.078 754.356  48.022 754.442
  48.739  754.45  49.669 754.463  50.175 754.465  50.947  754.55  52.328 754.717
  53.146 754.842
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   12.11     .04  22.058    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         12.11  22.058            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 307.727*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.439   5.662 754.661   7.974 754.267   8.486 754.182   9.424 754.019
   9.876 753.834   11.26 753.176  13.157 752.281  13.394 752.168  13.987 751.733
  14.773 751.139  15.726 750.301  16.454  750.03  16.476 750.022  16.661 749.954
  16.725 749.975  16.859 750.013  18.347 750.436  18.842 750.843  18.961 751.081
  19.503 751.786  19.822 751.981  20.904 752.425  21.242 752.559  24.278 752.927
  25.265 753.045  26.061 753.133  27.239 753.262  28.226 753.363  28.875 753.425
  29.937  753.65  30.869 753.674  31.808 753.694  34.553 753.932  36.617  754.18
  37.495 754.287  37.605 754.285  38.811 754.291  41.359 754.315  47.431 754.346
  48.165 754.347  49.114 754.352  49.631 754.349  50.421 754.438  51.831 754.613
  52.667 754.746

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.26     .04  20.904    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.26  20.904            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 305.818*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.433   5.235 754.664   7.372 754.264   7.845 754.177   8.713 754.013
    9.13 753.813   10.41 753.141  12.155 752.227  12.373 752.112  12.918 751.652
  13.641 751.031  14.517 750.201  15.187 749.981  15.208 749.974  15.377 749.919
  15.443 749.937  15.582 749.966  17.115 750.291  17.624 750.698  17.747  750.89
  18.305 751.509  18.635 751.727  19.749 752.224  20.095 752.373  23.195 752.774
  24.204 752.903  25.016     753   26.22 753.141  27.228 753.252   27.89  753.32
  28.975  753.57  29.926 753.594  30.885 753.616  33.689 753.881  35.796 754.159
  36.693 754.278  36.805 754.276  38.037  754.27  40.639 754.273  46.841 754.251
   47.59 754.245  48.559 754.242  49.087 754.232  49.894 754.325  51.334 754.508
  52.188 754.651

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.41     .04  19.749    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.41  19.749            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 303.909*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.426   4.807 754.667    6.77 754.261   7.204 754.172   8.001 754.006
   8.385 753.792    9.56 753.105  11.152 752.174  11.351 752.056  11.849 751.571
  12.509 750.924  13.309   750.1   13.92 749.932  13.939 749.927  14.094 749.885
  14.162 749.898  14.304 749.919  15.882 750.145  16.407 750.554  16.533 750.699
  17.108 751.232  17.447 751.474  18.595 752.022  18.947 752.186  22.112 752.621
  23.142 752.762  23.971 752.866    25.2 753.021  26.229 753.141  26.905 753.215
  28.012  753.49  28.984 753.514  29.963 753.538  32.824 753.831  34.976 754.138
  35.892 754.269  36.006 754.267  37.264  754.25   39.92 754.232   46.25 754.155
  47.015 754.142  48.005 754.131  48.544 754.116  49.367 754.213  50.837 754.404
  51.709 754.555

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.56     .04  18.595    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.56  18.595            2.221   1.931   1.706             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 302

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.42    4.38  754.67    7.29     754    8.71  753.07   10.15  752.12
   10.33     752   10.78  751.49    12.1     750   12.67  749.88   12.81  749.85
```

```
   12.88  749.86   14.65     750   16.26  751.22   17.44  751.82    17.8     752
   22.08  752.62   24.18   752.9   25.23  753.03   25.92  753.11   27.05  753.41
   29.04  753.46   31.96  753.78   35.09  754.26   36.49  754.23    39.2  754.19
   45.66  754.06   46.44  754.04   47.45  754.02      48     754   48.84   754.1
   50.34   754.3   51.23  754.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    8.71     .04   17.44    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          8.71   17.44            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 300.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.401   1.189  755.17   3.225 754.833   4.064 754.697   4.526 754.622
   4.667 754.599   5.647 754.386   7.767 753.921   8.334 753.582   8.706 753.362
    9.28 753.021   9.512 752.886   9.985 752.598  10.853 752.069  11.049 751.948
  11.541 751.445  11.737 751.245    12.3 750.672  12.426 750.542  12.982 749.974
  13.604 749.836  13.757 749.802  13.828 749.814  14.204 749.854  15.309 749.977
  15.614  750.01  16.996 751.045  17.239 751.229  18.118 751.687   18.43 751.858
  18.779 752.036  19.433 752.142  19.962 752.204  22.926 752.639  24.249 752.819
  24.961 752.913  25.979 753.039  26.647 753.116  27.742 753.403   29.67 753.454
    32.5 753.764  35.533 754.226  36.889   754.2  39.515 754.166  41.065 754.138
  45.774 754.056   46.53 754.039  47.509 754.022  48.042 754.004  48.856 754.101
  50.309 754.295  51.171  754.45

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.28     .04   18.43    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.28   18.43            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 298.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.382   1.262 755.112   3.423 754.763   4.314 754.627   4.804  754.55
   4.954 754.527   5.994 754.315   8.245 753.843   8.846 753.513   9.242 753.301
   9.851 752.973  10.101 752.842  10.615 752.552  11.556 752.018  11.769 751.896
  12.301 751.401  12.514 751.204  13.124 750.638  13.262  750.51  13.864 749.948
  14.539 749.793  14.704 749.754  14.776 749.768  15.156 749.819  16.271 749.978
  16.579 750.021  17.974 751.053  18.219 751.238  19.106 751.712  19.421 751.895
  19.759 752.072  20.391 752.186  20.903 752.231  23.773 752.659  25.053 752.835
  25.742 752.926  26.727 753.047  27.374 753.122  28.434 753.397  30.301 753.449
  33.039 753.748  35.975 754.192  37.288 754.169   39.83 754.142   41.33 754.118
  45.889 754.052   46.62 754.037  47.568 754.024  48.083 754.008  48.871 754.102
  50.278  754.29  51.113 754.439

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.851     .04  19.421    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.851  19.421            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 296.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.363   1.335 755.053   3.622 754.694   4.563 754.557   5.082 754.479
   5.241 754.456   6.342 754.243   8.722 753.764   9.359 753.443   9.777  753.24
  10.421 752.924  10.691 752.797  11.244 752.507  12.258 751.967  12.488 751.844
  13.062 751.356  13.291 751.162  13.949 750.604  14.097 750.478  14.746 749.922
  15.473 749.749  15.651 749.706  15.723 749.721  16.107 749.784  17.232 749.979
  17.543 750.031  18.951 751.061  19.198 751.247  20.094 751.737  20.411 751.933
  20.738 752.108  21.349 752.229  21.845 752.259  24.619 752.678  25.857 752.852
  26.524 752.939  27.476 753.056  28.102 753.128  29.126  753.39  30.931 753.443
  33.579 753.731  36.418 754.158  37.687 754.139  40.145 754.118  41.596 754.098
  46.003 754.048   46.71 754.036  47.626 754.026  48.125 754.012  48.887 754.104
  50.247 754.285  51.054 754.429

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.421     .04  20.411    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.421  20.411            1.282   1.982   1.023             .1      .3

CROSS SECTION
```

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 294.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.344	1.408	754.995	3.82	754.625	4.813	754.487	5.36	754.408
5.528	754.384	6.689	754.171	9.2	753.686	9.871	753.373	10.312	753.179
10.992	752.876	11.281	752.753	11.874	752.461	12.961	751.916	13.207	751.792
13.823	751.311	14.068	751.12	14.773	750.571	14.932	750.446	15.628	749.897
16.407	749.705	16.599	749.658	16.671	749.675	17.058	749.749	18.194	749.981
18.507	750.041	19.928	751.068	20.178	751.257	21.081	751.761	21.402	751.97
21.717	752.143	22.308	752.273	22.786	752.286	25.466	752.697	26.661	752.868
27.305	752.952	28.225	753.064	28.829	753.134	29.818	753.384	31.561	753.437
34.119	753.715	36.86	754.124	38.086	754.109	40.46	754.094	41.861	754.078
46.117	754.043	46.801	754.034	47.685	754.027	48.167	754.016	48.903	754.105
50.216	754.28	50.996	754.418						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	10.992	.04	21.402	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
10.992	21.402	1.282	1.982	1.023	.1 .3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 292.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.325	1.481	754.936	4.018	754.556	5.063	754.418	5.639	754.337
5.814	754.312	7.036	754.099	9.677	753.607	10.383	753.304	10.847	753.117
11.562	752.827	11.871	752.709	12.504	752.415	13.664	751.865	13.927	751.74
14.583	751.267	14.845	751.078	15.598	750.537	15.767	750.414	16.51	749.871
17.341	749.661	17.546	749.609	17.619	749.629	18.009	749.713	19.155	749.982
19.472	750.052	20.905	751.076	21.157	751.266	22.069	751.786	22.392	752.008
22.696	752.179	23.266	752.317	23.727	752.313	26.312	752.717	27.465	752.885
28.086	752.966	28.973	753.073	29.556	753.14	30.511	753.377	32.192	753.432
34.658	753.699	37.303	754.09	38.485	754.078	40.775	754.07	42.126	754.058
46.232	754.039	46.891	754.033	47.744	754.029	48.209	754.02	48.918	754.106
50.185	754.276	50.937	754.408						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.562	.04	22.392	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
11.562	22.392	1.282	1.982	1.023	.1 .3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 290.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.306	1.554	754.878	4.216	754.487	5.313	754.348	5.917	754.266
6.101	754.241	7.383	754.027	10.155	753.529	10.896	753.234	11.382	753.056
12.133	752.779	12.461	752.665	13.134	752.369	14.367	751.815	14.646	751.688
15.344	751.222	15.623	751.036	16.422	750.504	16.602	750.382	17.391	749.845
18.276	749.618	18.493	749.561	18.567	749.583	18.961	749.678	20.117	749.983
20.436	750.062	21.882	751.084	22.137	751.275	23.056	751.811	23.383	752.046
23.676	752.215	24.225	752.361	24.669	752.341	27.159	752.736	28.269	752.901
28.867	752.979	29.722	753.082	30.283	753.145	31.203	753.371	32.822	753.426
35.198	753.683	37.745	754.056	38.884	754.048	41.089	754.046	42.391	754.038
46.346	754.035	46.981	754.031	47.803	754.031	48.25	754.024	48.934	754.107
50.154	754.271	50.879	754.397						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.133	.04	23.383	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
12.133	23.383	1.282	1.982	1.023	.1 .3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 288.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.287	1.627	754.819	4.415	754.418	5.563	754.278	6.195	754.195
6.388	754.169	7.73	753.955	10.632	753.45	11.408	753.164	11.917	752.995
12.703	752.73	13.051	752.62	13.763	752.323	15.069	751.764	15.365	751.636
16.105	751.177	16.4	750.995	17.247	750.47	17.438	750.35	18.273	749.819
19.21	749.574	19.44	749.513	19.515	749.536	19.912	749.643	21.079	749.984
21.401	750.072	22.859	751.092	23.116	751.284	24.044	751.835	24.373	752.083
24.655	752.251	25.183	752.405	25.61	752.368	28.005	752.756	29.073	752.918
29.649	752.992	30.47	753.09	31.01	753.151	31.895	753.364	33.452	753.42
35.738	753.667	38.188	754.022	39.283	754.018	41.404	754.022	42.657	754.018

```
   46.46 754.031  47.071  754.03  47.861 754.033  48.292 754.028  48.949 754.108
  50.123 754.266   50.82 754.387

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.703     .04  24.373    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.703  24.373            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 286.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.268     1.7 754.761   4.613 754.349   5.813 754.208   6.473 754.124
   6.675 754.098   8.077 753.884   11.11 753.372   11.92 753.095  12.453 752.934
  13.274 752.681  13.641 752.576  14.393 752.277  15.772 751.713  16.084 751.584
  16.865 751.133  17.177 750.953  18.071 750.437  18.273 750.317  19.155 749.793
  20.144  749.53  20.387 749.465  20.462  749.49  20.863 749.608   22.04 749.985
  22.365 750.083  23.837 751.099  24.095 751.293  25.031  751.86  25.364 752.121
  25.634 752.287  26.141 752.449  26.552 752.395  28.851 752.775  29.878 752.935
   30.43 753.005  31.219 753.099  31.738 753.157  32.587 753.358  34.083 753.414
  36.277  753.65   38.63 753.988  39.682 753.987  41.719 753.998  42.922 753.999
  46.575 754.027  47.161 754.029   47.92 754.035  48.334 754.032  48.965  754.11
  50.092 754.261  50.761 754.376

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.274     .04  25.364    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.274  25.364            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 284.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.249   1.773 754.702   4.811  754.28   6.062 754.138   6.752 754.053
   6.962 754.027   8.424 753.812  11.587 753.293  12.432 753.025  12.988 752.873
  13.844 752.633  14.231 752.532  15.023 752.231  16.475 751.662  16.804 751.532
  17.626 751.088  17.954 750.911  18.896 750.403  19.108 750.285  20.037 749.768
  21.079 749.487  21.334 749.417   21.41 749.444  21.815 749.573  23.002 749.986
  23.329 750.093  24.814 751.107  25.075 751.302  26.019 751.884  26.354 752.159
  26.614 752.323    27.1 752.493  27.493 752.422  29.698 752.794  30.682 752.951
  31.211 753.018  31.968 753.107  32.465 753.163  33.279 753.351  34.713 753.409
  36.817 753.634  39.073 753.954  40.081 753.957  42.034 753.974  43.187 753.979
  46.689 754.023  47.251 754.027  47.979 754.037  48.375 754.036  48.981 754.111
  50.062 754.256  50.703 754.366

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.844     .04  26.354    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.844  26.354            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 282.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.23   1.846 754.644   5.009  754.21   6.312 754.068    7.03 753.982
   7.249 753.955   8.771  753.74  12.065 753.214  12.945 752.956  13.523 752.812
  14.415 752.584  14.821 752.487  15.653 752.185  17.178 751.611  17.523  751.48
  18.386 751.043  18.731 750.869   19.72 750.369  19.943 750.253  20.919 749.742
  22.013 749.443  22.281 749.369  22.358 749.398  22.766 749.537  23.963 749.987
  24.294 750.103  25.791 751.115  26.054 751.312  27.007 751.909  27.345 752.196
  27.593 752.358  28.058 752.537  28.434  752.45  30.544 752.814  31.486 752.968
  31.992 753.031  32.716 753.116  33.192 753.169  33.971 753.345  35.343 753.403
  37.357 753.618  39.515  753.92   40.48 753.927  42.349  753.95  43.452 753.959
  46.804 754.019  47.341 754.026  48.038 754.038  48.417 754.041  48.996 754.112
  50.031 754.251  50.644 754.355

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.415     .04  27.345    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.415  27.345            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 280.*
```

```
INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.21   1.919 754.585   5.208 754.141   6.562 753.999   7.308 753.911
   7.536 753.884   9.119 753.668  12.542 753.136  13.457 752.886  14.058 752.751
  14.985 752.536  15.411 752.443  16.282 752.139   17.88  751.56  18.242 751.428
  19.147 750.999  19.508 750.828  20.545 750.336  20.778 750.221  21.801 749.716
  22.947 749.399  23.229 749.321  23.306 749.351  23.717 749.502  24.925 749.989
  25.258 750.114  26.768 751.123  27.034 751.321  27.994 751.934  28.335 752.234
  28.572 752.394  29.016 752.581  29.376 752.477  31.391 752.833   32.29 752.984
  32.773 753.044  33.465 753.125  33.919 753.175  34.663 753.338  35.974 753.397
  37.897 753.602  39.958 753.886   40.88 753.897  42.664 753.926  43.718 753.939
  46.918 754.014  47.432 754.024  48.097  754.04  48.459 754.045  49.012 754.113
      50 754.246  50.586 754.345

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.985     .04  28.335    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.985  28.335            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 278.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.191   1.992 754.527   5.406 754.072   6.812 753.929   7.586  753.84
   7.823 753.812   9.466 753.596   13.02 753.057  13.969 752.816  14.593  752.69
  15.556 752.487  16.001 752.399  16.912 752.093  18.583 751.509  18.962 751.376
  19.908 750.954  20.286 750.786  21.369 750.302  21.613 750.189  22.683  749.69
  23.881 749.355  24.176 749.273  24.254 749.305  24.668 749.467  25.886  749.99
  26.222 750.124  27.745  751.13  28.013  751.33  28.982 751.958  29.326 752.271
  29.552  752.43  29.975 752.625  30.317 752.504  32.237 752.852  33.094 753.001
  33.555 753.057  34.214 753.133  34.646 753.181  35.355 753.331  36.604 753.392
  38.436 753.585    40.4 753.852  41.279 753.866  42.979 753.902  43.983 753.919
  47.032  754.01  47.522 754.023  48.155 754.042    48.5 754.049  49.028 754.115
  49.969 754.241  50.527 754.334

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.556     .04  29.326    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.556  29.326            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 276.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.172   2.065 754.468   5.604 754.003   7.062 753.859   7.864 753.769
   8.109 753.741   9.813 753.525  13.497 752.979  14.482 752.747  15.129 752.629
  16.126 752.439  16.591 752.354  17.542 752.047  19.286 751.458  19.681 751.324
  20.668 750.909  21.063 750.744  22.194 750.269  22.449 750.157  23.565 749.664
  24.816 749.312  25.123 749.225  25.201 749.259   25.62 749.432  26.848 749.991
  27.187 750.134  28.723 751.138  28.993 751.339  29.969 751.983  30.316 752.309
  30.531 752.466  30.933 752.669  31.259 752.532  33.083 752.872  33.898 753.017
  34.336  753.07  34.962 753.142  35.374 753.187  36.048 753.325  37.234 753.386
  38.976 753.569  40.843 753.818  41.678 753.836  43.294 753.878  44.248 753.899
  47.147 754.006  47.612 754.022  48.214 754.044  48.542 754.053  49.043 754.116
  49.938 754.236  50.469 754.324

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.126     .04  30.316    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.126  30.316            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 274.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.153   2.139  754.41   5.802 753.934   7.311 753.789   8.143 753.698
   8.396 753.669   10.16 753.453  13.975   752.9  14.994 752.677  15.664 752.568
  16.697  752.39  17.181  752.31  18.172 752.001  19.989 751.407    20.4 751.272
  21.429 750.865   21.84 750.702  23.018 750.235  23.284 750.125  24.447 749.638
   25.75 749.268   26.07 749.177  26.149 749.213  26.571 749.396  27.809 749.992
  28.151 750.145    29.7 751.146  29.972 751.348  30.957 752.008  31.307 752.347
   31.51 752.502  31.891 752.713    32.2 752.559   33.93 752.891  34.702 753.034
  35.117 753.083  35.711  753.15  36.101 753.193   36.74 753.318  37.865  753.38
  39.516 753.553  41.285 753.784  42.077 753.806  43.609 753.854  44.513 753.879
  47.261 754.002  47.702  754.02  48.273 754.046  48.584 754.057  49.059 754.117
  49.907 754.232   50.41 754.313
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.697     .04  31.307    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.697  31.307            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 272.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.134   2.212 754.351   6.001 753.865   7.561 753.719   8.421 753.626
   8.683 753.598  10.507 753.381  14.452 752.822  15.506 752.608  16.199 752.507
  17.267 752.341   17.77 752.266  18.801 751.956  20.692 751.356   21.12  751.22
   22.19  750.82  22.617 750.661  23.843 750.201  24.119 750.093  25.329 749.613
  26.684 749.224  27.017 749.129  27.097 749.166  27.522 749.361  28.771 749.993
  29.115 750.155  30.677 751.154  30.951 751.357  31.945 752.032  32.297 752.384
  32.489 752.538   32.85 752.757  33.142 752.586  34.776  752.91  35.506 753.051
  35.898 753.096  36.459 753.159  36.828 753.199  37.432 753.312  38.495 753.374
  40.055 753.537  41.728  753.75  42.476 753.775  43.924  753.83  44.779 753.859
  47.375 753.998  47.792 754.019  48.332 754.048  48.626 754.061  49.074 754.118
  49.876 754.227  50.351 754.303

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  17.267     .04  32.297    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        17.267  32.297            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 270.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.115   2.285 754.293   6.199 753.796   7.811 753.649   8.699 753.555
    8.97 753.526  10.854 753.309   14.93 752.743  16.019 752.538  16.734 752.445
  17.838 752.293   18.36 752.221  19.431  751.91  21.394 751.305  21.839 751.168
   22.95 750.776  23.394 750.619  24.667 750.168  24.954 750.061  26.211 749.587
  27.618  749.18  27.964 749.081  28.045  749.12  28.474 749.326  29.732 749.994
   30.08 750.165  31.654 751.161  31.931 751.367  32.932 752.057  33.288 752.422
  33.469 752.573  33.808   752.8  34.083 752.614  35.623  752.93   36.31 753.067
   36.68 753.109  37.208 753.168  37.555 753.205  38.124 753.305  39.125 753.369
  40.595 753.521   42.17 753.716  42.875 753.745  44.239 753.806  45.044 753.839
   47.49 753.994  47.882 754.017  48.391  754.05  48.667 754.065   49.09 754.119
  49.845 754.222  50.293 754.292

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  17.838     .04  33.288    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        17.838  33.288            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 268.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.096   2.358 754.234   6.397 753.727   8.061 753.579   8.977 753.484
   9.257 753.455  11.201 753.237  15.407 752.664  16.531 752.468  17.269 752.384
  18.408 752.244   18.95 752.177  20.061 751.864  22.097 751.255  22.558 751.116
  23.711 750.731  24.171 750.577  25.492 750.134  25.789 750.028  27.093 749.561
  28.553 749.137  28.911 749.032  28.993 749.074  29.425 749.291  30.694 749.995
  31.044 750.176  32.631 751.169   32.91 751.376   33.92 752.081  34.278  752.46
  34.448 752.609  34.767 752.844  35.024 752.641  36.469 752.949  37.114 753.084
  37.461 753.123  37.957 753.176  38.282 753.211  38.816 753.299  39.756 753.363
  41.135 753.504  42.613 753.682  43.274 753.715  44.554 753.782  45.309  753.82
  47.604  753.99  47.972 754.016  48.449 754.051  48.709 754.069  49.106 754.121
  49.814 754.217  50.234 754.282

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.408     .04  34.278    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.408  34.278            1.282   1.982   1.023             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 266.*

INPUT
Description:
Station Elevation Data    num=      52
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.077   2.431 754.176   6.595 753.657   8.311  753.51   9.255 753.413
   9.544 753.383  11.549 753.165  15.884 752.586  17.043 752.399  17.804 752.323
  18.979 752.196   19.54 752.133  20.691 751.818    22.8 751.204  23.278 751.064
  24.472 750.686  24.949 750.535  26.316 750.101  26.624 749.996  27.974 749.535
  29.487 749.093  29.859 748.984   29.94 749.028  30.376 749.256  31.655 749.997
  32.009 750.186  33.608 751.177   33.89 751.385  34.907 752.106  35.269 752.497
  35.427 752.645  35.725 752.888  35.966 752.668  37.316 752.969  37.918   753.1
  38.242 753.136  38.705 753.185   39.01 753.216  39.508 753.292  40.386 753.357
  41.674 753.488  43.055 753.648  43.673 753.684  44.868 753.758  45.574   753.8
  47.718 753.985  48.063 754.015  48.508 754.053  48.751 754.073  49.121 754.122
  49.783 754.212  50.176 754.271

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.979     .04  35.269    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.979  35.269            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 264.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.058   2.504 754.117   6.794 753.588    8.56  753.44   9.534 753.342
   9.831 753.312  11.896 753.094  16.362 752.507  17.555 752.329   18.34 752.262
  19.549 752.147   20.13 752.089   21.32 751.772  23.503 751.153  23.997 751.012
  25.232 750.642  25.726 750.494  27.141 750.067   27.46 749.964  28.856 749.509
  30.421 749.049  30.806 748.936  30.888 748.982  31.327  749.22  32.617 749.998
  32.973 750.196  34.586 751.185  34.869 751.394  35.895 752.131  36.259 752.535
  36.407 752.681  36.683 752.932  36.907 752.695  38.162 752.988  38.722 753.117
  39.023 753.149  39.454 753.193  39.737 753.222    40.2 753.286  41.016 753.352
  42.214 753.472  43.498 753.614  44.072 753.654  45.183 753.734   45.84  753.78
  47.833 753.981  48.153 754.013  48.567 754.055  48.792 754.077  49.137 754.123
  49.752 754.207  50.117 754.261

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.549     .04  36.259    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.549  36.259            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 262.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.039   2.577 754.059   6.992 753.519    8.81  753.37   9.812 753.271
  10.118  753.24  12.243 753.022  16.839 752.429  18.068  752.26  18.875 752.201
   20.12 752.099   20.72 752.044   21.95 751.726  24.205 751.102  24.716  750.96
  25.993 750.597  26.503 750.452  27.965 750.034  28.295 749.932  29.738 749.483
  31.356 749.005  31.753 748.888  31.836 748.935  32.279 749.185  33.578 749.999
  33.937 750.207  35.563 751.192  35.849 751.403  36.882 752.155   37.25 752.572
  37.386 752.717  37.642 752.976  37.849 752.723  39.008 753.007  39.526 753.133
  39.805 753.162  40.203 753.202  40.464 753.228  40.892 753.279  41.647 753.346
  42.754 753.456   43.94  753.58  44.471 753.624  45.498  753.71  46.105  753.76
  47.947 753.977  48.243 754.012  48.626 754.057  48.834 754.081  49.153 754.124
  49.721 754.202  50.059  754.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   20.12     .04   37.25    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.12   37.25            1.282   1.982   1.023             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 260

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  755.02    2.65     754    7.19  753.45    9.06   753.3   10.09   753.2
   12.59  752.95   18.58  752.19   19.41  752.14   20.69  752.05   21.31     752
   22.58  751.68   27.28  750.41   28.79     750   29.13   749.9    32.7  748.84
   33.23  749.15   34.54     750   36.54   751.2   37.87  752.18   38.24  752.61
    38.6  753.02   38.79  752.75   40.33  753.15   46.37  753.74      50  754.24

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   20.69     .04   38.24    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.69   38.24            1.556   1.999    1.97             .1      .3

