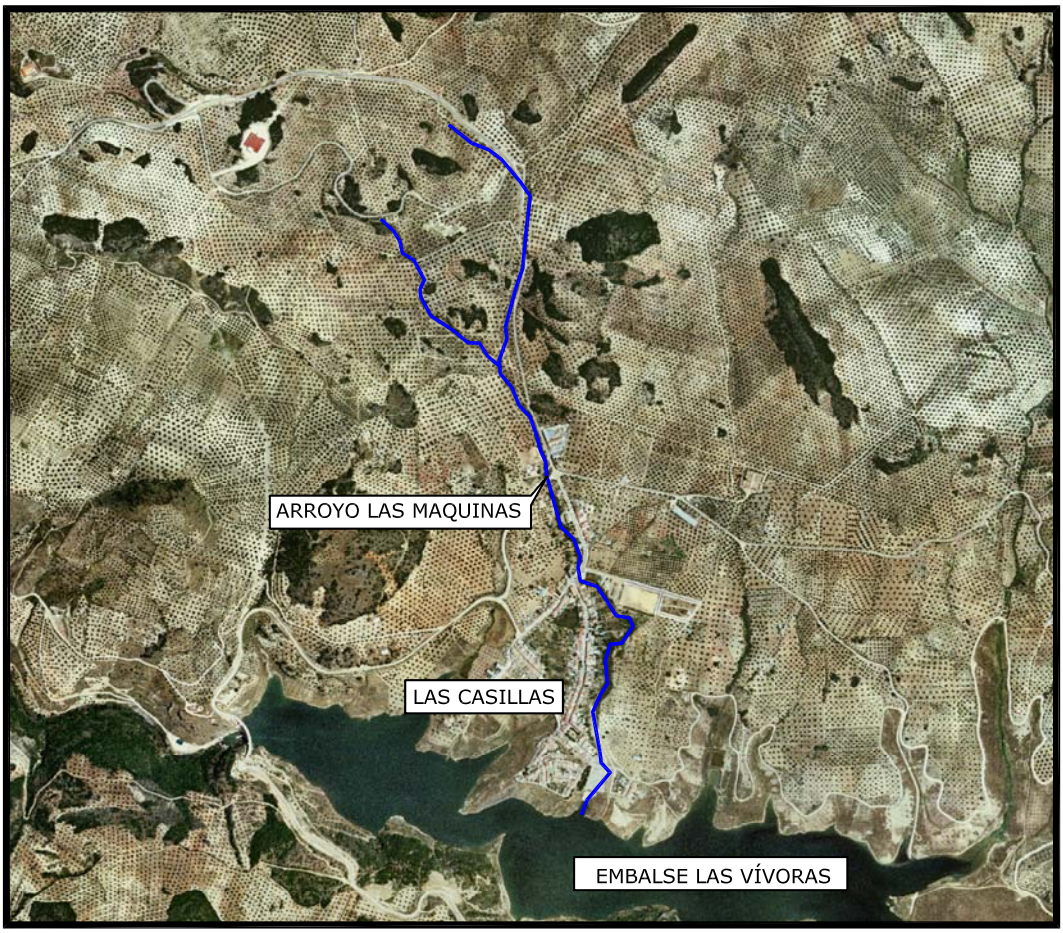
ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.



FECHA
AGOSTO 2013

ENCARGO

PLANEO

REDACCIÓN DEL ESTUDIO

INGESA

INGENIERO DE CAMINOS, C Y P.
LOURDES MARTINEZ JUGUERA

DOCUMENTO NÚMERO 1. MEMORIA

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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 del Arroyo de las Máquinas, que atraviesa un suelo urbano consolidado en la pedanía de Las Casillas, en el término municipal de Martos.

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

1.3.1.- ARROYO DE LAS MÁQUINAS EN LAS CASILLAS

El tramo del arroyo estudiado atraviesa de norte a sur la pedanía de las Casillas, y en él se localizan cuatro obras de drenaje transversal, si bien una de ellas realmente es el paso aéreo de una conducción de agua.

En total, se han modelizado 1.440 metros de arroyo. Las situaciones y secciones actuales del cauce (perfiles transversales) quedan reflejadas en el siguiente croquis.

El tramo se inicia en la sección 1480, punto ubicado suficientemente aguas arriba del inicio de la zona urbana. Discurre de norte a sur hasta entregar sus aguas al embalse de las Víboras.

Como se ha partido de la topografía del catastro facilitada por el Cliente, muchas de las edificaciones próximas no se representaban en el modelo digital del terreno creado para extraer las secciones transversales, motivo por el cual se han introducido en el modelo manualmente. Se han escogido varias secciones para simular las edificaciones más próximas a las márgenes del arroyo.

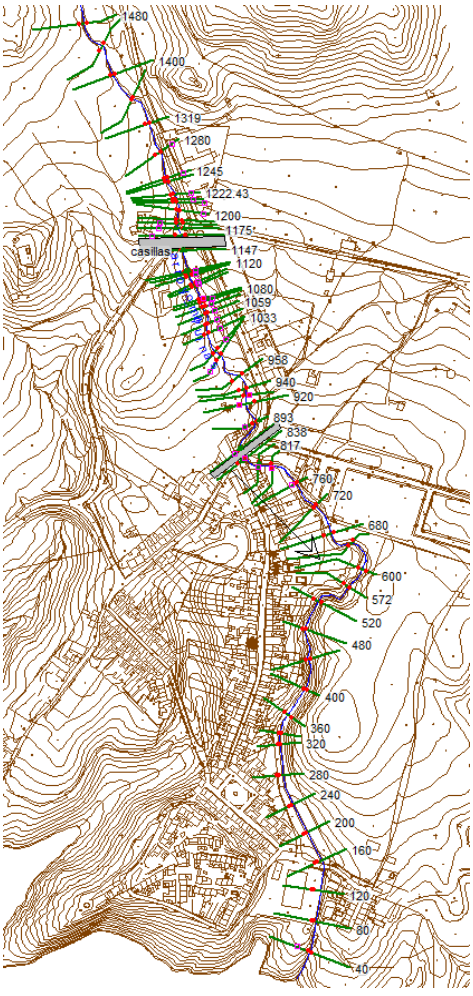


Ilustración 1. Esquema del Modelo Hidráulico del Arroyo de las Máquinas

Además de las secciones transversales, se han modelizado dos estructuras, en las secciones 1155 y 845, respectivamente, en los lugares en los que se ubican actualmente las obras de drenaje transversal n° 1 y 2.

La ODT n°3 no se ha modelizado puesto que se corresponde con un paso de tubería muy estrecho y con una luz de casi 7,5 m, que no afecta al régimen hidráulico del arroyo de las Máquinas. Respecto a la ODT n°4, que se corresponde con un marco de 3*2 m prefabricado de 255 ml de longitud, se ha implementado éste en el terreno mediante la apertura de un canal rectangular de 3 m de ancho y 2 m de altura de cajero, entre las secciones 334 a 80, con un 2% de pendiente.

Finalmente, indicar que cuenta la cota máxima del embalse de las Víboras (+544,00 m) alcanza la sección 334 ubicada inmediatamente aguas arriba de la ODT n°4. No obstante, no se va a tener en cuenta esta condición de contorno en el modelo, y se trabajará con el calado crítico como condición de contorno aguas abajo.

Atendiendo a la clasificación del suelo, el modelo se tramifica como sigue:

- Desde el inicio a la sección 1319, atraviesa suelo no urbanizable (SNU)
- Desde la anterior a la ODT N°2 (sección 845) el suelo urbano (SU) se localiza en la margen izquierda, en el sentido de avance del flujo

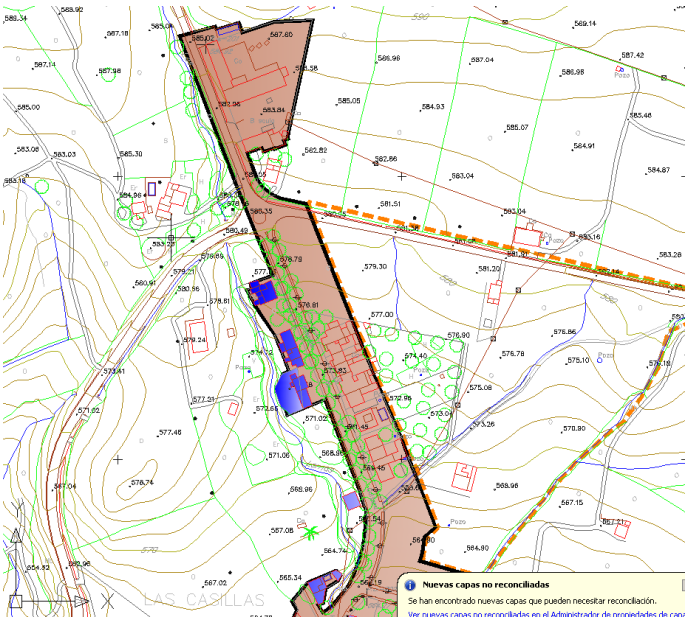


Ilustración 2. SU en margen izquierda del arroyo

- Dese la ODTn°2 hasta la sección 644, el SU se extiende en ambas márgenes

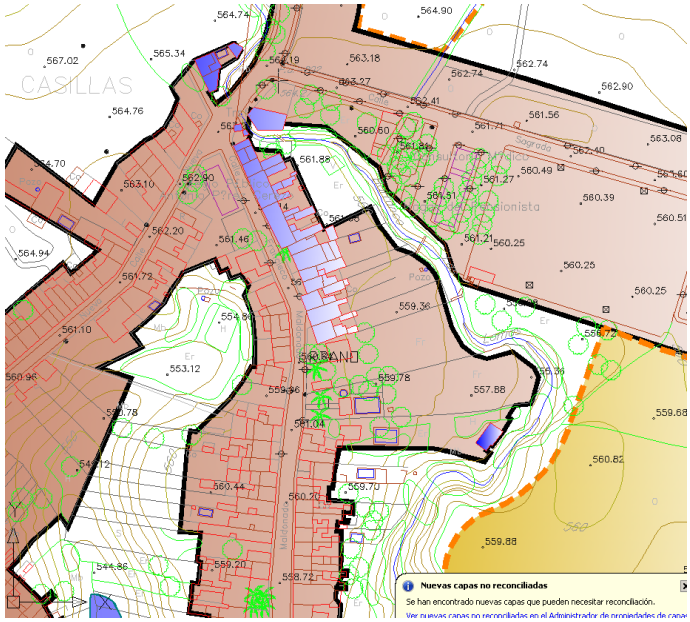


Ilustración 3. SU en ambas márgenes

- Desde la sección 644 hasta el final, el SU continúa en la margen derecha, localizándose suelo urbanizable (sector SUB-S) en la izquierda

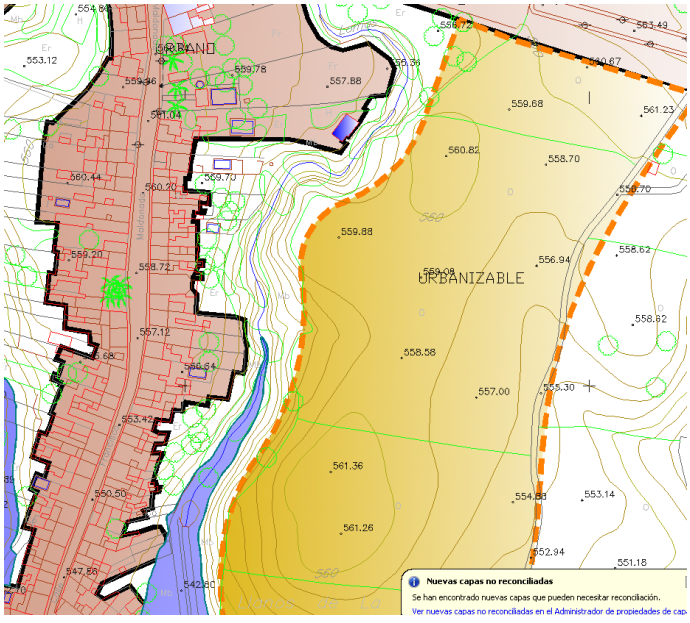


Ilustración 4. SU en margen derecha y SUB en la izquierda

La geometría del Arroyo de las Máquinas es muy variable. En general el arroyo está muy encajado con profundidades que rondan los 2-2,5 m. Sin embargo, el ancho varía de 3 a 10 metros, en función de las litologías atravesadas, y de los muros de contención ejecutados en sus bordes.

La pendiente longitudinal, obtenida a partir de la topografía con que contamos, alcanza el 4,1% en el tramo modelizado, y se ha aplicado como condición de contorno, por ser el parámetro que mejor describe el comportamiento del río.

La vegetación, como puede comprobarse en las imágenes que siguen, es abundante en el cauce de aguas bajas y en buena parte de las márgenes. Se ha tenido en cuenta la presencia de estas masas arbustivas para la determinación del coeficiente de rugosidad.

A continuación se muestran varias imágenes que caracterizan la zona.

Ilustración 5. Aspecto del cauce del arroyo de las máquinas en el tramo superior modelizado

Ilustración 6.- Detalle del cauce de aguas bajas con abundante vegetación de ribera

Ilustración 7.- Aspecto de uno de los tramos del arroyo totalmente anexo a las edificaciones en la margen derecha

Ilustración 8.- Vista de la salida aguas debajo de la ODT modelizada. El arroyo está completamente encajado

1.3.2.- COMPROBACIÓN DE CAPACIDAD DE LAS ODT

Actualmente, se localizan 4 ODT en el tramo estudiado, si bien la nº3 es solamente un paso superior de una conducción.

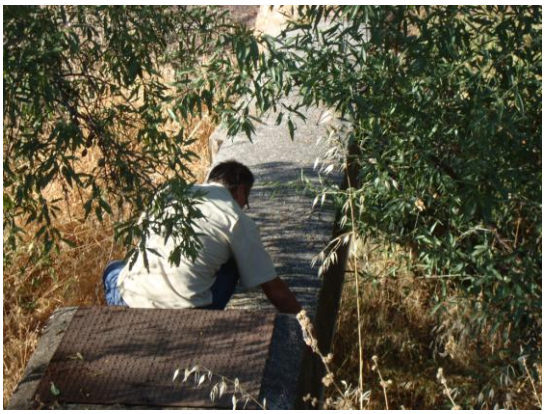
El Ayuntamiento de Martos nos ha facilitado los datos de dichas ODT, que se resumen a continuación.

ODT N°1 en arroyo Las Máquinas

Tubo de hormigón armado de D=1800 mm. I=3%

ODT N°2 en arroyo Las Máquinas

Pasarela estrecha (0,80 m de ancho) de 7,44 m de luz y 2,32 de calado libre, para paso de conducción. I=2,0%



ODT N°3 en arroyo Las Máquinas

Bóveda de ladrillo y piedra de dimensiones interiores 2*2 m, cimentada en hormigón, en buen estado de conservación. Se aloja en su interior una canalización plástica, probablemente de saneamiento.

I=2,5%

ODT N°4 en arroyo Las Máquinas

Marco prefabricado de hormigón armado de dimensiones interiores 3*2 m. I= 2,0%

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.

ODT	CAPACIDAD ACTUAL	SECCIÓN PROPUESTA
ODT N°1 en arroyo Las Máquinas	Tubo de hormigón armado de D=1800 mm. I=3% Q_{max}=17,25 m^3/s Es ligeramente **insuficiente**	Marco rectangular de 2*2,0 m interiores, suficiente para Q_{500}=17,25 m^3/s
ODT N°2 en arroyo Las Máquinas	Pasarela estrecha (0,80 m de ancho) de 7,44 m de luz y 2,32 de calado libre, para paso de conducción. I=2,0%	**ODT actual válida**. Lámina de agua de 0,57 m para Q_{500}=17,25 m^3/s
ODT N°3 en arroyo Las Máquinas	Bóveda de ladrillo y piedra de dimensiones interiores 2*2 m, cimentada en hormigón, en buen estado de conservación. Se aloja en su interior una canalización plástica, probablemente de saneamiento. I=2,5% Q_{max}=20,97 m^3/s	**ODT actual válida**. Lámina de agua de 1,47 m para Q_{500}=17,25 m^3/s
ODT N°4 en arroyo Las Máquinas	Marco prefabricado de hormigón armado de dimensiones interiores 3*2 m. I= 2,0% Q_{max}=40,24 m^3/s	**ODT actual válida**. Lámina de agua de 0,90 m para Q_{500}=17,25 m^3/s

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 E1-968 12.

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 es próxima a 1 Km^2, se ha considerado un único punto de control o característico. La extrapolación se realiza para los periodos de retorno de 5 y 500 años.

A continuación transcribimos la tabla con los valores adoptados:

Tabla 1. Resumen de valores

COORDENADAS UTM DE PTOS ANALIZADOS		PRECIP. MAX DIARIAS PARA LOS PERIODOS DE RETORNO (mm/día)
		500
PERIODOS DE RETORNO 5	411.802	57
	4.166.864	
PERIODOS DE RETORNO 500	411.802	139
	4.166.864	

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

Tabla 2. Datos de la cuenca

CUENCA	SUPERFICIE (HA)	PTO. ALTO CUENCA (M)	DISTANCIA (M)	PTO. ALTO CAUCE (M)	DIS.CAUCE (M)	PTO.BAJO (M)
ARROYO DE LAS MÁQUINAS	14,28	725,5	2.629	680	2.256	531,37

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 3. 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 INNOMINADO	4,46	7,12	10,87	17,37

Adoptamos como valor de cálculo para el cálculo del DPH el proporcionado por el método de la Instrucción 5.2 I.C para el periodo de retorno de 5 años, fijando por tanto el caudal de cálculo en **7,12 m^3/s,** y para la llanura de inundación **17,37 m^3/s.**

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.- AVENIDA ORDINARIA DE PERIODO DE RETORNO 5 AÑOS

2.3.1.1.- DATOS DEL MODELO HIDRÁULICO

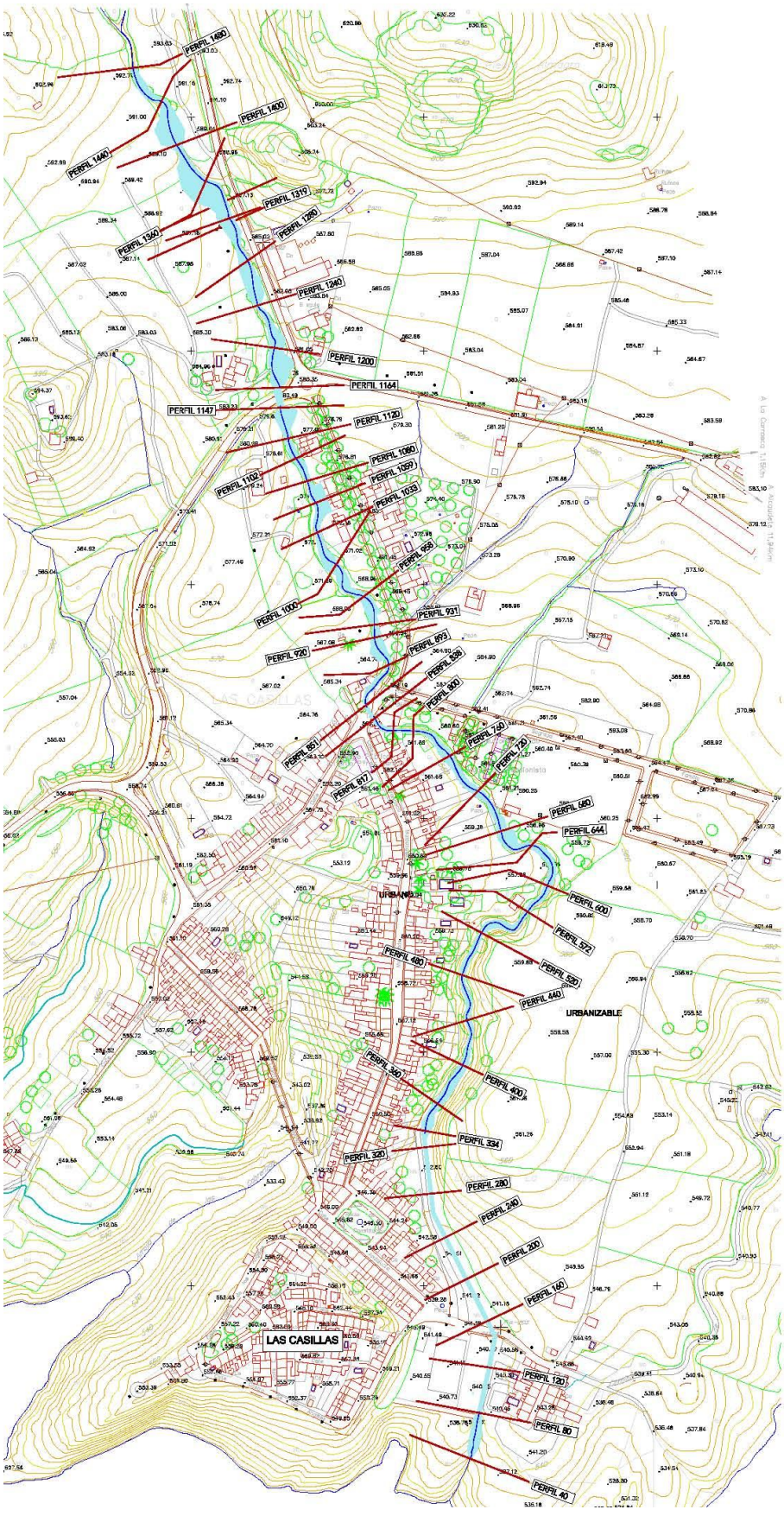
El resumen de los datos obtenidos para el arroyo modelizado se adjunta en la tabla siguiente. Asimismo, se representa la delimitación del DPH que se desprende del estudio realizado, remitiendo a los planos del presente Estudio para consulta de detalle.

Tabla 4. Resumen del modelo para T=5

HEC-RAS Plan: Plan 09 River: arroyo_maquinas Reach: casillas Profile: PF 1

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)	
casillas	1480	PF 1	7.12	589.67	590.79	590.65	590.97	0.025433	1.90	3.75	5.74	0.75
casillas	1440	PF 1	7.12	588.70	589.70	589.65	589.88	0.037897	1.92	3.70	7.85	0.89
casillas	1400	PF 1	7.12	587.16	588.17	588.21	588.41	0.036840	2.18	3.68	11.85	0.90
casillas	1360	PF 1	7.12	585.50	586.25	586.27	586.38	0.041207	2.06	5.25	23.36	0.92
casillas	1319	PF 1	7.12	584.30	584.99	584.99	585.17	0.041374	2.00	4.11	12.60	0.94
casillas	1280	PF 1	7.12	582.41	583.19	583.15	583.35	0.029470	1.76	4.26	11.11	0.80
casillas	1245	PF 1	7.12	580.72	582.32	582.08	582.50	0.019197	1.89	3.96	7.27	0.63
casillas	1240	PF 1	7.12	580.48	582.04	581.97	582.35	0.042546	2.48	2.88	4.47	0.88
casillas	1222.43	PF 1	7.12	580.00	581.27	581.33	581.59	0.043994	2.53	2.99	7.06	0.96
casillas	1215.61	PF 1	7.12	579.81	580.99	581.05	581.28	0.040664	2.45	3.22	8.38	0.94
casillas	1211.70	PF 1	7.12	579.70	580.84	580.88	581.10	0.036316	2.34	3.48	9.33	0.90
casillas	1200	PF 1	7.12	579.38	580.40	580.36	580.56	0.021891	1.90	4.66	12.41	0.72
casillas	1186.5	PF 1	7.12	578.98	580.14	580.02	580.27	0.021587	1.63	4.59	11.85	0.69
casillas	1182	PF 1	7.12	578.85	580.04	579.91	580.17	0.023328	1.59	4.50	10.38	0.71
casillas	1175	PF 1	7.12	578.64	579.79	579.74	579.97	0.036432	1.88	3.78	7.90	0.87
casillas	1166	PF 1	7.12	578.30	579.46	579.31	579.63	0.026745	1.79	3.97	6.79	0.75
casillas	1155		Culvert									
casillas	1147	PF 1	7.12	577.30	577.73	578.23	580.34	0.837154	7.17	0.99	11.56	3.97
casillas	1120	PF 1	7.12	574.59	575.51	575.63	575.95	0.093040	2.95	2.42	5.13	1.37
casillas	1117.15	PF 1	7.12	574.42	575.47	575.47	575.73	0.047174	2.27	3.14	5.94	1.00
casillas	1112.42	PF 1	7.12	574.14	575.15	575.18	575.44	0.057966	2.42	2.94	5.93	1.10
casillas	1102	PF 1	7.12	573.51	574.60	574.53	574.79	0.030916	1.93	3.74	7.30	0.82
casillas	1099	PF 1	7.12	573.37	574.49	574.42	574.69	0.032097	1.98	3.63	6.88	0.83
casillas	1080	PF 1	7.12	572.47	573.75	573.75	574.07	0.050130	2.49	2.86	4.51	1.00
casillas	1076	PF 1	7.12	572.30	573.21	573.38	573.73	0.153377	3.49	2.37	7.59	1.66
casillas	1069	PF 1	7.12	572.00	573.02	573.05	573.22	0.047524	2.24	3.90	11.71	0.98
casillas	1059	PF 1	7.12	571.57	572.76	572.31	572.79	0.002840	0.85	9.78	12.71	0.27
casillas	1045.51	PF 1	7.12	570.97	572.11	572.08	572.36	0.034553	2.26	3.28	5.86	0.88
casillas	1033	PF 1	7.12	570.42	571.58	571.58	571.87	0.047580	2.38	2.99	5.21	1.00
casillas	1009.70	PF 1	7.12	569.54	570.39	570.40	570.62	0.051307	2.09	3.40	8.00	1.02
casillas	1000	PF 1	7.12	569.17	569.90	569.90	570.09	0.053835	1.94	3.67	10.22	1.03
casillas	958	PF 1	7.12	566.48	567.25	567.29	567.49	0.062567	2.18	3.27	8.52	1.12
casillas	940	PF 1	7.12	565.51	566.41	566.40	566.62	0.044613	2.03	3.51	7.79	0.97
casillas	931	PF 1	7.12	565.02	565.99	565.99	566.24	0.045626	2.20	3.25	6.68	0.99
casillas	920	PF 1	7.12	564.20	564.92	564.99	565.22	0.086312	2.43	2.93	8.27	1.30
casillas	893	PF 1	7.12	562.40	563.64	563.64	563.94	0.048611	2.43	2.92	4.79	0.99
casillas	851	PF 1	7.12	559.99	560.90	560.93	561.35	0.060548	2.97	2.40	3.01	1.05
casillas	845		Culvert									
casillas	838	PF 1	7.12	559.20	559.64	560.02	561.10	0.305686	5.36	1.33	4.26	2.57
casillas	817	PF 1	7.12	558.00	560.20	559.98	560.46	0.049174	2.27	3.13	3.63	0.78
casillas	800	PF 1	7.12	558.00	559.57	559.20	559.73	0.020473	1.82	3.91	3.94	0.58
casillas	760	PF 1	7.12	557.37	558.71	558.37	558.78	0.007010	1.32	6.34	8.15	0.42
casillas	720	PF 1	7.12	556.89	558.12	557.99	558.29	0.024481	1.88	3.89	6.91	0.74
casillas	680	PF 1	7.12	556.15	557.11	557.10	557.32	0.048935	2.02	3.53	8.49	1.00
casillas	644	PF 1	7.12	554.20	555.29	555.28	555.56	0.044505	2.27	3.14	5.60	0.97
casillas	600	PF 1	7.12	552.23	553.35	553.31	553.58	0.037882	2.11	3.38	6.04	0.90
casillas	572	PF 1	7.12	550.63	552.17	552.11	552.47	0.045815	2.45	2.90	3.88	0.90
casillas	520	PF 1	7.12	548.26	549.88	549.75	550.15	0.035337	2.27	3.13	3.87	0.81
casillas	480	PF 1	7.12	546.92	548.22	548.22	548.57	0.044859	2.63	2.76	4.14	0.97
casillas	440	PF 1	7.12	544.18	545.24	545.32	545.63	0.071830	2.76	2.58	4.86	1.21
casillas	400	PF 1	7.12	542.61	544.04	543.75	544.16	0.012973	1.54	4.70	6.49	0.55
casillas	360	PF 1	7.12	542.34	543.44	543.32	543.60	0.026002	1.75	4.06	7.38	0.75
casillas	334	PF 1	7.12	541.46	542.29	542.29	542.71	0.004230	2.86	2.49	3.00	1.00
casillas	320	PF 1	7.12	541.34	542.10	542.17	542.60	0.005473	3.12	2.28	3.00	1.14
casillas	280	PF 1	7.12	541.02	541.78	541.85	542.28	0.005430	3.12	2.28	3.00	1.14
casillas	240	PF 1	7.12	540.69	541.51	541.52	541.94	0.004377	2.89	2.46	3.00	1.02
casillas	200	PF 1	7.12	540.36	541.18	541.19	541.61	0.004336	2.88	2.47	3.00	1.01
casillas	160	PF 1	7.12	540.03	540.79	540.86	541.29	0.005419	3.11	2.29	3.00	1.14
casillas	120	PF 1	7.12	539.70	540.52	540.53	540.95	0.004374	2.89	2.46	3.00	1.02
casillas	80	PF 1	7.12	539.37	540.19	540.20	540.62	0.004332	2.88	2.47	3.00	1.01
casillas	40	PF 1	7.12	531.37	532.35	532.79	533.82	0.330800	5.38	1.32	2.37	2.29

Ilustración 9. Planta de delimitación del DPH



2.3.1.2.- INCIDENCIAS CON LA ORDENACIÓN EXISTENTE

El DPH del arroyo de las 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.

2.3.2.- AVENIDA EXTRAORDINARIA DE PERIODO DE RETORNO 500 AÑOS

2.3.2.1.- DATOS DEL MODELO HIDRÁULICO

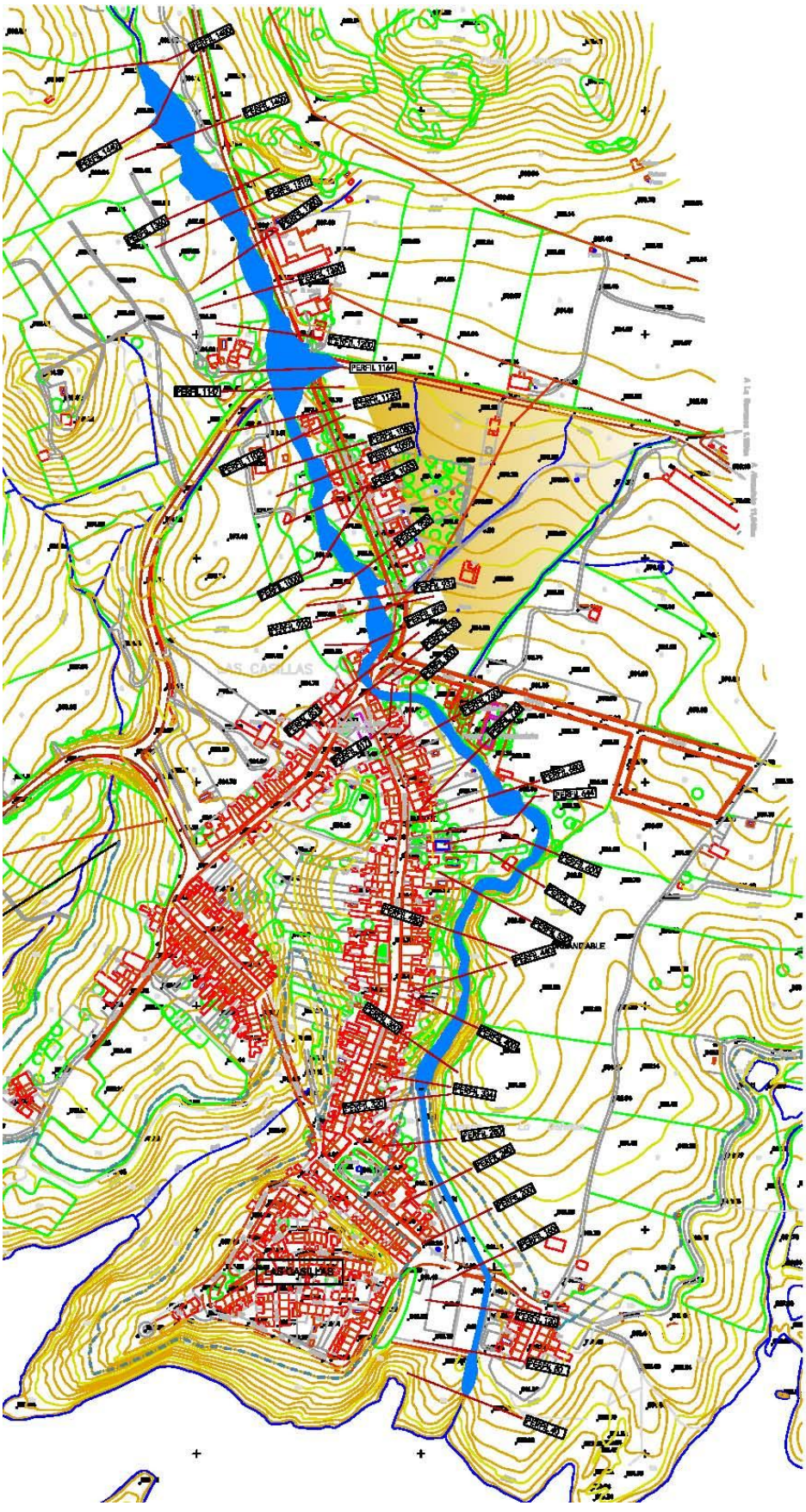
El resumen de los datos obtenidos para el arroyo modelizado se adjunta en la tabla siguiente. Asimismo, se representan la delimitación de la llanura de inundación que se desprende del estudio realizado, remitiendo a los planos del presente Estudio para consulta de detalle.

Tabla 5. Resumen del modelo para T=500

HEC-RAS Plan: Plan 09 River: arroyo_maquinas Reach: casillas Profile: PF 2

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)	
casillas	1480	PF 2	17.37	589.67	591.27	591.14	591.59	0.027922	2.48	7.02	7.67	0.83
casillas	1440	PF 2	17.37	588.70	590.04	590.12	590.29	0.038199	2.30	9.02	39.00	0.94
casillas	1400	PF 2	17.37	587.16	588.43	588.54	588.78	0.040998	2.93	8.01	21.63	1.01
casillas	1360	PF 2	17.37	585.50	586.44	586.45	586.61	0.042487	2.56	10.10	30.40	0.98
casillas	1319	PF 2	17.37	584.30	585.24	585.29	585.53	0.042484	2.70	7.88	17.64	1.02
casillas	1280	PF 2	17.37	582.41	583.53	583.48	583.76	0.025116	2.28	8.69	15.56	0.80
casillas	1245	PF 2	17.37	580.72	582.72	582.72	583.00	0.021481	2.56	8.95	17.56	0.71
casillas	1240	PF 2	17.37	580.48	582.55	582.62	582.87	0.029042	2.83	8.27	17.30	0.79
casillas	1222.43	PF 2	17.37	580.00	581.61	581.78	582.09	0.046468	3.38	6.68	14.73	1.05
casillas	1215.61	PF 2	17.37	579.81	581.30	581.44	581.75	0.045266	3.31	6.88	15.19	1.05
casillas	1211.70	PF 2	17.37	579.70	581.11	581.26	581.56	0.046369	3.31	6.88	15.29	1.08
casillas	1200	PF 2	17.37	579.38	580.91	580.70	581.02	0.009280	1.78	13.57	22.00	0.51
casillas	1186.5	PF 2	17.37	578.98	580.88	580.41	580.93	0.003474	1.14	22.68	46.62	0.32
casillas	1182	PF 2	17.37	578.85	580.88	580.31	580.91	0.002176	0.93	27.76	51.38	0.25
casillas	1175	PF 2	17.37	578.64	580.81	580.11	580.89	0.003818	1.23	14.16	57.86	0.34
casillas	1166	PF 2	17.37	578.30	580.76	579.80	580.77	0.000748	0.57	44.09	69.24	0.15
casillas	1155		Culvert									
casillas	1147	PF 2	17.37	577.30	578.19	578.91	580.94	0.277383	7.35	2.36	19.07	2.64
casillas	1120	PF 2	17.37	574.59	575.83	576.08	576.72	0.101359	4.20	4.14	6.82	1.55
casillas	1117.15	PF 2	17.37	574.42	575.76	575.92	576.35	0.076652	3.41	5.09	7.56	1.32
casillas	1112.42	PF 2	17.37	574.14	575.51	575.62	576.03	0.060710	3.20	5.49	8.28	1.20
casillas	1102	PF 2	17.37	573.51	574.81	574.95	575.36	0.064551	3.31	5.45	8.81	1.23
casillas	1099	PF 2	17.37	573.37	574.93	574.87	575.24	0.026617	2.50	7.40	10.13	0.82
casillas	1080	PF 2	17.37	572.47	574.31	574.31	574.74	0.034367	2.93	6.29	8.30	0.90
casillas	1076	PF 2	17.37	572.30	573.43	573.68	574.29	0.196505	4.57	4.39	10.62	1.96
casillas	1069	PF 2	17.37	572.00	573.29	573.32	573.62	0.044517	2.85	7.20	12.45	1.01
casillas	1059	PF 2	17.37	571.57	573.40	572.57	573.45	0.002518	1.11	18.18	13.81	0.28
casillas	1045.51	PF 2	17.37	570.97	572.47	572.54	573.02	0.043428	3.38	5.60	6.89	1.06
casillas	1033	PF 2	17.37	570.42	572.01	572.08	572.51	0.046119	3.15	5.67	7.19	1.05
casillas	1009.70	PF 2	17.37	569.54	570.67	570.77	571.10	0.056492	2.91	6.14	12.03	1.15
casillas	1000	PF 2	17.37	569.17	570.13	570.24	570.53	0.059924	2.81	6.48	14.97	1.17
casillas	958	PF 2	17.37	566.48	567.56	567.63	567.93	0.062619	2.73	6.36	11.82	1.19
casillas	940	PF 2	17.37	565.51	566.77	566.78	567.10	0.038845	2.54	6.96	12.08	0.97
casillas	931	PF 2	17.37	565.02	566.43	566.43	566.78	0.029611	2.69	7.17	11.45	0.88
casillas	920	PF 2	17.37	564.20	565.20	565.33	565.66	0.085232	2.98	5.82	11.93	1.36
casillas	893	PF 2	17.37	562.40	564.25	564.25	564.48	0.021141	2.29	9.53	20.74	0.72
casillas	851	PF 2	17.37	559.99	561.92	561.61	562.44	0.024099	3.18	5.47	14.66	0.75
casillas	845		Culvert									
casillas	838	PF 2	17.37	559.20	560.12	560.71	562.14	0.159749	6.30	2.76	5.04	2.10
casillas	817	PF 2	17.37	558.00	560.84	560.73	561.23	0.048427	2.74	6.34	6.30	0.87
casillas	800	PF 2	17.37	558.00	560.36	559.86	560.62	0.019266	2.30	7.77	6.51	0.58
casillas	760	PF 2	17.37	557.37	559.27	558.73	559.41	0.007705	1.85	11.10	8.76	0.47
casillas	720	PF 2	17.37	556.89	558.46	558.44	558.87	0.032809	2.88	6.40	7.53	0.91
casillas	680	PF 2	17.37	556.15	557.48	557.48	557.73	0.033853	2.28	8.33	17.67	0.90
casillas	644	PF 2	17.37	554.20	555.75	555.75	556.16	0.043020	2.86	6.07	7.37	1.01
casillas	600	PF 2	17.37	552.23	553.87	553.76	554.16	0.029867	2.41	7.22	8.88	0.85
casillas	572	PF 2	17.37	550.63	552.76	552.73	553.24	0.046108	3.07	5.66	5.43	0.96
casillas	520	PF 2	17.37	548.26	550.50	550.40	550.91	0.037868	2.85	6.09	5.86	0.89
casillas	480	PF 2	17.37	546.92	548.82	548.82	549.35	0.033145	3.34	5.69	5.67	0.92
casillas	440	PF 2	17.37	544.18	545.66	545.80	546.27	0.071360	3.48	4.99	6.78	1.28
casillas	400	PF 2	17.37	542.61	544.50	544.23	544.76	0.015351	2.28	8.07	7.90	0.65
casillas	360	PF 2	17.37	542.34	544.09	543.75	544.23	0.012409	1.70	10.25	11.49	0.57
casillas	334	PF 2	17.37	541.46	542.97	542.97	543.72	0.004848	3.84	4.53	3.00	1.00
casillas	320	PF 2	17.37	541.34	542.76	542.85	543.61	0.005648	4.06	4.27	3.00	1.09
casillas	280	PF 2	17.37	541.02	542.52	542.53	543.28	0.004891	3.85	4.51	3.00	1.00
casillas	240	PF 2	17.37	540.69	542.19	542.20	542.95	0.004959	3.87	4.49	3.00	1.01
casillas	200	PF 2	17.37	540.36	541.77	541.87	542.63	0.005768	4.10	4.24	3.00	1.10
casillas	160	PF 2	17.37	540.03	541.46	541.54	542.30	0.005641	4.06	4.28	3.00	1.09
casillas	120	PF 2	17.37	539.70	541.12	541.21	541.97	0.005659	4.07	4.27	3.00	1.09
casillas	80	PF 2	17.37	539.37	540.83	540.88	541.63	0.005291	3.97	4.38	3.00	1.05
casillas	40	PF 2	17.37	531.37	532.82	533.50	535.10	0.314702	6.68	2.60	3.03	2.30

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



2.3.2.2.- COMPATIBILIDAD CON LA ORDENACIÓN URBANÍSTICA

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

Al igual que el DPH, en algunas zonas la llanura de inundación para la avenida extraordinaria de 500 años limita con las edificaciones existentes, como por ejemplo, en la zona reflejada en la siguiente imagen.

Ilustración 11. Aspecto del arroyo de las Máquinas encajado entre dos edificios. Notar que la profundidad es muy elevada, lo que evita afecciones a las viviendas.

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.- Plano de Situación

2.- Topografía y Clasificación de Suelo

3.- Cuenca y usos del suelo

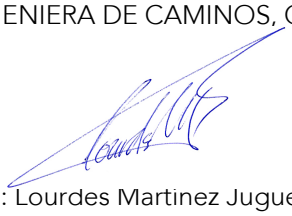
4.- Delimitación del DPH

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 2.013
I N G E S A
LA INGENIERA DE CAMINOS, C. Y P.



Fdo: Lourdes Martinez Juguera
Colegiada n° 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 el arroyo de las Máquinas que atraviesa la pedanía de Casillas, en Martos, para estudiar posibles afecciones a la ordenación propuesta en el Plan General de Ordenación Urbana del municipio.

Para los cálculos que siguen a continuación, se hará uso de la información publicada por la Dirección General de Carreteras en el texto "Máximas Precipitaciones de la España Peninsular".

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 la AAA 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 es próxima a 1 Km^2, se ha considerado un único punto de control o característico. La extrapolación se realiza para los periodos de retorno de 5 y 500 años. El análisis de los datos anteriormente citados, así como los resultados numéricos y gráficos obtenidos se adjuntan a continuación.

A continuación transcribimos la tabla con los valores adoptados:

Tabla 1. Resumen de valores

COORDENADAS UTM DE PTOS ANALIZADOS		PRECIP. MAX DIARIAS PARA LOS PERIODOS DE RETORNO (mm/día)
PERIODOS DE RETORNO 5	411.802	57
	4.166.864	
PERIODOS DE RETORNO 500	411.802	139
	4.166.864	

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 la cuenca.

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. Datos de la cuenca

CUENCA	SUPERFICIE (HA)	PTO. ALTO CUENCA (M)	DISTANCIA (M)	PTO. ALTO CAUCE (M)	DIS.CAUCE (M)	PTO.BAJO (M)
ARROYO DE LAS MÁQUINAS	14,28	725,5	2.629	680	2.256	531,37

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.

La AAA 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 de la Agencia Andaluza del Agua 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

T	Tc (h)	It (mm)	C	Q (m^3/s)
5	0,93	14,40	0,65	4,46
500	0,93	35,12	0,65	10,87

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:

$$E/P = 0 \qquad \text{si } (P/P_0)<1$$

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

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:

$$\text{Pmáx.intensidad} = b \times P_d$$

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**	**5**
Urbanizada	1.5	0.092
Viales	1	0.000
Frutales	19	
Olivar	15	1.206
Regadío	12	
Viñedo	12	
Secano	9	0.000
Bosque denso	22	0.019
Monte Bajo	14	0.023
Pradera	10	0.086
Superficie Erial	8	0.003
Roca permeable	3	0.000
Roca Impermeable	2	0.092

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.

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

T	Tc (h)	It (mm)	C	Q (m^3/s)
5	1,03	21,53	0,65	7,12
500	1,03	52,51	0,65	17,37

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.

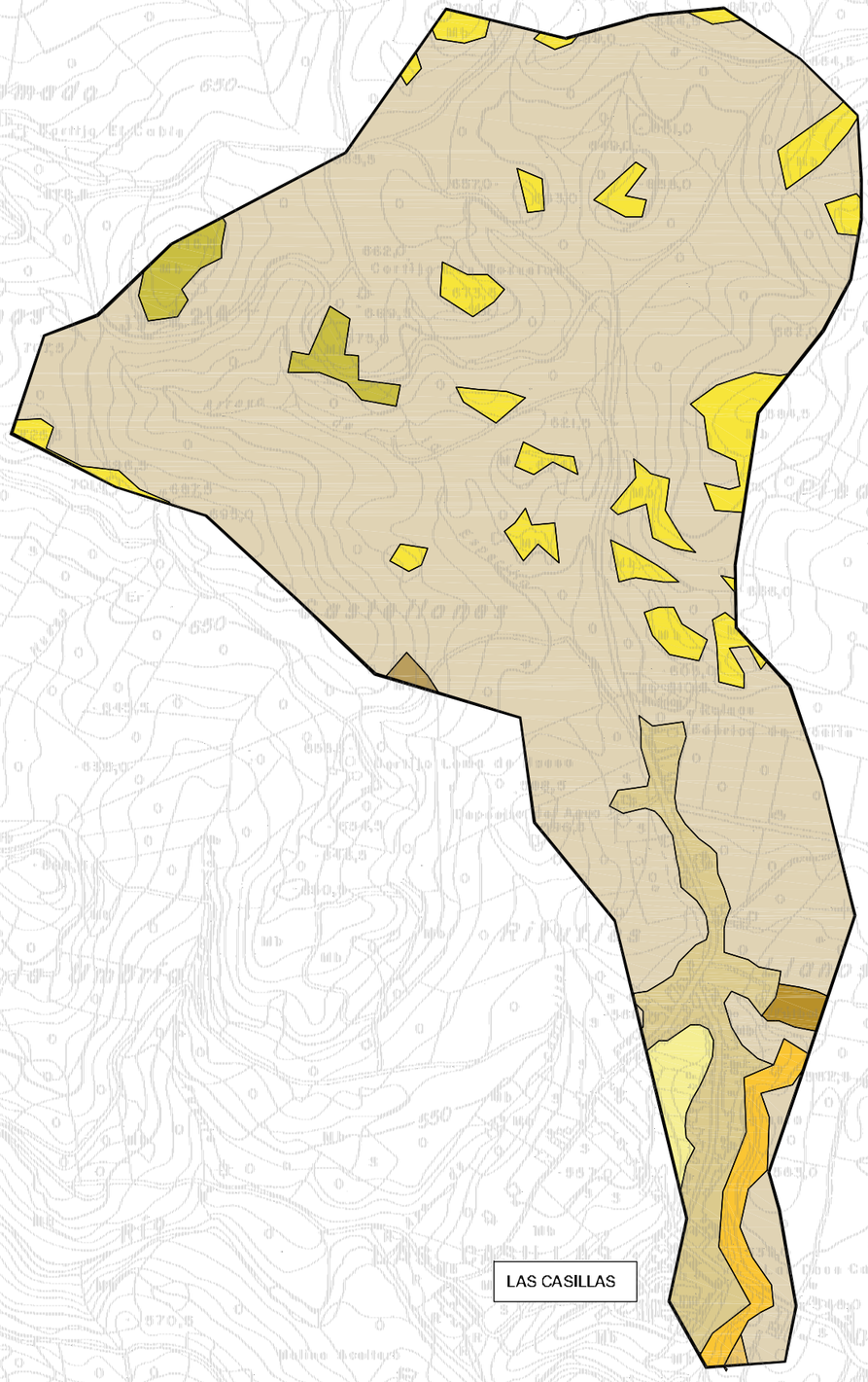
Estos son los caudales resultantes para las avenidas de periodo de retorno 5 y 500 años:

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 INNOMINADO	4,46	7,12	10,87	17,37

Adoptamos como valor de cálculo para el cálculo del DPH el proporcionado por el método de la Instrucción 5.2 I.C para el periodo de retorno de 5 años, fijando por tanto el caudal de cálculo en **7,12 m^3/s,** y para la llanura de inundación **17,37 m^3/s.**

APÉNDICE 1. PLANO DE CUENCAS Y USOS DEL SUELO



- CULTIVOS LEÑOSOS EN SECANO: OLIVAR
- EQUIPAMIENTO DEPORTIVO Y RECREATIVO
- MATORRAL DENSO
- MATORRAL DENSO ARBOLADO: QUERCINEAS DISPERSAS
- MATORRAL DISPERSO CON PASTIZAL
- OTROS CULTIVOS LEÑOSOS EN SECANO
- PASTIZAL CONTINUO
- RIOS Y CAUCES NAT.:OTRAS FORM. RIPARIAS
- TEJIDO URBANO

ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ JUGUERA, INGENIERO DE CAMINOS	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	ESCALA: 1:25.000	DOCUMENTO: PLANOS	TÍTULO: CUENCA Y USOS DEL SUELO	Nº DE ANEJO: 1	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 de las Máquinas
Período de retorno (T): 5
Precipitación máx. correspondiente a T en mm: 57,00

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)
1,428	725,5	680,0	531,3	2.629,0	2.256,0

	(m/m)	%
Pendiente media de la Cuenca (J)	0,074	7,387
Pendiente Media del Arroyo	0,066	6,591

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	2,26
Pendiente media (*J*) m/m	0,07
Tiempo de Concentración (*Tc*) en horas	**0,93**

2.- Intensidad por Yarnell y Hattaway

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

$Pmax_{24h}$	57,00
Intensidad horaria (I_h) =0,25 x $Pmax_{24h}$	14,25
Tc (minutos)	56,00
Intensidad para Tc (I_t) mm	**14,40**

3.- Caudal de cálculo

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

S= Superficicie de la cuenca en km^2	1,43
Intensidad para Tc (I_t)	14,40
*C= Coeficiente de Escorrentía**	0,65
Q por el método Racional(m^3/seg)	4,46

* 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 de las Máquinas*
Período de retorno (T): *5*
Precipitación máx. correspondiente a T en mm: *57*

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 2,63
Pendiente media (J) m/m 0,07
Tiempo de Concentración (Tc) en horas **1,03**

2.- Factor de corrección K Témez

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

1,06869

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 2,375
Relación Intensidades I_t/I_d fig. 2.2 9,2
t = Tc tiempo de concentración en horas 1,03
Intensidad de cálculo, para *T* y *Tc mm* **21,53691452**

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 % 7,39 >3%

Tipo de Terreno-Suelo	S_i (Km²)	P_{oi}	P_{oi} x Corrector	C_i	$C_i \times S_i$
Urbanizada	0,092394	1,5	4,05	0,77	0,0712
Viales	0,000000	1	2,70	0,00	0,0000
Frutales	0,000000	19	25,00	0,00	0,0000
Olivar	1,205511	15	25,00	0,18	0,2212
Regadío	0,000000	12	25,00	0,00	0,0000
Viñedo	0,000000	12	25,00	0,00	0,0000
Secano	0,000000	22	25,00	0,00	0,0000
Bosque denso	0,018803	14	25,00	0,18	0,0034
Monte Bajo	0,022913	14	25,00	0,18	0,0042
Pradera	0,086055	10	25,00	0,18	0,0158
Superficie Erial	0,002552	8	21,60	0,23	0,0006
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	1,428228		***C medio(*)***	**0,22**	**0,3164**

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(m³ /seg) 7,12

CÁLCULO DE CAUDALES

Proyecto/Estudio:	INUNDABILIDAD PGOU MARTOS
Identificación de la Cuenca:	Arroyo de las Máquinas
Período de retorno (T):	500
Precipitación máx. correspondiente a T en mm:	139,00

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)
1,428	725,5	680,0	531,3	2.629,0	2.256,0

	(m/m)	%
Pendiente media de la Cuenca (J)	0,074	7,387
Pendiente Media del Arroyo	0,066	6,591

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	2,26
Pendiente media (*J*) m/m	0,07
Tiempo de Concentración (*Tc*) en horas	**0,93**

2.- Intensidad por Yarnell y Hattaway

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

$Pmax_{24h}$	139,00
Intensidad horaria (I_h) =0,25 x $Pmax_{24h}$	34,75
Tc (minutos)	56,00
Intensidad para Tc (I_t) mm	**35,12**

3.- Caudal de cálculo

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

S= Superficicie de la cuenca en km^2	1,43
Intensidad para Tc (I_t)	35,12
*C= Coeficiente de Escorrentía**	0,65
Q por el método Racional(m^3/seg)	10,87

* 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: *Arroyo de las Máquinas*
Período de retorno (T): *500*
Precipitación máx. correspondiente a T en mm: *139*

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*) Km/m 2,63
Pendiente media (*J*) m/m 0,07
Tiempo de Concentración (*Tc*) en horas **1,03**

2.- Factor de corrección K Témez

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

1,06869

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 5,791666667
Relación Intensidades I_t/I_d fig. 2.2 9,2
t = Tc tiempo de concentración en horas 1,03
Intensidad de cálculo, para *T* y *Tc mm* **52,51984418**

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 % 7,39 >3%

Tipo de Terreno-Suelo	$S_i (Km^2)$	P_{oi}	P_{oi} x Corrector	C_i	$C_i \times S_i$
Urbanizada	0,092394	1,5	4,05	0,93	0,0859
Viales	0,000000	1	2,70	0,00	0,0000
Frutales	0,000000	19	25,00	0,00	0,0000
Olivar	1,205511	15	25,00	0,47	0,5725
Regadío	0,000000	12	25,00	0,00	0,0000
Viñedo	0,000000	12	25,00	0,00	0,0000
Secano	0,000000	22	25,00	0,00	0,0000
Bosque denso	0,018803	14	25,00	0,47	0,0089
Monte Bajo	0,022913	14	25,00	0,47	0,0109
Pradera	0,086055	10	25,00	0,47	0,0409
Superficie Erial	0,002552	8	21,60	0,53	0,0013
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	1,428228		***C medio(*)***	**0,50**	**0,7204**

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) 17,37

ANEJO NÚMERO 2. ESTUDIO HIDRÁULICO

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1. INTRODUCCIÓN

El objeto del presente Anejo es crear un modelo hidráulico para el arroyo de las Máquinas que discurre en las proximidades de la pedanía de Las Casillas, 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. Caudales de cálculo para T=500 años

T	Q_{500} (m^3/s)
5	7,12
500	17,37

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 E1-968 12.

2.3. ODT

Actualmente, se localizan 4 ODT en el tramo estudiado, si bien la nº3 es solamente un paso superior de una conducción.

El Ayuntamiento de Martos nos ha facilitado los datos de dichas ODT, que se resumen a continuación. Se adjunta en el Apéndice nº1 copia de la información facilitada por el Ayuntamiento.

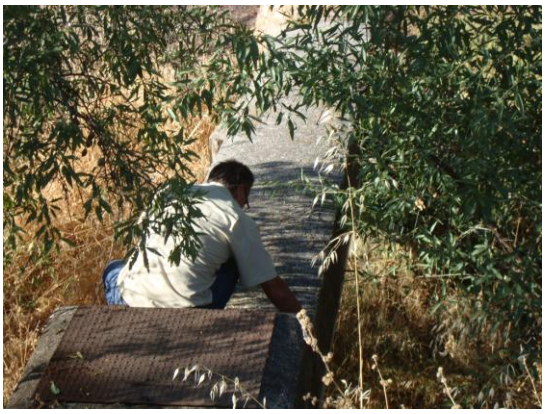
Notar que la denominación dada por el Ayuntamiento difiere de la adoptada en el presente estudio, que las numera de aguas arriba a aguas abajo, siendo por tanto la ODT nº1 la primera que aparece en el modelo (nº4 en la información del Ayuntamiento) y la ODT nº4 se corresponde con la última ODT modelizada, es decir el marco prefabricado que desemboca en el embalse (nº1 en la información del Ayuntamiento).

ODT N°1 en arroyo Las Máquinas

Tubo de hormigón armado de D=1800 mm. I=3%

ODT N°2 en arroyo Las Máquinas

Pasarela estrecha (0,80 m de ancho) de 7,44 m de luz y 2,32 de calado libre, para paso de conducción. I=2,0%



ODT N°3 en arroyo Las Máquinas

Bóveda de ladrillo y piedra de dimensiones interiores 2*2 m, cimentada en hormigón, en buen estado de conservación. Se aloja en su interior una canalización plástica, probablemente de saneamiento.

I=2,5%

ODT N°4 en arroyo Las Máquinas

Marco prefabricado de hormigón armado de dimensiones interiores 3*2 m. I= 2,0%

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.

ODT	CAPACIDAD ACTUAL	SECCIÓN PROPUESTA
ODT N°1 en arroyo Las Máquinas	Tubo de hormigón armado de D=1800 mm. I=3% Q_{max}=17,25 m^3/s Es ligeramente insuficiente	Marco rectangular de 2*2,0 m interiores, suficiente para Q_{500}=17,25 m^3/s
ODT N°2 en arroyo Las Máquinas	Pasarela estrecha (0,80 m de ancho) de 7,44 m de luz y 2,32 de calado libre, para paso de conducción. I=2,0%	ODT actual válida. Lámina de agua de 0,57 m para Q_{500}=17,25 m^3/s
ODT N°3 en arroyo Las Máquinas	Bóveda de ladrillo y piedra de dimensiones interiores 2*2 m, cimentada en hormigón, en buen estado de conservación. Se aloja en su interior una canalización plástica, probablemente de saneamiento. I=2,5% Q_{max}=20,97 m^3/s	ODT actual válida. Lámina de agua de 1,47 m para Q_{500}=17,25 m^3/s
ODT N°4 en arroyo Las Máquinas	Marco prefabricado de hormigón armado de dimensiones interiores 3*2 m. I= 2,0% Q_{max}=40,24 m^3/s	ODT actual válida. Lámina de agua de 0,90 m para Q_{500}=17,25 m^3/s

En el Apéndice 1 se adjunta la comprobación hidráulica de las secciones 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 del cauce (perfiles transversales) quedan reflejadas en el siguiente croquis:

El tramo se inicia en la sección 1480, punto ubicado suficientemente aguas arriba del inicio de la zona urbana. Discurre de norte a sur hasta entregar sus aguas al embalse de las Víboras.

En total, se han modelizado 1.440 metros de arroyo, habiéndose obtenido de la cartografía 59 secciones transversales que han generado el modelo digital del terreno para el cálculo de la llanura de inundación.

Ilustración 1. Esquema del Modelo Hidráulico del Arroyo de las Máquinas

Como se ha partido de la topografía del catastro facilitada por el Cliente, muchas de las edificaciones próximas no se representaban en el modelo digital del terreno creado para extraer las secciones transversales, motivo por el cual se han introducido en el modelo manualmente.