CROSS SECTION
```

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 258.*

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.017	.079	754.99	.119	754.976	.436	754.865	2.041	754.266
2.653	754.038	2.904	754.004	3.696	753.896	4.152	753.837	7.197	753.468
9.069	753.311	10.1	753.208	12.603	752.953	13.705	752.814	18.599	752.2
19.43	752.146	20.711	752.05	21.285	752.003	22.237	751.767	22.46	751.701
24.525	751.056	26.123	750.549	26.81	750.349	28.207	749.94	28.266	749.921
28.522	749.841	31.826	748.793	32.178	748.998	32.401	749.129	33.432	749.789
33.823	750.031	35.16	750.802	35.916	751.242	35.993	751.289	36.01	751.301
37.088	752.076	37.436	752.299	37.838	752.697	38.21	753.074	38.407	752.835
39.999	753.229	42.871	753.533	46.246	753.861	46.732	753.925	47.156	753.991
47.249	754.005	47.426	753.856	47.495	754.044	49.106	754.195	50	754.362

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.711	.04	37.838	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.711	37.838	1.556	1.999	1.97	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 256.*

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.014	.079	754.99	.119	754.977	.436	754.878	2.043	754.296
2.655	754.075	2.906	754.038	3.7	753.919	4.156	753.855	7.205	753.487
9.078	753.322	10.11	753.217	12.616	752.957	13.719	752.818	18.618	752.21
19.449	752.151	20.732	752.05	21.26	752.006	22.135	751.793	22.34	751.722
24.239	751.036	25.708	750.488	26.34	750.288	27.625	749.879	27.679	749.861
27.914	749.781	30.952	748.746	31.331	748.966	31.572	749.108	32.684	749.813
33.106	750.062	34.548	750.866	35.363	751.326	35.446	751.378	35.464	751.391
36.627	752.209	37.003	752.417	37.436	752.784	37.821	753.128	38.024	752.92
39.669	753.307	42.635	753.645	46.122	753.982	46.624	754.046	47.062	754.121
47.158	754.137	47.341	753.816	47.412	754.181	49.076	754.269	50	754.484

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.732	.04	37.436	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.732	37.436	1.556	1.999	1.97	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 254.*

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.011	.079	754.99	.119	754.979	.437	754.891	2.046	754.327
2.658	754.113	2.909	754.072	3.704	753.942	4.161	753.873	7.212	753.505
9.088	753.332	10.121	753.225	12.628	752.96	13.733	752.822	18.637	752.22
19.469	752.157	20.753	752.05	21.234	752.009	22.033	751.819	22.22	751.743
23.953	751.015	25.294	750.427	25.87	750.227	27.042	749.819	27.092	749.801
27.306	749.722	30.078	748.699	30.485	748.934	30.743	749.087	31.936	749.836
32.388	750.093	33.936	750.929	34.81	751.41	34.899	751.467	34.919	751.481
36.166	752.341	36.569	752.536	37.034	752.871	37.431	753.182	37.64	753.005
39.338	753.386	42.4	753.757	45.998	754.103	46.516	754.166	46.968	754.251
47.067	754.268	47.256	753.775	47.33	754.318	49.047	754.343	50	754.606

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.753	.04	37.034	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
20.753	37.034	1.556	1.999	1.97	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 252.*

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	755.008	.08	754.99	.119	754.981	.437	754.903	2.048	754.357
2.661	754.151	2.912	754.106	3.708	753.964	4.165	753.891	7.219	753.523
9.097	753.343	10.131	753.234	12.641	752.963	13.747	752.826	18.655	752.23
19.489	752.163	20.774	752.05	21.209	752.012	21.931	751.844	22.101	751.764
23.667	750.994	24.879	750.366	25.4	750.167	26.46	749.759	26.504	749.741
26.698	749.663	29.204	748.652	29.638	748.902	29.915	749.066	31.188	749.86
31.671	750.124	33.323	750.992	34.257	751.494	34.353	751.556	34.373	751.571
35.705	752.474	36.136	752.655	36.632	752.958	37.041	753.235	37.257	753.09
39.008	753.464	42.164	753.869	45.874	754.224	46.408	754.287	46.874	754.381
46.976	754.4	47.171	753.734	47.247	754.456	49.017	754.417	50	754.728

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.774    .04  36.632    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.774  36.632            1.556   1.999    1.97             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 250.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.005     .08  754.99    .119 754.982    .438 754.916    2.05 754.388
   2.663 754.188   2.915  754.14   3.711 753.987   4.169 753.909   7.226 753.542
   9.106 753.354  10.141 753.242  12.654 752.966  13.761  752.83  18.674 752.241
  19.509 752.168  20.795  752.05  21.184 752.016  21.829  751.87  21.981 751.785
  23.381 750.974  24.464 750.305   24.93 750.106  25.877 749.698  25.917 749.681
   26.09 749.604   28.33 748.605  28.792  748.87  29.086 749.045   30.44 749.883
  30.954 750.155  32.711 751.055  33.704 751.579  33.806 751.645  33.828 751.661
  35.244 752.607  35.702 752.774   36.23 753.045  36.652 753.289  36.874 753.175
  38.677 753.543  41.928 753.981   45.75 754.345    46.3 754.407   46.78 754.511
  46.885 754.532  47.085 753.694  47.164 754.593  48.988  754.49      50  754.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.795    .04   36.23    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.795   36.23            1.556   1.999    1.97             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 248.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 755.002     .08  754.99     .12 754.984    .438 754.929   2.052 754.418
   2.666 754.226   2.918 754.174   3.715 754.009   4.173 753.927   7.234  753.56
   9.115 753.365  10.151  753.25  12.667  752.97  13.774 752.834  18.693 752.251
  19.528 752.174  20.816  752.05  21.159 752.019  21.727 751.896  21.861 751.806
  23.094 750.953  24.049 750.244  24.459 750.045  25.294 749.638  25.329  749.62
  25.482 749.544  27.456 748.558  27.946 748.838  28.257 749.024  29.692 749.906
  30.237 750.186  32.099 751.118  33.152 751.663  33.259 751.734  33.282  751.75
  34.784 752.739  35.269 752.893  35.828 753.132  36.262 753.343  36.491  753.26
  38.347 753.621  41.693 754.092  45.625 754.466  46.192 754.528  46.686  754.64
  46.794 754.663      47 753.653  47.081 754.731  48.958 754.564      50 754.972

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.816    .04  35.828    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.816  35.828            1.556   1.999    1.97             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 246.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.999     .08  754.99     .12 754.985    .439 754.942   2.054 754.448
   2.669 754.264   2.921 754.208   3.719 754.032   4.177 753.946   7.241 753.578
   9.124 753.376  10.162 753.259  12.679 752.973  13.788 752.838  18.712 752.261
  19.548 752.179  20.837  752.05  21.134 752.022  21.626 751.922  21.741 751.827
  22.808 750.932  23.634 750.183  23.989 749.984  24.712 749.578  24.742  749.56
  24.874 749.485  26.582 748.511  27.099 748.806  27.428 749.003  28.944  749.93
  29.519 750.217  31.487 751.181  32.599 751.747  32.712 751.823  32.737  751.84
  34.323 752.872  34.835 753.011  35.426 753.219  35.872 753.397  36.108 753.345
  38.016   753.7  41.457 754.204  45.501 754.588  46.084 754.648  46.592  754.77
  46.703 754.795  46.915 753.612  46.998 754.868  48.929 754.638      50 755.094

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.837    .04  35.426    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.837  35.426            1.556   1.999    1.97             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 244.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.996     .08  754.99     .12 754.987    .439 754.954   2.056 754.479
   2.672 754.302   2.924 754.242   3.723 754.055   4.182 753.964   7.248 753.597
```

```
   9.134 753.386  10.172 753.267  12.692 752.976  13.802 752.842  18.731 752.271
  19.568 752.185  20.858  752.05  21.108 752.025  21.524 751.948  21.621 751.848
  22.522 750.911   23.22 750.122  23.519 749.923  24.129 749.518  24.155   749.5
  24.266 749.426  25.708 748.464  26.253 748.774  26.599 748.982  28.196 749.953
  28.802 750.248  30.874 751.244  32.046 751.831  32.165 751.912  32.191  751.93
  33.862 753.005  34.402  753.13  35.024 753.306  35.482 753.451  35.724  753.43
  37.686 753.778  41.221 754.316  45.377 754.709  45.976 754.769  46.498   754.9
  46.612 754.927   46.83 753.571  46.916 755.005  48.899 754.712      50 755.216

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.858     .04  35.024    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.858  35.024            1.556   1.999    1.97             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 242.*

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.993     .08  754.99     .12 754.988     .44 754.967   2.058 754.509
   2.674 754.339   2.927 754.276   3.726 754.077   4.186 753.982   7.256 753.615
   9.143 753.397  10.182 753.276  12.705 752.979  13.816 752.846   18.75 752.281
  19.587 752.191  20.879  752.05  21.083 752.028  21.422 751.974  21.501 751.869
  22.236 750.891  22.805 750.061  23.049 749.862  23.546 749.457  23.567  749.44
  23.658 749.367  24.834 748.417  25.406 748.742   25.77 748.961  27.448 749.977
  28.085 750.279  30.262 751.307  31.493 751.916  31.618 752.001  31.646  752.02
  33.401 753.137  33.968 753.249  34.622 753.393  35.093 753.505  35.341 753.515
  37.355 753.857  40.986 754.428  45.253  754.83  45.868 754.889  46.404  755.03
  46.521 755.058  46.745 753.531  46.833 755.143   48.87 754.786      50 755.338

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  20.879     .04  34.622    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.879  34.622            1.556   1.999    1.97             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 240

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.99     .08  754.99     .12  754.99     .44  754.98    2.06  754.54
    2.93  754.31    3.73   754.1    4.19     754   13.83  752.85    20.9  752.05
   21.32     752   21.95  750.87   22.39     750   22.98  749.38   23.96  748.37
   24.56  748.71    26.7     750   29.65  751.37   30.94     752    31.1  752.11
   32.94  753.27   34.22  753.48   40.75  754.54   45.76  755.01   46.31  755.16
   46.43  755.19   46.66  753.49   46.75  755.28   48.84  754.86      50  755.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    20.9     .04   34.22    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          20.9   34.22            2.048       2   2.012             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    17.6               F
    31.5      50               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 239.3*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.893    .079 754.893    .118 754.893    .432 754.883   1.026 754.733
   1.373 754.645   1.397 754.639   1.552   754.6   1.778 754.543   2.024 754.478
   2.602 754.328   2.878  754.26   3.426 754.125   3.664 754.067   4.116 753.976
   5.037 753.873   6.768  753.67  13.585 752.851  20.255 752.087   20.53 752.059
   20.71  752.04  20.966 752.003  21.024 751.911   21.48 751.117  21.621 750.867
  21.996  750.14  22.078 749.983  22.691 749.294  22.826 749.144  23.709 748.355
  24.298 748.661  25.275 749.201  26.315 749.953    26.4 750.008  26.889 750.265
  29.298 751.357  30.565 751.959  30.722 752.062  32.053 752.868  32.529 753.143
  32.543 753.145  32.722 753.172  33.152 753.264  33.786 753.393  35.085 753.655
  37.008 753.991  40.174 754.504  45.076 754.989  45.614 755.131  45.731  755.16
  45.956 753.633  46.044 755.245  48.089 754.893  49.224 755.447

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   20.53     .04  33.786    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.53  33.786            2.048       2   2.012             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   17.69               F
```

```
    30.9  49.224               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 238.6*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.796    .077 754.796    .116 754.795    .424 754.785   1.008 754.651
   1.348  754.57   1.371 754.565   1.524  754.53   1.746 754.478   1.987 754.416
   2.555 754.271   2.826 754.209   3.364 754.087   3.598 754.035   4.042 753.953
   4.946 753.859   6.646 753.662   13.34 752.852   19.89 752.093   20.16 752.068
  20.346 752.052  20.613 752.005  20.672 751.921  21.146 751.121  21.292 750.863
  21.681 750.125  21.766 749.965  22.402 749.208  22.542 749.042  23.458  748.34
  24.037 748.613  24.996 749.094  26.017 749.958    26.1 750.017   26.58 750.299
  28.945 751.343  30.189 751.918  30.343 752.014   31.65 752.772  32.118 753.016
  32.131 753.018  32.307 753.042   32.73 753.153  33.352 753.306  34.622 753.614
  36.503 753.968  39.599 754.468  44.392 754.969  44.918 755.102  45.033 755.129
  45.253 753.775  45.339 755.209  47.338 754.925  48.448 755.434

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   20.16     .04  33.352    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.16  33.352            2.048       2   2.012             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   17.78               F
    30.3  48.448               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 237.9*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.699    .076 754.698    .114 754.698    .417 754.688    .989 754.568
   1.323 754.495   1.346  754.49   1.496  754.46   1.714 754.413   1.951 754.353
   2.508 754.215   2.774 754.159   3.302 754.049   3.532 754.002   3.967 753.929
   4.855 753.844   6.524 753.655  13.095 752.854  19.525 752.099   19.79 752.077
  19.983 752.063  20.259 752.008  20.321 751.931  20.811 751.124  20.963  750.86
  21.366 750.109  21.454 749.948  22.113 749.122  22.258 748.941  23.207 748.325
  23.775 748.564  24.716 748.986  25.718 749.963    25.8 750.025  26.271 750.333
  28.593  751.33  29.814 751.876  29.965 751.966  31.248 752.675  31.706 752.889
   31.72 752.891  31.893 752.912  32.307 753.043  32.918 753.219  34.159 753.574
  35.998 753.944  39.023 754.432  43.708 754.948  44.222 755.074  44.334 755.099
  44.549 753.918  44.633 755.174  46.587 754.958  47.672 755.421

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   19.79     .04  32.918    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         19.79  32.918            2.048       2   2.012             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   17.87               F
    29.7  47.672               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 237.2*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.602    .074 754.601    .112 754.601    .409 754.591    .971 754.485
   1.298  754.42   1.321 754.416   1.468  754.39   1.682 754.349   1.914 754.291
   2.461 754.159   2.723 754.109    3.24  754.01   3.466  753.97   3.893 753.905
   4.765 753.829   6.402 753.647  12.851 752.855   19.16 752.105   19.42 752.086
   19.62 752.074  19.905  752.01  19.969 751.941  20.477 751.128  20.633 750.856
  21.051 750.094  21.142  749.93  21.824 749.036  21.974 748.839  22.956  748.31
  23.513 748.516  24.437 748.878   25.42 749.969  25.501 750.034  25.962 750.367
   28.24 751.317  29.438 751.835  29.587 751.919  30.845 752.579  31.295 752.762
  31.309 752.763  31.478 752.781  31.885 752.932  32.484 753.132  33.697 753.533
  35.492 753.921  38.448 754.397  43.024 754.927  43.526 755.045  43.635 755.069
  43.846  754.06  43.928 755.139  45.837  754.99  46.896 755.408

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   19.42     .04  32.484    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         19.42  32.484            2.048       2   2.012             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   17.96               F
    29.1  46.896               F

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 236.5*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.505    .073 754.504    .109 754.503    .401 754.494    .952 754.403
   1.274 754.345   1.296 754.342    1.44  754.32    1.65 754.284   1.878 754.229
   2.414 754.102   2.671 754.058   3.179 753.972     3.4 753.937   3.819 753.881
   4.674 753.814    6.28 753.639  12.606 752.856  18.795 752.111   19.05 752.095
  19.256 752.085  19.552 752.013  19.618 751.951  20.142 751.132  20.304 750.853
  20.736 750.078   20.83 749.913  21.534 748.949   21.69 748.738  22.705 748.295
  23.251 748.467  24.157  748.77  25.122 749.974  25.201 750.042  25.654 750.401
  27.888 751.304  29.063 751.794  29.208 751.871  30.443 752.482  30.884 752.635
  30.897 752.636  31.063 752.651  31.462 752.822   32.05 753.045  33.234 753.493
  34.987 753.897  37.872 754.361  42.339 754.907   42.83 755.016  42.937 755.038
  43.142 754.203  43.222 755.103  45.086 755.023   46.12 755.395

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   19.05     .04   32.05    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         19.05   32.05           2.048       2   2.012             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   18.05               F
    28.5   46.12               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 235.8*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.408    .072 754.407    .107 754.406    .393 754.396    .934  754.32
   1.249  754.27   1.271 754.267   1.412  754.25   1.618 754.219   1.841 754.167
   2.368 754.046   2.619 754.008   3.117 753.933   3.334 753.904   3.745 753.858
   4.583 753.799   6.158 753.631  12.361 752.857   18.43 752.117   18.68 752.104
  18.893 752.096  19.198 752.015  19.266  751.96  19.808 751.135  19.975  750.85
   20.42 750.062  20.518 749.895  21.245 748.863  21.406 748.636  22.454  748.28
   22.99 748.418  23.878 748.662  24.823 749.979  24.901 750.051  25.345 750.434
  27.535  751.29  28.687 751.753   28.83 751.823   30.04 752.386  30.473 752.508
  30.486 752.509  30.649 752.521   31.04 752.712  31.616 752.958  32.771 753.452
  34.482 753.874  37.297 754.325  41.655 754.886  42.134 754.987  42.238 755.008
  42.438 754.345  42.517 755.068  44.335 755.056  45.344 755.382

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   18.68     .04  31.616    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.68  31.616           2.048       2   2.012             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   18.14               F
    27.9  45.344               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 235.1*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.311     .07 754.309    .105 754.309    .385 754.299    .915 754.238
   1.224 754.195   1.246 754.193   1.384  754.18   1.586 754.154   1.805 754.105
   2.321 753.989   2.567 753.958   3.055 753.895   3.268 753.872   3.671 753.834
   4.492 753.784   6.036 753.623  12.116 752.858  18.065 752.122   18.31 752.113
   18.53 752.107  18.844 752.018  18.915  751.97  19.473 751.139  19.646 750.846
  20.105 750.047  20.206 749.878  20.956 748.777  21.122 748.535  22.203 748.265
  22.728  748.37  23.598 748.554  24.525 749.984  24.601 750.059  25.036 750.468
  27.183 751.277  28.312 751.712  28.452 751.775  29.638 752.289  30.062 752.381
  30.074 752.382  30.234 752.391  30.617 752.601  31.182 752.871  32.308 753.412
  33.976  753.85  36.721 754.289  40.971 754.866  41.438 754.958   41.54 754.978
  41.735 754.488  41.811 755.033  43.584 755.088  44.568 755.369

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   18.31     .04  31.182    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.31  31.182           2.048       2   2.012             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   18.23               F
    27.3  44.568               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 234.4*
```

```
INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.214    .069 754.212    .103 754.211    .378 754.202    .897 754.155
   1.199  754.12    1.22 754.119   1.356  754.11   1.554  754.09   1.768 754.043
   2.274 753.933   2.515 753.907   2.993 753.857   3.202 753.839   3.597  753.81
   4.402  753.77   5.914 753.616  11.871  752.86    17.7 752.128   17.94 752.122
  18.167 752.118  18.491  752.02  18.563  751.98  19.139 751.143  19.317 750.843
   19.79 750.031  19.894  749.86  20.667 748.691  20.838 748.433  21.952  748.25
  22.466 748.321  23.319 748.446  24.227  749.99  24.301 750.068  24.727 750.502
   26.83 751.264  27.936  751.67  28.073 751.727  29.235 752.193  29.651 752.254
  29.663 752.254  29.819  752.26  30.195 752.491  30.748 752.784  31.846 753.371
  33.471 753.827  36.146 754.253  40.287 754.845  40.742  754.93  40.841 754.947
  41.031  754.63  41.105 754.997  42.833 755.121  43.792 755.356

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   17.94     .04  30.748    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.94  30.748            2.048       2   2.012             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   18.32               F
    26.7  43.792               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 233.7*

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 754.117    .067 754.115    .101 754.114     .37 754.105    .878 754.073
   1.175 754.045   1.195 754.044   1.328  754.04   1.522 754.025   1.732  753.98
   2.227 753.876   2.463 753.857   2.932 753.818   3.136 753.807   3.522 753.787
   4.311 753.755   5.792 753.608  11.626 752.861  17.335 752.134   17.57 752.131
  17.803 752.129  18.137 752.023  18.212  751.99  18.804 751.146  18.988 750.839
  19.475 750.016  19.582 749.843  20.378 748.605  20.554 748.332  21.701 748.235
  22.205 748.272  23.039 748.338  23.928 749.995  24.001 750.076  24.419 750.536
  26.478  751.25  27.561 751.629  27.695 751.679  28.833 752.096  29.239 752.127
  29.251 752.127  29.405  752.13  29.772  752.38  30.314 752.697  31.383 753.331
  32.965 753.803   35.57 754.218  39.603 754.824  40.046 754.901  40.142 754.917
  40.327 754.773    40.4 754.962  42.082 755.153  43.016 755.343

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   17.57     .04  30.314    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.57  30.314            2.048       2   2.012             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   18.41               F
    26.1  43.016               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 233

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.02     .86  753.99    1.15  753.97    1.17  753.97     1.3  753.97
    1.49  753.96    2.18  753.82    2.87  753.78    4.22  753.74    5.67   753.6
   16.97  752.14    17.2  752.14   17.44  752.14   17.86     752   18.47  751.15
   19.16     750   20.27  748.23   21.45  748.22   22.76  748.23   23.63     750
   24.11  750.57   28.43     752   28.84     752   28.99     752   29.35  752.27
   29.88  752.61   30.92  753.29   32.46  753.78   42.24  755.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    17.2     .04   29.88    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          17.2   29.88            9.24    9.23    8.95             .1      .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    18.5               F
    25.5   42.24               F

CULVERT


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 229

INPUT
Description:
Distance from Upstream XS =       2
Deck/Roadway Width        =       5
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      10     753     748      40     753     748
```

```
Upstream Bridge Cross Section Data
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.02     .86  753.99    1.15  753.97    1.17  753.97     1.3  753.97
    1.49  753.96    2.18  753.82    2.87  753.78    4.22  753.74    5.67   753.6
   16.97  752.14    17.2  752.14   17.44  752.14   17.86     752   18.47  751.15
   19.16     750   20.27  748.23   21.45  748.22   22.76  748.23   23.63     750
   24.11  750.57   28.43     752   28.84     752   28.99     752   29.35  752.27
   29.88  752.61   30.92  753.29   32.46  753.78   42.24  755.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    17.2     .04   29.88    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
          17.2   29.88            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    18.5               F
    25.5   42.24               F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
      10     753     748      40     753     748

Downstream Bridge Cross Section Data
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  753.28     .21  753.25    1.08  753.16    1.92  753.07    2.28  753.06
    3.12  752.98    3.94  752.91    8.12  752.83     9.8  752.78   12.27  752.76
    13.1  752.64   13.83  752.46   14.56  752.47    15.3  752.48   15.55  752.48
   15.67  752.48    16.7  748.13   17.97  748.13   19.33  748.13   20.23  748.13
   20.37  748.13   20.89  752.25   22.35  752.23   24.23  751.91   24.84     752
   25.55  752.09   27.43  752.35   28.31  752.34    28.6  752.34   29.52  752.52
   29.94  752.53   30.35  752.54   30.73  752.55   31.39   752.7   31.86  752.71
   32.31  752.72   32.73  752.72   33.11  752.72   33.75  752.85   34.08  752.91
   34.56  752.92   35.55  753.05   39.23  753.29   40.04  753.32   40.82  753.36

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   14.56     .04   25.55    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
         14.56   25.55            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    14.5               F
    21.5   40.82               F

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box     2.5       7
FHWA Chart # 58- Rectangular concrete
FHWA Scale # 2 - Side tapered; More favorable edges
Solution Criteria = Outlet control
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  2       5     .015     .015        0                  .2                1
Upstream   Elevation =  748.23
           Centerline Station =  22
Downstream Elevation =  748.13
           Centerline Station =  18

CULVERT OUTPUT  Profile #PF 1  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      22.61    Culv Full Len (m)         5.00
  # Barrels                   1    Culv Vel US (m/s)         1.29
  Q Barrel (m3/s)          22.61    Culv Vel DS (m/s)         1.29
  E.G. US. (m)            751.20    Culv Inv El Up (m)      748.23
  W.S. US. (m)            751.00    Culv Inv El Dn (m)      748.13
  E.G. DS (m)             751.18    Culv Frctn Ls (m)         0.00
  W.S. DS (m)             751.00    Culv Exit Loss (m)        0.00
  Delta EG (m)              0.02    Culv Entr Loss (m)        0.02
  Delta WS (m)              0.01    Q Weir (m3/s)
  E.G. IC (m)             750.05    Weir Sta Lft (m)
  E.G. OC (m)             751.20    Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       750.73    Weir Max Depth (m)
  Culv WS Outlet (m)      750.63    Weir Avg Depth (m)
  Culv Nml Depth (m)                Weir Flow Area (m2)
  Culv Crt Depth (m)        1.02    Min El Weir Flow (m)    753.00


CULVERT OUTPUT  Profile #PF 2  Culv Group:  Culvert #1

  Q Culv Group (m3/s)      55.78    Culv Full Len (m)         5.00
  # Barrels                   1    Culv Vel US (m/s)         3.19
  Q Barrel (m3/s)          55.78    Culv Vel DS (m/s)         3.19
  E.G. US. (m)            752.70    Culv Inv El Up (m)      748.23
  W.S. US. (m)            752.34    Culv Inv El Dn (m)      748.13
  E.G. DS (m)             752.59    Culv Frctn Ls (m)         0.01
  W.S. DS (m)             752.05    Culv Exit Loss (m)        0.00
  Delta EG (m)              0.12    Culv Entr Loss (m)        0.10
```

Delta WS (m)	0.29	Q Weir (m3/s)	
E.G. IC (m)	751.59	Weir Sta Lft (m)	
E.G. OC (m)	752.70	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	750.73	Weir Max Depth (m)	
Culv WS Outlet (m)	750.63	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.86	Min El Weir Flow (m)	753.00

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 224

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	753.28	.21	753.25	1.08	753.16	1.92	753.07	2.28	753.06
3.12	752.98	3.94	752.91	8.12	752.83	9.8	752.78	12.27	752.76
13.1	752.64	13.83	752.46	14.56	752.47	15.3	752.48	15.55	752.48
15.67	752.48	16.7	748.13	17.97	748.13	19.33	748.13	20.23	748.13
20.37	748.13	20.89	752.25	22.35	752.23	24.23	751.91	24.84	752
25.55	752.09	27.43	752.35	28.31	752.34	28.6	752.34	29.52	752.52
29.94	752.53	30.35	752.54	30.73	752.55	31.39	752.7	31.86	752.71
32.31	752.72	32.73	752.72	33.11	752.72	33.75	752.85	34.08	752.91
34.56	752.92	35.55	753.05	39.23	753.29	40.04	753.32	40.82	753.36

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	14.56	.04	25.55	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
14.56	25.55	.297	1.41	2.643	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	14.5		F
21.5	40.82		F

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 222.666*

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	753.523	.238	753.502	.689	753.473	.948	753.443	1.223	753.404
1.653	753.353	1.823	753.336	2.082	753.303	2.175	753.29	2.583	753.254
2.77	753.229	2.835	753.226	3.534	753.14	3.734	753.117	4.463	753.03
4.512	753.026	4.69	753.021	5.428	752.969	6.092	752.922	6.699	752.885
7.242	752.865	7.825	752.829	8.376	752.799	9.198	752.775	10.815	752.718
11.101	752.707	13.899	752.631	14.104	752.609	14.839	752.536	15.035	752.505
15.666	752.37	16.493	752.32	16.564	752.314	16.628	752.314	17.312	752.078
17.64	751.952	18.028	751.801	18.214	751.728	18.406	751.304	19.26	749.352
19.81	748.103	20.657	748.103	21.563	748.103	22.163	748.103	22.257	748.103
22.742	750.964	24.103	751.272	24.818	751.353	25.005	751.377	25.856	751.343
26.35	751.435	26.425	751.449	27.087	751.563	29.154	751.975	30.122	752.081
30.441	752.117	31.387	752.339	31.453	752.351	31.915	752.389	31.928	752.39
31.971	752.391	32.366	752.417	32.783	752.445	33.509	752.581	34.011	752.613
34.026	752.614	34.521	752.63	34.983	752.64	35.401	752.649	36.105	752.75
36.468	752.797	36.996	752.815	38.084	752.924	42.131	753.167	43.022	753.205
43.567	753.234	43.88	753.247						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	16.493	.04	27.087	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
16.493	27.087	.297	1.41	2.643	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
017.16333			F
24.76667	43.88		F