Concretamente, se han simulado mediante motas verticales (leeves) las edificaciones ubicadas entre los siguientes perfiles o secciones del modelo, complementando con interpolaciones cada 5 metros entre éstas:

- Entre 1280 y 1245 en la margen izquierda
- Entre 1222 y 1215 en la margen izquierda
- Entre 1211 y 1200 en la margen izquierda
- Entre 1182 y 1166 en la margen derecha
- Entre 1117 y 1099 en la margen izquierda (valla)
- Entre 1076 y 1009 en la margen izquierda
- Entre 940 y 931 en la margen izquierda
- Entre 893 y 845 en la margen derecha
- Entre 838 y 760 en ambas márgenes
- En 720 en la margen izquierda

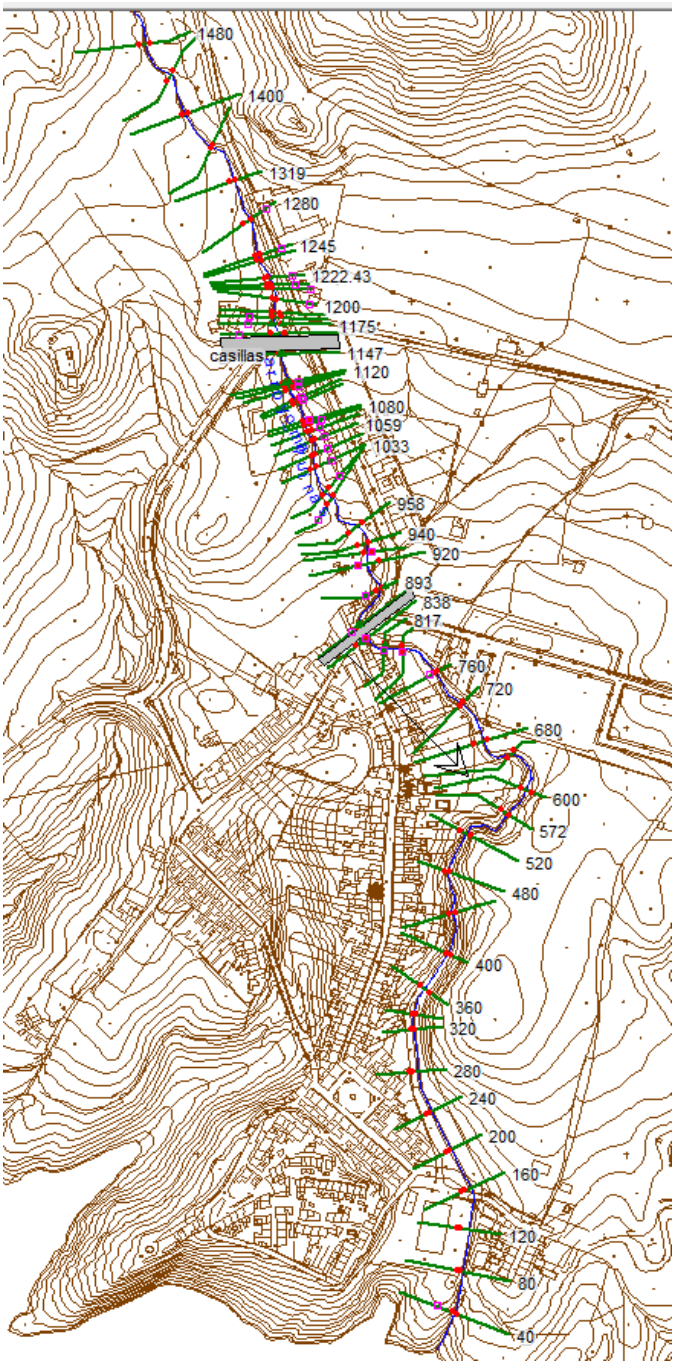
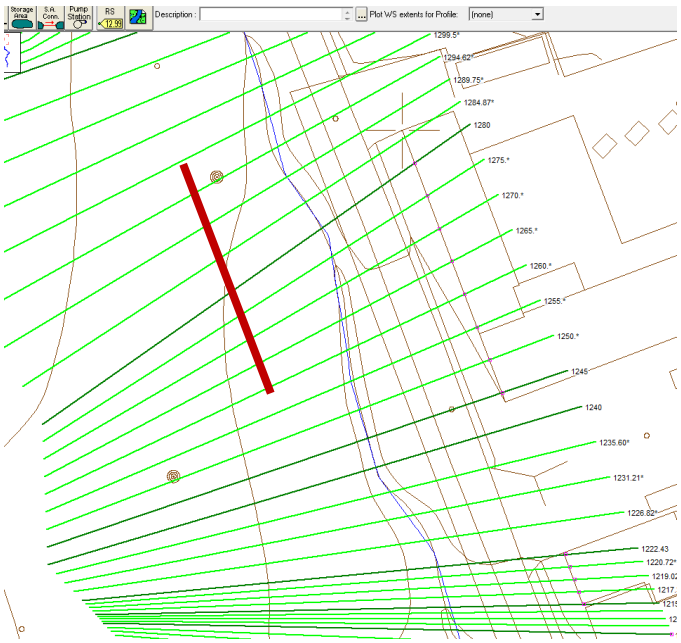


Ilustración 2. Detalle de implementación de los edificios. Se observan las dos secciones extraídas del modelo real (1280 y 1245), en las que se ha señalado la línea de motas introducida. Nótese la interpolación de secciones cada 5 metros.



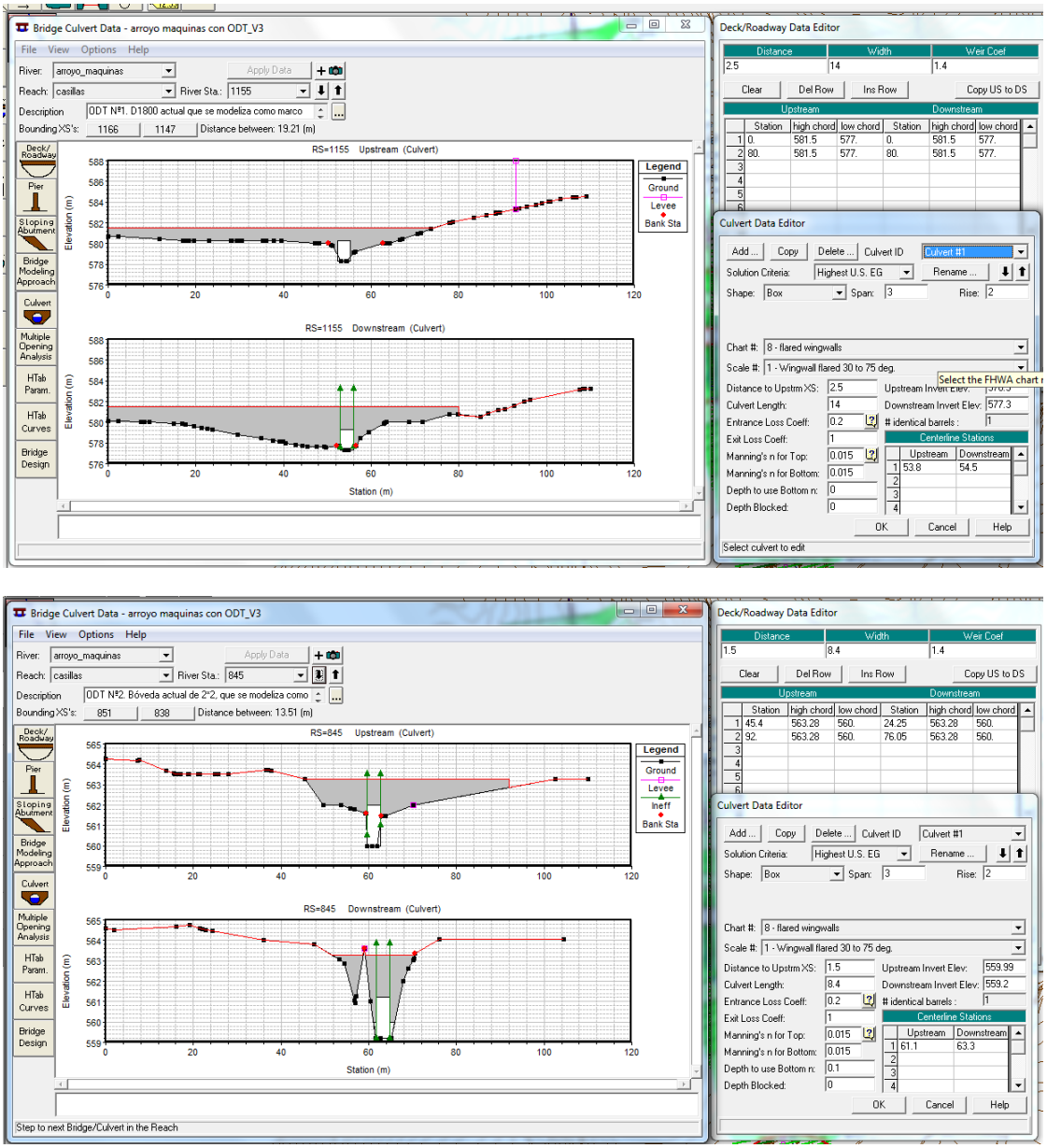
Además de las secciones transversales, se han modelizado dos estructuras, en las secciones 1155 y 845, respectivamente, en los lugares en los que se ubican actualmente las obras de drenaje transversal n° 1 y 2, descritas en el apartado anterior (ODT en adelante).

Señalar que no se han implementado las ODT actuales 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.

La ODT n°3 no se ha modelizado puesto que se corresponde con un paso de tubería muy estrecho y con una luz de casi 7,5 m, que no afecta al régimen hidráulico del arroyo de las Máquinas.

Respecto a la ODT n°4, que se corresponde con un marco de 3*2 m prefabricado de 255 ml de longitud, no se ha modelizado como estructura o culvert en Hec-Ras, dado que presenta un trazado en planta rectilíneo no susceptible de ser modelizado mediante esta aplicación. Es por eso que, para estudiará el funcionamiento del marco en avenida, se ha implementado éste en el terreno mediante la apertura de un canal rectangular de 3 m de ancho y 2 m de altura de cajero, entre las secciones 334 a 80, con un 2% de pendiente. Se ha utilizado la aplicación channel desing/modification para modificar las secciones transversales, si bien algunos perfiles se han tenido que rectificar manualmente para retocar las secciones.

Ilustración 3. Datos y croquis de la ODT en el Arroyo de las Máquinas. Notar que el dibujo tiene la escala Y distorsionada.



Finalmente, indicar que cuenta la cota máxima del embalse de las Víboras (+544,00 m) alcanza la sección 334 ubicada inmediatamente aguas arriba de la ODT nº4. No obstante, no se va a tener en cuenta esta condición de contorno en el modelo, y se trabajará con el calado crítico, como más adelante se explicará.

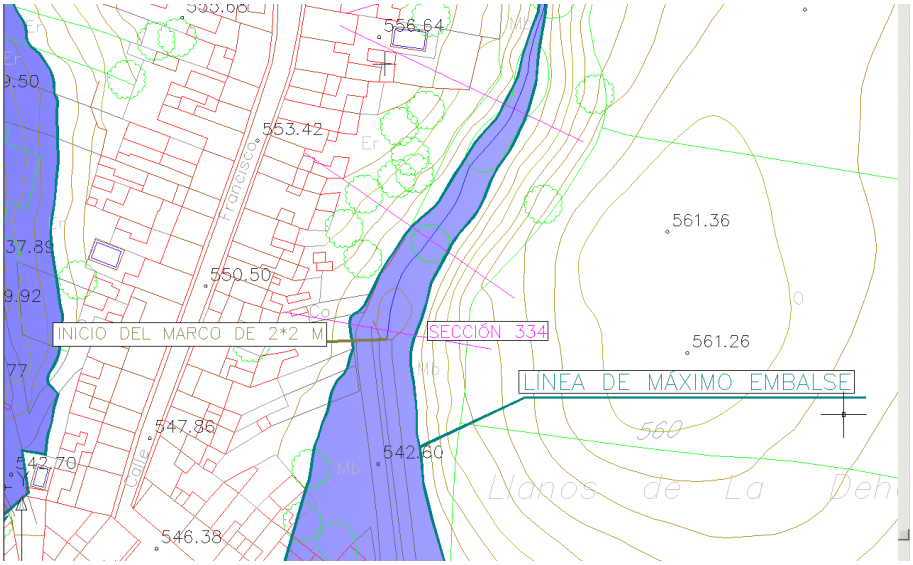


Ilustración 4. Detalle de la ubicación del final del modelo, con tres de las secciones inmersas en la zona ocupada por el máximo llenado del embalse.

La geometría del Arroyo de las Máquinas es muy variable. En general el arroyo está muy encajado con profundidades que rondan los 2-2,5 m. Sin embargo, el ancho varía de 3 a 10 metros, en función de las litologías atravesadas, y de los muros de contención ejecutados en sus bordes.

2.5. PENDIENTE LONGITUDINAL

La pendiente longitudinal, obtenida a partir de la topografía con que contamos, alcanza el 4,1% en el tramo modelizado, y se ha aplicado como condición de contorno, por ser el parámetro que mejor describe el comportamiento del río.

2.6. VEGETACIÓN

La vegetación, como puede comprobarse en las imágenes que siguen, es abundante en el cauce de aguas bajas y en buena parte de las márgenes.

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. Aspecto del cauce del arroyo de las máquinas en el tramo superior modelizado

Ilustración 6. Detalle del cauce de aguas bajas con abundante vegetación de ribera

Ilustración 7. Aspecto de uno de los tramos del arroyo totalmente anexo a las edificaciones en la margen derecha

Ilustración 8. Vista de la salida aguas debajo de la ODT nº2 modelizada. El arroyo está completamente encajado

3. METODOLOGÍA DE LA MODELIZACIÓN HIDRÁULICA

3.1. INTRODUCCIÓN

Se ha modelizado el régimen hidráulico del tramo de estudio de arroyo de las Máquinas en el tramo que atraviesa la pedanía de Las Casillas a través del programa informático HEC-RAS 4.1. del U.S. Arms Corps Of Engineers.

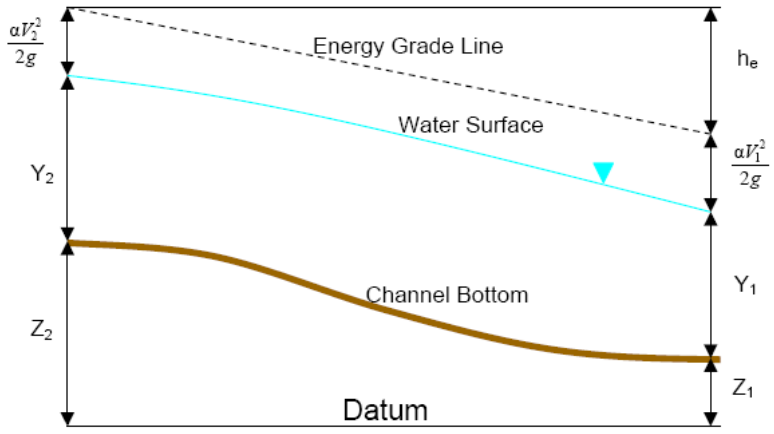
Los cálculos se realizan en régimen estacionario para las avenidas de 5 y 500 años. La primera simulación permitirá determinar el DPH, y la segunda, la llanura de inundación.

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 DE LAS MÁQUINAS

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	Menor	n3 = 0.015
Vegetación	Media	n4 = 0.015
Meandros	Menor	m5 = 1
n = 0.006		

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	Menor	n3= 0.015
Vegetación	Media	n4 = 0.015
Meandros	Menor	m5 = 1
n = 0.06		

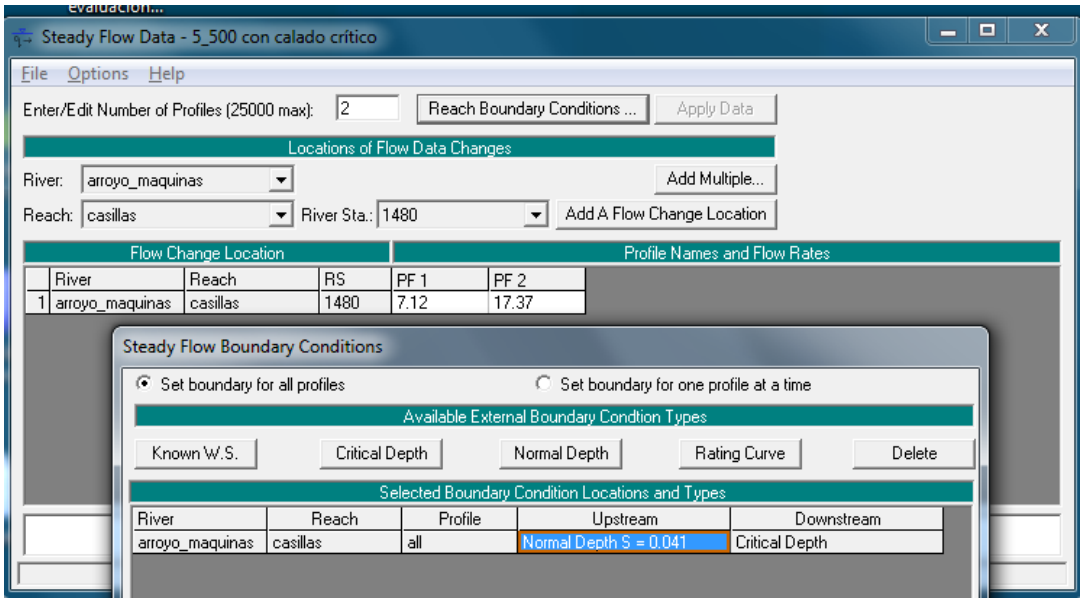
3.4. CONDICIONES DE CONTORNO

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 la pendiente del eje del arroyo para el inicio del tramo, y el calado crítico para el final del tramo.

Aunque para la avenida extraordinaria de 500 años de periodo de retorno, se debería aplicar la condición aguas debajo de nivel máximo de embalse, dada por la cota +544,00 m, por indicaciones del Organismo de Cuenca se adopta el calado crítico, para poder evaluar el funcionamiento del marco.

Ilustración 10. Condiciones de contorno del modelo Hec.



3.5. MODELIZACIÓN DE ESTRUCTURAS

Ya se ha descrito anteriormente que cuatro las estructuras existentes, si bien una de ellas corresponde a un paso de tubería, y la última a un encauzamiento de 255 ml. Es por ello, que solo se han modelizado dos estructuras siguiendo las subrutinas que se explican a continuación.

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.

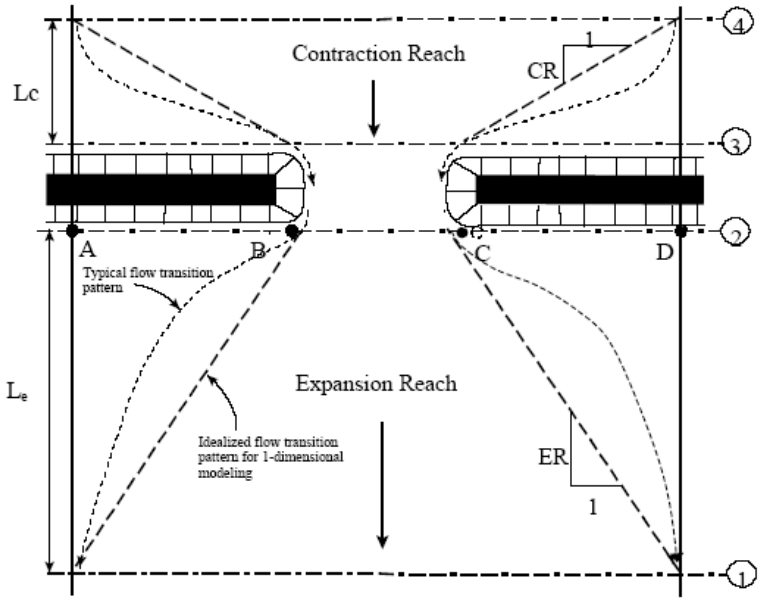


Ilustración 11. Perfiles de cálculo en estructuras

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. 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

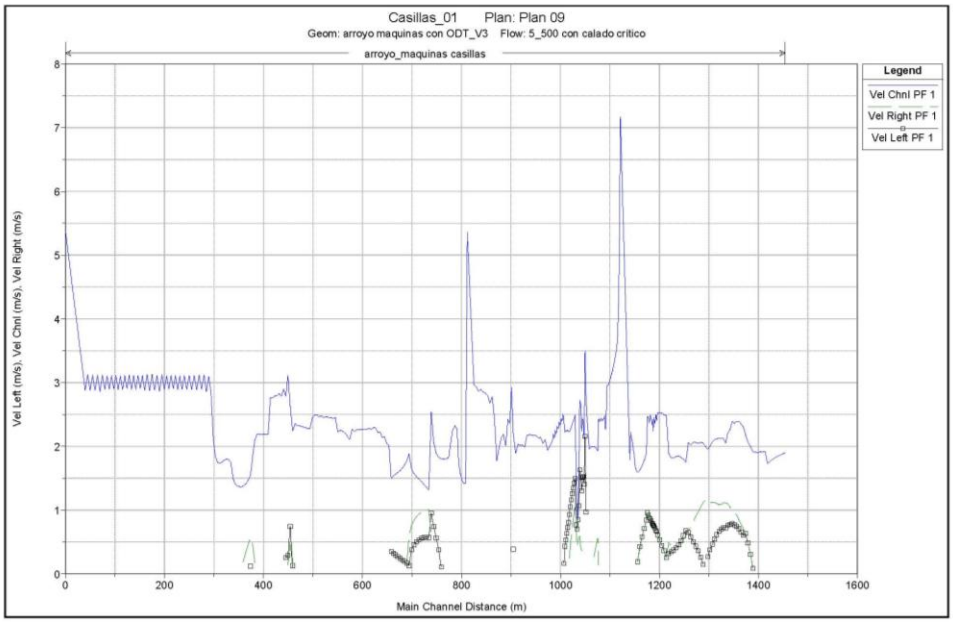
En primer lugar, se adjunta la tabla resumen de los resultados obtenidos, así como las gráficas de velocidades y del nº de Froude. Se aportan solo las secciones extraídas del MDT y no las interpoladas, por simplicidad.

Tabla 4. Resumen del modelo para T=5 años

HEC-RAS Plan: Plan 09 River: arroyo_maquinas Reach: casillas Profile: PF 1

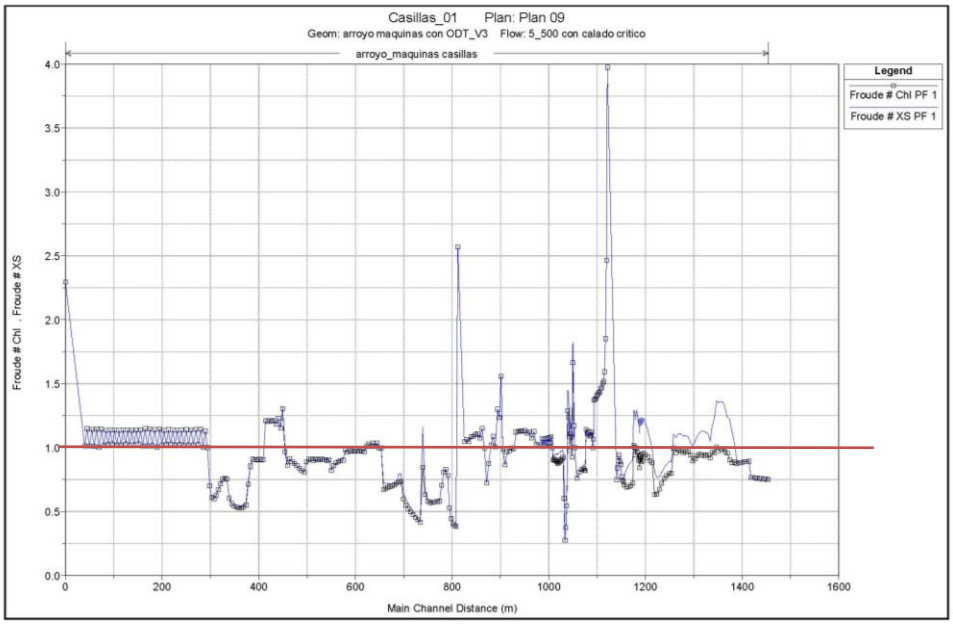
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
casillas	1480	PF 1	7.12	589.67	590.79	590.65	590.97	0.025433	1.90	3.75	5.74	0.75
casillas	1440	PF 1	7.12	588.70	589.70	589.65	589.88	0.037897	1.92	3.70	7.85	0.89
casillas	1400	PF 1	7.12	587.16	588.17	588.21	588.41	0.036840	2.18	3.68	11.85	0.90
casillas	1360	PF 1	7.12	585.50	586.25	586.27	586.38	0.041207	2.06	5.25	23.36	0.92
casillas	1319	PF 1	7.12	584.30	584.99	584.99	585.17	0.041374	2.00	4.11	12.60	0.94
casillas	1280	PF 1	7.12	582.41	583.19	583.15	583.35	0.029470	1.76	4.26	11.11	0.80
casillas	1245	PF 1	7.12	580.72	582.32	582.08	582.50	0.019197	1.89	3.96	7.27	0.63
casillas	1240	PF 1	7.12	580.48	582.04	581.97	582.35	0.042546	2.48	2.88	4.47	0.88
casillas	1222.43	PF 1	7.12	580.00	581.27	581.33	581.59	0.043994	2.53	2.99	7.06	0.96
casillas	1215.61	PF 1	7.12	579.81	580.99	581.05	581.28	0.040664	2.45	3.22	8.38	0.94
casillas	1211.70	PF 1	7.12	579.70	580.84	580.88	581.10	0.036316	2.34	3.48	9.33	0.90
casillas	1200	PF 1	7.12	579.38	580.40	580.36	580.56	0.021891	1.90	4.66	12.41	0.72
casillas	1186.5	PF 1	7.12	578.98	580.14	580.02	580.27	0.021587	1.63	4.59	11.85	0.69
casillas	1182	PF 1	7.12	578.85	580.04	579.91	580.17	0.023328	1.59	4.50	10.38	0.71
casillas	1175	PF 1	7.12	578.64	579.79	579.74	579.97	0.036432	1.88	3.78	7.90	0.87
casillas	1166	PF 1	7.12	578.30	579.46	579.31	579.63	0.026745	1.79	3.97	6.79	0.75
casillas	1155		Culvert									
casillas	1147	PF 1	7.12	577.30	577.73	578.23	580.34	0.837154	7.17	0.99	11.56	3.97
casillas	1120	PF 1	7.12	574.59	575.51	575.63	575.95	0.093040	2.95	2.42	5.13	1.37
casillas	1117.15	PF 1	7.12	574.42	575.47	575.47	575.73	0.047174	2.27	3.14	5.94	1.00
casillas	1112.42	PF 1	7.12	574.14	575.15	575.18	575.44	0.057966	2.42	2.94	5.93	1.10
casillas	1102	PF 1	7.12	573.51	574.60	574.53	574.79	0.030916	1.93	3.74	7.30	0.82
casillas	1099	PF 1	7.12	573.37	574.49	574.42	574.69	0.032097	1.98	3.63	6.88	0.83
casillas	1080	PF 1	7.12	572.47	573.75	573.75	574.07	0.050130	2.49	2.86	4.51	1.00
casillas	1076	PF 1	7.12	572.30	573.21	573.38	573.73	0.153377	3.49	2.37	7.59	1.66
casillas	1069	PF 1	7.12	572.00	573.02	573.05	573.22	0.047524	2.24	3.90	11.71	0.98
casillas	1059	PF 1	7.12	571.57	572.76	572.31	572.79	0.002840	0.85	9.78	12.71	0.27
casillas	1045.51	PF 1	7.12	570.97	572.11	572.08	572.36	0.034553	2.26	3.28	5.86	0.88
casillas	1033	PF 1	7.12	570.42	571.58	571.58	571.87	0.047580	2.38	2.99	5.21	1.00
casillas	1009.70	PF 1	7.12	569.54	570.39	570.40	570.62	0.051307	2.09	3.40	8.00	1.02
casillas	1000	PF 1	7.12	569.17	569.90	569.90	570.09	0.053835	1.94	3.67	10.22	1.03
casillas	958	PF 1	7.12	566.48	567.25	567.29	567.49	0.062567	2.18	3.27	8.52	1.12
casillas	940	PF 1	7.12	565.51	566.41	566.40	566.62	0.044613	2.03	3.51	7.79	0.97
casillas	931	PF 1	7.12	565.02	565.99	565.99	566.24	0.045626	2.20	3.25	6.68	0.99
casillas	920	PF 1	7.12	564.20	564.92	564.99	565.22	0.086312	2.43	2.93	8.27	1.30
casillas	893	PF 1	7.12	562.40	563.64	563.64	563.94	0.048611	2.43	2.92	4.79	0.99
casillas	851	PF 1	7.12	559.99	560.90	560.93	561.35	0.060548	2.97	2.40	3.01	1.05
casillas	845		Culvert									
casillas	838	PF 1	7.12	559.20	559.64	560.02	561.10	0.305686	5.36	1.33	4.26	2.57
casillas	817	PF 1	7.12	558.00	560.20	559.98	560.46	0.049174	2.27	3.13	3.63	0.78
casillas	800	PF 1	7.12	558.00	559.57	559.20	559.73	0.020473	1.82	3.91	3.94	0.58
casillas	760	PF 1	7.12	557.37	558.71	558.37	558.78	0.007010	1.32	6.34	8.15	0.42
casillas	720	PF 1	7.12	556.89	558.12	557.99	558.29	0.024481	1.86	3.89	6.91	0.74
casillas	680	PF 1	7.12	556.15	557.11	557.10	557.32	0.048935	2.02	3.53	8.49	1.00
casillas	644	PF 1	7.12	554.20	555.29	555.28	555.56	0.044505	2.27	3.14	5.60	0.97
casillas	600	PF 1	7.12	552.23	553.35	553.31	553.58	0.037882	2.11	3.38	6.04	0.90
casillas	572	PF 1	7.12	550.63	552.17	552.11	552.47	0.045815	2.45	2.90	3.88	0.90
casillas	520	PF 1	7.12	548.26	549.88	549.75	550.15	0.035337	2.27	3.13	3.87	0.81
casillas	480	PF 1	7.12	546.92	548.22	548.22	548.57	0.044859	2.63	2.76	4.14	0.97
casillas	440	PF 1	7.12	544.18	545.24	545.32	545.63	0.071830	2.76	2.58	4.86	1.21
casillas	400	PF 1	7.12	542.61	544.04	543.75	544.16	0.012973	1.54	4.70	6.49	0.55
casillas	360	PF 1	7.12	542.34	543.44	543.32	543.60	0.026002	1.75	4.06	7.38	0.75
casillas	334	PF 1	7.12	541.46	542.29	542.29	542.71	0.004230	2.86	2.49	3.00	1.00
casillas	320	PF 1	7.12	541.34	542.10	542.17	542.60	0.005473	3.12	2.28	3.00	1.14
casillas	280	PF 1	7.12	541.02	541.78	541.85	542.28	0.005430	3.12	2.28	3.00	1.14
casillas	240	PF 1	7.12	540.69	541.51	541.52	541.94	0.004377	2.89	2.46	3.00	1.02
casillas	200	PF 1	7.12	540.36	541.18	541.19	541.61	0.004336	2.88	2.47	3.00	1.01
casillas	160	PF 1	7.12	540.03	540.79	540.86	541.29	0.005419	3.11	2.29	3.00	1.14
casillas	120	PF 1	7.12	539.70	540.52	540.53	540.95	0.004374	2.89	2.46	3.00	1.02
casillas	80	PF 1	7.12	539.37	540.19	540.20	540.62	0.004332	2.88	2.47	3.00	1.01
casillas	40	PF 1	7.12	531.37	532.35	532.79	533.82	0.330800	5.38	1.32	2.37	2.29

Ilustración 12. Velocidades para T=5



Las velocidades obtenidas en el canal principal son moderadas y oscilan entre 2 y 3 m/s. Los picos en la velocidad obedecen a las dos obras de drenaje modelizadas.

Ilustración 13. Froude para T=5



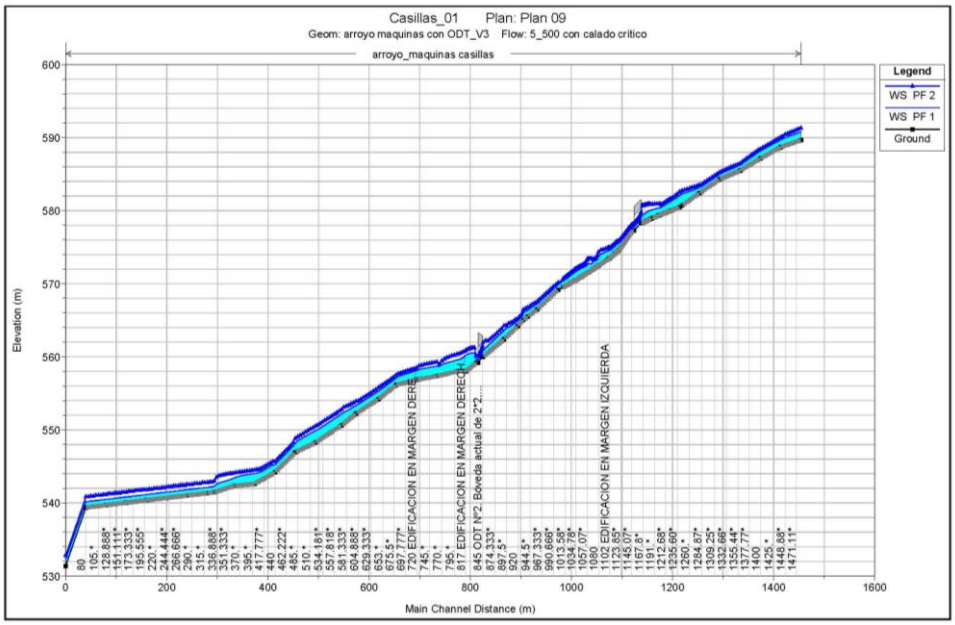
Resaltar que el régimen obtenido en el tramo de estudio del arroyo de las Máquinas es muy variable, dados los cambios de sección y de pendiente del cauce. El comportamiento del tramo final se analizará en el apartado 4.2.

En los apéndices 1.B. a 1.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

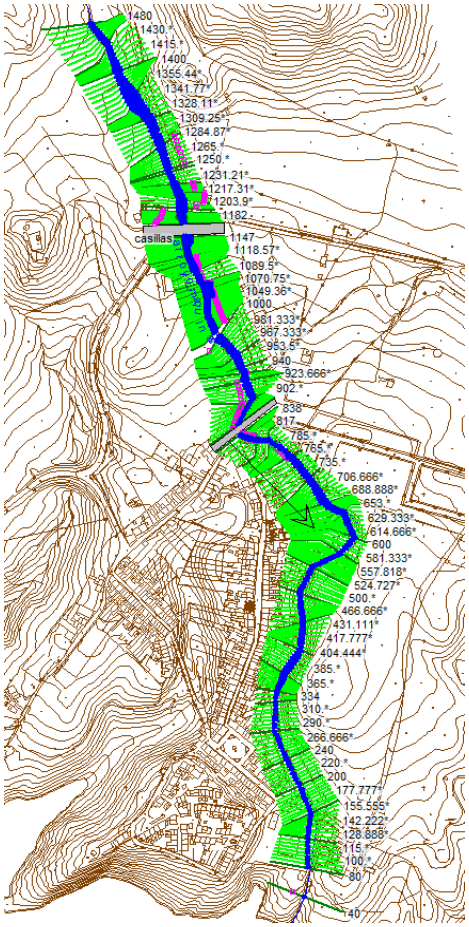
A continuación se muestra el gráfico con las cotas de la llanura de inundación alcanzadas para la avenida ordinaria de 5 años:

Ilustración 14. Cotas de inundación del modelo para T=5



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 15. Esquema en planta con el DPH del arroyo 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 5. Resumen del modelo para T=500

HEC-RAS Plan: Plan 09 River: arroyo_maquinas Reach: casillas Profile: PF 2

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)	
casillas	1480	PF 2	17.37	589.67	591.27	591.14	591.59	0.027922	2.48	7.02	7.67	0.83
casillas	1440	PF 2	17.37	588.70	590.04	590.12	590.29	0.038199	2.30	9.02	39.00	0.94
casillas	1400	PF 2	17.37	587.16	588.43	588.54	588.78	0.040998	2.93	8.01	21.63	1.01
casillas	1360	PF 2	17.37	585.50	586.44	586.45	586.61	0.042487	2.56	10.10	30.40	0.98
casillas	1319	PF 2	17.37	584.30	585.24	585.29	585.53	0.042484	2.70	7.88	17.64	1.02
casillas	1280	PF 2	17.37	582.41	583.53	583.48	583.76	0.025116	2.28	8.69	15.56	0.80
casillas	1245	PF 2	17.37	580.72	582.72	582.72	583.00	0.021481	2.56	8.95	17.56	0.71
casillas	1240	PF 2	17.37	580.48	582.55	582.62	582.87	0.029042	2.83	8.27	17.30	0.79
casillas	1222.43	PF 2	17.37	580.00	581.61	581.78	582.09	0.046468	3.38	6.68	14.73	1.05
casillas	1215.61	PF 2	17.37	579.81	581.30	581.44	581.75	0.045266	3.31	6.88	15.19	1.05
casillas	1211.70	PF 2	17.37	579.70	581.11	581.26	581.56	0.046369	3.31	6.88	15.29	1.06
casillas	1200	PF 2	17.37	579.38	580.91	580.70	581.02	0.009280	1.78	13.57	22.00	0.51
casillas	1186.5	PF 2	17.37	578.98	580.88	580.41	580.93	0.003474	1.14	22.68	46.62	0.32
casillas	1182	PF 2	17.37	578.85	580.88	580.31	580.91	0.002176	0.93	27.76	51.38	0.25
casillas	1175	PF 2	17.37	578.64	580.81	580.11	580.89	0.003818	1.23	14.16	57.86	0.34
casillas	1166	PF 2	17.37	578.30	580.76	579.80	580.77	0.000748	0.57	44.09	69.24	0.15
casillas	1155		Culvert									
casillas	1147	PF 2	17.37	577.30	578.19	578.91	580.94	0.277383	7.35	2.36	19.07	2.64
casillas	1120	PF 2	17.37	574.59	575.83	576.08	576.72	0.101359	4.20	4.14	6.82	1.55
casillas	1117.15	PF 2	17.37	574.42	575.76	575.92	576.35	0.076652	3.41	5.09	7.56	1.32
casillas	1112.42	PF 2	17.37	574.14	575.51	575.62	576.03	0.060710	3.20	5.49	8.28	1.20
casillas	1102	PF 2	17.37	573.51	574.81	574.95	575.36	0.064551	3.31	5.45	8.81	1.23
casillas	1099	PF 2	17.37	573.37	574.93	574.87	575.24	0.026617	2.50	7.40	10.13	0.82
casillas	1080	PF 2	17.37	572.47	574.31	574.31	574.74	0.034367	2.93	6.29	8.30	0.90
casillas	1076	PF 2	17.37	572.30	573.43	573.68	574.29	0.196505	4.57	4.39	10.62	1.96
casillas	1069	PF 2	17.37	572.00	573.29	573.32	573.62	0.044517	2.85	7.20	12.45	1.01
casillas	1059	PF 2	17.37	571.57	573.40	572.57	573.45	0.002518	1.11	18.18	13.81	0.28
casillas	1045.51	PF 2	17.37	570.97	572.47	572.54	573.02	0.043428	3.38	5.60	6.89	1.06
casillas	1033	PF 2	17.37	570.42	572.01	572.08	572.51	0.046119	3.15	5.67	7.19	1.05
casillas	1009.70	PF 2	17.37	569.54	570.67	570.77	571.10	0.056492	2.91	6.14	12.03	1.15
casillas	1000	PF 2	17.37	569.17	570.13	570.24	570.53	0.059924	2.81	6.48	14.97	1.17
casillas	958	PF 2	17.37	566.48	567.56	567.63	567.93	0.062619	2.73	6.36	11.82	1.19
casillas	940	PF 2	17.37	565.51	566.77	566.78	567.10	0.038845	2.54	6.96	12.08	0.97
casillas	931	PF 2	17.37	565.02	566.43	566.43	566.78	0.029611	2.69	7.17	11.45	0.88
casillas	920	PF 2	17.37	564.20	565.20	565.33	565.66	0.085232	2.98	5.82	11.93	1.36
casillas	893	PF 2	17.37	562.40	564.25	564.25	564.48	0.021141	2.29	9.53	20.74	0.72
casillas	851	PF 2	17.37	559.99	561.92	561.61	562.44	0.024099	3.18	5.47	14.66	0.75
casillas	845		Culvert									
casillas	838	PF 2	17.37	559.20	560.12	560.71	562.14	0.159749	6.30	2.76	5.04	2.10
casillas	817	PF 2	17.37	558.00	560.84	560.73	561.23	0.048427	2.74	6.34	6.30	0.87
casillas	800	PF 2	17.37	558.00	560.36	559.86	560.62	0.019266	2.30	7.77	6.51	0.58
casillas	760	PF 2	17.37	557.37	559.27	558.73	559.41	0.007705	1.85	11.10	8.76	0.47
casillas	720	PF 2	17.37	556.89	558.46	558.44	558.87	0.032809	2.88	6.40	7.53	0.91
casillas	680	PF 2	17.37	556.15	557.48	557.48	557.73	0.033853	2.28	8.33	17.67	0.90
casillas	644	PF 2	17.37	554.20	555.75	555.75	556.16	0.043020	2.86	6.07	7.37	1.01
casillas	600	PF 2	17.37	552.23	553.87	553.76	554.16	0.029867	2.41	7.22	8.88	0.85
casillas	572	PF 2	17.37	550.63	552.76	552.73	553.24	0.046108	3.07	5.66	5.43	0.96
casillas	520	PF 2	17.37	548.26	550.50	550.40	550.91	0.037868	2.85	6.09	5.86	0.89
casillas	480	PF 2	17.37	546.92	548.82	548.82	549.35	0.033145	3.34	5.69	5.67	0.92
casillas	440	PF 2	17.37	544.18	545.66	545.80	546.27	0.071360	3.48	4.99	6.78	1.28
casillas	400	PF 2	17.37	542.61	544.50	544.23	544.76	0.015351	2.28	8.07	7.90	0.65
casillas	360	PF 2	17.37	542.34	544.09	543.75	544.23	0.012409	1.70	10.25	11.49	0.57
casillas	334	PF 2	17.37	541.46	542.97	542.97	543.72	0.004848	3.84	4.53	3.00	1.00
casillas	320	PF 2	17.37	541.34	542.76	542.85	543.61	0.005648	4.06	4.27	3.00	1.09
casillas	280	PF 2	17.37	541.02	542.52	542.53	543.28	0.004891	3.85	4.51	3.00	1.00
casillas	240	PF 2	17.37	540.69	542.19	542.20	542.95	0.004959	3.87	4.49	3.00	1.01
casillas	200	PF 2	17.37	540.36	541.77	541.87	542.63	0.005768	4.10	4.24	3.00	1.10
casillas	160	PF 2	17.37	540.03	541.46	541.54	542.30	0.005641	4.06	4.28	3.00	1.09
casillas	120	PF 2	17.37	539.70	541.12	541.21	541.97	0.005659	4.07	4.27	3.00	1.09
casillas	80	PF 2	17.37	539.37	540.83	540.88	541.63	0.005291	3.97	4.38	3.00	1.05
casillas	40	PF 2	17.37	531.37	532.82	533.50	535.10	0.314702	6.68	2.60	3.03	2.30

Ilustración 16. Velocidades para T=500

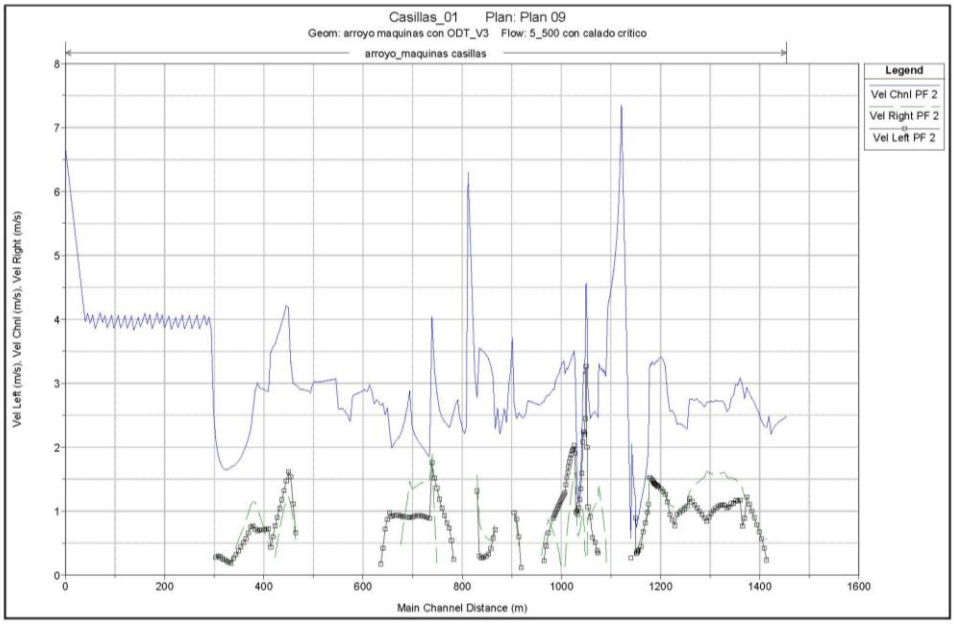
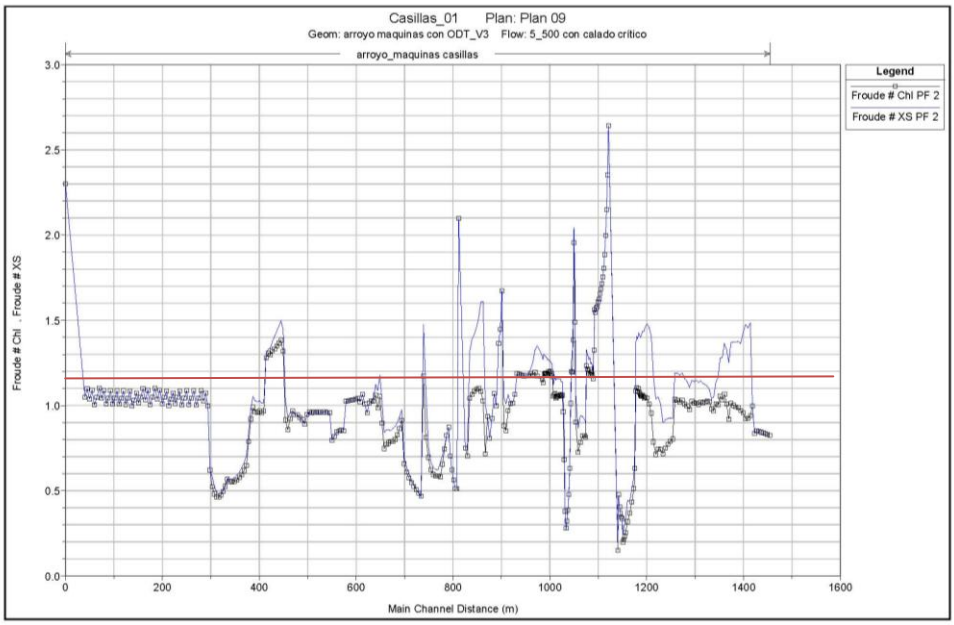
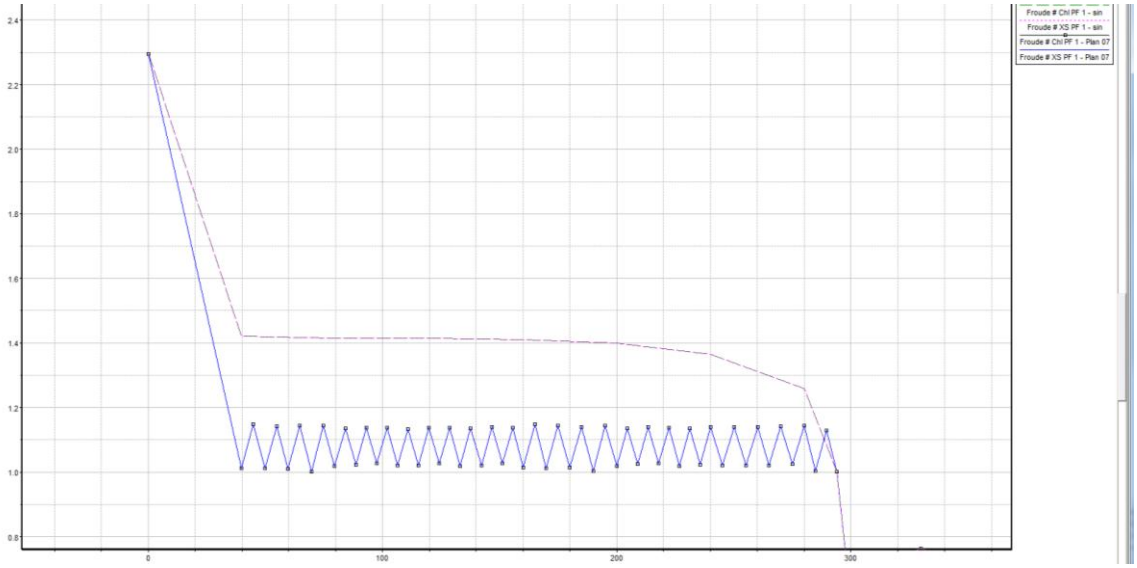


Ilustración 17. Froude para T=500



Resaltar que el régimen obtenido en el tramo de estudio del arroyo de las Máquinas es mayoritariamente supercrítico, aunque intercala tramos de régimen subcrítico. Las oscilaciones del tramo final, que se corresponde con la actual ODT nº4, obedecen a una respuesta extraña del programa al interpolar esta zona. Si eliminamos las secciones interpoladas entre la sección 334 y 80 y calculamos, obtenemos el resultado que a continuación se representa, en cuanto al régimen del tramo que, lógicamente es rápido.

Ilustración 18. Detalle entre las secciones 334 y 80 del Nº de Froude para T=500 entre el cálculo realizado sin interpolaciones (sin, línea magenta) y el modelo interpolado (Plan 07, línea azul). Pese a que el programa solicita que se interpole, la respuesta hidráulica es más lógica en el modelo "sin".



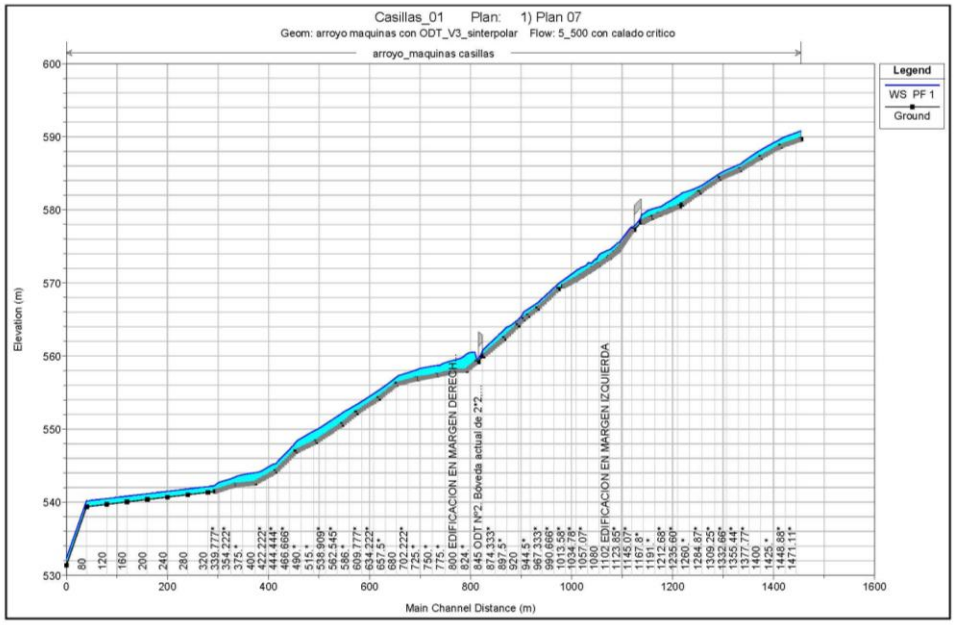
Las velocidades obtenidas en el canal principal son elevadas y oscilan entre 2 y 3 m/s, aumentando hasta 4 m/s en las zonas de mayor pendiente. En las llanuras la velocidad disminuye por debajo de 1 m/s.

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 19. 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. No obstante, adjuntamos detalle de la comparativa entre los dos cálculos realizados en el tramo final, con y sin interpolaciones. De la imagen siguiente se extrae que las diferencias en la lámina de agua son mínimas, y que el comportamiento de un canal de sección uniforme se asemeja más en la realidad al modelo "sin".

Ilustración 20. Comparativa de alturas de agua en el tramo comprendido entre las secciones 334 y 80, para el modelo interpolado (plan 07) y sin interpolar ("sin") para T=500.

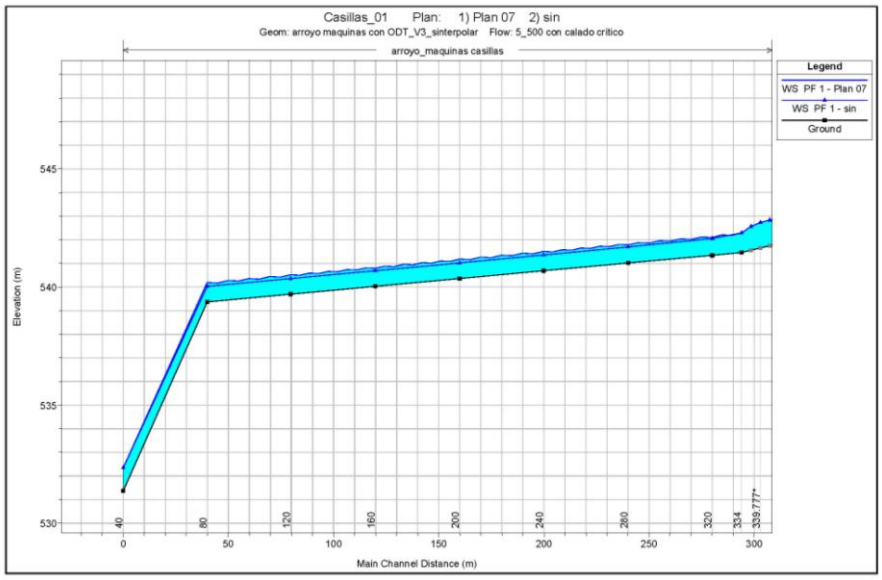
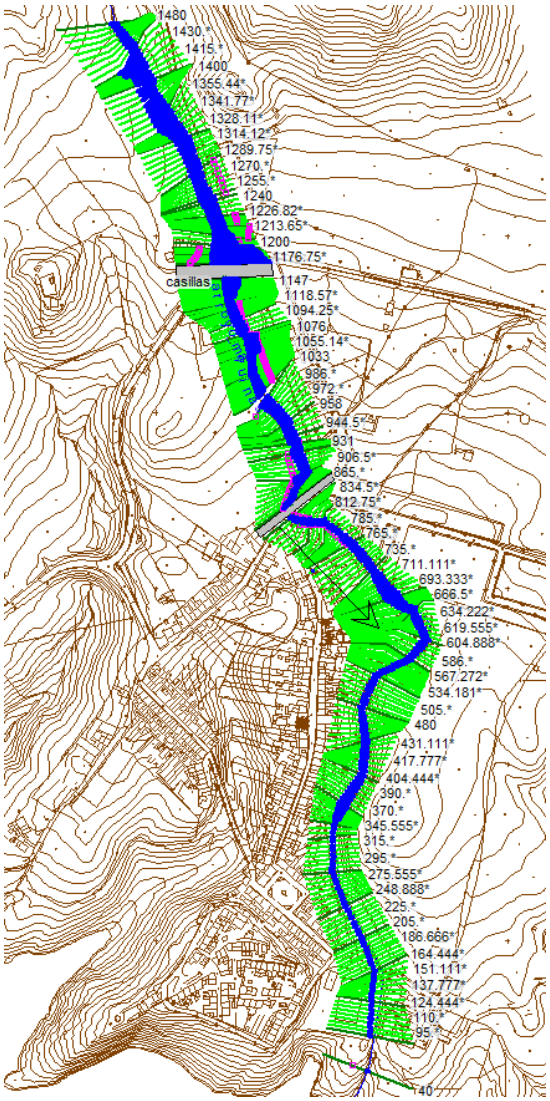


Ilustración 21. Esquema en planta con la Llanura de Inundación del arroyo sombreada en azul.



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.

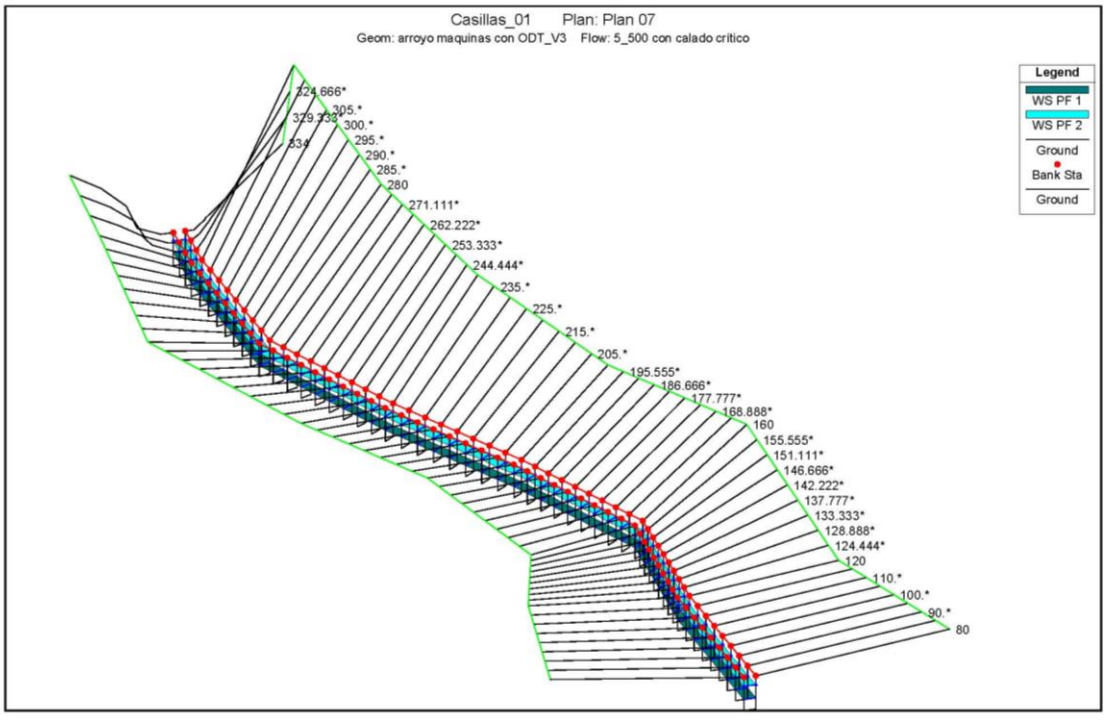
Tabla 6. Resultados de la modelización de las obras de paso

HEC-RAS Plan: Plan 07 River: arroyo_maquinas Reach: casillas

Reach	River Sta	Profile	E.G. US. (m)	W.S. US. (m)	E.G. IC (m)	E.G. OC (m)	Min El Weir Flow (m)	Q Culv Group (m3/s)	Q Weir (m3/s)	Delta WS (m)	Culv Vel US (m/s)	Culv Vel DS (m/s)
casillas	1155 Culvert #1	PF 1	579.63	579.46	579.55	579.63	581.50	7.12		1.23	2.86	5.53
casillas	1155 Culvert #1	PF 2	580.77	580.76	580.77	580.71	581.50	17.37		1.85	3.84	6.54
casillas	845 Culvert #1	PF 1	561.35	560.90			563.28	7.12		1.25	3.17	5.37
casillas	845 Culvert #1	PF 2	562.44	561.92	562.44	562.40	563.28	17.37		0.76	3.84	6.30

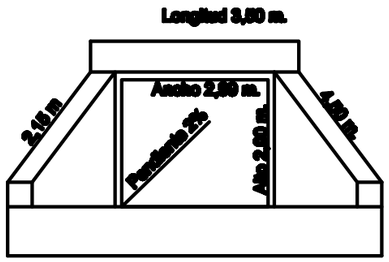
El funcionamiento de la ODT n°4, modelizada como ya se ha comentado como un canal rectangular de 3*2 metros, es adecuado para la avenida extraordinaria de 500 años. Se adjunta perspectiva de este tramo en ambas hipótesis, 5 y 500 años.

Ilustración 22. Perspectiva del marco prefabricado entre las secciones 334 y 80. En rojo, las Banks marcan la cota superior interior del marco.