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Arriba RS: 221.333*

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	753.767	.266	753.754	.769	753.736	1.059	753.702	1.059	753.688
1.367	753.649	1.846	753.586	2.036	753.568	2.326	753.526	2.43	753.51
2.885	753.447	3.095	753.415	3.168	753.413	3.949	753.3	4.172	753.268
4.986	753.15	5.041	753.143	5.24	753.135	6.064	753.045	6.806	752.961
7.485	752.897	8.091	752.868	8.743	752.804	9.358	752.755	10.276	752.721
12.082	752.649	12.403	752.634	15.529	752.502	15.757	752.485	16.579	752.432
16.798	752.412	17.503	752.28	18.427	752.17	18.522	752.157	18.609	752.157
19.536	751.679	19.98	751.424	20.505	751.122	20.757	750.977	21.018	750.652
22.175	749.076	22.92	748.077	23.343	748.077	23.797	748.077	24.097	748.077
24.143	748.077	24.593	749.678	25.856	750.313	26.519	750.607	26.692	750.688
27.482	750.776	27.94	750.883	28.009	750.899	28.623	751.037	30.878	751.601
31.934	751.821	32.282	751.895	33.313	752.169	33.385	752.182	33.889	752.248
33.904	752.25	33.95	752.25	34.381	752.293	34.837	752.339	35.629	752.463
36.175	752.517	36.192	752.517	36.732	752.541	37.236	752.56	37.692	752.577

```
  38.459 752.649  38.855 752.684  39.431  752.71  40.619 752.798  45.033 753.044
  46.004 753.091  46.598 753.122   46.94 753.133

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.427     .04  28.623    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.427  28.623             .297    1.41   2.643             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       019.82667               F
28.03333   46.94               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 220

INPUT
Description:
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  754.01     .85     754    1.17  753.96    1.17  753.94    2.04  753.82
    2.25   753.8    2.57  753.75    3.42   753.6     3.5   753.6    4.61  753.42
    5.57  753.26    5.79  753.25     6.7  753.12    7.52     753    8.27  752.91
    8.94  752.87    9.66  752.78   10.34  752.71   13.35  752.58   17.41  752.36
   18.56  752.32   20.36  752.02   20.48     752   20.59     752   21.76  751.28
   23.63     750   25.09   748.8   26.03  748.05   28.22  749.86   28.38     750
   29.53  750.33   30.16  750.51   35.24     752   35.88  752.11   35.93  752.11
   38.34  752.42   49.63  753.01      50  753.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   20.36     .04   30.16    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.36   30.16           1.428   1.819   2.355             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   22.49               F
    31.3      50               F

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 218.181*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 753.821    .394 753.816    .818  753.81   1.126 753.772   1.126 753.754
   1.963 753.642   2.165 753.623   2.473 753.577   3.291 753.438   3.368 753.438
   4.437 753.271   5.361 753.122   5.572 753.112   6.448 752.991   7.237  752.88
   7.959 752.795   8.604 752.757   9.297 752.673   9.951 752.607  12.848  752.48
  15.525 752.334  16.755 752.269    17.1 752.258  17.297 752.251  17.862 752.228
  19.595  751.94   19.72 751.919  19.835 751.917  20.105 751.767  21.057 751.226
  22.917 750.056  23.011  749.99  23.218 749.821  24.435   748.8  24.537 748.722
  25.197 748.231  25.519 747.991  26.428  748.74   27.36 749.503  27.597 749.706
  27.749 749.843   28.84 750.213  29.005 750.269  29.438 750.407      30 750.613
  33.548 751.608  34.526 751.878  35.167 751.984  35.217 751.984  36.929 752.201
   37.63 752.291  41.068 752.495  42.093 752.554  44.448 752.683  45.286 752.731
  45.395 752.737   45.68 752.753  45.858 752.763  45.946 752.767  48.519 752.898
  48.686 752.906  48.937 752.919  49.307 752.928

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  19.595     .04  29.438    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.595  29.438           1.428   1.819   2.355             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 216.363*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 753.632    .378 753.626    .786 753.619   1.082 753.584   1.082 753.568
   1.887 753.464   2.081 753.447   2.377 753.404   3.163 753.276   3.237 753.275
   4.263 753.121   5.151 752.984   5.355 752.975   6.196 752.863   6.955 752.759
   7.648 752.681   8.268 752.644   8.934 752.566   9.563 752.504  12.346 752.379
  14.918 752.239  16.101 752.179  16.432 752.168  16.621 752.162  17.164 752.136
  18.829  751.86   18.96 751.839   19.08 751.834  19.362 751.693  20.355 751.171
  22.294 750.051  22.393  749.98  22.608 749.803  23.877  748.72  23.984 748.644
  24.673 748.166  25.008 747.932  25.869 748.638   26.75 749.352  26.975 749.552
  27.118 749.686  28.151 750.096  28.307 750.158  28.716 750.305  29.279 750.552
  32.832 751.502  33.811 751.755  34.453 751.858  34.503 751.859  36.218 752.072
   36.92 752.162  40.363  752.39   41.39 752.456  43.749 752.589  44.588 752.643
  44.696  752.65  44.982 752.666   45.16 752.677  45.249  752.68  47.825 752.809
  47.993 752.816  48.243 752.827  48.615 752.836

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.829     .04  28.716    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.829  28.716             1.428   1.819   2.355             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 214.545*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 753.443    .363 753.437    .754 753.429   1.038 753.397   1.038 753.382
    1.81 753.287   1.996  753.27    2.28 753.231   3.034 753.114   3.105 753.113
    4.09 752.972   4.942 752.846   5.137 752.837   5.944 752.734   6.672 752.639
   7.337 752.566   7.932 752.531    8.57 752.459   9.174 752.402  11.844 752.279
  14.312 752.143  15.446 752.088  15.764 752.078  15.946 752.073  16.467 752.043
  18.064  751.78    18.2 751.758  18.325 751.751  18.618  751.62  19.652 751.117
  21.672 750.045  21.774  749.97  21.998 749.786   23.32  748.64  23.431 748.566
  24.148   748.1  24.497 747.873  25.309 748.536   26.14 749.202  26.352 749.398
  26.487 749.529  27.461 749.979  27.608 750.047  27.995 750.202  28.558 750.491
  32.116 751.396  33.097 751.633   33.74 751.732   33.79 751.733  35.507 751.943
  36.211 752.033  39.658 752.286  40.686 752.358  43.049 752.496  43.889 752.555
  43.998 752.562  44.284 752.578  44.462  752.59  44.551 752.594  47.131 752.719
  47.299 752.725   47.55 752.736  47.922 752.745

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  18.064     .04  27.995    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.064  27.995             1.428   1.819   2.355             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 212.727*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 753.254    .348 753.247    .722 753.238    .994 753.209    .994 753.196
   1.733 753.109   1.912 753.093   2.184 753.058   2.906 752.951   2.974 752.951
   3.917 752.822   4.732 752.708   4.919 752.699   5.692 752.605   6.389 752.518
   7.026 752.452   7.596 752.418   8.207 752.352   8.785 752.299  11.342 752.178
  13.705 752.048  14.792 751.998  15.096 751.988   15.27 751.984  15.769 751.951
  17.298   751.7   17.44 751.677  17.569 751.668  17.875 751.546   18.95 751.062
  21.049 750.039  21.155  749.96  21.388 749.769  22.762  748.56  22.878 748.489
  23.623 748.035  23.986 747.814  24.749 748.434   25.53 749.052  25.729 749.245
  25.856 749.373  26.771 749.862   26.91 749.936  27.273 750.099  27.837 750.429
  31.401 751.291  32.383 751.511  33.026 751.605  33.077 751.607  34.796 751.814
  35.501 751.904  38.954 752.181  39.983 752.259  42.349 752.403   43.19 752.467
  43.299 752.474  43.586 752.491  43.764 752.504  43.854 752.507  46.437 752.629
  46.605 752.634  46.857 752.644  47.229 752.653

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  17.298     .04  27.273    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        17.298  27.273             1.428   1.819   2.355             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 210.909*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 753.065    .332 753.057     .69 753.048     .95 753.021     .95  753.01
   1.657 752.931   1.827 752.917   2.087 752.884   2.777 752.789   2.842 752.788
   3.743 752.673   4.523  752.57   4.702 752.561   5.441 752.476   6.106 752.398
   6.715 752.337   7.259 752.305   7.844 752.245   8.396 752.196   10.84 752.078
  13.099 751.952  14.137 751.907  14.428 751.899  14.594 751.895  15.071 751.859
  16.533  751.62   16.68 751.597  16.814 751.586  17.131 751.472  18.247 751.008
  20.426 750.034  20.537  749.95  20.779 749.752  22.205  748.48  22.324 748.411
  23.098  747.97  23.475 747.755  24.189 748.332   24.92 748.902  25.106 749.091
  25.225 749.216  26.082 749.745  26.211 749.825  26.551 749.996  27.116 750.368
  30.685 751.185  31.668 751.388  32.313 751.479  32.363 751.482  34.085 751.684
  34.791 751.775  38.249 752.077   39.28 752.161  41.649  752.31  42.492 752.379
  42.601 752.386  42.888 752.404  43.067 752.418  43.156  752.42  45.743 752.539
  45.912 752.544  46.164 752.553  46.536 752.561

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.533     .04  26.551    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.533  26.551             1.428   1.819   2.355             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 209.090*

INPUT
```

```
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.875    .317 752.868    .658 752.857    .906 752.833    1.58 752.753
   1.742  752.74    1.99 752.711   2.649 752.627    2.71 752.626    3.57 752.523
   4.314 752.432   4.484 752.424   5.189 752.348   5.824 752.278   6.404 752.223
   6.923 752.192   7.481 752.138   8.008 752.093  10.339 751.978  12.492 751.857
  13.483 751.817   13.76 751.809  13.919 751.806  14.373 751.767  15.767  751.54
   15.92 751.516  16.059 751.503  16.388 751.399  17.544 750.953  19.804 750.028
  19.918  749.94  20.169 749.735  21.647   748.4  21.771 748.333  22.574 747.905
  22.965 747.695  23.629  748.23   24.31 748.751  24.484 748.937  24.594 749.059
  25.392 749.628  25.513 749.714  25.829 749.894  26.395 750.307  29.969 751.079
  30.954 751.266  31.599 751.353   31.65 751.356  33.374 751.555  34.081 751.646
  37.544 751.972  38.576 752.062  40.949 752.216  41.793 752.291  41.902 752.299
   42.19 752.316  42.369 752.332  42.458 752.334  45.049 752.449  45.218 752.453
   45.47 752.461  45.844 752.469

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.767     .04  25.829    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.767  25.829            1.428   1.819   2.355             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 207.272*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.686    .302 752.678    .626 752.667    .862 752.645   1.503 752.575
   1.658 752.563   1.894 752.538    2.52 752.465   2.579 752.463   3.397 752.374
   4.104 752.294   4.266 752.286   4.937 752.219   5.541 752.157   6.094 752.108
   6.587 752.079   7.118 752.031   7.619  751.99   9.837 751.877  11.886 751.762
  12.828 751.726  13.092 751.719  13.243 751.716  13.676 751.675  15.002  751.46
   15.16 751.436  15.304  751.42  15.644 751.325  16.842 750.899  19.181 750.022
  19.299  749.93  19.559 749.718   21.09  748.32  21.218 748.255  22.049  747.84
  22.454 747.636  23.069 748.128    23.7 748.601  23.861 748.783  23.964 748.902
  24.702 749.512  24.814 749.604  25.107 749.791  25.674 750.245  29.253 750.973
  30.239 751.144  30.886 751.227  30.936  751.23  32.663 751.426  33.371 751.517
  36.839 751.868  37.873 751.964  40.249 752.123  41.094 752.203  41.204 752.211
  41.492 752.229  41.671 752.245  41.761 752.247  44.356 752.359  44.525 752.363
  44.777  752.37  45.151 752.377

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.002     .04  25.107    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.002  25.107            1.428   1.819   2.355             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 205.454*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.497    .286 752.489    .594 752.476    .818 752.457   1.426 752.397
   1.573 752.387   1.797 752.365   2.391 752.303   2.447 752.301   3.223 752.224
   3.895 752.157   4.049 752.148   4.685  752.09   5.258 752.037   5.783 751.994
   6.251 751.966   6.755 751.923    7.23 751.887   9.335 751.777  11.279 751.666
  12.174 751.636  12.424 751.629  12.567 751.627  12.978 751.582  14.236  751.38
  14.399 751.355  14.549 751.337  14.901 751.251  16.139 750.845  18.558 750.017
  18.681  749.92  18.949 749.701  20.532  748.24  20.665 748.177  21.524 747.775
  21.943 747.577   22.51 748.026   23.09 748.451  23.238 748.629  23.333 748.745
  24.013 749.395  24.116 749.493  24.385 749.688  24.953 750.184  28.537 750.867
  29.525 751.021  30.173 751.101  30.223 751.105  31.953 751.297  32.661 751.388
  36.134 751.763   37.17 751.865   39.55  752.03  40.396 752.114  40.505 752.123
  40.794 752.142  40.973 752.159  41.063  752.16  43.662  752.27  43.831 752.272
  44.084 752.278  44.458 752.285

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.236     .04  24.385    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.236  24.385            1.428   1.819   2.355             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 203.636*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.308    .271 752.299    .562 752.286    .774  752.27   1.35  752.22
   1.489  752.21     1.7 752.192   2.263 752.141   2.316 752.139    3.05 752.075
   3.685 752.019   3.831 752.011   4.433 751.961   4.976 751.917   5.472 751.879
   5.915 751.853   6.391 751.816   6.841 751.785   8.833 751.676  10.673 751.571
  11.519 751.545  11.756  751.54  11.891 751.538   12.28  751.49  13.471   751.3
  13.639 751.274  13.794 751.254  14.157 751.177  15.437  750.79  17.935 750.011
  18.062  749.91   18.34 749.684  19.975  748.16  20.112 748.099  20.999  747.71
```

```
  21.432 747.518   21.95 747.924   22.48 748.301  22.615 748.475  22.702 748.588
  23.323 749.278  23.417 749.382  23.664 749.585  24.232 750.123  27.822 750.762
  28.811 750.899  29.459 750.975   29.51 750.979  31.242 751.168  31.952 751.259
   35.43 751.659  36.467 751.767   38.85 751.937  39.697 752.026  39.807 752.035
  40.096 752.055  40.276 752.073  40.365 752.073  42.968  752.18  43.137 752.181
  43.391 752.187  43.765 752.194

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.471     .04  23.664    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.471  23.664            1.428   1.819   2.355             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 201.818*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 752.119     .255  752.11      .53 752.095      .73 752.082   1.273 752.042
   1.404 752.033   1.604 752.019   2.134 751.979   2.184 751.976   2.877 751.925
   3.476 751.881   3.613 751.873   4.181 751.833   4.693 751.796   5.161 751.765
   5.579  751.74   6.028 751.709   6.453 751.682   8.331 751.576  10.066 751.475
  10.865 751.455  11.088  751.45  11.216 751.449  11.582 751.398  12.705  751.22
  12.879 751.194  13.039 751.171  13.414 751.104  14.734 750.736  17.313 750.006
  17.443   749.9   17.73 749.667  19.417  748.08  19.559 748.022  20.475 747.645
  20.921 747.459   21.39 747.822   21.87  748.15  21.993 748.321  22.071 748.431
  22.634 749.161  22.719 749.271  22.942 749.483  23.511 750.061  27.106 750.656
  28.096 750.776  28.746 750.849  28.796 750.853  30.531 751.039  31.242  751.13
  34.725 751.555  35.763 751.668   38.15 751.843  38.999 751.938  39.108 751.948
  39.398 751.967  39.578 751.986  39.668 751.987  42.274  752.09  42.444 752.091
  42.697 752.095  43.073 752.102

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.705     .04  22.942    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.705  22.942            1.428   1.819   2.355             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 200

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  751.93      .24  751.92     9.46  751.38   10.42  751.36   10.54  751.36
   11.94  751.14   12.67  751.03   16.69     750   17.12  749.65   18.86     748
   19.95  747.58   20.41   747.4   20.83  747.72   21.26     748   22.02  749.16
   22.22  749.38   22.79     750   26.39  750.55   29.82  750.91   34.02  751.45
   35.06  751.57   37.45  751.75    38.3  751.85   38.41  751.86    38.7  751.88
   38.88   751.9   38.97   751.9   41.58     752   41.75     752   42.38  752.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   11.94     .04  22.22    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         11.94   22.22            2.458   1.836    .571             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 198.181*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 751.979     .238 751.964     1.72 751.848   6.701 751.414   7.159 751.373
   7.327  751.36   9.362 751.151  10.312 751.087  10.431 751.081  10.979 750.975
  11.816 750.841  12.506 750.736  12.529  750.73  16.306 749.758  16.713 749.435
  17.209 748.977  18.358 747.916  19.388 747.522  19.823 747.354  20.406 747.704
  20.814 747.919  21.004 748.025  22.059 749.224  22.151 749.302  22.337 749.443
  22.898  750.01  26.439 750.535  29.599 750.863  29.813 750.885   32.66 751.243
  33.944 751.403  34.967 751.518  37.317 751.696  38.153 751.792  38.262 751.801
  38.547 751.821  38.724 751.841  38.812 751.841  39.694 751.878  41.379 751.948
  41.547 751.949  42.166 751.962

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.816     .04  22.337    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.816  22.337            2.458   1.836    .571             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 196.363*

INPUT
```

```
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.028    .235 752.008   1.702 751.863   6.631 751.291   7.084 751.236
    7.25 751.219   9.264 750.922  10.204 750.814  10.322 750.802  10.864 750.678
  11.693 750.542  12.343 750.441  12.364 750.436  15.923 749.516  16.306 749.221
  16.773 748.802  17.855 747.833  18.826 747.465  19.235 747.307  19.982 747.688
  20.505 747.927  20.747 748.051  22.099 749.288  22.215 749.372  22.455 749.505
  23.006  750.02  26.488 750.519  29.595 750.839  29.805  750.86  32.605 751.204
  33.867 751.356  34.873 751.467  37.185 751.642  38.007 751.733  38.113 751.743
  38.394 751.763  38.568 751.781  38.655 751.782  39.521 751.821  41.179 751.896
  41.343 751.898  41.953 751.914

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.693     .04  22.455    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.693  22.455            2.458   1.836    .571             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 194.545*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.077    .233 752.052   1.684 751.878   6.561 751.167   7.009 751.098
   7.173 751.078   9.166 750.694  10.096 750.541  10.213 750.523  10.749  750.38
  11.569 750.243  12.179 750.147  12.199 750.142  15.539 749.274  15.898 749.006
  16.338 748.628  17.353 747.749  18.264 747.407  18.648 747.261  19.559 747.672
  20.195 747.935  20.491 748.076  22.138 749.352   22.28 749.442  22.572 749.568
  23.114 750.031  26.536 750.504  29.591 750.814  29.798 750.835   32.55 751.164
  33.791 751.309   34.78 751.415  37.052 751.588   37.86 751.675  37.965 751.684
   38.24 751.704  38.411 751.722  38.497 751.723  39.349 751.764  40.978 751.843
   41.14 751.847  41.739 751.865

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.569     .04  22.572    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.569  22.572            2.458   1.836    .571             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 192.727*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.126     .23 752.096   1.666 751.893   6.491 751.044   6.934 750.961
   7.097 750.937   9.068 750.465   9.988 750.268  10.103 750.245  10.634 750.083
  11.445 749.944  12.016 749.853  12.034 749.848  15.155 749.032  15.491 748.792
  15.902 748.453   16.85 747.666  17.702  747.35  18.061 747.215  19.135 747.656
  19.886 747.944  20.234 748.102  22.178 749.416  22.345 749.511  22.689 749.631
  23.222 750.041  26.585 750.488  29.587  750.79   29.79  750.81  32.495 751.125
  33.714 751.262  34.686 751.363  36.919 751.534  37.713 751.617  37.816 751.626
  38.087 751.645  38.255 751.662  38.339 751.664  39.177 751.707  40.778 751.791
  40.937 751.795  41.525 751.817

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.445     .04  22.689    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.445  22.689            2.458   1.836    .571             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 190.909*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.175    .228 752.141   1.648 751.909   6.421  750.92   6.859 750.824
    7.02 750.796    8.97 750.236   9.881 749.995   9.994 749.966  10.519 749.785
  11.322 749.645  11.852 749.558  11.869 749.554  14.772  748.79  15.084 748.577
  15.466 748.278  16.348 747.582   17.14 747.292  17.474 747.168  18.711  747.64
  19.577 747.952  19.978 748.127  22.217  749.48   22.41 749.581  22.806 749.694
   23.33 750.051  26.634 750.473  29.583 750.766  29.783 750.785   32.44 751.086
  33.638 751.215  34.593 751.311  36.786 751.479  37.567 751.559  37.668 751.567
  37.934 751.587  38.099 751.603  38.182 751.606  39.004 751.651  40.577 751.739
  40.734 751.744  41.312 751.769

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.322     .04  22.806    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.322  22.806            2.458   1.836    .571             .1      .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 189.090*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.225    .225 752.185    1.63 751.924   6.351 750.797   6.785 750.687
   6.943 750.655   8.872 750.007   9.773 749.721   9.885 749.687  10.404 749.488
  11.198 749.345  11.688 749.264  11.705  749.26  14.388 748.548  14.677 748.362
   15.03 748.104  15.845 747.499  16.577 747.234  16.886 747.122  18.287 747.624
  19.267  747.96  19.722 748.153  22.257 749.544  22.475 749.651  22.924 749.756
  23.438 750.061  26.683 750.458   29.58 750.741  29.775 750.761  32.385 751.046
  33.562 751.169  34.499  751.26  36.654 751.425   37.42   751.5  37.519 751.509
  37.781 751.528  37.943 751.544  38.024 751.547  38.832 751.594  40.377 751.687
   40.53 751.693  41.098 751.721

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.198     .04  22.924    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.198  22.924            2.458   1.836    .571             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 187.272*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.274    .223 752.229   1.612 751.939    6.28 750.674    6.71 750.549
   6.867 750.514   8.774 749.778   9.665 749.448   9.776 749.408  10.289  749.19
  11.075 749.046  11.525 748.969   11.54 748.966  14.004 748.306   14.27 748.148
  14.594 747.929  15.343 747.415  16.015 747.177  16.299 747.076  17.863 747.607
  18.958 747.968  19.465 748.178  22.296 749.608   22.54 749.721  23.041 749.819
  23.545 750.072  26.732 750.442  29.576 750.717  29.768 750.736   32.33 751.007
  33.485 751.122  34.406 751.208  36.521 751.371  37.273 751.442  37.371  751.45
  37.627  751.47  37.787 751.484  37.866 751.488  38.659 751.537  40.176 751.635
  40.327 751.642  40.885 751.673

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.075     .04  23.041    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.075  23.041            2.458   1.836    .571             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 185.454*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.323     .22 752.273   1.594 751.954    6.21  750.55   6.635 750.412
    6.79 750.373   8.676  749.55   9.557 749.175   9.667 749.129  10.175 748.893
  10.951 748.747  11.361 748.675  11.375 748.672  13.621 748.064  13.863 747.933
  14.158 747.754  14.841 747.331  15.453 747.119  15.712 747.029   17.44 747.591
  18.648 747.976  19.209 748.204  22.335 749.672  22.605 749.791  23.158 749.882
  23.653 750.082  26.781 750.427  29.572 750.693   29.76 750.711  32.275 750.968
  33.409 751.075  34.312 751.156  36.388 751.317  37.127 751.384  37.222 751.392
  37.474 751.411  37.631 751.425  37.709 751.429  38.487  751.48  39.976 751.582
  40.124 751.591  40.671 751.625

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.951     .04  23.158    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.951  23.158            2.458   1.836    .571             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 183.636*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.372    .218 752.317   1.576 751.969    6.14 750.427    6.56 750.275
   6.713 750.232   8.578 749.321   9.449 748.902   9.558  748.85   10.06 748.595
  10.827 748.448  11.198 748.381   11.21 748.378  13.237 747.822  13.455 747.719
  13.722 747.579  14.338 747.248  14.891 747.062  15.125 746.983  17.016 747.575
  18.339 747.984  18.952 748.229  22.375 749.736   22.67  749.86  23.275 749.945
  23.761 750.092  26.829 750.411  29.568 750.669  29.753 750.686   32.22 750.929
  33.332 751.028  34.219 751.104  36.256 751.263   36.98 751.326  37.074 751.333
  37.321 751.352  37.474 751.365  37.551  751.37  38.315 751.424  39.775  751.53
   39.92  751.54  40.457 751.576

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.827     .04  23.275    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.827  23.275            2.458   1.836    .571             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 181.818*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.421    .215 752.361   1.558 751.985    6.07 750.303   6.485 750.137
   6.637 750.091    8.48 749.092   9.341 748.629   9.449 748.571   9.945 748.298
  10.704 748.149  11.034 748.086  11.045 748.084  12.854  747.58  13.048 747.504
  13.286 747.405  13.836 747.164  14.329 747.004  14.537 746.936  16.592 747.559
  18.029 747.992  18.696 748.254  22.414 749.799  22.735  749.93  23.393 750.007
  23.869 750.102  26.878 750.396  29.564 750.644  29.745 750.661  32.165 750.889
  33.256 750.981  34.125 751.053  36.123 751.209  36.833 751.267  36.925 751.275
  37.168 751.294  37.318 751.306  37.393 751.311  38.142 751.367  39.575 751.478
  39.717 751.489  40.244 751.528

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.704     .04  23.393    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.704  23.393            2.458   1.836    .571             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 180

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.47    1.54     752       6  750.18    6.41     750    6.56  749.95
    9.83     748   10.58  747.85   10.88  747.79   12.85  747.23   13.95  746.89
   17.72     748   17.73     748    22.8     750   23.51  750.07   29.56  750.62
   32.11  750.85   37.97  751.31   40.03  751.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.58     .04   23.51    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.58   23.51            2.421   1.979    .664             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 178.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.508   1.517 752.042    2.99 751.451   5.912 750.302   6.316 750.131
   6.338 750.124   6.464 750.083   9.686 748.253  10.425 748.101  10.735 748.036
  11.464 747.831  12.156 747.461   12.18 747.452  12.773 747.246   13.58 746.948
  13.911 746.831  14.506 747.013  16.121 747.502  16.971  747.76  17.756 747.996
  17.767 747.996  17.856 748.031  18.519 748.293  21.724 749.577  22.938 750.009
  23.662 750.077  23.993 750.107  25.259 750.218  27.376 750.403   29.61 750.606
  32.117 750.831  37.878 751.288  39.903 751.456

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.425     .04  23.662    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.425  23.662            2.421   1.979    .664             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 176.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.546   1.495 752.084   2.946 751.512   5.824 750.424   6.222 750.263
   6.244 750.256   6.368 750.216   9.542 748.506   10.27 748.352  10.591 748.282
  11.343 748.072  12.059 747.522  12.083  747.51  12.696 747.261   13.53 746.907
  13.872 746.772  14.479 746.963  16.126 747.476  16.992 747.747  17.793 747.992
  17.803 747.993  17.894 748.028   18.57 748.295  21.838 749.624  23.076 750.018
  23.814 750.084   24.14 750.112  25.383 750.218  27.464 750.393   29.66 750.591
  32.124 750.812  37.786 751.266  39.776 751.432

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   10.27     .04  23.814    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         10.27  23.814            2.421   1.979    .664             .1      .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 174.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.584   1.472 752.126   2.901 751.573   5.736 750.545   6.128 750.394
    6.15 750.388   6.272 750.349   9.398  748.76  10.115 748.603  10.446 748.529
  11.223 748.313  11.962 747.583  11.986 747.569  12.619 747.277   13.48 746.866
  13.833 746.713  14.451 746.914   16.13 747.451  17.013 747.733  17.829 747.988
   17.84 747.989  17.932 748.024  18.621 748.297  21.952 749.671  23.213 750.026
  23.966 750.091  24.286 750.118  25.508 750.218  27.553 750.382  29.709 750.577
   32.13 750.794  37.693 751.244  39.649 751.408

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.115     .04  23.966    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.115  23.966            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 172.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.622    1.45 752.167   2.857 751.634   5.648 750.667   6.034 750.526
   6.055  750.52   6.176 750.482   9.254 749.013    9.96 748.854  10.301 748.775
  11.103 748.554  11.864 747.644   11.89 747.628  12.543 747.293   13.43 746.825
  13.794 746.654  14.424 746.865  16.134 747.425  17.034  747.72  17.865 747.984
  17.876 747.985   17.97 748.021  18.672 748.299  22.066 749.718  23.351 750.035
  24.118 750.098  24.432 750.124  25.633 750.219  27.641 750.372  29.759 750.562
  32.137 750.775  37.601 751.222  39.522 751.384

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.96     .04  24.118    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.96  24.118            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 170.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.66   1.427 752.209   2.812 751.695    5.56 750.789    5.94 750.657
   5.961 750.651   6.079 750.615    9.11 749.266   9.805 749.105  10.157 749.021
  10.982 748.795  11.767 747.705  11.793 747.687  12.466 747.308   13.38 746.784
  13.755 746.595  14.397 746.816  16.139 747.399  17.055 747.707  17.902  747.98
  17.913 747.982  18.009 748.017  18.724   748.3   22.18 749.765  23.489 750.044
   24.27 750.105  24.578  750.13  25.757 750.219  27.729 750.362  29.809 750.548
  32.144 750.756  37.509   751.2  39.395  751.36

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.805     .04   24.27    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.805   24.27            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 168.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.698   1.405 752.251   2.768 751.756   5.473 750.911   5.847 750.789
   5.867 750.783   5.983 750.748   8.966 749.519    9.65 749.356  10.012 749.267
  10.862 749.036   11.67 747.766  11.696 747.745  12.389 747.324   13.33 746.744
  13.716 746.536  14.369 746.767  16.143 747.373  17.076 747.693  17.938 747.976
  17.949 747.978  18.047 748.014  18.775 748.302  22.294 749.812  23.627 750.053
  24.422 750.112  24.725 750.136  25.882 750.219  27.817 750.351  29.859 750.534
  32.151 750.737  37.417 751.178  39.268 751.336

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.65     .04  24.422    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.65  24.422            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
```

```
REACH: Aguas Arriba       RS: 166.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.736   1.382 752.293   2.723 751.817   5.385 751.032   5.753  750.92
   5.773 750.915   5.887 750.882   8.822 749.772   9.495 749.607   9.867 749.514
  10.741 749.277  11.572 747.827    11.6 747.804  12.312  747.34   13.28 746.703
  13.677 746.477  14.342 746.718  16.147 747.347  17.097  747.68  17.974 747.972
  17.986 747.975  18.085  748.01  18.826 748.304  22.408 749.859  23.765 750.061
  24.574 750.119  24.871 750.142  26.006 750.219  27.905 750.341  29.909 750.519
  32.157 750.718  37.325 751.156  39.141 751.312

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.495     .04  24.574    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.495  24.574            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 164.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.774    1.36 752.335   2.679 751.878   5.297 751.154   5.659 751.052
   5.678 751.047   5.791 751.015   8.678 750.025    9.34 749.858   9.723  749.76
  10.621 749.518  11.475 747.888  11.503 747.863  12.235 747.355   13.23 746.662
  13.638 746.418  14.315 746.668  16.151 747.322  17.118 747.667  18.011 747.968
  18.022 747.971  18.123 748.007  18.877 748.306  22.522 749.906  23.903  750.07
  24.726 750.126  25.017 750.148  26.131 750.219  27.994 750.331  29.959 750.505
  32.164   750.7  37.232 751.134  39.014 751.288

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.34     .04  24.726    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.34  24.726            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 162.*

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.812   1.337 752.377   2.634 751.939   5.209 751.276   5.565 751.183
   5.584 751.178   5.695 751.148   8.534 750.279   9.185 750.109   9.578 750.006
    10.5 749.759  11.377 747.949  11.407 747.921  12.158 747.371   13.18 746.621
  13.599 746.359  14.287 746.619  16.156 747.296  17.139 747.653  18.047 747.964
  18.059 747.967  18.162 748.003  18.929 748.308  22.636 749.953   24.04 750.079
  24.878 750.133  25.164 750.154  26.255  750.22  28.082  750.32  30.008  750.49
  32.171 750.681   37.14 751.112  38.887 751.264

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.185     .04  24.878    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.185  24.878            2.421   1.979    .664             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 160

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.85    2.59     752    5.49  751.31    9.03  750.36   10.38     750
   11.28  748.01   11.29     748   11.31  747.98   13.13  746.58   13.56   746.3
   14.26  746.57   16.16  747.27   17.16  747.64    18.2     748   18.98  748.31
   22.75     750   25.03  750.14   25.31  750.16   26.38  750.22   28.17  750.31
   38.76  751.24

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    9.03     .04  25.03    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9.03   25.03            2.058   1.998   2.194             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 158.*

INPUT
Description:
Station Elevation Data    num=      45
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.801     .77 752.549   1.418 752.299   2.732 751.807   2.809 751.784
   5.727 751.126    5.79 751.111   7.145 750.763   7.936 750.566   8.406  750.45
    8.72 750.374   9.524  750.16  10.468 749.909  10.949 749.768  11.899 747.914
  11.909 747.904   11.93 747.885  12.505  747.47   13.51 746.746  13.728 746.597
  13.851 746.513  14.305 746.249  14.968 746.497  16.276 746.965  16.769 747.142
  16.873  747.18  17.716 747.496  18.702 747.844  19.441 748.141  23.013 749.748
  24.676 749.885  25.174 749.925  25.187 749.927  25.447 749.957  25.498 749.963
  25.901     750   26.49 750.058  28.236  750.22  28.249 750.222  29.896 750.414
  31.726 750.569  34.243 750.782  36.409 750.963  38.368 751.126  38.563 751.143

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   9.524     .04  25.174    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         9.524  25.174            2.058   1.998   2.194             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 156.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.752     .81 752.488   1.492 752.189   2.873 751.615   2.954 751.586
   6.024 750.927   6.091 750.912   7.515  750.56   8.347 750.367   8.842 750.256
   9.172 750.184  10.018  749.96  11.012 749.697  11.518 749.536  12.517 747.818
  12.528 747.809  12.551  747.79  13.156 747.379  14.214 746.663  14.442 746.524
  14.572 746.446   15.05 746.198  15.677 746.425  16.912 746.853  17.378 747.014
  17.476 747.049  18.273 747.353  19.204 747.688  19.902 747.972  23.277 749.496
  24.848 749.662  25.318  749.71  25.331 749.713  25.584 749.755  25.634 749.762
  26.026 749.815  26.601 749.897  28.302 750.131  28.314 750.133   29.92 750.368
  31.703 750.513  34.156 750.713  36.267 750.881  38.176  751.03  38.366 751.046

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.018     .04  25.318    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.018  25.318            2.058   1.998   2.194             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 154.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.703     .85 752.427   1.565 752.079   3.015 751.422     3.1 751.388
   6.321 750.729   6.391 750.714   7.886 750.358   8.759 750.169   9.278 750.061
   9.624 749.993  10.512  749.76  11.555 749.485  12.086 749.304  13.136 747.723
  13.148 747.714  13.171 747.695  13.806 747.288  14.917  746.58  15.157 746.451
  15.294 746.378  15.795 746.147  16.385 746.352  17.548  746.74  17.986 746.886
  18.079 746.917  18.829 747.209  19.706 747.532  20.363 747.803   23.54 749.244
  25.019 749.439  25.462 749.495  25.474 749.499  25.721 749.552   25.77 749.562
  26.152 749.629  26.711 749.735  28.368 750.041   28.38 750.044  29.944 750.322
   31.68 750.458  34.069 750.644  36.125 750.798  37.984 750.934  38.169 750.949

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  10.512     .04  25.462    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        10.512  25.462            2.058   1.998   2.194             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 152.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.654     .89 752.366   1.639 751.969   3.157 751.229   3.246  751.19
   6.618 750.531   6.691 750.515   8.256 750.155    9.17 749.971   9.714 749.867
  10.076 749.803  11.006  749.56  12.099 749.273  12.655 749.073  13.755 747.627
  13.767 747.618  13.791   747.6  14.457 747.197   15.62 746.497  15.872 746.378
  16.015 746.311   16.54 746.096  17.093  746.28  18.184 746.627  18.595 746.759
  18.682 746.786  19.385 747.065  20.208 747.376  20.824 747.633  23.804 748.992
  25.191 749.217  25.606  749.28  25.618 749.285  25.858 749.349  25.906 749.362
  26.277 749.444  26.822 749.573  28.434 749.952  28.446 749.955  29.968 750.276
  31.657 750.403  33.982 750.575  35.983 750.716  37.792 750.837  37.972 750.852

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.006     .04  25.606    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.006  25.606            2.058   1.998   2.194             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
```

```
REACH: Aguas Arriba       RS: 150.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.605     .93 752.305   1.712 751.859   3.298 751.036   3.392 750.991
   6.915 750.332   6.992 750.316   8.627 749.953   9.582 749.772   10.15 749.672
  10.529 749.612    11.5  749.36  12.642 749.061  13.224 748.841  14.373 747.531
  14.386 747.523  14.412 747.505  15.107 747.105  16.324 746.414  16.587 746.305
  16.736 746.244  17.285 746.045  17.802 746.207   18.82 746.514  19.204 746.631
  19.285 746.655  19.942 746.922  20.709  747.22  21.285 747.464  24.067  748.74
  25.362 748.994   25.75 749.065  25.762  749.07  25.995 749.147  26.041 749.161
  26.403 749.258  26.932 749.412    28.5 749.862  28.512 749.866  29.991  750.23
  31.634 750.347  33.895 750.505  35.841 750.633    37.6 750.741  37.775 750.755

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    11.5     .04   25.75    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          11.5   25.75            2.058   1.998   2.194             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 148.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.556     .97 752.244   1.786  751.75    3.44 750.844   3.537 750.793
   7.212 750.134   7.292 750.117   8.998  749.75   9.994 749.574  10.586 749.478
  10.981 749.422  11.994  749.16  13.186 748.849  13.793 748.609  14.992 747.435
  15.005 747.427  15.032 747.411  15.758 747.014  17.027 746.331  17.301 746.232
  17.457 746.177   18.03 745.994   18.51 746.134  19.456 746.401  19.813 746.503
  19.888 746.524  20.498 746.778  21.211 747.064  21.746 747.295  24.331 748.488
  25.534 748.771  25.894  748.85  25.905 748.856  26.132 748.944  26.177 748.961
  26.528 749.072  27.043  749.25  28.566 749.772  28.577 749.776  30.015 750.184
  31.611 750.292  33.808 750.436  35.699  750.55  37.408 750.645  37.578 750.658

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  11.994     .04  25.894    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        11.994  25.894            2.058   1.998   2.194             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 146.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.507    1.01 752.183   1.859  751.64   3.582 750.651   3.683 750.595
   7.509 749.935   7.592 749.918   9.368 749.548  10.405 749.375  11.022 749.283
  11.433 749.231  12.488  748.96  13.729 748.636  14.362 748.377  15.611 747.339
  15.625 747.332  15.652 747.316  16.408 746.923   17.73 746.249  18.016 746.159
  18.178  746.11  18.775 745.943  19.218 746.062  20.092 746.289  20.421 746.375
  20.491 746.393  21.055 746.634  21.713 746.908  22.207 747.126  24.594 748.236
  25.705 748.548  26.038 748.635  26.049 748.642  26.269 748.742  26.313 748.761
  26.654 748.887  27.153 749.089  28.632 749.683  28.643 749.687  30.039 750.138
  31.589 750.236  33.721 750.367  35.556 750.468  37.216 750.549  37.381 750.561

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.488     .04  26.038    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.488  26.038            2.058   1.998   2.194             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 144.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.458    1.05 752.122   1.933  751.53   3.724 750.458   3.829 750.397
   7.806 749.737   7.893  749.72   9.739 749.345  10.817 749.177  11.458 749.089
  11.885 749.041  12.982  748.76  14.273 748.424   14.93 748.145  16.229 747.244
  16.244 747.236  16.273 747.221  17.059 746.832  18.433 746.166  18.731 746.086
  18.899 746.042   19.52 745.892  19.927 745.989  20.728 746.176   21.03 746.247
  21.094 746.262  21.611 746.491  22.215 746.753  22.668 746.957  24.858 747.984
  25.877 748.326  26.182  748.42  26.193 748.428  26.406 748.539  26.449 748.561
  26.779 748.701  27.264 748.927  28.698 749.593  28.709 749.598  30.063 750.092
  31.566 750.181  33.634 750.298  35.414 750.385  37.024 750.453  37.184 750.464

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.982     .04  26.182    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.982  26.182            2.058   1.998   2.194             .1      .3
```

```
CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 142.*

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.409    1.09 752.061   2.006  751.42   3.865 750.265   3.974 750.198
   8.103 749.538   8.193 749.521  10.109 749.143  11.228 748.978  11.894 748.894
  12.338  748.85  13.476  748.56  14.816 748.212  15.499 747.913  16.848 747.148
  16.863 747.141  16.893 747.126  17.709 746.741  19.137 746.083  19.445 746.013
  19.621 745.975  20.265 745.841  20.635 745.917  21.364 746.063  21.639 746.119
  21.697 746.131  22.167 746.347  22.717 746.597  23.129 746.788  25.121 747.731
  26.048 748.103  26.326 748.205  26.336 748.214  26.543 748.336  26.584  748.36
  26.905 748.516  27.374 748.765  28.764 749.504  28.774 749.509  30.086 750.046
  31.543 750.125  33.547 750.229  35.272 750.303  36.832 750.356  36.987 750.367

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.476     .04  26.326    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.476  26.326            2.058   1.998   2.194             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Arriba       RS: 140

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.36    1.13     752    2.08  751.31    4.12     750     8.4  749.34
   10.48  748.94   11.64  748.78   12.33   748.7   12.79  748.66   13.97  748.36
   15.36     748   18.36  746.65   19.84     746   20.16  745.94   21.01  745.79
      22  745.95    22.3     746   26.22  747.88   26.47  747.99   26.48     748
   26.72  748.16   27.03  748.33   28.84  749.42   30.11     750   31.52  750.07
   33.46  750.16   35.13  750.22   36.64  750.26   36.79  750.27

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   13.97     .04   26.47    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         13.97   26.47           12.84    19.8   24.72             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 120

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.07     .17     752     .61  751.68    2.71     750    9.45  748.93
   13.97  748.23   15.42     748   17.53  747.03   19.76     746   20.88  745.45
   21.48   745.2   22.75  745.88   22.97     746   23.06  746.13    24.2     748
   24.89  748.17   26.61  748.49   27.56  748.67   29.14  748.72   34.12  748.88

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   13.97     .04   26.61    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         13.97   26.61           1.751   1.839   1.911             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 118.181*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.099    .172 752.026    .619  751.71    .638 751.695   1.723 750.863
    2.75 750.077   4.302 749.779   9.181 749.009   9.588 748.945  14.174 748.239
  15.634 748.009  16.256 747.742  17.759 747.019  18.049 746.879  19.057 746.395
  20.005 745.955  20.673 745.628  21.133 745.403  21.737 745.148  22.981 745.853
  23.197 745.978  23.285 746.103  23.496  746.44  24.401 747.868  25.077  748.06
  25.939 748.256  26.762 748.445   26.81 748.453  27.875 748.624  27.941 748.626
  28.808 748.657  29.205 748.672  29.619 748.685  29.727 748.689  30.344  748.71
  30.668  748.72   31.69 748.754  32.281 748.773  32.739 748.787  33.602 748.813
  33.931 748.823  35.564 748.886

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.174     .04  26.762    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.174  26.762           1.751   1.839   1.911             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 116.363*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.128    .175 752.052    .628  751.74    .647 751.726   1.747 750.917
   2.789 750.153   4.364 749.801   9.313 749.024   9.725  748.96  14.377 748.248
  15.848 748.018  16.474 747.768  17.988 747.008   18.28 746.861  19.296 746.356
   20.25  745.91  20.922 745.581  21.386 745.356  21.995 745.096  23.212 745.826
  23.423 745.956   23.51 746.075  23.717 746.396  24.603 747.736  25.264  747.95
  26.108 748.179  26.914 748.401  26.969 748.407   28.19 748.577  28.266 748.581
   29.26  748.62  29.716 748.638   30.19 748.654  30.314 748.658  31.022 748.683
  31.393 748.694  32.565 748.735  33.243 748.755  33.768 748.771  34.758   748.8
  35.134 748.811  37.007 748.893

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.377     .04  26.914    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.377  26.914            1.751   1.839   1.911             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 114.545*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.157    .177 752.078    .637 751.771    .657 751.756   1.772 750.971
   2.829  750.23   4.426 749.823   9.445 749.039   9.863 748.974  14.581 748.257
  16.062 748.027  16.693 747.794  18.217 746.997  18.511 746.843  19.534 746.316
  20.495 745.866  21.172 745.534  21.639 745.308  22.252 745.045  23.443 745.799
   23.65 745.934  23.734 746.048  23.937 746.352  24.804 747.604  25.452 747.839
  26.277 748.101  27.065 748.356  27.128 748.362  28.506 748.531  28.591 748.535
  29.713 748.582  30.226 748.603  30.761 748.622  30.901 748.627  31.699 748.656
  32.119 748.668   33.44 748.716  34.205 748.738  34.797 748.755  35.914 748.786
  36.338 748.798  38.451 748.899

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.581     .04  27.065    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.581  27.065            1.751   1.839   1.911             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 112.727*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.186     .18 752.104    .646 751.801    .666 751.787   1.797 751.024
   2.868 750.306   4.487 749.845   9.577 749.054  10.001 748.989  14.785 748.266
  16.276 748.036  16.911 747.819  18.446 746.986  18.742 746.825  19.772 746.277
   20.74 745.821  21.422 745.487  21.892 745.261  22.509 744.993  23.675 745.772
  23.877 745.912  23.959  746.02  24.158 746.308  25.005 747.472  25.639 747.729
  26.446 748.023  27.217 748.312  27.287 748.317  28.821 748.485  28.916 748.489
  30.165 748.544  30.737 748.569  31.332 748.591  31.488 748.596  32.377 748.629
  32.844 748.642  34.315 748.696  35.167 748.721  35.826  748.74   37.07 748.773
  37.542 748.786  39.895 748.905

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.785     .04  27.217    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.785  27.217            1.751   1.839   1.911             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 110.909*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.215    .182 752.129    .654 751.831    .675 751.817   1.822 751.078
   2.908 750.383   4.549 749.867   9.709 749.069  10.139 749.004  14.988 748.275
   16.49 748.045   17.13 747.845  18.675 746.976  18.973 746.808   20.01 746.237
  20.985 745.776  21.672 745.441  22.145 745.214  22.766 744.941  23.906 745.745
  24.103  745.89  24.184 745.993  24.378 746.264  25.207  747.34  25.826 747.619
  26.615 747.946  27.369 748.267  27.446 748.272  29.136 748.438  29.241 748.444
  30.617 748.506  31.247 748.535  31.903 748.559  32.075 748.566  33.054 748.602
  33.569 748.616   35.19 748.677  36.129 748.704  36.855 748.724  38.225  748.76
  38.746 748.774  41.338 748.912

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.988     .04  27.369    .035
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.988  27.369             1.751   1.839   1.911             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 109.090*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.245    .185 752.155    .663 751.861    .684 751.848   1.846 751.132
   2.947  750.46   4.611  749.89    9.84 749.084  10.276 749.019  15.192 748.285
  16.704 748.054  17.348 747.871  18.904 746.965  19.204  746.79  20.249 746.198
   21.23 745.731  21.921 745.394  22.398 745.167  23.024 744.889  24.137 745.718
   24.33 745.868  24.409 745.966  24.598  746.22  25.408 747.208  26.013 747.509
  26.785 747.868  27.521 748.223  27.605 748.226  29.451 748.392  29.566 748.398
  31.069 748.469  31.758 748.501  32.474 748.528  32.662 748.535  33.732 748.575
  34.294  748.59  36.065 748.657  37.091 748.686  37.885 748.708  39.381 748.746
   39.95 748.761  42.782 748.918

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.192     .04  27.521    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.192  27.521             1.751   1.839   1.911             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 107.272*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.274    .187 752.181    .672 751.891    .693 751.878   1.871 751.185
   2.987 750.536   4.673 749.912   9.972 749.099  10.414 749.033  15.395 748.294
  16.918 748.063  17.566 747.897  19.133 746.954  19.436 746.772  20.487 746.158
  21.475 745.686  22.171 745.347  22.651  745.12  23.281 744.837  24.368 745.691
  24.557 745.846  24.634 745.938  24.819 746.176   25.61 747.076    26.2 747.399
  26.954  747.79  27.673 748.178  27.764 748.181  29.767 748.346   29.89 748.352
  31.521 748.431  32.268 748.467  33.046 748.496  33.249 748.504   34.41 748.548
  35.019 748.564   36.94 748.638  38.052 748.669  38.914 748.693  40.537 748.733
  41.154 748.749  44.225 748.925

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.395     .04  27.673    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.395  27.673             1.751   1.839   1.911             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 105.454*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.303     .19 752.207    .681 751.921    .702 751.909   1.896 751.239
   3.026 750.613   4.735 749.934  10.104 749.115  10.552 749.048  15.599 748.303
  17.132 748.072  17.785 747.923  19.362 746.943  19.667 746.754  20.725 746.119
   21.72 745.642  22.421   745.3  22.904 745.072  23.538 744.785  24.599 745.664
  24.783 745.823  24.858 745.911  25.039 746.132  25.811 746.944  26.387 747.288
  27.123 747.713  27.825 748.134  27.923 748.136  30.082 748.299  30.215 748.307
  31.973 748.393  32.779 748.432  33.617 748.465  33.836 748.473  35.087 748.521
  35.744 748.538  37.815 748.618  39.014 748.652  39.943 748.677  41.693  748.72
  42.358 748.737  45.669 748.931

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.599     .04  27.825    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.599  27.825             1.751   1.839   1.911             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 103.636*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.332    .192 752.233     .69 751.951    .712 751.939   1.921 751.293
   3.066 750.689   4.796 749.956  10.236  749.13   10.69 749.063  15.803 748.312
  17.346 748.081  18.003 747.948  19.592 746.932  19.898 746.736  20.963 746.079
  21.965 745.597  22.671 745.254  23.157 745.025  23.795 744.734   24.83 745.637
   25.01 745.801  25.083 745.883  25.259 746.088  26.012 746.812  26.575 747.178
  27.292 747.635  27.976 748.089  28.082 748.091  30.397 748.253   30.54 748.261
  32.426 748.356  33.289 748.398  34.188 748.433  34.423 748.442  35.765 748.494
   36.47 748.512   38.69 748.599  39.976 748.635  40.972 748.661  42.848 748.707
  43.562 748.725  47.113 748.937
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.803     .04  27.976    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.803  27.976            1.751   1.839   1.911             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 101.818*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.361    .195 752.259    .699 751.982    .721  751.97   1.945 751.346
   3.105 750.766   4.858 749.978  10.368 749.145  10.827 749.078  16.006 748.321
   17.56  748.09  18.222 747.974  19.821 746.921  20.129 746.718  21.202 746.039
   22.21 745.552   22.92 745.207   23.41 744.978  24.053 744.682  25.062  745.61
  25.236 745.779  25.308 745.856   25.48 746.044  26.214  746.68  26.762 747.068
  27.461 747.558  28.128 748.045  28.241 748.045  30.712 748.206  30.865 748.216
  32.878 748.318    33.8 748.364  34.759 748.402   35.01 748.411  36.442 748.467
  37.195 748.486  39.565 748.579  40.938 748.617  42.001 748.646  44.004 748.693
  44.766 748.712  48.556 748.944

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.006     .04  28.128    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.006  28.128            1.751   1.839   1.911             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 100

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.39     .73     752    1.97   751.4    4.92     750    10.5  749.16
   16.21  748.33   18.44     748   20.36   746.7   21.44     746   23.17  745.16
   24.31  744.63    25.3  745.59    25.7     746   27.63  747.48   28.28     748
    28.4     748   31.19  748.17   33.33  748.28   34.31  748.33   35.33  748.37
   37.12  748.44   37.92  748.46   40.44  748.56    41.9   748.6   43.03  748.63
   45.16  748.68   45.97   748.7      50  748.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   16.21     .04   28.28    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.21   28.28            2.001       2   2.018             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 98.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.448    .163 752.363    .728 752.072   1.966 751.491   2.915 751.054
   4.403 750.299    4.91 750.044   5.484 749.922   8.154 749.558  10.458 749.245
  10.478 749.242  13.353 748.829  13.832 748.734  15.075 748.562  15.809 748.345
  16.176 748.279  18.399 747.874  18.436 747.849   19.69 747.011  20.314 746.605
  21.391 745.933  21.509 745.876  23.115  745.11  24.252  744.59  25.236 745.501
  25.633 745.889  26.527 746.553   27.55 747.302  28.196 747.794  28.316 747.799
  28.351 747.802  31.117 747.996   32.98 748.111  33.266 748.125  34.249 748.176
  35.273 748.217  35.889 748.242   37.07 748.296  37.873 748.323  38.808 748.367
  40.403 748.432  41.021  748.45  41.869 748.479  42.336 748.494  43.003 748.514
  45.141  748.57  45.954 748.592      50 748.839

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.176     .04  28.196    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.176  28.196            2.001       2   2.018             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 96.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.506    .163 752.424    .727 752.145   1.962 751.583   2.909 751.159
   4.394 750.357   4.899 750.087   5.472 749.931   8.137 749.606  10.436 749.326
  10.456 749.323  13.325 748.917  13.803 748.797  15.043 748.634  15.776 748.307
  16.142 748.228  18.359 747.748  18.396 747.724  19.646 746.899  20.267 746.511
  21.341 745.865  21.459  745.81  23.061 745.061  24.194  744.55  25.171 745.412
  25.566 745.778  26.454 746.416  27.471 747.124  28.112 747.588  28.233 747.597
```

```
  28.267 747.602  31.045 747.822  32.915 747.956  33.201 747.971  34.189 748.021
  35.217 748.064  35.835 748.089   37.02 748.153  37.827 748.187  38.765 748.238
  40.366 748.304  40.987 748.323  41.837 748.357  42.306 748.376  42.976 748.397
  45.123  748.46  45.939 748.485      50 748.728

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.142     .04  28.112    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.142  28.112            2.001       2   2.018             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 94.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.564    .162 752.485    .725 752.217   1.958 751.674   2.903 751.264
   4.385 750.415   4.889 750.131   5.461 749.939    8.12 749.654  10.414 749.408
  10.434 749.405  13.296 749.005  13.774  748.86  15.012 748.706  15.743 748.268
  16.108 748.177  18.318 747.621  18.355 747.598  19.601 746.786  20.221 746.416
  21.292 745.798  21.409 745.744  23.006 745.011  24.136  744.51  25.107 745.323
  25.499 745.667  26.381 746.279  27.391 746.946  28.028 747.382  28.149 747.396
  28.184 747.401  30.972 747.648  32.849 747.802  33.137 747.816  34.128 747.867
   35.16  747.91  35.781 747.937  36.971 748.009   37.78  748.05  38.722 748.108
  40.329 748.176  40.952 748.197  41.806 748.236  42.277 748.258  42.949 748.281
  45.104  748.35  45.923 748.377      50 748.617

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.108     .04  28.028    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.108  28.028            2.001       2   2.018             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 92.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.622    .162 752.546    .724 752.289   1.953 751.766   2.897 751.369
   4.376 750.473   4.879 750.174   5.449 749.948   8.103 749.702  10.392  749.49
  10.412 749.487  13.268 749.093  13.744 748.923   14.98 748.778  15.709  748.23
  16.074 748.126  18.278 747.495  18.314 747.473  19.557 746.674  20.175 746.321
  21.242 745.731  21.359 745.677  22.952 744.962  24.078  744.47  25.042 745.234
  25.432 745.557  26.308 746.142  27.311 746.768  27.944 747.176  28.066 747.195
    28.1 747.201  30.899 747.474  32.783 747.647  33.072 747.662  34.067 747.712
  35.103 747.757  35.726 747.784  36.921 747.865  37.733 747.914  38.679 747.978
  40.292 748.048  40.918  748.07  41.775 748.115  42.247 748.139  42.922 748.164
  45.085  748.24  45.908 748.269      50 748.506

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.074     .04  27.944    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.074  27.944            2.001       2   2.018             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 90.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.68    .162 752.606    .722 752.362   1.949 751.857   2.891 751.474
   4.366  750.53   4.868 750.218   5.438 749.957   8.086  749.75   10.37 749.572
   10.39 749.569   13.24 749.181  13.715 748.986  14.948  748.85  15.676 748.192
   16.04 748.075  18.237 747.369  18.274 747.347  19.512 746.562  20.129 746.227
  21.193 745.663  21.309 745.611  22.897 744.912   24.02  744.43  24.978 745.146
  25.364 745.446  26.235 746.005  27.231  746.59   27.86  746.97  27.982 746.993
  28.017 747.001  30.826   747.3  32.718 747.493  33.008 747.507  34.007 747.558
  35.046 747.604  35.672 747.632  36.871 747.722  37.686 747.777  38.636 747.849
  40.255  747.92  40.883 747.943  41.743 747.994  42.218 748.021  42.895 748.048
  45.066  748.13  45.892 748.162      50 748.395

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   16.04     .04   27.86    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         16.04   27.86            2.001       2   2.018             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 88.*

INPUT
```

```
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.738    .161 752.667    .721 752.434   1.945 751.948   2.885 751.579
   4.357 750.588   4.858 750.261   5.426 749.965   8.069 749.798  10.348 749.653
  10.368  749.65  13.212 749.268  13.686 749.049  14.917 748.922  15.643 748.153
  16.006 748.024  18.196 747.243  18.233 747.222  19.468 746.449  20.082 746.132
  21.143 745.596  21.259 745.545  22.842 744.863  23.962  744.39  24.913 745.057
  25.297 745.335  26.162 745.868  27.152 746.412  27.776 746.764  27.899 746.792
  27.934 746.801  30.754 747.126  32.652 747.338  32.943 747.353  33.946 747.403
   34.99 747.451  35.617  747.48  36.821 747.578   37.64 747.641  38.592 747.719
  40.218 747.792  40.848 747.817  41.712 747.872  42.188 747.903  42.868 747.931
  45.048  748.02  45.876 748.054      50 748.284

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  16.006     .04  27.776    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.006  27.776            2.001       2   2.018             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 86.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.796    .161 752.728    .719 752.506   1.941  752.04   2.878 751.685
   4.348 750.646   4.848 750.305   5.415 749.974   8.051 749.846  10.326 749.735
  10.346 749.732  13.184 749.356  13.657 749.111  14.885 748.994   15.61 748.115
  15.972 747.973  18.156 747.117  18.192 747.096  19.423 746.337  20.036 746.037
  21.094 745.529   21.21 745.479  22.788 744.814  23.904  744.35  24.849 744.968
   25.23 745.224  26.089 745.731  27.072 746.234  27.692 746.558  27.815 746.591
   27.85 746.601  30.681 746.952  32.587 747.184  32.879 747.198  33.885 747.249
  34.933 747.298  35.563 747.327  36.771 747.435  37.593 747.504  38.549 747.589
  40.181 747.664  40.814  747.69  41.681 747.751  42.159 747.785  42.841 747.815
  45.029  747.91  45.861 747.947      50 748.173

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.972     .04  27.692    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.972  27.692            2.001       2   2.018             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 84.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.854    .161 752.789    .718 752.578   1.937 752.131   2.872  751.79
   4.339 750.704   4.837 750.349   5.403 749.983   8.034 749.894  10.304 749.817
  10.324 749.814  13.156 749.444  13.628 749.174  14.853 749.066  15.576 748.077
  15.938 747.922  18.115  746.99  18.151 746.971  19.379 746.225   19.99 745.942
  21.044 745.461   21.16 745.413  22.733 744.764  23.846  744.31  24.784 744.879
  25.163 745.113  26.016 745.594  26.992 746.056  27.608 746.352  27.732 746.389
  27.767   746.4  30.608 746.778  32.521 747.029  32.814 747.044  33.825 747.094
  34.876 747.145  35.509 747.175  36.722 747.291  37.546 747.367  38.506 747.459
  40.144 747.535  40.779 747.563  41.649  747.63  42.129 747.666  42.814 747.699
   45.01   747.8  45.845 747.839      50 748.062

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.938     .04  27.608    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.938  27.608            2.001       2   2.018             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 82.*

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.912     .16 752.849    .716 752.651   1.933 752.223   2.866 751.895
   4.329 750.762   4.827 750.392   5.392 749.991   8.017 749.942  10.282 749.898
  10.302 749.896  13.128 749.532  13.599 749.237  14.822 749.138  15.543 748.038
  15.904 747.871  18.075 746.864  18.111 746.845  19.334 746.112  19.943 745.848
  20.995 745.394   21.11 745.346  22.678 744.715  23.788  744.27   24.72  744.79
  25.096 745.002  25.943 745.457  26.912 745.878  27.524 746.146  27.648 746.188
  27.683   746.2  30.535 746.604  32.456 746.875   32.75 746.889  33.764  746.94
  34.819 746.991  35.454 747.022  36.672 747.147    37.5 747.231  38.463  747.33
  40.107 747.407  40.745 747.437  41.618 747.509    42.1 747.548  42.787 747.582
  44.992  747.69   45.83 747.731      50 747.951

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.904     .04  27.524    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
       15.904  27.524            2.001       2   2.018             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 80

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.97     .16  752.91    2.86     752    4.32  750.82    5.38     750
       8  749.99   10.26  749.98    13.1  749.62   13.57   749.3   14.79  749.21
   15.51     748   15.87  747.82   18.07  746.72   19.29     746   21.06  745.28
   23.73  744.23   25.87  745.32   27.44  745.94    27.6     746   32.39  746.72
    35.4  746.87   38.42   747.2   40.71  747.31   42.07  747.43      50  747.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   15.87     .04   27.44    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.87   27.44              2.3       2   1.708             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 78.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.939    .159 752.879     .88  752.63   1.717 752.343   1.993 752.241
   2.842 751.927   4.293 750.771   4.812 750.375   5.346 749.982    7.95 749.883
    8.67 749.855  10.196 749.806  11.076 749.681  13.018 749.421  13.485 749.124
  14.698  749.02  15.413 747.917  15.771 747.748  17.276 747.056   18.06 746.698
  19.329  746.02  20.145 745.713   21.17 745.292  21.761 745.057  23.785 744.262
  23.948 744.202  25.874 745.183  27.287 745.741  27.448 745.789  27.683 745.812
  27.834 745.836  28.305 745.915  28.994  746.06  31.143 746.496  32.271 746.656
  35.301 746.813  38.341 747.132  40.647 747.247  42.016 747.365      50 747.791

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.771     .04  27.287    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.771  27.287              2.3       2   1.708             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 76.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.908    .158 752.847    .874 752.594   1.706 752.305    1.98 752.195
   2.824 751.854   4.266 750.723   4.782 750.333   5.313 749.963     7.9 749.776
   8.615 749.723  10.132 749.633  11.006 749.494  12.937 749.221  13.401 748.948
  14.605 748.829  15.316 747.834  15.672 747.676  17.235 747.015  18.049 746.676
  19.368 746.039  20.215 745.745  21.281 745.305  21.894 745.057  23.997 744.233
  24.166 744.174  25.878 745.046  27.134 745.542  27.296 745.578  27.533 745.588
  27.685 745.614  28.159 745.702  28.852 745.889  31.016 746.441  32.151 746.592
  35.202 746.756  38.263 747.063  40.584 747.184  41.962   747.3      50 747.742

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.672     .04  27.134    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.672  27.134              2.3       2   1.708             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 74.*

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.877    .157 752.816    .869 752.559   1.695 752.267   1.968 752.148
   2.806 751.781   4.239 750.674   4.751 750.291   5.279 749.945    7.85 749.668
   8.561 749.592  10.068 749.459  10.937 749.307  12.855 749.022  13.316 748.771
  14.513 748.639   15.22 747.751  15.573 747.604  17.195 746.975  18.039 746.654
  19.407 746.059  20.286 745.777  21.391 745.317  22.027 745.058  24.208 744.204
  24.384 744.146  25.882 744.909  26.981 745.343  27.144 745.367  27.382 745.365
  27.535 745.392  28.013  745.49  28.711 745.718  30.889 746.386  32.032 746.528
  35.103 746.698  38.184 746.995  40.521 747.121  41.909 747.234      50 747.693

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  15.573     .04  26.981    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.573  26.981              2.3       2   1.708             .1       .3
```

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 72.*

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.846	.156	752.785	.863	752.523	1.685	752.229	1.955	752.101
2.789	751.709	4.212	750.626	4.721	750.25	5.246	749.926	7.8	749.561
8.507	749.46	10.004	749.286	10.867	749.121	12.773	748.823	13.231	748.595
14.421	748.448	15.123	747.667	15.474	747.532	17.154	746.934	18.029	746.633
19.446	746.078	20.357	745.809	21.501	745.329	22.161	745.058	24.42	744.175
24.602	744.118	25.886	744.772	26.828	745.144	26.992	745.156	27.232	745.141
27.386	745.171	27.867	745.277	28.569	745.546	30.762	746.331	31.912	746.464
35.004	746.641	38.106	746.926	40.458	747.058	41.855	747.169	50	747.644

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	15.474	.04	26.828	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15.474	26.828	2.3	2	1.708	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 70.*

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.815	.155	752.753	.858	752.488	1.674	752.191	1.943	752.054
2.771	751.636	4.185	750.577	4.691	750.208	5.212	749.908	7.75	749.454
8.452	749.328	9.94	749.112	10.798	748.934	12.691	748.624	13.147	748.419
14.329	748.258	15.026	747.584	15.375	747.46	17.113	746.893	18.019	746.611
19.485	746.098	20.427	745.84	21.612	745.342	22.294	745.058	24.632	744.146
24.82	744.09	25.89	744.635	26.675	744.945	26.84	744.944	27.082	744.918
27.237	744.949	27.721	745.064	28.428	745.375	30.635	746.276	31.793	746.4
34.905	746.584	38.027	746.858	40.395	746.995	41.801	747.104	50	747.595

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	15.375	.04	26.675	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15.375	26.675	2.3	2	1.708	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 68.*

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.784	.154	752.722	.852	752.452	1.663	752.153	1.93	752.007
2.753	751.563	4.158	750.529	4.661	750.166	5.179	749.889	7.701	749.347
8.398	749.197	9.876	748.939	10.728	748.747	12.61	748.425	13.062	748.243
14.236	748.067	14.929	747.501	15.276	747.388	17.073	746.853	18.008	746.589
19.524	746.118	20.498	745.872	21.722	745.354	22.427	745.059	24.843	744.117
25.038	744.062	25.894	744.498	26.522	744.746	26.689	744.733	26.931	744.694
27.087	744.727	27.575	744.851	28.286	745.204	30.508	746.221	31.673	746.336
34.806	746.527	37.949	746.789	40.332	746.932	41.747	747.039	50	747.546

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	15.276	.04	26.522	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15.276	26.522	2.3	2	1.708	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 66.*

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.753	.153	752.691	.847	752.417	1.652	752.115	1.918	751.96
2.735	751.49	4.131	750.48	4.631	750.125	5.145	749.871	7.651	749.24
8.343	749.065	9.812	748.766	10.659	748.56	12.528	748.225	12.977	748.067
14.144	747.877	14.833	747.418	15.177	747.316	17.032	746.812	17.998	746.567
19.563	746.137	20.568	745.904	21.832	745.367	22.56	745.059	25.055	744.087
25.256	744.034	25.898	744.361	26.369	744.547	26.537	744.522	26.781	744.471
26.938	744.505	27.428	744.638	28.145	745.033	30.381	746.165	31.554	746.272
34.707	746.469	37.87	746.721	40.269	746.869	41.694	746.974	50	747.497

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	15.177	.04	26.369	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15.177	26.369	2.3	2	1.708	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 64.*

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.722	.152	752.659	.841	752.381	1.642	752.076	1.905	751.914
2.717	751.417	4.104	750.432	4.6	750.083	5.112	749.853	7.601	749.132
8.289	748.933	9.748	748.592	10.589	748.374	12.446	748.026	12.893	747.89
14.052	747.687	14.736	747.335	15.078	747.244	16.991	746.771	17.988	746.545
19.601	746.157	20.639	745.936	21.943	745.379	22.694	745.059	25.267	744.058
25.474	744.006	25.902	744.224	26.216	744.348	26.385	744.311	26.631	744.247
26.789	744.284	27.282	744.426	28.003	744.862	30.254	746.11	31.435	746.209
34.608	746.412	37.792	746.652	40.206	746.806	41.64	746.909	50	747.448

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	15.078	.04	26.216	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
15.078	26.216	2.3	2	1.708	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 62.*

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.691	.151	752.628	.836	752.346	1.631	752.038	1.893	751.867
2.699	751.344	4.077	750.383	4.57	750.042	5.078	749.834	7.551	749.025
8.234	748.802	9.684	748.419	10.52	748.187	12.365	747.827	12.808	747.714
13.96	747.496	14.639	747.252	14.979	747.172	16.951	746.731	17.978	746.523
19.64	746.177	20.709	745.968	22.053	745.391	22.827	745.06	25.478	744.029
25.692	743.978	25.906	744.087	26.063	744.149	26.233	744.1	26.48	744.023
26.639	744.062	27.136	744.213	27.862	744.691	30.127	746.055	31.315	746.145
34.509	746.355	37.713	746.584	40.143	746.743	41.586	746.844	50	747.399

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	14.979	.04	26.063	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
14.979	26.063	2.3	2	1.708	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 60

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.66	.83	752.31	1.62	752	1.88	751.82	4.54	750
8.18	748.67	10.45	748	14.88	747.1	16.91	746.69	20.78	746
22.96	745.06	25.69	744	25.91	743.95	26.33	743.8	26.49	743.84
26.99	744	27.72	744.52	30	746	50	747.35		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	14.88	.04	25.91	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
14.88	25.91	1.558	2	2.281	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 58.*

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.597	.092	752.558	.786	752.232	.818	752.218	1.596	751.882
1.852	751.701	2.715	751.099	4.473	749.907	4.587	749.863	6.805	749.022
8.06	748.584	10.296	747.946	11.334	747.737	14.661	747.069	16.699	746.663
18.986	746.255	20.585	745.947	22.773	745.028	23.543	744.734	25.204	744.108
25.514	743.985	25.735	743.93	26.158	743.775	26.319	743.803	26.543	743.856
26.608	743.872	26.683	743.901	26.823	743.954	27.313	744.312	27.558	744.491
27.895	744.718	29.388	745.729	29.855	746.003	36.346	746.43	42.262	746.819
45.117	747.003	45.361	747.017	45.624	747.034	50	747.318		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	14.661	.04	25.735	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
14.661	25.735	1.558	2	2.281	.1	.3