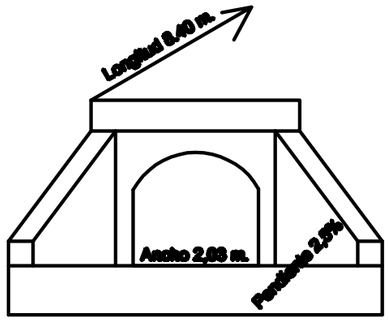
APÉNDICE 1. COMPROBACIÓN DE LAS ODT MODIFICADAS

OBRA Nº 1
ALZADO



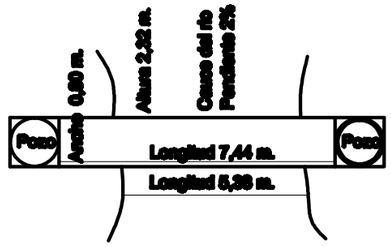
PREFABRICADO DE HORMIGON ARMADO

OBRA Nº 2
ALZADO



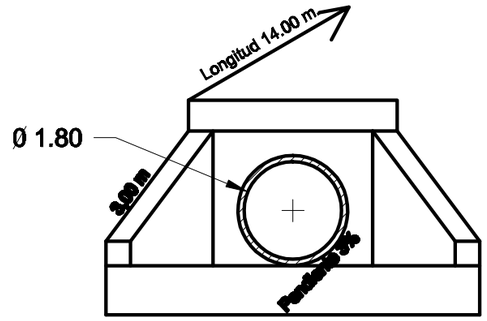
MAMPOSTERIA DE LADRILLO Y PIEDRA

OBRA Nº 3
PLANTA



2 PILARES Y LOSA DE HORMIGON ARMADO

OBRA Nº 4
ALZADO

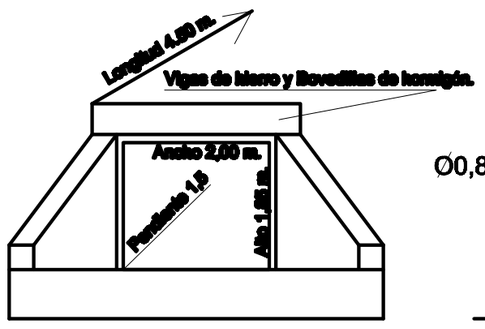


PREFABRICADO DE HORMIGON ARMADO

OBRAS EN LAS CASILLAS

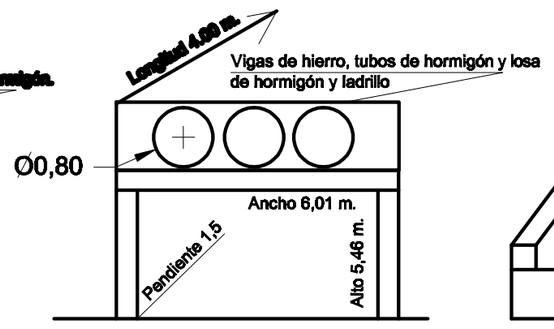
OBRAS EN EL MORO

OBRA Nº 1
ALZADO



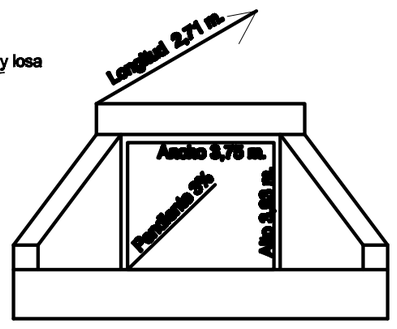
BLOQUES DE HORMIGON ARMADO

OBRA Nº 2
ALZADO



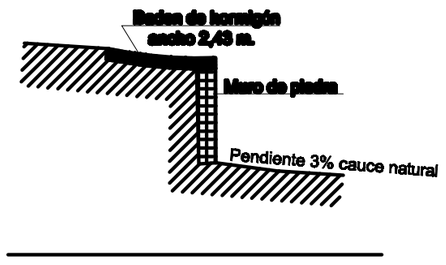
PILARES DE HORMIGÓN ARMADO

OBRA Nº 3
ALZADO



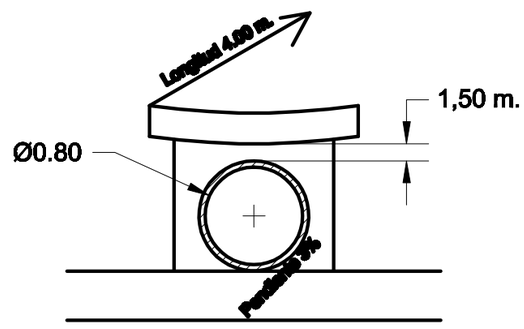
PILARES Y VIGAS DE HORMIGON ARMADO

OBRA Nº 4
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 N°1 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	1,80	m
Diameter	1,80	m
Discharge	17,25	m³/s

Results

Discharge	17,25	m³/s
Normal Depth	1,80	m
Flow Area	2,54	m²
Wetted Perimeter	5,65	m
Hydraulic Radius	0,45	m
Top Width	0,00	m
Critical Depth	1,76	m
Percent Full	100,0	%
Critical Slope	0,02673	m/m
Velocity	6,78	m/s
Velocity Head	2,34	m
Specific Energy	4,14	m
Froude Number	0,00	
Maximum Discharge	18,56	m³/s
Discharge Full	17,25	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	1,80	m

GVF Output Data

Critical Depth	1,76	m
Channel Slope	0,03000	m/m
Critical Slope	0,02673	m/m

ODT N°1. MODIFICADA

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,02000	m/m
Height	2,32	m
Bottom Width	5,38	m
Discharge	17,37	m³/s

Results

Normal Depth	0,57	m
Flow Area	3,05	m²
Wetted Perimeter	6,52	m
Hydraulic Radius	0,47	m
Top Width	5,38	m
Critical Depth	1,02	m
Percent Full	24,5	%
Critical Slope	0,00337	m/m
Velocity	5,69	m/s
Velocity Head	1,65	m
Specific Energy	2,22	m
Froude Number	2,41	
Discharge Full	102,30	m³/s
Slope Full	0,69367	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	24,46	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	0,57	m
Critical Depth	1,02	m
Channel Slope	0,02000	m/m

GVF Output Data

Critical Slope	0,00337 m/m

ODT N°2. ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,02000	m/m
Height	2,32	m
Bottom Width	5,38	m
Discharge	17,37	m³/s

Results

Normal Depth	0,57	m
Flow Area	3,05	m²
Wetted Perimeter	6,52	m
Hydraulic Radius	0,47	m
Top Width	5,38	m
Critical Depth	1,02	m
Percent Full	24,5	%
Critical Slope	0,00337	m/m
Velocity	5,69	m/s
Velocity Head	1,65	m
Specific Energy	2,22	m
Froude Number	2,41	
Discharge Full	102,30	m³/s
Slope Full	0,69367	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	24,46	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	0,57	m
Critical Depth	1,02	m
Channel Slope	0,02000	m/m

ODT Nº2. ACTUAL

GVF Output Data

Critical Slope	0,00337	m/m

ODT N°3 ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,019	
Channel Slope	0,02500	m/m
Height	2,00	m
Bottom Width	2,00	m
Discharge	17,37	m³/s

Results

Normal Depth	1,47	m
Flow Area	2,95	m²
Wetted Perimeter	4,95	m
Hydraulic Radius	0,60	m
Top Width	2,00	m
Critical Depth	1,97	m
Percent Full	73,7	%
Critical Slope	0,01207	m/m
Velocity	5,89	m/s
Velocity Head	1,77	m
Specific Energy	3,24	m
Froude Number	1,55	
Discharge Full	20,97	m³/s
Slope Full	0,03644	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	73,70	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	1,47	m
Critical Depth	1,97	m
Channel Slope	0,02500	m/m

GVF Output Data

Critical Slope	0,01207 m/m

ODT N°3 ACTUAL. MÁXIMA CAPACIDAD

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0,019	
Channel Slope	0,02500	m/m
Normal Depth	2,00	m
Height	2,00	m
Bottom Width	2,00	m
Discharge	20,97	m³/s

Results

Flow Area	4,00	m²
Wetted Perimeter	8,00	m
Hydraulic Radius	0,50	m
Top Width	2,00	m
Critical Depth	2,24	m
Percent Full	100,0	%
Critical Slope	0,01297	m/m
Velocity	5,24	m/s
Velocity Head	1,40	m
Specific Energy	3,40	m
Froude Number	1,18	
Discharge Full	20,97	m³/s
Slope Full	0,02500	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	2,00	m
Critical Depth	2,24	m
Channel Slope	0,02500	m/m

ODT N°3 ACTUAL. MÁXIMA CAPACIDAD

GVF Output Data

Critical Slope	0,01297 m/m

ODT N°4 ACTUAL

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,02000	m/m
Height	2,00	m
Bottom Width	3,00	m
Discharge	40,24	m³/s

Results

Normal Depth	1,67	m
Flow Area	5,00	m²
Wetted Perimeter	6,33	m
Hydraulic Radius	0,79	m
Top Width	3,00	m
Critical Depth	2,64	m
Percent Full	83,3	%
Critical Slope	0,00618	m/m
Velocity	8,05	m/s
Velocity Head	3,31	m
Specific Energy	4,97	m
Froude Number	1,99	
Discharge Full	40,24	m³/s
Slope Full	0,02000	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	83,30	%
Downstream Velocity	Infinito	m/s
Upstream Velocity	Infinito	m/s
Normal Depth	1,67	m
Critical Depth	2,64	m
Channel Slope	0,02000	m/m

ODT N°4 ACTUAL

GVF Output Data

Critical Slope	0,00618 m/m

ODT N°4 ACTUAL. MÁXIMA CAPACIDAD

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0,015	
Channel Slope	0,02000	m/m
Normal Depth	2,00	m
Height	2,00	m
Bottom Width	3,00	m
Discharge	40,24	m³/s

Results

Flow Area	6,00	m²
Wetted Perimeter	10,00	m
Hydraulic Radius	0,60	m
Top Width	3,00	m
Critical Depth	2,64	m
Percent Full	100,0	%
Critical Slope	0,00618	m/m
Velocity	6,71	m/s
Velocity Head	2,29	m
Specific Energy	4,29	m
Froude Number	1,51	
Discharge Full	40,24	m³/s
Slope Full	0,02000	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	2,00	m
Critical Depth	2,64	m
Channel Slope	0,02000	m/m

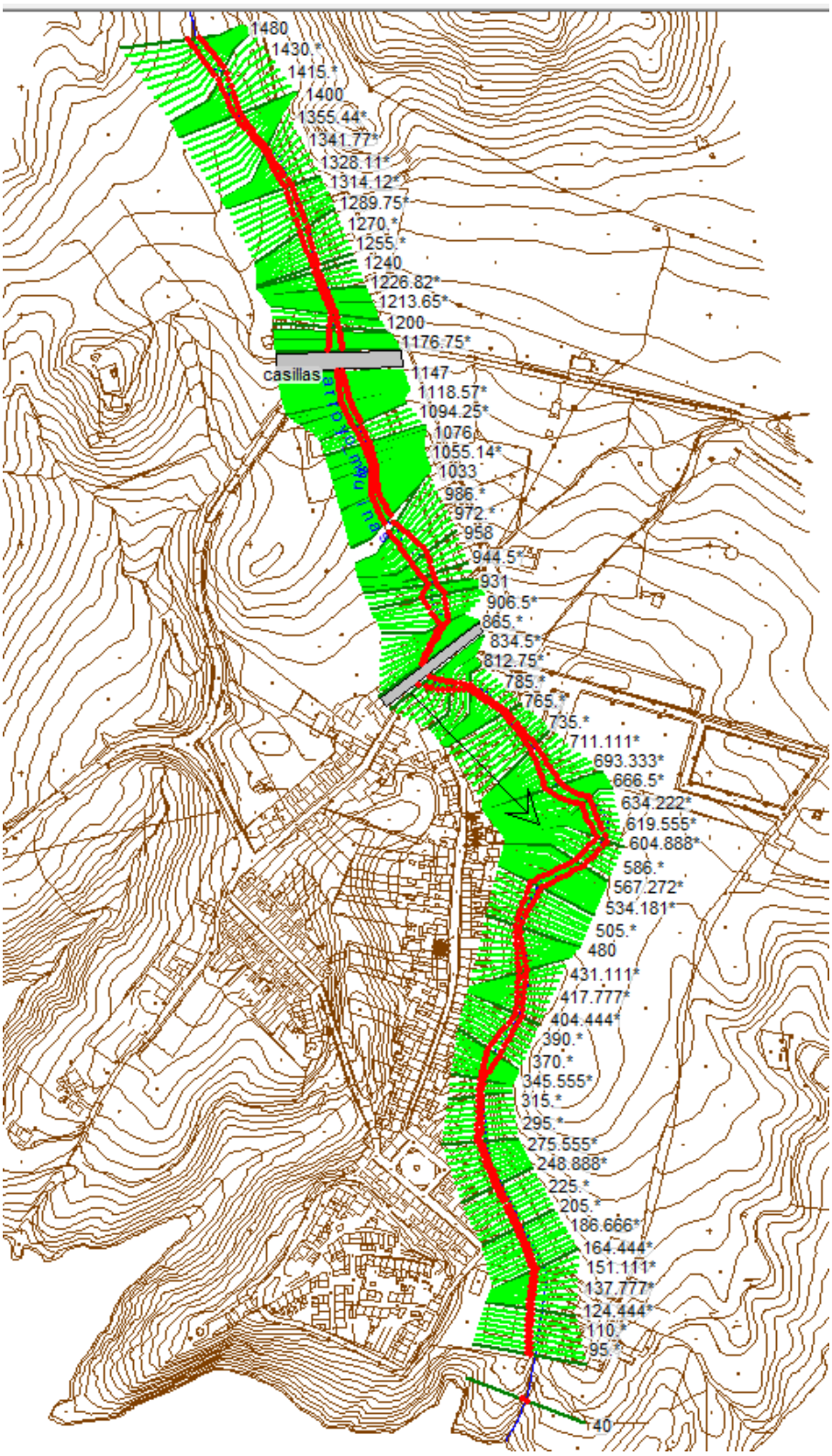
ODT N°4 ACTUAL. MÁXIMA CAPACIDAD

GVF Output Data

Critical Slope	0,00618	m/m

APÉNDICE 2. MODELO HIDRÁULICO DEL ARROYO DE LAS MÁQUINAS

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


1480
1430.*
1415.*
1400
1355.44*
1341.77*
1328.11*
1314.12*
1289.75*
1270.*
1255.*
1240
1226.82*
1213.65*
1200
1176.75*
casillas
1147
1118.57*
1094.25*
1076
1055.14*
1033
986.*
972.*
958
944.5*
931
906.5*
865.*
834.5*
812.75*
785.*
765.*
735.*
711.111*
693.333*
666.5*
634.222*
619.555*
604.888*
586.*
567.272*
534.181*
505.*
480
431.111*
417.777*
404.444*
390.*
370.*
345.555*
315.*
295.*
275.555*
248.888*
225.*
205.*
186.666*
164.444*
151.111*
137.777*
124.444*
110.*
95.*
140

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: Casillas_01
Project File : Casillas_01.prj
Run Date and Time: 9/4/2013 6:33:43 PM

Project in SI units


PLAN DATA

Plan Title: Plan 07
Plan File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\306_CASILLAS\Casillas_01.p07

          Geometry Title: arroyo maquinas con ODT_V3
          Geometry File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\306_CASILLAS\Casillas_01.g06

          Flow Title    : 5_500 con calado crítico
          Flow File     : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\306_CASILLAS\Casillas_01.f03

Plan Summary Information:
Number of:  Cross Sections =  354    Multiple Openings  =    0
            Culverts       =    2    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance  =  0.003
    Critical depth calculation tolerance =  0.003
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.1
    Flow tolerance factor                =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Mixed Flow



FLOW DATA

Flow Title: 5_500 con calado crítico
Flow File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\306_CASILLAS\Casillas_01.f03

Flow Data (m3/s)

  River           Reach           RS                  PF 1           PF 2
  arroyo_maquinas casillas        1480                7.12          17.37


Boundary Conditions

  River           Reach           Profile                     Upstream                 Downstream

  arroyo_maquinas casillas        PF 1                    Normal S = 0.041             Critical
  arroyo_maquinas casillas        PF 2                    Normal S = 0.041             Critical



GEOMETRY DATA

Geometry Title: arroyo maquinas con ODT_V3
Geometry File : C:\TRABAJO\HEC\IC10013_PGOUMARTOS\306_CASILLAS\Casillas_01.g06

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1480

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    2.49     592    3.37     592    4.17     592   17.07  592.28
   21.28  592.17   23.72  592.15    30.1  592.08   32.03  592.07   33.66     592
      34     592   34.56     592   35.99     592   37.07     592   38.03     592
   39.05     592   41.29  590.81   42.75     590   43.25  589.91   44.46  589.67
   44.94  589.83   45.43     590   48.35   591.4   49.86     592   54.09  592.22
   57.65  592.42   70.03  593.67   73.24     594   73.32  594.01   74.06  594.13
```

```
   84.08  595.71   84.64   595.8   85.96     596   88.79  596.62   91.72  597.03
   94.96  597.52   96.96  597.85   97.91     598   104.3  598.92  106.19  599.19
  109.58  599.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   39.05     .06   49.86     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         39.05   49.86              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1475.55*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .485     592   2.499     592   2.902     592   3.339     592
   3.383     592   4.076     592   4.186     592   6.007 592.035   8.463 592.082
   9.259 592.097  12.122 592.091  12.461 592.099  16.567 592.204  17.135 592.213
  19.071 592.165  19.983 592.142  20.895 592.116  21.361 592.101   23.81  592.06
  30.215 591.938  32.152 591.911  33.788 591.833   34.13  591.83  34.692 591.825
  36.006 591.812  36.127 591.811  37.211 591.799  38.175 591.789  39.199 591.778
  41.372 590.659  42.788   589.9  42.826 589.893  43.273 589.807  44.447 589.562
  44.948 589.722   45.46 589.891  45.956 590.111  46.915 590.533  47.391 590.742
  48.469 591.201  48.512  591.22  48.685 591.282  48.826 591.333   50.09 591.778
  50.419 591.793  53.493 591.936  54.306 591.973  56.577 592.087  57.853 592.151
   63.26 592.638  63.404 592.651   63.63 592.671  70.191 593.243  70.426 593.264
  70.693  593.29  70.724 593.294   73.39 593.549   73.47 593.558  74.024  593.64
  74.076 593.649  74.208 593.669  74.477 593.708  75.206 593.812  75.659 593.876
  79.566 594.431  84.193 595.088  84.752 595.168  85.251 595.236  86.067 595.347
  88.887 595.899  90.309 596.077  91.807 596.268   92.52 596.366  95.036  596.71
  95.254 596.742   97.03 597.004  97.976 597.138  104.25 597.946 104.345 597.958
   105.7 598.134 106.228 598.202 107.026 598.315 108.352 598.502 109.596 598.676
 109.607 598.678

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.199     .06   50.09     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.199   50.09              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1471.11*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .487     592   2.509     592   2.913     592   3.351     592
   3.396     592   4.092     592   4.202     592    6.03 592.031   8.495 592.072
   9.294 592.085  12.168 592.011  12.509 592.019   16.63 592.139    17.2 592.147
  19.143 592.101  20.059 592.078  20.974 592.051  21.442 592.032  23.901 591.971
   30.33 591.796  32.274 591.751  33.917 591.666  34.259  591.66  34.824 591.649
  36.143 591.624  36.264 591.622  37.353 591.598   38.32 591.578  39.348 591.556
  41.453 590.509  42.826   589.8  42.863 589.792  43.296 589.704  44.433 589.454
  44.957 589.614  45.491 589.783  46.008 589.995  47.008 590.399  47.505 590.598
  48.629 591.023  48.674  591.04  48.854 591.098  49.002 591.146   50.32 591.556
  50.648 591.569  53.711 591.694  54.521 591.727  56.785 591.826  58.057 591.882
  63.445 592.308  63.588  592.32  63.814 592.337  70.353 592.816  70.586 592.833
  70.853 592.859  70.883 592.864  73.541 593.098   73.62 593.106  74.172  593.18
  74.224 593.189  74.355 593.207  74.623 593.243  75.351 593.335  75.801 593.393
  79.695 593.885  84.307 594.465  84.863 594.537  85.361 594.597  86.174 594.694
  88.985 595.179  90.402 595.335  91.895 595.506  92.605 595.594  95.113 595.899
   95.33 595.928  97.099 596.158  98.043 596.275 104.295 596.985 104.389 596.996
  105.74 597.153 106.266 597.214 107.062 597.314 108.383  597.48 109.623 597.634
 109.633 597.636