CROSS SECTION

```
RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 56.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.534    .091 752.496    .774 752.141    .806 752.125   1.572 751.764
   1.825 751.582   2.674 750.977   4.406 749.814   4.518 749.768   6.703 748.908
   7.939 748.497  10.142 747.892  11.164 747.689  14.442 747.038  16.488 746.636
  18.785 746.227  20.389 745.893  22.586 744.995   23.36 744.706  25.027 744.096
  25.338 743.971   25.56  743.91  25.986 743.749  26.148 743.766  26.373 743.801
   26.44 743.812  26.515 743.847  26.656 743.908  27.149 744.277  27.396 744.462
  27.735   744.7  29.239 745.759  29.709 746.005  36.248 746.424  42.206 746.807
  45.082 746.982  45.328 746.995  45.592 747.011      50 747.286

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.442     .04   25.56    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.442   25.56            1.558       2   2.281             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 54.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.471     .09 752.434    .762  752.05    .793 752.033   1.548 751.645
   1.797 751.463   2.634 750.855    4.34 749.721    4.45 749.674   6.602 748.795
   7.819 748.411   9.989 747.838  10.995  747.64  14.223 747.007  16.277 746.608
  18.583 746.199  20.194  745.84    22.4 744.963  23.176 744.677   24.85 744.084
  25.162 743.956  25.385  743.89  25.814 743.724  25.978 743.728  26.204 743.746
  26.271 743.751  26.347 743.792  26.489 743.862  26.985 744.242  27.234 744.434
  27.576 744.681  29.091 745.789  29.564 746.008  36.149 746.419  42.151 746.795
  45.047 746.962  45.294 746.973  45.561 746.989      50 747.254

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.223     .04  25.385    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.223  25.385            1.558       2   2.281             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 52.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.408    .088 752.372     .75 751.958    .781 751.941   1.525 751.527
   1.769 751.344   2.593 750.733   4.273 749.628   4.381 749.579     6.5 748.681
   7.698 748.324   9.835 747.784  10.826 747.592  14.004 746.976  16.066 746.581
  18.381  746.17  19.998 745.787  22.213 744.931  22.992 744.649  24.673 744.072
  24.986 743.942   25.21  743.87  25.642 743.698  25.807 743.691  26.035 743.691
  26.102 743.691  26.179 743.737  26.321 743.816  26.822 744.208  27.073 744.405
  27.417 744.662  28.942  745.82  29.419  746.01  36.051 746.413  42.095 746.783
  45.011 746.942  45.261 746.951  45.529 746.966      50 747.222

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.004     .04   25.21    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.004   25.21            1.558       2   2.281             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 50.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.345    .087  752.31    .739 751.867    .769 751.848   1.501 751.409
   1.742 751.225   2.553  750.61   4.206 749.535   4.313 749.484   6.398 748.568
   7.578 748.238   9.681  747.73  10.656 747.543  13.785 746.945  15.855 746.554
  18.179 746.142  19.803 745.733  22.026 744.898  22.809 744.621  24.496  744.06
  24.811 743.927  25.035  743.85   25.47 743.673  25.636 743.654  25.866 743.635
  25.934 743.631  26.011 743.683  26.154  743.77  26.658 744.173  26.911 744.376
  27.257 744.643  28.793  745.85  29.274 746.013  35.952 746.407  42.039 746.771
  44.976 746.921  45.227  746.93  45.498 746.943      50  747.19

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.785     .04  25.035    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.785  25.035            1.558       2   2.281             .1       .3

CROSS SECTION
```

```
RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 48.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.282    .086 752.248    .727 751.776    .757 751.756   1.477 751.291
   1.714 751.106   2.512 750.488   4.139 749.442   4.244 749.389   6.297 748.454
   7.458 748.152   9.527 747.676  10.487 747.494  13.566 746.914  15.645 746.527
  17.977 746.114  19.607  745.68  21.839 744.866  22.625 744.593  24.318 744.048
  24.635 743.912   24.86  743.83  25.298 743.647  25.465 743.617  25.697  743.58
  25.765 743.571  25.843 743.628  25.987 743.724  26.494 744.139  26.749 744.347
  27.098 744.625  28.645  745.88  29.128 746.015  35.854 746.402  41.983 746.759
  44.941 746.901  45.194 746.908  45.466 746.921      50 747.158

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.566     .04   24.86    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.566   24.86            1.558       2   2.281             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 46.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.219    .084 752.186    .715 751.684    .744 751.664   1.453 751.172
   1.686 750.987   2.472 750.366   4.072 749.349   4.176 749.294   6.195 748.341
   7.337 748.065   9.373 747.622  10.318 747.446  13.347 746.883  15.434 746.499
  17.775 746.085  19.412 745.627  21.653 744.834  22.441 744.565  24.141 744.036
  24.459 743.898  24.685  743.81  25.126 743.622  25.294 743.579  25.528 743.525
  25.596 743.511  25.674 743.574   25.82 743.678  26.331 744.104  26.587 744.318
  26.938 744.606  28.496  745.91  28.983 746.018  35.755 746.396  41.927 746.746
  44.906 746.881   45.16 746.886  45.435 746.898      50 747.126

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.347     .04  24.685    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.347  24.685            1.558       2   2.281             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 44.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.156    .083 752.124    .703 751.593    .732 751.571   1.429 751.054
   1.659 750.868   2.431 750.244   4.005 749.256   4.107   749.2   6.093 748.227
   7.217 747.979    9.22 747.568  10.149 747.397  13.128 746.852  15.223 746.472
  17.574 746.057  19.216 745.574  21.466 744.802  22.257 744.536  23.964 744.024
  24.283 743.883   24.51  743.79  24.954 743.597  25.124 743.542  25.358  743.47
  25.427  743.45  25.506 743.519  25.653 743.633  26.167 744.069  26.425  744.29
  26.779 744.587  28.347  745.94  28.838  746.02  35.657 746.391  41.872 746.734
   44.87 746.861  45.127 746.864  45.403 746.875      50 747.094

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.128     .04  24.51    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.128   24.51            1.558       2   2.281             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 42.*

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.093    .081 752.062    .692 751.501     .72 751.479   1.405 750.936
   1.631 750.749   2.391 750.122   3.939 749.163   4.039 749.105   5.992 748.114
   7.096 747.892   9.066 747.514   9.979 747.349  12.909 746.821  15.012 746.445
  17.372 746.028  19.021  745.52  21.279 744.769  22.074 744.508  23.787 744.012
  24.107 743.869  24.335  743.77  24.782 743.571  24.953 743.505  25.189 743.415
  25.259  743.39  25.338 743.465  25.486 743.587  26.004 744.035  26.263 744.261
  26.619 744.569  28.199  745.97  28.692 746.023  35.558 746.385  41.816 746.722
  44.835  746.84  45.093 746.842  45.372 746.853      50 747.062

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  12.909     .04  24.335    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        12.909  24.335            1.558       2   2.281             .1       .3
```

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 40

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.03	.08	752	.68	751.41	2.35	750	3.97	749.01
5.89	748	9.81	747.3	12.69	746.79	17.17	746	21.89	744.48
23.61	744	24.16	743.75	25.02	743.36	25.09	743.33	25.17	743.41
25.84	744	26.46	744.55	28.05	746	35.46	746.38	41.76	746.71
44.8	746.82	45.06	746.82	45.34	746.83	50	747.03		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.69	.04	24.16	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
12.69	24.16	2.009	2	2.01	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 38.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.119	.082	752.092	.693	751.56	.776	751.499	.793	751.486
1.091	751.264	2.191	750.37	2.396	750.203	2.438	750.178	2.6	750.074
2.941	749.854	3.981	749.187	4.048	749.144	4.373	748.958	4.739	748.752
6.006	748.041	6.427	747.934	10.002	747.272	12.027	746.901	12.939	746.735
14.081	746.529	17.405	745.919	17.611	745.854	22.016	744.459	22.11	744.428
23.406	744.044	23.825	743.919	24.373	743.669	24.455	743.729	25.002	743.539
25.125	743.499	25.305	743.436	25.374	743.413	25.453	743.49	25.761	743.756
26.116	744.062	26.729	744.594	28.301	745.994	28.406	746.005	29.008	746.033
29.979	746.078	33.628	746.249	35.035	746.314	35.626	746.344	39.934	746.562
41.854	746.657	42.043	746.663	44.398	746.745	44.859	746.762	45.116	746.763
45.393	746.773	50	746.97						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.939	.04	24.455	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
12.939	24.455	2.009	2	2.01	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 36.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.208	.083	752.184	.707	751.71	.791	751.655	.808	751.644
1.112	751.447	2.233	750.57	2.442	750.406	2.485	750.38	2.65	750.27
2.997	750.035	4.057	749.324	4.126	749.278	4.457	749.074	4.83	748.851
6.121	748.082	6.551	747.941	10.195	747.245	12.258	746.853	13.188	746.68
14.327	746.47	17.64	745.838	17.846	745.775	22.237	744.408	22.33	744.376
23.622	743.97	24.039	743.838	24.586	743.588	24.75	743.708	25.291	743.579
25.412	743.554	25.59	743.511	25.659	743.496	25.737	743.57	26.041	743.829
26.392	744.125	26.997	744.638	28.551	745.987	28.655	746.004	29.251	746.029
30.21	746.07	33.817	746.221	35.207	746.279	35.792	746.308	40.05	746.517
41.948	746.603	42.135	746.61	44.462	746.686	44.919	746.703	45.173	746.705
45.446	746.715	50	746.91						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	13.188	.04	24.75	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
13.188	24.75	2.009	2	2.01	.1	.3

CROSS SECTION

RIVER: Arroyo Rioeliche
REACH: Aguas Abajo RS: 34.*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	752.297	.085	752.276	.72	751.86	.806	751.812	.823	751.802
1.133	751.629	2.275	750.77	2.488	750.609	2.532	750.583	2.7	750.467
3.054	750.216	4.134	749.461	4.204	749.411	4.541	749.19	4.922	748.949
6.237	748.123	6.674	747.948	10.387	747.217	12.49	746.805	13.437	746.625
14.572	746.411	17.875	745.757	18.08	745.695	22.457	744.357	22.55	744.323
23.838	743.896	24.254	743.757	24.799	743.507	25.045	743.687	25.579	743.619
25.699	743.61	25.876	743.587	25.943	743.579	26.02	743.651	26.321	743.902
26.667	744.187	27.266	744.683	28.802	745.981	28.904	746.004	29.493	746.026
30.442	746.061	34.007	746.193	35.38	746.245	35.958	746.271	40.166	746.471
42.042	746.55	42.227	746.556	44.527	746.628	44.978	746.645	45.229	746.648
45.5	746.658	50	746.85						

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.437    .04  25.045    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.437  25.045            2.009       2    2.01             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 32.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.386    .086 752.368    .733  752.01     .82 751.969    .838 751.961
   1.154 751.812   2.317  750.97   2.534 750.811   2.579 750.785    2.75 750.663
    3.11 750.396    4.21 749.598   4.282 749.545   4.625 749.305   5.013 749.048
   6.352 748.164   6.798 747.956   10.58 747.189  12.721 746.757  13.686  746.57
  14.818 746.353   18.11 745.676  18.314 745.616  22.677 744.306   22.77 744.271
  24.054 743.822  24.469 743.676  25.012 743.426   25.34 743.666  25.868 743.659
  25.986 743.666  26.161 743.663  26.228 743.662  26.304 743.731    26.6 743.974
  26.943 744.249  27.535 744.727  29.052 745.975  29.154 746.003  29.735 746.022
  30.673 746.052  34.196 746.166  35.553  746.21  36.124 746.235  40.283 746.425
  42.136 746.497  42.319 746.502  44.592  746.57  45.037 746.587  45.286 746.591
  45.553 746.601      50  746.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.686    .04   25.34    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.686   25.34            2.009       2    2.01             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 30.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.475    .088 752.459    .747 752.161    .835 752.126    .854 752.119
   1.175 751.995   2.359  751.17   2.581 751.014   2.625 750.988     2.8 750.859
   3.167 750.577   4.287 749.735   4.359 749.679   4.709 749.421   5.104 749.147
   6.468 748.205   6.922 747.963  10.772 747.161  12.953 746.709  13.935 746.515
  15.063 746.294  18.345 745.595  18.549 745.537  22.898 744.255  22.991 744.219
   24.27 743.749  24.684 743.595  25.225 743.345  25.635 743.645  26.157   743.7
  26.274 743.721  26.446 743.738  26.512 743.745  26.587 743.811   26.88 744.047
  27.219 744.312  27.804 744.771  29.303 745.968  29.403 746.003  29.978 746.018
  30.904 746.044  34.385 746.138  35.726 746.175   36.29 746.199  40.399 746.379
   42.23 746.444  42.411 746.448  44.657 746.512  45.097 746.529  45.342 746.533
  45.606 746.544      50  746.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  13.935    .04  25.635    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        13.935  25.635            2.009       2    2.01             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 28.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.564    .089 752.551     .76 752.311     .85 752.283    .869 752.277
   1.196 752.178   2.401  751.37   2.627 751.217   2.672  751.19    2.85 751.055
   3.224 750.757   4.364 749.872   4.437 749.813   4.793 749.537   5.195 749.245
   6.583 748.246   7.045  747.97  10.965 747.134  13.184 746.661  14.184  746.46
  15.308 746.235   18.58 745.514  18.783 745.457  23.118 744.204  23.211 744.167
  24.486 743.675  24.898 743.514  25.438 743.264   25.93 743.624  26.445  743.74
  26.561 743.777  26.731 743.814  26.796 743.829  26.871 743.891   27.16 744.119
  27.495 744.374  28.072 744.815  29.554 745.962  29.652 746.002   30.22 746.015
  31.135 746.035  34.574 746.111  35.899  746.14  36.456 746.163  40.515 746.333
  42.324  746.39  42.502 746.395  44.721 746.453  45.156  746.47  45.398 746.476
  45.659 746.486      50  746.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.184    .04   25.93    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.184   25.93            2.009       2    2.01             .1       .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 26.*

INPUT
Description:
Station Elevation Data    num=      52
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.653    .091 752.643    .773 752.461    .865  752.44    .884 752.435
   1.217 752.361   2.444  751.57   2.673  751.42   2.719 751.393     2.9 751.251
    3.28 750.938    4.44 750.009   4.515 749.947   4.878 749.653   5.286 749.344
   6.699 748.287   7.169 747.978  11.157 747.106  13.416 746.613  14.433 746.405
  15.554 746.176  18.815 745.433  19.017 745.378  23.339 744.153  23.431 744.115
  24.702 743.601  25.113 743.433  25.651 743.183  26.225 743.603  26.734  743.78
  26.848 743.833  27.016 743.889  27.081 743.912  27.154 743.971   27.44 744.192
  27.771 744.436  28.341 744.859  29.804 745.956  29.902 746.002  30.463 746.011
  31.366 746.026  34.763 746.083  36.072 746.105  36.622 746.127  40.631 746.287
  42.418 746.337  42.594 746.341  44.786 746.395  45.216 746.412  45.455 746.419
  45.712 746.429      50  746.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.433     .04  26.225    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.433  26.225            2.009       2    2.01             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 24.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.742    .093 752.735    .787 752.611     .88 752.596    .899 752.594
   1.238 752.544   2.486  751.77   2.719 751.623   2.766 751.595    2.95 751.448
   3.337 751.119   4.517 750.146   4.593  750.08   4.962 749.768   5.378 749.443
   6.815 748.328   7.293 747.985   11.35 747.078  13.647 746.566  14.682  746.35
  15.799 746.118   19.05 745.352  19.251 745.299  23.559 744.102  23.651 744.062
  24.918 743.527  25.328 743.352  25.864 743.102   26.52 743.582  27.023  743.82
  27.135 743.889  27.301 743.965  27.365 743.995  27.438 744.052   27.72 744.265
  28.047 744.499   28.61 744.904  30.055  745.95  30.151 746.001  30.705 746.007
  31.598 746.017  34.952 746.055  36.244  746.07  36.788 746.091  40.748 746.242
  42.513 746.284  42.686 746.287  44.851 746.337  45.275 746.354  45.511 746.362
  45.766 746.372      50  746.55

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.682     .04   26.52    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.682   26.52            2.009       2    2.01             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 22.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 752.831    .094 752.827      .8 752.761    .895 752.753    .915 752.752
   1.259 752.727   2.528  751.97   2.765 751.826   2.813 751.797       3 751.644
   3.393 751.299   4.593 750.283   4.671 750.214   5.046 749.884   5.469 749.541
    6.93 748.368   7.416 747.993  11.542 747.051  13.879 746.518  14.931 746.295
  16.045 746.059  19.284 745.271  19.486 745.219   23.78 744.051  23.871  744.01
  25.134 743.454  25.543  743.27  26.077 743.021  26.815 743.561  27.311  743.86
  27.423 743.944  27.587 744.041  27.649 744.078  27.721 744.132      28 744.337
  28.322 744.561  28.879 744.948  30.305 745.943  30.401 746.001  30.948 746.004
  31.829 746.009  35.141 746.028  36.417 746.035  36.954 746.054  40.864 746.196
  42.607 746.231  42.778 746.234  44.915 746.278  45.334 746.296  45.568 746.304
  45.819 746.315      50  746.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  14.931     .04  26.815    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        14.931  26.815            2.009       2    2.01             .1      .3

CROSS SECTION


RIVER: Arroyo Rioeliche
REACH: Aguas Abajo        RS: 20

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  752.92     .91  752.91     .93  752.91    1.28  752.91    2.57  752.17
    2.86     752    3.05  751.84    3.45  751.48    4.67  750.42    5.13     750
    5.56  749.64    7.54     748   14.11  746.47   15.18  746.24   16.29     746
   19.72  745.14      24     744   25.35  743.38   26.29  742.94   27.11  743.54
    27.6   743.9   27.71     744   28.28  744.41   30.65     746   31.19     746
   32.06     746   35.33     746   36.59     746   40.98  746.15   42.87  746.18
   44.98  746.22      50  746.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   15.18     .04   27.11    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.18   27.11           16.93      20   16.26             .1      .3
```

Profile Output Table - Standard Table 1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev
E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl				
				(m3/s)	(m)	(m)	(m)	(m)
(m/m)	(m/s)	(m2)	(m)					
Arroyo Rioeliche	Aguas Arriba	600	PF 1	22.61	758.72	760.42	760.42	760.88
0.016635	3.01	7.64	8.37	0.97				
Arroyo Rioeliche	Aguas Arriba	600	PF 2	55.78	758.72	761.21	761.21	761.92
0.014178	3.80	15.21	10.66	0.96				
Arroyo Rioeliche	Aguas Arriba	580	PF 1	22.61	758.14	759.92	759.94	760.42
0.018574	3.15	7.23	7.89	1.02				
Arroyo Rioeliche	Aguas Arriba	580	PF 2	55.78	758.14	760.80	760.81	761.44
0.012428	3.63	16.49	13.36	0.90				
Arroyo Rioeliche	Aguas Arriba	563	PF 1	22.61	757.49	758.83	759.13	759.79
0.043390	4.34	5.21	6.17	1.51				
Arroyo Rioeliche	Aguas Arriba	563	PF 2	55.78	757.49	760.74	760.04	761.00
0.003660	2.38	26.62	23.56	0.50				
Arroyo Rioeliche	Aguas Arriba	559	PF 1	22.61	757.35	758.95	758.95	759.51
0.018644	3.31	6.83	6.73	0.99				
Arroyo Rioeliche	Aguas Arriba	559	PF 2	55.78	757.35	759.90	759.90	760.83
0.016233	4.27	13.05	9.55	1.00				
Arroyo Rioeliche	Aguas Arriba	554		Culvert				
Arroyo Rioeliche	Aguas Arriba	550	PF 1	22.61	757.14	759.45	759.45	759.95
0.019191	3.15	7.19	9.77	0.99				
Arroyo Rioeliche	Aguas Arriba	550	PF 2	55.78	757.14	760.29	760.29	761.22
0.015824	4.26	13.09	24.31	0.99				
Arroyo Rioeliche	Aguas Arriba	545	PF 1	22.61	756.99	758.26	758.67	759.54
0.075106	5.01	4.51	6.73	1.95				
Arroyo Rioeliche	Aguas Arriba	545	PF 2	55.78	756.99	758.83	759.47	760.83
0.061067	6.29	9.05	9.17	1.90				
Arroyo Rioeliche	Aguas Arriba	520	PF 1	22.61	756.62	758.52	758.52	759.02
0.018541	3.15	7.18	7.02	0.99				
Arroyo Rioeliche	Aguas Arriba	520	PF 2	55.78	756.62	759.40	759.40	760.17
0.016716	3.87	14.41	9.35	0.99				
Arroyo Rioeliche	Aguas Arriba	502	PF 1	22.61	755.95	757.16	757.50	758.25
0.048255	4.62	4.90	5.49	1.56				
Arroyo Rioeliche	Aguas Arriba	502	PF 2	55.78	755.95	757.98	758.45	759.51
0.039949	5.49	10.16	7.35	1.49				
Arroyo Rioeliche	Aguas Arriba	478	PF 1	22.61	755.17	756.91	757.01	757.62
0.025382	3.73	6.06	5.40	1.12				
Arroyo Rioeliche	Aguas Arriba	478	PF 2	55.78	755.17	758.05	758.05	758.97
0.018857	4.25	13.13	7.16	1.00				
Arroyo Rioeliche	Aguas Arriba	460	PF 1	22.61	754.19	755.82	756.14	756.85
0.050095	4.50	5.03	6.13	1.58				
Arroyo Rioeliche	Aguas Arriba	460	PF 2	55.78	754.19	756.45	757.01	758.19
0.050964	5.84	9.56	7.76	1.68				
Arroyo Rioeliche	Aguas Arriba	441	PF 1	22.61	753.17	755.00	755.29	756.01
0.041639	4.45	5.09	4.90	1.39				
Arroyo Rioeliche	Aguas Arriba	441	PF 2	55.78	753.17	755.97	756.50	757.34
0.033673	5.17	10.78	6.83	1.31				
Arroyo Rioeliche	Aguas Arriba	417	PF 1	22.61	752.64	754.64	754.83	755.28
0.039111	3.55	6.36	9.25	1.37				
Arroyo Rioeliche	Aguas Arriba	417	PF 2	55.78	752.64	756.03	755.48	756.30
0.004904	2.30	25.07	19.43	0.56				
Arroyo Rioeliche	Aguas Arriba	398	PF 1	22.61	752.07	754.52	754.52	755.03
0.020691	3.18	7.12	6.85	0.99				
Arroyo Rioeliche	Aguas Arriba	398	PF 2	55.78	752.07	755.42	755.42	756.12
0.015708	3.75	15.28	11.38	0.94				
Arroyo Rioeliche	Aguas Arriba	380	PF 1	22.61	751.45	753.18	753.50	754.18
0.053523	4.42	5.11	6.40	1.58				
Arroyo Rioeliche	Aguas Arriba	380	PF 2	55.78	751.45	753.85	754.36	755.38
0.045921	5.49	10.22	8.88	1.58				
Arroyo Rioeliche	Aguas Arriba	358	PF 1	22.61	751.11	753.17	753.17	753.62
0.018679	2.98	7.59	8.30	0.99				
Arroyo Rioeliche	Aguas Arriba	358	PF 2	55.78	751.11	753.79	753.95	754.64
0.023777	4.09	13.64	11.22	1.18				
Arroyo Rioeliche	Aguas Arriba	341	PF 1	22.61	750.82	753.07	752.83	753.31
0.009838	2.18	10.38	11.29	0.73				
Arroyo Rioeliche	Aguas Arriba	341	PF 2	55.78	750.82	754.03	753.54	754.31
0.005196	2.38	24.19	18.05	0.59				
Arroyo Rioeliche	Aguas Arriba	323	PF 1	22.61	750.23	752.50	752.50	753.03
0.020681	3.21	7.05	6.62	0.99				
Arroyo Rioeliche	Aguas Arriba	323	PF 2	55.78	750.23	753.43	753.43	754.13
0.018448	3.70	15.09	10.73	0.99				
Arroyo Rioeliche	Aguas Arriba	302	PF 1	22.61	749.85	751.25	751.55	752.26
0.042529	4.46	5.07	5.31	1.46				
Arroyo Rioeliche	Aguas Arriba	302	PF 2	55.78	749.85	752.16	752.60	753.45
0.030406	5.04	11.21	8.83	1.31				
Arroyo Rioeliche	Aguas Arriba	260	PF 1	22.61	748.84	751.35	750.59	751.45
0.002705	1.42	15.94	12.92	0.41				
Arroyo Rioeliche	Aguas Arriba	260	PF 2	55.78	748.84	752.76	751.35	752.86
0.001235	1.40	41.37	24.38	0.30				

Arroyo Rioeliche	Aguas Arriba	240	PF 1	22.61	748.37	751.08	750.62	751.35	
0.008009	2.32	9.75	7.19	0.64					
Arroyo Rioeliche	Aguas Arriba	240	PF 2	55.78	748.37	752.50	751.62	752.80	
0.004728	2.43	23.54	14.79	0.53					
Arroyo Rioeliche	Aguas Arriba	233	PF 1	22.61	748.22	751.00	750.00	751.20	
0.004903	1.95	11.59	6.86	0.48					
Arroyo Rioeliche	Aguas Arriba	233	PF 2	55.78	748.22	752.34	751.22	752.70	
0.004263	2.66	20.94	14.04	0.49					
Arroyo Rioeliche	Aguas Arriba	229	Culvert						
Arroyo Rioeliche	Aguas Arriba	224	PF 1	22.61	748.13	751.00	749.67	751.18	
0.004144	1.88	12.02	4.71	0.38					
Arroyo Rioeliche	Aguas Arriba	224	PF 2	55.78	748.13	752.05	750.87	752.59	
0.010078	3.25	17.16	6.88	0.57					
Arroyo Rioeliche	Aguas Arriba	220	PF 1	22.61	748.05	750.14	750.42	751.04	
0.039248	4.19	5.39	5.46	1.35					
Arroyo Rioeliche	Aguas Arriba	220	PF 2	55.78	748.05	750.82	751.28	752.36	
0.044177	5.51	10.24	8.80	1.53					
Arroyo Rioeliche	Aguas Arriba	200	PF 1	22.61	747.40	749.31	749.53	750.23	
0.035250	4.24	5.33	4.68	1.27					
Arroyo Rioeliche	Aguas Arriba	200	PF 2	55.78	747.40	750.37	750.80	751.54	
0.027550	4.85	12.00	9.97	1.22					
Arroyo Rioeliche	Aguas Arriba	180	PF 1	22.61	746.89	748.81	748.43	749.00	
0.005238	1.95	12.00	11.32	0.57					
Arroyo Rioeliche	Aguas Arriba	180	PF 2	55.78	746.89	748.60	749.14	750.34	
0.058643	5.96	9.65	10.41	1.88					
Arroyo Rioeliche	Aguas Arriba	160	PF 1	22.61	746.30	748.20	748.20	748.69	
0.018981	3.10	7.29	7.50	1.00					
Arroyo Rioeliche	Aguas Arriba	160	PF 2	55.78	746.30	749.05	749.05	749.79	
0.016954	3.81	14.64	9.81	1.00					
Arroyo Rioeliche	Aguas Arriba	140	PF 1	22.61	745.79	747.85	747.36	748.03	
0.004898	1.84	12.26	10.47	0.54					
Arroyo Rioeliche	Aguas Arriba	140	PF 2	55.78	745.79	749.04	748.15	749.25	
0.002663	2.03	28.79	18.27	0.44					
Arroyo Rioeliche	Aguas Abajo	120	PF 1	28.00	745.20	747.45	747.36	747.95	
0.015667	3.16	8.86	7.24	0.91					
Arroyo Rioeliche	Aguas Abajo	120	PF 2	69.07	745.20	748.53	748.48	749.18	
0.014209	3.57	19.54	14.82	0.92					
Arroyo Rioeliche	Aguas Abajo	100	PF 1	28.00	744.63	746.91	746.95	747.53	
0.020755	3.51	7.97	6.82	1.04					
Arroyo Rioeliche	Aguas Abajo	100	PF 2	69.07	744.63	747.98	747.98	748.83	
0.016873	4.09	16.87	9.78	0.99					
Arroyo Rioeliche	Aguas Abajo	80	PF 1	28.00	744.23	745.94	746.22	746.83	
0.039682	4.18	6.70	8.02	1.46					
Arroyo Rioeliche	Aguas Abajo	80	PF 2	69.07	744.23	746.55	747.12	748.08	
0.039127	5.57	13.01	12.91	1.55					
Arroyo Rioeliche	Aguas Abajo	60	PF 1	28.00	743.95	745.85	745.79	746.32	
0.012695	2.67	9.39	8.65	0.85					
Arroyo Rioeliche	Aguas Abajo	60	PF 2	69.07	743.95	746.91	746.72	747.23	
0.009045	2.65	27.52	27.64	0.76					
Arroyo Rioeliche	Aguas Abajo	40	PF 1	28.00	743.75	745.51	745.51	746.01	
0.014144	2.61	9.20	8.81	0.90					
Arroyo Rioeliche	Aguas Abajo	40	PF 2	69.07	743.75	746.57	746.49	746.99	
0.012186	3.11	24.35	25.17	0.89					
Arroyo Rioeliche	Aguas Abajo	20	PF 1	28.00	742.94	745.06	745.10	745.58	
0.018354	3.26	8.83	9.23	1.03					
Arroyo Rioeliche	Aguas Abajo	20	PF 2	69.07	742.94	745.91	745.93	746.61	
0.015771	3.78	18.62	13.86	1.02					
Arroyo El Moro	Afluente	460	PF 1	5.39	796.29	797.25	797.25	797.48	
0.022147	2.12	2.54	5.56	1.00					
Arroyo El Moro	Afluente	460	PF 2	13.31	796.29	797.95	797.65	798.09	
0.006220	1.66	8.08	10.67	0.59					
Arroyo El Moro	Afluente	454	PF 1	5.39	796.00	797.08	796.72	797.23	
0.003806	1.60	3.17	17.21	0.50					
Arroyo El Moro	Afluente	454	PF 2	13.31	796.00	797.62	797.30	798.02	
0.005905	2.62	4.78	22.53	0.66					
Arroyo El Moro	Afluente	452	Culvert						
Arroyo El Moro	Afluente	447	PF 1	5.39	793.58	793.83	794.48	816.28	
9.975622	21.00	0.26	1.79	17.71					
Arroyo El Moro	Afluente	447	PF 2	13.31	793.58	795.05	795.05	795.68	
0.015484	3.50	3.80	10.82	0.99					
Arroyo El Moro	Afluente	440	PF 1	5.39	792.29	792.99	793.49	795.51	
0.400993	7.03	0.77	2.18	3.78					
Arroyo El Moro	Afluente	440	PF 2	13.31	792.29	793.54	793.98	795.08	
0.114639	5.50	2.42	3.89	2.22					
Arroyo El Moro	Afluente	420	PF 1	5.39	790.45	791.38	791.66	792.23	
0.096012	4.09	1.32	2.84	1.92					
Arroyo El Moro	Afluente	420	PF 2	13.31	790.45	791.75	792.18	793.09	
0.095880	5.13	2.60	3.97	2.02					
Arroyo El Moro	Afluente	400	PF 1	5.39	789.40	790.13	790.33	790.75	
0.070671	3.47	1.55	3.83	1.74					

Arroyo El Moro	Afluente	400	PF 2	13.31	789.40	790.45	790.80	791.53	
0.072530	4.60	2.89	4.60	1.85					
Arroyo El Moro	Afluente	380	PF 1	5.39	788.31	789.36	789.49	789.83	
0.037035	3.07	1.81	3.49	1.27					
Arroyo El Moro	Afluente	380	PF 2	13.31	788.31	789.75	790.01	790.51	
0.039587	3.99	3.58	5.60	1.39					
Arroyo El Moro	Afluente	360	PF 1	5.39	787.11	787.42	787.55	787.93	
0.184207	3.62	1.71	12.77	2.54					
Arroyo El Moro	Afluente	360	PF 2	13.31	787.11	787.52	787.75	788.44	
0.179703	4.21	3.13	14.49	2.61					
Arroyo El Moro	Afluente	340	PF 1	5.39	784.04	784.62	784.86	785.52	
0.131974	4.61	1.34	5.14	2.29					
Arroyo El Moro	Afluente	340	PF 2	13.31	784.04	784.85	785.22	786.06	
0.114255	5.34	2.77	7.11	2.22					
Arroyo El Moro	Afluente	320	PF 1	5.39	779.14	779.88	780.27	781.56	
0.245634	5.74	0.94	2.58	3.04					
Arroyo El Moro	Afluente	320	PF 2	13.31	779.14	780.17	780.84	782.88	
0.213394	7.31	1.85	3.35	3.03					
Arroyo El Moro	Afluente	300	PF 1	5.39	776.88	777.90	778.20	778.83	
0.107353	4.28	1.26	2.61	1.97					
Arroyo El Moro	Afluente	300	PF 2	13.31	776.88	778.28	778.74	779.78	
0.110597	5.43	2.45	3.68	2.12					
Arroyo El Moro	Afluente	280	PF 1	5.39	772.93	773.94	774.37	775.44	
0.188596	5.42	0.99	1.95	2.43					
Arroyo El Moro	Afluente	280	PF 2	13.31	772.93	774.38	775.00	776.65	
0.160856	6.67	2.00	2.67	2.42					
Arroyo El Moro	Afluente	260	PF 1	5.39	769.73	770.67	771.06	772.01	
0.168063	5.12	1.05	2.20	2.37					
Arroyo El Moro	Afluente	260	PF 2	13.31	769.73	771.05	771.63	773.25	
0.162221	6.57	2.03	3.14	2.51					
Arroyo El Moro	Afluente	255	Culvert						
Arroyo El Moro	Afluente	254	PF 1	5.39	768.88	769.16	770.01	813.92	
21.959820	29.64	0.18	1.29	25.16					
Arroyo El Moro	Afluente	254	PF 2	13.31	768.88	769.46	770.60	787.53	
2.973954	18.84	0.71	2.06	10.27					
Arroyo El Moro	Afluente	240	PF 1	5.39	766.64	767.43	767.83	769.08	
0.229999	5.68	0.95	2.40	2.88					
Arroyo El Moro	Afluente	240	PF 2	13.31	766.64	767.71	768.40	770.76	
0.266372	7.74	1.72	3.25	3.29					
Arroyo El Moro	Afluente	220	PF 1	5.39	762.84	763.48	763.75	764.61	
0.220346	4.72	1.14	4.25	2.90					
Arroyo El Moro	Afluente	220	PF 2	13.31	762.84	763.68	764.13	765.59	
0.229825	6.12	2.18	5.84	3.15					
Arroyo El Moro	Afluente	200	PF 1	5.39	760.96	761.85	762.09	762.60	
0.086457	3.83	1.41	3.25	1.85					
Arroyo El Moro	Afluente	200	PF 2	13.31	760.96	762.22	762.58	763.36	
0.078636	4.75	2.80	4.26	1.87					
Arroyo El Moro	Afluente	180	PF 1	5.39	759.32	759.95	760.16	760.63	
0.100648	3.65	1.48	4.56	2.05					
Arroyo El Moro	Afluente	180	PF 2	13.31	759.32	760.19	760.57	761.45	
0.106109	4.97	2.68	5.26	2.22					
Arroyo El Moro	Afluente	160	PF 1	5.39	758.19	759.22	759.31	759.61	
0.036385	2.80	1.93	3.76	1.25					
Arroyo El Moro	Afluente	160	PF 2	13.31	758.19	759.61	759.80	760.27	
0.039155	3.61	3.69	5.20	1.37					
Arroyo El Moro	Afluente	140	PF 1	5.39	757.15	758.16	758.30	758.66	
0.048098	3.13	1.72	3.37	1.40					
Arroyo El Moro	Afluente	140	PF 2	13.31	757.15	758.58	758.81	759.36	
0.045951	3.91	3.40	4.56	1.45					
Arroyo El Moro	Afluente	120	PF 1	5.39	756.00	756.83	757.03	757.46	
0.058963	3.54	1.52	2.84	1.54					
Arroyo El Moro	Afluente	120	PF 2	13.31	756.00	757.27	757.56	758.26	
0.056856	4.40	3.03	3.84	1.58					
Arroyo El Moro	Afluente	100	PF 1	5.39	754.59	755.57	755.75	756.25	
0.054913	3.66	1.47	3.13	1.51					
Arroyo El Moro	Afluente	100	PF 2	13.31	754.59	756.10	756.41	757.24	
0.039856	4.73	2.81	4.63	1.42					
Arroyo El Moro	Afluente	95	Culvert						
Arroyo El Moro	Afluente	92	PF 1	5.39	753.14	754.64	754.64	755.16	
0.041569	3.29	1.72	1.64	0.96					
Arroyo El Moro	Afluente	92	PF 2	13.31	753.14	755.57	755.57	756.27	
0.037841	3.80	3.60	4.35	0.98					
Arroyo El Moro	Afluente	80	PF 1	5.39	752.40	753.18	753.42	753.95	
0.096401	3.89	1.38	3.54	1.98					
Arroyo El Moro	Afluente	80	PF 2	13.31	752.40	753.44	753.86	754.97	
0.114633	5.51	2.45	4.69	2.30					
Arroyo El Moro	Afluente	60	PF 1	5.39	751.06	751.79	752.00	752.45	
0.072939	3.60	1.50	3.48	1.75					
Arroyo El Moro	Afluente	60	PF 2	13.31	751.06	752.14	752.49	753.22	
0.072091	4.60	2.89	4.46	1.82					

Arroyo El Moro	Afluente	40	PF 1	5.39	749.71	750.19	750.36	750.72	
0.096940	3.23	1.67	6.14	1.98					
Arroyo El Moro	Afluente	40	PF 2	13.31	749.71	750.39	750.68	751.37	
0.105565	4.39	3.03	7.44	2.20					
Arroyo El Moro	Afluente	20	PF 1	5.39	746.90	747.74	748.03	748.65	
0.109195	4.23	1.27	3.03	2.08					
Arroyo El Moro	Afluente	20	PF 2	13.31	746.90	749.23	748.51	749.33	
0.002714	1.35	9.87	8.41	0.39					

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : ed50

River: Arroyo El Moro Reach: Afluente RS: 460 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: Arroyo El Moro Reach: Afluente RS: 460 Profile: PF 2
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.
River: Arroyo El Moro Reach: Afluente RS: 458.5* 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.
River: Arroyo El Moro Reach: Afluente RS: 457.* Profile: PF 1
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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo El Moro Reach: Afluente RS: 455.5* Profile: PF 2
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.
River: Arroyo El Moro Reach: Afluente RS: 454 Profile: PF 1
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Arroyo El Moro Reach: Afluente RS: 454 Profile: PF 2
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Arroyo El Moro Reach: Afluente RS: 452 Profile: PF 1 Culv: Culvert #1
Warning:During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
section. The program used the solution with the least error.
Note: The flow in the culvert is entirely supercritical.
River: Arroyo El Moro Reach: Afluente RS: 452 Profile: PF 2 Culv: Culvert #1
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert
inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.
River: Arroyo El Moro Reach: Afluente RS: 447 Profile: PF 2
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 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: Arroyo El Moro Reach: Afluente RS: 445.25* 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.
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.
River: Arroyo El Moro Reach: Afluente RS: 445.25* Profile: PF 2
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.
River: Arroyo El Moro Reach: Afluente RS: 443.5* 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.
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.
River: Arroyo El Moro Reach: Afluente RS: 443.5* Profile: PF 2
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: Arroyo El Moro  Reach: Afluente     RS: 441.75*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 440     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 438.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 436.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 434.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 400     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo El Moro  Reach: Afluente     RS: 400     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo El Moro  Reach: Afluente     RS: 361.818*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 360     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 360     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 358.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 358.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 338.181*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 336.363*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 334.545*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 332.727*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 332.727*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 330.909*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 330.909*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 329.090*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 329.090*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 327.272*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 327.272*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 325.454*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 325.454*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 323.636*     Profile: PF 1
```

```
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 323.636*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 321.818*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 321.818*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 320     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 320     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 318.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 318.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 316.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 316.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 314.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 312.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 298.*     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.
River: Arroyo El Moro  Reach: Afluente     RS: 298.*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 294.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 292.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 290.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 290.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 288.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 288.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 286.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 286.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 284.*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 284.*     Profile: PF 2
     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.
```

River: Arroyo El Moro Reach: Afluente   RS: 282.*   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 282.*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 280   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 280   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 278.181*   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 276.363*   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 276.363*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 274.545*   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 274.545*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 272.727*   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 272.727*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 270.909*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 269.090*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 267.272*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 265.454*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 263.636*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 261.818*   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 261.818*   Profile: PF 2
     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.
River: Arroyo El Moro Reach: Afluente   RS: 260   Profile: PF 1
     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.
River: Arroyo El Moro Reach: Afluente   RS: 255   Profile: PF 1   Culv: Culvert #1
     Warning:During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
             section. The program used the solution with the least error.
     Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
River: Arroyo El Moro Reach: Afluente   RS: 255   Profile: PF 2   Culv: Culvert #1
     Warning:During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross
             section. The program used the solution with the least error.
     Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert
             inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.
River: Arroyo El Moro Reach: Afluente   RS: 252.*   Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
             surface that had the least amount of error between computed and assumed values.
     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.
     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.
River: Arroyo El Moro Reach: Afluente   RS: 252.*   Profile: PF 2

```
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 250.*     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.
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 250.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 248.*     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.
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 248.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 246.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 246.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 244.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 244.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 242.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 242.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 240     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 240     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 238.181*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 238.181*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 236.363*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 236.363*     Profile: PF 2
     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.
```

```
River: Arroyo El Moro  Reach: Afluente     RS: 234.545*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 234.545*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 232.727*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 232.727*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 230.909*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 230.909*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 229.090*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 229.090*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 227.272*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 227.272*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 225.454*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 225.454*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 223.636*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 223.636*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 221.818*     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 221.818*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 220     Profile: PF 1
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 220     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 218.*     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 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.
River: Arroyo El Moro  Reach: Afluente     RS: 218.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 216.*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 178.181*     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.
River: Arroyo El Moro  Reach: Afluente     RS: 178.181*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 95     Profile: PF 1     Culv: Culvert #1
     Note:   During the supercritical calculations a hydraulic jump occurred inside of the culvert.
River: Arroyo El Moro  Reach: Afluente     RS: 95     Profile: PF 2     Culv: Culvert #1
     Note:   During the supercritical calculations a hydraulic jump occurred inside of the culvert.
River: Arroyo El Moro  Reach: Afluente     RS: 92     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 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: Arroyo El Moro  Reach: Afluente     RS: 92     Profile: PF 2
     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 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: Arroyo El Moro  Reach: Afluente     RS: 90.2857*     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.
River: Arroyo El Moro  Reach: Afluente     RS: 90.2857*     Profile: PF 2
     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.
River: Arroyo El Moro  Reach: Afluente     RS: 88.5714*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 83.4285*     Profile: PF 2
     Warning:Divided flow computed for this cross-section.
River: Arroyo El Moro  Reach: Afluente     RS: 78.1818*     Profile: PF 2
     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: Arroyo El Moro  Reach: Afluente     RS: 21.8181*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo El Moro  Reach: Afluente     RS: 20     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 600     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 600     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 580     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 580     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 578.111*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 578.111*     Profile: PF 2
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
cross sections.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 576.222*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 576.222*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 574.333*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 574.333*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 572.444*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 572.444*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 570.555*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 570.555*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 568.666*     Profile: PF 1
```

```
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 568.666*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 566.777*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 566.777*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 564.888*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 564.888*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 563     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 563     Profile: PF 2
     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 559     Profile: PF 1
     Warning:During subcritical analysis, the water surface upstream of culvert went to critical depth.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 559     Profile: PF 2
     Warning:During subcritical analysis, the water surface upstream of culvert went to critical depth.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 554     Profile: PF 1
     Warning:During subcritical analysis, the water surface upstream of culvert went to critical depth.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 554     Profile: PF 1     Culv: Culvert #1
     Warning:During the supercritical analysis, the program could not balance the energy equation during the forewater
             calculations inside of the culvert.  The program assumed critical depth at the outlet and continued on.
     Warning:The inlet is submerged and the outlet computations indicate that the culvert would flow full over all or
part of its
             length.   The program would normally default to the outlet answer.  However, the user has requested that
the inlet
             answer be used.
     Note:   During the supercritical calculations a hydraulic jump occurred inside of the culvert.
     Note:   During the supercritical calculations a hydraulic jump occurred at the inlet of (going into) the culvert.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 554     Profile: PF 2
     Warning:During subcritical analysis, the water surface upstream of culvert went to critical depth.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 554     Profile: PF 2     Culv: Culvert #1
     Warning:During the supercritical analysis, the program could not balance the energy equation during the forewater
             calculations inside of the culvert.  The program assumed critical depth at the outlet and continued on.
     Warning:The inlet is submerged and the outlet computations indicate that the culvert would flow full over all or
part of its
             length.   The program would normally default to the outlet answer.  However, the user has requested that
the inlet
             answer be used.
     Note:   During the supercritical calculations a hydraulic jump occurred inside of the culvert.
River: Arroyo Rioeliche  Reach: Aguas Arriba     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: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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 550     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 548.333*     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 548.333*     Profile: PF 2
     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 546.666*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 543.076*     Profile: PF 1
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 543.076*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 541.153*     Profile: PF 2
```

```
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 520     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 520     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 518.2*     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 518.2*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 500.*     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 500.*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 498.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 498.*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 496.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 494.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 492.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 490.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 488.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 486.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 484.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 482.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 480.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 480.*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 478     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 478     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 476.*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 439.153*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
             surface that had the least amount of error between computed and assumed values.
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 437.307*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
```

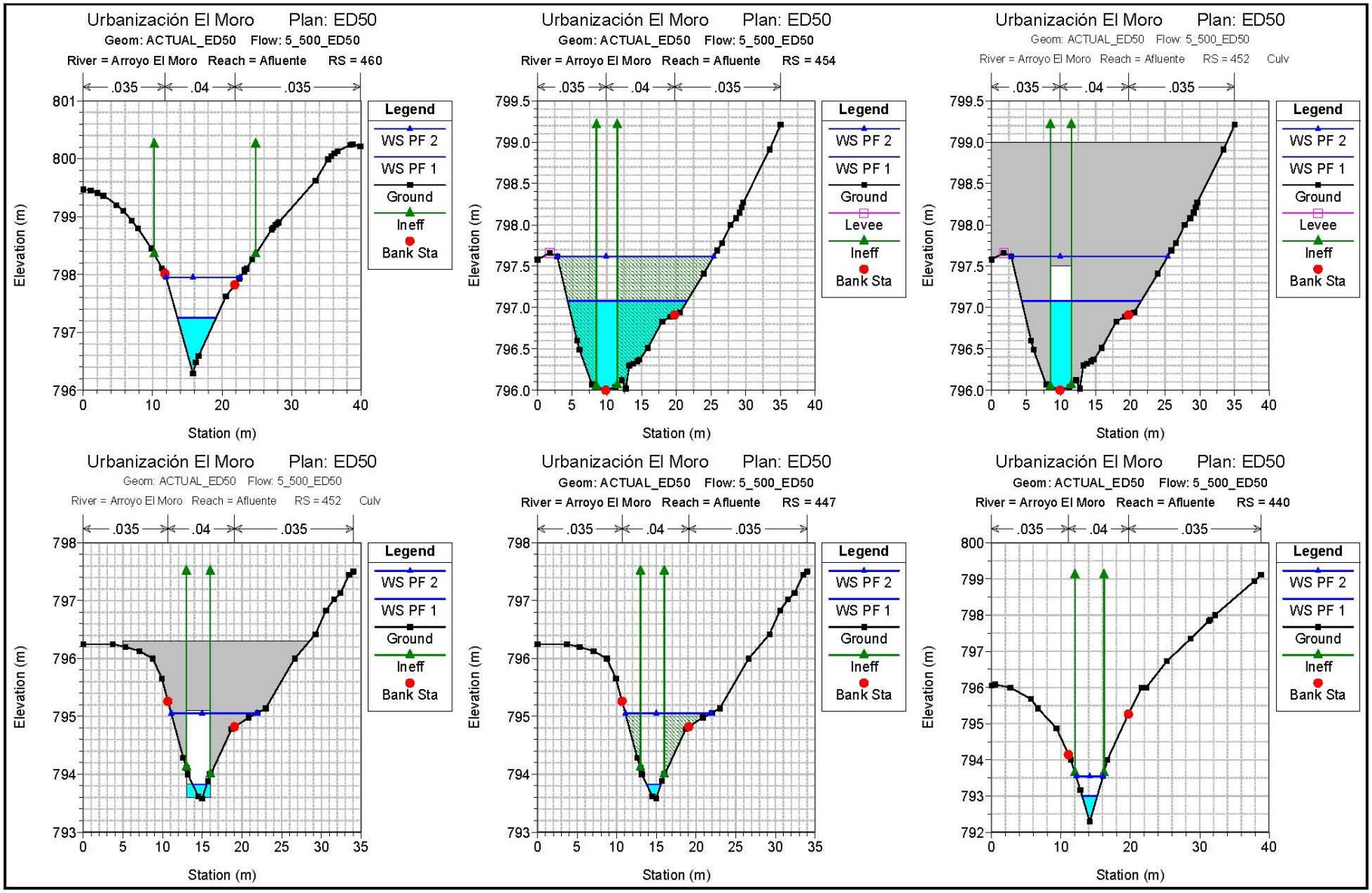
```
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 435.461*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 433.615*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 431.769*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 429.923*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 428.076*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 426.230*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 424.384*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 418.846*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 415.1*     Profile: PF 1
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 399.9*     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 399.9*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 398     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 398     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 396.*     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 396.*     Profile: PF 2
     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 378.*     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.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 374.*     Profile: PF 1
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 368.*     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 366.*     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 364.*     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 362.*     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 360.*     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 358     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: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 358     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program
selected the water
            surface that had the least amount of error between computed and assumed values.
River: Arroyo Rioeliche  Reach: Aguas Arriba     RS: 356.111*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
```

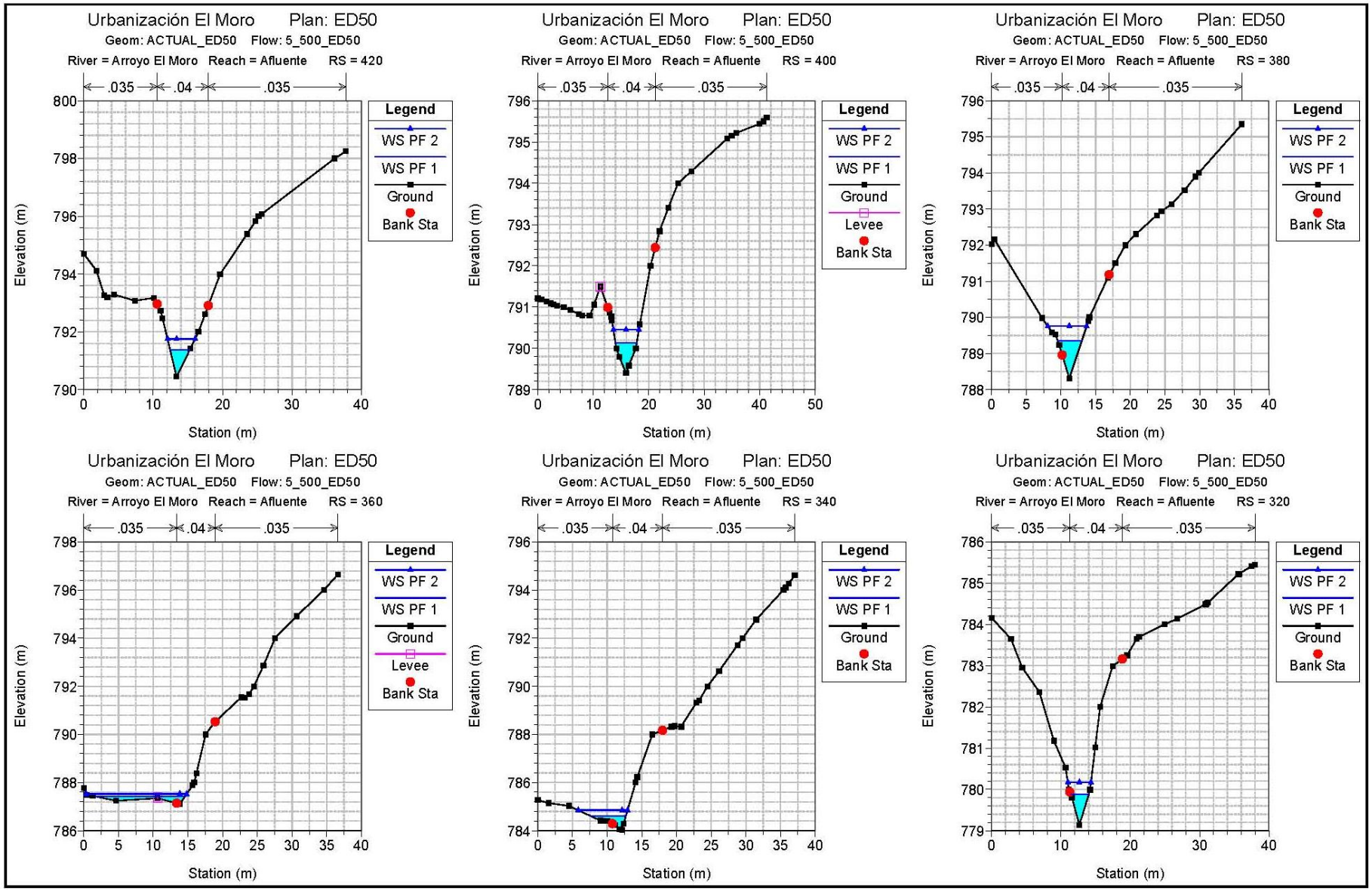
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 354.222* Profile: PF 1
  Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 324.8* Profile: PF 2
  Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 323 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: Arroyo Rioeliche Reach: Aguas Arriba RS: 323 Profile: PF 2
  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: Arroyo Rioeliche Reach: Aguas Arriba RS: 313.454* 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.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 309.636* Profile: PF 2
  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: Arroyo Rioeliche Reach: Aguas Arriba RS: 307.727* Profile: PF 2
  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: Arroyo Rioeliche Reach: Aguas Arriba RS: 292.* Profile: PF 2
  Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 284.* Profile: PF 1
  Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 272.* Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 270.* Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 268.* Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 266.* Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 264.* Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 262.* Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 260 Profile: PF 2
  Warning:Divided flow computed for this cross-section.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 224 Profile: PF 1
  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.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 224 Profile: PF 2
  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: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.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 222.666* 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.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 222.666* Profile: PF 2
  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: Arroyo Rioeliche Reach: Aguas Arriba RS: 221.333* 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: Arroyo Rioeliche Reach: Aguas Arriba RS: 221.333* Profile: PF 2
  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: Arroyo Rioeliche Reach: Aguas Arriba RS: 220 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.
River: Arroyo Rioeliche Reach: Aguas Arriba RS: 220 Profile: PF 2
  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: Arroyo Rioeliche Reach: Aguas Arriba RS: 198.181* Profile: PF 2
  Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

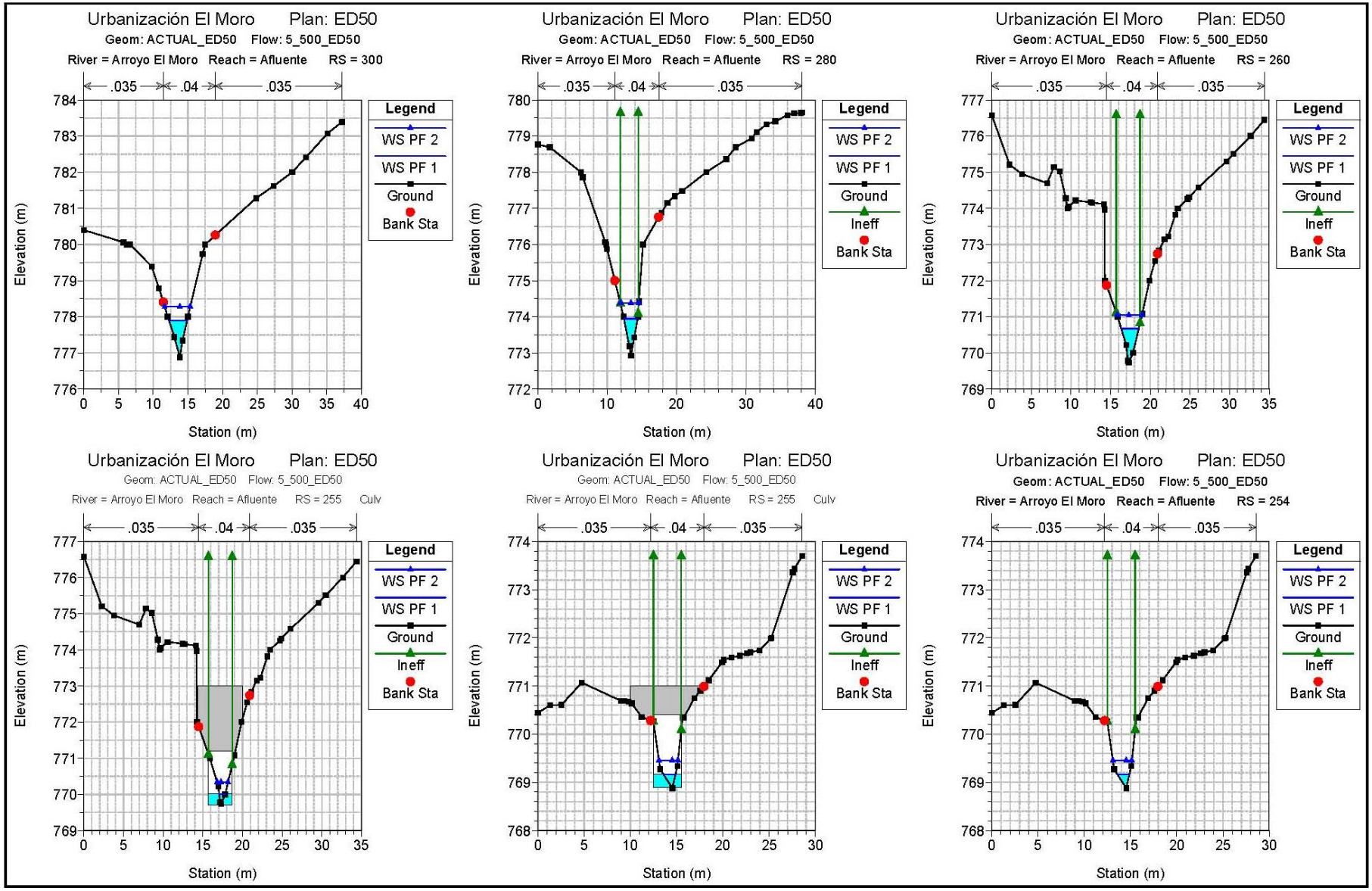
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 196.363*   Profile: PF 2
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 180   Profile: PF 1
     Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 178.*   Profile: PF 2
     Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 160   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: Arroyo Rioeliche Reach: Aguas Arriba   RS: 160   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Arriba   RS: 158.*   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.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 158.*   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Arriba   RS: 148.*   Profile: PF 2
     Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 144.*   Profile: PF 1
     Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 140   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.
River: Arroyo Rioeliche Reach: Aguas Arriba   RS: 140   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 105.454*   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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 101.818*   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 100   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 98.*   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 96.*   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 94.*   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 78.*   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.
River: Arroyo Rioeliche Reach: Aguas Abajo   RS: 72.*   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.
River: Arroyo Rioeliche Reach: Aguas Abajo   RS: 68.*   Profile: PF 1
     Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Abajo   RS: 60   Profile: PF 2
     Note: Hydraulic jump has occurred between this cross section and the previous upstream section.
River: Arroyo Rioeliche Reach: Aguas Abajo   RS: 40   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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 30.*   Profile: PF 2
     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: Arroyo Rioeliche Reach: Aguas Abajo   RS: 28.*   Profile: PF 2
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

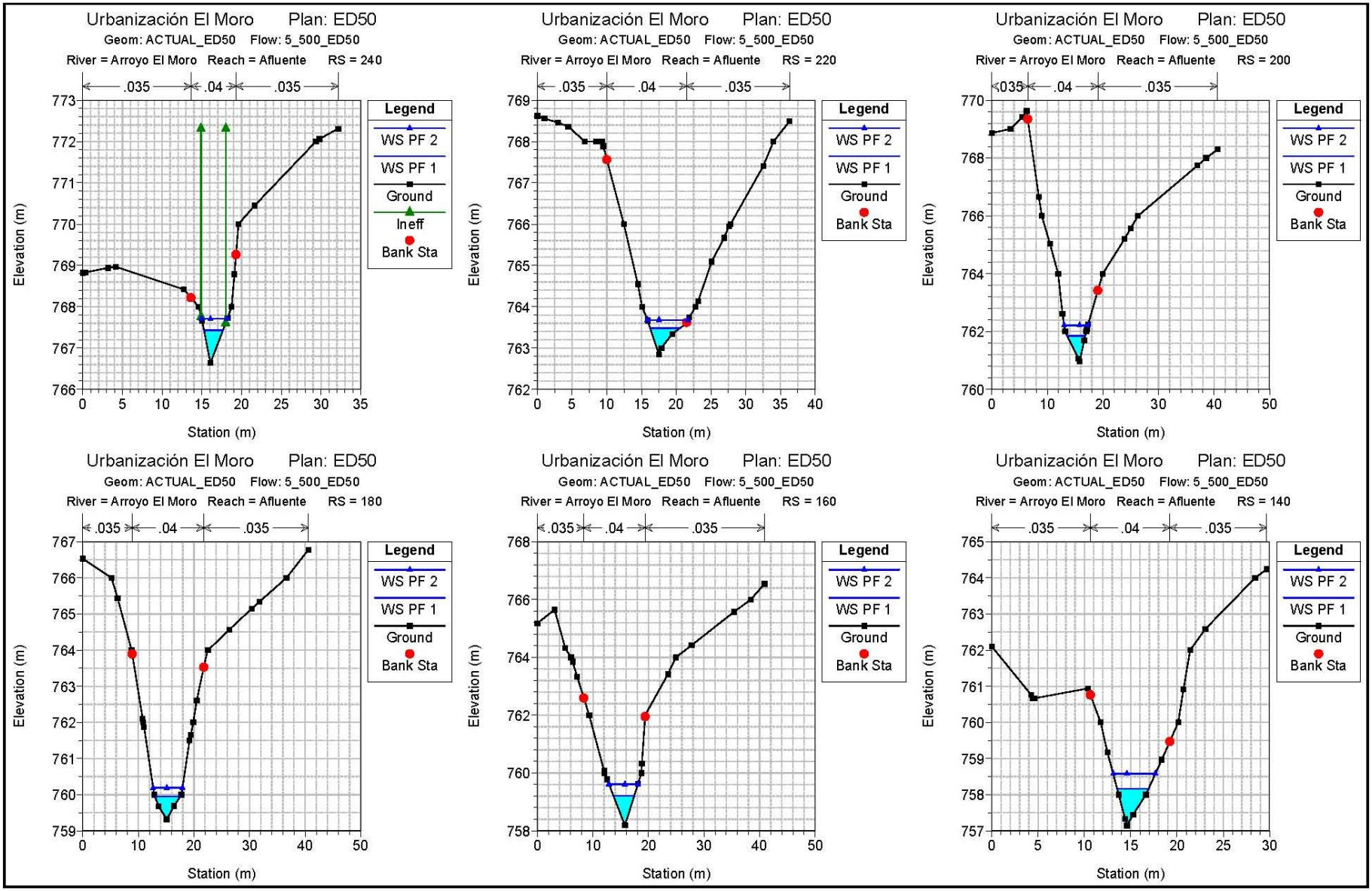
```
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Abajo     RS: 26.*     Profile: PF 2
     Warning:The energy equation could not be balanced within the specified number of iterations.  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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Abajo     RS: 24.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Abajo     RS: 22.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: Arroyo Rioeliche  Reach: Aguas Abajo     RS: 20     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
```