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.348     .06   50.32     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.348   50.32              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1466.66*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .489     592   2.518     592   2.924     592   3.364     592
   3.409     592   4.107     592   4.218     592   6.053 592.026   8.527 592.062
   9.329 592.073  12.214 591.931  12.556 591.939  16.692 592.075  17.265  592.08
  19.215 592.036  20.135 592.014  21.054 591.985  21.523 591.964  23.991 591.881
  30.444 591.654  32.396 591.592  34.045 591.499  34.389  591.49  34.955 591.474
  36.279 591.437  36.402 591.433  37.494 591.398  38.465 591.366  39.497 591.333
  41.535 590.358  42.864   589.7  42.899 589.692  43.319 589.601   44.42 589.347
  44.965 589.507  45.521 589.674   46.06 589.878  47.101 590.265  47.618 590.454
  48.789 590.844  48.836 590.859  49.024 590.914  49.177  590.96   50.55 591.333
  50.877 591.345   53.93 591.452  54.737  591.48  56.993 591.565   58.26 591.613
```

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   63.63 591.978  63.773 591.988  63.998 592.003  70.514 592.389  70.747 592.403
  71.012 592.428  71.043 592.433  73.691 592.646   73.77 592.654  74.321  592.72
  74.372 592.729  74.503 592.746   74.77 592.778  75.495 592.859  75.944  592.91
  79.824 593.339   84.42 593.843  84.975 593.905  85.471 593.957  86.281 594.041
  89.082 594.458  90.494 594.593  91.982 594.745   92.69 594.822  95.189 595.089
  95.406 595.114  97.169 595.312  98.109 595.413  104.34 596.024 104.434 596.034
  105.78 596.173 106.305 596.226 107.097 596.313 108.414 596.459  109.65 596.592
  109.66 596.593

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.497     .06   50.55     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.497   50.55              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1462.22*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .491     592   2.528     592   2.935     592   3.377     592
   3.421     592   4.123     592   4.234     592   6.076 592.022   8.559 592.051
   9.364 592.061   12.26 591.851  12.603 591.859  16.755 592.011   17.33 592.014
  19.288 591.972   20.21  591.95  21.133 591.919  21.605 591.895  24.082 591.791
  30.559 591.511  32.518 591.433  34.173 591.332  34.519  591.32  35.087 591.298
  36.416 591.249  36.539 591.244  37.635 591.197   38.61 591.155  39.646 591.111
  41.617 590.208  42.902   589.6  42.936 589.592  43.342 589.498  44.407 589.239
  44.973 589.399  45.552 589.565  46.111 589.762  47.194 590.131  47.732  590.31
  48.949 590.665  48.998 590.679  49.193  590.73  49.353 590.773   50.78 591.111
  51.106 591.121  54.148  591.21  54.952 591.233  57.201 591.304  58.464 591.344
  63.815 591.649  63.957 591.657  64.181  591.67  70.675 591.962  70.907 591.972
  71.172 591.997  71.202 592.003  73.842 592.195   73.92 592.202  74.469  592.26
   74.52 592.269   74.65 592.284  74.917 592.314  75.639 592.382  76.087 592.426
  79.954 592.792  84.534 593.221  85.086 593.273  85.581 593.318  86.388 593.388
   89.18 593.737  90.587 593.851   92.07 593.983  92.775  594.05  95.266 594.279
  95.481   594.3  97.239 594.466  98.176 594.551 104.385 595.064 104.479 595.072
  105.82 595.192 106.343 595.238 107.133 595.313 108.445 595.437 109.676  595.55
 109.687 595.551

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.646     .06   50.78     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.646   50.78              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1457.77*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .493     592   2.537     592   2.946     592   3.389     592
   3.434     592   4.138     592   4.249     592   6.099 592.018   8.591 592.041
   9.399 592.049  12.306 591.771  12.651  591.78  16.818 591.947  17.395 591.947
   19.36 591.908  20.286 591.886  21.213 591.853  21.686 591.826  24.172 591.702
  30.674 591.369  32.641 591.274  34.302 591.165  34.648 591.149  35.219 591.123
  36.553 591.061  36.676 591.055  37.777 590.996  38.755 590.944  39.794 590.889
  41.699 590.057   42.94   589.5  42.973 589.491  43.365 589.395  44.393 589.131
  44.981 589.291  45.582 589.457  46.163 589.646  47.288 589.997  47.846 590.166
   49.11 590.486   49.16 590.499  49.362 590.546  49.528 590.586   51.01 590.889
  51.334 590.896  54.367 590.968  55.168 590.987  57.409 591.044  58.667 591.076
      64 591.319  64.142 591.325  64.365 591.336  70.837 591.535  71.068 591.542
  71.332 591.565  71.362 591.572  73.992 591.744  74.071  591.75  74.617   591.8
  74.668 591.809  74.798 591.823  75.063 591.849  75.783 591.906  76.229 591.943
  80.083 592.246  84.647 592.598  85.198 592.642   85.69 592.678  86.495 592.735
  89.277 593.017   90.68 593.109  92.157 593.221   92.86 593.278  95.342 593.468
  95.557 593.486  97.308  593.62  98.242 593.688  104.43 594.103 104.523  594.11
  105.86 594.212 106.381  594.25 107.168 594.312 108.476 594.416 109.703 594.508
 109.713 594.509

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.794     .06   51.01     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.794   51.01              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1453.33*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .494     592   2.547     592   2.957     592   3.402     592
   3.447     592   4.154     592   4.265     592   6.122 592.013   8.624 592.031
   9.434 592.037  12.352 591.691  12.698   591.7  16.881 591.883  17.461 591.881
  19.433 591.843  20.362 591.822  21.292 591.787  21.767 591.757  24.263 591.612
  30.789 591.227  32.763 591.114   34.43 590.999  34.778 590.979  35.351 590.948
```

```
   36.69 590.873  36.813 590.865  37.918 590.795    38.9 590.733  39.943 590.667
   41.78 589.907  42.978   589.4   43.01 589.391  43.388 589.292   44.38 589.023
   44.99 589.183  45.612 589.348  46.215 589.529  47.381 589.862  47.959 590.022
   49.27 590.307  49.322 590.319  49.532 590.362  49.704   590.4   51.24 590.667
  51.563 590.672  54.585 590.726  55.384  590.74  57.616 590.783  58.871 590.807
  64.185 590.989  64.326 590.994  64.549 591.002  70.998 591.107  71.228 591.111
  71.491 591.134  71.521 591.142  74.142 591.293  74.221 591.298  74.765  591.34
  74.816 591.349  74.946 591.361   75.21 591.384  75.927 591.429  76.372  591.46
  80.212 591.699  84.761 591.976  85.309  592.01    85.8 592.039  86.603 592.082
  89.375 592.296  90.772 592.367  92.245 592.459  92.945 592.506  95.419 592.658
  95.633 592.672  97.378 592.774  98.308 592.826 104.475 593.142 104.568 593.148
   105.9 593.231 106.419 593.262 107.204 593.312 108.507 593.394  109.73 593.466
  109.74 593.467

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.943     .06   51.24     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.943   51.24              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1448.88*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .496     592   2.556     592   2.968     592   3.415     592
    3.46     592   4.169     592   4.281     592   6.144 592.009   8.656 592.021
    9.47 592.024  12.398  591.61  12.745  591.62  16.944 591.818  17.526 591.814
  19.505 591.779  20.438 591.758  21.371 591.722  21.848 591.688  24.353 591.522
  30.903 591.085  32.885 590.955  34.558 590.832  34.907 590.809  35.482 590.772
  36.826 590.686  36.951 590.676  38.059 590.595  39.045 590.522  40.092 590.444
  41.862 589.756  43.016   589.3  43.046 589.291  43.411 589.189  44.367 588.916
  44.998 589.075  45.643  589.24  46.267 589.413  47.474 589.728  48.073 589.878
   49.43 590.128  49.484 590.138  49.701 590.178  49.879 590.213   51.47 590.444
  51.792 590.448  54.803 590.484  55.599 590.493  57.824 590.522  59.074 590.538
   64.37 590.659  64.511 590.663  64.733 590.668  71.159  590.68  71.389 590.681
  71.651 590.703  71.681 590.711  74.293 590.841  74.371 590.846  74.914  590.88
  74.964  590.89  75.093   590.9  75.357 590.919  76.072 590.953  76.515 590.977
  80.341 591.153  84.874 591.354  85.421 591.378   85.91 591.399   86.71 591.429
  89.472 591.576  90.865 591.624  92.332 591.697   93.03 591.734  95.495 591.848
  95.709 591.858  97.447 591.928  98.375 591.964  104.52 592.181 104.613 592.186
  105.94 592.251 106.457 592.274 107.239 592.311 108.538 592.373 109.757 592.424
 109.767 592.424

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  40.092     .06   51.47     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.092   51.47              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1444.44*

INPUT
Description:
Station Elevation Data    num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     592    .498     592   2.566     592   2.979     592   3.427     592
   3.473     592   4.185     592   4.297     592   6.167 592.004   8.688  592.01
   9.505 592.012  12.444  591.53  12.793  591.54  17.007 591.754  17.591 591.747
  19.578 591.714  20.514 591.694  21.451 591.656  21.929 591.619  24.444 591.433
  31.018 590.943  33.007 590.796  34.687 590.665  35.037 590.639  35.614 590.597
  36.963 590.498  37.088 590.487  38.201 590.394   39.19 590.311  40.241 590.222
  41.944 589.605  43.054   589.2  43.083  589.19  43.434 589.086  44.353 588.808
  45.006 588.967  45.673 589.131  46.318 589.296  47.567 589.594  48.186 589.734
   49.59 589.949  49.646 589.958  49.871 589.994  50.055 590.027    51.7 590.222
  52.021 590.224  55.022 590.242  55.815 590.247  58.032 590.261  59.278 590.269
  64.555  590.33  64.695 590.331  64.916 590.334  71.321 590.253  71.549  590.25
   71.81 590.271   71.84 590.281  74.443  590.39  74.521 590.394  75.062  590.42
  75.112  590.43  75.241 590.438  75.503 590.455  76.216 590.476  76.657 590.493
  80.471 590.606  84.988 590.731  85.533 590.746   86.02  590.76  86.817 590.776
   89.57 590.855  90.957 590.882   92.42 590.936  93.115 590.962  95.572 591.037
  95.784 591.044  97.517 591.082  98.441 591.101 104.565 591.221 104.657 591.224
  105.98  591.27 106.496 591.286 107.275 591.311 108.569 591.352 109.783 591.382
 109.793 591.382

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  40.241     .06    51.7     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.241    51.7              .01    4.46    8.37             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1440

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
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       0     592      .5     592    2.99     592    3.44     592     4.2     592
    6.19     592    8.72     592    9.54     592   12.49  591.45   12.84  591.46
   17.07  591.69   19.65  591.65   20.59  591.63   21.53  591.59    37.1  590.31
   40.39     590   43.12  589.09   44.34   588.7   46.37  589.18   47.66  589.46
    48.3  589.59   49.75  589.77   50.04  589.81   50.23  589.84   51.93     590
   52.25     590   55.24     590   58.24     590   64.74     590   64.88     590
    65.1     590   71.71  589.82   71.97  589.84      72  589.85   75.21  589.96
   75.26  589.97   75.65  589.99   76.36     590    76.8  590.01    80.6  590.06
   86.13  590.12   91.05  590.14    93.2  590.19   95.86  590.23  104.61  590.26
  106.02  590.29  107.31  590.31   108.6  590.33  109.81  590.34  109.82  590.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   40.39     .06   51.93     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         40.39   51.93             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1435.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   592.2    .521  592.19   3.023 592.144   3.118 592.141   3.587 592.127
   4.379 592.103   6.455 592.041   7.841     592   9.093 591.943   9.115 591.943
   9.948 591.901  13.024 591.269  13.385 591.278  13.898 591.301  16.456 591.419
  17.755 591.479  18.417  591.47  18.883 591.456   20.01 591.437   20.42 591.425
  21.391 591.393  22.362 591.344  27.308 590.926  31.541 590.601  32.235 590.548
  34.074 590.402  36.215 590.233  38.446 590.055  40.815 589.842  41.845  589.75
  44.461 588.895  44.506  588.88  45.695 588.508  46.657 588.744  47.541 588.958
  48.714  589.22  49.296 589.343  50.614  589.52  50.878 589.558  51.051 589.587
  52.596  589.75  52.913 589.752  55.869 589.767  58.836 589.782  65.264 589.815
  65.402 589.815   65.62 589.816  69.507 589.743  72.156 589.692  72.413 589.711
  72.443 589.719  75.617 589.831  75.629 589.833  75.667  589.84  76.052  589.86
  76.755 589.872  76.997 589.879   77.19 589.884  79.504 589.928  79.559 589.929
  79.732 589.931   80.08 589.936   80.47 589.941   80.72 589.945  80.947 589.948
  81.697 589.956  86.416 590.014  91.281 590.045  93.407 590.095  96.038 590.137
  104.69 590.188 106.085 590.218 107.346 590.239  107.36 590.239 108.182 590.251
 108.636 590.258 109.039 590.262 109.833 590.269

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  41.845     .06  52.596     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        41.845  52.596             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1430.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   592.4    .543 592.381   3.147 592.287   3.246 592.282   3.734 592.254
   4.559 592.207   6.719 592.083   8.162     592   9.465 591.887   9.489 591.885
  10.355 591.803  13.557 591.088  13.931 591.095   14.46 591.115  17.099 591.216
   18.44 591.268  19.123  591.26  19.604  591.24  20.768 591.217   21.19   591.2
  22.192 591.156  23.194 591.097  28.298 590.655  32.666 590.342  33.383 590.291
   35.28 590.146   37.49 589.978  39.793   589.8  42.237  589.59   43.3   589.5
  45.848 588.684  45.892  588.67   47.05 588.315  47.916 588.538  48.712 588.736
  49.767 588.981  50.291 589.095  51.478 589.269  51.716 589.307  51.871 589.334
  53.263   589.5  53.575 589.503  56.499 589.533  59.432 589.564  65.788 589.629
  65.924 589.631   66.14 589.633  69.984 589.592  72.603 589.563  72.857 589.581
  72.886 589.589  76.025 589.702  76.037 589.704  76.074  589.71  76.455  589.73
  77.149 589.745  77.389 589.752  77.579 589.758  79.868 589.816  79.922 589.816
  80.093 589.818  80.437 589.824  80.823 589.828   81.07 589.833  81.295 589.836
  82.036 589.844  86.702 589.909  91.512 589.951  93.615     590  96.215 590.045
 104.771 590.115  106.15 590.146 107.397 590.167 107.411 590.168 108.223  590.18
 108.672 590.186 109.071  590.19 109.855 590.198

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    43.3     .06  53.263     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          43.3  53.263             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1425.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   592.6    .564 592.571   3.271 592.431   3.373 592.423   3.881 592.381
   4.738  592.31   6.984 592.124   8.483     592   9.838 591.831   9.862 591.828
  10.763 591.704  14.091 590.906  14.476 590.913  15.022 590.929  17.743 591.014
  19.125 591.056  19.829  591.05  20.325 591.023  21.525 590.998  21.961 590.975
  22.994  590.92  24.027 590.851  29.288 590.384  33.792 590.083  34.531 590.034
  36.487  589.89  38.765 589.724  41.139 589.545   43.66 589.339  44.755  589.25
  47.235 588.473  47.278  588.46  48.405 588.122  49.175 588.331  49.882 588.514
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  50.821 588.741  51.287 588.848  52.342 589.019  52.553 589.055  52.692 589.082
  53.929  589.25  54.238 589.255  57.128   589.3  60.028 589.345  66.311 589.444
  66.447 589.446  66.659 589.449   70.46 589.442  73.049 589.435    73.3 589.451
  73.329 589.458  76.432 589.574  76.444 589.575   76.48 589.581  76.857 589.599
  77.544 589.617  77.781 589.625  77.969 589.632  80.232 589.703  80.285 589.703
  80.455 589.705  80.794 589.712  81.176 589.715   81.42 589.721  81.642 589.723
  82.375 589.731  86.988 589.803  91.744 589.856  93.822 589.905  96.393 589.952
 104.851 590.043 106.214 590.073 107.447 590.096 107.461 590.096 108.264 590.108
 108.708 590.115 109.102 590.118 109.878 590.126

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.755     .06  53.929     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.755  53.929             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1420.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   592.8    .585 592.761   3.394 592.575   3.501 592.564   4.028 592.508
   4.918 592.413   7.248 592.165   8.805     592  10.211 591.774  10.236  591.77
  11.171 591.606  14.625 590.725  15.021  590.73  15.583 590.744  18.386 590.811
   19.81 590.845  20.535  590.84  21.046 590.807  22.282 590.778  22.731 590.751
  23.795 590.683  24.859 590.605  30.279 590.113  34.917 589.825  35.679 589.777
  37.694 589.634   40.04 589.469  42.485  589.29  45.082 589.087   46.21     589
  48.622 588.263  48.664  588.25   49.76  587.93  50.434 588.125  51.053 588.292
  51.875 588.501  52.283   588.6  53.206 588.768  53.391 588.804  53.512 588.829
  54.595     589  54.901 589.006  57.758 589.067  60.624 589.127  66.835 589.258
  66.969 589.261  67.179 589.266  70.936 589.292  73.495 589.307  73.744 589.322
  73.772 589.328  76.839 589.445  76.851 589.446  76.887 589.451   77.26 589.469
  77.938  589.49  78.173 589.498  78.359 589.506  80.595  589.59  80.648 589.591
  80.816 589.592  81.151 589.599  81.529 589.602   81.77 589.608   81.99 589.611
  82.714 589.619  87.274 589.697  91.975 589.761  94.029  589.81  96.571 589.859
 104.932  589.97 106.279 590.001 107.498 590.025 107.512 590.025 108.305 590.036
 108.744 590.043 109.134 590.047   109.9 590.055

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   46.21     .06  54.595     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         46.21  54.595             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1415.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     593    .607 592.951   3.518 592.719   3.629 592.705   4.175 592.635
   5.097 592.516   7.513 592.207   9.126     592  10.583 591.718  10.609 591.712
  11.578 591.507  15.159 590.544  15.567 590.547  16.145 590.558   19.03 590.608
  20.495 590.634  21.242  590.63  21.767  590.59  23.039 590.559  23.501 590.526
  24.596 590.446  25.691 590.359  31.269 589.842  36.043 589.566  36.827  589.52
    38.9 589.378  41.315 589.214  43.832 589.035  46.504 588.835  47.665  588.75
  50.009 588.052  50.049  588.04  51.115 587.737  51.693 587.919  52.224  588.07
  52.929 588.261  53.278 588.353   54.07 588.518  54.229 588.552  54.333 588.576
  55.261  588.75  55.563 588.758  58.387 588.833   61.22 588.909  67.359 589.073
  67.491 589.077  67.699 589.082  71.412 589.141  73.941 589.179  74.187 589.192
  74.215 589.197  77.247 589.316  77.258 589.317  77.294 589.321  77.662 589.339
  78.333 589.362  78.564 589.371  78.748  589.38  80.959 589.478  81.011 589.478
  81.177 589.479  81.508 589.487  81.882 589.489   82.12 589.496  82.337 589.499
  83.053 589.507   87.56 589.592  92.206 589.667  94.237 589.715  96.749 589.767
 105.012 589.898 106.344 589.929 107.548 589.954 107.562 589.954 108.346 589.965
  108.78 589.971 109.165 589.975 109.923 589.984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.665     .06  55.261     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.665  55.261             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1410.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   593.2    .628 593.142   3.642 592.863   3.757 592.846   4.322 592.762
   5.277  592.62   7.777 592.248   9.447     592  10.956 591.661  10.983 591.655
  11.986 591.409  15.693 590.362  16.112 590.365  16.707 590.372  19.673 590.405
   21.18 590.422  21.948  590.42  22.488 590.373  23.796 590.339  24.271 590.301
  25.397 590.209  26.523 590.112  32.259 589.572  37.169 589.307  37.974 589.264
  40.107 589.122   42.59 588.959  45.178  588.78  47.926 588.583   49.12   588.5
  51.396 587.841  51.435  587.83   52.47 587.545  52.952 587.713  53.395 587.848
  53.982 588.022  54.274 588.106  54.934 588.267  55.067 588.301  55.153 588.323
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  55.927   588.5  56.226  588.51  59.017   588.6  61.816 588.691  67.883 588.888
  68.013 588.892  68.219 588.899  71.888 588.991  74.388  589.05   74.63 589.063
  74.658 589.066  77.654 589.187  77.666 589.188  77.701 589.191  78.065 589.209
  78.727 589.234  78.956 589.244  79.138 589.254  81.323 589.365  81.374 589.365
  81.538 589.366  81.866 589.375  82.234 589.376   82.47 589.384  82.685 589.387
  83.392 589.395  87.846 589.486  92.437 589.572  94.444  589.62  96.926 589.674
 105.093 589.826 106.409 589.856 107.599 589.882 107.612 589.883 108.388 589.893
 108.816 589.899 109.197 589.903 109.946 589.912

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   49.12     .06  55.927     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         49.12  55.927             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1405.*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   593.4     .65 593.332   3.766 593.006   3.884 592.986   4.469 592.888
   5.456 592.723   8.042 592.289   9.769     592  11.328 591.605  11.356 591.597
  12.394  591.31  16.226 590.181  16.657 590.182  17.268 590.186  20.317 590.203
  21.865 590.211  22.654  590.21  23.209 590.157  24.553  590.12  25.041 590.076
  26.198 589.972  27.356 589.866   33.25 589.301  38.294 589.049  39.122 589.007
  41.313 588.866  43.865 588.705  46.525 588.526  49.348 588.332  50.575  588.25
  52.783 587.631  52.821  587.62  53.825 587.352  54.211 587.506  54.566 587.626
  55.036 587.782   55.27 587.858  55.799 588.017  55.904 588.049  55.974 588.071
  56.594  588.25  56.889 588.261  59.646 588.367  62.413 588.473  68.407 588.702
  68.536 588.707  68.739 588.715  72.364  588.84  74.834 588.922  75.074 588.933
  75.101 588.936  78.062 589.058  78.073 589.059  78.108 589.061  78.467 589.079
  79.122 589.107  79.348 589.117  79.528 589.128  81.686 589.253  81.737 589.253
  81.899 589.253  82.223 589.262  82.587 589.263   82.82 589.272  83.032 589.275
  83.731 589.282  88.132  589.38  92.669 589.478  94.651 589.525  97.104 589.581
 105.173 589.753 106.473 589.784 107.649 589.811 107.663 589.811 108.429 589.822
 108.852 589.827 109.228 589.832 109.968 589.841

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.575     .06  56.594     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.575  56.594             7.64       5    1.88             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1400

INPUT
Description:
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   593.6    3.89  593.15   10.09     592   11.73  591.54   16.76     590
   17.83     590   20.96     590   23.36     590   23.93  589.94   25.31   589.9
   34.24  589.03   39.42  588.79   40.27  588.75   42.52  588.61   45.14  588.45
   50.77  588.08   52.03     588   54.17  587.42   55.18  587.16   55.47   587.3
   57.26     588   72.84  588.69   78.48  588.93   79.74  588.99   82.05  589.14
    82.1  589.14   82.26  589.14   82.58  589.15   82.94  589.15   83.17  589.16
   84.07  589.17   107.7  589.74  108.47  589.75  109.26  589.76     110  589.77

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   52.03     .06   57.26     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         52.03   57.26             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1395.55*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 593.304   3.562  592.88    9.24 591.819  10.742   591.4  15.348     590
  16.407     590  16.833     590  19.507 589.973  21.884 589.948  22.449 589.889
  23.815  589.84  27.385 589.491  27.537 589.477  28.166 589.415  29.164 589.323
  30.205 589.227  31.604 589.099  32.659 589.001  33.382 588.968  37.789 588.763
  38.631 588.723  39.032 588.699  40.859 588.588  43.454 588.433   49.03 588.077
  50.224 588.003  50.278 587.996  50.549 587.778  51.495 587.521  52.595 587.224
  53.561 586.976  53.831 587.107  54.811 587.499  55.498 587.778  57.901 587.871
  59.459 587.931  60.964 587.989  62.663 588.055  62.848 588.062    64.3 588.124
  66.888 588.226  67.742  588.26  69.494 588.333  71.316  588.41  71.347 588.411
  77.073 588.646  77.085 588.647  78.367 588.703  80.717 588.843  80.767 588.843
   80.93 588.844  81.256 588.853  81.622 588.854  81.856 588.864  82.126 588.867
  82.771 588.877  85.084  588.94  99.617 589.347 100.541 589.371 102.856 589.431
 103.587 589.451  106.43 589.526  106.81 589.537 107.594 589.551 108.349 589.564
 108.397 589.564  109.15 589.573

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.549     .06  55.498     .06
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.549  55.498             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1391.11*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 593.009   3.234  592.61    8.39 591.639   9.753  591.26  13.936     590
  14.985     590  15.407     590  18.055 589.945  20.408 589.897  20.967 589.839
  22.321  589.78  25.856 589.434  26.006  589.42  26.629 589.358  27.617 589.273
  28.648 589.182  30.033 589.064  31.079 588.973  31.794 588.939  36.159 588.736
  36.992 588.696  37.389 588.673  39.199 588.566  41.768 588.416   47.29 588.074
  48.472 588.003  48.526 587.991  49.068 587.556  49.971 587.309  51.021 587.028
  51.942 586.791  52.192 586.914    53.1 587.287  53.736 587.556   56.18 587.637
  57.764  587.69  59.295 587.741  61.023 587.798  61.211 587.804  62.688 587.865
   65.32 587.957  66.188 587.988   67.97 588.056  69.823 588.131  69.855 588.132
  75.678 588.363   75.69 588.363  76.993 588.417  79.383 588.546  79.435 588.546
    79.6 588.547  79.931 588.557  80.304 588.558  80.542 588.567  80.816 588.571
  81.473 588.584  83.824 588.655  98.605 589.125  99.545 589.151 101.899 589.216
 102.642 589.238 105.534 589.322  105.92 589.334 106.717 589.352 107.485 589.368
 107.534 589.369   108.3 589.377

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.068     .06  53.736     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.068  53.736             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1386.66*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 592.713   2.907 592.341   7.539 591.458   8.765 591.121  12.523     590
  13.562     590   13.98     590  16.602 589.918  18.932 589.845  19.486 589.788
  20.826 589.719  24.326 589.376  24.475 589.363  25.092 589.301   26.07 589.223
  27.091 589.138  28.463 589.029  29.498 588.944  30.207 588.911  34.528 588.708
  35.353 588.669  35.747 588.647  37.538 588.543  40.083 588.399   45.55 588.071
   46.72 588.002  46.773 587.987  47.587 587.333  48.446 587.098  49.446 586.831
  50.323 586.607  50.553 586.722  51.389 587.074  51.973 587.333  54.458 587.403
  56.069 587.448  57.626 587.492  59.382 587.541  59.573 587.547  61.075 587.605
  63.751 587.687  64.634 587.715  66.446  587.78   68.33 587.852  68.362 587.854
  74.282  588.08  74.294  588.08   75.62  588.13   78.05 588.249  78.102 588.249
  78.271 588.251  78.607  588.26  78.986 588.263  79.228 588.271  79.507 588.275
  80.174 588.292  82.565  588.37  97.593 588.903  98.548 588.931 100.942 589.001
 101.698 589.026 104.637 589.117 105.031 589.131 105.841 589.152 106.622 589.173
 106.672 589.173  107.45  589.18

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.587     .06  51.973     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.587  51.973             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1382.22*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 592.418   2.579 592.071   6.689 591.277   7.776 590.981  11.111     590
   12.14     590  12.553     590  15.149 589.891  17.457 589.794  18.005 589.737
  19.331 589.659  22.797 589.318  22.944 589.306  23.555 589.245  24.524 589.172
  25.534 589.093  26.892 588.994  27.917 588.916  28.619 588.882  32.897 588.681
  33.715 588.642  34.104  588.62  35.878 588.521  38.397 588.382   43.81 588.068
  44.968 588.002  45.021 587.982  46.106 587.111  46.922 586.887  47.871 586.635
  48.704 586.422  48.915 586.529  49.677 586.862  50.211 587.111  52.737 587.169
  54.374 587.207  55.956 587.243  57.742 587.284  57.936 587.289  59.463 587.346
  62.183 587.418   63.08 587.443  64.921 587.503  66.836 587.574  66.869 587.575
  72.887 587.796  72.899 587.797  74.246 587.844  76.716 587.952   76.77 587.952
  76.941 587.954  77.283 587.963  77.668 587.967  77.914 587.975  78.197 587.979
  78.876 587.999  81.306 588.085   96.58 588.681  97.552 588.711  99.985 588.786
 100.753 588.813 103.741 588.913 104.141 588.927 104.964 588.953 105.758 588.977
 105.809 588.978   106.6 588.983

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.106     .06  50.211     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.106  50.211             1.16    4.45    7.23             .1       .3

CROSS SECTION
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```
RIVER: arroyo_maquinas
REACH: casillas          RS: 1377.77*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 592.122   2.251 591.801   5.839 591.097   6.788 590.841   9.699     590
  10.717     590  11.127     590  13.696 589.863  15.981 589.742  16.523 589.687
  17.837 589.599  21.268 589.261  21.413 589.248  22.018 589.188  22.977 589.122
  23.977 589.048  25.322 588.959  26.336 588.887  27.031 588.854  31.267 588.654
  32.076 588.615  32.461 588.594  34.217 588.499  36.711 588.365   42.07 588.065
  43.217 588.002  43.269 587.978  44.624 586.889  45.398 586.675  46.296 586.439
  47.086 586.238  47.276 586.336  47.966  586.65  48.449 586.889  51.015 586.935
  52.679 586.966  54.287 586.995  56.102 587.028  56.299 587.031   57.85 587.087
  60.614 587.148  61.526  587.17  63.397 587.226  65.343 587.295  65.376 587.296
  71.492 587.513  71.504 587.513  72.873 587.557  75.383 587.655  75.437 587.655
  75.611 587.658  75.959 587.666   76.35 587.671    76.6 587.679  76.888 587.684
  77.577 587.706  80.047   587.8  95.568 588.459  96.555 588.491  99.028 588.571
  99.808   588.6 102.845 588.708 103.251 588.724 104.088 588.754 104.894 588.782
 104.946 588.782  105.75 588.787

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.624     .06  48.449     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.624  48.449             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1373.33*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 591.827   1.923 591.531   4.989 590.916     5.8 590.701   8.287     590
   9.295     590     9.7     590  12.244 589.836  14.505  589.69  15.042 589.636
  16.342 589.539  19.738 589.203  19.883 589.191  20.481 589.131   21.43 589.071
  22.421 589.004  23.751 588.925  24.756 588.858  25.443 588.825  29.636 588.627
  30.437 588.589  30.818 588.568  32.557 588.477  35.025 588.348   40.33 588.062
  41.465 588.001  41.517 587.973  43.143 586.667  43.873 586.464  44.722 586.243
  45.467 586.053  45.637 586.143  46.254 586.437  46.687 586.667  49.294 586.702
  50.985 586.724  52.618 586.746  54.461 586.771  54.662 586.773  56.238 586.828
  59.046 586.879  59.972 586.898  61.873  586.95   63.85 587.016  63.884 587.017
  70.096  587.23  70.109  587.23    71.5  587.27  74.049 587.358  74.105 587.358
  74.281 587.361  74.634  587.37  75.032 587.375  75.286 587.382  75.578 587.388
  76.279 587.413  78.788 587.515  94.556 588.236  95.559  588.27  98.071 588.355
  98.864 588.388 101.949 588.504 102.361 588.521 103.211 588.555 104.031 588.586
 104.083 588.587   104.9  588.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.143     .06  46.687     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.143  46.687             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1368.88*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 591.531   1.596 591.261   4.139 590.735   4.811 590.562   6.874     590
   7.872     590   8.273     590  10.791 589.809  13.029 589.639  13.561 589.585
  14.847 589.479  18.209 589.145  18.352 589.134  18.944 589.074  19.883 589.021
  20.864 588.959  22.181  588.89  23.175  588.83  23.856 588.797  28.005 588.599
  28.798 588.562  29.176 588.542  30.896 588.454  33.339 588.331  38.589 588.058
  39.713 588.001  39.764 587.969  41.662 586.444  42.349 586.253  43.147 586.047
  43.848 585.869  43.998  585.95  44.543 586.225  44.924 586.444  47.573 586.468
   49.29 586.483  50.949 586.497  52.821 586.514  53.024 586.516  54.625 586.568
  57.477 586.609  58.418 586.625  60.349 586.673  62.357 586.737  62.391 586.739
  68.701 586.947  68.714 586.947  70.126 586.984  72.716 587.061  72.772 587.062
  72.951 587.065   73.31 587.073  73.714  587.08  73.972 587.086  74.269 587.092
   74.98  587.12  77.528  587.23  93.544 588.014  94.563  588.05  97.114  588.14
  97.919 588.175 101.052 588.299 101.472 588.318 102.335 588.355 103.167 588.391
  103.22 588.391  104.05 588.393

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  41.662     .06  44.924     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        41.662  44.924             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1364.44*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 591.236   1.268 590.992   3.288 590.555   3.823 590.422   5.462     590
    6.45     590   6.847     590   9.338 589.781  11.553 589.587  12.079 589.534
  13.353 589.418  16.679 589.088  16.821 589.077  17.407 589.017  18.337  588.97
  19.307 588.915   20.61 588.855  21.594 588.801  22.268 588.768  26.375 588.572
  27.159 588.535  27.533 588.516  29.236 588.432  31.654 588.313  36.849 588.055
  37.962     588  38.012 587.964  40.181 586.222  40.824 586.041  41.572  585.85
  42.229 585.684  42.359 585.758  42.831 586.012  43.162 586.222  45.851 586.234
  47.595 586.241  49.279 586.249   51.18 586.257  51.387 586.258  53.013 586.309
  55.909  586.34  56.864 586.353  58.824 586.397  60.863 586.459  60.898  586.46
  67.305 586.663  67.318 586.664  68.753 586.697  71.382 586.764  71.439 586.765
  71.622 586.768  71.986 586.776  72.396 586.784  72.657  586.79  72.959 586.796
  73.682 586.828  76.269 586.945  92.532 587.792  93.566  587.83  96.157 587.925
  96.975 587.963 100.156 588.095 100.582 588.115 101.458 588.156 102.304 588.195
 102.358 588.196   103.2 588.197

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  40.181     .06  43.162     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.181  43.162             1.16    4.45    7.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1360

INPUT
Description:
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  590.94    4.05     590    5.42     590   15.15  589.03   15.29  589.02
   15.87  588.96   16.79  588.92   17.75  588.87   19.04  588.82   20.68  588.74
   25.89  588.49   36.21     588   36.26  587.96    38.7     586    39.3  585.83
   40.61   585.5   41.12   585.8    41.4     586   44.13     586    45.9     586
   47.61     586   49.54     586   49.75     586    51.4  586.05   54.34  586.07
   55.31  586.08    57.3  586.12   59.37  586.18   65.91  586.38   71.65   586.5
   75.01  586.66   91.52  587.57   92.57  587.61    95.2  587.71   96.03  587.75
   99.26  587.89  101.44     588  102.35     588

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    38.7     .06    41.4     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         38.7    41.4             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1355.44*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 590.731   2.241 590.202   3.873 589.817   5.183  589.79    5.76 589.724
   6.928   589.6  14.487 588.797   14.62 588.786  15.175 588.726  16.055 588.678
  16.973 588.621  18.206  588.56  19.774 588.468  22.126 588.331  22.694 588.305
  24.756 588.213  26.686 588.128  34.624 587.778  34.677  587.74  35.429 587.197
   37.26 585.888  37.884 585.713  39.246 585.367  39.951 585.654  40.338 585.843
  43.036  585.86  44.785 585.871  46.475 585.881  48.382 585.893   48.59 585.894
   50.22 585.949  53.126 585.985  54.084     586  55.601 586.036  56.051 586.048
  56.231 586.054  58.043 586.112  58.096 586.114   64.56 586.334  65.127 586.348
  70.232 586.478  73.553 586.641  82.766 587.158  83.562 587.203  83.816 587.217
  85.994 587.337  86.071 587.342   86.27 587.352  86.336 587.356  86.612 587.371
  87.165   587.4   87.95 587.444   88.69 587.484  89.868 587.548  90.906 587.588
  92.647 587.655  93.505 587.688  94.325 587.727  97.517 587.866  99.672 587.973
 100.571 587.977

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   37.26     .06  40.338     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         37.26  40.338             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1350.88*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 590.522   2.138 590.008   3.695 589.633   4.945 589.579   5.496 589.509
   6.611 589.383  13.823 588.564  13.951 588.553   14.48 588.491   15.32 588.436
  16.196 588.372  17.373   588.3  18.869 588.195  21.112 588.039  21.654 588.017
  23.623 587.937  25.464 587.862  33.039 587.556  33.095 587.519  33.888 587.005
   35.82 585.776  36.467 585.595  37.881 585.233  38.781 585.508  39.276 585.687
  41.941  585.72   43.67 585.742   45.34 585.763  47.224 585.786  47.429 585.789
   49.04 585.848  51.911 585.899  52.858 585.919  54.357 585.962  54.802 585.975
  54.979 585.982   56.77 586.045  56.823 586.047  63.209 586.288   63.77 586.305
  68.814 586.455  72.095 586.623  81.199 587.142  81.986 587.188  82.237 587.201
  84.388  587.32  84.465 587.325  84.661 587.334  84.727 587.339      85 587.353
  85.546 587.382  86.321 587.425  87.053 587.463  88.217 587.525  89.242 587.565
  90.962 587.633   91.81 587.666  92.621 587.705  95.775 587.841  97.904 587.945
  98.792 587.953
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   35.82     .06  39.276     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.82  39.276             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1346.33*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 590.313   2.036 589.814   3.518  589.45   4.708 589.369   5.233 589.293
   6.294 589.165   13.16 588.332  13.281  588.32  13.785 588.257  14.584 588.194
  15.418 588.124  16.539  588.04  17.963 587.923  20.099 587.748  20.615 587.729
  22.489  587.66  24.242 587.596  31.453 587.333  31.512 587.299  32.347 586.813
   34.38 585.663  35.051 585.478  36.517   585.1  37.612 585.362  38.213  585.53
  40.847  585.58  42.555 585.613  44.204 585.644  46.066 585.679  46.269 585.683
  47.861 585.747  50.697 585.814  51.633 585.839  53.113 585.887  53.552 585.903
  53.728  585.91  55.497 585.979  55.549 585.981  61.859 586.242  62.413 586.261
  67.396 586.433  70.638 586.604  79.632 587.126  80.409 587.172  80.657 587.185
  82.783 587.303  82.858 587.309  83.052 587.316  83.117 587.322  83.387 587.336
  83.926 587.363  84.692 587.405  85.415 587.443  86.565 587.503  87.578 587.543
  89.278 587.611  90.116 587.645  90.916 587.682  94.032 587.817  96.135 587.918
  97.013  587.93

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   34.38     .06  38.213     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         34.38  38.213             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1341.77*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 590.104   1.933  589.62   3.341 589.266   4.471 589.159   4.969 589.078
   5.976 588.948  12.496 588.099  12.612 588.086   13.09 588.023  13.849 587.952
  14.641 587.875  15.705  587.78  17.058  587.65  19.086 587.457  19.576 587.441
  21.355 587.383   23.02  587.33  29.868 587.111  29.929 587.079  30.806 586.621
   32.94 585.551  33.635  585.36  35.152 584.967  36.443 585.217  37.151 585.373
  39.753  585.44  41.439 585.483  43.069 585.525  44.908 585.572  45.108 585.578
  46.681 585.646  49.483 585.729  50.407 585.758  51.869 585.813  52.303  585.83
  52.477 585.838  54.224 585.912  54.276 585.915  60.508 586.196  61.056 586.218
  65.978  586.41   69.18 586.585  78.065  587.11  78.833 587.157  79.078 587.169
  81.177 587.286  81.252 587.292  81.444 587.298  81.508 587.305  81.774 587.318
  82.307 587.344  83.064 587.386  83.778 587.422  84.914  587.48  85.914 587.521
  87.593 587.589  88.421 587.623  89.212 587.659   92.29 587.792  94.367 587.891
  95.234 587.907

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   32.94     .06  37.151     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         32.94  37.151             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1337.22*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 589.896    1.83 589.426   3.163 589.083   4.233 588.948   4.705 588.862
   5.659  588.73  11.833 587.866  11.942 587.853  12.395 587.788  13.114 587.711
  13.864 587.626  14.871  587.52  16.152 587.378  18.073 587.165  18.537 587.153
  20.222 587.107  21.798 587.064  28.282 586.889  28.347 586.859  29.264 586.429
    31.5 585.439  32.219 585.243  33.788 584.833  35.273 585.071  36.089 585.217
  38.658   585.3  40.324 585.354  41.934 585.407   43.75 585.466  43.948 585.472
  45.501 585.545  48.268 585.643  49.181 585.678  50.625 585.738  51.054 585.758
  51.225 585.767  52.952 585.846  53.002 585.848  59.158  586.15  59.699 586.174
   64.56 586.388  67.723 586.567  76.498 587.094  77.256 587.141  77.498 587.153
  79.572 587.268  79.645 587.276  79.835 587.281  79.898 587.288  80.161   587.3
  80.688 587.325  81.435 587.367   82.14 587.402  83.262 587.458  84.251 587.499
  85.908 587.568  86.726 587.601  87.507 587.636  90.547 587.768  92.599 587.864
  93.456 587.883

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    31.5     .06  36.089     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          31.5  36.089             7.25    4.51    1.07             .1       .3

CROSS SECTION
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```
RIVER: arroyo_maquinas
REACH: casillas          RS: 1332.66*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 589.687   1.728 589.232   2.986 588.899   3.996 588.738   4.441 588.647
   5.342 588.513   11.17 587.633  11.273 587.619  11.701 587.554  12.379 587.469
  13.087 587.377  14.038  587.26  15.247 587.105   17.06 586.874  17.498 586.865
  19.088  586.83  20.576 586.798  26.697 586.667  26.764 586.638  27.723 586.237
   30.06 585.327  30.802 585.125  32.423   584.7  34.104 584.925  35.027  585.06
  37.564  585.16  39.209 585.225  40.799 585.288  42.592 585.359  42.788 585.366
  44.321 585.444  47.054 585.558  47.955 585.597  49.381 585.664  49.805 585.686
  49.974 585.695  51.679 585.779  51.729 585.782  57.807 586.104  58.342 586.131
  63.143 586.365  66.265 586.548  74.931 587.078   75.68 587.126  75.919 587.138
  77.966 587.251  78.039 587.259  78.226 587.263  78.289 587.271  78.548 587.283
  79.068 587.306  79.806 587.348  80.503 587.381  81.611 587.435  82.587 587.476
  84.224 587.546  85.031 587.579  85.803 587.614  88.805 587.744  90.831 587.837
  91.677  587.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   30.06     .06  35.027     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         30.06  35.027             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1328.11*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 589.478   1.625 589.038   2.809 588.716   3.759 588.527   4.178 588.431
   5.025 588.295  10.506 587.401  10.603 587.385  11.006 587.319  11.644 587.227
  12.309 587.128  13.204     587  14.341 586.833  16.046 586.583  16.458 586.576
  17.954 586.553  19.354 586.532  25.111 586.444  25.182 586.418  26.182 586.044
   28.62 585.214  29.386 585.008  31.059 584.567  32.935 584.779  33.964 584.903
   36.47  585.02  38.094 585.096  39.663 585.169  41.434 585.252  41.627 585.261
  43.141 585.343  45.839 585.473   46.73 585.517  48.138 585.589  48.556 585.613
  48.723 585.623  50.406 585.713  50.455 585.716  56.457 586.058  56.984 586.087
  61.725 586.343  64.808 586.529  73.364 587.062  74.103 587.111  74.339 587.122
  76.361 587.234  76.433 587.243  76.617 587.245  76.679 587.254  76.936 587.265
  77.449 587.288  78.177 587.328  78.865 587.361  79.959 587.413  80.923 587.454
  82.539 587.524  83.336 587.557  84.098 587.591  87.062 587.719  89.063 587.809
  89.898 587.837

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   28.62     .06  33.964     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         28.62  33.964             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1323.55*

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 589.269   1.523 588.844   2.631 588.532   3.521 588.317   3.914 588.216
   4.707 588.078   9.843 587.168   9.934 587.152  10.311 587.085  10.908 586.985
  11.532 586.879   12.37  586.74  13.436  586.56  15.033 586.291  15.419 586.288
  16.821 586.277  18.132 586.266  23.526 586.222  23.599 586.198  24.641 585.852
   27.18 585.102   27.97 584.891  29.694 584.433  31.765 584.633  32.902 584.747
  35.375  584.88  36.979 584.967  38.528  585.05  40.277 585.145  40.467 585.155
  41.962 585.241  44.625 585.388  45.504 585.436  46.894 585.515  47.307 585.541
  47.471 585.552  49.133 585.646  49.182 585.649  55.107 586.012  55.627 586.044
  60.307 586.321  63.351 586.511  71.797 587.046  72.527 587.095   72.76 587.106
  74.755 587.217  74.826 587.227  75.009 587.228   75.07 587.237  75.323 587.248
  75.829 587.269  76.549 587.309  77.228  587.34  78.308  587.39  79.259 587.432
  80.855 587.502  81.641 587.535  82.393 587.568   85.32 587.695  87.294 587.782
  88.119 587.813

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   27.18     .06  32.902     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.18  32.902             7.25    4.51    1.07             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1319

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  589.06    1.42  588.65    3.65     588    4.39  587.86   14.02     586
   14.38     586   16.91     586   21.94     586    23.1  585.66   25.74  584.99
   28.33   584.3   31.84  584.59   45.65  585.44   46.22  585.48   47.86  585.58
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```
   54.27     586   70.23  587.03   70.95  587.08   71.18  587.09   73.15   587.2
   73.22  587.21    73.4  587.21   73.46  587.22   73.71  587.23   74.21  587.25
   74.92  587.29   75.59  587.32   79.17  587.48   86.34  587.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   25.74     .06   31.84     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         25.74   31.84             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1314.12*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 588.756   1.438 588.375   3.697 587.772   4.446 587.637   5.412 587.461
  11.633 586.278  14.077 585.867  14.199 585.845  14.564 585.841  17.126 585.811
   22.22 585.753  22.439 585.695  23.395 585.452  24.314 585.251  26.069 584.732
  28.434 584.064  29.362 584.142  30.471 584.231   32.41 584.391  36.484 584.648
  45.715 585.244  45.999 585.262   46.56 585.301  46.833 585.317  48.174   585.4
  48.898 585.447  51.245 585.599  54.481 585.811  56.481  585.94   62.79 586.348
  70.103 586.807  70.185 586.812  70.894 586.861   71.12 586.871  72.134 586.929
  73.059 586.981  73.128  586.99  73.305 586.992  73.364 587.001   73.61 587.011
  74.102 587.031    74.8 587.069   75.46 587.099  76.829 587.159  78.499 587.232
  78.982 587.253  81.794 587.371  83.893 587.465  86.037 587.552

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  26.069     .06   32.41     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        26.069   32.41             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1309.25*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 588.453   1.456 588.101   3.743 587.543   4.502 587.415    5.48 587.247
   11.78 586.067  14.255  585.71  14.378  585.69  14.747 585.681  17.342 585.622
    22.5 585.505  22.722 585.453   23.69 585.245   24.62 585.072  26.397 584.475
  28.538 583.828  29.574 583.916  30.814 584.014   32.98 584.193  36.988 584.451
  46.069 585.067  46.348 585.084    46.9 585.121  47.168 585.138  48.487 585.219
  49.199 585.266  51.509 585.413  54.692 585.621   56.66 585.748  62.866 586.151
  70.059 586.588  70.141 586.594  70.838 586.642   71.06 586.653  72.058 586.711
  72.967 586.763  73.035 586.771  73.209 586.773  73.267 586.782  73.509 586.792
  73.993 586.812  74.681 586.849  75.329 586.877  76.676 586.937  78.319 587.006
  78.795 587.026  81.561 587.138  83.626 587.234  85.735 587.315

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  26.397     .06   32.98     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        26.397   32.98             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1304.37*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 588.149   1.474 587.826    3.79 587.315   4.558 587.192   5.549 587.032
  11.926 585.856  14.432 585.553  14.557 585.535  14.931 585.522  17.558 585.433
  22.781 585.258  23.005  585.21  23.985 585.037  24.927 584.894  26.726 584.217
  28.641 583.591  29.787  583.69  31.157 583.797   33.55 583.994  37.491 584.254
  46.422 584.889  46.697 584.906  47.239 584.942  47.503 584.958  48.801 585.039
  49.501 585.085  51.772 585.228  54.903 585.432  56.838 585.557  62.941 585.954
  70.016  586.37  70.096 586.376  70.782 586.423  71.001 586.434  71.981 586.492
  72.876 586.544  72.943 586.551  73.114 586.555  73.171 586.562  73.409 586.574
  73.885 586.593  74.561 586.628  75.199 586.656  76.523 586.714  78.139  586.78
  78.607 586.799  81.327 586.905  83.358 587.004  85.432 587.078

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  26.726     .06   33.55     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        26.726   33.55             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1299.5*

INPUT
Description:
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```
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 587.845   1.493 587.551   3.836 587.086   4.614  586.97   5.617 586.818
  12.073 585.645   14.61 585.397  14.736 585.379  15.115 585.363  17.774 585.245
  23.061  585.01  23.288 584.968   24.28  584.83  25.234 584.715  27.055  583.96
  28.745 583.355      30 583.464  31.499 583.579   34.12 583.795  37.995 584.057
  46.776 584.711  47.046 584.728  47.579 584.763  47.839 584.778  49.114 584.859
  49.803 584.904  52.036 585.042  55.114 585.243  57.017 585.366  63.017 585.757
  69.973 586.152  70.052 586.157  70.726 586.203  70.941 586.215  71.905 586.274
  72.785 586.325   72.85 586.332  73.019 586.337  73.075 586.343  73.309 586.355
  73.777 586.374  74.441 586.407  75.068 586.434  76.371 586.491  77.959 586.554
  78.419 586.572  81.094 586.672   83.09 586.773   85.13  586.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  27.055     .06   34.12     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        27.055   34.12             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1294.62*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 587.541   1.511 587.276   3.883 586.858    4.67 586.747   5.685 586.603
   12.22 585.434  14.787  585.24  14.915 585.224  15.298 585.203   17.99 585.056
  23.341 584.763  23.571 584.726  24.575 584.622   25.54 584.536  27.384 583.703
  28.849 583.119  30.212 583.238  31.842 583.362   34.69 583.596  38.499 583.861
  47.129 584.533  47.395  584.55  47.919 584.583  48.174 584.599  49.428 584.679
  50.105 584.723  52.299 584.857  55.325 585.053  57.195 585.174  63.093 585.561
   69.93 585.934  70.007 585.939  70.669 585.984  70.881 585.996  71.829 586.055
  72.693 586.106  72.758 586.112  72.923 586.118  72.978 586.124  73.208 586.136
  73.668 586.155  74.322 586.186  74.938 586.213  76.218 586.268   77.78 586.328
  78.231 586.344   80.86 586.439  82.823 586.542  84.827 586.602

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  27.384     .06   34.69     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        27.384   34.69             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1289.75*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 587.237   1.529 587.001    3.93 586.629   4.726 586.525   5.753 586.389
  12.367 585.222  14.965 585.083  15.094 585.069  15.482 585.044  18.206 584.867
  23.621 584.515  23.854 584.484   24.87 584.415  25.847 584.357  27.713 583.445
  28.952 582.882  30.425 583.012  32.185 583.145   35.26 583.398  39.003 583.664
  47.483 584.356  47.743 584.371  48.259 584.404  48.509 584.419  49.741 584.498
  50.406 584.542  52.563 584.671  55.535 584.864  57.373 584.983  63.169 585.364
  69.886 585.716  69.962 585.721  70.613 585.765  70.821 585.778  71.753 585.837
  72.602 585.888  72.665 585.893  72.828   585.9  72.882 585.905  73.108 585.917
   73.56 585.936  74.202 585.966  74.808 585.992  76.065 586.046    77.6 586.102
  78.044 586.117  80.627 586.206  82.555 586.311  84.525 586.365

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  27.713     .06   35.26     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        27.713   35.26             4.18    4.98    6.72             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1284.87*

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 586.934   1.547 586.727   3.976 586.401   4.782 586.302   5.822 586.174
  12.513 585.011  15.142 584.927  15.273 584.914  15.666 584.885  18.422 584.678
  23.902 584.268  24.137 584.242  25.165 584.208  26.153 584.179  28.041 583.188
  29.056 582.646  30.637 582.786  32.527 582.927   35.83 583.199  39.506 583.467
  47.836 584.178  48.092 584.193  48.599 584.225  48.845  584.24  50.055 584.318
  50.708 584.361  52.826 584.486  55.746 584.675  57.552 584.791  63.244 585.167
  69.843 585.498  69.918 585.503  70.557 585.546  70.761 585.559  71.676 585.618
  72.511 585.669  72.573 585.673  72.733 585.682  72.786 585.686  73.008 585.699
  73.452 585.717  74.082 585.745  74.677  585.77  75.913 585.823   77.42 585.876
  77.856  585.89  80.393 585.973  82.288 586.081  84.222 586.128

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  28.041     .06   35.83     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        28.041   35.83             4.18    4.98    6.72             .1       .3
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CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1280

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  586.63    5.89  585.96   12.66   584.8   15.32  584.77   24.42     584
   26.46     584   28.37  582.93   29.16  582.41   30.85  582.56   32.87  582.71
    36.4     583   40.01  583.27   48.19     584   49.18  584.06   51.01  584.18
   53.09   584.3   57.73   584.6   63.32  584.97    69.8  585.28    71.6   585.4
   72.91  585.48   75.76   585.6   77.24  585.65   80.16  585.74   82.02  585.85
   83.92  585.89

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   28.37     .06    36.4     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         28.37    36.4             5.79    4.94    3.04             .1       .3
Left Levee      Station=   10.88      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1275.*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 586.289   3.997 585.904    6.01 585.706   6.396 585.649   8.091 585.398
    9.86  585.14  12.918 584.635  13.748  584.61  14.432 584.591  15.632 584.562
  16.636 584.477  20.207 584.169  22.324 583.999  23.813  583.88  24.917  583.79
   25.32 583.785  26.518 583.772  26.999 583.767  27.096  583.72  28.734 582.933
  28.948 582.814  29.466 582.429   29.83 582.169  31.367 582.344  33.172 582.524
  33.204 582.527  36.414 582.875  40.076 583.166  48.375  583.93  48.549 583.942
  49.379 583.998  51.236  584.13  52.202 584.193  53.047 584.248  53.346 584.264
  53.838 584.294  58.053 584.551  63.724 584.905  70.299 585.211  72.125 585.325
  73.454 585.402  76.345 585.523  77.847 585.574  80.809 585.669  82.696 585.775
  84.624  585.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  28.948     .06  36.414     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        28.948  36.414             5.79    4.94    3.04             .1       .3
Left Levee      Station=10.92671      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1270.*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 585.947   4.077 585.624    6.13 585.452   6.524 585.403   8.253 585.186
  10.056 584.966  13.175  584.47  14.022 584.429   14.72 584.398  15.944 584.355
  16.968 584.267   20.61 583.946  22.769 583.783  24.288 583.668  25.414 583.579
  25.825 583.571  27.047 583.544  27.537 583.534  27.637 583.494  29.307 582.819
  29.525 582.697  30.098 582.233    30.5 581.927  31.884 582.127  33.509  582.34
  33.537 582.344  36.427  582.75  40.142 583.063   48.56  583.86  48.736 583.873
  49.579 583.935  51.462 584.081  52.442 584.151  53.299 584.212  53.602 584.228
  54.101 584.256  58.377 584.502  64.129 584.839  70.797 585.141   72.65 585.251
  73.998 585.325   76.93 585.445  78.453 585.499  81.458 585.597  83.372   585.7
  85.327  585.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  29.525     .06  36.427     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        29.525  36.427             5.79    4.94    3.04             .1       .3
Left Levee      Station=10.97343      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1265.*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 585.606   4.157 585.344    6.25 585.197   6.652 585.157   8.414 584.973
  10.253 584.793  13.433 584.305  14.297 584.247  15.008 584.205  16.256 584.147
    17.3 584.057  21.013 583.724  23.214 583.567  24.763 583.456  25.911 583.369
   26.33 583.356  27.577 583.316  28.076 583.302  28.177 583.268  29.881 582.706
  30.103 582.581   30.73 582.037   31.17 581.686    32.4 581.911  33.845 582.157
  33.871 582.161  36.441 582.625  40.208 582.959  48.745  583.79  48.923 583.804
  49.778 583.873  51.688 584.031  52.681 584.109  53.551 584.177  53.858 584.192
  54.365 584.219    58.7 584.453  64.534 584.774  71.296 585.072  73.174 585.176
  74.542 585.247  77.516 585.368   79.06 585.423  82.107 585.526  84.048 585.625
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  86.031  585.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  30.103     .06  36.441     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        30.103  36.441             5.79    4.94    3.04             .1       .3
Left Levee      Station=11.02014      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1260.*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 585.265   4.237 585.064    6.37 584.943   6.779  584.91   8.576 584.761
   10.45 584.619  13.691  584.14  14.571 584.066  15.296 584.012  16.568 583.939
  17.632 583.847  21.416 583.502   23.66  583.35  25.239 583.244  26.409 583.159
  26.835 583.142  28.106 583.088  28.615 583.069  28.718 583.042  30.454 582.592
   30.68 582.465  31.362 581.842   31.84 581.445  32.917 581.695  34.182 581.973
  34.205 581.979  36.455   582.5  40.275 582.855   48.93 583.719  49.111 583.735
  49.977  583.81  51.913 583.982  52.921 584.068  53.803 584.141  54.114 584.155
  54.628 584.181  59.024 584.404  64.938 584.709  71.795 585.002  73.699 585.101
  75.085 585.169  78.101  585.29  79.667 585.347  82.756 585.454  84.725 585.549
  86.735  585.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   30.68     .06  36.455     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         30.68  36.455             5.79    4.94    3.04             .1       .3
Left Levee      Station=11.06686      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1255.*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 584.924   4.316 584.784    6.49 584.689   6.907 584.664   8.737 584.549
  10.647 584.445  13.949 583.976  14.845 583.885  15.584  583.82  16.879 583.731
  17.964 583.637   21.82  583.28  24.105 583.134  25.714 583.033  26.906 582.948
  27.341 582.927  28.635  582.86  29.153 582.836  29.259 582.816  31.027 582.478
  31.258 582.349  31.994 581.646   32.51 581.204  33.434 581.478  34.519  581.79
  34.538 581.796  36.469 582.375  40.341 582.751  49.115 583.649  49.298 583.667
  50.176 583.748  52.139 583.932  53.161 584.026  54.054 584.106   54.37 584.119
  54.891 584.143  59.347 584.355  65.343 584.644  72.293 584.933  74.224 585.026
  75.629 585.091  78.686 585.213  80.274 585.271  83.406 585.383  85.401 585.474
  87.439  585.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  31.258     .06  36.469     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.258  36.469             5.79    4.94    3.04             .1       .3
Left Levee      Station=11.11357      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1250.*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 584.582   4.396 584.504   6.609 584.435   7.034 584.418   8.899 584.336
  10.843 584.272  14.206 583.811  15.12 583.704  15.872 583.627  17.191 583.524
  18.296 583.427  22.223 583.058  24.551 582.918  26.189 582.821  27.403 582.738
  27.846 582.713  29.164 582.632  29.692 582.604  29.799  582.59  31.601 582.364
  31.835 582.232  32.626 581.451   33.18 580.962  33.951 581.262  34.856 581.606
  34.872 581.613  36.482  582.25  40.407 582.648  49.299 583.579  49.486 583.598
  50.376 583.685  52.365 583.883    53.4 583.984  54.306  584.07  54.626 584.083
  55.154 584.106  59.671 584.306  65.747 584.578  72.792 584.863  74.749 584.952
  76.173 585.014  79.271 585.135   80.88 585.196  84.055 585.311  86.077 585.399
  88.142  585.47

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  31.835     .06  36.482     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         31.835  36.482             5.79    4.94    3.04             .1       .3
Left Levee      Station=11.16029      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1245
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INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 584.241   4.476 584.224   7.162 584.172    9.06 584.124   11.04 584.098
  15.394 583.523   16.16 583.434  18.628 583.217  22.626 582.836  24.996 582.702
  26.664 582.609  28.351 582.498  29.693 582.404   30.34 582.364  32.174  582.25
  32.413 582.116  33.258 581.255   33.85 580.721  34.468 581.046  35.193 581.423
  35.206  581.43  36.496 582.125  40.473 582.544  49.485 583.509  49.673 583.529
  50.575 583.623  52.591 583.833   53.64 583.942  54.558 584.035  54.883 584.047
  55.417 584.068  59.994 584.257  66.152 584.513  73.291 584.794  75.274 584.877
  76.717 584.936  79.857 585.058  81.487  585.12  84.704  585.24  86.753 585.324
  88.846   585.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  32.413     .06  36.496     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.413  36.496             5.79    4.94    3.04             .1       .3
Left Levee      Station=  11.207      Elevation=     587

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1240

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   583.9    4.59  583.94    9.29   583.9   11.32  583.91   16.57  583.24
    23.2   582.6   25.63  582.47   27.34  582.38   29.07  582.27   31.11  582.13
   32.99     582   33.89  581.06   34.52  580.48   35.53  581.24   36.51     582
   49.86  583.46   53.88   583.9   54.81     584   55.68  584.03   89.55  585.33

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   32.99     .06   36.51     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         32.99   36.51             5.64    4.42    2.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1235.60*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 583.654    1.49 583.668   4.655 583.662   7.756 583.609   9.422 583.593
  11.481 583.596  15.351 583.151  16.806 583.001  18.593 582.866  18.817 582.847
    19.5 582.788  19.805 582.762  20.075 582.738  20.271  582.72   23.53 582.402
  23.997 582.374  25.156  582.31  25.995 582.263  27.729 582.168  29.484 582.055
  31.467 581.919  31.553 581.913   33.46 581.781  33.718 581.544  34.425 580.903
  35.101 580.359  35.963 580.981  36.099 581.077  37.067 581.781  41.569 582.302
  46.131 582.822  49.659 583.226  50.413  583.31  54.432 583.754  55.362 583.855
  56.231 583.893  60.788 584.108  66.332 584.372  66.402 584.374  66.492 584.377
  67.424 584.409  72.598 584.626  74.422   584.7  76.808 584.797  78.452 584.864
  80.227 584.936  90.091 585.294

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   33.46     .06  37.067     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.46  37.067             5.64    4.42    2.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1231.21*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 583.409   1.511 583.423    4.72 583.384   7.865 583.305   9.554 583.285
  11.642 583.281  15.567  582.88 17.042 582.763  18.854 582.661  19.082 582.645
  19.773 582.592  20.083 582.569  20.356 582.547  20.556 582.531   23.86 582.204
  24.334 582.173  25.509 582.105   26.36 582.056  28.118 581.957  29.898 581.841
  31.908 581.702  31.996 581.696   33.93 581.561  34.206  581.34   34.96 580.746
  35.681 580.239  36.533 580.825  36.668 580.914  37.625 581.561  42.125 582.112
  46.686 582.653  50.213 583.075  50.967 583.159  54.984 583.607  55.914 583.709
  56.783 583.755  61.338  584.01   66.88 584.326   66.95 584.328   67.04 584.331
  67.972 584.359  73.144 584.593  74.968 584.672  77.353 584.774  78.997 584.845
  80.771  584.92  90.632 585.258

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   33.93     .06  37.625     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.93  37.625             5.64    4.42    2.23             .1       .3

CROSS SECTION
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RIVER: arroyo_maquinas
REACH: casillas          RS: 1226.82*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 583.163   1.532 583.178   4.786 583.106   7.974     583   9.687 582.977
  11.804 582.967  15.782 582.608  17.278 582.525  19.115 582.457  19.346 582.443
  20.047 582.397  20.361 582.377  20.638 582.357   20.84 582.341  24.191 582.006
  24.671 581.971  25.862 581.901  26.725 581.849  28.508 581.745  30.312 581.626
   32.35 581.485  32.439 581.479  34.399 581.341  34.693 581.136  35.495 580.589
  36.261 580.118  37.104  580.67  37.236 580.751  38.183 581.341  42.681 581.922
   47.24 582.484  50.766 582.924   51.52 583.008  55.536  583.46  56.465 583.564
  57.334 583.618  61.888 583.913  67.429  584.28  67.499 584.282  67.589 584.284
   68.52 584.308  73.691  584.56  75.514 584.643  77.898 584.751  79.541 584.826
  81.315 584.905  91.173 585.221

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  34.399     .06  38.183     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        34.399  38.183             5.64    4.42    2.23             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1222.43

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.917   1.553 582.933   4.851 582.828   8.083 582.696   9.819  582.67
  11.965 582.653  15.998 582.337  17.514 582.286  19.376 582.253   19.61 582.241
  20.321 582.201  20.639 582.184   20.92 582.166  21.125 582.151  24.521 581.808
  25.008  581.77  26.215 581.696   27.09 581.642  28.897 581.533  30.726 581.411
  32.792 581.268  32.882 581.262  34.869 581.122   35.18 580.932   36.03 580.432
  36.842 579.997  37.674 580.514  37.806 580.588   38.74 581.122  43.237 581.732
  47.795 582.315   51.32 582.773  52.074 582.858  56.089 583.314  57.018 583.419
  57.886 583.481  62.438 583.816  67.977 584.234  68.047 584.236  68.137 584.238
  69.068 584.258  74.237 584.527   76.06 584.615  78.443 584.728  80.086 584.807
  81.859 584.889  91.714 585.185

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  34.869     .06   38.74     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        34.869   38.74             2.19    1.72     .87             .1       .3
Left Levee      Station=   11.88      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1220.72*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.821   1.561 582.838   4.876  582.72   8.125 582.578    9.87  582.55
  12.027 582.531  16.082 582.232  17.606 582.193  19.477 582.174  19.713 582.163
  20.427 582.125  20.747 582.109  21.029 582.092  21.236 582.077  24.649 581.731
  25.139 581.692  26.352 581.617  27.232 581.562  29.048 581.451  30.887 581.328
  32.963 581.184  33.054 581.178  35.052 581.037  35.369 580.853  36.237 580.371
  37.068  579.95  37.896 580.454  38.027 580.524  38.957 581.037  43.453 581.658
   48.01 582.249  51.535 582.714  52.289 582.799  56.303 583.257  57.232 583.362
  58.101 583.428  62.652 583.778   68.19 584.216   68.26 584.218   68.35  584.22
  69.281 584.238  74.449 584.514  76.272 584.604  78.655 584.719  80.297   584.8
   82.07 584.883  91.924 585.171

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.052     .06  38.957     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.052  38.957             2.19    1.72     .87             .1       .3
Left Levee      Station= 12.0175      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1219.02*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.725   1.569 582.742   4.902 582.612   8.168 582.459   9.922 582.431
   12.09 582.409  16.166 582.126  17.697   582.1  19.579 582.094  19.815 582.084
  20.534 582.048  20.855 582.035  21.139 582.018  21.346 582.003  24.778 581.654
   25.27 581.613  26.489 581.537  27.374 581.481    29.2 581.368  31.048 581.244
  33.135   581.1  33.226 581.094  35.234 580.952  35.559 580.774  36.446  580.31
  37.294 579.903  38.118 580.393  38.248 580.461  39.174 580.952   43.67 581.584
  48.226 582.183   51.75 582.655  52.504 582.741  56.518   583.2  57.446 583.306
  58.315 583.375  62.866  583.74  68.403 584.198  68.473   584.2  68.563 584.201
  69.494 584.219  74.662 584.501  76.484 584.593  78.867  584.71  80.509 584.792
  82.282 584.877  92.135 585.157
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.234     .06  39.174     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.234  39.174             2.19    1.72     .87            .1       .3
Left Levee      Station=  12.155      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1217.31*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  582.63   1.577 582.646   4.927 582.504    8.21 582.341   9.973 582.312
  12.152 582.286   16.25 582.021  17.789 582.008   19.68 582.015  19.918 582.005
   20.64 581.972  20.963  581.96  21.248 581.943  21.457 581.929  24.906 581.577
  25.401 581.534  26.627 581.458  27.516 581.401  29.351 581.286  31.209 581.161
  33.307 581.015  33.399 581.009  35.417 580.866  35.748 580.694  36.654 580.249
   37.52 579.856   38.34 580.333   38.47 580.397  39.391 580.866  43.886  581.51
  48.442 582.118  51.966 582.597   52.72 582.682  56.733 583.144  57.661 583.249
   58.53 583.321   63.08 583.703  68.617 584.181  68.687 584.182  68.777 584.183
  69.708 584.199  74.874 584.489  76.697 584.582  79.079 584.701  80.721 584.785
  82.493 584.871  92.345 585.143

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.417     .06  39.391     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.417  39.391             2.19    1.72     .87            .1       .3
Left Levee      Station= 12.2925      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1215.61

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.534   1.586 582.551   4.953 582.396   8.253 582.223  10.025 582.192
  12.215 582.164  16.334 581.915  17.881 581.915  19.782 581.936  20.021 581.927
  20.747 581.896  21.071 581.885  21.358 581.869  21.568 581.855  25.035   581.5
  25.532 581.456  26.764 581.378  27.658  581.32  29.503 581.203   31.37 581.077
  33.479 580.931  33.571 580.925    35.6 580.781  35.938 580.615  36.862 580.188
  37.746 579.809  38.562 580.273  38.691 580.334  39.608 580.781  44.103 581.436
  48.658 582.052  52.181 582.538  52.935 582.624  56.948 583.087  57.876 583.193
  58.745 583.268  63.294 583.665   68.83 584.163    68.9 584.164   68.99 584.165
  69.921 584.179  75.087 584.476  76.909 584.571  79.291 584.692  80.933 584.778
  82.705 584.865  92.556 585.129

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    35.6     .06  39.608     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          35.6  39.608             1.25     .98      .5            .1       .3
Left Levee      Station=   12.43      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1214.63*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.479    1.59 582.497   4.968 582.334   8.277 582.155  10.054 582.124
  12.251 582.094  16.382 581.855  17.933 581.862   19.84 581.891   20.08 581.882
  20.808 581.852  21.133 581.842  21.421 581.827  21.631 581.813  25.108 581.456
  25.607 581.411  26.842 581.333  27.739 581.274   29.59 581.156  31.462 581.029
  33.577 580.883  33.669 580.877  35.704 580.732  36.046  580.57  36.981 580.153
  37.875 579.782  38.689 580.238  38.817 580.298  39.732 580.732  44.226 581.394
  48.781 582.014  52.304 582.504  53.058 582.591  57.071 583.054  57.999 583.161
  58.868 583.237  63.416 583.643  68.952 584.153  69.022 584.154  69.112 584.155
  70.043 584.168  75.208 584.469   77.03 584.565  79.412 584.687  81.054 584.774
  82.826 584.862  92.676 585.121

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.704     .06  39.732     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.704  39.732             1.25     .98      .5            .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1213.65*

INPUT
Description:
```

```
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.425   1.595 582.442   4.982 582.272   8.301 582.088  10.084 582.055
  12.287 582.024   16.43 581.794  17.986 581.809  19.898 581.845  20.138 581.837
  20.868 581.809  21.195 581.799  21.483 581.784  21.694 581.771  25.182 581.412
  25.682 581.367  26.921 581.287   27.82 581.228  29.676 581.109  31.554 580.982
  33.675 580.835  33.768 580.828  35.809 580.683  36.154 580.524    37.1 580.118
  38.004 579.755  38.815 580.204  38.944 580.262  39.856 580.683   44.35 581.352
  48.904 581.977  52.427 582.471  53.181 582.557  57.193 583.022  58.121 583.128
   58.99 583.207  63.538 583.622  69.074 584.143  69.144 584.143  69.234 584.144
  70.165 584.157   75.33 584.461  77.152 584.558  79.533 584.682  81.175  584.77
  82.947 584.858  92.797 585.113

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.809     .06  39.856     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.809  39.856             1.25     .98      .5             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1212.68*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  582.37     1.6 582.388   4.997 582.211   8.325  582.02  10.113 581.987
  12.322 581.955  16.477 581.734  18.038 581.756  19.956   581.8  20.197 581.793
  20.929 581.766  21.256 581.757  21.546 581.742  21.758 581.728  25.255 581.368
  25.757 581.322  26.999 581.242  27.901 581.182  29.762 581.062  31.646 580.934
  33.773 580.786  33.866  580.78  35.913 580.635  36.263 580.479  37.219 580.083
  38.133 579.729  38.942 580.169   39.07 580.225   39.98 580.635  44.474 581.309
  49.028 581.939   52.55 582.437  53.304 582.524  57.316 582.989  58.244 583.096
  59.113 583.176  63.661   583.6  69.196 584.132  69.266 584.133  69.356 584.134
  70.286 584.145  75.451 584.454  77.273 584.552  79.654 584.677  81.296 584.765
  83.068 584.855  92.917 585.105

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.913     .06   39.98     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.913   39.98             1.25     .98      .5             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1211.70

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.315   1.604 582.333   5.011 582.149    8.35 581.952  10.143 581.919
  12.358 581.885  16.525 581.674  18.091 581.703  20.014 581.755  20.256 581.748
   20.99 581.722  21.318 581.714  21.608 581.699  21.821 581.686  25.329 581.324
  25.831 581.277  27.078 581.196  27.982 581.136  29.849 581.015  31.738 580.886
  33.872 580.738  33.965 580.732  36.017 580.586  36.371 580.434  37.337 580.048
  38.262 579.702  39.069 580.135  39.197 580.189  40.104 580.586  44.597 581.267
  49.151 581.901  52.673 582.404  53.427  582.49  57.439 582.957  58.366 583.064
  59.235 583.146  63.783 583.579  69.317 584.122  69.387 584.123  69.477 584.124
  70.408 584.134  75.573 584.447  77.394 584.546  79.776 584.672  81.417 584.761
  83.189 584.851  93.037 585.097

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.017     .06  40.104     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.017  40.104              2.5    1.96     .99             .1      .3
Left Levee      Station=       0      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1209.75*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.206   1.613 582.224    5.04 582.025   8.398 581.817  10.202 581.782
   12.43 581.745  16.621 581.553  18.196 581.597   20.13 581.664  20.373 581.658
  21.111 581.635  21.442 581.628  21.733 581.614  21.947 581.602  25.476 581.236
  25.981 581.188  27.235 581.105  28.144 581.044  30.022 580.921  31.922 580.791
  34.068 580.642  34.162 580.635  36.226 580.488  36.587 580.344  37.575 579.978
   38.52 579.648  39.322 580.066   39.45 580.117  40.352 580.488  44.844 581.182
  49.397 581.826  52.919 582.337  53.673 582.423  57.684 582.892  58.611 582.999
   59.48 583.085  64.027 583.536  69.561 584.102  69.631 584.102  69.721 584.103
  70.652 584.112  75.816 584.432  77.637 584.533  80.018 584.662  81.659 584.753
  83.431 584.844  93.278 585.081

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.226     .06  40.352     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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```
        36.226  40.352              2.5    1.96     .99             .1       .3
Left Levee      Station=1.368333      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1207.8*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 582.097   1.623 582.115   5.069 581.902   8.446 581.681  10.261 581.645
  12.501 581.606  16.717 581.433  18.301 581.491  20.246 581.573   20.49 581.569
  21.233 581.548  21.565 581.543  21.859 581.529  22.074 581.517  25.623 581.148
  26.131 581.098  27.392 581.014  28.306 580.952  30.195 580.827  32.106 580.695
  34.264 580.545  34.359 580.539  36.435 580.391  36.804 580.253  37.812 579.908
  38.778 579.595  39.576 579.997  39.703 580.044  40.599 580.391  45.091 581.098
  49.644 581.751  53.165 582.269  53.919 582.357   57.93 582.827  58.856 582.935
  59.725 583.024  64.272 583.493  69.804 584.081  69.874 584.082  69.964 584.083
  70.895 584.089  76.059 584.418  77.879 584.521  80.261 584.651  81.901 584.744
  83.673 584.837  93.518 585.065

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.435     .06  40.599     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.435  40.599              2.5    1.96     .99             .1       .3
Left Levee      Station=2.736667      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1205.85*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.987   1.632 582.006   5.098 581.778   8.495 581.546  10.319 581.509
  12.573 581.466  16.812 581.312  18.406 581.385  20.362 581.483  20.608 581.479
  21.355 581.461  21.689 581.457  21.984 581.444    22.2 581.433   25.77  581.06
   26.28 581.009  27.549 580.923  28.469  580.86  30.368 580.733   32.29   580.6
  34.461 580.449  34.556 580.443  36.644 580.293   37.02 580.162   38.05 579.839
  39.036 579.541  39.829 579.927  39.955 579.972  40.847 580.293  45.338 581.013
   49.89 581.675  53.411 582.202  54.165  582.29  58.175 582.762  59.102  582.87
   59.97 582.963  64.516 583.449  70.048 584.061  70.118 584.062  70.208 584.062
  71.139 584.067  76.301 584.404  78.122 584.508  80.503 584.641  82.143 584.735
  83.914 584.831  93.758 585.048

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.644     .06  40.847     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.644  40.847              2.5    1.96     .99             .1       .3
Left Levee      Station=   4.105      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1203.9*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.878   1.641 581.898   5.127 581.655   8.543 581.411  10.378 581.372
  12.645 581.326  16.908 581.191  18.511 581.279  20.478 581.392  20.725 581.389
  21.477 581.374  21.812 581.371  22.109  581.36  22.327 581.349  25.916 580.971
   26.43 580.919  27.706 580.832  28.631 580.769  30.541 580.638  32.474 580.505
  34.657 580.353  34.753 580.346  36.852 580.195  37.237 580.071  38.288 579.769
  39.294 579.487  40.083 579.858  40.208 579.899  41.095 580.195  45.585 580.929
  50.137   581.6  53.657 582.135   54.41 582.223   58.42 582.696  59.347 582.806
  60.215 582.902  64.761 583.406  70.292 584.041  70.362 584.041  70.452 584.041
  71.382 584.045  76.544 584.389  78.364 584.495  80.745 584.631  82.385 584.727
  84.156 584.824  93.999 585.032

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.852     .06  41.095     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.852  41.095              2.5    1.96     .99             .1       .3
Left Levee      Station=5.473333      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1201.95*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.769   1.651 581.789   5.156 581.531   8.592 581.275  10.437 581.235
  12.716 581.187  17.004 581.071  18.615 581.173  20.594 581.301  20.843   581.3
  21.598 581.287  21.936 581.286  22.234 581.275  22.453 581.264  26.063 580.883
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   26.58  580.83  27.863 580.741  28.793 580.677  30.714 580.544  32.658 580.409
  34.854 580.256   34.95  580.25  37.061 580.098  37.453 579.981  38.526 579.699
  39.552 579.434  40.336 579.789  40.461 579.827  41.342 580.098  45.832 580.844
  50.383 581.525  53.903 582.067  54.656 582.156  58.666 582.631  59.592 582.741
   60.46 582.841  65.005 583.363  70.536  584.02  70.606 584.021  70.695 584.021
  71.626 584.022  76.787 584.375  78.607 584.483  80.987  584.62  82.627 584.718
  84.398 584.817   94.24 585.016

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  37.061     .06  41.342     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        37.061  41.342             2.5    1.96     .99             .1       .3
Left Levee      Station=6.841667      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1200

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  581.66    1.66  581.68    8.64  581.14    17.1  580.95   20.71  581.21
   20.96  581.21   21.72   581.2   22.06   581.2   22.36  581.19   22.58  581.18
   26.73  580.74   28.02  580.65   35.05  580.16   37.27     580   37.67  579.89
   39.81  579.38   40.59  579.72   41.59     580   46.08  580.76   50.63  581.45
   54.15     582   65.25  583.32   70.78     584   70.85     584   70.94     584
   71.87     584   77.03  584.36   78.85  584.47   81.23  584.61   82.87  584.71
   84.64  584.81   94.48     585

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   37.27     .06   41.59     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         37.27   41.59             3.8    4.42    5.53             .1       .3
Left Levee      Station=    8.21      Elevation=     584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1195.5*

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.536   1.736 581.547   9.037 581.046  13.279 580.949  13.945 580.935
  14.343 580.927  15.238 580.906  17.885 580.855  21.661 581.082  21.922 581.082
  22.717 581.073  23.073 581.073  23.155  581.07  23.387 581.064  23.617 581.056
  27.385 580.728  27.957 580.678  29.307 580.601  30.689 580.522  36.659 580.142
  37.092 580.114  37.337 580.099  38.981     580  39.417 579.883  39.572 579.847
  40.822 579.484  41.609 579.285  41.749 579.247  42.624 579.647  44.377     580
   45.01 580.095  46.161 580.268  48.796  580.71  49.423 580.806  53.273 581.384
  54.107 581.512  56.736 581.921  61.454 582.499  61.511 582.505  62.289 582.595
  67.658 583.214  70.766 583.583    73.1 583.859  73.169  583.86  73.257 583.861
  74.172 583.869  78.147  584.15   79.25 584.231   81.04 584.346  83.382 584.494
  84.996 584.599  86.738 584.705   87.12 584.715  89.592 584.786  92.932 584.865
  93.869 584.885   96.42 584.938

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  38.981     .06  44.377     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.981  44.377             3.8    4.42    5.53             .1       .3
Left Levee      Station=   21.66      Elevation=

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1191.*

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.412   1.812 581.414   9.433 580.951  13.862 580.849  14.557 580.836
  14.972 580.827  15.906 580.805   18.67 580.761  22.612 580.953  22.885 580.953
  23.715 580.945  24.086 580.945  24.171 580.943  24.413 580.938  24.654 580.932
  28.587 580.659  29.185 580.616  30.593 580.552  32.037 580.486  38.269 580.125
   38.72 580.098  38.976 580.085  40.693     580  41.164 579.877  41.331 579.837
  42.685 579.385  43.536  579.16  43.688 579.115  44.658 579.575  47.165     580
  47.787 580.082  48.919  580.23  51.511 580.661  52.128 580.755  55.915 581.317
  56.736 581.442  59.322 581.843  63.964 582.428  64.019 582.433  64.785 582.518
  70.067 583.108  73.123 583.459   75.42 583.719  75.487  583.72  75.574 583.721
  76.475 583.737  80.385 584.019  81.469 584.101  83.231 584.222  85.535 584.377
  87.122 584.487  88.835 584.599  89.211 584.613  91.643 584.707  94.929 584.799
  95.851  584.82   98.36 584.875

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  40.693     .06  47.165     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.693  47.165             3.8    4.42    5.53             .1       .3
Left Levee      Station=   22.52      Elevation=
```

```
CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1186.5

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.289   1.889 581.281    9.83 580.857  14.445 580.749  15.169 580.737
  15.602 580.728  16.575 580.704  19.455 580.666  23.563 580.825  23.847 580.825
  24.712 580.818  25.099 580.818  25.188 580.816   25.44 580.812   25.69 580.807
  29.789 580.589  30.412 580.554   31.88 580.503  33.384  580.45  39.878 580.107
  40.348 580.081  40.615 580.071  42.404     580  42.911  579.87  43.091 579.828
  44.547 579.285  45.464 579.035  45.626 578.982  46.691 579.503  49.952     580
  50.564 580.068  51.678 580.192  54.227 580.611  54.833 580.704  58.558 581.251
  59.365 581.372  61.909 581.764  66.473 582.356  66.528 582.361  67.281 582.442
  72.475 583.002  75.481 583.334  77.739 583.578  77.806  583.58  77.892 583.582
  78.777 583.606  82.622 583.887  83.689 583.972  85.421 584.098  87.687 584.261
  89.248 584.375  90.933 584.494  91.303 584.511  93.694 584.628  96.926 584.732
  97.832 584.755   100.3 584.812

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  42.404     .06  49.952     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        42.404  49.952              3.8    4.42    5.53             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1182

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.165   1.965 581.148  10.227 580.762  15.028 580.649  15.781 580.637
  16.231 580.628  17.244 580.603  20.241 580.572  24.514 580.697   24.81 580.697
  25.709 580.691  26.112  580.69  26.204 580.689  26.467 580.687  26.727 580.683
  30.991 580.519  31.639 580.493  33.166 580.454  34.731 580.414  41.487 580.089
  41.977 580.065  42.254 580.057  44.115     580  44.658 579.864  44.851 579.818
   46.41 579.186  47.391  578.91  47.565  578.85  48.725  579.43   52.74     580
  53.341 580.054  54.436 580.153  56.942 580.562  57.539 580.653  61.201 581.184
  61.994 581.301  64.495 581.685  68.982 582.285  69.036 582.289  69.777 582.366
  74.883 582.896  77.839 583.209  80.059 583.437  80.125  583.44  80.209 583.443
  81.079 583.475   84.86 583.756  85.908 583.842  87.612 583.974  89.839 584.145
  91.374 584.264  93.031 584.389  93.394 584.409  95.745 584.548  98.923 584.666
  99.814  584.69  102.24  584.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.115     .06   52.74     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.115   52.74              1.48    1.72    2.15             .1       .3
Right Levee     Station=  73.125      Elevation=     585

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1180.25*

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 581.117   1.995 581.096  10.381 580.725  15.255  580.61  16.019 580.599
  16.475 580.589  17.504 580.564  20.546 580.535  24.884 580.647  25.184 580.647
  26.097 580.641  26.506 580.641  26.599  580.64  26.866 580.638   27.13 580.635
  31.458 580.492  32.116 580.469  33.666 580.435  35.255   580.4  42.112 580.082
   42.61 580.059  42.891 580.052  44.781     580  45.337 579.862  45.535 579.814
  47.134 579.148   48.14 578.862  48.319 578.798  49.308 579.298  49.553 579.406
  53.824     580  54.421 580.049  55.509 580.138  57.998 580.543  58.591 580.633
  62.229 581.158  63.016 581.274  65.501 581.654  69.958 582.257  70.011 582.261
  70.747 582.336  75.819 582.855  78.756 583.161  80.961 583.382  81.027 583.385
   81.11 583.389  81.974 583.424  85.729 583.705  86.771 583.792  88.463 583.926
  90.676   584.1  92.201  584.22  93.847 584.348  94.207 584.369  96.543 584.517
  99.699  584.64 100.584 584.665 102.994 584.726

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.781     .06  53.824     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.781  53.824              1.48    1.72    2.15             .1       .3
Right Levee     Station=74.63325      Elevation=     585

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1178.5*

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
      0 581.068   2.024 581.044  10.535 580.688  15.481 580.572  16.257  580.56
  16.72 580.551  17.764 580.525  20.851 580.499  25.253 580.597  25.558 580.597
 26.484 580.592    26.9 580.591  26.994  580.59  27.265 580.589  27.533 580.586
 31.926 580.464  32.593 580.445  34.166 580.416  35.779 580.386  42.738 580.075
 43.243 580.052  43.528 580.046  45.446     580  46.017 579.859  46.219 579.811
 47.858 579.109   48.89 578.813  49.073 578.747  50.121 579.281  50.381 579.382
 54.908     580  55.501 580.044  56.581 580.124  59.054 580.523  59.643 580.613
 63.256 581.132  64.038 581.246  66.506 581.624  70.934 582.229  70.987 582.233
 71.718 582.307  76.756 582.813  79.673 583.112  81.863 583.328  81.928 583.331
 82.011 583.334  82.869 583.373    86.6 583.653  87.634 583.741  89.315 583.877
 91.513 584.055  93.027 584.177  94.662 584.307   95.02 584.329   97.34 584.486
100.476 584.615 101.355  584.64 103.749 584.702

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.446     .06  54.908     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.446  54.908             1.48    1.72    2.15             .1       .3
Right Levee     Station=76.14149      Elevation=     585

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1176.75*

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  581.02   2.054 580.993   10.69 580.652  15.708 580.533  16.495 580.521
  16.965 580.512  18.024 580.485  21.157 580.462  25.623 580.547  25.933 580.547
  26.872 580.542  27.294 580.542   27.39 580.541  27.665  580.54  27.937 580.538
  32.393 580.437  33.071 580.421  34.667 580.397  36.303 580.372  43.364 580.068
  43.877 580.046  44.166  580.04  46.111     580  46.696 579.857  46.904 579.807
  48.583  579.07  49.639 578.765  49.827 578.695  50.935 579.264  51.209 579.359
  55.992     580  56.581 580.038  57.654 580.109   60.11 580.504  60.695 580.594
  64.284 581.107  65.061 581.219  67.512 581.594   71.91 582.202  71.962 582.205
  72.688 582.277  77.692 582.772   80.59 583.063  82.765 583.273   82.83 583.276
  82.912  583.28  83.765 583.322   87.47 583.602  88.498 583.691  90.167 583.829
   92.35 584.009  93.854 584.133  95.478 584.266  95.834  584.29  98.138 584.455
 101.252 584.589 102.125 584.614 104.504 584.677

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.111     .06  55.992     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.111  55.992             1.48    1.72    2.15             .1       .3
Right Levee     Station=77.64975      Elevation=     585

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1175

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.972   2.084 580.941  10.844 580.615  15.935 580.494  16.733 580.483
   17.21 580.473  18.285 580.446  21.462 580.425  25.993 580.497  26.307 580.497
   27.26 580.493  27.688 580.492  27.785 580.491  28.064 580.491   28.34  580.49
  32.861  580.41  33.548 580.397  35.167 580.378  36.827 580.358   43.99 580.061
   44.51  580.04  44.803 580.035  46.777     580  47.376 579.854  47.588 579.803
  49.307 579.032  50.389 578.716  50.581 578.644  51.748 579.247  52.037 579.335
  57.076     580  57.661 580.033  58.727 580.094  61.166 580.485  61.747 580.574
  65.312 581.081  66.083 581.192  68.518 581.563  72.886 582.174  72.938 582.177
  73.659 582.247  78.629 582.731  81.507 583.015  83.668 583.218  83.732 583.222
  83.814 583.226   84.66 583.271   88.34 583.551  89.361 583.641  91.019 583.781
  93.187 583.964  94.681  584.09  96.294 584.225  96.647  584.25  98.936 584.424
 102.029 584.563 102.896 584.589 105.258 584.653

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.777     .06  57.076     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.777  57.076             1.52    1.77    2.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   46.58               F
   57.05 105.258               F
Right Levee     Station=  79.158      Elevation=     585

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1173.2*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.923   2.114 580.888  11.003 580.577  16.168 580.454  16.978 580.443
  17.462 580.433  18.552 580.406  21.776 580.387  26.373 580.446  26.692 580.446
  27.659 580.442  28.093 580.441  28.192  580.44  28.475 580.441  28.754  580.44
  33.342 580.382  34.039 580.372  35.682 580.358  37.366 580.344  44.634 580.054
  45.161 580.033  45.459 580.029  47.461     580   48.03 579.862  48.231 579.814
  48.316 579.778   48.62 579.652  49.862 579.032  50.889 578.655  51.071 578.575
```

```
  51.313 578.575  51.356 578.575  52.584 579.229  52.889 579.311  58.191     580
  58.772 580.028   59.83 580.079  62.252 580.465  62.829 580.554  66.369 581.054
  67.135 581.164  69.552 581.532  73.889 582.146  73.941 582.148  74.657 582.216
  79.592 582.689   82.45 582.965  84.595 583.162  84.659 583.166   84.74  583.17
  85.581 583.218  89.235 583.498  90.249 583.589  91.895 583.731  94.048 583.917
  95.531 584.045  97.133 584.183  97.484 584.209  99.756 584.392 102.828 584.536
 103.689 584.563 106.034 584.628

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.461     .06  58.191     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.461  58.191            1.52    1.77    2.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  47.724               F
    56.7 106.034               F
Right Levee     Station=  81.922      Elevation=   585.6

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1171.4*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.873   2.145 580.834  11.161 580.539  16.401 580.414  17.223 580.403
  17.714 580.393  18.819 580.366   22.09 580.349  26.754 580.395  27.077 580.394
  28.058 580.391  28.498  580.39  28.598 580.389  28.885  580.39  29.169 580.391
  33.823 580.354   34.53 580.347  36.196 580.338  37.905 580.329  45.277 580.047
  45.812 580.027  46.114 580.023  48.146     580  48.684  579.87  48.874 579.825
  48.955 579.794  49.242 579.685  50.417 579.032  51.389 578.594  51.561 578.506
  52.046 578.506  52.132 578.506  53.421 579.212   53.74 579.287  59.306     580
  59.883 580.022  60.934 580.063  63.338 580.445  63.911 580.534  67.426 581.028
  68.186 581.136  70.587   581.5  74.893 582.117  74.945 582.119  75.656 582.186
  80.556 582.646  83.393 582.915  85.523 583.106  85.587  583.11  85.667 583.115
  86.502 583.166   90.13 583.446  91.136 583.537  92.771 583.682  94.909 583.871
  96.382 584.001  97.972 584.141   98.32 584.168 100.577  584.36 103.626  584.51
 104.481 584.537  106.81 584.603

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.146     .06  59.306     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.146  59.306            1.52    1.77    2.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  48.868               F
   56.35  106.81               F
Right Levee     Station=  84.686      Elevation=   586.2

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1169.6*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.824   2.175 580.781   11.32 580.502  16.634 580.374  17.467 580.364
  17.965 580.354  19.087 580.325  22.404 580.311  27.134 580.343  27.462 580.343
  28.457  580.34  28.903 580.339  29.005 580.339  29.296  580.34  29.584 580.341
  34.303 580.327  35.021 580.323  36.711 580.319  38.443 580.315  45.921  580.04
  46.464  580.02   46.77 580.018   48.83     580  49.337 579.878  49.517 579.835
  49.593  579.81  49.864 579.718  50.973 579.032  51.889 578.533  52.052 578.438
  52.778 578.438  52.907 578.438  54.257 579.194  54.592 579.262  60.421     580
  60.994 580.017  62.037 580.048  64.425 580.425  64.993 580.513  68.483 581.001
  69.238 581.107  71.621 581.469  75.896 582.089  75.948  582.09  76.654 582.155
  81.519 582.604  84.336 582.865  86.451 583.049  86.514 583.054  86.594 583.059
  87.423 583.113  91.025 583.393  92.024 583.486  93.648 583.632   95.77 583.824
  97.232 583.956  98.811 584.098  99.157 584.127 101.397 584.329 104.425 584.483
 105.274 584.511 107.586 584.578

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   48.83     .06  60.421     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.83  60.421            1.52    1.77    2.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  50.012               F
      56 107.586               F
Right Levee     Station=   87.45      Elevation=   586.8

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1167.8*

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.774   2.206 580.727  11.479 580.464  16.868 580.334  17.712 580.324
```

```
  18.217 580.314  19.354 580.285  22.718 580.273  27.514 580.292  27.847 580.291
  28.855 580.289  29.308 580.288  29.411 580.288  29.706 580.289  29.998 580.292
  34.784 580.299  35.511 580.298  37.225 580.299  38.982   580.3  46.564 580.033
  47.115 580.014  47.425 580.012  49.515     580  49.991 579.886   50.16 579.846
  50.232 579.825  50.486 579.751  51.528 579.032  52.389 578.471  52.542 578.369
  53.511 578.369  53.683 578.369  55.094 579.176  55.443 579.238  61.536     580
  62.105 580.011  63.141 580.032  65.511 580.405  66.076 580.493   69.54 580.975
   70.29 581.079  72.656 581.437    76.9  582.06  76.952 582.061  77.652 582.125
  82.482 582.561  85.279 582.815  87.379 582.993  87.442 582.998  87.521 583.004
  88.344 583.061   91.92 583.341  92.912 583.434  94.524 583.583  96.631 583.778
  98.083 583.912   99.65 584.056  99.993 584.086 102.218 584.297 105.224 584.457
 106.066 584.485 108.362 584.553

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.515     .06  61.536     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.515  61.536            1.52    1.77    2.21             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  51.156               F
   55.65 108.362               F
Right Levee     Station=  90.214      Elevation=   587.4

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1166

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.725   2.236 580.674  11.638 580.426  17.101 580.294  17.958 580.284
   18.47 580.274  19.622 580.245  23.033 580.235  27.895 580.241  28.232  580.24
  29.255 580.238  29.713 580.237  29.818 580.237  30.117 580.239  30.413 580.242
  35.265 580.271  36.003 580.273   37.74 580.279  39.521 580.286  47.209 580.026
  47.766 580.007  48.082 580.006  50.199     580   50.87 579.841  51.108 579.784
  53.032   578.3  54.243   578.3  54.458   578.3  55.931 579.159  56.295 579.214
  62.651     580  63.216 580.006  64.244 580.017  66.597 580.385  67.158 580.473
  70.597 580.948  71.342 581.051  73.691 581.406  77.904 582.032  77.955 582.032
  78.651 582.094  83.446 582.519  86.222 582.765  88.307 582.937  88.369 582.942
  88.448 582.948  89.265 583.008  92.816 583.288    93.8 583.382    95.4 583.533
  97.492 583.731  98.933 583.867 100.489 584.014  100.83 584.045 103.038 584.265
 106.023  584.43 106.859 584.459 109.138 584.528

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.199     .06  62.651     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.199  62.651           19.85   19.21   20.61             .1       .3
Right Levee     Station=  92.978      Elevation=     588

CULVERT


RIVER: arroyo_maquinas
REACH: casillas           RS: 1155

INPUT
Description: ODT N°1. D1800 actual que se modeliza como marco de 3*2 m
Distance from Upstream XS =     2.5
Deck/Roadway Width        =      14
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   581.5     577      80   581.5     577

Upstream Bridge Cross Section Data
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.725   2.236 580.674  11.638 580.426  17.101 580.294  17.958 580.284
   18.47 580.274  19.622 580.245  23.033 580.235  27.895 580.241  28.232  580.24
  29.255 580.238  29.713 580.237  29.818 580.237  30.117 580.239  30.413 580.242
  35.265 580.271  36.003 580.273   37.74 580.279  39.521 580.286  47.209 580.026
  47.766 580.007  48.082 580.006  50.199     580   50.87 579.841  51.108 579.784
  53.032   578.3  54.243   578.3  54.458   578.3  55.931 579.159  56.295 579.214
  62.651     580  63.216 580.006  64.244 580.017  66.597 580.385  67.158 580.473
  70.597 580.948  71.342 581.051  73.691 581.406  77.904 582.032  77.955 582.032
  78.651 582.094  83.446 582.519  86.222 582.765  88.307 582.937  88.369 582.942
  88.448 582.948  89.265 583.008  92.816 583.288    93.8 583.382    95.4 583.533
  97.492 583.731  98.933 583.867 100.489 584.014  100.83 584.045 103.038 584.265
 106.023  584.43 106.859 584.459 109.138 584.528

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.199     .06  62.651     .06

Bank Sta: Left   Right    Coeff Contr.   Expan.
        50.199  62.651            .1       .3
Right Levee     Station=  92.978      Elevation=     588

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   581.5     577      80   581.5     577

Downstream Bridge Cross Section Data
Station Elevation Data    num=      60
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  580.09     2.3  580.07    7.52  580.02     8.3     580    9.37     580
   15.04  579.89   16.84  579.84   17.63   579.8    19.6  579.63    21.3  579.49
   22.61  579.39   23.77  579.28   29.43  578.82   34.86  578.48    37.5  578.23
   39.15   578.1   39.93  578.14   40.53     578   42.69  577.83   44.19  577.74
   45.43  577.68   47.53  577.63   49.33  577.66   49.72  577.57   52.13  577.75
   52.64  577.69   53.81   577.3   54.34   577.3   54.83   577.3    56.5  577.75
   57.49  578.44   59.34  579.04   62.82  579.84   62.97  579.89   63.04  579.91
   63.36     580   68.71     580   71.74     580   77.92  580.73   79.74  580.73
   84.88  580.56   86.64  580.85      89  581.14   90.53  581.28   92.51  581.58
   94.88     582   96.28  582.13  107.51  583.13  108.37  583.21  108.41  583.21
   108.5  583.22  108.52  583.22  108.53  583.22  108.55  583.22  108.56  583.22
  108.58  583.22  108.59  583.22   108.6  583.22  108.63  583.22     110   583.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   52.13     .06    56.5     .06

Bank Sta: Left   Right    Coeff Contr.   Expan.
         52.13    56.5             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0      53             F
      56     110             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       3
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               2.5      14     .015     .015        0                   .2               1
Upstream   Elevation =  578.3
           Centerline Station =  53.8
Downstream Elevation =  577.3
           Centerline Station =  54.5

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

  Q Culv Group (m3/s)       7.12    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         2.86
  Q Barrel (m3/s)           7.12    Culv Vel DS (m/s)         5.53
  E.G. US. (m)            579.63    Culv Inv El Up (m)      578.30
  W.S. US. (m)            579.46    Culv Inv El Dn (m)      577.30
  E.G. DS (m)             578.64    Culv Frctn Ls (m)         0.26
  W.S. DS (m)             578.23    Culv Exit Loss (m)        0.64
  Delta EG (m)              0.99    Culv Entr Loss (m)        0.08
  Delta WS (m)              1.23    Q Weir (m3/s)
  E.G. IC (m)             579.55    Weir Sta Lft (m)
  E.G. OC (m)             579.63    Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)       579.13    Weir Max Depth (m)
  Culv WS Outlet (m)      577.73    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.32    Weir Flow Area (m2)
  Culv Crt Depth (m)        0.83    Min El Weir Flow (m)    581.50


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)      17.37    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         3.84
  Q Barrel (m3/s)          17.37    Culv Vel DS (m/s)         6.54
  E.G. US. (m)            580.77    Culv Inv El Up (m)      578.30
  W.S. US. (m)            580.76    Culv Inv El Dn (m)      577.30
  E.G. DS (m)             579.66    Culv Frctn Ls (m)         0.20
  W.S. DS (m)             578.91    Culv Exit Loss (m)        0.71
  Delta EG (m)              1.12    Culv Entr Loss (m)        0.21
  Delta WS (m)              1.85    Q Weir (m3/s)
  E.G. IC (m)             580.77    Weir Sta Lft (m)
  E.G. OC (m)             580.71    Weir Sta Rgt (m)
  Culvert Control          Inlet    Weir Submerg
  Culv WS Inlet (m)       579.81    Weir Max Depth (m)
  Culv WS Outlet (m)      578.19    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.58    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.51    Min El Weir Flow (m)    581.50


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.

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 1147
```

```
INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  580.09     2.3  580.07    7.52  580.02     8.3     580    9.37     580
   15.04  579.89   16.84  579.84   17.63   579.8    19.6  579.63    21.3  579.49
   22.61  579.39   23.77  579.28   29.43  578.82   34.86  578.48    37.5  578.23
   39.15   578.1   39.93  578.14   40.53     578   42.69  577.83   44.19  577.74
   45.43  577.68   47.53  577.63   49.33  577.66   49.72  577.57   52.13  577.75
   52.64  577.69   53.81   577.3   54.34   577.3   54.83   577.3    56.5  577.75
   57.49  578.44   59.34  579.04   62.82  579.84   62.97  579.89   63.04  579.91
   63.36     580   68.71     580   71.74     580   77.92  580.73   79.74  580.73
   84.88  580.56   86.64  580.85      89  581.14   90.53  581.28   92.51  581.58
   94.88     582   96.28  582.13  107.51  583.13  108.37  583.21  108.41  583.21
   108.5  583.22  108.52  583.22  108.53  583.22  108.55  583.22  108.56  583.22
  108.58  583.22  108.59  583.22   108.6  583.22  108.63  583.22     110   583.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   52.13     .06    56.5     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         52.13    56.5             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0      53          F
      56     110          F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1145.07*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 580.004   2.301 579.983   3.167 579.974   5.647 579.949   7.522 579.928
   8.303 579.907   9.373 579.905   12.16 579.848  13.564  579.82  15.045 579.791
  16.845 579.741  17.636 579.702  19.606 579.541  19.729 579.531  21.307 579.405
  22.617 579.308  23.777 579.202  26.551 578.983  27.009 578.945  29.439 578.702
  30.605 578.606  31.521 578.555  32.049 578.525  34.871 578.347  37.512 578.102
  37.745 578.084  38.283  578.04  39.162 577.979  39.943 578.018  40.543  577.89
  41.191 577.845  42.038 577.784  42.526 577.749  42.703 577.737  42.904 577.726
  43.323 577.703  43.751  577.68  44.204 577.656  44.269 577.653  45.444 577.588
  47.545 577.521  48.272 577.525  49.346 577.541  49.736 577.458  52.146 577.625
  52.685 577.538  53.332 577.311  53.921 577.106  54.414 577.106  54.869 577.106
   55.47  577.27  56.758 577.625  57.743 578.279  59.584  578.86  62.531 579.531
  63.047 579.649  63.197 579.697  63.266 579.717  63.585 579.805  67.398 579.857
  68.909 579.869  71.924 579.893  78.075  580.62  79.886 580.635  80.716 580.616
  84.121 580.535  85.001 580.513  86.095 580.688  86.753 580.792  89.101  581.07
  90.624 581.205  91.975 581.401  92.594 581.491  94.953  581.89  95.123 581.906
   96.03 581.988  96.346 582.014 102.658 582.514 103.469  582.57 104.173 582.597
 104.483 582.607 104.717 582.616  106.34 582.665 106.638 582.679 106.991 582.694
 107.522 582.742 108.378 582.822 108.418 582.823 108.507 582.833 108.527 582.833
 108.557 582.833 108.587 582.833 108.637 582.833 109.691 582.826     110 582.824

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.146     .06  56.758     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.146  56.758             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
      053.01357          F
56.19357     110          F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1143.14*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.917   2.301 579.896   3.168 579.887   5.649  579.86   7.525 579.836
   8.305 579.815   9.376  579.81  12.164 579.751  13.569 579.722  15.049 579.692
  16.851 579.642  17.641 579.605  19.612 579.452  19.735 579.443  21.313  579.32
  22.624 579.226  23.785 579.123   26.56 578.911  27.018 578.872  29.449 578.584
  30.614 578.465  31.531  578.42  32.059 578.393  34.882 578.214  37.524 577.974
  37.757 577.956  38.295 577.911  39.175 577.857  39.955 577.896  40.556  577.78
  41.204 577.741  42.051 577.686  42.539 577.655  42.717 577.644  42.918 577.634
  43.336 577.614  43.765 577.593  44.218 577.571  44.283 577.569  45.459 577.497
   47.56 577.412  48.288 577.408  49.361 577.423  49.751 577.346  52.163   577.5
  52.731 577.386  53.412 577.137  54.033 576.913  54.487 576.913  54.907 576.913
  55.579 577.096  57.016   577.5  57.996 578.117  59.828  578.68  62.761 579.341
  63.275 579.457  63.423 579.504  63.493 579.523   63.81 579.609  67.604 579.714
  69.108 579.738  72.109 579.787  78.229 580.511  80.032  580.54  80.858 580.529
  84.246 580.481  85.122 580.467  86.211 580.635  86.865 580.733  89.202 580.999
  90.718  581.13  92.062 581.316  92.679 581.402  95.026  581.78  95.195 581.795
  96.098 581.875  96.412 581.898 102.693 582.333   103.5 582.372 104.201 582.365
 104.509 582.357 104.743 582.352 106.357 582.306 106.655 582.307 107.005 582.306
 107.534 582.354 108.386 582.435 108.425 582.435 108.514 582.445 108.534 582.445
 108.564 582.446 108.594 582.446 108.643 582.447 109.692 582.448     110 582.449

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.163     .06  57.016     .06
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.163  57.016             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.02714               F
56.38714     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1141.21*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.831   2.302 579.809   3.169   579.8    5.65 579.771   7.527 579.743
   8.308 579.722   9.379 579.715  12.168 579.653  13.573 579.623  15.054 579.592
  16.856 579.543  17.647 579.507  19.619 579.363  19.742 579.354   21.32 579.236
  22.631 579.144  23.792 579.045  26.568 578.839  27.026 578.799  29.458 578.466
  30.624 578.323  31.541 578.285  32.069 578.261  34.893 578.081  37.535 577.846
  37.769 577.828  38.307 577.782  39.187 577.736  39.968 577.774  40.568  577.67
  41.217 577.636  42.064 577.588  42.553  577.56   42.73 577.551  42.931 577.542
   43.35 577.524  43.778 577.506  44.232 577.487  44.297 577.485  45.473 577.405
  47.575 577.303  48.303  577.29  49.377 577.304  49.767 577.234  52.179 577.375
  52.776 577.234  53.491 576.962  54.144 576.719  54.561 576.719  54.946 576.719
  55.687 576.922  57.274 577.375  58.249 577.956  60.073   578.5  62.991 579.151
  63.502 579.266   63.65 579.311  63.719  579.33  64.034 579.414   67.81 579.571
  69.307 579.608  72.293  579.68  78.384 580.401  80.178 580.444      81 580.443
  84.371 580.427  85.243  580.42  86.326 580.582  86.978 580.675  89.304 580.929
  90.812 581.055   92.15 581.232  92.763 581.313  95.099  581.67  95.267 581.685
  96.166 581.762  96.478 581.781 102.729 582.152 103.532 582.174  104.23 582.132
 104.536 582.106 104.769 582.089 106.375 581.948 106.671 581.934  107.02 581.918
 107.546 581.967 108.394 582.047 108.433 582.048 108.522 582.058 108.541 582.058
 108.571 582.059 108.601 582.059  108.65  582.06 109.694  582.07     110 582.073

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.179     .06  57.274     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.179  57.274             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.04071               F
56.58072     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1139.28*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.744   2.303 579.722    3.17 579.713   5.652 579.681   7.529 579.651
    8.31  579.63   9.382  579.62  12.172 579.556  13.577 579.525  15.059 579.493
  16.861 579.444  17.652  579.41  19.625 579.274  19.748 579.266  21.327 579.151
  22.639 579.062    23.8 578.967  26.576 578.768  27.035 578.727  29.467 578.348
  30.634 578.182  31.551  578.15  32.079 578.129  34.904 577.948  37.547 577.717
  37.781   577.7  38.319 577.652  39.199 577.614   39.98 577.653  40.581  577.56
   41.23 577.532  42.078  577.49  42.566 577.466  42.744 577.459  42.945  577.45
  43.364 577.435  43.792 577.419  44.246 577.402  44.311 577.401  45.487 577.313
   47.59 577.193  48.318 577.173  49.392 577.186  49.783 577.121  52.196  577.25
  52.821 577.082  53.571 576.787  54.256 576.526  54.634 576.526  54.984 576.526
  55.796 576.748  57.531  577.25  58.502 577.795  60.317  578.32  63.221 578.961
   63.73 579.074  63.877 579.118  63.945 579.136  64.259 579.218  68.017 579.429
  69.506 579.477  72.478 579.573  78.538 580.291  80.323 580.349  81.142 580.356
  84.497 580.372  85.364 580.373  86.442 580.529   87.09 580.617  89.405 580.858
  90.905  580.98  92.237 581.147  92.847 581.224  95.171  581.56   95.34 581.574
  96.233 581.649  96.545 581.665 102.764 581.971 103.564 581.977 104.258 581.899
 104.563 581.856 104.794 581.825 106.393 581.589 106.687 581.562 107.034  581.53
 107.558 581.579 108.401  581.66 108.441 581.661 108.529  581.67 108.549 581.671
 108.578 581.672 108.607 581.672 108.656 581.674 109.695 581.692     110 581.697

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.196     .06  57.531     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.196  57.531             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.05429               F
56.77428     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1137.35*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.658   2.304 579.635   3.171 579.625   5.654 579.592   7.532 579.559
   8.313 579.537   9.385 579.525  12.176 579.458  13.582 579.426  15.064 579.394
  16.867 579.345  17.658 579.312  19.631 579.185  19.754 579.177  21.334 579.066
  22.646 578.979  23.807 578.889  26.585 578.696  27.043 578.654  29.476  578.23
```