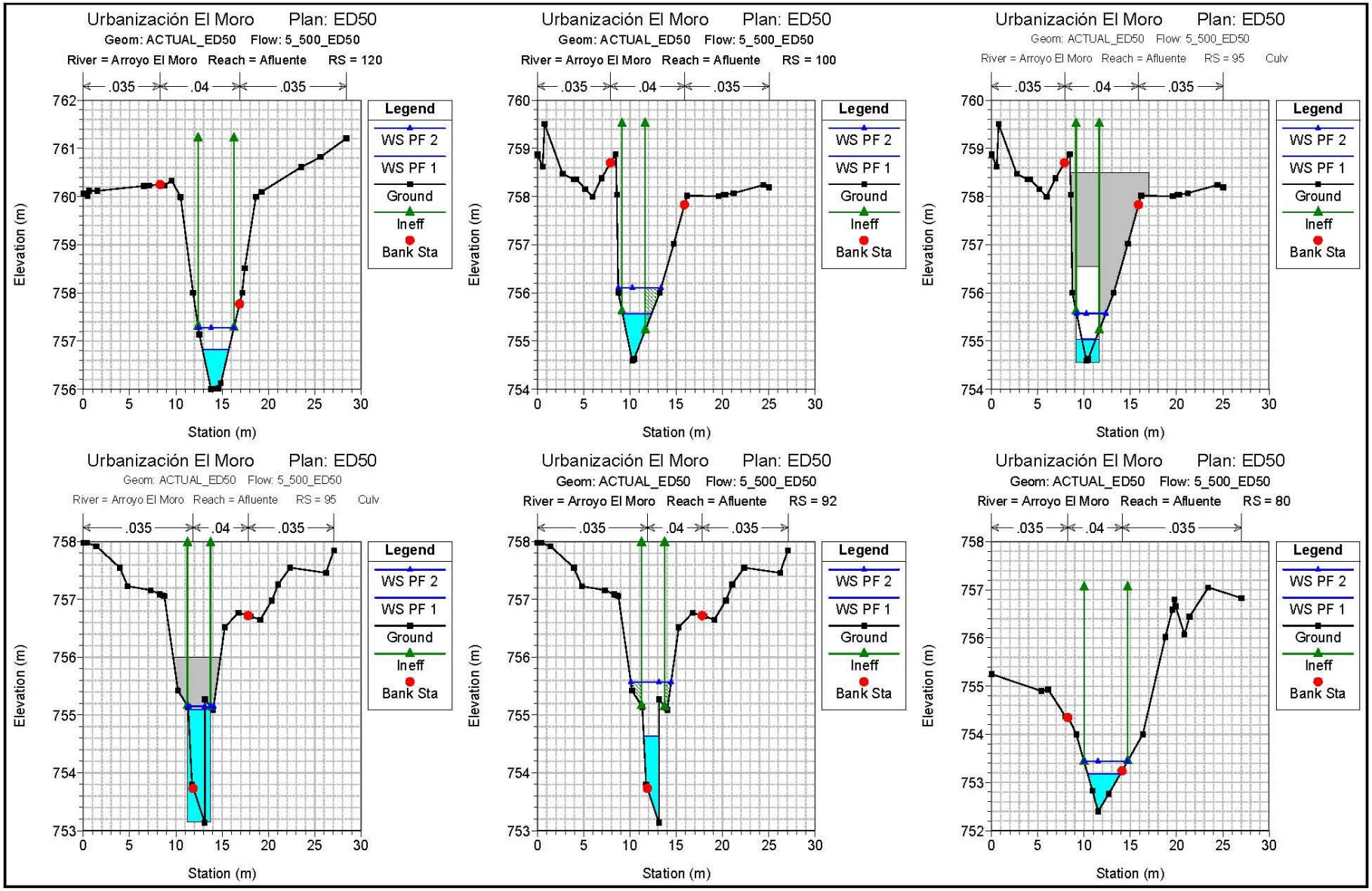
APÉNDICE 2.C. SECCIONES TRANSVERSALES

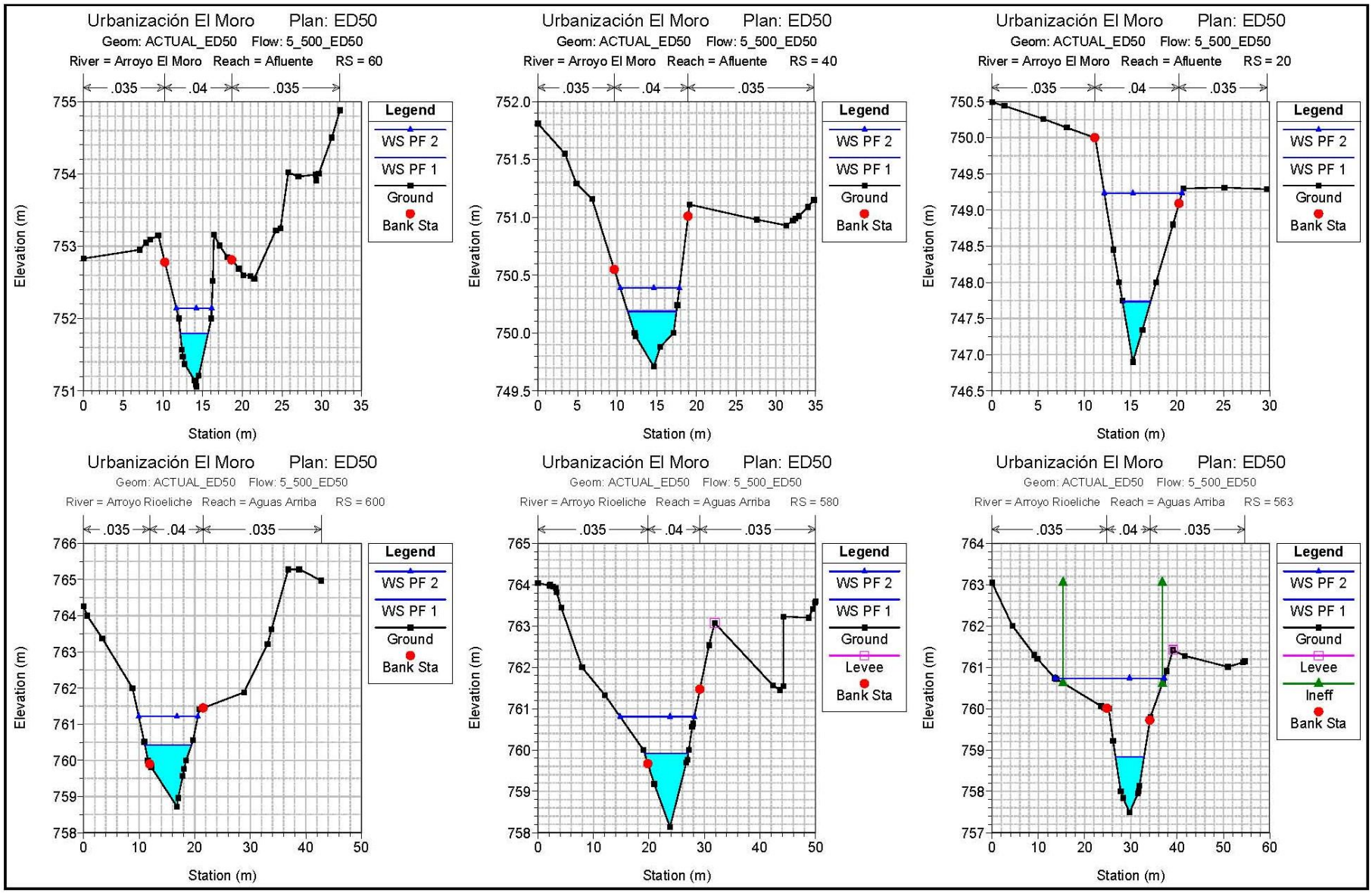

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 460
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 454
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 452 Culv
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 452 Culv
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 447
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 440
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

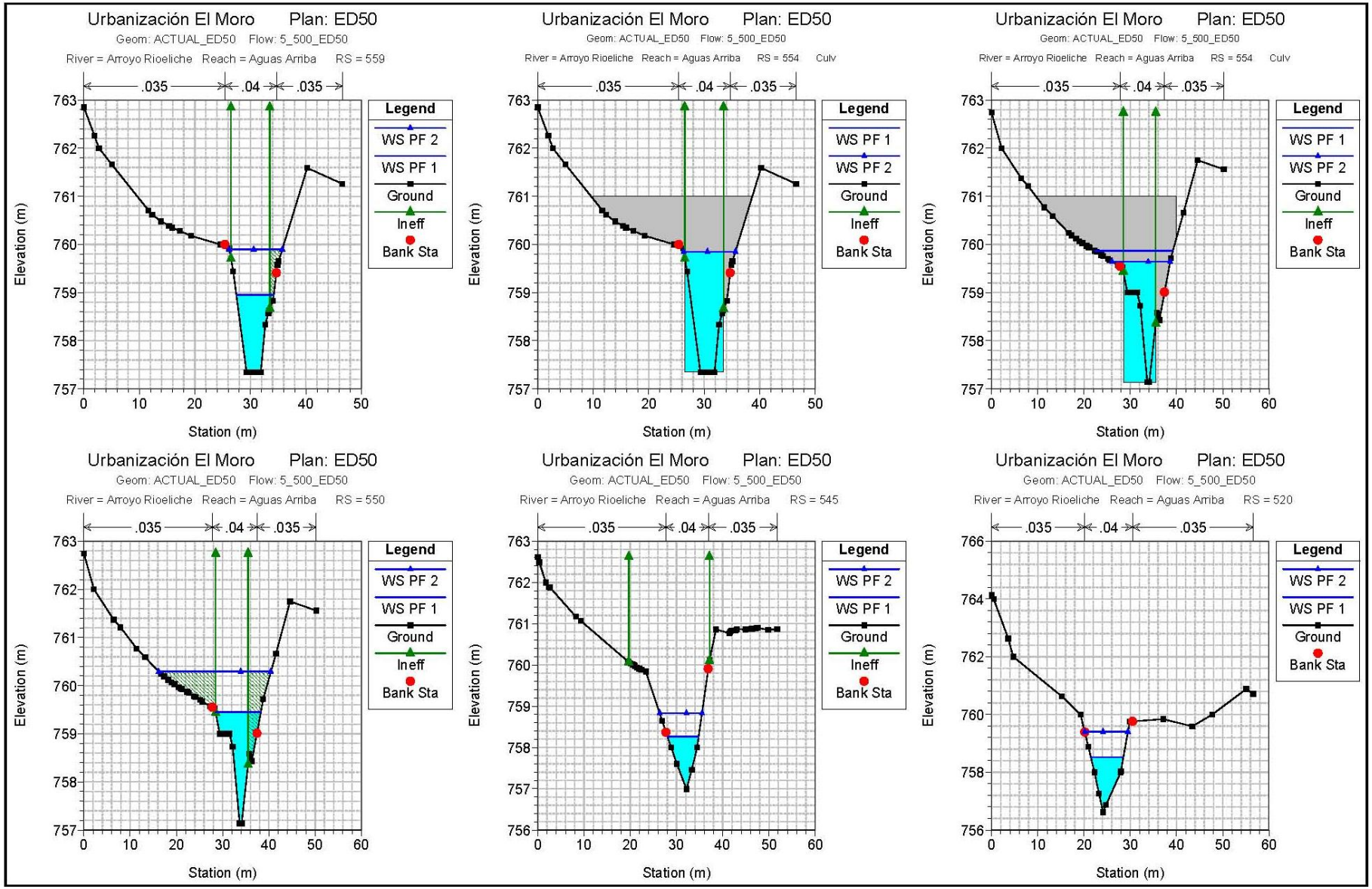

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 420
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 400
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 380
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 360
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 340
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 320
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

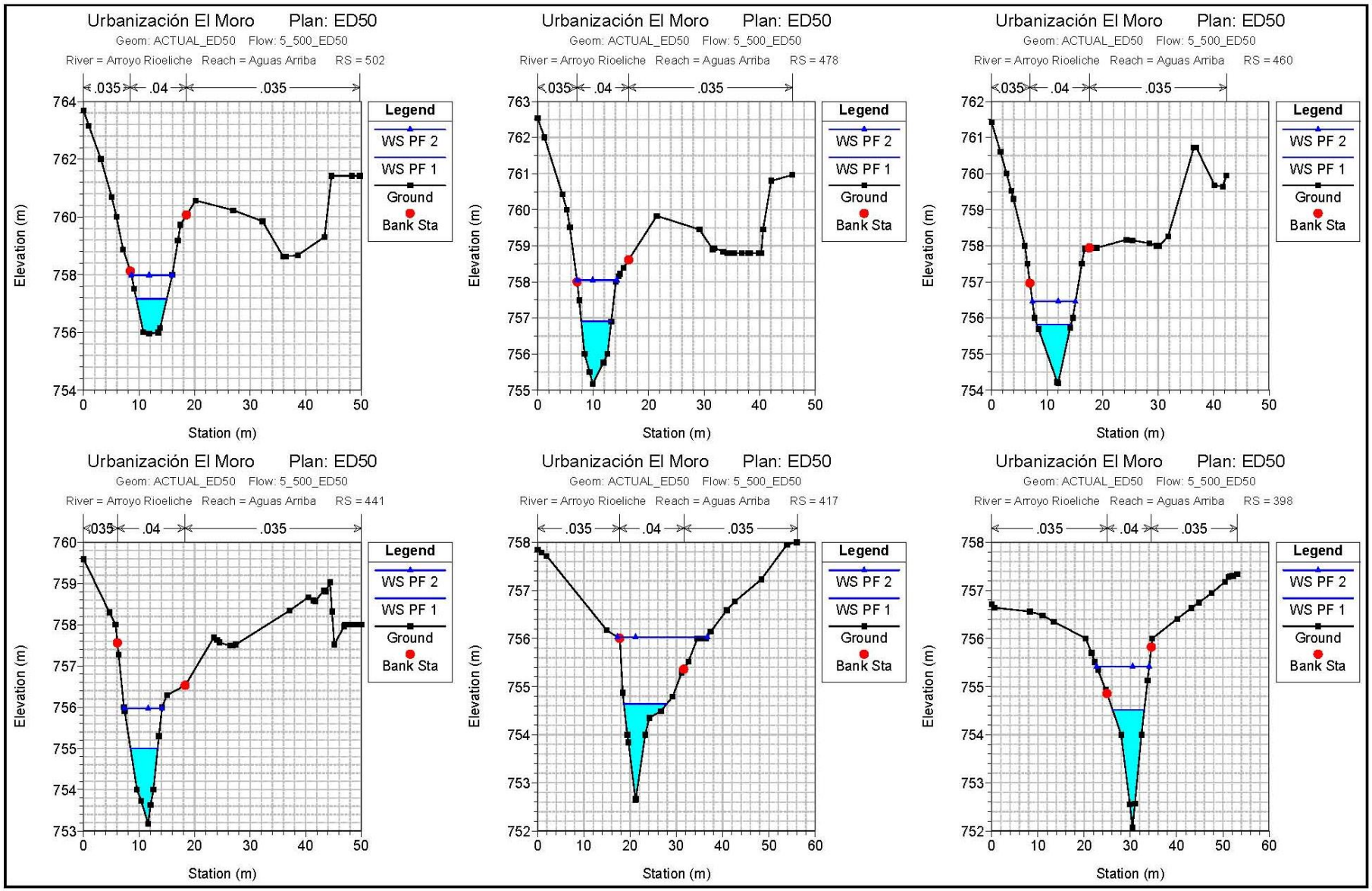

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 300
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 280
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 260
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 255 Culv
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 255 Culv
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 254
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

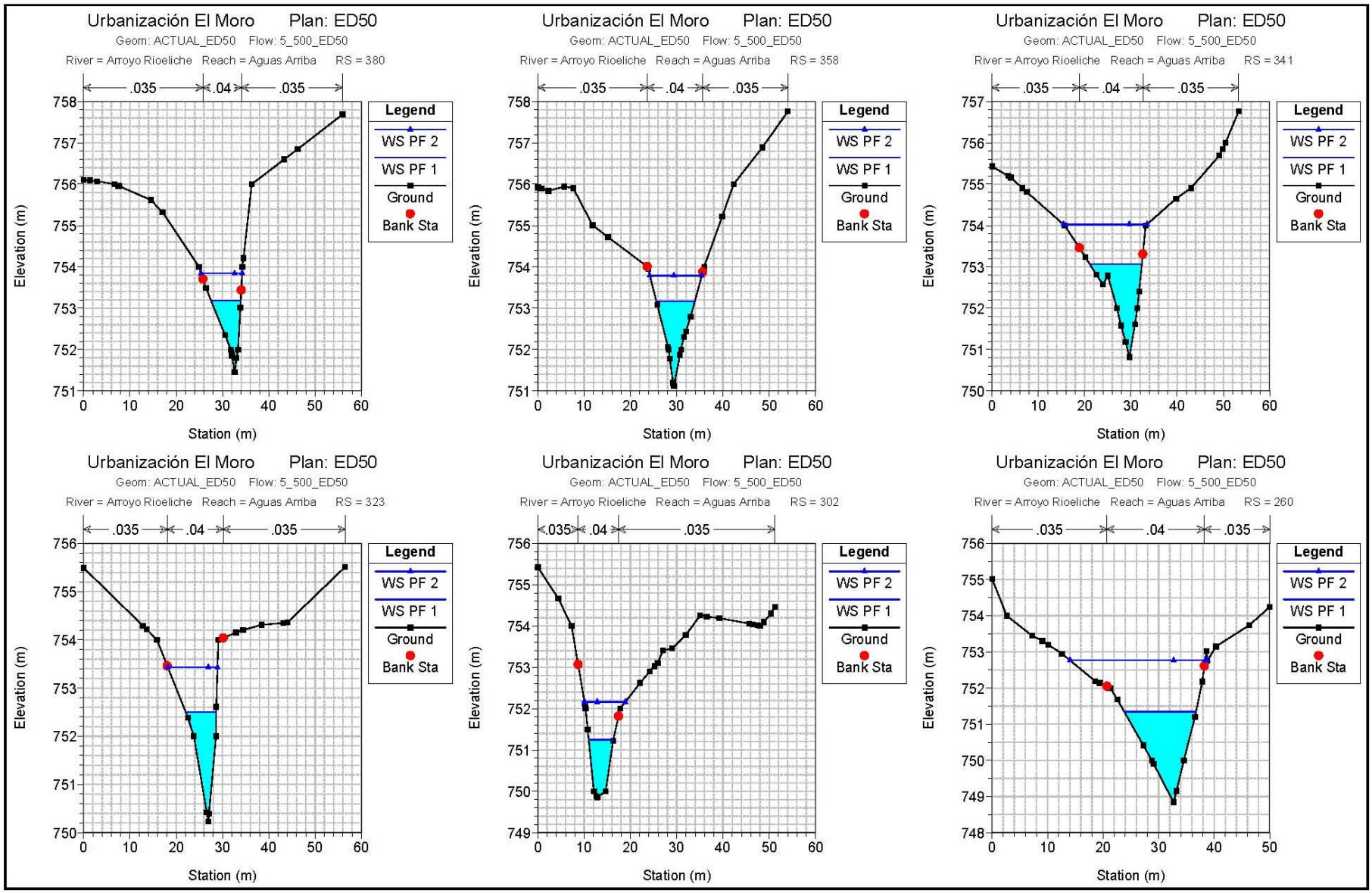

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 240
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 220
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 200
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 180
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 160
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 140
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

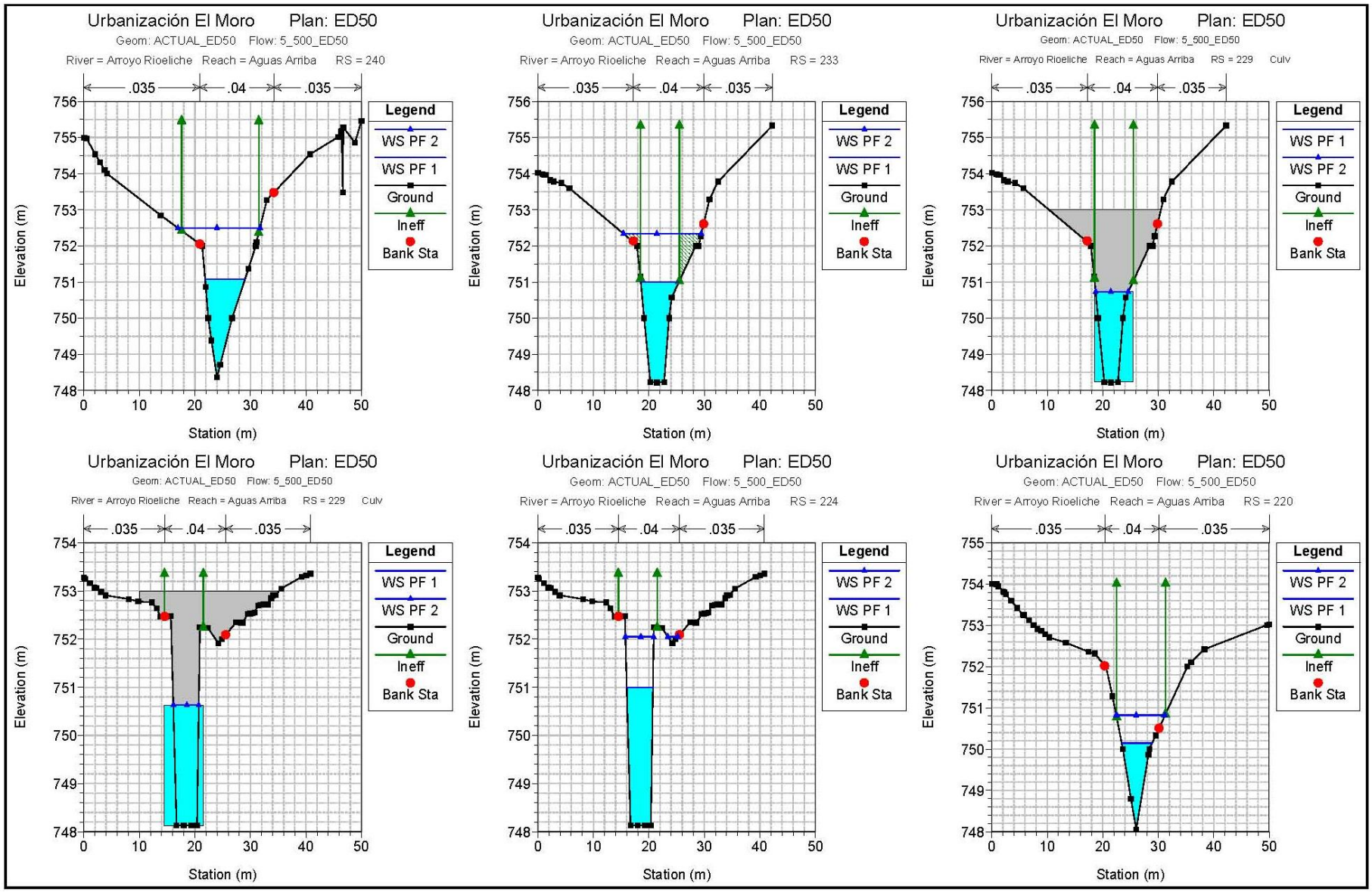

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 120
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 100
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 95 Culv
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 95 Culv
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 92
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 80
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

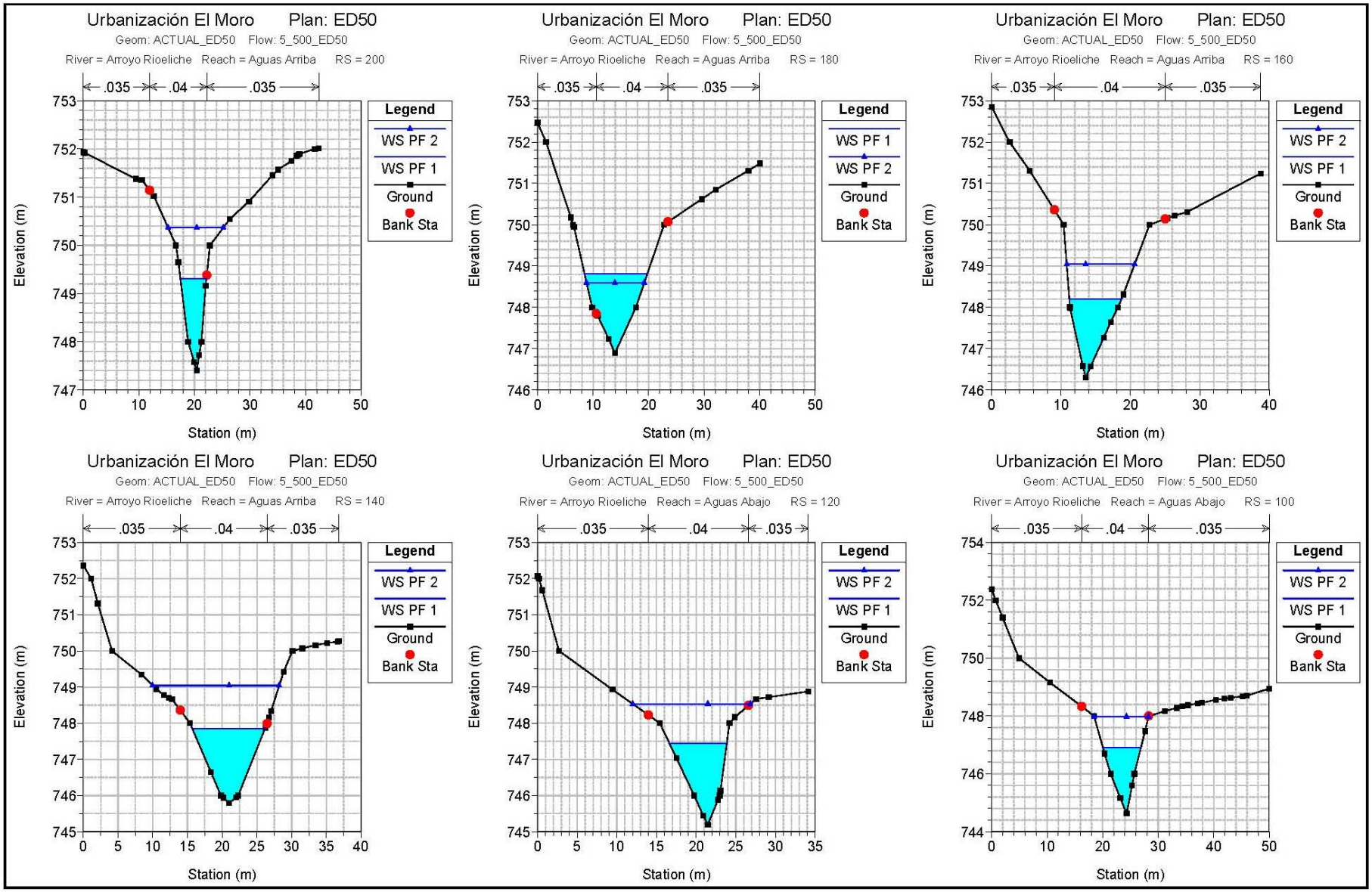

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 60
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 40
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo El Moro Reach = Afluente RS = 20
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 600
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 580
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 563
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

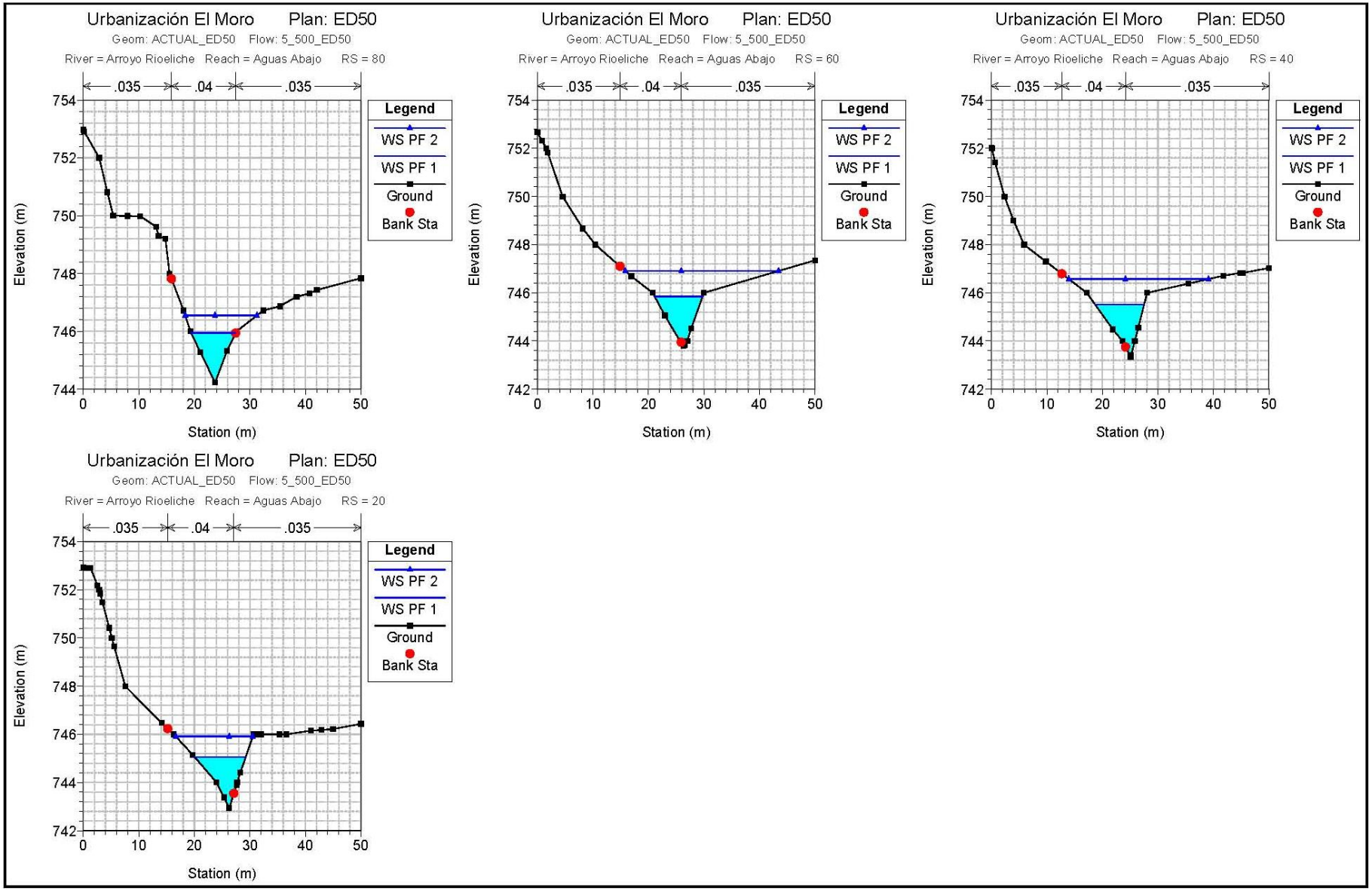

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 559
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 554 Culv
.035 .04 .035
Legend
WS PF 1
WS PF 2
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 554 Culv
.035 .04 .035
Legend
WS PF 1
WS PF 2
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 550
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 545
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 520
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)


Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 502
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 478
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 460
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 441
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 417
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 398
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

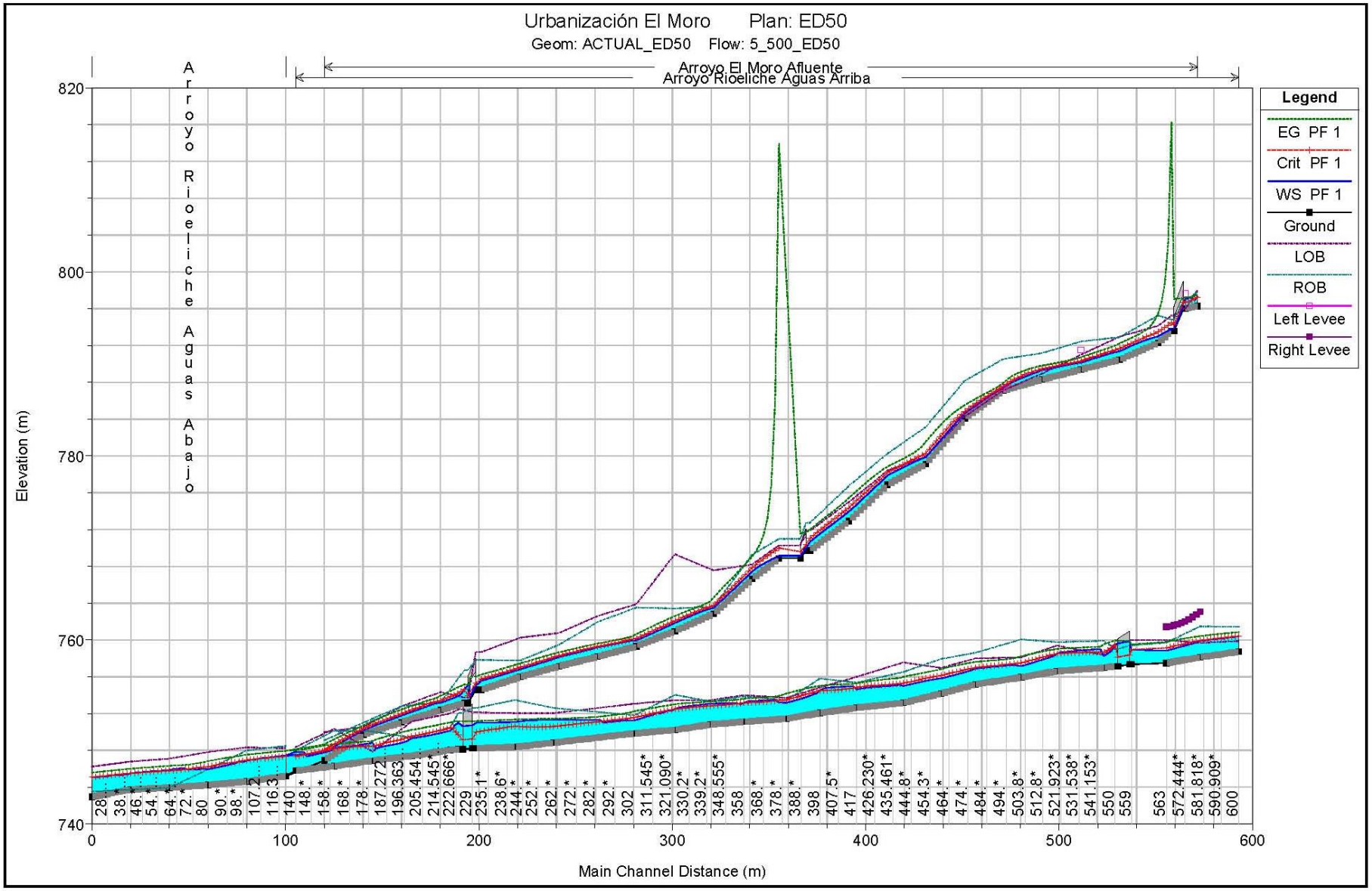

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 380
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 358
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 341
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 323
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 302
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 260
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