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  30.643 578.041  31.561 578.015  32.089 577.997  34.915 577.815  37.559 577.589
  37.793 577.572  38.331 577.523  39.212 577.493  39.993 577.531  40.594  577.45
  41.243 577.428  42.091 577.392  42.579 577.371  42.757 577.366  42.958 577.358
  43.377 577.345  43.806 577.332   44.26 577.318  44.324 577.317  45.502 577.221
  47.605 577.084  48.333 577.056  49.408 577.067  49.798 577.009  52.212 577.125
  52.866 576.931  53.651 576.612  54.367 576.332  54.708 576.332  55.023 576.332
  55.904 576.574  57.789 577.125  58.755 577.633  60.561  578.14  63.451 578.771
  63.957 578.883  64.103 578.925  64.172 578.943  64.484 579.023  68.223 579.286
  69.705 579.346  72.662 579.467  78.693 580.182  80.469 580.254  81.284 580.269
  84.622 580.318  85.485 580.326  86.558 580.476  87.203 580.558  89.506 580.788
  90.999 580.905  92.324 581.062  92.931 581.135  95.244  581.45  95.412 581.464
  96.301 581.536  96.611 581.549   102.8 581.789 103.595 581.779 104.286 581.666
  104.59 581.605  104.82 581.562  106.41  581.23 106.703  581.19 107.049 581.142
  107.57 581.191 108.409 581.272 108.448 581.273 108.536 581.283 108.556 581.284
 108.585 581.285 108.614 581.286 108.663 581.287 109.697 581.314     110 581.321

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.212     .06  57.789     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.212  57.789             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.06786               F
56.96786     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1135.42*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.571   2.304 579.548   3.172 579.538   5.656 579.503   7.534 579.467
   8.316 579.445   9.388  579.43  12.179 579.361  13.586 579.328  15.068 579.295
  16.872 579.246  17.663 579.215  19.637 579.096   19.76 579.089   21.34 578.982
  22.653 578.897  23.815  578.81  26.593 578.624  27.052 578.581  29.486 578.112
  30.653   577.9  31.571  577.88  32.099 577.865  34.926 577.681  37.571 577.461
  37.805 577.444  38.344 577.394  39.224 577.371  40.006 577.409  40.607  577.34
  41.256 577.324  42.104 577.294  42.593 577.277  42.771 577.273  42.972 577.266
  43.391 577.256   43.82 577.245  44.274 577.234  44.338 577.232  45.516  577.13
   47.62 576.975  48.348 576.938  49.423 576.949  49.814 576.897  52.229     577
  52.912 576.779  53.731 576.438  54.479 576.139  54.781 576.139  55.061 576.139
  56.013 576.401  58.047     577  59.009 577.472  60.805  577.96  63.681  578.58
  64.184 578.691   64.33 578.732  64.398 578.749  64.709 578.827  68.429 579.143
  69.904 579.215  72.846  579.36  78.848 580.072  80.615 580.159  81.425 580.183
  84.747 580.264  85.606  580.28  86.674 580.423  87.316   580.5  89.607 580.717
  91.093 580.831  92.412 580.978  93.016 581.046  95.317  581.34  95.484 581.353
  96.369 581.423  96.677 581.433 102.836 581.608 103.627 581.581 104.314 581.433
 104.616 581.355 104.845 581.298 106.428 580.871  106.72 580.818 107.063 580.754
 107.582 580.803 108.417 580.884 108.456 580.886 108.543 580.895 108.563 580.896
 108.592 580.897 108.621 580.899  108.67 580.901 109.698 580.935     110 580.946

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.229     .06  58.047     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.229  58.047             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.08143               F
57.16143     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1133.5*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.485   2.305 579.461   3.173 579.451   5.658 579.414   7.537 579.375
   8.318 579.352   9.391 579.335  12.183 579.263   13.59 579.229  15.073 579.196
  16.877 579.147  17.669 579.117  19.643 579.007  19.766     579  21.347 578.897
   22.66 578.815  23.822 578.732  26.601 578.552   27.06 578.509  29.495 577.994
  30.663 577.759   31.58 577.745  32.109 577.733  34.937 577.548  37.583 577.333
  37.817 577.316  38.356 577.265  39.236  577.25  40.018 577.287  40.619 577.231
  41.269 577.219  42.117 577.196  42.606 577.182  42.784  577.18  42.985 577.174
  43.404 577.166  43.834 577.159  44.287 577.149  44.352 577.148   45.53 577.038
  47.635 576.866  48.364 576.821  49.439  576.83   49.83 576.785  52.245 576.875
  52.957 576.627  53.811 576.263   54.59 575.945  54.855 575.945    55.1 575.945
  56.121 576.227  58.305 576.875  59.262  577.31  61.049 577.779  63.911  578.39
  64.412   578.5  64.557 578.539  64.624 578.556  64.934 578.632  68.636     579
  70.103 579.085  73.031 579.253  79.002 579.962  80.761 580.064  81.567 580.096
  84.873  580.21  85.728 580.233   86.79 580.371  87.428 580.442  89.709 580.647
  91.187 580.756  92.499 580.893    93.1 580.957   95.39  581.23  95.556 581.243
  96.436  581.31  96.743 581.316 102.871 581.427 103.659 581.384 104.342   581.2
 104.643 581.104 104.871 581.035 106.446 580.512 106.736 580.445 107.078 580.366
 107.594 580.416 108.425 580.497 108.464 580.499 108.551 580.508  108.57 580.509
 108.599  580.51 108.628 580.512 108.676 580.514   109.7 580.557     110  580.57

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.245     .06  58.305     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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        52.245  58.305             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  53.095               F
  57.355     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1131.57*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.399   2.306 579.373   3.174 579.364   5.659 579.325   7.539 579.283
   8.321  579.26   9.394  579.24  12.187 579.165  13.594 579.131  15.078 579.097
  16.882 579.048  17.674  579.02  19.649 578.918  19.773 578.911  21.354 578.812
  22.667 578.733   23.83 578.654   26.61 578.481  27.069 578.436  29.504 577.876
  30.672 577.617   31.59  577.61  32.119 577.601  34.948 577.415  37.595 577.205
  37.829 577.188  38.368 577.135  39.249 577.128  40.031 577.165  40.632 577.121
  41.282 577.115  42.131 577.098   42.62 577.087  42.798 577.087  42.999 577.082
  43.418 577.077  43.847 577.072  44.301 577.065  44.366 577.064  45.545 576.946
   47.65 576.757  48.379 576.704  49.454 576.711  49.845 576.673  52.261  576.75
  53.002 576.475  53.891 576.088  54.701 575.751  54.929 575.751  55.139 575.751
  56.229 576.053  58.563  576.75  59.515 577.149  61.293 577.599  64.141   578.2
  64.639 578.308  64.783 578.346  64.851 578.363  65.158 578.436  68.842 578.857
  70.302 578.954  73.215 579.147  79.157 579.853  80.907 579.968  81.709  580.01
  84.998 580.155  85.849 580.186  86.905 580.318  87.541 580.383   89.81 580.576
  91.281 580.681  92.586 580.808  93.184 580.868  95.463  581.12  95.628 581.133
  96.504 581.197  96.809   581.2 102.907 581.246  103.69 581.186 104.371 580.967
  104.67 580.853 104.896 580.771 106.464 580.153 106.752 580.073 107.093 579.978
 107.606 580.028 108.433 580.109 108.471 580.111 108.558 580.121 108.577 580.122
 108.606 580.123 108.635 580.125 108.683 580.128 109.701 580.179     110 580.194

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.261     .06  58.563     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.261  58.563             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.10857               F
57.54857     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1129.64*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.312   2.307 579.286   3.175 579.276   5.661 579.236   7.541  579.19
   8.324 579.167   9.397 579.145  12.191 579.068  13.599 579.032  15.083 578.997
  16.888  578.95   17.68 578.922  19.656 578.828  19.779 578.823   21.36 578.727
  22.674 578.651  23.837 578.576  26.618 578.409  27.077 578.363  29.513 577.758
  30.682 577.476    31.6 577.475   32.13  577.47  34.959 577.282  37.606 577.077
  37.841  577.06   38.38 577.006  39.261 577.007  40.043 577.043  40.645 577.011
  41.295 577.011  42.144     577  42.633 576.993  42.811 576.994  43.012  576.99
  43.432 576.987  43.861 576.985  44.315 576.981   44.38  576.98  45.559 576.854
  47.665 576.648  48.394 576.586   49.47 576.593  49.861 576.561  52.278 576.625
  53.047 576.323  53.971 575.914  54.813 575.558  55.002 575.558  55.177 575.558
  56.338 575.879  58.821 576.625  59.768 576.988  61.538 577.419  64.371  578.01
  64.867 578.117   65.01 578.153  65.077 578.169  65.383 578.241  69.048 578.714
  70.501 578.823    73.4  579.04  79.312 579.743  81.053 579.873  81.851 579.923
  85.123 580.101   85.97 580.139  87.021 580.265  87.653 580.325  89.911 580.506
  91.375 580.606  92.674 580.724  93.269 580.779  95.536  581.01    95.7 581.022
  96.572 581.084  96.875 581.084 102.942 581.065 103.722 580.988 104.399 580.734
 104.696 580.603 104.922 580.508 106.481 579.794 106.769 579.701 107.107  579.59
 107.618  579.64 108.441 579.722 108.479 579.724 108.565 579.733 108.584 579.734
 108.613 579.736 108.642 579.738 108.689 579.741 109.703 579.801     110 579.819

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.278     .06  58.821     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.278  58.821             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.12214               F
57.74214     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1127.71*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.226   2.307 579.199   3.176 579.189   5.663 579.147   7.544 579.098
   8.326 579.075     9.4  579.05  12.195  578.97  13.603 578.934  15.087 578.898
  16.893 578.851  17.686 578.825  19.662 578.739  19.785 578.734  21.367 578.643
  22.681 578.569  23.845 578.497  26.627 578.337  27.086 578.291  29.523 577.641
  30.691 577.335   31.61  577.34   32.14 577.338   34.97 577.149  37.618 576.949
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  37.852 576.932  38.392 576.877  39.273 576.885  40.056 576.922  40.658 576.901
  41.308 576.907  42.157 576.902  42.646 576.898  42.825 576.901  43.026 576.898
  43.445 576.898  43.875 576.898  44.329 576.896  44.394 576.896  45.573 576.763
   47.68 576.538  48.409 576.469  49.485 576.474  49.877 576.449  52.294   576.5
  53.093 576.171  54.051 575.739  54.924 575.364  55.076 575.364  55.216 575.364
  56.446 575.705  59.079   576.5  60.021 576.826  61.782 577.239    64.6  577.82
  65.094 577.925  65.237  577.96  65.303 577.976  65.608 578.045  69.255 578.571
    70.7 578.692  73.584 578.933  79.466 579.633  81.198 579.778  81.993 579.836
  85.249 580.047  86.091 580.093  87.137 580.212  87.766 580.267  90.012 580.435
  91.468 580.531  92.761 580.639  93.353  580.69  95.609 580.901  95.772 580.912
  96.639 580.972  96.941 580.968 102.978 580.884 103.753 580.791 104.427 580.502
 104.723 580.352 104.948 580.244 106.499 579.435 106.785 579.329 107.122 579.202
  107.63 579.252 108.449 579.334 108.487 579.337 108.572 579.346 108.591 579.347
  108.62 579.349 108.648 579.351 108.696 579.355 109.704 579.423     110 579.443

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.294     .06  59.079     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.294  59.079             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.13571              F
57.93571     110              F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1125.78*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.139   2.308 579.112   3.177 579.102   5.665 579.057   7.546 579.006
   8.329 578.982   9.402 578.955  12.199 578.873  13.607 578.835  15.092 578.799
  16.898 578.752  17.691 578.727  19.668  578.65  19.791 578.646  21.374 578.558
  22.688 578.487  23.852 578.419  26.635 578.265  27.094 578.218  29.532 577.523
  30.701 577.194   31.62 577.205   32.15 577.206  34.981 577.016   37.63  576.82
  37.864 576.804  38.404 576.748  39.286 576.764  40.068   576.8  40.671 576.791
  41.321 576.803   42.17 576.804   42.66 576.804  42.838 576.809  43.039 576.806
  43.459 576.808  43.889 576.811  44.343 576.812  44.408 576.812  45.587 576.671
  47.695 576.429  48.424 576.352  49.501 576.356  49.892 576.336  52.311 576.375
  53.138 576.019   54.13 575.564  55.036 575.171  55.149 575.171  55.254 575.171
  56.555 575.531  59.336 576.375  60.274 576.665  62.026 577.059   64.83  577.63
  65.321 577.734  65.463 577.767   65.53 577.782  65.833  577.85  69.461 578.429
  70.899 578.561  73.768 578.826  79.621 579.523  81.344 579.683  82.135  579.75
  85.374 579.993  86.212 580.046  87.253 580.159  87.878 580.208  90.113 580.365
  91.562 580.456  92.848 580.554  93.437 580.601  95.682 580.791  95.844 580.801
  96.707 580.859  97.007 580.852 103.013 580.703 103.785 580.593 104.455 580.269
  104.75 580.102 104.973 579.981 106.517 579.077 106.801 578.957 107.136 578.814
 107.642 578.865 108.456 578.946 108.494 578.949  108.58 578.958 108.598  578.96
 108.627 578.962 108.655 578.964 108.703 578.968 109.706 579.044     110 579.067

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.311     .06  59.336     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.311  59.336             1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.14928              F
58.12928     110              F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1123.85*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 579.053   2.309 579.025   3.178 579.015   5.666 578.968   7.548 578.914
   8.331 578.889   9.405  578.86  12.202 578.775  13.611 578.737  15.097   578.7
  16.904 578.653  17.697 578.629  19.674 578.561  19.798 578.557  21.381 578.473
  22.696 578.405   23.86 578.341  26.643 578.194  27.103 578.145  29.541 577.405
  30.711 577.052   31.63  577.07   32.16 577.074  34.992 576.883  37.642 576.692
  37.876 576.676  38.416 576.618  39.298 576.642  40.081 576.678  40.683 576.681
  41.334 576.698  42.184 576.706  42.673 576.709  42.851 576.716  43.053 576.714
  43.473 576.719  43.902 576.724  44.357 576.727  44.422 576.728  45.602 576.579
   47.71  576.32   48.44 576.235  49.517 576.237  49.908 576.224  52.327  576.25
  53.183 575.867   54.21 575.389  55.147 574.977  55.223 574.977  55.293 574.977
  56.663 575.358  59.594  576.25  60.527 576.504   62.27 576.879   65.06  577.44
  65.549 577.543   65.69 577.574  65.756 577.589  66.058 577.654  69.667 578.286
  71.098 578.431  73.953  578.72  79.775 579.414   81.49 579.588  82.276 579.663
  85.499 579.938  86.333 579.999  87.368 580.106  87.991  580.15  90.215 580.294
  91.656 580.381  92.935 580.469  93.522 580.512  95.754 580.681  95.916 580.691
  96.775 580.746  97.074 580.735 103.049 580.522 103.817 580.395 104.484 580.036
 104.777 579.851 104.999 579.717 106.535 578.718 106.817 578.584 107.151 578.426
 107.654 578.477 108.464 578.559 108.502 578.562 108.587 578.571 108.606 578.573
 108.634 578.575 108.662 578.577 108.709 578.582 109.707 578.666     110 578.691

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.327     .06  59.594     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.327  59.594             1.41    1.94    2.32             .1       .3
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Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.16286               F
58.32286     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1121.92*

INPUT
Description:
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.966   2.309 578.938   3.179 578.927   5.668 578.879   7.551 578.822
   8.334 578.797   9.408 578.765  12.206 578.678  13.616 578.638  15.102 578.601
  16.909 578.554  17.702 578.532   19.68 578.472  19.804 578.469  21.387 578.388
  22.703 578.322  23.867 578.262  26.652 578.122  27.111 578.073  29.551 577.287
   30.72 576.911   31.64 576.935   32.17 576.942  35.003  576.75  37.654 576.564
  37.888 576.548  38.428 576.489   39.31 576.521  40.094 576.556  40.696 576.571
  41.347 576.594  42.197 576.608  42.687 576.615  42.865 576.623  43.066 576.622
  43.486 576.629  43.916 576.637  44.371 576.643  44.436 576.644  45.616 576.487
  47.725 576.211  48.455 576.117  49.532 576.119  49.924 576.112  52.344 576.125
  53.228 575.716   54.29 575.215  55.259 574.784  55.296 574.784  55.331 574.784
  56.772 575.184  59.852 576.125   60.78 576.342  62.514 576.699   65.29  577.25
  65.776 577.351  65.917 577.382  65.982 577.395  66.282 577.459  69.874 578.143
  71.297   578.3  74.137 578.613   79.93 579.304  81.636 579.492  82.418 579.577
  85.625 579.884  86.454 579.953  87.484 580.053  88.104 580.092  90.316 580.224
   91.75 580.306  93.023 580.385  93.606 580.422  95.827 580.571  95.988  580.58
  96.842 580.633   97.14 580.619 103.084 580.341 103.848 580.198 104.512 579.803
 104.803 579.601 105.024 579.453 106.552 578.359 106.834 578.212 107.165 578.038
 107.666 578.089 108.472 578.171  108.51 578.175 108.594 578.183 108.613 578.185
 108.641 578.188 108.669 578.191 108.716 578.195 109.709 578.288     110 578.316

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.344     .06  59.852     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       52.344  59.852           1.41    1.94    2.32             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       053.17643               F
58.51643     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1120

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  578.88    3.18  578.84    5.67  578.79   12.21  578.58   13.62  578.54
   19.81  578.38   26.66  578.05   27.12     578   30.73  576.77   31.65   576.8
   32.18  576.81    37.9  576.42   38.44  576.36   41.36  576.49   42.21  576.51
    42.7  576.52   42.88  576.53   43.08  576.53    43.5  576.54   43.93  576.55
   44.45  576.56   48.47     576   52.36     576   54.37  575.04   55.37  574.59
   56.88  575.01   60.11     576   65.52  577.06   70.08     578   82.56  579.49
   85.75  579.83    87.6     580   93.11   580.3   96.06  580.47   96.91  580.52
  103.12  580.16  103.88     580  104.54  579.57  104.83  579.35  105.05  579.19
  106.57     578  106.85  577.84  107.18  577.65  109.71  577.91     110  577.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   52.36     .06   60.11     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.36   60.11            .74    1.46    1.87             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   53.19               F
   58.71     110               F

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1118.57*

INPUT
Description:
Station Elevation Data    num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.823   1.571   578.8   3.133 578.777   4.156 578.755   5.437 578.731
   5.587 578.727   5.836  578.72    6.73 578.693   8.495 578.639   9.945 578.584
  12.032 578.508  13.421 578.463  15.358 578.403  19.521 578.268  21.038 578.186
  26.271 577.906  26.725 577.857  28.421 577.302  28.469 577.669  28.481 577.756
  28.759 577.668  28.843 577.641  30.136 577.229  30.282 577.183  30.511  577.19
  30.898 577.202  31.189  577.21  31.711 577.219  32.143 577.192  36.033 576.944
  36.469 576.916  36.916 576.888  37.348  576.86   37.88 576.805  39.441  576.87
  40.757 576.925  41.595 576.943  42.078 576.953  42.255 576.962  42.452 576.962
  42.866 576.971  43.271  576.98   43.29  576.98  43.802  576.99  47.764 576.474
  47.863 576.474  48.166 576.474  48.455 576.474  49.083 576.474   49.12 576.134
  49.144     576  51.597 575.917  53.152 575.178  53.668 574.945  54.416 574.626
  54.699 574.505  55.102 574.625  55.462 574.734  55.791 574.831  56.167 574.934
  59.308 575.876  64.558 576.907  68.983 577.819   71.21 578.094  77.743 578.946
  79.776 579.209  80.054 579.246  80.846 579.344  81.094 579.372  81.203 579.384
  81.684 579.432  81.994 579.463  84.189 579.685  84.275 579.693  85.347 579.786
  85.985 579.842  86.184 579.853  88.512 579.981  89.629 580.041  91.332 580.138
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  93.601 580.273  94.194 580.308  95.019 580.358  96.828 580.265  99.963 580.096
 101.046 580.039 101.783 579.893 102.424 579.499 102.705 579.297 102.919  579.15
 104.394 578.057 104.665  577.91 104.986 577.736 106.124 577.849 107.441 577.979
 107.723 578.006

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.597     .06  59.308     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.597  59.308              .74    1.46    1.87             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1117.15

INPUT
Description:
Station Elevation Data    num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.765   1.548  578.74   3.087 578.714   4.095  578.69   5.357 578.668
   5.505 578.665    5.75 578.658   6.631 578.634   8.369 578.582   9.798  578.52
  11.854 578.436  13.223 578.385  15.131 578.317  19.233 578.155  20.727 578.067
  25.883 577.763   26.33 577.713  28.001  577.19  28.048 577.941   28.06  578.12
  28.334 578.039  28.417 578.015  29.691 577.638  29.835 577.596   30.06 577.602
  30.441 577.613  30.728 577.621  31.243 577.629  31.668 577.604  35.501 577.378
   35.93 577.352   36.37 577.326  36.796 577.301   37.32  577.25  38.858  577.31
  40.155  577.36   40.98 577.377  41.456 577.385  41.631 577.394  41.825 577.394
  42.233 577.402  42.632  577.41   42.65 577.411  43.155 577.419  47.058 576.947
  47.156 576.947  47.454 576.947  47.739 576.947  48.358 576.947  48.394 576.268
  48.418     576  50.835 575.834  52.435 575.077  52.967  574.85  53.737 574.538
  54.028 574.419   54.42 574.544  54.769  574.66  55.089  574.76  55.454 574.858
  58.506 575.752  63.596 576.754  67.886 577.638  70.045 577.915  76.379 578.814
   78.35 579.091   78.62  579.13  79.388 579.229  79.628 579.255  79.734 579.265
    80.2 579.309  80.501 579.338  82.629 579.541  82.712 579.548  83.751 579.633
   84.37 579.684  84.563 579.694   86.82 579.821  87.903 579.878  89.554 579.976
  91.754 580.112  92.329 580.146  93.129 580.195  94.883 580.118  97.922 579.968
  98.972 579.918  99.687 579.786 100.308 579.427 100.581 579.243 100.788 579.109
 102.218 578.113 102.481 577.979 102.792 577.821 103.895 577.927 105.172 578.047
 105.445 578.073

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.835     .06  58.506     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.835  58.506              .82    1.62    2.07             .1       .3
Left Levee      Station=   44.59      Elevation=     580

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1115.57*

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.701   1.522 578.673   3.036 578.644   4.027 578.618   5.268 578.598
   5.413 578.596   5.654  578.59    6.52 578.568    8.23 578.519   9.635 578.449
  11.656 578.356  13.003 578.299  14.879 578.222  18.912  578.03  20.381 577.934
  25.452 577.603  25.891 577.553  27.534 577.066   27.58 578.235  27.581 578.249
  27.592 578.522  27.862 578.452  27.943  578.43  29.196 578.092  29.338 578.055
  29.559  578.06  29.934  578.07  30.215 578.077  30.722 578.084   31.14 578.062
  34.909 577.859  35.331 577.836  35.763 577.813  36.183  577.79  36.698 577.745
   38.21 577.799  39.486 577.843  40.297 577.859  40.765 577.866  40.937 577.874
  41.128 577.874  41.529 577.881  41.921 577.888  41.939 577.889  42.436 577.896
  46.274 577.473   46.37 577.473  46.663 577.473  46.943 577.473  47.552 577.473
  47.587 576.418  47.611 576.001  49.988 575.742  51.639 574.965  52.188 574.744
  52.982  574.44  53.282 574.324  53.662 574.454  53.999 574.578  54.309 574.681
  54.662 574.773  57.615 575.614  62.527 576.584  66.667 577.437  68.751 577.715
  74.863 578.668  76.766  578.96  77.026 579.001  77.767 579.101  77.999 579.124
  78.101 579.133  78.551 579.173  78.841 579.199  80.895 579.381  80.975 579.387
  81.978 579.463  82.575 579.509  82.762 579.517  84.939 579.643  85.985 579.697
  87.578 579.796  89.701 579.933  90.256 579.966  91.028 580.014  92.721 579.955
  95.654 579.826  96.667 579.784  97.357 579.667  97.956 579.347   98.22 579.184
  98.419 579.064    99.8 578.176 100.054 578.056 100.353 577.916 101.418 578.014
  102.65 578.123 102.914 578.147

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.988     .06  57.615     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.988  57.615              .82    1.62    2.07             .1       .3
Left Levee      Station=44.44967      Elevation=     580

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1113.99*

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.637   1.496 578.607   2.984 578.573   3.958 578.546   5.178 578.529
   5.321 578.526   5.558 578.521    6.41 578.502    8.09 578.457   9.471 578.379
  11.459 578.277  12.782 578.212  14.627 578.126  18.592 577.904  20.035 577.801
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   25.02 577.444  25.452 577.394  27.068 576.942  27.113 578.529  27.114 578.548
  27.125 578.925  27.389 578.864   27.47 578.845  28.701 578.547   28.84 578.513
  29.058 578.519  29.426 578.527  29.703 578.533  30.201  578.54  30.612  578.52
  34.318 578.341  34.732 578.321  35.157   578.3  35.569  578.28  36.076  578.24
  37.563 578.287  38.816 578.327  39.614  578.34  40.074 578.346  40.243 578.353
  40.431 578.353  40.825  578.36  41.211 578.366  41.228 578.367  41.716 578.374
  45.489     578  45.584     578  45.872     578  46.148     578  46.746     578
  46.781 576.567  46.804 576.003   49.14  575.65  50.842 574.853  51.408 574.639
  52.227 574.343  52.537  574.23  52.903 574.364  53.229 574.495  53.529 574.601
   53.87 574.689  56.723 575.477  61.458 576.414  65.448 577.235  67.456 577.516
  73.348 578.521  75.181 578.828  75.432 578.871  76.147 578.973   76.37 578.994
  76.469 579.002  76.902 579.036  77.181 579.059  79.161  579.22  79.239 579.225
  80.205 579.293  80.781 579.333   80.96 579.341  83.059 579.464  84.067 579.516
  85.603 579.616  87.649 579.753  88.184 579.787  88.928 579.834  90.559 579.791
  93.386 579.683  94.363 579.649  95.028 579.549  95.605 579.268  95.859 579.124
  96.051 579.019  97.382 578.238  97.627 578.134  97.915  578.01  98.942   578.1
 100.129 578.199 100.384  578.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   49.14     .06  56.723     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         49.14  56.723              .82    1.62    2.07             .1       .3
Left Levee      Station=44.30933      Elevation=     580

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1112.42

INPUT
Description:
Station Elevation Data    num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.573    1.47  578.54   2.933 578.503   3.891 578.474   5.089 578.459
    5.23 578.457   5.463 578.453     6.3 578.436   7.951 578.394   9.308 578.308
  11.262 578.197  12.562 578.126  14.375 578.031  18.271 577.779   19.69 577.668
  24.589 577.284  25.013 577.234  26.601 576.818  26.646 578.847  26.657 579.333
  26.917 579.277  26.996  579.26  28.207 579.001  28.343 578.972  28.557 578.977
  28.919 578.984  29.191 578.989   29.68 578.995  30.084 578.978  33.726 578.822
  34.133 578.805  34.551 578.787  34.956 578.769  35.454 578.735  36.915 578.776
  38.147  578.81  38.931 578.822  39.383 578.827  39.549 578.833  39.734 578.833
  40.121 578.839    40.5 578.844  40.517 578.845  40.997 578.851  44.705 578.526
  44.798 578.526  45.081 578.526  45.352 578.526   45.94 578.526  45.974 576.716
  45.997     576  48.293 575.558  50.046 574.741  50.629 574.533  51.472 574.245
  51.791 574.135  52.145 574.274   52.46 574.413  52.749 574.522  53.078 574.604
  55.832 575.339  60.389 576.244  64.229 577.034  66.162 577.316  71.832 578.375
  73.597 578.697  73.839 578.742  74.526 578.845  74.741 578.863  74.836  578.87
  75.253   578.9  75.522  578.92  77.428  579.06  77.502 579.064  78.432 579.123
  78.986 579.158  79.159 579.164  81.179 579.286  82.149 579.335  83.627 579.436
  85.597 579.574  86.111 579.607  86.827 579.653  88.398 579.628  91.119 579.541
  92.058 579.515  92.698  579.43  93.254 579.188  93.498 579.064  93.683 578.974
  94.964 578.301    95.2 578.211  95.477 578.105  96.465 578.187  97.608 578.275
  97.853 578.294

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.293     .06  55.832     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.293  55.832              .9    1.78    2.28             .1       .3
Left Levee      Station=  44.169      Elevation=     580

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1110.68*

INPUT
Description:
Station Elevation Data    num=      98
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.503   1.442 578.467   2.876 578.426   3.815 578.395   4.991 578.383
   5.129 578.381   5.357 578.378   6.178 578.363   7.797 578.325   9.128  578.23
  11.045 578.109   12.32 578.031  14.097 577.926  17.918 577.641   19.31 577.522
  24.114 577.108   24.53 577.059  26.087 576.682  26.132 579.178  26.142 579.773
  26.397 579.731  26.475 579.717  27.662 579.501  27.796 579.477  28.006 579.481
  28.361 579.487  28.628 579.491  29.107 579.496  29.503 579.482  33.075 579.352
  33.474 579.338  33.884 579.323  34.281 579.307   34.77 579.279  36.202 579.313
  37.411 579.342   38.18 579.352  38.623 579.356  38.786 579.361  38.967 579.361
  39.347 579.366  39.718  579.37  39.735 579.371  40.206 579.376  43.842 579.105
  43.933 579.105  44.211 579.105  44.477 579.105  45.053 579.105  45.054 579.081
  45.087  576.89  45.087 576.867  45.109 576.001  47.361 575.457   49.17 574.618
  49.772 574.417  50.642 574.138  50.971 574.031  51.311 574.175  51.613 574.323
  51.891 574.435  52.207 574.511  54.852 575.188  59.213 576.057  62.888 576.813
  64.738 577.097  70.165 578.214  71.854 578.552  72.086   578.6  72.743 578.704
  72.949 578.719   73.04 578.725  73.439  578.75  73.697 578.767  75.521 578.883
  75.592 578.887  76.481 578.936  77.012 578.965  77.177  578.97  79.111  579.09
  80.039 579.136  81.454 579.238  83.339 579.377  83.831 579.409  84.516 579.454
   86.02 579.448  88.624 579.384  89.523 579.367  90.135   579.3  90.668 579.101
  90.901 578.999  91.078 578.924  92.304  578.37   92.53 578.296  92.795 578.209
  93.741 578.283  94.835 578.359  95.069 578.375

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.361     .06  54.852     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.361  54.852              .9    1.78    2.28             .1       .3
Left Levee      Station=43.49083      Elevation=580.3333
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CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 1108.94*

INPUT
Description:
Station Elevation Data num= 98

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	578.432	1.413	578.393	2.82	578.349	3.74	578.316	4.893	578.306
5.028	578.305	5.252	578.302	6.056	578.291	7.644	578.256	8.949	578.152
10.827	578.021	12.077	577.936	13.82	577.821	17.566	577.504	18.93	577.375
23.64	576.933	24.047	576.883	25.574	576.545	25.617	579.51	25.628	580.212
25.878	580.185	25.954	580.173	27.118	580.001	27.249	579.981	27.455	579.985
27.803	579.989	28.064	579.993	28.534	579.997	28.923	579.985	32.424	579.881
32.815	579.87	33.217	579.858	33.607	579.846	34.085	579.823	35.49	579.851
36.674	579.873	37.428	579.881	37.863	579.885	38.022	579.889	38.2	579.889
38.572	579.893	38.937	579.896	38.953	579.897	39.414	579.901	42.979	579.684
43.069	579.684	43.341	579.684	43.601	579.684	44.167	579.684	44.167	579.664
44.199	577.065	44.2	577.034	44.221	576.002	46.429	575.355	48.294	574.494
48.914	574.301	49.811	574.03	50.151	573.927	50.477	574.076	50.767	574.232
51.033	574.348	51.336	574.418	53.871	575.036	58.037	575.87	61.548	576.591
63.315	576.877	68.498	578.053	70.111	578.408	70.333	578.458	70.961	578.563
71.157	578.575	71.244	578.58	71.625	578.6	71.871	578.613	73.614	578.707
73.681	578.709	74.531	578.749	75.038	578.772	75.196	578.776	77.043	578.894
77.929	578.937	79.28	579.04	81.081	579.179	81.551	579.211	82.206	579.255
83.642	579.269	86.129	579.227	86.988	579.219	87.573	579.169	88.081	579.013
88.304	578.933	88.473	578.875	89.644	578.439	89.86	578.381	90.113	578.313
91.016	578.378	92.061	578.442	92.285	578.456				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	46.429	.06	53.871	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
46.429	53.871	.9	1.78	2.28	.1	.3

Left Levee Station=42.81266 Elevation=580.6667

CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 1107.21*

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	578.362	1.385	578.32	2.763	578.271	3.665	578.237	4.794	578.229
4.927	578.229	5.146	578.227	5.935	578.218	7.49	578.187	8.769	578.074
10.61	577.934	11.835	577.842	13.542	577.716	17.213	577.366	18.55	577.229
23.165	576.757	23.565	576.708	25.06	576.409	25.061	576.423	25.103	579.843
25.113	580.652	25.114	580.667	25.358	580.638	25.433	580.63	26.573	580.5
26.702	580.486	26.903	580.489	27.244	580.492	27.501	580.495	27.961	580.497
28.342	580.489	31.773	580.411	32.156	580.402	32.55	580.393	32.932	580.385
33.401	580.367	34.777	580.388	35.938	580.405	36.677	580.411	37.102	580.414
37.259	580.417	37.433	580.417	37.798	580.419	38.155	580.422	38.171	580.422
38.623	580.426	42.116	580.263	42.204	580.263	42.47	580.263	42.726	580.263
43.28	580.263	43.28	580.248	43.312	577.239	43.312	577.2	43.333	576.004
45.496	575.254	47.418	574.371	48.057	574.185	48.981	573.922	49.33	573.823
49.642	573.977	49.92	574.141	50.174	574.261	50.464	574.325	52.891	574.885
56.861	575.683	60.207	576.37	61.891	576.658	66.831	577.892	68.368	578.263
68.579	578.316	69.178	578.422	69.365	578.432	69.448	578.435	69.811	578.45
70.046	578.46	71.706	578.53	71.771	578.532	72.581	578.562	73.064	578.579
73.214	578.582	74.974	578.698	75.819	578.738	77.107	578.842	78.823	578.982
79.271	579.013	79.895	579.057	81.264	579.089	83.634	579.07	84.453	579.072
85.01	579.039	85.495	578.926	85.707	578.868	85.868	578.825	86.984	578.508
87.19	578.467	87.431	578.418	88.292	578.474	89.288	578.526	89.501	578.537

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	45.496	.06	52.891	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.496	52.891	.9	1.78	2.28	.1	.3

Left Levee Station= 42.1345 Elevation= 581

CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 1105.47*

INPUT
Description:
Station Elevation Data num= 99

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	578.291	1.357	578.247	2.707	578.194	3.59	578.158	4.696	578.153
4.826	578.152	5.041	578.151	5.813	578.145	7.337	578.118	8.589	577.996
10.392	577.846	11.592	577.747	13.265	577.61	16.86	577.228	18.17	577.083
22.691	576.581	23.082	576.532	24.547	576.273	24.547	576.292	24.589	580.175
24.599	581.092	24.599	581.111	24.839	581.092	24.912	581.087	26.029	581
26.155	580.991	26.352	580.992	26.686	580.995	26.937	580.996	27.388	580.998
27.761	580.993	31.122	580.941	31.498	580.935	31.883	580.929	32.257	580.923
32.717	580.912	34.065	580.925	35.202	580.937	35.925	580.941	36.342	580.942
36.495	580.944	36.666	580.944	37.023	580.946	37.373	580.948	37.389	580.948
37.832	580.95	41.253	580.842	41.339	580.842	41.6	580.842	41.85	580.842
42.393	580.842	42.424	577.413	42.425	577.367	42.446	576.005	44.564	575.153
46.542	574.247	47.2	574.069	48.15	573.815	48.51	573.718	48.808	573.878
49.073	574.051	49.316	574.174	49.593	574.232	51.911	574.733	55.685	575.496
58.866	576.149	60.467	576.439	65.164	577.732	66.626	578.119	66.826	578.174

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  67.395 578.282  67.573 578.288  67.652  578.29  67.998   578.3   68.22 578.307
  69.799 578.353   69.86 578.355  70.631 578.374   71.09 578.386  71.233 578.388
  72.906 578.502   73.71 578.538  74.934 578.643  76.566 578.785  76.991 578.815
  77.585 578.858  78.886 578.909   81.14 578.914  81.918 578.924  82.448 578.908
  82.908 578.839   83.11 578.802  83.264 578.776  84.325 578.577   84.52 578.552
   84.75 578.522  85.568 578.569  86.515 578.609  86.718 578.618

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.564     .06  51.911     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.564  51.911               .9    1.78    2.28            .1       .3
Left Levee      Station=41.45633      Elevation=581.3333

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1103.73*

INPUT
Description:
Station Elevation Data    num=      99
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 578.221   1.328 578.173    2.65 578.117   3.515 578.079   4.598 578.076
   4.725 578.076   4.935 578.076   5.692 578.073   7.183 578.049    8.41 577.918
  10.175 577.758   11.35 577.652  12.987 577.505  16.508 577.091   17.79 576.936
  22.216 576.406  22.599 576.357  24.033 576.136  24.034  576.16  24.074 580.508
  24.084 581.531  24.085 581.555  24.319 581.546  24.391 581.543  25.484   581.5
  25.608 581.495  25.801 581.496  26.128 581.497  26.374 581.498  26.816 581.499
  27.181 581.496  30.471  581.47  30.839 581.467  31.216 581.464  31.582 581.461
  32.032 581.456  33.352 581.463  34.465 581.468  35.174  581.47  35.582 581.471
  35.732 581.472  35.899 581.472  36.249 581.473  36.591 581.474  36.607 581.474
   37.04 581.475   40.39 581.421  40.474 581.421   40.73 581.421  40.975 581.421
  41.506 581.421  41.537 577.587  41.537 577.534  41.558 576.006  43.632 575.051
  45.666 574.124  46.342 573.953   47.32 573.708   47.69 573.614  47.974 573.779
  48.227  573.96  48.458 574.087  48.722 574.139   50.93 574.581  54.509 575.309
  57.525 575.927  59.044 576.219  63.497 577.571  64.883 577.974  65.073 578.032
  65.613 578.141  65.782 578.144  65.856 578.145  66.184  578.15  66.395 578.153
  67.892 578.177   67.95 578.177   68.68 578.187  69.116 578.193  69.251 578.194
  70.838 578.306    71.6 578.339  72.761 578.445  74.308 578.587  74.712 578.617
  75.274 578.659  76.508  578.73  78.645 578.757  79.382 578.776  79.885 578.778
  80.322 578.751  80.513 578.737  80.659 578.726  81.665 578.646   81.85 578.637
  82.068 578.626  82.844 578.664  83.741 578.693  83.934 578.699

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.632     .06   50.93     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.632   50.93               .9    1.78    2.28            .1       .3
Left Levee      Station=40.77816      Elevation=581.6667

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1102

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  578.15     1.3   578.1    3.44     578     4.5     578    4.83     578
    5.57     578    7.03  577.98    8.23  577.84   12.71   577.4   17.41  576.79
   23.52     576   23.56  580.84   23.57     582    23.8     582   23.87     582
   24.94     582   25.25     582   25.57     582    26.6     582   29.82     582
   30.18     582   30.55     582   32.64     582   35.81     582   39.61     582
   39.86     582    40.1     582   40.62     582   40.65   577.7   40.67     576
    42.7  574.95   44.79     574   46.49   573.6   46.87  573.51   47.14  573.68
   47.38  573.87    47.6     574   49.95  574.43   57.62     576   61.83  577.41
   63.14  577.83   63.32  577.89   63.83     578   64.06     578   64.37     578
   64.57     578   66.04     578   66.73     578   67.27     578   68.77  578.11
   69.49  578.14   72.05  578.39   74.13  578.55   76.15   578.6   80.12  578.76
   81.15  578.78

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    42.7     .06   49.95     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          42.7   49.95               1.87    1.49    1.22            .1       .3
Left Levee      Station=    40.1      Elevation=     582

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1100.5*

INPUT
Description:
Station Elevation Data    num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  577.99    .381 577.974   1.317  577.93   3.485 577.814   4.561 577.805
   4.895 577.802   5.645 577.797   7.125 577.766   8.341 577.626  12.315 577.235
  12.882 577.177  15.883 576.779  17.645  576.57  22.726 575.969  23.242 575.864
  23.838 575.822  23.838 575.832  23.878 580.317  23.879 580.346  23.889 581.394
  23.889 581.415  24.122 581.426  24.193 581.429  25.277 581.482  25.398 581.488
  25.591  581.49  25.703  581.49  25.916 581.491  26.033 581.492  26.286 581.494
  26.532 581.495  26.827 581.497   26.96 581.487  27.402 581.452  27.774 581.423
  30.223 581.432  30.588 581.433  30.963 581.435  31.623 581.438  32.596 581.415
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  33.081 581.405  33.788 581.389  35.903 581.392  36.294 581.396  40.145 581.435
  40.399 581.437  40.642  581.44  41.169 581.445   41.17 581.426    41.2 577.465
    41.2  577.42   41.22 575.858  42.702 575.164  43.278 574.885  43.734 574.676
  45.342 573.947  47.021 573.532  47.397 573.439   47.66 573.607  47.894 573.793
  48.108 573.922  49.015 574.115  50.397 574.401  58.132 575.944  58.707 576.128
  60.205 576.603  61.944 577.153  62.378 577.291  63.699 577.694  63.881 577.751
  63.898 577.755  64.395 577.856  64.627 577.858   64.94 577.859  65.142  577.86
  65.915 577.864  65.978 577.864  66.624 577.871  66.659 577.871  67.224 577.878
   67.32 577.879  67.865 577.886  69.377 578.008  70.104 578.044  71.922 578.231
  72.685 578.309  74.783 578.483  75.257 578.499  76.036 578.527   76.82 578.554
  77.318 578.577  77.676 578.591  78.286 578.614   78.77 578.631  80.824 578.715
  81.863 578.737

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.278     .06  50.397     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.278  50.397             1.87    1.49    1.22             .1       .3
Left Levee      Station=  40.985      Elevation=   581.5

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1099

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 577.831    .386 577.812   1.335 577.761   3.531 577.628   4.622  577.61
   4.961 577.605   5.721 577.593    7.22 577.552   8.453 577.412  12.479 577.015
  13.054 576.953  16.095 576.543  17.881  576.35  23.029 575.797  23.552 575.651
  24.156 575.643  24.197 579.827  24.208  580.83  24.444 580.852  24.516 580.859
  25.615 580.964  25.737 580.976  25.933 580.979  26.046  580.98  26.262 580.983
   26.38 580.984  26.637 580.987  26.886  580.99  27.185 580.994   27.32 580.973
  27.768 580.904  28.145 580.846  30.627 580.865  30.996 580.867  31.376  580.87
  32.045 580.875  33.031  580.83  33.523 580.809  34.239 580.778  36.382 580.785
  36.779 580.793  40.681 580.869  40.938 580.874  41.185 580.879  41.719  580.89
   41.75 577.177   41.77 575.709  43.272 575.085  43.855  574.82  44.306 574.612
  45.894 573.893  47.553 573.464  47.924 573.368   48.18 573.535  48.408 573.716
  48.616 573.845  49.499  574.06  50.845 574.371  58.645 575.888  59.225 576.065
  60.735 576.518  62.489  577.04  62.927 577.172  64.259 577.558  64.442 577.613
  64.459 577.616  64.961 577.713  65.195 577.715   65.51 577.718  65.714  577.72
  66.493 577.727  66.557 577.727  67.209 577.742  67.244 577.742  67.813 577.756
  67.911 577.758   68.46 577.772  69.985 577.905  70.718 577.949  72.551 578.146
  73.321 578.228  75.437 578.416  75.914 578.437    76.7 578.474  77.491 578.508
  77.993 578.535  78.354 578.548  78.969 578.569  79.457 578.585  81.529  578.67
  82.576 578.694

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.855     .06  50.845     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.855  50.845              5.9    4.72    3.86             .1       .3
Left Levee      Station=   41.87      Elevation=     581

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1094.25*

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 577.326    .402 577.299   1.391 577.224   3.678 577.039   4.815 576.993
   5.168  576.98    5.96 576.949   7.521 576.874   8.805 576.733  12.999 576.319
  13.598 576.245  16.766 575.795  18.627 575.654  23.989  575.25  24.534 574.978
  25.163 575.078  25.206 578.223  25.217 578.977  25.463 579.035  25.538 579.053
  26.683 579.324   26.81 579.354  27.014 579.362  27.132 579.365  27.357 579.372
   27.48 579.375  27.748 579.383  28.007  579.39  28.319 579.401  28.459 579.347
  28.926 579.168  29.319  579.02  31.904 579.067  32.289 579.074  32.684 579.081
  33.381 579.094  34.408 578.978  34.921 578.923  35.667 578.844  37.899 578.861
  38.313 578.882  42.377 579.079  42.645 579.092  42.902 579.104  43.459 579.132
  43.491 576.348  43.512 575.248  45.076 574.834  45.684 574.615  46.117 574.409
  47.643 573.724  49.237  573.25  49.593 573.143  49.827 573.305  50.035 573.473
  50.225 573.599  51.032 573.885  52.261 574.278  60.268 575.712  60.864 575.866
  62.414 576.249  64.214 576.682  64.664 576.795  66.031 577.127  66.219 577.174
  66.237 577.177  66.752 577.258  66.992 577.264  67.316 577.272  67.525 577.277
  68.325 577.295   68.39 577.295   69.06 577.333  69.095 577.334   69.68  577.37
   69.78 577.375  70.344 577.411  71.909  577.58  72.662 577.646  74.543 577.877
  75.334 577.972  77.506 578.204  77.995  578.24  78.802 578.305  79.615 578.362
  80.129 578.401    80.5 578.411  81.132 578.427  81.633 578.439   83.76 578.527
  84.834 578.558

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.684     .06  52.261     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.684  52.261              5.9    4.72    3.86             .1       .3
Left Levee      Station=  44.025      Elevation= 579.375

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1089.5*
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INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  576.82    .418 576.786   1.446 576.687   3.825 576.449   5.007 576.377
   5.375 576.354   6.198 576.304   7.822 576.197   9.158 576.055  13.519 575.623
  14.143 575.537  17.437 575.047  19.372 574.958  24.949 574.703  25.516 574.306
  26.171 574.513  26.215 576.619  26.227 577.125  26.483 577.218  26.561 577.247
  27.751 577.684  27.883 577.733  28.096 577.744  28.218  577.75  28.452 577.761
   28.58 577.767  28.858 577.779  29.128  577.79  29.452 577.807  29.598  577.72
  30.084 577.432  30.492 577.193  33.181 577.269  33.581  577.28  33.993 577.292
  34.717 577.312  35.785 577.125  36.319 577.037  37.094 576.909  39.416 576.938
  39.846  576.97  44.074 577.288  44.352 577.309   44.62  577.33  45.198 577.373
  45.232 575.519  45.254 574.787  46.881 574.583  47.512  574.41  47.928 574.206
  49.391 573.555   50.92 573.035  51.262 572.919  51.474 573.075  51.662  573.23
  51.834 573.353  52.564  573.71  53.677 574.185  61.892 575.535  62.502 575.667
  64.092 575.979  65.939 576.325  66.401 576.419  67.804 576.696  67.996 576.735
  68.014 576.738  68.543 576.804  68.789 576.813  69.121 576.825  69.336 576.833
  70.156 576.863  70.223 576.864   70.91 576.923  70.947 576.926  71.546 576.983
  71.649 576.993  72.228  577.05  73.834 577.255  74.605 577.343  76.535 577.608
  77.347 577.715  79.575 577.992  80.077 578.044  80.905 578.137  81.738 578.215
  82.266 578.267  82.647 578.274  83.294 578.284  83.808 578.292   85.99 578.385
  87.093 578.422

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.512     .06  53.677     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.512  53.677             5.9    4.72    3.86            .1       .3
Left Levee      Station=   46.18      Elevation=  577.75

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1084.75*

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 576.315    .434 576.273   1.502 576.149   3.973 575.859     5.2  575.76
   5.582 575.729   6.437  575.66   8.123 575.519    9.51 575.376   14.04 574.926
  14.687  574.83  18.108 574.298  20.118 574.262   25.91 574.157  26.498 573.633
  27.178 573.948  27.224 575.016  27.236 575.272  27.502 575.402  27.583 575.441
  28.819 576.044  28.957 576.111  29.177 576.127  29.304 576.135  29.547  576.15
   29.68 576.159  29.969 576.174  30.249  576.19  30.586 576.213  30.738 576.094
  31.242 575.696  31.666 575.367  34.458 575.471  34.874 575.487  35.301 575.503
  36.054 575.531  37.163 575.273  37.717 575.151  38.522 574.974  40.933 575.014
   41.38 575.059   45.77 575.498  46.059 575.527  46.337 575.555  46.938 575.615
  46.973  574.69  46.995 574.325  48.685 574.331  49.341 574.205  49.739 574.003
   51.14 573.385  52.604 572.821  52.931 572.694  53.121 572.845  53.289 572.987
  53.443 573.107  54.097 573.535  55.094 574.093  63.515 575.359  64.141 575.469
  65.771  575.71  67.665 575.967  68.138 576.042  69.576 576.265  69.773 576.297
  69.792 576.299  70.334 576.349  70.586 576.362  70.927 576.379  71.147  576.39
  71.988 576.432  72.057 576.432  72.761 576.514  72.798 576.518  73.413 576.596
  73.519  576.61  74.111 576.689  75.758 576.929  76.549  577.04  78.528 577.339
   79.36 577.459  81.644  577.78  82.158 577.847  83.007 577.969  83.862 578.069
  84.403 578.134  84.793 578.137  85.457 578.142  85.984 578.146  88.221 578.242
  89.352 578.286

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.341     .06  55.094     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.341  55.094             5.9    4.72    3.86            .1       .3
Left Levee      Station=  48.335      Elevation= 576.125

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1080

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  575.81     .45  575.76    4.12  575.27   14.56  574.23   18.78  573.55
   26.87  573.61   27.48  572.96   30.03  574.49   30.39  574.52   30.78  574.55
   31.08  574.57   31.37  574.59   31.72  574.62    32.4  573.96   32.84  573.54
   37.39  573.75   38.54  573.42   39.95  573.04   42.45  573.09   50.49  574.08
   51.17     574   51.55   573.8    54.6  572.47   55.63  573.36   56.51     574
   65.78  575.27   67.45  575.44   69.39  575.61   71.57  575.86   73.82     576
   73.89     576   74.65  576.11   75.28  576.21   80.52  577.07   84.24  577.65
   85.11   577.8   86.54     578   86.94     578   87.62     578   88.16     578
   91.61  578.15

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   51.17     .06   56.51     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         51.17   56.51            1.59    1.92    2.16            .1       .3
Left Levee      Station=   50.49      Elevation=   574.5

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1078.*
```

```
INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 575.614    .444 575.565    .825 575.515   4.065 575.094   9.514 574.556
  14.367 574.076  18.531 573.431  22.271 573.428  22.329 573.428  22.386     574
   25.87 574.024  26.514 574.028  27.116  573.44  29.632 574.824  29.987 574.852
  30.372 574.878  30.668 574.896  30.954 574.915  31.299 574.942   31.97 574.345
  32.405 573.965  36.894 574.155  38.029 573.856   39.42 573.513   40.76 573.537
  40.795 573.234  40.817 572.967  41.887 572.986  45.459 573.389  49.821 573.882
  50.492  573.81  50.852 573.625  52.798 572.795  53.748 572.385  54.748 573.209
  54.838 573.272  55.602  573.81   57.24 574.105  58.869 574.402  60.037 574.557
  64.932 575.174  66.613 575.333  67.287 575.388  68.248 575.463  68.566 575.488
   69.18 575.551   70.76 575.728  73.025 575.874  73.095 575.875   73.86  575.98
  74.494 576.076  75.178 576.183   76.12 576.323  79.642 576.882  79.769 576.901
  80.395 576.993  83.513 577.464  84.105 577.562  84.389 577.608  84.444 577.615
  85.828 577.804  86.231 577.808  86.327  577.81  86.915 577.813  87.459 577.818
  88.192 577.851   88.38 577.859  88.484 577.864  90.932 577.975