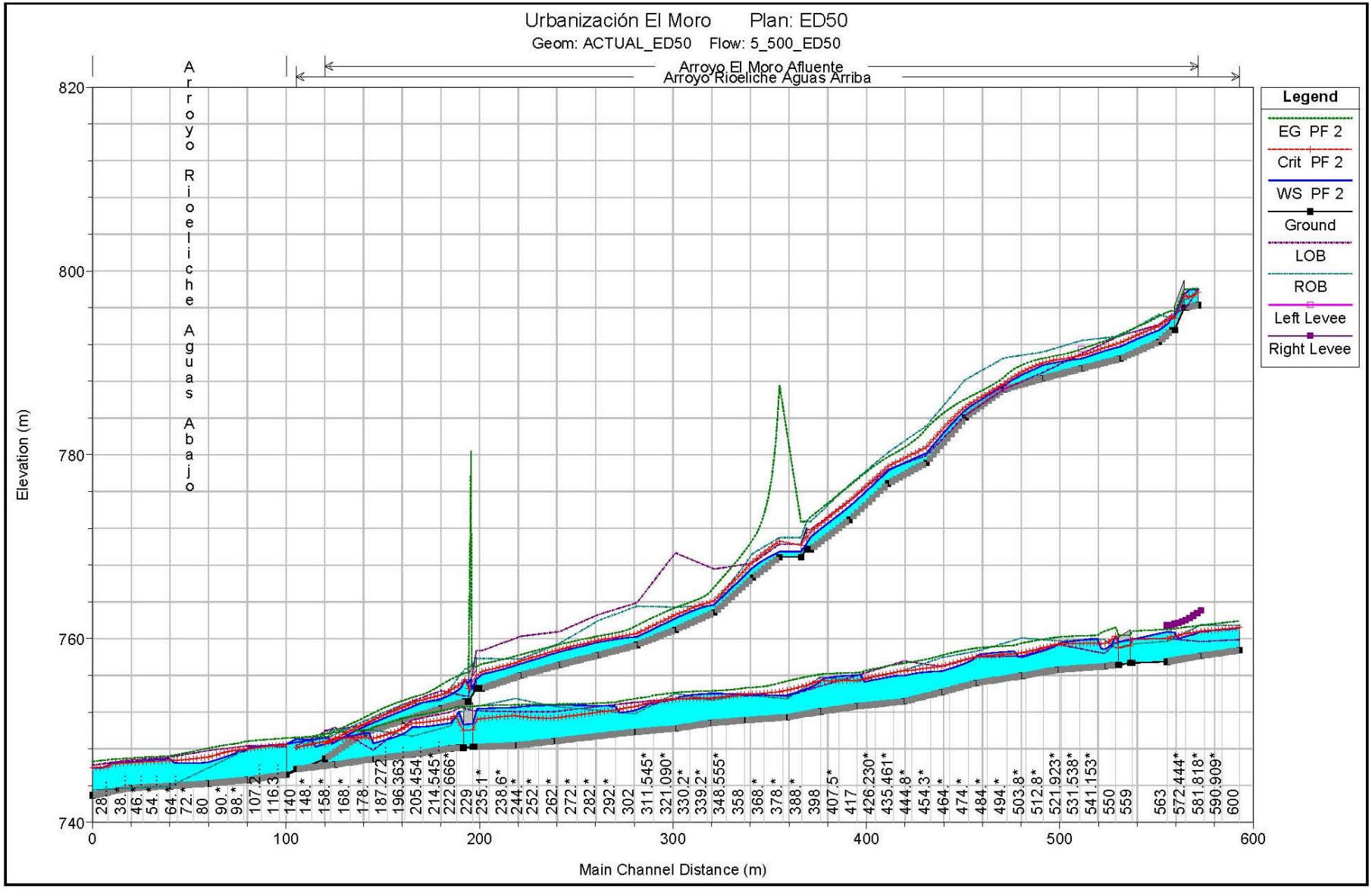

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 240
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 233
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 229 Culv
.035 .04 .035
Legend
WS PF 1
WS PF 2
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 229 Culv
.035 .04 .035
Legend
WS PF 1
WS PF 2
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 224
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 220
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)


Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 200
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 180
.035 .04 .035
Legend
WS PF 1
WS PF 2
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 160
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Arriba RS = 140
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Abajo RS = 120
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Abajo RS = 100
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

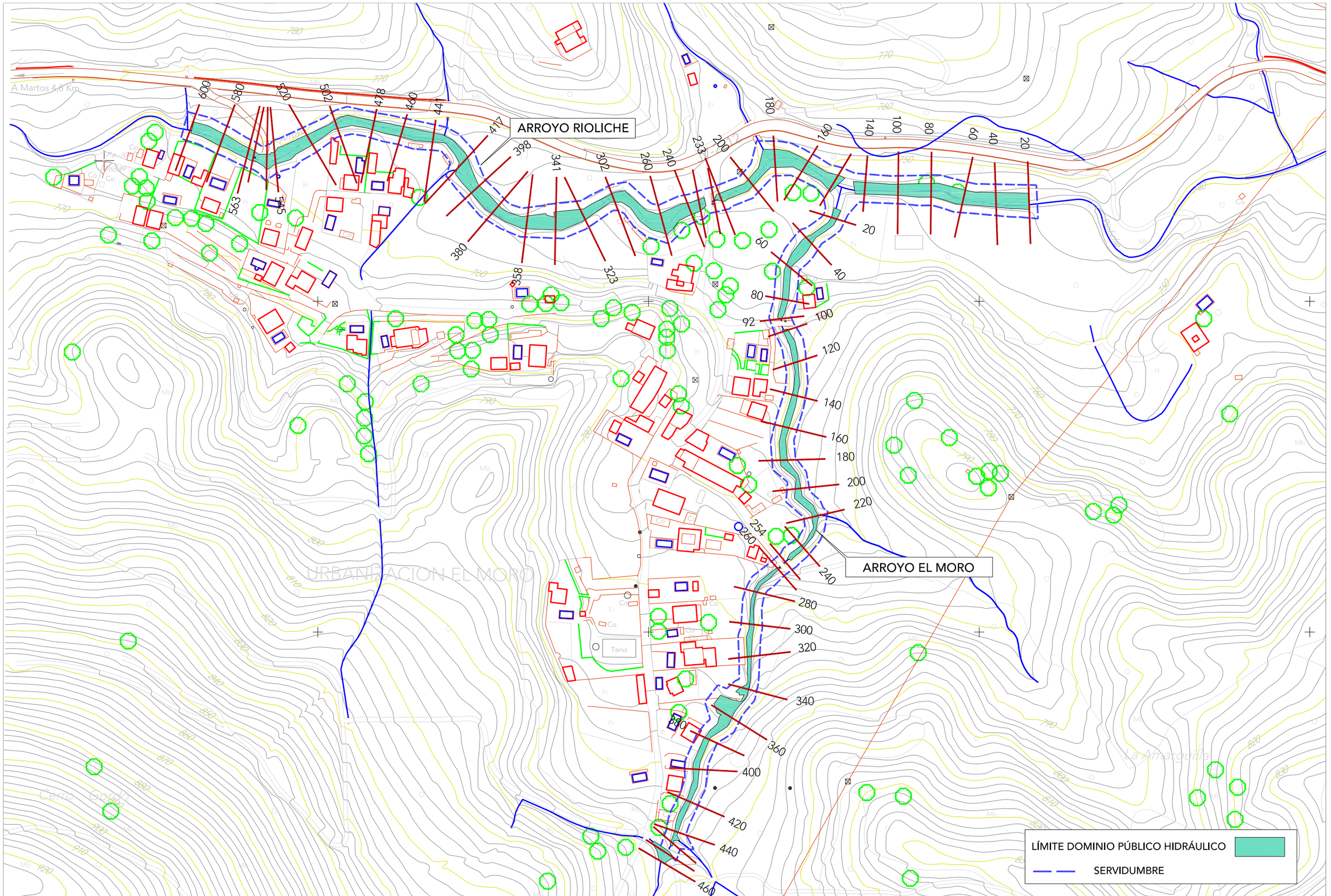

Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Abajo RS = 80
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Abajo RS = 60
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Abajo RS = 40
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
River = Arroyo Rioeliche Reach = Aguas Abajo RS = 20
.035 .04 .035
Legend
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

APÉNDICE 2.D. PERFIL LONGITUDINAL


Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
Arroyo El Moro Afluente
Arroyo Rioeliche Aguas Arriba
Arroyo Rioeliche Aguas Abajo
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
LOB
ROB
Left Levee
Right Levee
Elevation (m)
Main Channel Distance (m)
820
800
780
760
740
0
100
200
300
400
500
600


Urbanización El Moro Plan: ED50
Geom: ACTUAL_ED50 Flow: 5_500_ED50
Arroyo El Moro Afluente
Arroyo Rioeliche Aguas Arriba
Arroyo Rioeliche Aguas Abajo
Legend
EG PF 2
Crit PF 2
WS PF 2
Ground
LOB
ROB
Left Levee
Right Levee
Elevation (m)
820
800
780
760
740
0
100
200
300
400
500
600
Main Channel Distance (m)

APÉNDICE 2.E. PLANOS



ENCARGO PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA 1:2.000	DOCUMENTO PLANOS	TITULO DELIMITACIÓN D.P.H.	Nº DE ANEJO 02	FECHA AGOSTO 2013 1 DE 1

A Martos 4,8 Km.

ARROYO RIOLICHE

ARROYO EL MORO

URBANIZACION EL MORO

Cerro Gordo

La Amarguilla

Riolichе

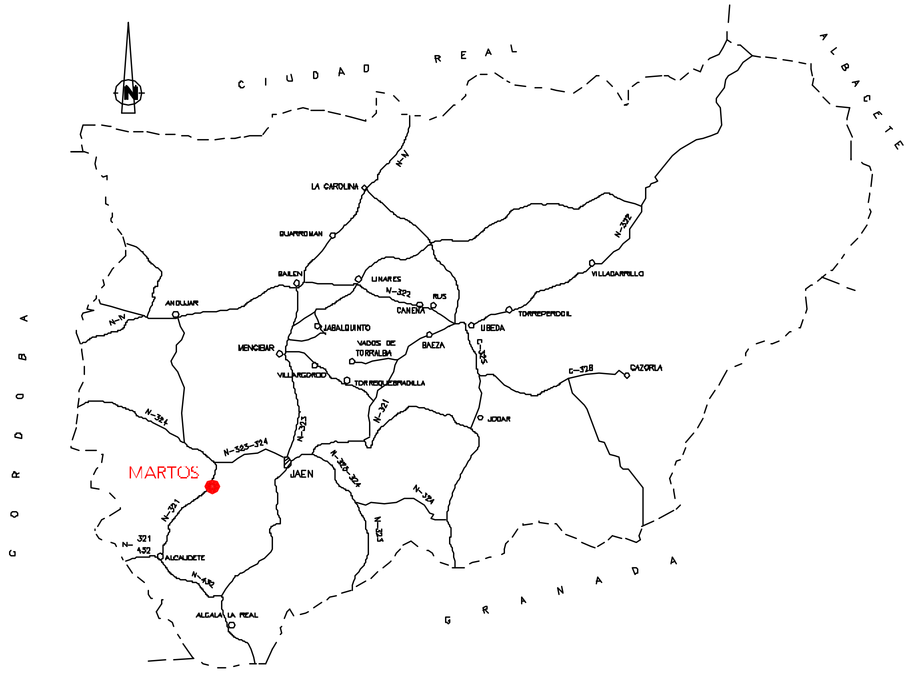
600 580 520 502 478 460 441 417 398 380 358 341 323 302 280 260 240 233 220 200 180 160 140 120 100 80 60 40 20 563 545 20 40 60 80 92 100 120 140 160 180 200 220 240 254 260 280 300 320 340 360 380 400 420 440 460

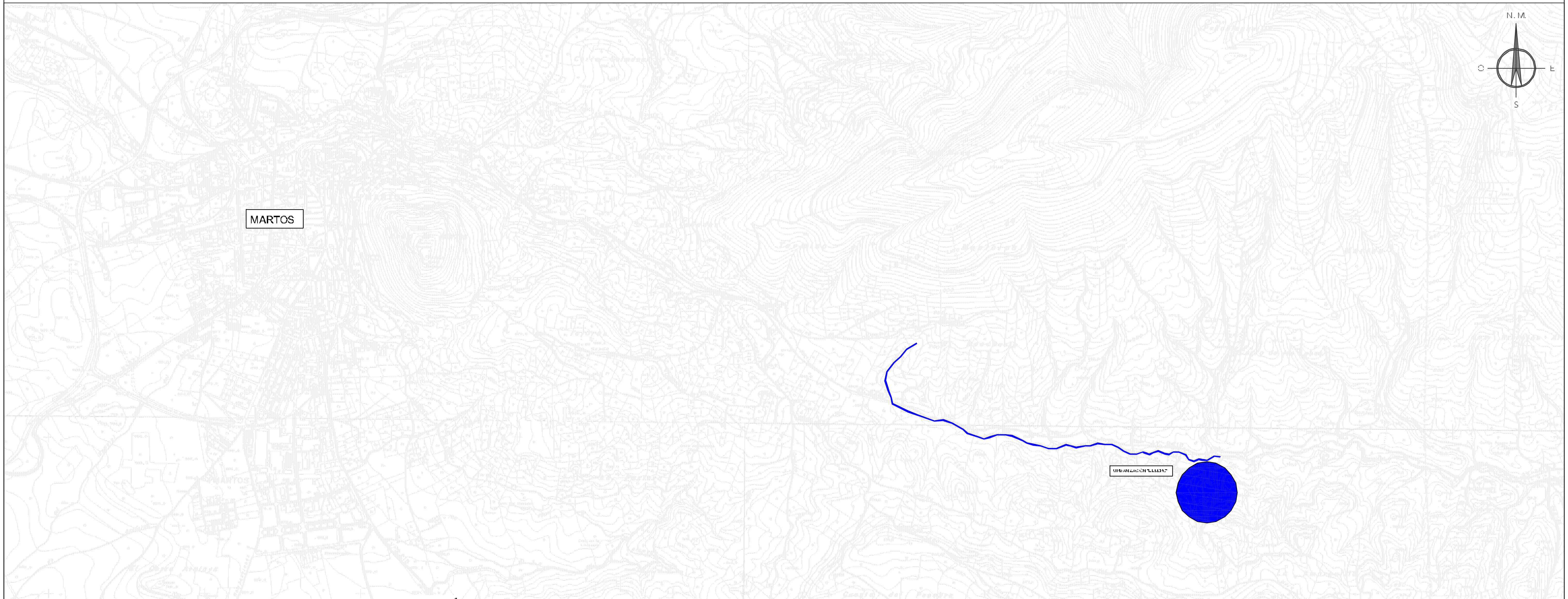
LLANURA DE INUNDACIÓN PARA PERIODO DE RETORNO DE 500 AÑOS

ENCARGO PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO LOURDES MARTÍNEZ JUGUERA INGENIERA DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA 1:2.000	DOCUMENTO PLANOS	TITULO LLANURA DE INUNDACIÓN PARA T500 AÑOS	Nº DE ANEJO 02	FECHA AGOSTO 2013 1 DE 1

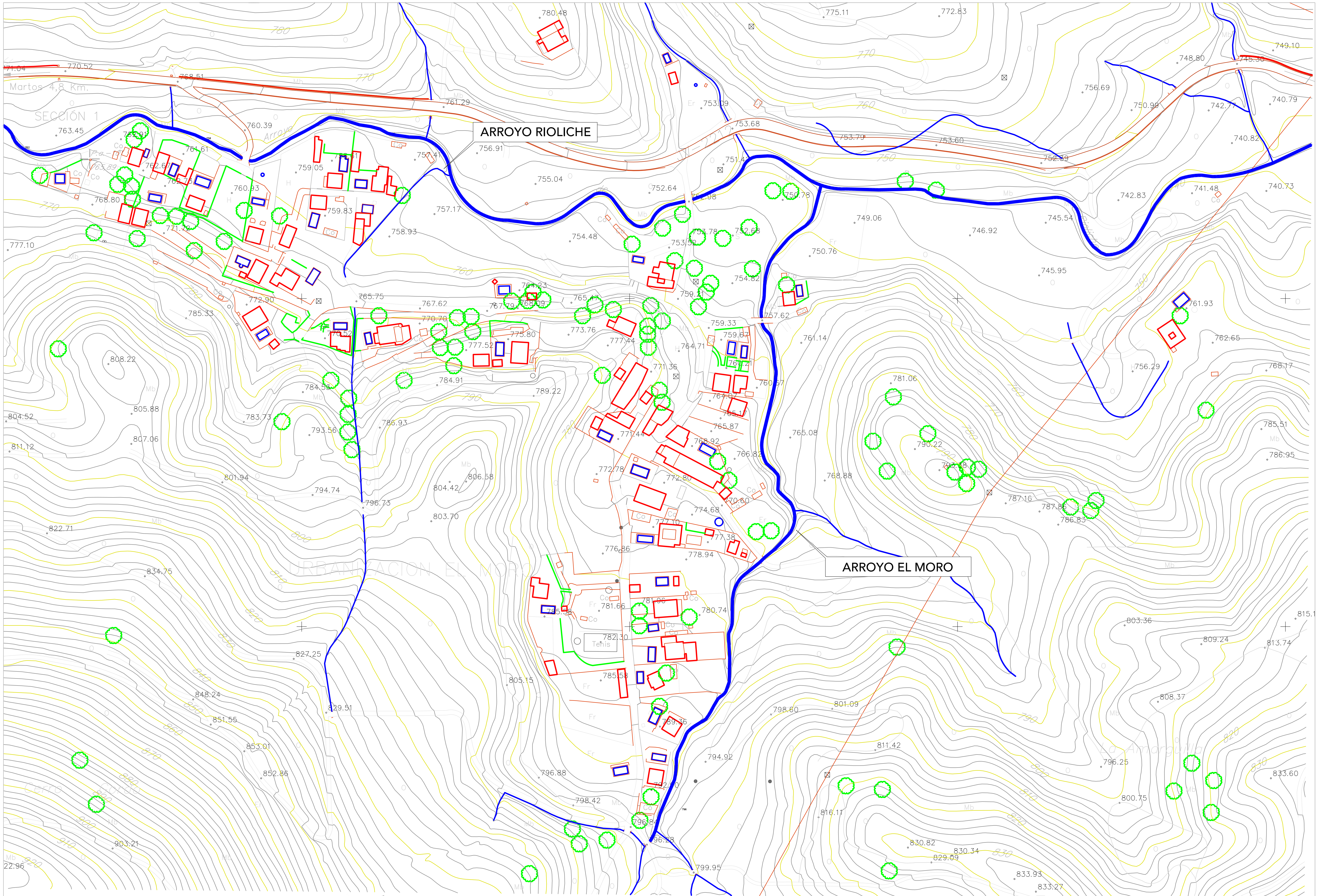
DOCUMENTO NÚMERO 2. PLANOS

PROVINCIA DE JAÉN

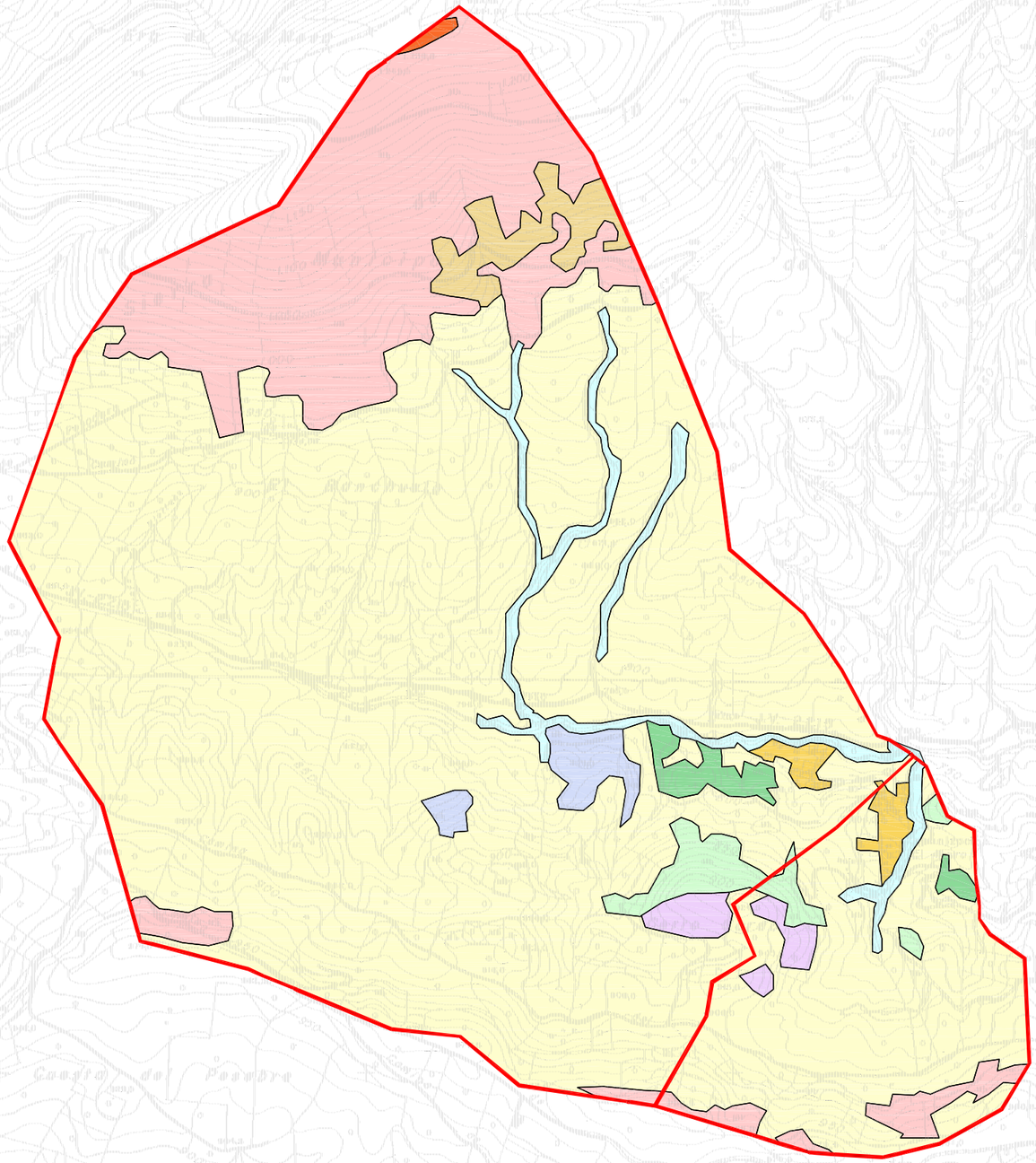




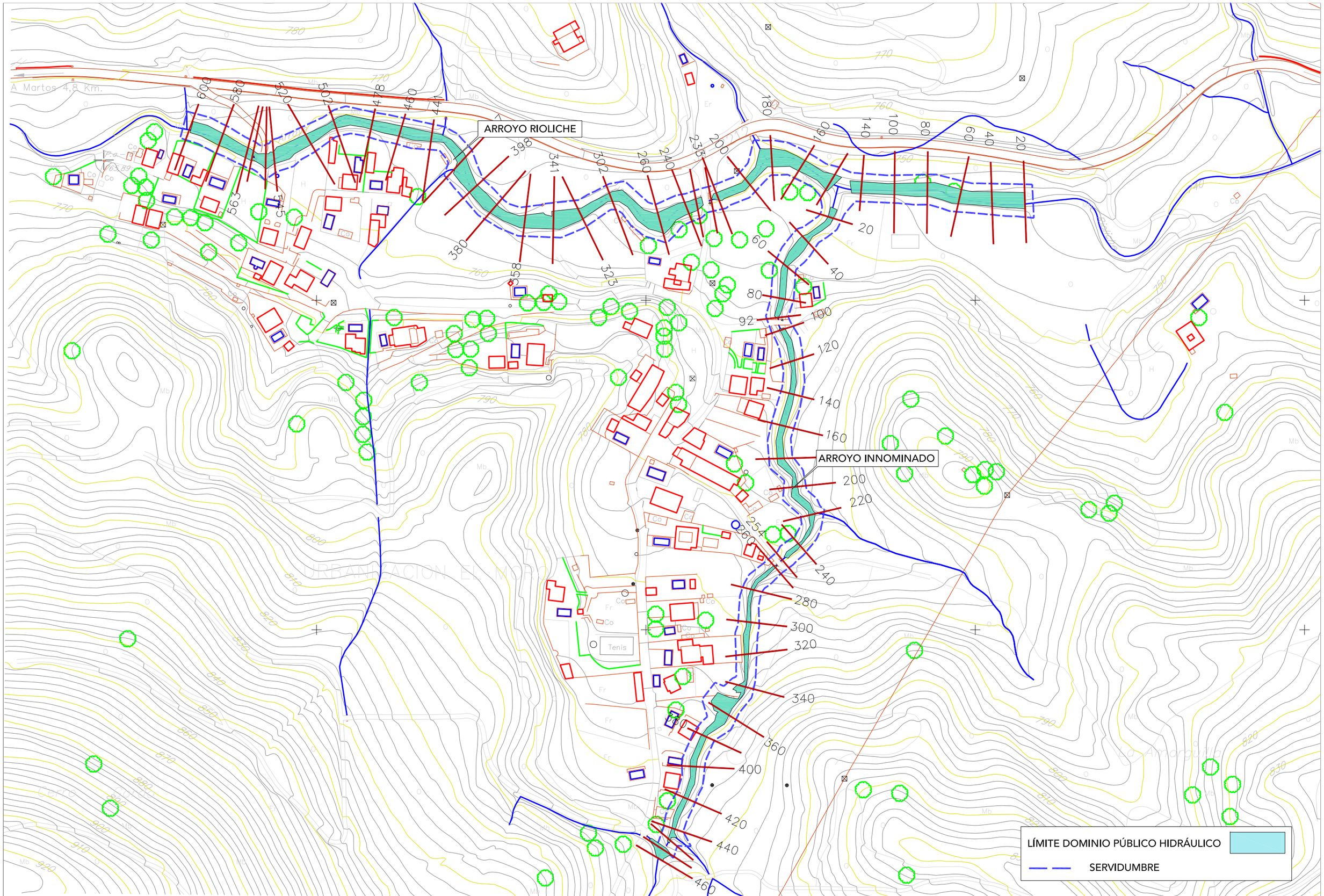
ENCARGO PLANEO		REDACCIÓN DEL ESTUDIO LOURDES MARTÍNEZ LUCUERA	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA 1:25.000	DOCUMENTO PLANOS	TÍTULO SITUACIÓN	Nº DE PLANO 01	FECHA AGOSTO 2013 1 DE 1



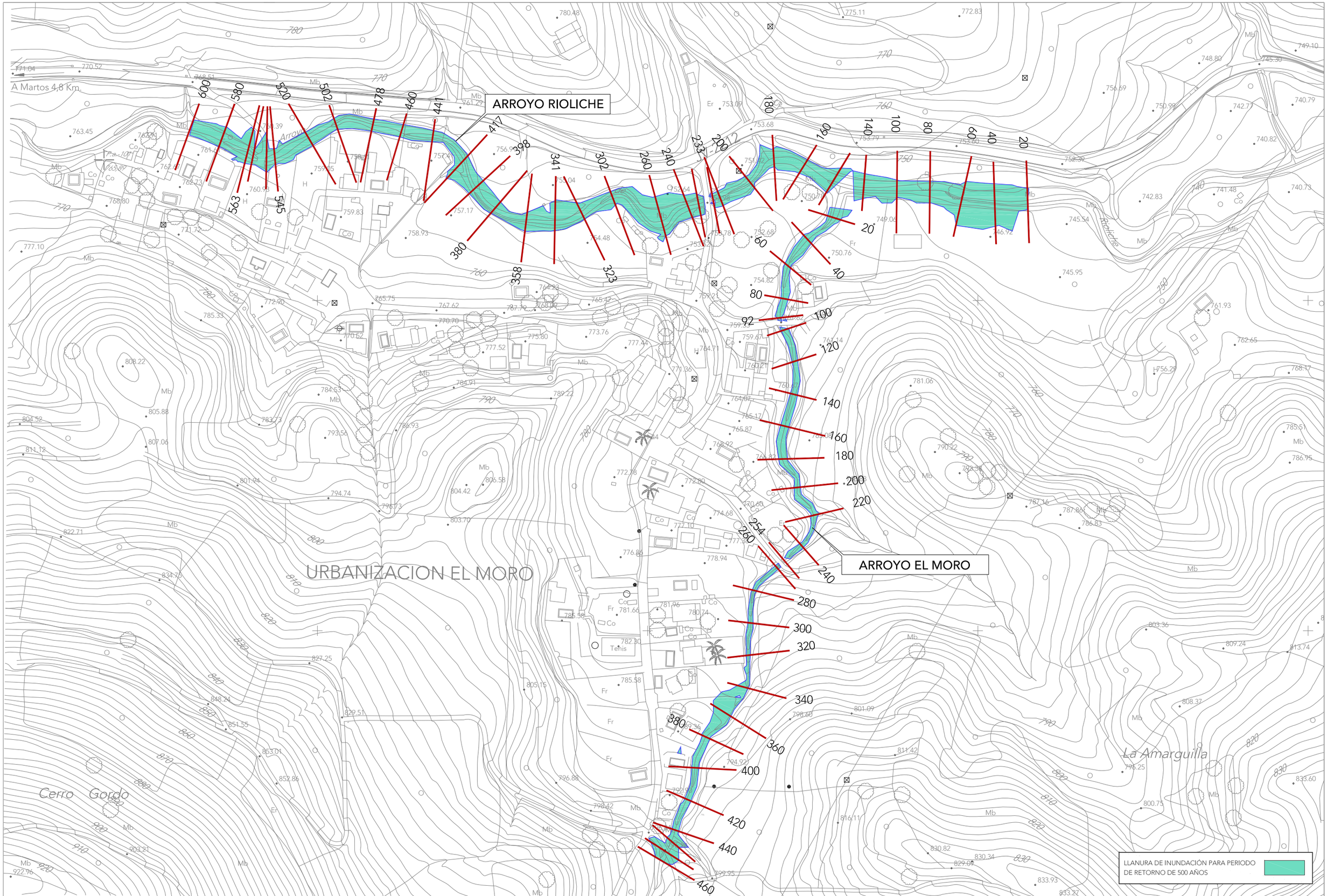
ENCARGO		REDACCIÓN DEL ESTUDIO		ESCALA	DOCUMENTO	TITULO	Nº DE PLANO	FECHA
PLANEO	INGESA	LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	1:2.000	PLANOS	PLANTA TOPOGRÁFICA	02	AGOSTO 2013 1 DE 1



ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ LUCUERA, INGENIERO DE CAMINOS	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA: 1:15.000	DOCUMENTO: PLANOS	TÍTULO: CUENCA Y USOS DEL SUELO	Nº DE PLANO: 03	FECHA: AGOSTO 2013 — 1 DE 1



ENCARGO PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C.Y.P.	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA 1:2.000	DOCUMENTO PLANOS	TITULO DELIMITACIÓN D.P.H.	Nº DE PLANO 04	FECHA AGOSTO 2013 1 DE 1



ENCARGO PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD EN LA URBANIZACIÓN EL MORO PARA EL RIO ELICHE Y EL ARROYO EL MORO. T.M. MARTOS (JAÉN)	ESCALA 1:2.000	DOCUMENTO PLANOS	TITULO LLANURA DE INUNDACIÓN PARA T500 AÑOS	Nº DE PLANO 05	FECHA AGOSTO 2013 1 DE 1