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.492     .06  55.602     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.492  55.602             1.59    1.92    2.16             .1       .3
Left Levee      Station=  44.955      Elevation=574.8334

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1076

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 575.418    .438  575.37    .814 575.322   4.011 574.919   9.386 574.392
  14.174 573.923  18.282 573.311  21.972 573.278  22.029 573.278  22.029 573.295
  22.085 574.421  25.523 574.442  26.158 574.446  26.752  573.92  29.234 575.159
  29.585 575.183  29.964 575.207  30.256 575.223  30.539  575.24  30.879 575.264
  31.541  574.73   31.97  574.39  36.399  574.56  37.519 574.292  38.891 573.985
  40.213 574.007  40.247   573.4  40.269 572.865  41.325 572.882  44.849 573.243
  49.152 573.684  49.814 573.619  50.155 573.449  51.997 572.684  52.897 572.299
  53.866 573.059  53.953 573.117  54.693 573.619  56.342 573.988  57.982  574.36
  59.157  574.51  64.085 575.079  65.777 575.226  66.455 575.278  67.422 575.344
  67.742 575.366   68.36 575.423  69.951 575.596   72.23 575.748  72.301 575.749
  73.071 575.851  73.709 575.943  74.397 576.045  75.345 576.171   78.89 576.714
  79.018 576.733  79.648 576.819  82.787 577.277  83.382 577.372  83.668 577.416
  83.724 577.423  85.117 577.608  85.522 577.617  85.619 577.619  86.211 577.627
  86.759 577.635  87.496 577.671  87.685 577.678   87.79 577.683  90.254   577.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.814     .06  54.693     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.814  54.693             1.39    1.68    1.89             .1       .3
Left Levee      Station=   39.42      Elevation=575.1667

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1074.25*

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 575.246    .433 575.199    .804 575.153   3.963 574.765   9.274 574.249
  14.005 573.789  18.064 573.206   21.71 573.146  21.766 573.146  21.766 573.158
  21.767 573.173  21.822 574.782  25.219 574.808  25.846 574.812  26.433  574.34
  28.886 575.451  29.232 575.473  29.607 575.494  29.896 575.509  30.175 575.524
  30.511 575.546  31.165 575.067  31.589 574.762  35.965 574.914  37.072 574.674
  38.428 574.398  39.734 574.418  39.767 573.963  39.789 573.562  40.833 572.792
  44.315 573.115  48.566  573.51   49.22 573.452  49.545 573.296  51.296 572.587
  52.152 572.224  53.094 572.927  53.178 572.981  53.898 573.452  55.556 573.885
  57.205 574.323  58.387 574.469  63.343 574.995  65.045 575.133  65.727 575.182
  66.699 575.239  67.021  575.26  67.642  575.31  69.242  575.48  71.534 575.638
  71.606 575.639   72.38 575.738  73.022 575.826  73.714 575.924  74.667 576.038
  78.232 576.568  78.361 576.585  78.994 576.667  82.151 577.114   82.75 577.206
  83.037 577.248  83.093 577.255  84.494 577.437  84.902 577.449  84.999 577.452
  85.595 577.464  86.146 577.476  86.887 577.514  87.077  577.52  87.182 577.525
   89.66 577.646

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   49.22     .06  53.898     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         49.22  53.898             1.39    1.68    1.89             .1       .3
Left Levee      Station=   39.56      Elevation=575.4584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1072.5*

INPUT
Description:
```

```
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 575.075    .427 575.029    .794 574.984   3.915 574.612   9.162 574.105
  13.836 573.655  17.846 573.102  21.448 573.015  21.504 573.015  21.504 573.039
  21.559 575.143  21.559 575.158  24.915 575.174  25.535 575.178  26.114  574.76
  28.537 575.744   28.88 575.763   29.25 575.782  29.535 575.795  29.811 575.808
  30.143 575.828  30.789 575.403  31.208 575.133  35.532 575.268  36.625 575.055
  37.964 574.812  39.255 574.829  39.288 574.526  39.309 574.258   40.34 572.701
   43.78 572.987  47.981 573.337  48.627 573.286  48.934 573.143  50.595  572.49
  51.407 572.149  52.322 572.796  52.404 572.846  53.103 573.286   54.77 573.782
  56.429 574.286  57.617 574.427  62.601 574.911  64.312  575.04  64.998 575.085
  65.976 575.135    66.3 575.153  66.925 575.198  68.534 575.365  70.839 575.527
  70.911 575.529  71.689 575.625  72.335 575.709   73.03 575.803  73.989 575.906
  77.574 576.421  77.704 576.438  78.341 576.514  81.515 576.951  82.117  577.04
  82.406  577.08  82.463 577.087  83.872 577.265  84.281 577.282  84.379 577.286
  84.978 577.302  85.532 577.316  86.278 577.356  86.469 577.361  86.575 577.367
  89.067 577.493

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.627     .06  53.103     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         48.627  53.103             1.39    1.68    1.89            .1       .3
Left Levee      Station=    39.7      Elevation=  575.75

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1070.75*

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.903    .422 574.858    .785 574.815   3.868 574.458   9.051 573.962
  13.667  573.52  17.629 572.997  21.187 572.883  21.241 572.883  21.241 572.919
  21.296 575.504  21.296 575.527  24.611 575.541  25.223 575.544  25.796  575.18
  28.189 576.036  28.527 576.053  28.893 576.069  29.175 576.081  29.447 576.092
  29.775 576.109  30.414  575.74  30.827 575.505  35.098 575.622  36.178 575.437
  37.501 575.225  38.776  575.24  38.808 575.088   38.83 574.955  39.848 572.611
  43.246 572.859  47.395 573.164  48.033 573.119  48.324  572.99  49.895 572.393
  50.662 572.074   51.55 572.664  51.629  572.71  52.308 573.119  53.985  573.68
  55.652 574.249  56.848 574.386   61.86 574.828   63.58 574.946   64.27 574.989
  65.253 575.031  65.579 575.047  66.207 575.086  67.825 575.249  70.143 575.417
  70.215  575.42  70.998 575.511  71.647 575.593  72.347 575.682  73.311 575.773
  76.916 576.274  77.046  576.29  77.687 576.362   80.88 576.788  81.485 576.874
  81.776 576.913  81.832 576.919  83.249 577.094  83.661 577.114   83.76 577.119
  84.362 577.139  84.919 577.156  85.669 577.198  85.861 577.203  85.967  577.21
  88.473 577.339

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.033     .06  52.308     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         48.033  52.308             1.39    1.68    1.89            .1       .3
Left Levee      Station=   39.84      Elevation=576.0417

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1069

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.731    .417 574.687    .775 574.646    3.82 574.304   8.939 573.819
  13.499 573.386  17.411 572.892  20.926 572.751  20.979 572.752  20.979 572.799
  21.033 575.895  24.307 575.907  24.912  575.91  25.477   575.6  27.841 576.329
  28.175 576.343  28.537 576.357  28.815 576.367  29.084 576.376  29.408 576.391
  30.039 576.076  30.446 575.876  34.665 575.976  35.731 575.819  37.038 575.638
  38.297 575.651  38.329 575.651  38.351 575.651  39.356 572.519  42.713 572.731
   46.81  572.99   47.44 572.952  47.715 572.836  49.194 572.296  49.917 571.999
  50.778 572.533  50.855 572.575  51.513 572.952  53.199 573.577  54.876 574.212
  56.078 574.345  61.118 574.744  62.848 574.853  63.542 574.892   64.53 574.926
  64.858  574.94   65.49 574.973  67.117 575.133  69.448 575.307  69.521  575.31
  70.308 575.398  70.961 575.476  71.664 575.561  72.634  575.64  76.259 576.128
   76.39 576.142  77.034  576.21  80.244 576.625  80.853 576.708  81.146 576.745
  81.202 576.751  82.627 576.923  83.042 576.947  83.141 576.952  83.746 576.976
  84.306 576.997   85.06 577.041  85.254 577.045   85.36 577.052   87.88 577.186

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   47.44     .06  51.513     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         47.44  51.513             1.59    1.92    2.16            .1       .3
Left Levee      Station=   39.98      Elevation=576.3333

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1067.*

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 574.535    .411 574.492    .764 574.453   3.765 574.128   8.811 573.655
  13.306 573.233  17.162 572.772  20.626 572.601  20.679 572.602  20.679 572.639
  20.679 572.664  20.732 576.316   23.96 576.326  24.556 576.328  25.113  576.08
  27.443 576.663  27.772 576.674  28.129 576.686  28.403 576.694  28.668 576.701
  28.988 576.713   29.61 576.461  30.011 576.301   34.17 576.381   35.22 576.255
  36.509  576.11  37.749 576.121  37.781 575.483  37.802 574.921  38.794 572.415
  42.102 572.585  46.141 572.792  46.762 572.762  47.018 572.661  48.393 572.185
  49.066 571.913  49.896 572.383   49.97  572.42  50.604 572.762  52.301  573.46
  53.989  574.17  55.198 574.298   60.27 574.648  62.011 574.746  62.709 574.782
  63.704 574.807  64.034 574.818   64.67 574.844  66.307 575.001  68.653 575.181
  68.727 575.185  69.519 575.269  70.176 575.343  70.883 575.423  71.859 575.488
  75.507  575.96  75.639 575.973  76.287 576.036  79.518 576.439   80.13 576.518
  80.425 576.553  80.481 576.559  81.916 576.727  82.333 576.755  82.432 576.762
  83.042  576.79  83.605 576.815  84.364 576.861  84.559 576.864  84.666 576.872
  87.202 577.011

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.762     .06  50.604     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.762  50.604             1.59    1.92    2.16             .1       .3
Left Levee      Station=  39.008      Elevation=576.6666

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1065.*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.339    .405 574.297    .753  574.26   3.711 573.953   8.683 573.491
  13.113 573.079  16.913 572.653  20.327 572.451  20.379 572.451  20.379 572.479
  20.379  572.52  20.432 576.737  23.612 576.744    24.2 576.746  24.749  576.56
  27.045 576.997   27.37 577.006  27.721 577.014  27.991  577.02  28.253 577.026
  28.567 577.035   29.18 576.846  29.576 576.726  33.674 576.786   34.71 576.691
  35.979 576.583  37.202 576.591  37.202 576.576  37.233 575.315  37.254 574.191
  38.231 572.311  41.491 572.439  45.472 572.594  46.084 572.571   46.32 572.485
  47.592 572.074  48.214 571.827  49.013 572.232  49.085 572.265  49.696 572.571
  51.403 573.342  53.101 574.127  54.319 574.251  59.423 574.553  61.175 574.639
  61.877 574.671  62.878 574.688   63.21 574.696   63.85 574.716  65.498 574.869
  67.858 575.055  67.932 575.059  68.729 575.139   69.39 575.209  70.102 575.285
  71.084 575.336  74.755 575.793  74.888 575.805   75.54 575.862  78.791 576.252
  79.408 576.329  79.705 576.361  79.761 576.367  81.204 576.532  81.625 576.564
  81.724 576.571  82.338 576.603  82.905 576.632  83.668 576.681  83.864 576.683
  83.972 576.691  86.524 576.836

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.084     .06  49.696     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.084  49.696             1.59    1.92    2.16             .1       .3
Left Levee      Station=  38.036      Elevation=     577

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1063.*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.142    .399 574.102    .742 574.066   3.656 573.777   8.556 573.328
   12.92 572.926  16.664 572.533  20.028   572.3   20.08 572.301   20.08  572.32
   20.08 572.377  20.131 577.158  23.265 577.163  23.844 577.164  24.385  577.04
  26.647 577.332  26.967 577.337  27.313 577.343   27.58 577.347  27.837  577.35
  28.147 577.356  28.751  577.23  29.141  577.15  33.179  577.19  34.199 577.128
   35.45 577.055  36.655  577.06  36.655 577.038  36.686 575.146  36.706  573.46
  37.669 572.208  40.881 572.292  44.803 572.396  45.406 572.381  45.623  572.31
  46.792 571.962  47.363 571.742  48.131 572.082    48.2  572.11  48.787 572.381
  50.505 573.225  52.214 574.085  53.439 574.204  58.575 574.457  60.338 574.532
  61.045 574.561  62.052 574.568  62.386 574.574   63.03 574.587  64.688 574.737
  67.063 574.929  67.138 574.934   67.94  575.01  68.605 575.076  69.322 575.146
  70.309 575.184  74.003 575.625  74.137 575.636  74.794 575.688  78.065 576.066
  78.685 576.139  78.984 576.169  79.041 576.174  80.493 576.336  80.916 576.372
  81.016 576.381  81.633 576.417  82.204  576.45  82.972   576.5  83.169 576.502
  83.278 576.511  85.846  576.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.406     .06  48.787     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.406  48.787             1.59    1.92    2.16             .1       .3
Left Levee      Station=  37.064      Elevation=577.3333

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1061.*

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.946    .393 573.907    .731 573.873   3.602 573.602   8.428 573.164
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  12.727 572.773  16.416 572.413  19.729  572.15   19.78  572.15   19.78 572.233
  19.831 577.579  22.917 577.581  23.488 577.582  24.021  577.52  26.249 577.666
  26.564 577.669  26.906 577.671  27.168 577.673  27.421 577.675  27.727 577.678
  28.322 577.615  28.705 577.575  32.683 577.595  33.688 577.564  34.921 577.528
  36.107  577.53  36.108 577.501  36.138 574.978  36.158  572.73  37.106 572.104
   40.27 572.146  44.134 572.198  44.728  572.19  44.926 572.135  45.991 571.851
  46.511 571.656  47.249 571.931  47.315 571.955  47.879  572.19  49.607 573.107
  51.327 574.042  52.559 574.157  57.727 574.361  59.501 574.426  60.212  574.45
  61.226 574.449  61.562 574.452   62.21 574.459  63.878 574.604  66.268 574.802
  66.343 574.808   67.15 574.881   67.82 574.942  68.541 575.008  69.535 575.032
  73.252 575.458  73.387 575.467  74.047 575.514  77.338 575.879  77.963  575.95
  78.263 575.977   78.32 575.982  79.782  576.14  80.207 576.181  80.308  576.19
  80.929 576.231  81.503 576.267  82.276  576.32  82.475 576.321  82.584  576.33
  85.168 576.485

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.728     .06  47.879     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.728  47.879             1.59    1.92    2.16            .1       .3
Left Levee      Station=  36.092      Elevation=577.6667

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1059

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  573.75     .72  573.68     8.3     573   19.43     572   19.48     572
   19.48  572.09   19.53     578   22.57     578   35.56     578   35.59  574.81
   35.61     572   39.66     572   44.05     572   45.19  571.74   45.66  571.57
   46.43   571.8   46.97     572   48.71  572.99   50.44     574   51.68  574.11
   59.38  574.34    60.4  574.33   61.39  574.33   67.76  574.87   68.76  574.88
    72.5  575.29    73.3  575.34   77.24  575.76    77.6  575.79    79.6     576
   81.58  576.14   81.78  576.14   81.89  576.15   84.49  576.31

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   44.05     .06   46.97     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         44.05   46.97             1.59    1.94    1.92            .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1057.07*

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.798    .727 573.731   8.382 573.077   9.384 572.991  12.288 572.732
  12.387 572.721  12.511 572.706  12.734 572.681  12.975 572.653  13.323 572.614
  14.017 572.534  16.298 572.274  16.325 572.548  16.343 572.715  17.127  572.65
  19.132 572.485  19.622 572.444  19.672 572.444  19.672 572.529  19.722 577.944
  19.723     578  20.148     578  22.793     578  29.862     578  30.824     578
  30.888 577.781  35.911 577.781  35.941 575.079  35.941 575.043  35.962 572.446
  36.972 572.444  40.051 572.444  43.237 572.444  43.273 572.444  43.326 572.444
  43.434 572.444  43.478 572.036  43.478     572  44.485 571.967  45.658 571.676
  45.687 571.669  46.184 571.485  47.033 571.765  47.187 571.825  47.629     572
  48.402 572.419  49.346 572.928  50.636 573.643  51.052 573.873  52.275 573.982
  59.871 574.237  60.877 574.233  61.854 574.238  66.986 574.675  68.013 574.764
  68.137 574.774  69.123  574.79  70.705 574.962  72.813  575.19  73.602 575.241
  77.488 575.647  77.844 575.676  79.816  575.88   81.77 576.018  81.967 576.019
  82.075 576.028  83.251 576.102   84.64 576.187

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.485     .06  47.629     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.485  47.629             1.59    1.94    1.92            .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1055.14*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.846    .734 573.782   8.464 573.153   9.475 573.071  12.408 572.811
  12.508 572.797  12.633 572.779  12.859 572.749  13.102 572.716  13.453 572.667
  14.154  572.57  16.457 572.252  16.485 572.802  16.503 573.138  17.295 573.078
  19.319 572.926  19.814 572.889  19.864 572.889  19.864 572.901  19.865 572.967
  19.915 577.953  19.916     578  20.345     578  23.016     578  30.153     578
  31.125     578   31.19 577.561  36.262 577.561  36.292  575.31  36.293 575.276
  36.313 572.893  37.334 572.889  40.442 572.889   43.66 572.889  43.696 572.889
  43.749 572.889  43.858 572.889  43.903 572.071  43.903     572   44.92 571.935
  46.154 571.606  46.185 571.597  46.707   571.4  47.637  571.73  47.805 571.798
  48.289     572  49.051 572.391  49.981 572.867  51.254 573.532  51.664 573.747
  52.871 573.854  60.362 574.133  61.354 574.136  62.317 574.146  67.379 574.578
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  68.392 574.668  68.514 574.679  69.487 574.699  71.047 574.868  73.126  575.09
  73.904 575.141  77.737 575.534  78.088 575.563  80.033 575.759   81.96 575.896
  82.154 575.897   82.26 575.907   83.42  575.98  84.791 576.064

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   44.92     .06  48.289     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         44.92  48.289             1.59    1.94    1.92            .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1053.21*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.894    .741 573.833   8.546  573.23   9.567 573.151  12.529  572.89
  12.629 572.874  12.756 572.852  12.983 572.816  13.229 572.778  13.583 572.721
  14.291 572.606  16.617  572.23  16.645 573.057  16.663  573.56  17.462 573.506
  19.506 573.367  20.005 573.333  20.057 573.333  20.057 573.352  20.057 573.406
  20.108 577.963  20.108     578  20.542     578  23.238     578  30.445     578
  31.427     578  31.492 577.342  36.613 577.342  36.644 575.541  36.644 575.509
  36.665 573.339  37.695 573.333  40.834 573.333  44.082 573.333  44.119 573.333
  44.173 573.333  44.283 573.333  44.328 572.107  44.328     572  45.355 571.902
   46.65 571.536  46.683 571.526  47.231 571.315   48.24 571.695  48.423 571.771
  48.948     572  49.699 572.364  50.617 572.805  51.872 573.422  52.276  573.62
  53.466 573.726  60.853  574.03  61.831 574.039  62.781 574.054  67.772 574.482
  68.771 574.573  68.892 574.583  69.851 574.609  71.389 574.774  73.439  574.99
  74.206 575.042  77.986 575.421  78.331 575.449   80.25 575.639  82.149 575.774
  82.341 575.776  82.446 575.785   83.59 575.858  84.941 575.941

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.355     .06  48.948     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.355  48.948             1.59    1.94    1.92            .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1051.29*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.943    .748 573.884   8.628 573.306   9.659  573.23  12.649 572.969
   12.75 572.951  12.878 572.925  13.108 572.884  13.355  572.84  13.713 572.774
  14.428 572.641  16.776 572.208  16.804 573.311  16.823 573.983   17.63 573.934
  19.693 573.808  20.197 573.778  20.249 573.778  20.249 573.802  20.249 573.845
  20.301 577.972  20.301     578  20.739     578  23.461     578  30.737     578
  31.728     578  31.794 577.122  36.964 577.122  36.995 575.772  36.995 575.741
  37.016 573.786  38.057 573.778  41.225 573.778  44.505 573.778  44.542 573.778
  44.596 573.778  44.707 573.778  44.753 572.142  44.753     572  45.789  571.87
  47.146 571.466  47.181 571.455  47.755 571.229  48.844 571.659  49.041 571.744
  49.607     572  50.348 572.337  51.253 572.743   52.49 573.311  52.888 573.494
  54.062 573.598  61.344 573.926  62.309 573.941  63.245 573.963  68.166 574.385
   69.15 574.477  69.269 574.488  70.215 574.519  71.731  574.68  73.752 574.891
  74.508 574.943  78.235 575.308  78.575 575.335  80.467 575.518  82.339 575.651
  82.528 575.655  82.632 575.664  83.759 575.736  85.092 575.818

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.789     .06  49.607     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.789  49.607             1.59    1.94    1.92            .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1049.36*

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.991    .756 573.935   8.71 573.383   9.751  573.31  12.769 573.048
  12.871 573.028      13 572.999  13.232 572.952  13.482 572.902  13.844 572.827
  14.565 572.677  16.935 572.186  16.964 573.566  16.982 574.406  17.797 574.362
   19.88  574.25  20.389 574.222  20.441 574.222  20.441 574.253  20.442 574.284
  20.493 577.981  20.494     578  20.936     578  23.684     578  31.029     578
  32.029     578  32.096 576.903  37.315 576.903  37.346 576.002  37.347 575.974
  37.368 574.232  37.368 574.222  38.418 574.222  41.617 574.222  44.928 574.222
  44.965 574.222   45.02 574.222  45.132 574.222  45.178 572.178  45.178     572
  46.224 571.837  47.643 571.396  47.678 571.384  48.279 571.144  49.447 571.624
  49.658 571.718  50.266     572  50.997  572.31  51.888 572.681  53.108   573.2
  53.501 573.367  54.657  573.47  61.835 573.823  62.786 573.844  63.709 573.871
  68.559 574.289  69.529 574.382  69.646 574.392  70.578 574.429  72.073 574.587
  74.065 574.791  74.811 574.844  78.483 575.195  78.819 575.221  80.683 575.398
  82.529 575.529  82.716 575.534  82.818 575.542  83.929 575.615  85.242 575.695
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.224     .06  50.266     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.224  50.266             1.59    1.94    1.92             .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1047.43*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.039    .763 573.986   8.792 573.459   9.842  573.39  12.889 573.127
  12.992 573.104  13.123 573.072  13.357  573.02  13.609 572.964  13.974 572.881
  14.702 572.712  17.095 572.164  17.123  573.82  17.142 574.829  17.965  574.79
  20.067 574.691  20.581 574.667  20.634 574.667  20.634 574.703  20.634 574.722
  20.686 577.991  21.133     578  23.907     578  31.321     578  32.331     578
  32.398 576.683  37.666 576.683  37.698 576.233  37.698 576.207  37.719 574.679
  37.719 574.667   38.78 574.667  42.008 574.667   45.35 574.667  45.388 574.667
  45.443 574.667  45.556 574.667  45.603 572.213  45.603     572  46.659 571.805
  48.139 571.326  48.176 571.312  48.802 571.059   50.05 571.589  50.276 571.691
  50.926     572  51.645 572.283  52.524  572.62  53.726  573.09  54.113 573.241
  55.252 573.342  62.326 573.719  63.263 573.747  64.172 573.779  68.952 574.192
  69.908 574.286  70.024 574.297  70.942 574.338  72.415 574.493  74.378 574.691
  75.113 574.744  78.732 575.082  79.063 575.108    80.9 575.277  82.719 575.407
  82.903 575.412  83.003 575.421  84.098 575.493  85.393 575.572

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  46.659     .06  50.926     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        46.659  50.926             1.59    1.94    1.92             .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1045.51

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.087     .77 574.037   8.874 573.536   9.934  573.47  13.009 573.206
  13.113 573.181  13.245 573.145  13.481 573.088  13.736 573.026  14.104 572.934
  14.839 572.748  17.254 572.142  17.283 574.075  17.302 575.252  18.132 575.218
  20.254 575.132  20.773 575.111  20.826 575.111  20.826 575.154  20.879     578
   21.33     578   24.13     578  31.613     578  32.632     578    32.7 576.464
  38.049 576.464  38.071 575.111  39.141 575.111    42.4 575.111  45.773 575.111
  45.811 575.111  45.867 575.111  45.981 575.111  46.028 572.249  46.028     572
  47.094 571.772  48.635 571.256  48.674 571.241  49.326 570.974  50.654 571.554
  50.894 571.664  51.585     572  52.294 572.256   53.16 572.558  54.344 572.979
  54.725 573.114  55.848 573.214  62.817 573.616   63.74  573.65  64.636 573.687
  69.345 574.096  70.287 574.191  70.401 574.201  71.306 574.248  72.757 574.399
  74.691 574.591  75.415 574.645  78.981 574.969  79.307 574.994  81.117 575.157
  82.909 575.285   83.09 575.291  83.189 575.299  84.268 575.371  85.543 575.449

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.094     .06  51.585     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.094  51.585             1.48     1.8    1.78             .1       .3
Left Levee      Station=   35.12      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1043.72*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.132    .777 574.084    8.95 573.607  10.019 573.544  13.121 573.279
  13.225 573.252  13.359 573.213  13.597 573.151  13.854 573.084  14.225 572.984
  14.966 572.781  17.402 572.122  17.403 572.156  17.431 574.305   17.45 575.632
   17.45 575.645  18.287 575.615  20.428 575.542  20.951 575.524  21.005 575.524
  21.005 575.561  21.058     578  21.513     578  24.337     578  31.884     578
  32.912     578   32.98  576.59  33.492 575.895  38.375 575.895  38.397 574.735
  39.477 574.735  42.763 574.735  46.165 574.735  46.204 574.735   46.26 574.735
  46.375 574.735  46.423 572.283  46.423 572.215  46.423     572  47.498 571.742
  49.096 571.191  49.136 571.175  49.812 570.895  51.214 571.521  51.468 571.639
  52.197     572  52.896 572.231   53.75 572.501  54.917 572.876  55.293 572.996
  56.401 573.095  63.273  573.52  64.183  573.56  65.067 573.602   69.71 574.007
  70.639 574.102  70.751 574.112  71.644 574.164  73.075 574.312  74.982 574.498
  75.696 574.553  79.212 574.864  79.533 574.888  81.318 575.045  83.085 575.172
  83.264 575.178  83.361 575.186  84.425 575.258  85.683 575.335

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.498     .06  52.197     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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        47.498  52.197             1.48     1.8    1.78             .1       .3
Left Levee      Station=35.11428      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1041.93*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.176    .783 574.132   9.026 573.678  10.104 573.619  13.232 573.353
  13.338 573.324  13.472 573.281  13.712 573.214  13.971 573.141  14.345 573.033
  15.093 572.814   17.55 572.102   17.55  572.13  17.579 574.543  17.598 576.027
  17.599 576.037  18.443 576.013  20.601 575.951  21.129 575.936  21.183 575.936
  21.183 575.967  21.237     578  21.696     578  24.544     578  32.155     578
  33.191     578  33.261 576.716  33.777 575.326  38.701 575.326  38.724 574.359
  39.812 574.359  43.127 574.359  46.558 574.359  46.596 574.359  46.653 574.359
  46.769 574.359  46.817 572.316  46.817 572.179  46.817     572  47.901 571.711
  49.556 571.126  49.598 571.109  50.299 570.816  51.775 571.489  52.041 571.614
  52.809     572  53.499 572.206   54.34 572.443  55.491 572.773  55.862 572.879
  56.954 572.976  63.729 573.424  64.626 573.469  65.497 573.516  70.075 573.917
  70.991 574.014  71.102 574.024  71.981  574.08  73.392 574.225  75.272 574.406
  75.976 574.461  79.443 574.759   79.76 574.783  81.519 574.933  83.261 575.058
  83.437 575.066  83.534 575.073  84.583 575.145  85.822 575.221

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.901     .06  52.809     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.901  52.809             1.48     1.8    1.78             .1       .3
Left Levee      Station=35.10857      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1040.14*

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.221     .79 574.179   9.102 573.749  10.189 573.693  13.344 573.426
   13.45 573.395  13.586 573.349  13.828 573.277  14.089 573.199  14.466 573.082
  15.221 572.847  17.698 572.081  17.698 572.104  17.727  574.78  17.747 576.421
  18.598  576.41  20.775 576.361  21.307 576.349  21.362 576.349  21.362 576.374
  21.416     578  21.879     578  24.751     578  32.426     578  33.471     578
  33.541 576.842  34.061 574.757  39.028 574.757   39.05 573.983  40.148 573.983
   43.49 573.983   46.95 573.983  46.989 573.983  47.047 573.983  47.163 573.983
  47.212 572.349  47.212 572.143  47.212     572  48.305 571.681  50.017 571.061
   50.06 571.043  50.785 570.737  52.335 571.456  52.615 571.589  53.421     572
  54.101 572.181  54.931 572.386  56.065 572.671   56.43 572.761  57.506 572.857
  64.185 573.328  65.069 573.379  65.928 573.431   70.44 573.828  71.342 573.925
  71.452 573.935  72.319 573.996   73.71 574.138  75.563 574.313  76.257 574.369
  79.674 574.654  79.986 574.677   81.72 574.821  83.438 574.945  83.611 574.953
  83.706 574.961   84.74 575.032  85.962 575.107

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.305     .06  53.421     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.305  53.421             1.48     1.8    1.78             .1       .3
Left Levee      Station=35.10286      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1038.36*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.266    .796 574.226   9.178  573.82  10.275 573.767  13.455   573.5
  13.563 573.466  13.699 573.416  13.943 573.341  14.207 573.257  14.587 573.132
  15.348 572.881  17.846 572.061  17.846 572.078  17.876 575.018  17.876 575.028
  17.895 576.816  18.754 576.808  20.949 576.771  21.485 576.762   21.54 576.762
   21.54  576.78  21.595     578  22.061     578  24.957     578  32.697     578
  33.751     578  33.821 576.968  34.346 574.187  39.354 574.187  39.376 573.608
  40.483 573.608  43.854 573.608  47.343 573.608  47.382 573.608   47.44 573.608
  47.557 573.608  47.606 572.382  47.606 572.107  47.606     572  48.709 571.651
  50.478 570.995  50.523 570.977  51.271 570.657  52.895 571.424  53.189 571.564
  54.034     572  54.703 572.155  55.521 572.328  56.639 572.568  56.999 572.644
  58.059 572.738   64.64 573.232  65.512 573.289  66.358 573.346  70.805 573.738
  71.694 573.836  71.802 573.846  72.657 573.912  74.027 574.051  75.853 574.221
  76.537 574.276  79.905 574.549  80.212 574.572  81.922 574.709  83.614 574.831
  83.785 574.841  83.878 574.848  84.897 574.919  86.101 574.992

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.709     .06  54.034     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.709  54.034             1.48     1.8    1.78             .1       .3
Left Levee      Station=35.09715      Elevation=     578

CROSS SECTION
```

```
RIVER: arroyo_maquinas
REACH: casillas           RS: 1036.57*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.311    .803 574.274   9.254 573.892   10.36 573.841  13.567 573.573
  13.675 573.537  13.813 573.484  14.059 573.404  14.325 573.315  14.708 573.181
  15.475 572.914  17.994 572.041  17.994 572.052  18.024 575.255  18.024 575.266
  18.043 577.211  18.909 577.205  21.122 577.181  21.663 577.175  21.719 577.175
  21.719 577.187  21.774     578  22.244     578  25.164     578  32.968     578
  34.031     578  34.102 577.094  34.631 573.618   39.68 573.618  39.703 573.232
  40.819 573.232  44.217 573.232  47.735 573.232  47.775 573.232  47.833 573.232
  47.952 573.232  48.001 572.414  48.001 572.072  48.001     572  49.113 571.621
  50.939  570.93  50.985 570.911  51.757 570.578  53.455 571.391  53.762  571.54
  54.646     572  55.305  572.13  56.111 572.271  57.212 572.465  57.567 572.526
  58.612 572.619  65.096 573.136  65.955 573.198  66.789 573.261   71.17 573.649
  72.046 573.747  72.152 573.758  72.994 573.829  74.345 573.964  76.144 574.128
  76.818 574.184  80.135 574.444  80.439 574.466  82.123 574.597   83.79 574.718
  83.959 574.728  84.051 574.735  85.055 574.806  86.241 574.878

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.113     .06  54.646     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.113  54.646             1.48     1.8    1.78             .1       .3
Left Levee      Station=35.09143      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1034.78*

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.355     .81 574.321    9.33 573.963  10.445 573.916  13.678 573.647
  13.787 573.609  13.926 573.552  14.174 573.467  14.442 573.372  14.829 573.231
  15.602 572.947  18.141 572.021  18.172 575.493  18.172 575.504  18.192 577.605
  19.065 577.603  21.296  577.59  21.841 577.587  21.897 577.587  21.953     578
  22.427     578  25.371     578  33.239     578   34.31     578  34.382  577.22
  34.915 573.049  40.006 573.049  40.029 572.856  41.154 572.856  44.581 572.856
  48.127 572.856  48.167 572.856  48.226 572.856  48.346 572.856  48.395 572.447
  48.395 572.036  48.395     572  49.516  571.59  51.399 570.865  51.447 570.845
  52.244 570.499  54.016 571.359  54.336 571.515  55.258     572  55.908 572.105
  56.701 572.214  57.786 572.363  58.136 572.408  59.165   572.5  65.552 573.039
  66.398 573.108  67.219 573.175  71.535 573.559  72.398 573.659  72.503 573.669
  73.332 573.745  74.662 573.877  76.435 574.035  77.098 574.092  80.366 574.339
  80.665  574.36  82.324 574.485  83.966 574.604  84.132 574.615  84.223 574.622
  85.212 574.693   86.38 574.764

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.516     .06  55.258     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.516  55.258             1.48     1.8    1.78             .1       .3
Left Levee      Station=35.08572      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1033

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   574.4   10.53  573.99   13.79  573.72    13.9  573.68   14.04  573.62
   14.29  573.53   14.56  573.43   14.95  573.28   15.73  572.98   18.29     572
   18.32  575.73   18.34     578   19.22     578   21.47     578   22.61     578
   33.51     578   34.59     578    35.2  572.48   48.52  572.48   48.56  572.48
   48.62  572.48   48.74  572.48   48.79  572.48   48.79     572   49.92  571.56
   51.86   570.8   52.73  570.42   54.91  571.49   55.87     572   56.51  572.08
   58.36  572.26    71.9  573.47   72.75  573.57   74.98  573.79   77.38     574
   85.37  574.58   86.52  574.65

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   49.92     .06   55.87     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         49.92   55.87              .18    1.96    2.89             .1       .3
Left Levee      Station=   35.08      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1031.05*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.386   3.491 574.246  10.567 573.933  13.839 573.653   13.95 573.615
```

```
   14.09 573.557  14.341 573.471  14.612 573.375  15.003  573.23  15.786 572.942
  16.936  572.52  17.494 572.309  17.522 572.478  17.551 572.642  18.355 572.353
  18.356 572.386  18.385 575.863  18.405     578  19.288     578  20.493     578
  21.547     578  22.691     578  23.351     578  24.846     578  26.719     578
  26.786     578  26.804     578  28.517     578  29.293     578  29.718     578
   30.57     578   33.63     578  34.713 577.595  35.326 572.535  40.268 572.535
  40.674 572.534  41.224 572.531  41.638 572.526  41.696 572.526  42.094 572.523
  48.693 572.479  48.733 572.478  48.793 572.478  48.914 572.477  48.964 572.342
  48.964  572.33  48.964  571.89  50.098 571.468  51.016 571.108  51.987 570.721
  52.836 570.346  54.649 571.126  55.246 571.383  55.905  571.69  56.182 571.817
  56.308 571.876  56.961 571.957   57.01 571.962   58.85 572.135  61.357 572.352
  63.975 572.579  68.751 572.979  70.933 573.153  72.155 573.249  72.671 573.291
  73.128  573.34  73.538 573.384  75.528 573.563  75.814 573.589  77.331  573.71
  78.264 573.784  79.308 573.853  83.217 574.118  83.708 574.153  84.742 574.222
  85.572 574.281   86.42 574.339  87.594 574.405

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.098     .06  56.308     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.098  56.308             .18    1.96    2.89             .1       .3
Left Levee      Station=35.23083      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1029.11*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 574.372    3.504 574.228  10.605 573.876  13.888 573.587  13.999  573.55
   14.14 573.495  14.392 573.411  14.664 573.319  15.057 573.181  15.842 572.904
  16.996 572.499  17.557  572.29  17.585 572.638  17.614 572.977  18.421 572.706
  18.421 572.735  18.451 575.997  18.471 577.999  19.357     578  20.566     578
  21.623     578  22.771     578  23.434     578  24.934     578  26.814     578
  26.881     578  26.899     578  28.618     578  29.397     578  29.824     578
  30.678     578  33.749     578  34.837 577.189  35.451 572.589  40.411 572.589
  40.819 572.587   41.37 572.582  41.787 572.573  41.844 572.572  42.243 572.566
  48.866 572.478  48.907 572.477  48.967 572.476  49.088 572.475  49.138 572.203
  49.138  572.18  49.138  571.78  50.276 571.376   51.17 571.025  52.116 570.642
  52.942 570.273  54.929 571.028  55.583 571.277  56.305 571.573  56.608 571.696
  56.746 571.752  57.413 571.834  57.463 571.839   59.34  572.01  61.897 572.224
  64.569 572.449  69.443 572.831  71.668 572.987  72.915 573.074  73.442 573.112
  73.908 573.158  74.327 573.199  76.357 573.364  76.649 573.388  78.197   573.5
  79.149 573.569  80.214 573.633  84.203 573.884  84.703 573.919  85.758 573.983
  86.605 574.043   87.47 574.098  88.668 574.161

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.276     .06  56.746     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.276  56.746             .18    1.96    2.89             .1       .3
Left Levee      Station=35.38167      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1027.17*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 574.358    3.516 574.209  10.643 573.818  13.938  573.52  14.049 573.485
   14.19 573.432  14.443 573.352  14.716 573.263   15.11 573.131  15.898 572.865
  17.057 572.477  17.619 572.271  17.647 572.798  17.676 573.312  18.486 573.059
  18.486 573.085  18.516  576.13  18.536 577.999  19.425     578  20.639     578
    21.7     578  22.852     578  23.517     578  25.022     578  26.909     578
  26.976     578  26.995     578   28.72     578  29.501     578  29.929     578
  30.787     578  33.869     578   34.96 576.784  35.577 572.644  40.555 572.644
  40.964 572.641  41.517 572.633  41.935  572.62  41.993 572.618  42.393 572.609
   49.04 572.477   49.08 572.475  49.141 572.474  49.262 572.472  49.312 572.065
  49.312  572.03  49.313  571.67  50.455 571.285  51.324 570.942  52.244 570.563
  53.048 570.199  55.208 570.929   55.92  571.17  56.705 571.456  57.034 571.574
  57.185 571.628  57.864 571.711  57.915 571.717   59.83 571.884  62.438 572.097
  65.163 572.319  70.134 572.683  72.404 572.822  73.675 572.898  74.212 572.933
  74.688 572.975  75.115 573.013  77.186 573.166  77.484 573.188  79.062  573.29
  80.033 573.354   81.12 573.412  85.188 573.649  85.698 573.685  86.774 573.744
  87.638 573.805  88.521 573.856  89.742 573.916

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.455     .06  57.185     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.455  57.185             .18    1.96    2.89             .1       .3
Left Levee      Station= 35.5325      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1025.23*

INPUT
Description:
Station Elevation Data    num=      78
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     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.344   3.529 574.191   10.68 573.761  13.987 573.454  14.099  573.42
  14.241 573.369  14.494 573.293  14.768 573.208  15.164 573.081  15.955 572.827
  17.117 572.456  17.681 572.251  17.709 572.958  17.738 573.646  18.551 573.412
  18.552 573.435  18.582 576.264  18.602 577.998  19.494     578  20.712     578
  21.777     578  22.933     578    23.6     578  25.111     578  27.004     578
  27.072     578   27.09     578  28.821     578  29.605     578  30.035     578
  30.896     578  33.989     578  35.084 576.379  35.703 572.699  40.698 572.699
  41.108 572.694  41.664 572.685  42.083 572.666  42.141 572.664  42.543 572.652
  49.213 572.475  49.254 572.474  49.314 572.473  49.436 572.469  49.486 571.927
  49.486  571.88  49.487  571.56  50.633 571.193  51.478 570.859  52.372 570.484
  53.154 570.126  55.487 570.831  56.256 571.064  57.104 571.339   57.46 571.452
  57.623 571.504  58.316 571.589  58.368 571.594   60.32 571.759  62.979 571.969
  65.757 572.189  70.825 572.535  73.139 572.657  74.436 572.723  74.983 572.755
  75.468 572.793  75.904 572.827  78.015 572.967  78.319 572.987  79.928  573.08
  80.918 573.138  82.025 573.191  86.173 573.415  86.693 573.451   87.79 573.505
  88.671 573.567  89.571 573.615  90.816 573.671

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.633     .06  57.623     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.633  57.623              .18    1.96    2.89             .1       .3
Left Levee      Station=35.68333      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1023.29*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  574.33   3.541 574.172  10.718 573.704  14.036 573.387  14.148 573.355
  14.291 573.307  14.545 573.233   14.82 573.152  15.217 573.031  16.011 572.789
  17.177 572.435  17.743 572.232  17.772 573.118  17.801 573.981  18.617 573.765
  18.617 573.785  18.647 576.397  18.667 577.998  19.563     578  20.785     578
  21.853     578  23.014     578  23.683     578  25.199     578    27.1     578
  27.167     578  27.185     578  28.923     578  29.709     578  30.141     578
  31.005     578  34.108     578  35.207 575.973  35.828 572.753  40.841 572.753
  41.253 572.747   41.81 572.736  42.231 572.713   42.29  572.71  42.693 572.695
  49.386 572.474  49.427 572.472  49.488 572.471   49.61 572.467  49.661 571.788
  49.661  571.73  49.661  571.45  50.811 571.101  51.632 570.776  52.501 570.404
   53.26 570.052  55.767 570.732  56.593 570.957  57.504 571.222  57.886 571.331
  58.061  571.38  58.767 571.466   58.82 571.471   60.81 571.634   63.52 571.841
  66.352 572.059  71.516 572.386  73.875 572.492  75.196 572.547  75.754 572.576
  76.248  572.61  76.692 572.642  78.844 572.768  79.153 572.786  80.793  572.87
  81.802 572.922  82.931  572.97  87.158 573.181  87.688 573.218  88.806 573.266
  89.704 573.329  90.621 573.374   91.89 573.427

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.811     .06  58.061     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.811  58.061              .18    1.96    2.89             .1       .3
Left Levee      Station=35.83417      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1021.35*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.316   3.553 574.154  10.755 573.647  14.085  573.32  14.198  573.29
  14.341 573.244  14.596 573.174  14.872 573.097   15.27 572.982  16.067 572.751
  17.237 572.414  17.806 572.213  17.834 573.278  17.863 574.316  18.682 574.118
  18.682 574.135  18.712 576.531  18.733 577.997  19.631     578  20.858     578
   21.93     578  23.094     578  23.766     578  25.288     578  27.195     578
  27.262     578  27.281     578  29.024     578  29.814     578  30.247     578
  31.113     578  34.228     578  35.331 575.568  35.954 572.808  40.984 572.808
  41.398 572.801  41.957 572.787  42.379 572.759  42.438 572.755  42.842 572.737
  49.559 572.473    49.6 572.471  49.661 572.469  49.784 572.464  49.835  571.65
  49.835 571.579  49.835 571.339  50.989  571.01  51.786 570.693  52.629 570.325
  53.366 569.979  56.046 570.634  56.929  570.85  57.904 571.105  58.312 571.209
    58.5 571.255  59.219 571.343  59.273 571.349  61.299 571.509  64.061 571.714
  66.946 571.929  72.207 572.238   74.61 572.327  75.956 572.371  76.525 572.397
  77.028 572.428   77.48 572.456  79.673 572.569  79.988 572.585  81.659  572.66
  82.687 572.707  83.837 572.749  88.143 572.947  88.683 572.984  89.822 573.027
  90.737  573.09  91.671 573.133  92.964 573.182

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.989     .06    58.5     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.989    58.5              .18    1.96    2.89             .1       .3
Left Levee      Station=  35.985      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1019.40*

INPUT
```

```
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.301   3.566 574.135  10.793  573.59  14.135 573.254  14.247 573.224
  14.391 573.181  14.647 573.115  14.924 573.042  15.324 572.932  16.123 572.713
  17.298 572.392  17.868 572.193  17.896 573.438  17.926 574.651  18.747  574.47
  18.747 574.485  18.778 576.664  18.798 577.997    19.7     578   20.93     578
  22.007     578  23.175     578   23.85     578  25.376     578   27.29     578
  27.357     578  27.376     578  29.126     578  29.918     578  30.352     578
  31.222     578  34.348     578  35.454 575.163   36.08 572.863  41.128 572.863
  41.542 572.854  42.104 572.838  42.527 572.805  42.586 572.801  42.992  572.78
  49.733 572.472  49.774 572.469  49.835 572.467  49.958 572.461  50.009 571.512
  50.009 571.429   50.01 571.229  51.168 570.918   51.94  570.61  52.757 570.246
  53.471 569.906  56.326 570.535  57.266 570.744  58.304 570.988  58.738 571.087
  58.938 571.131   59.67  571.22  59.725 571.226  61.789 571.383  64.602 571.586
   67.54 571.799  72.898  572.09  75.346 572.162  76.716 572.196  77.296 572.218
  77.809 572.245  78.269  572.27  80.502  572.37  80.823 572.384  82.524  572.45
  83.571 572.492  84.743 572.528  89.128 572.712  89.678  572.75  90.838 572.788
   91.77 572.852  92.722 572.891  94.039 572.937

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.168     .06  58.938     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.168  58.938             .18    1.96    2.89             .1       .3
Left Levee      Station=36.13583      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1017.46*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.287   3.578 574.117  10.831 573.533  14.184 573.187  14.297 573.159
  14.441 573.119  14.698 573.055  14.976 572.986  15.377 572.882  16.179 572.675
  17.358 572.371   17.93 572.174  17.959 573.599  17.988 574.986  18.812 574.823
  18.813 574.835  18.843 576.798  18.864 577.997  19.768     578  21.003     578
  22.083     578  23.256     578  23.933     578  25.464     578  27.385     578
  27.453     578  27.472     578  29.227     578  30.022     578  30.458     578
  31.331     578  34.467     578  35.578 574.757  36.206 572.917  41.271 572.917
  41.687 572.908   42.25 572.889  42.675 572.852  42.735 572.847  43.142 572.823
  49.906 572.471  49.947 572.468  50.009 572.465  50.132 572.459  50.183 571.373
  50.183 571.279  50.184 571.119  51.346 570.826  52.094 570.527  52.886 570.167
  53.577 569.832  56.605 570.437  57.603 570.637  58.703 570.871  59.164 570.966
  59.376 571.007  60.122 571.097  60.178 571.104  62.279 571.258  65.143 571.458
  68.134  571.67  73.589 571.942  76.081 571.997  77.477  572.02  78.066 572.039
  78.589 572.063  79.057 572.085  81.331 572.171  81.657 572.183   83.39  572.24
  84.456 572.276  85.648 572.307  90.113 572.478  90.674 572.516  91.855  572.55
  92.803 572.614  93.772  572.65  95.113 572.693

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.346     .06  59.376     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.346  59.376             .18    1.96    2.89             .1       .3
Left Levee      Station=36.28667      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1015.52*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.273   3.591 574.098  10.868 573.476  14.233 573.121  14.347 573.094
  14.491 573.056  14.749 572.996  15.028  572.93   15.43 572.832  16.235 572.636
  17.418  572.35  17.992 572.155  18.021 573.759  18.051 575.321  18.878 575.176
  18.909 576.931  18.929 577.996  19.837     578  21.076     578   22.16     578
  23.337     578  24.016     578  25.553     578   27.48     578  27.548     578
  27.567     578  29.329     578  30.126     578  30.564     578   31.44     578
  34.587     578  35.701 574.352  36.331 572.972  41.414 572.972  41.832 572.961
  42.397  572.94  42.824 572.898  42.883 572.893  43.292 572.866  50.079 572.469
  50.121 572.466  50.182 572.464  50.306 572.456  50.306 572.446  50.357 571.235
  50.357 571.129  50.358 571.009  51.524 570.734  52.248 570.444  53.014 570.088
  53.683 569.759  56.885 570.338  57.939 570.531  59.103 570.755  59.591 570.844
  59.814 570.883  60.573 570.974   60.63 570.981  62.769 571.133  65.683 571.331
  68.728  571.54  74.281 571.794  76.817 571.831  78.237 571.845  78.837  571.86
  79.369  571.88  79.846 571.899  82.159 571.972  82.492 571.982  84.255  572.03
   85.34  572.06  86.554 572.087  91.099 572.244  91.669 572.282  92.871 572.311
  93.836 572.376  94.822 572.409  96.187 572.448

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.524     .06  59.814     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.524  59.814             .18    1.96    2.89             .1       .3
Left Levee      Station= 36.4375      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1013.58*
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INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.259   3.603  574.08  10.906 573.418  14.282 573.054  14.396 573.029
  14.541 572.993    14.8 572.937   15.08 572.875  15.484 572.783  16.292 572.598
  17.478 572.329  18.055 572.136  18.083 573.919  18.113 575.656  18.943 575.529
  18.974 577.065  18.995 577.996  19.906     578  21.149     578  22.237     578
  23.417     578  24.099     578  25.641     578  27.575     578  27.643     578
  27.662     578   29.43     578  30.231     578   30.67     578  31.548     578
  34.707     578  35.825 573.947  36.457 573.027  41.557 573.027  41.977 573.015
  42.544 572.992  42.972 572.945  43.031 572.939  43.441 572.909  50.252 572.468
  50.294 572.465  50.356 572.462   50.48 572.453   50.48 572.442  50.532 571.097
  50.532 570.979  50.532 570.899  51.702 570.643  52.402 570.361  53.142 570.008
  53.789 569.685  57.164  570.24  58.276 570.424  59.503 570.638  60.017 570.722
  60.253 570.759  61.025 570.852  61.083 570.858  63.259 571.008  66.224 571.203
  69.322  571.41  74.972 571.646  77.552 571.666  78.997 571.669  79.608 571.682
  80.149 571.698  80.634 571.713  82.988 571.773  83.327 571.782  85.121  571.82
  86.225 571.845   87.46 571.866  92.084  572.01  92.664 572.048  93.887 572.072
  94.869 572.137  95.872 572.167  97.261 572.203

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.702     .06  60.253     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.702  60.253             .18    1.96    2.89             .1       .3
Left Levee      Station=36.58833      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1011.64*

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.245   3.616 574.061  10.943 573.361  14.332 572.988  14.446 572.964
  14.591 572.931  14.851 572.877  15.132 572.819  15.537 572.733  16.348  572.56
  17.539 572.307  18.117 572.116  18.146 574.079  18.176 575.991  19.008 575.882
   19.04 577.198   19.06 577.995  19.974     578  21.222     578  22.313     578
  23.498     578  24.182     578   25.73     578   27.67     578  27.739     578
  27.758     578  29.532     578  30.335     578  30.775     578  31.657     578
  34.826     578  35.948 573.541  36.583 573.081  41.701 573.081  42.121 573.068
   42.69 573.043   43.12 572.992   43.18 572.985  43.591 572.952  50.426 572.467
  50.467 572.464  50.529  572.46  50.654 572.451  50.654 572.438  50.706 570.958
  50.706 570.829  50.706 570.789  51.881 570.551  52.556 570.278  53.271 569.929
  53.895 569.612  57.444 570.141  58.612 570.318  59.902 570.521  60.443 570.601
  60.691 570.635  61.476 570.729  61.535 570.736  63.749 570.882  66.765 571.076
  69.916  571.28  75.663 571.498  78.288 571.501  79.758 571.494  80.379 571.503
  80.929 571.516  81.423 571.528  83.817 571.574  84.161 571.581  85.986  571.61
  87.109  571.63  88.365 571.645  93.069 571.775  93.659 571.814  94.903 571.833
  95.902 571.899  96.923 571.926  98.335 571.959

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.881     .06  60.691     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.881  60.691             .18    1.96    2.89             .1       .3
Left Levee      Station=36.73917      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 1009.70

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 574.231   3.628 574.043  10.981 573.304  14.381 572.921  14.496 572.899
  14.642 572.868  14.902 572.818  15.184 572.764  15.591 572.683  16.404 572.522
  17.599 572.286  18.179 572.097  18.208 574.239  18.238 576.326  19.074 576.235
  19.105 577.332  19.126     578  20.043     578  21.295     578   22.39     578
  23.579     578  24.265     578  25.818     578  27.765     578  27.834     578
  27.853     578  29.633     578  30.439     578  30.881     578  31.766     578
  34.946     578  36.072 573.136  41.844 573.136  42.266 573.122  42.837 573.094
  43.268 573.038  43.328 573.031  43.741 572.995  50.599 572.466  50.641 572.462
  50.703 572.458  50.828 572.448   50.88  570.82   50.88 570.679  52.059 570.459
   52.71 570.195  53.399  569.85  54.001 569.538  57.723 570.043  58.949 570.211
  60.302 570.404  60.869 570.479  61.129 570.511  61.928 570.606  61.988 570.613
  64.239 570.757  67.306 570.948   70.51  571.15  76.354  571.35  79.023 571.336
  80.518 571.318   81.15 571.324  81.709 571.333  82.211 571.342  84.646 571.375
  84.996  571.38  86.852   571.4  87.994 571.414  89.271 571.424  94.054 571.541
  94.654  571.58  95.919 571.594  96.935 571.661  97.973 571.685  99.409 571.714

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.059     .06  61.129     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.059  61.129             .92    9.78   14.46             .1       .3
Left Levee      Station=   36.89      Elevation=     578

CROSS SECTION


RIVER: arroyo_maquinas
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REACH: casillas          RS: 1000

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  574.16    3.69  573.95    17.9  572.18   18.49     572   18.52  575.04
   18.55     578   21.66     578   24.68     578   26.26     578   28.24     578
   28.31   573.3   28.33     572   30.14     572   30.96     572   31.41     572
   32.31     572   42.56  571.11   42.99  571.09   43.57  571.05   44.07  570.96
   44.49  570.91   52.95     570   53.48  569.78   54.53  569.17   59.12  569.55
    62.3  569.82      63  569.87   63.32  569.89   64.25     570   70.01  570.31
   73.48   570.5   79.81  570.61    82.7  570.51   84.32  570.44   85.61  570.42
   88.79  570.38   91.18  570.35    93.8  570.32   98.98  570.37   99.63  570.41
     101   570.4   102.1  570.47  104.78  570.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   52.95     .06   63.32     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         52.95   63.32             6.27    4.62    1.47             .1       .3
Right Levee     Station=   79.54      Elevation=  570.61

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 995.333*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.861    3.728  573.64  18.085 571.934  18.681 571.769  18.738 574.476
  18.794 577.111  21.559 577.111  24.243 577.111  25.648 577.111  27.408 577.111
   27.47 572.933  27.488 571.778  29.183 571.761  29.951 571.754  30.372  571.75
  31.215 571.742  40.813 570.858  41.216 570.837  41.759 570.796  42.227 570.711
   42.62 570.663  50.542 569.778  51.244 569.524  51.489 569.408   52.08 569.132
  52.634 568.871  57.315 569.296  60.558 569.597  61.078 569.639  61.271 569.655
  61.598  569.68  61.623 569.683   62.55 569.778   63.34 569.815  68.449 570.087
  68.921 570.112   71.16 570.228  72.002  570.27  72.911 570.287  73.668   570.3
  74.569 570.315  75.588 570.337  77.465 570.377  78.071 570.389  78.485 570.398
  78.542 570.396  78.938 570.386  79.754 570.364  80.445 570.344  81.444 570.314
  81.783 570.301  82.591 570.271  83.103 570.253  84.424 570.237  87.681 570.206
   89.51 570.189  90.128 570.183  91.261 570.174  92.549 570.165  92.811 570.163
   93.82 570.173  95.268 570.191  96.993 570.211  97.768  570.22  98.116 570.225
  98.782 570.264  99.476 570.263   99.99 570.262 100.185 570.262 100.941 570.308
 101.311 570.331 101.884 570.337 104.056 570.366

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.542     .06  61.598     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.542  61.598             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 990.666*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.562    3.766  573.33   18.27 571.689  18.872 571.538  18.956 573.911
  19.039 576.222  21.458 576.222  23.807 576.222  25.036 576.222  26.576 576.222
   26.63 572.567  26.646 571.556  28.225 571.523  28.941 571.508  29.334   571.5
  30.119 571.484  39.066 570.606  39.441 570.583  39.947 570.542  40.384 570.463
   40.75 570.416  48.134 569.556  49.008 569.267  49.313 569.143  50.049  568.85
  50.739 568.572   55.51 569.043  58.815 569.374  59.346 569.422  59.543  569.44
  59.876  569.47  59.901 569.472   60.85 569.556  61.659 569.588  66.888 569.864
  67.371  569.89  69.663     570  70.525 570.041  71.455 570.059   72.23 570.071
  73.152 570.087  74.194 570.114  76.115 570.161  76.736 570.176  77.159 570.185
  77.218 570.184  77.623 570.178  78.459 570.161  79.165 570.145  80.188 570.117
  80.535 570.106  81.362 570.081  81.886 570.066  83.238 570.054  86.571 570.032
  88.444  570.02  89.077 570.017  90.236 570.011  91.554 570.007  91.823 570.005
  92.855 570.016  94.337 570.038  96.103 570.062  96.895 570.074  97.252  570.08
  97.933 570.118  98.644 570.122   99.17 570.123  99.369 570.125 100.143  570.17
 100.522 570.191 101.108   570.2 103.331 570.241

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.134     .06  59.876     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.134  59.876             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 986.*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 573.263    3.804  573.02  18.455 571.443  19.063 571.307  19.173 573.347
  19.283 575.333  21.357 575.333   23.37 575.333  24.423 575.333  25.743 575.333
   25.79   572.2  25.803 571.333  27.268 571.284  27.932 571.262  28.296  571.25
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  29.024 571.226  37.319 570.355  37.667  570.33  38.136 570.287  38.541 570.214
  38.881 570.169  45.727 569.333  46.772 569.011  47.136 568.878  48.018 568.569
  48.843 568.273  53.705 568.789  57.073 569.151  57.614 569.204  57.814 569.226
  58.153  569.26   58.18 569.262   59.15 569.333  59.978 569.361  65.326 569.641
  65.821 569.667  68.165 569.773  69.047 569.811  69.998  569.83  70.791 569.842
  71.734 569.859  72.801 569.891  74.766 569.945  75.401 569.962  75.834 569.973
  75.894 569.972  76.308  569.97  77.163 569.958  77.886 569.946  78.933 569.921
  79.287  569.91  80.133 569.891  80.669 569.879  82.053 569.871  85.462 569.859
  87.378 569.852  88.025  569.85  89.211 569.848  90.559 569.849  90.834 569.848
   91.89  569.86  93.406 569.885  95.212 569.913  96.023 569.928  96.388 569.935
  97.085 569.972  97.812  569.98   98.35 569.984  98.554 569.987  99.346 570.031
  99.733 570.052 100.333 570.063 102.607 570.117

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.727     .06  58.153     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.727  58.153             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 981.333*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 572.964   3.843  572.71   18.64 571.198  19.254 571.076  19.391 572.782
  19.528 574.444  21.256 574.444  22.933 574.444  23.811 574.444  24.911 574.444
   24.95 571.833  24.961 571.111  26.311 571.046  26.922 571.016  27.258     571
  27.929 570.967  35.572 570.103  35.892 570.076  36.325 570.033  36.698 569.965
  37.011 569.922  43.319 569.111  44.536 568.755   44.96 568.614  45.986 568.287
  46.948 567.974    51.9 568.535  55.331 568.928  55.881 568.987  56.086 569.011
  56.431  569.05  56.458 569.052  57.451 569.111  58.296 569.134  63.765 569.418
  64.271 569.444  66.668 569.546  67.569 569.582  68.542 569.602  69.353 569.613
  70.317 569.631  71.407 569.667  73.417 569.729  74.065 569.748  74.509  569.76
   74.57  569.76  74.994 569.761  75.868 569.755  76.607 569.747  77.677 569.724
  78.039 569.715  78.904 569.701  79.453 569.692  80.867 569.688  84.353 569.685
  86.311 569.683  86.973 569.684  88.186 569.685  89.564 569.691  89.845 569.691
  90.925 569.703  92.475 569.733  94.322 569.764  95.151 569.781  95.524 569.791
  96.236 569.827   96.98 569.838   97.53 569.845  97.738 569.849  98.548 569.893
  98.944 569.913  99.557 569.926 101.882 569.992

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.319     .06  56.431     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.319  56.431             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 976.666*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 572.666   3.881   572.4  18.825 570.952  19.446 570.844  19.609 572.218
  19.772 573.556  21.154 573.556  22.497 573.556  23.199 573.556  24.079 573.556
   24.11 571.467  24.119 570.889  25.353 570.807  25.913  570.77   26.22  570.75
  26.833 570.709  33.825 569.851  34.118 569.823  34.513 569.779  34.854 569.716
  35.141 569.675  40.911 568.889    42.3 568.499  42.784 568.349  43.955 568.006
  45.052 567.676  50.095 568.282  53.588 568.705  54.149  568.77  54.357 568.796
  54.709  568.84  54.737 568.841  55.751 568.889  56.615 568.907  62.204 569.194
   62.72 569.221   65.17 569.319  66.091 569.352  67.085 569.374  67.914 569.385
    68.9 569.403  70.014 569.444  72.067 569.513   72.73 569.535  73.183 569.548
  73.246 569.548  73.679 569.553  74.572 569.552  75.327 569.547  76.421 569.528
  76.791  569.52  77.675 569.511  78.236 569.505  79.681 569.505  83.244 569.511
  85.245 569.514  85.921 569.517   87.16 569.522  88.569 569.532  88.857 569.533
   89.96 569.546  91.544  569.58  93.432 569.615  94.279 569.635   94.66 569.646
  95.388 569.681  96.148 569.697   96.71 569.706  96.923 569.711  97.751 569.754
  98.155 569.773  98.782 569.789 101.158 569.868

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  40.911     .06  54.709     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.911  54.709             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 972.*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 572.367   3.919  572.09   19.01 570.706  19.637 570.613  19.827 571.653
  20.017 572.667  21.053 572.667   22.06 572.667  22.587 572.667  23.247 572.667
   23.27   571.1  23.277 570.667  24.396 570.569  24.903 570.524  25.182   570.5
  25.738 570.451  32.077 569.599  32.343 569.569  32.702 569.525  33.011 569.468
  33.271 569.428  38.503 568.667  40.064 568.242  40.608 568.084  41.924 567.724
  43.157 567.377   48.29 568.028  51.846 568.482  52.417 568.552  52.629 568.581
  52.987  568.63  53.015 568.631  54.051 568.667  54.934  568.68  60.643 568.971
```

```
   61.17 568.998  63.673 569.092  64.614 569.123  65.629 569.145  66.476 569.156
  67.482 569.174   68.62  569.22  70.718 569.298  71.395 569.321  71.858 569.335
  71.922 569.336  72.364 569.345  73.277 569.349  74.048 569.348  75.165 569.332
  75.544 569.325  76.447 569.321  77.019 569.318  78.495 569.323  82.134 569.337
  84.179 569.346   84.87  569.35  86.135 569.359  87.575 569.374  87.868 569.376
  88.995  569.39  90.613 569.428  92.541 569.466  93.407 569.489  93.796 569.501
   94.54 569.535  95.316 569.555   95.89 569.567  96.108 569.574  96.953 569.616
  97.366 569.634  98.006 569.651 100.433 569.743

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  38.503     .06  52.987     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.503  52.987             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 967.333*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 572.068   3.957 571.781  19.195 570.461  19.828 570.382  20.044 571.089
  20.261 571.778  20.952 571.778  21.623 571.778  21.974 571.778  22.414 571.778
   22.43 570.733  22.434 570.444  23.439  570.33  23.894 570.278  24.143  570.25
  24.643 570.193   30.33 569.348  30.569 569.316  30.891  569.27  31.168 569.219
  31.401 569.181  36.096 568.444  37.828 567.986  38.432 567.819  39.893 567.443
  41.261 567.078  46.485 567.774  50.104 568.259  50.685 568.335    50.9 568.367
  51.264  568.42  51.293 568.421  52.351 568.444  53.253 568.454  59.081 568.748
   59.62 568.776  62.175 568.864  63.136 568.893  64.173 568.917  65.037 568.927
  66.065 568.946  67.227 568.997  69.369 569.082   70.06 569.107  70.532 569.123
  70.598 569.124  71.049 569.137  71.981 569.146  72.769 569.149  73.909 569.135
  74.296  569.13  75.218  569.13  75.802 569.131  77.309  569.14  81.025 569.164
  83.113 569.177  83.818 569.184   85.11 569.196   86.58 569.216  86.879 569.219
   88.03 569.233  89.682 569.275  91.651 569.318  92.534 569.343  92.932 569.356
  93.691 569.389  94.484 569.413   95.07 569.428  95.292 569.436  96.155 569.477
  96.577 569.494  97.231 569.514  99.709 569.619

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.096     .06  51.264     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.096  51.264             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 962.666*

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 571.769   3.995 571.471   19.38 570.215  20.019 570.151  20.262 570.524
  20.506 570.889  20.851 570.889  21.187 570.889  21.362 570.889  21.582 570.889
   21.59 570.367  21.592 570.222  22.481 570.092  22.884 570.032  23.105      570
  23.548 569.935  28.583 569.096  28.795 569.062  29.079 569.016  29.325  568.97
  29.531 568.934  33.688 568.222  35.592  567.73  36.256 567.555  37.861 567.161
  39.366 566.779   44.68 567.521  48.361 568.036  48.952 568.117  49.172 568.152
  49.542  568.21  49.572  568.21  50.651 568.222  51.571 568.227   57.52 568.525
   58.07 568.553  60.678 568.637  61.658 568.664  62.716 568.688  63.599 568.699
  64.647 568.718  65.833 568.773  68.019 568.866  68.725 568.894  69.207  568.91
  69.274 568.912  69.735 568.928  70.686 568.943  71.489 568.949  72.653 568.939
  73.048 568.935  73.989  568.94  74.585 568.944  76.124 568.957  79.916  568.99
  82.046 569.009  82.766 569.017  84.085 569.033  85.585 569.058   85.89 569.061
  87.065 569.077  88.751 569.123   90.76 569.169  91.662 569.196  92.068 569.211
  92.843 569.243  93.652 569.272   94.25 569.289  94.477 569.298  95.358 569.339
  95.788 569.355  96.455 569.377  98.984 569.494

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  33.688     .06  49.542     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.688  49.542             6.27    4.62    1.47             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 958

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  571.47   20.21  569.92   20.75     570   31.28     568   34.08  567.29
   35.83  566.88   37.47  566.48   47.22   567.9   47.82     568   47.85     568
   49.89     568   56.52  568.33   59.18  568.41   61.26  568.46   62.16  568.47
   63.23  568.49   64.44  568.55   66.67  568.65   67.39  568.68   67.95   568.7
   68.42  568.72   69.39  568.74   70.21  568.75    71.8  568.74   72.76  568.75
   80.98  568.84   83.06  568.87   84.59   568.9    86.1  568.92   87.82  568.97
   89.87  569.02   90.79  569.05   92.82  569.13   93.43  569.15   94.56   569.2
   95.68  569.24   98.26  569.37

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

```
       0     .06   31.28     .06   47.82     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         31.28   47.82             7.09    4.59     2.4             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 953.5*

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  570.91   4.271 570.629   4.581  570.61     5.1 570.577   5.519 570.552
  13.288 570.096  18.187 569.779  19.563 569.454  20.401 569.335  20.574 569.307
  20.682 569.267  22.252  569.34  22.252 569.273  22.702 569.324  31.485 567.653
  34.109 566.994  35.362 566.701  35.749  566.61  36.144 566.514  36.445 566.441
  37.287 566.237  38.427 566.417  39.887 566.646   45.81 567.574  46.335 567.667
  46.366 567.667  47.415 567.687  48.452 567.706  49.377 567.761  50.223 567.805
  55.232 568.088   55.48 568.098  57.952 568.189   58.18 568.196   60.08 568.252
  60.278 568.255      61 568.268  62.095 568.294   62.15 568.297  63.194 568.346
  63.332 568.353  64.247 568.393  65.613 568.448  66.272 568.472  66.349 568.475
  66.922 568.496  67.227 568.509  67.402 568.516  67.983 568.531  68.395 568.541
  68.937  568.55  69.233 568.555  70.859 568.552  71.493  568.56  71.841 568.565
  72.456 568.572   75.12 568.601  79.981 568.634  80.248 568.638  82.375 568.673
   83.94 568.706  84.562 568.715  85.484 568.724  87.243 568.765  87.434 568.769
  89.144 568.806  89.339 568.811   90.28 568.837    91.7 568.886  92.356 568.909
   92.61 568.917   92.98 568.928  94.136 568.974   94.58 568.988  95.281 569.012
  96.939  569.09   97.92 569.137

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  31.485     .06  46.335     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.485  46.335             7.09    4.59     2.4             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 949.*

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  570.35   4.347  570.11   4.662 570.094   5.191 570.068   5.617 570.051
  13.523 569.722  18.509 569.457  19.909 568.912  20.762 568.737  20.938 568.695
  21.153 568.614  24.293  568.76  24.293 568.626  24.654 568.649   31.69 567.307
  34.138 566.698  35.308 566.424  35.669  566.34  36.038 566.252  36.318 566.183
  37.104 565.994   38.08 566.163   39.33 566.379  44.401 567.248   44.85 567.333
  44.881 567.334  45.954 567.374  47.014 567.412   47.96 567.477  48.824 567.524
  53.945 567.846  54.198 567.858  56.725 567.968  56.958 567.977    58.9 568.043
  59.102 568.048  59.841 568.066  60.959 568.099  61.016 568.102  62.084 568.149
  62.224 568.156   63.16 568.197  64.556 568.245   65.23 568.268  65.308 568.271
  65.894 568.292  66.206 568.305  66.385 568.313  66.978 568.331  67.399 568.343
  67.954 568.354  68.256 568.359  69.918 568.365  70.566 568.374  70.922 568.379
   71.55 568.388  74.274 568.417  79.242 568.432  79.515 568.436   81.69 568.476
  83.289 568.511  83.926 568.522  84.868 568.529  86.666  568.56  86.861 568.563
   88.61 568.597  88.809 568.601  89.771 568.625  91.222 568.666  91.893 568.688
  92.152 568.696   92.53 568.706  93.712 568.747  94.166  568.76  94.883 568.784
  96.578 568.858   97.58 568.904

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   31.69     .06   44.85     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         31.69   44.85             7.09    4.59     2.4             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 944.5*

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  569.79   4.422 569.591   4.743 569.579   5.281  569.56   5.714 569.549
  13.758 569.349   18.83 569.136  20.255  568.37  21.122 568.139  21.301 568.082
  21.625  567.96  26.335  568.18  26.335  567.98  26.606 567.973  31.895  566.96
  34.168 566.402  35.253 566.148  35.588  566.07  35.931 565.989  36.191 565.924
   36.92  565.75  37.732  565.91  38.772 566.111  42.991 566.922  43.365     567
  43.397 567.002  44.493  567.06  45.576 567.118  46.542 567.192  47.426 567.243
  52.657 567.603  52.916 567.619  55.498 567.746  55.736 567.757   57.72 567.834
  57.927 567.841  58.681 567.864  59.824 567.904  59.882 567.906  60.973 567.951
  61.117 567.958  62.072     568  63.499 568.043  64.187 568.063  64.268 568.067
  64.866 568.089  65.184 568.102  65.367 568.109  65.974 568.131  66.404 568.144
   66.97 568.158   67.28 568.164  68.978 568.177   69.64 568.188  70.003 568.193
  70.645 568.203  73.428 568.232  78.504 568.229  78.783 568.234  81.005 568.279
  82.639 568.317  83.289 568.329  84.252 568.333  86.089 568.355  86.289 568.357
  88.075 568.387  88.278 568.391  89.261 568.412  90.744 568.447  91.429 568.467
  91.694 568.474  92.081 568.484  93.288 568.521  93.752 568.533  94.484 568.557
  96.216 568.626   97.24  568.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  31.895     .06  43.365     .06
```

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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.895  43.365             7.09    4.59     2.4             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 940

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  569.23   4.498 569.072   4.824 569.064   5.371 569.051   5.812 569.047
  13.993 568.976  19.152 568.815  20.601 567.828  21.483 567.541  21.665  567.47
  22.097 567.307  22.234 569.125  22.295 569.823  22.325 570.146  22.417 571.333
  22.837 571.333  23.323 571.333  23.977 571.333   24.57 571.333   25.95 571.333
  26.663 571.333  27.177 571.333  27.637 571.333  28.037 571.333   28.13 571.333
  28.343 571.333  28.377   567.6  28.377 567.333    32.1 566.613  34.197 566.106
  35.199 565.872  35.508   565.8  35.824 565.726  36.064 565.666  36.737 565.507
  37.385 565.657  38.215 565.844  41.582 566.596   41.88 566.667  41.913 566.669
  43.032 566.747  44.138 566.824  45.125 566.908  46.027 566.962   51.37 567.361
  51.634 567.379  54.271 567.525  54.514 567.538   56.54 567.626  56.751 567.634
  57.522 567.662  58.689 567.708  58.748 567.711  59.862 567.754  60.009 567.761
  60.985 567.803  62.442 567.841  63.145 567.859  63.227 567.862  63.838 567.885
  64.163 567.898   64.35 567.906  64.969 567.931  65.409 567.945  65.987 567.962
  66.303 567.968  68.037  567.99  68.713 568.002  69.085 568.008   69.74 568.019
  72.582 568.048  77.766 568.026  78.051 568.032   80.32 568.082  81.989 568.122
  82.653 568.136  83.636 568.138  85.512  568.15  85.716 568.151   87.54 568.178
  87.748 568.182  88.752 568.199  90.266 568.228  90.966 568.246  91.236 568.253
  91.631 568.262  92.864 568.294  93.338 568.305  94.086 568.329  95.854 568.394
    96.9 568.437

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    32.1     .06   41.88     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          32.1   41.88             7.09    4.59     2.4             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 935.5*

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  568.67   4.594 568.551   4.927 568.547   5.485 568.541   5.936 568.544
  14.291 568.598  19.561 568.488   21.04 567.279  21.941 566.935  22.128  566.85
  22.568 566.653  22.682 568.917  22.732 569.787  22.758 570.188  22.833 571.667
  23.358 571.667  23.967 571.667  24.783 571.667  25.525 571.667   27.25 571.667
  28.142 571.667  28.783 571.667  29.358 571.667  29.858 571.667  29.975 571.667
  30.242 571.667  30.283     567  30.283 566.667  32.305 566.267  34.227  565.81
  35.145 565.596  35.428 565.531  35.717 565.463  35.937 565.408  36.553 565.263
  37.037 565.403  37.657 565.577  40.172  566.27  40.395 566.333  40.428 566.336
  41.571 566.433    42.7  566.53  43.707 566.624  44.629 566.681  50.082 567.119
  50.352  567.14  53.044 567.304  53.292 567.319   55.36 567.417  55.576 567.427
  56.363 567.461  57.554 567.513  57.614 567.515  58.751 567.557  58.901 567.564
  59.897 567.607  61.384 567.639  62.102 567.654  62.186 567.658   62.81 567.681
  63.141 567.694  63.333 567.703  63.965  567.73  64.413 567.746  65.003 567.766
  65.326 567.772  67.097 567.803  67.787 567.816  68.166 567.823  68.835 567.834
  71.736 567.864  77.028 567.823  77.319  567.83  79.635 567.885  81.338 567.927
  82.016 567.943   83.02 567.942  84.935 567.946  85.143 567.946  87.005 567.969
  87.218 567.972  88.242 567.986  89.788 568.009  90.503 568.025  90.778 568.031
  91.182  568.04   92.44 568.067  92.924 568.078  93.687 568.102  95.492 568.162
   96.56 568.203

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  32.305     .06  40.395     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.305  40.395             7.09    4.59     2.4             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 931

INPUT
Description: EDIFICACION EN MARGEN IZQUIERDA
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  568.11    4.69  568.03    5.03  568.03     5.6  568.03    6.06  568.04
   14.59  568.22   19.97  568.16   21.48  566.73    22.4  566.33   22.59  566.23
   23.04     566   23.13  568.71   23.17  569.75   23.19  570.23   23.25     572
   23.88     572   24.61     572   25.59     572   26.48     572   28.55     572
   29.62     572   30.39     572   31.08     572   31.68     572   31.82     572
   32.14     572   32.19   566.4   32.19     566   32.51  565.92   35.09  565.32
   35.61   565.2   35.81  565.15   36.37  565.02   36.69  565.15    37.1  565.31
   38.91     566   40.11  566.12   42.29  566.34   43.23   566.4   49.07   566.9
   52.07   567.1    54.4  567.22   56.48  567.32   57.64  567.36   58.81  567.41
   61.06  567.45   62.12  567.49   62.96  567.53   64.02  567.57   66.86  567.63
   67.93  567.65   70.89  567.68   76.29  567.62   81.38  567.75   84.57  567.74
   86.47  567.76   89.31  567.79   90.32  567.81   92.51  567.85   95.13  567.93
   96.22  567.97

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   32.51     .06   38.91     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         32.51   38.91             2.93    3.62    5.21             .1       .3
Left Levee      Station=   31.68      Elevation=     572

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 927.333*

INPUT
Description:
Station Elevation Data    num=     109
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  567.77     .216 567.761   1.797 567.714   4.592 567.634    4.97 567.621
   5.331 567.612   5.935 567.597   6.422 567.592   6.488 567.591   8.438  567.62
   9.328 567.609  10.406 567.653  12.105 567.635   12.95  567.63  14.037 567.681
  15.367 567.679  15.462 567.683  15.664 567.689  16.706 567.685  17.515 567.692
  18.764  567.72  19.618 567.757  20.274  567.81  21.163 567.897  25.365 566.703
  27.563 566.348  27.926 566.291  28.454 566.198  29.707  565.98  29.832  567.79
  29.888 568.484  29.916 568.805      30 569.987   30.42 569.987  30.907 569.987
   31.56 569.987  32.153 569.987  33.533 569.987  34.247 569.987   34.76 569.987
   35.22 569.987   35.62 569.987  35.713 569.987  35.927 569.987   35.96 566.253
   35.96 565.987  36.173 565.933  36.408 565.791  36.531 565.783   36.57 565.779
  36.693 565.768  36.777  565.76  36.911 565.747  37.682 565.589  40.438 565.117
  40.782 565.058  41.297 564.968  41.628 564.908  42.553 564.747    42.6 564.747
  43.191 564.942  43.377 565.003  43.946 565.166  44.436 565.301   45.13 565.476
  45.694  565.66   47.29     566  48.411 566.092  50.447 566.259  50.517 566.263
  51.325 566.307  54.139 566.505  54.325 566.517  56.779 566.674   59.58 566.815
  61.757 566.902  62.246  566.92  62.479 566.931  63.699 566.988  64.782 567.028
  65.811 567.071  65.875 567.073  65.997 567.075  66.475 567.084  67.976 567.106
  68.966 567.135  69.751 567.163  70.741 567.191  71.891 567.211  72.462 567.219
  73.393  567.23  73.452 567.231  74.393 567.249  77.157 567.285    82.2 567.273
   82.77 567.287  86.954 567.387  89.933 567.398  91.472 567.418  91.708 567.422
   94.36  567.46  94.838  567.47  95.234 567.479  95.303 567.481  96.049 567.496
  97.348 567.522  97.994 567.541  99.795 567.595 100.813  567.63

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.173     .06   47.29     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.173   47.29             2.93    3.62    5.21             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 923.666*

INPUT
Description:
Station Elevation Data    num=      94
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  567.43     .228 567.416   1.899 567.347   4.851 567.232   5.251 567.211
   5.631 567.194   6.269 567.164   6.784 567.143   6.854  567.14   8.914  567.16
   9.854 567.119  10.993 567.186  12.787 567.118   13.68  567.09  14.828 567.171
  16.234 567.139  16.334 567.146  16.547 567.159  17.648 567.162  18.502 567.186
  19.822 567.255  20.724 567.339  21.417  567.45  22.357 567.633  29.251 566.675
  32.857 566.309  33.451 566.253  34.319 566.165  36.373  565.96  39.73 566.107
   39.73 565.973  39.837 565.947  40.164 565.696  40.335 565.697   40.39 565.695
  40.561 565.689  40.678 565.685  40.865 565.679  41.941 565.469  45.785 564.913
  46.266 564.844  46.984 564.737  47.445 564.667  48.737 564.473   48.83 564.473
  49.692 564.735  49.964 564.816  50.793 565.023  51.508  565.19  52.52 565.398
  53.342  565.65   55.67     566  56.711 566.063  58.603 566.179  58.668 566.182
  59.419 566.215  62.035 566.353  62.208 566.358  64.487 566.448  67.091 566.531
  69.113 566.584  69.568 566.595  69.785 566.606  70.918 566.656  71.925 566.695
   72.88 566.736   72.94 566.737  73.053 566.737  73.497 566.747  74.893 566.762
  75.813 566.779  76.542 566.795  77.462 566.812   78.53 566.825  79.061  566.83
  79.926  566.83  79.981  566.83  80.855 566.847  83.424 566.889   88.11 566.927
   88.64 566.939  92.528 567.025  95.296 567.056  96.726 567.079  96.945 567.083
   99.41  567.13  99.854  567.14 100.222  567.15 100.286 567.151  100.98 567.168
 102.187 567.194 102.787  567.21 104.461  567.26 105.407  567.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.837     .06   55.67     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.837   55.67             2.93    3.62    5.21             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 920

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  567.09      .24  567.07        2  566.98    5.11  566.83    7.22  566.69
    9.39   566.7   10.38  566.63   11.58  566.72   13.47   566.6   14.41  566.55
   15.62  566.66    17.1   566.6   17.43  566.63   18.59  566.64   19.49  566.68
   20.88  566.79   21.83  566.92   22.56  567.09   23.55  567.37   38.15  566.27
   43.04  565.94    43.5  565.96   43.92   565.6   44.14  565.61   44.21  565.61
   44.43  565.61   44.58  565.61   44.82  565.61    46.2  565.35   51.75  564.63
   54.92   564.2   55.06   564.2   56.55  564.63   57.64  564.88   58.58  565.08
   59.91  565.32   60.99  565.64   64.05     566   66.82   566.1   69.93   566.2
   70.09   566.2   76.89  566.27   77.09  566.28   79.95   566.4   80.11   566.4
```

```
   80.52  566.41   85.17  566.44   85.66  566.44   86.51  566.43   94.51  566.59
  101.98  566.74  104.87  566.81  105.21  566.82  105.91  566.84  107.58  566.88
     110  566.95

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    43.5     .06   64.05     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          43.5   64.05             3.84    4.53    4.02            .1       .3
Right Levee     Station=   64.36      Elevation=  566.01

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 915.5*

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 566.908      .2 566.892   1.667 566.817   4.258 566.692   6.017 566.575
   7.825 566.583    8.65 566.525    9.65   566.6  11.225   566.5  12.008 566.458
  13.017  566.55   14.25   566.5  14.525 566.525  15.492 566.533  16.242 566.567
    17.4 566.658  18.192 566.767    18.8 566.908  19.625 567.142  19.662 567.139
  33.681 565.968  37.852 565.648  37.927 565.644  38.389 565.617  38.832 565.633
  39.196 565.322  39.387 565.325  39.448 565.323  39.638 565.317  39.769 565.313
  39.977 565.307  41.174 565.054  42.854 564.794  45.988 564.326  48.738   563.9
  48.855   563.9  50.203  564.31  50.973 564.503  51.189 564.555  52.039 564.748
  53.242 564.985  54.219 565.282  56.987 565.667  57.108 565.667  57.137 565.667
   57.22 565.667   57.57 565.667  58.125 565.667  58.397 565.667  58.982  565.69
  59.338 565.493  59.572 565.407  61.625 565.492  62.262 565.518  62.763 565.537
  64.582 565.607  65.133 565.628  65.283 565.633  65.438 565.635  66.154  565.65
  67.186 565.669  68.207 565.689  69.228 565.708  70.284 565.729  71.363 565.749
  72.043 565.762  72.238 565.773  72.302 565.776  73.651 565.839  75.015  565.89
  75.171  565.89  75.569 565.899  80.086 565.928  80.562 565.928  81.387 565.921
    83.8 565.965  85.959 566.017  89.158   566.1  90.734 566.141  96.413 566.361
  99.221  566.48  99.551 566.496 100.231 566.527 101.853 566.596 104.203 566.705

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  38.832     .06  56.987     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.832  56.987             3.84    4.53    4.02            .1       .3
Right Levee     Station=   59.24      Elevation=565.7584

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 911.*

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 566.727     .16 566.713   1.333 566.653   3.407 566.553   4.813  566.46
    6.26 566.467    6.92  566.42    7.72  566.48    8.98   566.4   9.607 566.367
  10.413  566.44    11.4   566.4   11.62  566.42  12.393 566.427  12.993 566.453
   13.92 566.527  14.553 566.613   15.04 566.727    15.7 566.913  15.736 566.911
  29.212 565.666  33.222 565.318  33.293 565.315  33.738 565.293  34.163 565.307
  34.472 565.045  34.634  565.04  34.685 565.036  34.847 565.025  34.957 565.017
  35.133 565.004  36.148 564.758  37.571 564.489  40.227 564.022  42.557   563.6
   42.65   563.6  43.855 563.991  44.544  564.18  44.737  564.23  45.498 564.416
  46.574  564.65  47.448 564.923  49.923 565.333  50.167 565.333  50.223 565.333
   50.39 565.333   51.09 565.333    52.2 565.333  52.743 565.333  53.913  565.38
  54.627 564.987  55.093 564.813  57.086 564.908  57.704 564.936   58.19 564.958
  59.955 565.038   60.49  565.06  60.636 565.067  60.787  565.07  61.481 565.092
  62.483 565.119  63.474  565.15  64.464 565.177  65.489 565.208  66.537 565.235
  67.197 565.255  67.385 565.265  67.447 565.268  68.757 565.337  70.081 565.379
  70.232  565.38  70.618 565.387  75.001 565.416  75.463 565.417  76.265 565.412
  78.606  565.45  80.701 565.509  83.806 565.609  85.335 565.658  90.847 565.983
  93.571 566.151  93.892 566.172  94.551 566.215  96.126 566.312  98.407  566.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  34.163     .06  49.923     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        34.163  49.923             3.84    4.53    4.02            .1       .3
Right Levee     Station=   54.12      Elevation=565.5067

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 906.5*

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 566.545     .12 566.535       1  566.49   2.555 566.415    3.61 566.345
   4.695  566.35    5.19 566.315    5.79  566.36   6.735   566.3   7.205 566.275
    7.81  566.33    8.55   566.3   8.715 566.315   9.295  566.32   9.745  566.34
   10.44 566.395  10.915  566.46   11.28 566.545  11.775 566.685  11.809 566.684
  24.743 565.364  28.591 564.989   28.66 564.986  29.086  564.97  29.495  564.98
  29.748 564.767  29.881 564.755  29.923 564.749  30.055 564.732  30.146  564.72
   30.29 564.701  31.122 564.462  32.288 564.184  34.465 563.718  36.375   563.3
  36.445   563.3  37.508 563.671  38.116 563.858  38.286 563.905  38.957 564.083
  39.906 564.314  40.676 564.565   42.86     565  43.225     565   43.31     565
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   43.56     565   44.61     565  46.275     565   47.09     565  48.845  565.07
  49.915  564.48  50.615  564.22  52.547 564.323  53.147 564.355  53.618 564.378
  55.329 564.468  55.848 564.493  55.989    564.5  56.135 564.505  56.808 564.534
   57.78 564.569   58.74  564.61  59.701 564.645  60.694 564.686   61.71 564.721
   62.35 564.747  62.533 564.758  62.593 564.761  63.863 564.836  65.146 564.869
  65.293  564.87  65.667 564.876  69.917 564.904  70.365 564.905  71.142 564.903
  73.412 564.935  75.443 565.002  78.453 565.119  79.936 565.176   85.28 565.604
  87.922 565.821  88.232 565.848  88.872 565.902  90.398 566.027   92.61 566.215

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  29.495     .06   42.86     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        29.495   42.86             3.84    4.53    4.02             .1       .3
Right Levee     Station=      49      Elevation= 565.255

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 902.*

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 566.363     .08 566.357    .667 566.327   1.703 566.277   2.407  566.23
    3.13 566.233    3.46  566.21    3.86  566.24    4.49   566.2   4.803 566.183
   5.207  566.22     5.7   566.2    5.81  566.21   6.197 566.213   6.497 566.227
    6.96 566.263   7.277 566.307    7.52 566.363    7.85 566.457   7.883 566.456
  20.274 565.062  23.961 564.659  24.027 564.657  24.435 564.647  24.827 564.653
  25.024 564.489  25.127 564.469   25.16 564.462  25.264 564.439  25.334 564.423
  25.447 564.398  26.095 564.167  27.005  563.88  28.704 563.414  30.193     563
   30.24     563  31.161 563.351  31.687 563.535  31.835  563.58  32.416 563.751
  33.238 563.979  33.905 564.206  35.797 564.667  36.283 564.667  36.397 564.667
   36.73 564.667   38.13 564.667   40.35 564.667  41.437 564.667  43.777  564.76
  45.203 563.973  46.137 563.627  48.008 563.739  48.589 563.773  49.045 563.799
  50.703 563.899  51.205 563.925  51.342 563.933  51.483 563.941  52.136 563.976
  53.077  564.02  54.007  564.07  54.937 564.113  55.899 564.164  56.883 564.208
  57.503 564.239   57.68 564.251  57.739 564.254  58.968 564.334  60.212 564.359
  60.354 564.359  60.717 564.364  64.833 564.392  65.267 564.394  66.019 564.394
  68.218  564.42  70.186 564.495  73.101 564.628  74.538 564.694  79.714 565.225
  82.272 565.492  82.573 565.524  83.193 565.589  84.671 565.743  86.813  565.97

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  24.827     .06  35.797     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.827  35.797             3.84    4.53    4.02             .1       .3
Right Levee     Station=   43.88      Elevation=565.0034

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 897.5*

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 566.182     .04 566.178    .333 566.163    .852 566.138   1.203 566.115
   1.565 566.117    1.73 566.105    1.93  566.12   2.245   566.1   2.402 566.092
   2.603  566.11    2.85   566.1   2.905 566.105   3.098 566.107   3.248 566.113
    3.48 566.132   3.638 566.153    3.76 566.182   3.925 566.228   3.956 566.228
  15.805  564.76   19.33  564.33  19.393 564.329  19.784 564.323  20.158 564.327
    20.3 564.212  20.374 564.184  20.398 564.175  20.472 564.146  20.523 564.127
  20.604 564.095  21.069 563.871  21.723 563.575  22.942  563.11  24.012   562.7
  24.035   562.7  24.814 563.032  25.259 563.213  25.383 563.255  25.875 563.419
   26.57 563.644  27.134 563.848  28.733 564.333  29.342 564.333  29.483 564.333
    29.9 564.333   31.65 564.333  34.425 564.333  35.783 564.333  38.708  564.45
  40.492 563.467  41.658 563.033  43.469 563.154  44.031 563.191  44.473 563.219
  46.076 563.329  46.563 563.357  46.695 563.367  46.832 563.376  47.463 563.418
  48.373  563.47  49.273  563.53  50.174 563.582  51.105 563.642  52.057 563.694
  52.656 563.731  52.828 563.743  52.884 563.747  54.074 563.832  55.277 563.848
  55.414 563.849  55.766 563.853  59.749  563.88  60.168 563.882  60.896 563.885
  63.024 563.905  64.928 563.987  67.749 564.138  69.139 564.212  74.147 564.847
  76.623 565.162  76.914   565.2  77.513 565.276  78.944 565.459  81.017 565.725

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  20.158     .06  28.733     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.158  28.733             3.84    4.53    4.02             .1       .3
Right Levee     Station=   38.76      Elevation=564.7516

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 893

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     566     .03     566    14.7     564   14.76     564   15.49     564
   16.44  563.27   17.83   562.4   18.83  562.89   21.67     564    22.4     564
   22.57     564   23.07     564   25.17     564    28.5     564   30.13     564
   33.64  564.14   35.78  562.96   37.18  562.44   38.93  562.57    39.9  562.64
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   41.45  562.76   41.92  562.79   42.79  562.86   43.67  562.92   44.54  562.99
   45.41  563.05   46.31  563.12   47.23  563.18   48.03  563.24   49.18  563.33
   57.83  563.39   59.67  563.48   63.74  563.73   75.22  565.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   15.49     .06   21.67     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.49   21.67             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   12.85               F
   33.64   75.22               F
Right Levee     Station=   33.64      Elevation=   564.5

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 888.333*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 565.809    .039 565.809   2.466 565.574   2.617 565.562   4.712 565.313
   5.326 565.242   5.371 565.235    5.72 565.203    5.82 565.194   6.454 565.135
   6.489 565.132   7.219 565.065   7.336 565.054   8.557 564.942   8.793  564.92
   9.606 564.845  12.566 564.591  12.658 564.583  12.706 564.578  12.919 564.557
   15.57 564.264  17.003 563.994  18.437 563.859   19.15 563.776  19.329 563.756
  19.408 563.755  19.486 563.753  20.344  563.73  20.368  563.73  21.227  563.01
  22.483 562.132   22.61 562.132  22.738 562.132  23.652  562.61  26.248 563.718
  26.968 563.717  27.136 563.717  27.302 563.717  27.629 563.719  29.701 563.737
  32.987 563.765  34.465 563.778  34.595 563.778  38.058 563.916   40.17 562.876
  41.551 562.419  43.278 562.541  44.235 562.607  45.764  562.72  46.228 562.748
  47.086 562.814  47.955 562.871  48.813 562.936  49.672 562.993   50.56 563.058
  51.467 563.115  52.257 563.172  53.391 563.256  61.926 563.343  63.742  563.43
  67.757 563.668  70.833 564.102  79.084 565.234

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  20.368     .06  26.248     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.368  26.248             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       018.04445               F
36.85778  79.084               F
Right Levee     Station=37.70222      Elevation=564.2222

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 883.666*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 565.618    .049 565.617   3.056   565.4   3.243 565.392   5.841  565.11
   6.602 565.031   6.657 565.023    7.09 564.995   7.214 564.987       8 564.936
   8.043 564.933   8.948 564.874   9.092 564.865  10.606 564.766  10.899 564.747
  11.907 564.682  15.575 564.481   15.69 564.474  15.749  564.47  16.013  564.45
  19.299 564.139  21.076 563.748  22.852 563.625  23.737 563.534  23.958 563.513
  24.056  563.51  24.153 563.507  25.216  563.46  25.246  563.46  26.013  562.75
  27.137 561.864   27.39 561.864  27.646 561.864  28.474 562.331  30.826 563.436
  31.536 563.434  31.702 563.434  31.865 563.433  32.188 563.439  34.232 563.474
  37.474  563.53  38.932 563.556   39.06 563.557  42.477 563.693   44.56 562.791
  45.922 562.398  47.626 562.512   48.57 562.574  50.079  562.68  50.536 562.706
  51.383 562.768  52.239 562.821  53.086 562.882  53.933 562.936  54.809 562.997
  55.705 563.051  56.483 563.104  57.603 563.182  66.022 563.296  67.813  563.38
  71.775 563.606  74.809     564  82.949 564.989

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  25.246     .06  30.826     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.246  30.826             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       023.23889               F
40.07555  82.949               F
Right Levee     Station=41.76444      Elevation=563.9445

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 879.*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 565.427    .058 565.426   3.647 565.226    3.87 565.222   6.969 564.907
   7.877 564.821   7.943 564.812    8.46 564.787   8.607  564.78   9.546 564.737
   9.596 564.734  10.677 564.684  10.849 564.676  12.655 564.591  13.005 564.575
  14.207 564.519  18.584 564.371  18.721 564.364  18.792 564.361  19.107 564.343
  23.027 564.013  25.148 563.501  27.268 563.392  28.323 563.292  28.587 563.269
```

```
  28.704 563.265   28.82  563.26  30.088  563.19  30.123  563.19    30.8  562.49
   31.79 561.597   32.17 561.597  32.553 561.597  33.296 562.051  35.403 563.153
  36.104 563.151  36.267 563.151  36.429  563.15  36.747 563.158  38.763 563.211
   41.96 563.295  43.399 563.333  43.525 563.335  46.895 563.469  48.949 562.707
  50.294 562.376  51.974 562.483  52.905 562.541  54.393 562.639  54.844 562.665
  55.679 562.721  56.524 562.772  57.359 562.828  58.195 562.878  59.059 562.935
  59.942 562.986   60.71 563.035  61.814 563.109  70.118 563.249  71.885  563.33
  75.792 563.544  78.785 563.897  86.813 564.743

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  30.123     .06  35.403     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        30.123  35.403             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       028.43333               F
43.29333  86.813               F
Right Levee     Station=45.82666      Elevation=563.6667

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 874.333*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 565.236    .068 565.235   4.237 565.051   4.497 565.052   8.098 564.704
   9.153 564.611   9.229   564.6    9.83 564.579  10.001 564.574  11.091 564.537
   11.15 564.535  12.406 564.493  12.606 564.486  14.704 564.416  15.111 564.402
  16.508 564.356  21.594 564.261  21.753 564.255  21.835 564.253  22.201 564.236
  26.756 563.888   29.22 563.254  31.683 563.158  32.909  563.05  33.216 563.026
  33.352  563.02  33.486 563.013   34.96  562.92  35.001  562.92  35.587 562.229
  36.443 561.329   36.95 561.329  37.461 561.329  38.117 561.771  39.981 562.871
  40.672 562.868  40.833 562.867  40.992 562.867  41.307 562.878  43.295 562.949
  46.447 563.061  47.866 563.111   47.99 563.113  51.313 563.245  53.339 562.623
  54.665 562.355  56.321 562.455   57.24 562.508  58.707 562.599  59.152 562.623
  59.976 562.675  60.809 562.722  61.633 562.774  62.456 562.821  63.308 562.874
  64.179 562.922  64.937 562.967  66.025 563.035  74.214 563.202  75.956  563.28
  79.809 563.482  82.761 563.794  90.678 564.498

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.001     .06  39.981     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.001  39.981             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       033.62778               F
46.51111  90.678               F
Right Levee     Station=49.88889      Elevation=563.3889

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 869.666*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 565.044    .077 565.044   4.828 564.877   5.123 564.881   9.226 564.501
  10.428 564.401  10.515 564.388    11.2 564.372  11.395 564.367  12.637 564.338
  12.704 564.336  14.135 564.302  14.363 564.297  16.753 564.241  17.217  564.23
  18.808 564.193  24.603 564.151  24.784 564.146  24.878 564.144  25.294 564.129
  30.485 563.762  33.292 563.007  36.098 562.924  37.495 562.808  37.845 562.782
      38 562.774  38.153 562.767  39.832  562.65  39.879  562.65  40.373 561.969
  41.097 561.061   41.73 561.061  42.369 561.061  42.939 561.492  44.559 562.589
   45.24 562.585  45.399 562.584  45.556 562.583  45.866 562.597  47.826 562.686
  50.934 562.826  52.333 562.889  52.455 562.891  55.732 563.021  57.729 562.538
  59.036 562.334  60.669 562.426  61.575 562.475  63.021 562.559   63.46 562.581
  64.272 562.629  65.094 562.673  65.906 562.721  66.718 562.764  67.558 562.812
  68.416 562.857  69.163 562.899  70.237 562.961   78.31 563.155  80.028  563.23
  83.827  563.42  86.737 563.691  94.542 564.252

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.879     .06  44.559     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.879  44.559             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       038.82222               F
49.72889  94.542               F
Right Levee     Station=53.95111      Elevation=563.1111

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 865.*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 564.853    .087 564.852   5.418 564.703    5.75 564.711  10.355 564.299
  11.704 564.191  11.801 564.176   12.57 564.164  12.789  564.16  14.183 564.138
  14.258 564.137  15.863 564.112   16.12 564.108  18.802 564.066  19.322 564.057
  21.109 564.029  27.612  564.04  27.816 564.037  27.921 564.036  28.388 564.022
  34.214 563.637  37.364  562.76  40.514 562.691  42.081 562.566  42.474 562.539
  42.647 562.529   42.82  562.52  44.704  562.38  44.757  562.38   45.16 561.709
   45.75 560.793   46.51 560.793  47.277 560.793  47.761 561.212  49.137 562.307
  49.808 562.302  49.965 562.301  50.119   562.3  50.425 562.317  52.357 562.423
  55.421 562.591  56.799 562.667   56.92  562.67   60.15 562.798  62.119 562.454
  63.407 562.313  65.017 562.397   65.91 562.443  67.336 562.518  67.768 562.539
  68.569 562.583  69.378 562.623  70.179 562.667  70.979 562.707  71.807 562.751
  72.654 562.792   73.39 562.831  74.448 562.887  82.407 563.108    84.1  563.18
  87.844 563.358  90.712 563.588  98.407 564.007

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  44.757     .06  49.137     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.757  49.137             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       044.01667               F
52.94667  98.407               F
Right Levee     Station=58.01333      Elevation=562.8333

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 860.333*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 564.662    .096 564.661   6.009 564.529   6.377 564.541  11.483 564.096
  12.979  563.98  13.088 563.964   13.94 563.956  14.182 563.953  15.729 563.939
  15.812 563.938  17.592 563.921  17.876 563.919  20.852  563.89  21.428 563.885
  23.409 563.866  30.621  563.93  30.847 563.928  30.964 563.927  31.482 563.914
  37.942 563.511  41.436 562.514  44.929 562.457  46.668 562.324  47.103 562.295
  47.295 562.284  47.487 562.273  49.576  562.11  49.634  562.11  49.947 561.449
  50.403 560.526   51.29 560.526  52.184 560.526  52.583 560.932  53.714 562.024
  54.376 562.019  54.531 562.018  54.683 562.017  54.984 562.036  56.888  562.16
  59.908 562.356  61.266 562.444  61.386 562.448  64.568 562.574  66.509  562.37
  67.778 562.292  69.365 562.368  70.245  562.41   71.65 562.478  72.076 562.498
  72.865 562.537  73.663 562.574  74.452 562.613  75.241  562.65  76.057 562.689
  76.891 562.728  77.616 562.763  78.659 562.814  86.503 563.061  88.171  563.13
  91.862 563.296  94.688 563.486 102.271 563.761

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  49.634     .06  53.714     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        49.634  53.714             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       049.21111               F
56.16444 102.271               F
Right Levee     Station=62.07555      Elevation=562.5555

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 855.666*

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 564.471    .106  564.47   6.599 564.354   7.003  564.37  12.612 563.893
  14.255  563.77  14.374 563.752   15.31 563.748  15.576 563.747  17.274 563.739
  17.366 563.739  19.321 563.731  19.633 563.729  22.901 563.715  23.534 563.712
   25.71 563.703  33.631  563.82  33.879 563.819  34.007 563.819  34.576 563.807
  41.671 563.386  45.508 562.267  49.345 562.224  51.254 562.082  51.732 562.052
  51.943 562.039  52.153 562.027  54.448  561.84  54.512  561.84  54.733 561.189
  55.057 560.258   56.07 560.258  57.092 560.258  57.405 560.652  58.292 561.742
  58.944 561.736  59.096 561.735  59.246 561.733  59.543 561.756  61.419 561.897
  64.394 562.121  65.733 562.222  65.851 562.226  68.987  562.35  70.899 562.285
  72.149 562.271  73.713 562.339   74.58 562.377  75.964 562.438  76.384 562.456
  77.162  562.49  77.948 562.524  78.725 562.559  79.502 562.592  80.306 562.628
  81.128 562.663  81.843 562.694  82.871  562.74  90.599 563.014  92.243  563.08
  95.879 563.234  98.664 563.383 106.136 563.516

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  54.512     .06  58.292     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        54.512  58.292             1.76    4.61    4.46             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       054.40556               F
59.38222 106.136               F
Right Levee     Station=66.13778      Elevation=562.2778

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 851
```

```
INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  564.28    7.19  564.18    7.63   564.2   13.74  563.69   15.53  563.56
   15.66  563.54   16.68  563.54   16.97  563.54   18.82  563.54   18.92  563.54
   21.05  563.54   21.39  563.54   24.95  563.54   25.64  563.54   28.01  563.54
   36.64  563.71   36.91  563.71   37.05  563.71   37.67   563.7    45.4  563.26
   49.58  562.02   53.76  561.99   55.84  561.84   56.82  561.78   59.32  561.57
   59.39  561.57   59.71  559.99   60.85  559.99      62  559.99   62.87  561.46
   63.81  561.45    70.2     562  102.64  563.28     110  563.27

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   59.39     .06   62.87     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         59.39   62.87            16.93   13.51   13.69             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    59.6  563.54       F
    62.6     110  563.54       F
Right Levee     Station=    70.2      Elevation=     562

CULVERT


RIVER: arroyo_maquinas
REACH: casillas           RS: 845

INPUT
Description: ODT Nº2. Bóveda actual de 2*2, que se modeliza como marco de 3*2 m
Distance from Upstream XS =     1.5
Deck/Roadway Width        =     8.4
Weir Coefficient          =     1.4
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    45.4  563.28     560      92  563.28     560

Upstream Bridge Cross Section Data
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  564.28    7.19  564.18    7.63   564.2   13.74  563.69   15.53  563.56
   15.66  563.54   16.68  563.54   16.97  563.54   18.82  563.54   18.92  563.54
   21.05  563.54   21.39  563.54   24.95  563.54   25.64  563.54   28.01  563.54
   36.64  563.71   36.91  563.71   37.05  563.71   37.67   563.7    45.4  563.26
   49.58  562.02   53.76  561.99   55.84  561.84   56.82  561.78   59.32  561.57
   59.39  561.57   59.71  559.99   60.85  559.99      62  559.99   62.87  561.46
   63.81  561.45    70.2     562  102.64  563.28     110  563.27

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   59.39     .06   62.87     .06

Bank Sta: Left   Right    Coeff Contr.   Expan.
         59.39   62.87            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    59.6  563.54       F
    62.6     110  563.54       F
Right Levee     Station=    70.2      Elevation=     562

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   24.25  563.28     560   76.05  563.28     560

Downstream Bridge Cross Section Data
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  564.58    1.88  564.51   16.01  564.67   19.13  564.74   21.48  564.57
   22.11  564.55   22.89  564.52   24.25  564.48   35.99     564   47.45  563.79
   53.37  563.05    54.5  562.85   56.76  561.04   56.84  560.92   57.09  561.24
   58.98  563.62   60.45  561.01   61.55   559.2    62.6   559.2   65.09   559.2
   67.94  561.99   68.99   562.6   70.08  563.01    70.3   563.1    70.6  563.35
   76.05  564.07  104.44  564.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   58.98     .06    70.6     .06

Bank Sta: Left   Right    Coeff Contr.   Expan.
         58.98    70.6            .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    61.8  563.85       F
    64.8  104.44  563.85       F
Left Levee      Station=   58.98      Elevation=  563.62

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       3
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FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               1.5     8.4     .015     .015        0                  .2               1
Upstream   Elevation =  559.99
           Centerline Station =  61.1
Downstream Elevation =  559.2
           Centerline Station =  63.3

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

  Q Culv Group (m3/s)       7.12    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         3.17
  Q Barrel (m3/s)           7.12    Culv Vel DS (m/s)         5.37
  E.G. US. (m)            561.35    Culv Inv El Up (m)      559.99
  W.S. US. (m)            560.90    Culv Inv El Dn (m)      559.20
  E.G. DS (m)             561.09    Culv Frctn Ls (m)         0.14
  W.S. DS (m)             559.65    Culv Exit Loss (m)        0.02
  Delta EG (m)              0.26    Culv Entr Loss (m)        0.10
  Delta WS (m)              1.25    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)       560.74    Weir Max Depth (m)
  Culv WS Outlet (m)      559.64    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.30    Weir Flow Area (m2)
  Culv Crt Depth (m)        0.83    Min El Weir Flow (m)    563.28


Note:     Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water
surface was used.
Note:    The flow in the culvert is entirely supercritical.

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

  Q Culv Group (m3/s)      17.37    Culv Full Len (m)
  # Barrels                    1    Culv Vel US (m/s)         3.84
  Q Barrel (m3/s)          17.37    Culv Vel DS (m/s)         6.30
  E.G. US. (m)            562.44    Culv Inv El Up (m)      559.99
  W.S. US. (m)            561.92    Culv Inv El Dn (m)      559.20
  E.G. DS (m)             561.61    Culv Frctn Ls (m)         0.11
  W.S. DS (m)             561.16    Culv Exit Loss (m)        0.54
  Delta EG (m)              0.83    Culv Entr Loss (m)        0.19
  Delta WS (m)              0.76    Q Weir (m3/s)
  E.G. IC (m)             562.44    Weir Sta Lft (m)
  E.G. OC (m)             562.40    Weir Sta Rgt (m)
  Culvert Control          Inlet    Weir Submerg
  Culv WS Inlet (m)       561.50    Weir Max Depth (m)
  Culv WS Outlet (m)      560.12    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.53    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.51    Min El Weir Flow (m)    563.28


Note:     Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water
surface was used.
Note:    The flow in the culvert is entirely supercritical.

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 838

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  564.58    1.88  564.51   16.01  564.67   19.13  564.74   21.48  564.57
   22.11  564.55   22.89  564.52   24.25  564.48   35.99     564   47.45  563.79
   53.37  563.05    54.5  562.85   56.76  561.04   56.84  560.92   57.09  561.24
   58.98  563.62   60.45  561.01   61.55   559.2    62.6   559.2   65.09   559.2
   67.94  561.99   68.99   562.6   70.08  563.01    70.3   563.1    70.6  563.35
   76.05  564.07  104.44  564.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   58.98     .06    70.6     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         58.98    70.6             1.37    3.45    5.98             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0    61.8  563.85       F
    64.8  104.44  563.85       F
Left Levee      Station=   58.98      Elevation=  563.62

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 834.5*

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 564.385   1.744 564.316  10.239 564.348  13.751 564.375   14.85 564.383
  17.744 564.432  17.935 564.419  19.924 564.285  20.508 564.266  21.232  564.24
  22.493 564.203  24.744 564.114  33.382 563.768  33.786  563.76  37.592 563.694
  43.532 563.553  44.012 563.536  46.437 563.219  49.503 562.811  50.551 562.622
  52.648  561.07  52.722 560.968  52.954  561.23  54.707 563.177  56.576 560.846
  56.626 560.788  56.926  560.41  57.206 560.057  57.545 559.591  57.975     559
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   58.85     559  60.925     559  63.303 561.645   64.18 562.271  65.089 562.735
  65.273 562.835  65.523 563.077  65.532 563.459  66.458 563.557  69.296 563.856
  70.148 563.946  71.211 564.058  81.517  564.05  82.915 564.048  83.643 564.048
  91.032 564.042  91.049 563.647  91.073 563.042  92.952  563.47  98.255 563.747
 100.837 563.732

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  54.707     .06  65.523     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        54.707  65.523             1.37    3.45    5.98             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       057.13833               F
60.68834 100.837               F
Left Levee      Station=   54.71      Elevation=

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 831.*

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  564.19   1.608 564.121   9.439 564.082  12.676 564.094   13.69 564.096
  16.358 564.125  16.534 564.113  18.367 563.999  18.906 563.983  19.573 563.959
  20.736 563.925  22.811 563.847  30.775 563.536  31.146 563.528  34.656 563.471
  40.132 563.306  40.574 563.282  42.809 562.976  45.636 562.571  46.603 562.394
  48.535   561.1  48.603 561.017  48.817  561.22  50.433 562.733  52.702 560.682
  52.763  560.63  53.127 560.262  53.467  559.92  53.878 559.424    54.4   558.8
    55.1   558.8   56.76   558.8  58.667   561.3  59.369 561.942  60.099  562.46
  60.246 562.569  60.447 562.803  60.455 563.567  61.421 563.646  64.377 563.885
  65.265 563.957  66.371 564.047  77.108  564.04  78.564 564.039  79.323 564.038
   87.02 564.033  87.037 563.243  87.063 562.033  89.019 562.892  94.544 563.452
  97.233 563.423

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.433     .06  60.447     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.433  60.447             1.37    3.45    5.98             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       052.47667               F
56.57667  97.233               F
Left Levee      Station=   50.43      Elevation=

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 827.5*

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 563.995   1.471 563.927   8.639 563.817  11.602 563.813   12.53 563.809
  14.972 563.817  15.133 563.808  16.811 563.714  17.304 563.699  17.915 563.678
  18.979 563.648  20.879  563.58  28.167 563.304  28.507 563.296  31.719 563.248
  36.731  563.06  37.136 563.029  39.182 562.732  41.769 562.332  42.654 562.166
  44.423  561.13  44.485 561.065  44.681  561.21   46.16  562.29  48.828 560.518
    48.9 560.473  49.328 560.114  49.728 559.782  50.211 559.258  50.825   558.6
   51.35   558.6  52.595   558.6   54.03 560.954  54.559 561.613  55.108 562.185
  55.219 562.304   55.37  562.53  55.379 563.676  56.383 563.734  59.458 563.914
  60.381 563.968  61.532 564.035  72.698  564.03  74.213 564.029  75.002 564.029
  83.007 564.025  83.025  562.84  83.052 561.025  85.087 562.314  90.833 563.156
   93.63 563.115

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   46.16     .06   55.37     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         46.16   55.37             1.37    3.45    5.98             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  47.815               F
  52.465   93.63               F
Left Levee      Station=   46.16      Elevation=
Right Levee     Station=   55.38      Elevation=

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 824.*

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   563.8   1.335 563.732    7.84 563.551  10.528 563.532   11.37 563.523
  13.586 563.509  13.732 563.502  15.255 563.429  15.702 563.416  16.256 563.398
  17.222 563.371  18.946 563.314   25.56 563.072  25.868 563.064  28.783 563.026
  33.331 562.813  33.698 562.775  35.555 562.488  37.903 562.093  38.705 561.938
   40.31 561.159  40.367 561.113  40.544   561.2  41.887 561.847  44.954 560.353
  45.036 560.315  45.528 559.966  45.989 559.645  46.544 559.092   47.25   558.4
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    47.6   558.4   48.43   558.4  49.394 560.609  49.749 561.284  50.117  561.91
  50.192 562.039  50.293 562.257  50.303 563.784  51.345 563.823  54.539 563.943
  55.497 563.979  56.692 564.023  68.289  564.02  69.862 564.019  70.681 564.019
  78.995 564.017  79.013 562.437  79.041 560.017  81.155 561.736  87.122 562.861
  90.027 562.807

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  41.887     .06  50.293     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        41.887  50.293             1.37    3.45    5.98             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       043.15334              F
48.35334  90.027              F
Left Levee      Station=   41.89      Elevation=
Right Levee     Station=    50.3      Elevation=

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 820.5*

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 563.605   1.199 563.538    7.04 563.286   9.454 563.251   10.21 563.236
    12.2 563.201  12.331 563.196  13.698 563.143    14.1 563.132  14.598 563.117
  15.465 563.094  17.013 563.047  22.952  562.84  23.229 562.832  25.846 562.803
   29.93 562.567   30.26 562.521  31.927 562.244  34.036 561.854  34.756 561.711
  36.198 561.189  36.249 561.161  36.408  561.19  37.613 561.403  41.081 560.189
  41.173 560.158  41.729 559.818  42.249 559.507  42.877 558.926  43.675   558.2
   43.85   558.2  44.265   558.2  44.757 560.264  44.939 560.955  45.127 561.635
  45.165 561.773  45.217 561.983  45.226 563.892  46.308 563.911  49.619 563.971
  50.614 563.989  51.853 564.012  63.879  564.01  65.511  564.01  66.361  564.01
  74.982 564.008  75.002 562.033  75.031 559.008  77.222 561.158  83.411 562.565
  86.423 562.498

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  37.613     .06  45.217     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        37.613  45.217             1.37    3.45    5.98             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       038.49167              F
44.24167  86.423              F
Left Levee      Station=   37.61      Elevation=
Right Levee     Station=   45.23      Elevation=

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 817

INPUT
Description: EDIFICACION EN MARGEN DERECHA
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  563.41    6.24  563.02    8.38  562.97   10.93  562.89   15.08  562.78
   20.59   562.6   22.91  562.58   26.53  562.32    28.3     562   33.34  560.96
   37.31     560   37.93  559.67   38.51  559.37   39.21  558.76    40.1     558
   40.14  561.71   40.15     564   41.27     564    44.7     564   45.73     564
   59.47     564   61.16     564   62.04     564   70.97     564   70.99  561.63
   71.02     558   73.29  560.58    79.7  562.27   82.82  562.19

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   33.34     .06   40.14     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.34   40.14             2.57    4.28     3.7             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   33.83              F
   40.13   82.82              F
Right Levee     Station=   40.15      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 812.75*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 563.253   5.717 562.885   7.677 562.822  10.014 562.731  12.971 562.628
  13.816 562.604  16.279 562.522  16.458 562.514  18.864 562.364  20.989 562.273
  24.306  561.96  25.928 561.662  30.063 560.817  30.545  560.72  30.612 560.699
  30.733  560.66  34.029 559.637  34.202 559.595  34.773 559.321  35.024 559.205
  35.308 559.076  35.953 558.597  36.772     558  36.812  561.89  36.823     564
  37.633     564    38.1     564  42.012     564  43.186     564  52.631     564
  54.485     564  56.683     564  58.092     564  58.857     564  60.784     564
  61.788     564  71.973     564  71.993 561.657  72.022     558  74.283 560.557
  80.193 561.783   83.07 561.703
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  30.545     .06  36.812     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        30.545  36.812             2.57    4.28     3.7             .1       .3
Right Levee     Station= 36.8225      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 808.5*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 563.095   5.194  562.75   6.975 562.674   9.097 562.573  11.784 562.452
  12.552 562.428  14.789 562.351  14.952 562.343  17.138 562.128  19.069 561.967
  22.082   561.6  23.555 561.325  27.312 560.564   27.75  560.48  27.812 560.456
  27.922  560.41  30.936 559.228  31.095 559.189  31.617 558.973  31.846  558.88
  32.105 558.781  32.695 558.434  33.445     558  33.485  562.07  33.495     564
  34.405     564   34.93     564  39.323     564  40.643     564   51.25     564
  53.333     564  55.802     564  57.385     564  58.244     564  60.409     564
  61.536     564  72.975     564  72.995 561.685  73.025     558  75.275 560.535
  80.686 561.296   83.32 561.215

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   27.75     .06  33.485     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.75  33.485             2.57    4.28     3.7             .1       .3
Right Levee     Station=  33.495      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 804.25*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 562.938   4.671 562.615   6.272 562.526   8.181 562.414  10.597 562.276
  11.287 562.253    13.3 562.181  13.446 562.171  15.412 561.893  17.148  561.66
  19.858 561.241  21.183 560.987  24.561 560.312  24.955  560.24  25.011 560.213
  25.111  560.16  27.843 558.819  27.987 558.784   28.46 558.624  28.668 558.555
  28.903 558.487  29.438 558.271  30.118     558  30.157  562.25  30.168     564
  31.178     564   31.76     564  36.635     564  38.099     564   49.87     564
  52.182     564  54.921     564  56.677     564   57.63     564  60.033     564
  61.284     564  73.978     564  73.997 561.712  74.027     558  76.268 560.513
  81.179 560.809   83.57 560.727

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  24.955     .06  30.157     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.955  30.157             2.57    4.28     3.7             .1       .3
Right Levee     Station= 30.1675      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 800

INPUT
Description: EDIFICACION EN MARGEN DERECHA
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  562.78    9.41   562.1   11.81  562.01   11.94     562   21.81  560.06
   22.16     560   22.21  559.97    22.3  559.91   24.75  558.41   25.49  558.23
   26.79     558   26.83  562.43   26.84     564   27.95     564   48.49     564
   51.03     564   54.04     564  55.97     564   74.98     564      75  561.74
   75.03     558   77.26  560.49   83.82  560.24

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   22.16     .06   26.83     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         22.16   26.83             6.1    4.99      .8             .1       .3
Right Levee     Station=   26.84      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 795.*

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 562.661   5.164  562.33   8.814 562.091    10.1 562.049  11.062 562.018
  11.184 562.009  20.429 560.338  20.854 560.031  20.881  560.01  21.281  559.75
  21.326 559.723  21.407 559.668  22.792 558.813  23.611 558.311  24.277 558.142
  25.446 557.921  25.564 557.966  25.669     558  25.704 561.876  26.037  562.64
  26.297 563.235  26.299  563.46  26.304     564  27.415     564  47.978     564
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  49.751     564  50.521     564  53.534     564  55.466     564  74.498     564
  74.518  561.67  74.528 560.403  74.548     558  76.272 559.932   76.66 560.333
  82.872 560.116

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  21.281     .06  25.704     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.281  25.704              6.1    4.99      .8            .1       .3
Right Levee     Station=26.30375      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 790.*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 562.543   4.815 562.279   8.218 562.082   9.418 562.049  10.314 562.025
  10.428 562.019  19.048 560.615  19.723 560.033   19.73 560.022  19.767 559.991
  20.403   559.5  20.442 559.475  20.514 559.427  21.744 558.658  22.472 558.212
  23.064 558.055  24.103 557.843  24.338 557.932  24.548     558  24.577 561.323
  25.239 561.977  25.755 562.488  25.757 562.932  25.767     564   26.88     564
  47.466     564  49.241     564  50.012     564  53.028     564  54.963     564
  74.015     564  74.035   561.6  74.045 560.312  74.065     558  75.693 559.832
  76.059 560.175  81.925 559.992

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  20.403     .06  24.577     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.403  24.577              6.1    4.99      .8            .1       .3
Right Levee     Station= 25.7675      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 785.*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 562.424   4.466 562.227   7.622 562.073   8.735 562.049   9.566 562.033
   9.671 562.028  17.666 560.893  18.593 560.034  18.601 560.019  18.652 559.973
  19.524  559.25  19.559 559.228  19.622 559.185  20.697 558.504  21.333 558.113
   21.85 557.967  22.759 557.764  23.111 557.899  23.426     558  23.451 560.769
  24.441 561.314  25.212  561.74  25.216 562.405  25.231     564  26.345     564
  46.954     564   48.73     564  49.502     564  52.522     564  54.459     564
  73.533     564  73.552  561.53  73.562 560.222  73.582     558  75.114 559.732
  75.459 560.018  80.978 559.869

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  19.524     .06  23.451     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.524  23.451              6.1    4.99      .8            .1       .3
Right Levee     Station=25.23125      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 780.*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 562.305   4.117 562.176   7.026 562.065   8.052 562.049   8.818 562.041
   8.915 562.037  16.285  561.17  17.462 560.035  17.473 560.015  17.538 559.954
  18.645     559  18.675 558.981  18.729 558.944   19.65 558.349  20.195 558.014
  20.637 557.879  21.415 557.685  21.885 557.865  22.305     558  22.325 560.215
  23.643 560.651   24.67 560.992  24.675 561.878  24.695     564   25.81     564
  46.442     564   48.22     564  48.993     564  52.016     564  53.955     564
   73.05     564   73.07  561.46   73.08 560.131   73.1     558  74.535 559.631
  74.858 559.861   80.03 559.745

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.645     .06  22.325     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.645  22.325              6.1    4.99      .8            .1       .3
Right Levee     Station=  24.695      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 775.*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0 562.186   3.767 562.124    6.43 562.056   7.369 562.049    8.07 562.048
   8.159 562.046  14.904 561.448  16.332 560.036  16.345 560.011  16.423 559.936
  17.766  558.75  17.791 558.734  17.836 558.702  18.602 558.194  19.056 557.916
  19.424 557.792  20.071 557.606  20.659 557.831  21.184     558  21.199 559.661
  22.845 559.989  24.127 560.244  24.134 561.351  24.159     564  25.275     564
   45.93     564   47.71     564  48.484     564  51.511     564  53.451     564
  72.568     564  72.588  561.39  72.598 560.041  72.618     558  73.956 559.531
  74.258 559.703  79.082 559.621

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  17.766     .06  21.199     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        17.766  21.199             6.1    4.99      .8             .1       .3
Right Levee     Station=24.15875      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 770.*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 562.068   3.418 562.073   5.834 562.047   6.686  562.05   7.322 562.056
   7.403 562.056  13.523 561.725  15.201 560.037  15.217 560.007  15.309 559.917
  16.888   558.5  16.907 558.486  16.943 558.461  17.555 558.039  17.917 557.817
  18.211 557.704  18.728 557.527  19.432 557.797  20.062     558  20.073 559.107
  22.046 559.326  23.585 559.496  23.592 560.824  23.622     564   24.74     564
  45.418     564    47.2     564  47.975     564  51.005     564  52.948     564
  72.085     564  72.105  561.32  72.115 559.951  72.135     558  73.378 559.431
  73.657 559.546  78.135 559.497

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.888     .06  20.073     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.888  20.073             6.1    4.99      .8             .1       .3
Right Levee     Station= 23.6225      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 765.*

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.949   3.069 562.021   5.238 562.038   6.003  562.05   6.574 562.064
   6.647 562.065  12.141 562.003  14.071 560.039  14.088 560.004  14.194 559.898
  16.009  558.25  16.024 558.239   16.05 558.219  16.507 557.885  16.778 557.718
  16.998 557.616  17.384 557.449  18.206 557.764  18.941     558  18.946 558.554
  21.248 558.663  23.042 558.748  23.051 560.297  23.086     564  24.205     564
  44.905     564   46.69     564  47.465     564  50.499     564  52.444     564
  71.603     564  71.622  561.25  71.632  559.86  71.652     558  72.799  559.33
  73.057 559.388  77.188 559.374

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.009     .06  18.946     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.009  18.946             6.1    4.99      .8             .1       .3
Right Levee     Station=23.08625      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 760

INPUT
Description: EDIFICACION EN MARGEN DERECHA
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  561.83    2.72  561.97    5.32  562.05   10.76  562.28   12.94  560.04
   12.96     560   13.08  559.88   15.13     558   15.46  557.73   16.04  557.37
   16.98  557.73   17.82     558   20.45     558    22.5     558   22.51  559.77
   22.55     564   46.18     564   71.12     564   71.15  559.77   71.17     558
   72.22  559.23   76.24  559.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   15.13     .06   17.82     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.13   17.82           4.386   4.984   6.932             .1       .3
Right Levee     Station=   22.55      Elevation=     564

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 755.*

INPUT
Description:
```

```
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.769    2.79 561.892   5.456 561.964   5.969 561.982  11.035 562.243
  11.779 561.634  12.637 560.758  13.253 560.117  13.351 560.025  13.372 559.988
    13.5 559.871  15.677 558.011  15.753 557.954  15.778 557.935  15.964 557.793
  16.062 557.719  16.738  557.31  17.576 557.615  17.793 557.696  18.736     558
  20.303     558  21.123     558  22.984     558  22.994 559.688  23.014 561.817
  23.034     564   23.27     564   23.37     564   23.47     564  23.615     564
  32.496     564  33.132     564  33.813     564   36.51     564  38.226     564
  39.225     564  40.279     564  41.795     564  43.457     564   47.01     564
  65.515     564   68.33     564  70.937     564  71.554     564  72.316     564
  72.347 560.299  72.367  558.75  73.432 559.826  73.824 559.828  75.132 559.834
  76.258 559.838  77.511 559.844

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  15.677     .06  18.736     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.677  18.736            4.386   4.984   6.932             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 750.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.708   2.859 561.815   5.592 561.877   6.118 561.893   11.31 562.205
  12.098 561.708  13.006 560.786  13.659 560.101  13.762 560.011  13.784 559.977
  13.919 559.862  16.225 558.023  16.311  557.96   16.34  557.94  16.552 557.787
  16.664 557.708  17.435  557.25  18.365 557.574  18.606 557.661  19.653     558
   21.06     558  21.796     558  23.468     558  23.478 559.606  23.497 561.749
  23.517     564  23.757     564  23.858     564   23.96     564  24.107     564
  33.117     564  33.762     564  34.453     564  37.189     564   38.93     564
  39.943     564  41.012     564   42.55     564  44.236     564  47.841     564
  66.613     564  69.469     564  72.113     564  72.739     564  73.512     564
  73.543 560.828  73.564   559.5  74.645 560.422  75.042 560.424  76.369 560.429
  77.511 560.433  78.783 560.438

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.225     .06  19.653     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.225  19.653            4.386   4.984   6.932             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 745.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.646   2.929 561.737   5.728 561.791   6.266 561.804  11.585 562.167
  12.417 561.781  13.375 560.813  14.064 560.084  14.173 559.996  14.197 559.965
  14.339 559.852  16.773 558.034  16.869 557.967  16.901 557.945   17.14 557.781
  17.266 557.697  18.133  557.19  19.154 557.534  19.419 557.627  20.569     558
  21.816     558   22.47     558  23.951     558  23.961 559.524  23.981 561.681
  24.001     564  24.244     564  24.347     564   24.45     564  24.599     564
  33.737     564  34.391     564  35.092     564  37.867     564  39.633     564
  40.661     564  41.745     564  43.305     564  45.015     564  48.671     564
  67.711     564  70.607     564  73.289     564  73.924     564  74.708     564
   74.74 561.356  74.761  560.25  75.857 561.019   76.26  561.02  77.606 561.024
  78.764 561.027  80.054 561.031

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.773     .06  20.569     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.773  20.569            4.386   4.984   6.932             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 740.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.585   2.998  561.66   5.864 561.704   6.415 561.716   11.86  562.13
  12.735 561.855  13.744  560.84  14.469 560.067  14.584 559.982  14.609 559.953
  14.759 559.843   17.32 558.045  17.427 557.974  17.463  557.95  17.728 557.774
  17.868 557.685   18.83  557.13  19.943 557.493  20.232 557.593  21.485     558
  22.573     558  23.143     558  24.435     558  24.445 559.442  24.465 561.612
  24.485     564  24.731     564  24.836     564   24.94     564  25.091     564
  34.358     564  35.021     564  35.732     564  38.546     564  40.337     564
  41.379     564  42.478     564   44.06     564  45.794     564  49.501     564
  68.809     564  71.746     564  74.465     564  75.109     564  75.905     564
  75.936 561.885  75.958     561  77.069 561.615  77.478 561.616  78.843 561.619
  80.017 561.622  81.325 561.625

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

```
       0     .06   17.32     .06  21.485     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.32  21.485            4.386   4.984   6.932             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 735.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.524   3.068 561.582       6 561.618   6.564 561.627  12.135 562.093
  13.054 561.929  14.113 560.868  14.874  560.05  14.995 559.967  15.021 559.942
  15.178 559.834  17.868 558.056  17.986  557.98  18.025 557.955  18.316 557.768
  18.469 557.674  19.528  557.07  20.732 557.452  21.045 557.558  22.401     558
   23.33     558  23.816     558  24.919     558  24.929  559.36  24.949 561.544
  24.969     564  25.219     564  25.324     564   25.43     564  25.584     564
  34.978     564  35.651     564  36.371     564  39.224     564   41.04     564
  42.097     564  43.211     564  44.815     564  46.573     564  50.332     564
  69.906     564  72.884     564  75.641     564  76.295     564  77.101     564
  77.133 562.414  77.154  561.75  78.281 562.211  78.696 562.212  80.079 562.214
  81.271 562.216  82.596 562.219

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  17.868     .06  22.401     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.868  22.401            4.386   4.984   6.932             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 730.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.463   3.137 561.505   6.136 561.531   6.713 561.538   12.41 562.055
  13.373 562.003  14.482 560.895   15.28 560.034  15.406 559.952  15.433  559.93
  15.598 559.825  18.415 558.068  18.544 557.987  18.587  557.96  18.904 557.762
  19.071 557.663  20.225  557.01  21.522 557.411  21.858 557.524  23.317     558
  24.087     558  24.489     558  25.403     558  25.413 559.278  25.432 561.476
  25.452     564  25.706     564  25.813     564   25.92     564  26.076     564
  35.599     564  36.281     564  37.011     564  39.903     564  41.743     564
  42.814     564  43.944     564   45.57     564  47.352     564  51.162     564
  71.004     564  74.023     564  76.818     564   77.48     564  78.297     564
   78.33 562.943  78.351   562.5  79.494 562.807  79.914 562.808  81.316  562.81
  82.524 562.811  83.868 562.812

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.415     .06  23.317     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.415  23.317            4.386   4.984   6.932             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 725.*

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.401   3.207 561.427   6.272 561.445   6.861 561.449  12.685 562.017
  13.691 562.076  14.851 560.923  15.685 560.017  15.817 559.938  15.845 559.918
  16.018 559.815  18.962 558.079  19.102 557.993  19.148 557.965  19.492 557.756
  19.673 557.652  20.923  556.95  22.311 557.371  22.671  557.49  24.234     558
  24.843     558  25.162     558  25.886     558  25.896 559.195  25.916 561.408
  25.936     564  26.193     564  26.301     564   26.41     564  26.568     564
  36.219     564   36.91     564   37.65     564  40.581     564  42.447     564
  43.532     564  44.677     564  46.325     564  48.131     564  51.992     564
  72.102     564  75.161     564  77.994     564  78.665     564  79.493     564
  79.526 563.471  79.548  563.25  80.706 563.404  81.132 563.404  82.553 563.405
  83.777 563.405  85.139 563.406

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.962     .06  24.234     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.962  24.234            4.386   4.984   6.933             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 720

INPUT
Description: EDIFICACION EN MARGEN DERECHA
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  561.34    7.01  561.36   12.96  561.98   14.01  562.15   15.22  560.95
```

```
   16.09     560   19.51  558.09   19.66     558   19.71  557.97   20.08  557.75
   21.62  556.89    23.1  557.33   25.15     558    25.6     558   26.37     558
    26.4  561.34   26.42     564   26.68     564   26.79     564    26.9     564
   27.06     564   36.84     564   37.54     564   38.29     564   41.26     564
   43.15     564   44.25     564   45.41     564   47.08     564   48.91     564
    73.2     564    76.3     564   79.17     564   79.85     564   82.35     564
   83.79     564   85.03     564   86.41     564

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   19.51     .06   25.15     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         19.51   25.15             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 715.555*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.203   6.809 561.216  12.589 561.763  13.609 561.913  15.451 560.711
  16.776 559.769  21.516 557.982  21.685 557.895  21.742 557.866  22.161 557.654
  23.168  557.17  23.903 556.808  25.382 557.261  28.038 557.982  28.121     558
  28.521     558  29.206     558  29.232 560.969   29.25 563.333  29.509 563.333
  29.619 563.333  29.728 563.333  29.847 563.333  29.888 563.333  30.464 563.333
  30.752 563.333   31.03 563.333  32.069 563.333  32.552 563.333  35.032 563.333
  35.968 563.333  36.626 563.333  38.293 563.333  39.486 563.333  39.634 563.333
  40.031 563.333  40.331 563.333  41.079 563.333   41.41 563.333  41.585 563.333
  43.951 563.333  44.038 563.333  45.895 563.333  45.922 563.333  47.018 563.333
  47.871 563.333  48.174 563.333  49.838 563.333  50.113 563.333  51.662 563.343
  58.559 563.383  60.648 563.383  60.936 563.383  62.726 563.383  63.106 563.383
  64.938 563.383  65.709 563.383  67.839 563.382  71.974 563.382  75.867  563.43
  78.956 563.468  79.186 563.471  81.449 563.556  81.816 563.542  82.494 563.516
  83.579 563.476   84.34 563.474   84.69 563.474  84.985 563.477   86.42 563.487
  87.656 563.496  89.031 563.506

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  21.516     .06  28.121     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.516  28.121             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 711.111*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 561.067   6.609 561.072  12.218 561.546  13.208 561.677  15.682 560.472
  17.461 559.538  23.521 557.874  23.711 557.791  23.774 557.763  24.241 557.557
  25.366 557.088  26.187 556.726  27.664 557.192  30.988 557.984  31.092     558
  31.442     558  32.041     558  32.064 560.598   32.08 562.667  32.338 562.667
  32.447 562.667  32.557 562.667  32.675 562.667  32.716 562.667   33.29 562.667
  33.577 562.667  33.854 562.667  34.889 562.667  35.371 562.667  37.841 562.667
  38.774 562.667   39.43 562.667  41.091 562.667   42.28 562.667  42.427 562.667
  42.824 562.667  43.123 562.667  43.867 562.667  44.197 562.667  44.372 562.667
   46.73 562.667  46.817 562.667  48.667 562.667  48.693 562.667  49.786 562.667
  50.635 562.667  50.938 562.667  52.596 562.667   52.87 562.667  54.413 562.685
  61.287 562.767  63.368 562.767  63.655 562.767  65.439 562.767  65.818 562.767
  67.643 562.767  68.412 562.767  70.534 562.764  74.655 562.764  78.534  562.86
  81.613 562.937  81.841 562.942  84.097 563.111  84.463 563.083  85.138 563.033
  86.219 562.951  86.977 562.949  87.326 562.949   87.62 562.953   89.05 562.974
  90.282 562.991  91.652 563.011

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  23.521     .06  31.092     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.521  31.092             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 706.666*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  560.93   6.408 560.928  11.847 561.329  12.807  561.44  15.913 560.233
  18.147 559.307  25.527 557.767  25.736 557.686  25.806 557.659  26.322 557.461
  27.563 557.005   28.47 556.643  29.947 557.123  33.939 557.986  34.063     558
  34.363     558  34.877     558  34.897 560.227   34.91     562  35.167     562
  35.276     562  35.385     562  35.503     562  35.543     562  36.115     562
  36.401     562  36.677     562  37.709     562  38.189     562  40.651     562
  41.581     562  42.235     562   43.89     562  45.075     562  45.221     562
  45.616     562  45.914     562  46.656     562  46.985     562  47.159     562
  49.508     562  49.595     562  51.439     562  51.465     562  52.554     562
    53.4     562  53.702     562  55.354     562  55.627     562  57.165 562.028
  64.014  562.15  66.088  562.15  66.374  562.15  68.152  562.15   68.53  562.15
  70.348  562.15  71.114  562.15  73.229 562.147  77.336 562.147  81.201 562.291
```

```
  84.269 562.405  84.497 562.413  86.744 562.667  87.109 562.625  87.782 562.549
  88.859 562.427  89.615 562.423  89.962 562.423  90.256  562.43  91.681 562.461
  92.908 562.487  94.273 562.517

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  25.527     .06  34.063     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.527  34.063             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 702.222*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 560.793   6.207 560.784  11.476 561.112  12.406 561.203  16.144 559.994
  18.832 559.076  27.532 557.659  27.761 557.581  27.838 557.555  28.402 557.364
  29.761 556.923  30.753 556.561  32.229 557.054  36.889 557.989  37.034      558
  37.284      558  37.712      558  37.729 559.856   37.74 561.333  37.996 561.333
  38.105 561.333  38.213 561.333   38.33 561.333  38.371 561.333  38.941 561.333
  39.226 561.333  39.501 561.333  40.529 561.333  41.008 561.333  43.461 561.333
  44.387 561.333  45.039 561.333  46.688 561.333  47.869 561.333  48.015 561.333
  48.408 561.333  48.705 561.333  49.445 561.333  49.772 561.333  49.946 561.333
  52.287 561.333  52.373 561.333  54.211 561.333  54.237 561.333  55.322 561.333
  56.165 561.333  56.466 561.333  58.112 561.333  58.385 561.333  59.917  561.37
  66.742 561.533  68.809 561.533  69.094 561.533  70.865 561.533  71.242 561.533
  73.054 561.533  73.817 561.533  75.924 561.529  80.016 561.529  83.868 561.721
  86.925 561.873  87.152 561.884  89.392 562.222  89.755 562.167  90.426 562.065
  91.499 561.902  92.252 561.898  92.599 561.898  92.891 561.906  94.311 561.947
  95.534 561.983  96.894 562.022

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  27.532     .06  37.034     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        27.532  37.034             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 697.777*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 560.657   6.007 560.641  11.105 560.895  12.004 560.967  16.375 559.755
  19.518 558.844  29.538 557.551  29.787 557.476  29.869 557.451  30.483 557.268
  31.959  556.84  33.037 556.479  34.511 556.986  39.839 557.991  40.006      558
  40.206      558  40.548      558  40.561 559.484   40.57 560.667  40.825 560.667
  40.934 560.667  41.042 560.667  41.158 560.667  41.199 560.667  41.767 560.667
  42.051 560.667  42.325 560.667  43.349 560.667  43.826 560.667  46.271 560.667
  47.194 560.667  47.843 560.667  49.486 560.667  50.663 560.667  50.809 560.667
  51.201 560.667  51.496 560.667  52.233 560.667   52.56 560.667  52.732 560.667
  55.065 560.667  55.152 560.667  56.983 560.667  57.009 560.667   58.09 560.667
   58.93 560.667  59.229 560.667   60.87 560.667  61.142 560.667  62.668 560.713
   69.47 560.917  71.529 560.917  71.813 560.917  73.578 560.917  73.953 560.917
  75.759 560.917   76.52 560.917  78.619 560.911  82.697 560.911  86.536 561.151
  89.582 561.341  89.808 561.356   92.04 561.778  92.402 561.709   93.07 561.582
  94.139 561.378   94.89 561.372  95.235 561.372  95.526 561.383  96.941 561.434
   98.16 561.479  99.516 561.528

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  29.538     .06  40.006     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        29.538  40.006             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 693.333*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  560.52   5.806 560.497  10.734 560.678  11.603  560.73  16.606 559.516
  20.203 558.613  31.543 557.443  31.812 557.372  31.901 557.348  32.564 557.171
  34.157 556.758   35.32 556.397  36.793 556.917  42.789 557.993  42.977      558
  43.127      558  43.383      558  43.393 559.113    43.4      560  43.655      560
  43.762      560   43.87      560  43.986      560  44.027      560  44.593      560
  44.876      560  45.149      560   46.17      560  46.645      560  49.081      560
      50      560  50.647      560  52.285      560  53.457      560  53.602      560
  53.993      560  54.288      560  55.022      560  55.347      560  55.519      560
  57.844      560   57.93      560  59.754      560   59.78      560  60.857      560
  61.695      560  61.993      560  63.628      560  63.899      560   65.42 560.055
  72.197    560.3  74.249    560.3  74.532    560.3  76.291    560.3  76.665    560.3
  78.464    560.3  79.222    560.3  81.315 560.293  85.378 560.293  89.203 560.581
  92.238   560.81  92.463 560.827  94.687 561.333  95.048 561.251  95.714 561.098
   96.78 560.853  97.527 560.847  97.871 560.847  98.161 560.859  99.571 560.921
 100.785 560.974 102.137 561.033
```

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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  31.543     .06  42.977     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.543  42.977             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 688.888*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 560.383   5.605 560.353  10.363 560.461  11.202 560.493  16.837 559.276
  20.889 558.382  33.549 557.336  33.837 557.267  33.933 557.244  34.644 557.075
  36.354 556.675  37.603 556.314  39.076 556.848   45.74 557.995  45.948     558
  46.048     558  46.219     558  46.226 558.742   46.23 559.333  46.484 559.333
  46.591 559.333  46.698 559.333  46.814 559.333  46.854 559.333  47.418 559.333
    47.7 559.333  47.972 559.333   48.99 559.333  49.463 559.333   51.89 559.333
  52.807 559.333  53.452 559.333  55.083 559.333  56.252 559.333  56.396 559.333
  56.785 559.333  57.079 559.333  57.811 559.333  58.135 559.333  58.306 559.333
  60.623 559.333  60.708 559.333  62.526 559.333  62.552 559.333  63.625 559.333
   64.46 559.333  64.757 559.333  66.386 559.333  66.656 559.333  68.172 559.398
  74.925 559.683  76.969 559.683  77.251 559.683  79.004 559.683  79.377 559.683
  81.169 559.683  81.925 559.683   84.01 559.676  88.059 559.676   91.87 560.011
  94.894 560.278  95.119 560.298  97.335 560.889  97.694 560.792  98.358 560.614
   99.42 560.329 100.165 560.321 100.507 560.321 100.797 560.336 102.202 560.408
 103.411  560.47 104.758 560.539

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  33.549     .06  45.948     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.549  45.948             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 684.444*

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 560.247   5.404 560.209   9.992 560.244  10.801 560.257  17.068 559.037
  21.574 558.151  35.554 557.228  35.862 557.162  35.965  557.14  36.725 556.978
  38.552 556.593  39.887 556.232  41.358 556.779   48.69 557.998  48.919     558
  48.969     558  49.054     558  49.058 558.371   49.06 558.667  49.313 558.667
   49.42 558.667  49.527 558.667  49.642 558.667  49.682 558.667  50.244 558.667
  50.525 558.667  50.796 558.667   51.81 558.667  52.282 558.667    54.7 558.667
  55.613 558.667  56.256 558.667  57.882 558.667  59.046 558.667   59.19 558.667
  59.578 558.667   59.87 558.667  60.599 558.667  60.922 558.667  61.093 558.667
  63.401 558.667  63.487 558.667  65.298 558.667  65.324 558.667  66.393 558.667
  67.225 558.667  67.521 558.667  69.144 558.667  69.413 558.667  70.924  558.74
  77.652 559.067   79.69 559.067  79.971 559.067  81.717 559.067  82.088 559.067
  83.875 559.067  84.627 559.067  86.705 559.058  90.739 559.058  94.537 559.442
  97.551 559.746  97.774 559.769  99.982 560.444 100.341 560.334 101.002  560.13
  102.06 559.804 102.802 559.796 103.144 559.796 103.432 559.812 104.832 559.895
 106.037 559.966 107.379 560.044

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.554     .06  48.919     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.554  48.919             5.92    4.52    1.13             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 680

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  560.11    10.4  560.02   22.26  557.92   37.56  557.12   40.75  556.51
   42.17  556.15   43.64  556.71   51.64     558   51.89     558   52.47     558
   53.07     558   53.35     558   53.62     558   54.63     558    55.1     558
   57.51     558   58.42     558   59.06     558   60.68     558   61.84     558
   62.37     558   63.71     558   63.88     558   66.18     558   68.07     558
   69.99     558   72.17     558   80.38  558.45   82.41  558.45   82.69  558.45
   84.43  558.45    84.8  558.45   86.58  558.45   87.33  558.45    89.4  558.44
   93.42  558.44  100.43  559.24  102.63     560   104.7  559.28  105.44  559.27
  105.78  559.27     110  559.55

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   37.56     .06   51.89     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         37.56   51.89             1.99    4.41    2.17             .1       .3

CROSS SECTION
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```
RIVER: arroyo_maquinas
REACH: casillas          RS: 675.5*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.955     9.1 559.876  14.829 558.967  15.422 558.864  15.793 558.801
  16.608 558.665  17.072 558.589  18.889 558.299  21.095 557.924  33.328 557.119
  35.835  556.98  37.944 556.493  38.893 556.279  38.963 556.259  40.254 555.906
   41.64 556.427   43.39 556.727  46.457 557.252  49.184 557.743   49.42  557.75
  49.653  557.75   49.85  557.75  50.033 557.752  50.353 557.755  50.666 557.756
  50.914 557.758  50.962 557.758  51.082 557.758  51.235 557.759  51.247 557.759
  51.366 557.759  52.314 557.769   52.81 557.775  54.449 557.792  55.355 557.797
  55.586 557.799  56.133 557.801  56.316 557.802  56.374 557.802  56.862 557.804
  56.992 557.804  57.518 557.805  58.014 557.805  58.703 557.815  59.763  557.83
  59.928 557.833  60.488 557.842  61.903 557.864  62.083 557.867  63.349 557.888
  64.512   557.9  66.508 557.922  68.536 557.945  70.838  557.97  73.189 558.103
  75.645 558.217  76.083 558.238  76.206 558.244  79.509 558.425   80.15 558.431
  81.653 558.445  81.948 558.448  83.786 558.464  84.177 558.468  84.836 558.474
  86.057 558.484  86.849  558.49  89.035 558.499  93.281 558.533  99.997 559.221
 100.165 559.237 100.187 559.239  100.34 559.254 100.376 559.257 100.537 559.271
 100.609 559.278 100.684 559.285 100.806  559.32 101.222 559.438 103.007 559.979
 103.838 559.737 104.747 559.472 105.155 559.354 105.923 559.347 106.276 559.348
 108.794 559.495 110.654 559.604

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  35.835     .06   49.42     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.835   49.42             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 671.*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   559.8     7.8 559.733  13.593 558.918  14.193 558.815  14.568 558.754
  15.393 558.624  15.862 558.553  17.699 558.292   19.93 557.927  31.699 556.982
   34.11  556.84  36.128 556.287  37.035 556.047  37.102 556.026  38.337 555.663
   39.64 556.143  41.284 556.444  44.166  556.97  46.728 557.486   46.95   557.5
  47.196   557.5  47.403   557.5  47.595 557.504  47.933  557.51  48.262 557.513
  48.524 557.515  48.574 557.515    48.7 557.515  48.861 557.518  48.874 557.518
      49 557.518  49.998 557.538   50.52 557.549  52.247 557.585  53.201 557.595
  53.444 557.598   54.02 557.602  54.213 557.604  54.273 557.605  54.787 557.607
  54.925 557.608  55.478  557.61      56  557.61  56.727  557.63  57.842  557.66
  58.017 557.665  58.606 557.683  60.097 557.729  60.286 557.734  61.619 557.775
  62.844 557.801  64.946 557.845  67.082  557.89  69.506 557.941  71.982 558.084
  74.569 558.185  75.029 558.204   75.16 558.209  78.638   558.4  79.313 558.412
  80.896  558.44  81.207 558.445  83.142 558.478  83.554 558.486  84.248 558.497
  85.534 558.517  86.368  558.53   88.67 558.557  93.141 558.625 100.215 559.277
 100.391  559.29 100.414 559.292 100.576 559.305 100.614 559.308 100.783 559.318
  100.86 559.324 100.938  559.33 101.067  559.36 101.504 559.459 103.385 559.958
 104.245 559.751 105.188 559.528  105.61 559.427 106.406 559.423 106.771 559.425
 109.381 559.558 111.308 559.657

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   34.11     .06   46.95     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         34.11   46.95             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 666.5*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.645     6.5 559.589  12.358 558.868  12.964 558.766  13.343 558.706
  14.177 558.583  14.651 558.518  16.509 558.285  18.765 557.931  30.069 556.845
  32.385   556.7  34.311 556.081  35.178 555.816  35.242 555.793  36.421 555.419
   37.64  555.86  39.179 556.162  41.875 556.689  44.273 557.229   44.48  557.25
  44.738  557.25  44.956  557.25  45.158 557.255  45.512 557.265  45.859 557.269
  46.133 557.273  46.186 557.273  46.318 557.273  46.488 557.276  46.501 557.276
  46.633 557.276  47.681 557.307   48.23 557.324  50.044 557.378  51.046 557.392
  51.302 557.396  51.906 557.404  52.109 557.407  52.173 557.407  52.713 557.411
  52.857 557.412  53.438 557.415  53.987 557.415   54.75 557.445  55.922  557.49
  56.105 557.498  56.724 557.525   58.29 557.593  58.489 557.602  59.889 557.662
  61.176 557.701  63.384 557.767  65.627 557.834  68.174 557.911  70.775 558.065
  73.492 558.152  73.976  558.17  74.113 558.174  77.767 558.375  78.476 558.394
  80.138 558.435  80.465 558.443  82.498 558.493  82.931 558.503   83.66 558.521
   85.01 558.551  85.887  558.57  88.305 558.616  93.002 558.718 100.432 559.332
 100.618 559.344 100.642 559.345 100.811 559.356 100.852 559.358 101.029 559.365
  101.11  559.37 101.192 559.375 101.327   559.4 101.787 559.481 103.762 559.936
 104.653 559.766 105.628 559.583 106.065 559.501 106.888   559.5 107.267 559.503
 109.967 559.622 111.961 559.711

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  32.385     .06   44.48     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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```
       32.385   44.48             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 662.*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.49     5.2 559.445  11.122 558.819  11.735 558.717  12.119 558.659
  12.962 558.543  13.441 558.482  15.319 558.278    17.6 557.935  28.439 556.708
   30.66  556.56  32.495 555.875  33.321 555.584  33.381 555.561  34.505 555.175
   35.64 555.577  37.073  555.88  39.584 556.407  41.817 556.971   42.01     557
   42.28     557  42.509     557   42.72 557.007  43.092  557.02  43.455 557.026
  43.742  557.03  43.798  557.03  43.937  557.03  44.114 557.035  44.128 557.035
  44.266 557.035  45.365 557.077  45.941 557.098  47.841  557.17  48.892  557.19
  49.159 557.195  49.793 557.205  50.006 557.209  50.072  557.21  50.638 557.215
   50.79 557.216  51.399  557.22  51.973  557.22  52.773 557.259  54.002  557.32
  54.194 557.331  54.843 557.367  56.483 557.457  56.691 557.469  58.159  557.55
  59.508 557.601  61.822  557.69  64.173 557.779  66.842 557.881  69.568 558.046
  72.416  558.12  72.923 558.136  73.067 558.139  76.895 558.351  77.638 558.375
  79.381  558.43  79.724  558.44  81.855 558.507  82.308 558.521  83.072 558.545
  84.487 558.584  85.405 558.609   87.94 558.674  92.863  558.81  100.65 559.388
 100.844 559.397  100.87 559.398 101.047 559.406 101.089 559.408 101.275 559.412
  101.36 559.416 101.446  559.42 101.588  559.44  102.07 559.503  104.14 559.915
  105.06 559.781 106.069 559.638  106.52 559.574 107.371 559.577 107.762  559.58
 110.554 559.686 112.615 559.765

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   30.66     .06   42.01     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         30.66   42.01             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 657.5*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.335     3.9 559.301   9.887 558.769  10.507 558.667  10.894 558.612
  11.746 558.502  12.231 558.447  14.129 558.271  16.435 557.939  26.809 556.571
  28.935  556.42  30.679 555.668  31.463 555.353  31.521 555.328  32.589 554.931
   33.64 555.293  34.967 555.597  37.293 556.125  39.361 556.714   39.54  556.75
  39.823  556.75  40.061  556.75  40.283 556.759  40.671 556.775  41.051 556.782
  41.352 556.787   41.41 556.787  41.555 556.787  41.741 556.794  41.755 556.794
    41.9 556.794  43.049 556.846  43.651 556.873  45.638 556.963  46.737 556.987
  47.017 556.994   47.68 557.006  47.902 557.011  47.972 557.013  48.564 557.019
  48.722  557.02  49.359 557.025   49.96 557.025  50.796 557.074  52.081  557.15
  52.282 557.163  52.961 557.208  54.677 557.322  54.894 557.336   56.43 557.438
   57.84 557.502   60.26 557.612  62.719 557.724  65.511 557.851  68.361 558.027
  71.339 558.087   71.87 558.102   72.02 558.104  76.024 558.326  76.801 558.356
  78.624 558.424  78.982 558.438  81.211 558.521  81.684 558.539  82.484 558.569
  83.964 558.618  84.924 558.649  87.575 558.733  92.723 558.903 100.867 559.443
 101.071  559.45 101.097 559.451 101.283 559.457 101.327 559.459 101.521 559.459
  101.61 559.462   101.7 559.465 101.848  559.48 102.352 559.525 104.518 559.894
 105.468 559.796 106.509 559.694 106.975 559.648 107.854 559.653 108.258 559.658
  111.14 559.749 113.269 559.819

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  28.935     .06   39.54     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        28.935   39.54             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 653.*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.18     2.6 559.157   8.651 558.719   9.278 558.618   9.669 558.565
  10.531 558.461  11.021 558.411   12.94 558.264   15.27 557.943   25.18 556.434
   27.21  556.28  28.863 555.462  29.606 555.122  29.661 555.095  30.672 554.688
   31.64  555.01  32.861 555.315  35.002 555.843  36.905 556.457   37.07   556.5
  37.365   556.5  37.614   556.5  37.845 556.511  38.251  556.53  38.647 556.538
  38.961 556.545  39.022 556.545  39.173 556.545  39.367 556.552  39.383 556.552
  39.533 556.552  40.733 556.615  41.361 556.647  43.436 556.755  44.582 556.785
  44.875 556.792  45.567 556.807  45.799 556.813  45.871 556.815  46.489 556.823
  46.654 556.824  47.319  556.83  47.947  556.83   48.82 556.889  50.161  556.98
   50.37 556.996  51.079  557.05   52.87 557.186  53.097 557.203    54.7 557.325
  56.172 557.402  58.698 557.534  61.265 557.669  64.179 557.822  67.154 558.008
  70.263 558.055  70.816 558.068  70.973  558.07  75.153 558.301  75.964 558.337
  77.867 558.419  78.241 558.435  80.567 558.535  81.061 558.557  81.896 558.593
  83.441 558.651  84.443 558.689   87.21 558.792  92.584 558.995 101.085 559.499
 101.297 559.503 101.325 559.504 101.519 559.508 101.565 559.509 101.768 559.506
  101.86 559.508 101.954  559.51 102.109  559.52 102.635 559.547 104.895 559.872
 105.875  559.81 106.949 559.749 107.431 559.721 108.337  559.73 108.753 559.735
 111.727 559.813 113.923 559.872
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   27.21     .06   37.07     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.21   37.07             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 648.5*

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 559.025      1.3 559.014    7.416  558.67    8.049 558.569    8.445 558.517
   9.315 558.421     9.81 558.376   11.75 558.257  14.105 557.946   23.55 556.297
  25.485  556.14  27.046 555.256  27.749  554.89    27.8 554.863  28.756 554.444
   29.64 554.727  30.756 555.032  32.711 555.562   34.45   556.2    34.6  556.25
  34.908  556.25  35.167  556.25  35.408 556.263   35.83 556.285  36.244 556.295
  36.571 556.302  36.634 556.302  36.792 556.302  36.994 556.311   37.01 556.311
  37.167 556.311  38.416 556.384  39.071 556.422  41.233 556.548  42.428 556.582
  42.732 556.591  43.453 556.609  43.695 556.615  43.771 556.617  44.415 556.626
  44.587 556.628   45.28 556.635  45.933 556.635  46.843 556.704   48.24  556.81
  48.459 556.829  49.197 556.891  51.063  557.05    51.3  557.07   52.97 557.212
  54.504 557.302  57.136 557.457   59.81 557.614  62.847 557.792  65.947 557.989
  69.186 558.022  69.763 558.034  69.927 558.035  74.282 558.276  75.127 558.319
  77.109 558.414  77.499 558.433  79.923  558.55  80.438 558.574  81.308 558.616
  82.917 558.685  83.962 558.729  86.845  558.85  92.444 559.088 101.302 559.554
 101.524 559.557 101.552 559.557 101.754 559.559 101.802  559.56 102.014 559.553
  102.11 559.554 102.208 559.555 102.369  559.56 102.917 559.568 105.272 559.851
 106.283 559.825  107.39 559.805 107.886 559.795  108.82 559.807 109.249 559.813
 112.313 559.876 114.576 559.926

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  25.485     .06    34.6     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.485    34.6             1.99    4.41    2.17             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 644

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  558.87     6.18  558.62     6.82  558.52     7.22  558.47     8.1  558.38
     8.6  558.34    10.56  558.25    12.94  557.95    21.92  556.16   23.76     556
   25.23  555.05    25.94  554.63    26.84   554.2    28.65  554.75   30.42  555.28
   32.13     556    32.45     556    32.72     556    33.41  556.04   34.18  556.06
   34.41  556.06    34.62  556.07     34.8  556.07    39.03  556.34   40.59  556.39
   41.34  556.41    41.67  556.42    42.34  556.43    43.24  556.44   43.92  556.44
   46.32  556.64    51.24   557.1    64.74  557.97    68.11  557.99   68.71     558
   68.88     558    74.29   558.3    80.72  558.64   101.52  559.61  101.75  559.61
  101.78  559.61   101.99  559.61   102.04  559.61   102.26   559.6  102.36   559.6
  102.63   559.6    103.2  559.59   105.65  559.83   106.69  559.84  107.83  559.86
   112.9  559.94   115.23  559.98

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   23.76     .06   32.13     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         23.76   32.13             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 639.111*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0 558.987    3.426  558.82    5.909 558.697    6.521 558.601    6.904 558.552
    7.01 558.541    7.745 558.454    8.223 558.407   10.097 558.284  12.373 557.964
  12.757 557.884   18.204 556.665   18.551 556.589   19.04 556.473   20.96 556.015
  22.719 555.778   22.758 555.755   24.294  554.84  25.055 554.421  26.019 553.981
  27.802 554.539   29.546 555.077   30.175  555.34  31.231 555.778  31.552 555.783
  31.822 555.788   32.514 555.836   33.286 555.867  33.516 555.871  33.727 555.884
  33.907 555.887   37.148 556.128   38.146 556.202   39.71 556.273  40.461 556.304
  40.792 556.318   41.463 556.339   42.365 556.363  43.047 556.375  43.979  556.46
  45.452 556.589   47.125 556.751   50.383 557.047   61.16 557.748  61.839 557.795
  63.912 557.929    67.29 557.973   67.891 557.986  68.061 557.987  68.542 558.015
  69.987 558.087   73.483 558.262    77.86 558.472  79.927 558.569  80.445  558.59
  89.615 559.023   91.414 559.107 100.772 559.538 101.003 559.539 101.033  559.54
 101.243 559.541 101.293 559.541 101.514 559.533 101.587 559.533 101.614 559.533
 101.885 559.534 102.226  559.53 102.456 559.528 102.482  559.53 102.963 559.576
 104.911 559.758 105.954 559.773 107.096 559.798 112.177 559.901 114.512 559.951

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  22.719     .06  31.231     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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        22.719  31.231             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 634.222*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.103   3.269 558.915   5.638 558.775   6.222 558.683   6.587 558.635
   6.689 558.623    7.39 558.528   7.846 558.475   9.635 558.318  11.806 557.979
  12.172 557.899  17.369 556.596  17.701 556.515  18.168 556.387  19.999 555.869
  21.678 555.556   21.72 555.533  23.358 554.629  24.169 554.212  25.198 553.762
  26.955 554.327  28.673 554.874  29.292 555.131  30.332 555.556  30.654 555.567
  30.925 555.576  31.618 555.632  32.391 555.675  32.622 555.683  32.833 555.698
  33.014 555.704  36.262 555.979  37.262 556.063  38.829 556.156  39.582 556.198
  39.914 556.217  40.587 556.248  41.491 556.287  42.174  556.31  43.108 556.403
  44.584 556.538   46.26 556.706  49.526 556.994  60.327 557.703  61.006 557.753
  63.084 557.888  66.469 557.955  67.072 557.972  67.242 557.975  67.724 558.003
  69.172 558.067  72.676 558.225  77.062 558.413  79.134 558.498  79.653 558.517
  88.843 558.955  90.646  559.04 100.025 559.467 100.256 559.469 100.286 559.469
 100.497 559.471 100.547 559.472 100.768 559.466 100.841 559.467 100.868 559.467
  101.14 559.469 101.481 559.466 101.712 559.465 101.738 559.468  102.22 559.513
 104.173 559.685 105.217 559.706 106.362 559.736 111.454 559.862 113.794 559.922

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  21.678     .06  30.332     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.678  30.332             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 629.333*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.22   3.112  559.01   5.368 558.852   5.923 558.764   6.271 558.717
   6.367 558.706   7.035 558.602    7.47 558.542   9.172 558.352  11.239 557.993
  11.588 557.913  16.535 556.526  16.851 556.441  17.295   556.3  19.039 555.724
  20.637 555.333  20.681 555.311  22.422 554.419  23.284 554.003  24.377 553.543
  26.107 554.116  27.799 554.671  28.409 554.922  29.433 555.333  29.755  555.35
  30.027 555.365  30.722 555.428  31.497 555.482  31.728 555.494   31.94 555.512
  32.121 555.522  35.376 555.831  36.378 555.925  37.949 556.039  38.704 556.091
  39.036 556.115   39.71 556.157  40.616  556.21    41.3 556.245  42.237 556.345
  43.716 556.488  45.396 556.661  48.668 556.941  59.493 557.659  60.174 557.711
  62.257 557.847  65.649 557.938  66.253 557.958  66.424 557.962  66.906 557.991
  68.358 558.048  71.869 558.187  76.265 558.354  78.341 558.427  78.861 558.443
  88.072 558.887  89.878 558.973  99.277 559.395  99.509 559.398  99.539 559.399
   99.75 559.402    99.8 559.403 100.022 559.399 100.095   559.4 100.123   559.4
 100.394 559.403 100.737 559.403 100.968 559.403 100.994 559.405 101.477  559.45
 103.434 559.613 104.481 559.639 105.628 559.674 110.731 559.823 113.077 559.893

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  20.637     .06  29.433     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.637  29.433             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 624.444*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.337   2.955 559.105   5.097  558.93   5.625 558.845   5.955 558.799
   6.046 558.788    6.68 558.676   7.093  558.61   8.709 558.386  10.672 558.008
  11.003 557.928  15.701 556.457  16.001 556.368  16.423 556.213  18.078 555.578
  19.596 555.111  19.643 555.089  21.486 554.208  22.398 553.793  23.556 553.324
  25.259 553.905  26.925 554.468  27.526 554.714  28.534 555.111  28.857 555.134
   29.13 555.153  29.826 555.224  30.602 555.289  30.834 555.306  31.046 555.326
  31.228 555.339   34.49 555.682  35.495 555.787  37.068 555.922  37.825 555.985
  38.158 556.013  38.833 556.065  39.741 556.133  40.427  556.18  41.366 556.288
  42.848 556.437  44.532 556.616  47.811 556.888  58.659 557.614  59.342 557.669
  61.429 557.807  64.828 557.921  65.433 557.945  65.605  557.95  66.089 557.979
  67.543 558.028  71.062 558.149  75.467 558.295  77.548 558.356  78.069 558.369
    87.3 558.819   89.11 558.906  98.529 559.324  98.761 559.328  98.792 559.328
  99.003 559.332  99.054 559.333  99.276 559.332  99.349 559.333  99.377 559.334
  99.649 559.337  99.992 559.339 100.224 559.341  100.25 559.343 100.734 559.386
 102.695 559.541 103.744 559.573 104.894 559.612 110.009 559.784 112.359 559.864

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  19.596     .06  28.534     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.596  28.534             6.93    4.91    1.46             .1       .3

CROSS SECTION
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RIVER: arroyo_maquinas
REACH: casillas          RS: 619.555*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.453   2.798   559.2   4.826 559.007   5.326 558.927   5.638 558.882
   5.725  558.87   6.325  558.75   6.716 558.677   8.246  558.42  10.105 558.022
  10.418 557.942  14.867 556.388   15.15 556.294   15.55 556.127  17.118 555.433
  18.554 554.889  18.604 554.867  20.549 553.998  21.513 553.584  22.734 553.106
  24.411 553.693  26.051 554.265  26.643 554.505  27.636 554.889  27.959 554.917
  28.232 554.941   28.93  555.02  29.708 555.097   29.94 555.117  30.153  555.14
  30.335 555.156  33.604 555.534  34.611 555.648  36.188 555.805  36.946 555.879
   37.28 555.912  37.957 555.974  38.867 556.056  39.554 556.115  40.495  556.23
   41.98 556.386  43.667  556.57  46.954 556.835  57.825 557.569  58.509 557.627
  60.601 557.766  64.008 557.903  64.614 557.931  64.786 557.937  65.271 557.967
  66.728 558.008  70.255 558.112   74.67 558.236  76.755 558.284  77.277 558.295
  86.528 558.751  88.342 558.839  97.782 559.252  98.014 559.257  98.045 559.258
  98.257 559.263  98.307 559.264   98.53 559.265  98.604 559.267  98.631 559.267
  98.904 559.272  99.248 559.275   99.48 559.278  99.506  559.28  99.992 559.323
 101.957 559.469 103.008 559.506  104.16  559.55 109.286 559.745 111.641 559.836

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.554     .06  27.636     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.554  27.636             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 614.666*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.57   2.641 559.295   4.555 559.084   5.027 559.008   5.322 558.964
   5.404 558.953    5.97 558.824   6.339 558.744   7.784 558.454   9.538 558.037
   9.834 557.957  14.033 556.318    14.3 556.221  14.678  556.04  16.157 555.288
  17.513 554.667  17.566 554.645  19.613 553.787  20.628 553.375  21.913 552.887
  23.564 553.482  25.178 554.061  25.759 554.296  26.737 554.667  27.061 554.701
  27.334 554.729  28.033 554.816  28.813 554.904  29.046 554.929  29.259 554.954
  29.442 554.973  32.718 555.385  33.727  555.51  35.307 555.688  36.067 555.773
  36.401  555.81   37.08 555.883  37.992  555.98  38.681  556.05  39.623 556.173
  41.112 556.335  42.803 556.525  46.097 556.781  56.991 557.524  57.677 557.586
  59.773 557.725  63.187 557.886  63.795 557.917  63.967 557.925  64.453 557.956
  65.914 557.989  69.448 558.074  73.872 558.177  75.962 558.213  76.486 558.221
  85.756 558.684  87.574 558.771  97.034  559.18  97.267 559.187  97.297 559.188
   97.51 559.194  97.561 559.195  97.784 559.198  97.858   559.2  97.885 559.201
  98.159 559.206  98.503 559.211  98.736 559.216  98.762 559.218  99.249  559.26
 101.218 559.396 102.272 559.439 103.427 559.488 108.563 559.706 110.923 559.807

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  17.513     .06  26.737     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        17.513  26.737             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 609.777*

INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.687   2.484  559.39   4.284 559.162   4.728 559.089   5.005 559.047
   5.082 559.035   5.616 558.898   5.962 558.812   7.321 558.487   8.971 558.051
   9.249 557.971  13.198 556.249   13.45 556.147  13.805 555.953  15.197 555.142
  16.472 554.444  16.527 554.424  18.677 553.577  19.742 553.166  21.092 552.668
  22.716 553.271  24.304 553.858  24.876 554.087  25.838 554.444  26.163 554.484
  26.437 554.518  27.137 554.612  27.919 554.712  28.153  554.74  28.366 554.768
  28.549 554.791  31.832 555.237  32.843 555.372  34.427 555.571  35.188 555.667
  35.523 555.709  36.204 555.792  37.117 555.903  37.808 555.985  38.752 556.115
  40.244 556.284  41.939  556.48  45.239 556.728  56.158  557.48  56.845 557.544
  58.945 557.684  62.367 557.869  62.976 557.903  63.148 557.912  63.635 557.944
  65.099 557.969  68.641 558.036  73.075 558.118  75.169 558.142  75.694 558.148
  84.984 558.616  86.806 558.704  96.286 559.109   96.52 559.116   96.55 559.117
  96.764 559.124  96.814 559.126  97.038 559.131  97.112 559.133  97.139 559.134
  97.413 559.141  97.759 559.148  97.992 559.154  98.018 559.155  98.506 559.197
 100.479 559.324 101.535 559.372 102.693 559.426  107.84 559.667 110.206 559.778

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.472     .06  25.838     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.472  25.838             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 604.888*
```

```
INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.803   2.327 559.485   4.014 559.239   4.429 559.171   4.689 559.129
   4.761 559.118   5.261 558.972   5.585 558.879   6.858 558.521   8.404 558.066
   8.665 557.986  12.364 556.179    12.6 556.074  12.933 555.867  14.236 554.997
  15.431 554.222  15.489 554.202  17.741 553.366  18.857 552.957  20.271 552.449
  21.868 553.059   23.43 553.655  23.993 553.879  24.939 554.222  25.264 554.268
  25.539 554.306  26.241 554.408  27.025 554.519  27.259 554.552  27.472 554.582
  27.655 554.608  30.946 555.089  31.959 555.233  33.546 555.454  34.309  555.56
  34.645 555.607  35.327 555.701  36.243 555.826  36.934  555.92  37.881 556.057
  39.376 556.233  41.074 556.435  44.382 556.675  55.324 557.435  56.012 557.502
  58.117 557.643  61.546 557.851  62.157 557.889   62.33   557.9  62.818 557.932
  64.285  557.95  67.834 557.999  72.277 558.059  74.376 558.071  74.902 558.074
  84.212 558.548  86.038 558.637  95.539 559.037  95.773 559.046  95.803 559.047
  96.017 559.055  96.068 559.057  96.292 559.064  96.366 559.067  96.393 559.067
  96.668 559.075  97.014 559.084  97.248 559.091  97.274 559.093  97.763 559.133
  99.741 559.252 100.799 559.305 101.959 559.365 107.117 559.628 109.488 559.749

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  15.431     .06  24.939     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        15.431  24.939             6.93    4.91    1.46             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 600

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.92    2.17  559.58    4.44   559.2    8.08     558   11.53  556.11
   11.75     556   12.06  555.78   14.39     554   14.45  553.98   19.45  552.23
   23.11  553.67   24.04     554   30.06  554.94   37.01     556   40.21  556.39
   54.49  557.39   55.18  557.46      62  557.92   63.47  557.93   71.48     558
   74.11     558   83.44  558.48   85.27  558.57   95.62     559   96.27  559.02
   96.53  559.03   97.02  559.07  108.77  559.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   14.39     .06   24.04     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         14.39   24.04             5.06    4.77    1.33             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 595.333*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.872   1.535 559.636   2.407 559.487   4.924 559.035   5.577 558.838
   8.962 557.763   9.532 557.489  10.437 557.059  12.788 555.951  13.032 555.845
  13.376 555.641  15.779 554.117   15.96     554  16.014 553.976  16.385 553.801
  18.276 552.914  19.268 552.501  20.497 551.963  21.268 552.298  22.339 552.752
  24.153 553.499  24.442 553.618  25.445     554   25.65     554  25.725      554
  25.728 554.397  25.733     555    25.8     555  26.263     555  26.492      555
  26.977     555   26.98  554.57  26.985     554  30.327 554.599  32.133 554.915
  38.075 555.936  40.812 556.325  41.745 556.381  51.677 557.078  52.599 557.139
  54.608 557.285  55.274 557.352  58.044 557.548  61.863 557.792  63.283 557.809
  64.277 557.822   65.66 557.858  66.169 557.865  68.097  557.91  68.521 557.916
  70.874 557.957  71.022  557.96  71.165 557.962  73.563 557.991  74.342 558.035
   75.47 558.085  76.319 558.122  78.029 558.198   78.72 558.229   78.89 558.238
  79.836 558.287  81.509 558.379  82.577 558.436  84.345 558.526  94.344 558.971
  94.972 558.994  95.223 559.004  95.697 559.041 107.048 559.682

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   15.96     .06  25.445     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.96  25.445             5.06    4.77    1.33             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 590.666*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.823   1.686 559.569   2.644 559.393   5.409  558.87   6.126 558.671
   9.843 557.526  10.469 557.259  11.463 556.848  14.046 555.792  14.314 555.689
  14.692 555.501  17.331  554.11   17.53     554  17.578 553.971  17.906 553.767
  19.578 552.731  20.456 552.293  21.543 551.697   22.37 552.084   23.52 552.602
  25.464 553.433  25.775 553.565   26.85     554   27.26     554   27.41      554
  27.417 554.793  27.427     556   27.56     556  28.487     556  28.943      556
  29.913     556   29.92  555.14   29.93     554  32.706 554.587  34.205  554.89
  39.141 555.873  41.413  556.26  42.314 556.305  51.898 556.978  52.787 557.033
  54.726  557.18  55.369 557.244  58.041 557.442  61.727 557.665  63.097 557.688
  64.056 557.706   65.39 557.764  65.881 557.774  67.742 557.846  68.151 557.855
```

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  70.421 557.916  70.564  557.92  70.702 557.923  73.016 557.981  73.768 558.028
  74.856 558.068  75.675 558.098  77.325 558.159  77.992 558.183  78.156 558.192
  79.069 558.239  80.683 558.335  81.713 558.392  83.419 558.483  93.068 558.943
  93.674 558.967  93.916 558.978  94.373 559.013 105.327 559.643

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   17.53     .06   26.85     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         17.53   26.85             5.06    4.77    1.33             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 586.*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.775   1.837 559.502    2.88   559.3   5.893 558.705   6.674 558.503
  10.725  557.29  11.407 557.029   12.49 556.636  15.304 555.632  15.596 555.534
  16.007 555.362  18.883 554.102    19.1     554  19.141 553.967  19.427 553.732
  20.881 552.549  21.645 552.085   22.59  551.43  23.473 551.871    24.7 552.451
  26.776 553.367  27.107 553.513  28.255     554   28.87     554  29.095     554
  29.105  555.19   29.12     557   29.32     557   30.71     557  31.395     557
   32.85     557   32.86  555.71  32.875     554  35.084 554.575  36.278 554.866
  40.206 555.809  42.015 556.195  42.883 556.229  52.118 556.879  52.975 556.927
  54.843 557.076  55.463 557.136  58.038 557.337   61.59 557.537   62.91 557.567
  63.834 557.589   65.12 557.671  65.593 557.683  67.386 557.782  67.781 557.794
  69.968 557.874  70.106  557.88  70.239 557.885  72.469 557.972  73.193 558.021
  74.242 558.051  75.031 558.073  76.621 558.119  77.264 558.137  77.422 558.147
  78.301 558.192  79.858 558.292   80.85 558.348  82.494 558.439  91.792 558.914
  92.376 558.941  92.609 558.952   93.05 558.984 103.605 559.605

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06    19.1     .06  28.255     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          19.1  28.255             5.06    4.77    1.33             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 581.333*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.727   1.988 559.434   3.117 559.206   6.378  558.54   7.223 558.335
  11.606 557.053  12.345 556.799  13.517 556.424  16.562 555.473  16.878 555.378
  17.323 555.222  20.436 554.095   20.67     554  20.705 553.962  20.948 553.698
  22.184 552.366  22.833 551.877  23.637 551.163  24.575 551.657   25.88 552.301
  28.087 553.301   28.44 553.461   29.66     554   30.48     554   30.78     554
  30.793 555.587  30.813     558   31.08     558  32.933     558  33.847     558
  35.787     558    35.8  556.28   35.82     554  37.463 554.563   38.35 554.841
  41.272 555.746  42.617  556.13  43.452 556.153  52.339 556.779  53.164 556.821
  54.961 556.971  55.557 557.028  58.036 557.231  61.453  557.41  62.724 557.447
  63.613 557.473   64.85 557.577  65.306 557.592  67.031 557.718  67.411 557.732
  69.516 557.833  69.648  557.84  69.776 557.847  71.922 557.962  72.619 558.014
  73.628 558.034  74.388 558.049  75.918 558.079  76.536 558.092  76.688 558.101
  77.534 558.145  79.032 558.248  79.987 558.304  81.569 558.395  90.516 558.886
  91.078 558.914  91.302 558.926  91.726 558.956 101.883 559.567

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   20.67     .06   29.66     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.67   29.66             5.06    4.77    1.33             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 576.666*

INPUT
Description:
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.678   2.139 559.367   3.354 559.113   6.862 558.375   7.771 558.168
  12.488 556.816  13.282  556.57  14.543 556.212   17.82 555.314   18.16 555.223
  18.639 555.083  21.988 554.087   22.24     554  22.269 553.958  22.469 553.664
  23.487 552.183  24.022 551.668  24.683 550.897  25.678 551.444   27.06  552.15
  29.399 553.236  29.772 553.408  31.065     554   32.09     554  32.465     554
  32.482 555.983  32.507     559   32.84     559  35.157     559  36.298     559
  38.723     559   38.74  556.85  38.765     554  39.841 554.552  40.423 554.816
  42.337 555.682  43.218 556.065  44.021 556.076  52.559  556.68  53.352 556.716
  55.079 556.866  55.652  556.92  58.033 557.126  61.316 557.282  62.537 557.326
  63.391 557.357   64.58 557.484  65.018 557.501  66.675 557.654   67.04 557.671
  69.063 557.791   69.19   557.8  69.313 557.808  71.374 557.953  72.044 558.007
  73.014 558.017  73.744 558.024  75.214  558.04  75.808 558.046  75.954 558.056
  76.767 558.097  78.206 558.204  79.124  558.26  80.643 558.351   89.24 558.857
   89.78 558.888  89.996   558.9  90.403 558.927 100.162 559.528

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

```
       0     .06   22.24     .06  31.065     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         22.24  31.065             5.06    4.77    1.33             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 572

INPUT
Description: EDIFICACION EN MARGEN DERECHA
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.63    2.29   559.3    8.32     558   14.22  556.34   15.57     556
   23.54  554.08   23.81     554   23.99  553.63   24.79     552   25.21  551.46
   25.73  550.63   26.78  551.23   28.24     552   30.71  553.17   32.47     554
    33.7     554   34.15     554   34.17  556.38    34.2     560    34.6     560
   37.38     560   38.75     560   41.66     560   41.68  557.42   41.71     554
   42.22  554.54   43.82     556   44.59     556   52.78  556.58   53.54  556.61
   58.03  557.02   63.17  557.24   64.31  557.39   64.73  557.41   66.32  557.59
   66.67  557.61   68.61  557.75   68.85  557.77   71.47     558    72.4     558
    73.1     558   74.51     558   75.08     558   75.22  558.01      76  558.05
   77.38  558.16   98.44  559.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   23.81     .06   32.47     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         23.81   32.47             3.03    4.69    1.92             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 567.272*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.645   2.705 559.357   2.814 559.339   6.662 558.601   6.863 558.562
   7.143 558.511   7.487 558.448   7.869 558.381   8.315 558.303   9.827 558.042
   9.925 558.021  10.715 557.846  11.109 557.759  13.193 557.271  13.375 557.232
  14.792 556.925  15.462  556.78  15.983 556.667  16.189 556.623  16.382 556.581
  16.587 556.536   16.65 556.523  16.796 556.491  16.814 556.488   17.67 556.255
   18.57     556   18.98 555.881  21.626   555.1  21.999 554.999  25.997 553.901
  26.248 553.818  26.454 553.453  26.507  553.36  27.367 551.847  27.576 551.604
  27.616 551.557  27.847 551.278  28.441 550.415  29.485 551.031  30.134 551.388
  30.816  551.76  30.936 551.824  31.753 552.215  32.871 552.744  33.391 552.991
   35.14 553.818  36.055  553.97  36.706 554.087  37.279 554.191  37.297 556.355
  37.325 559.645  37.605 559.646  37.708 559.647  37.833 559.647  40.374 559.648
  41.602 559.648  41.687 559.648  44.477 559.655  44.495  557.31  44.523 554.201
  45.075 554.743  46.809 556.232  47.532 556.238  53.384 556.691  54.397 556.738
  55.219 556.778  55.932  556.79   58.51 556.964  60.146 557.136  61.088  557.19
   62.97 557.295   64.97 557.382   66.04 557.521  66.434  557.54  67.926 557.707
  68.255 557.726  70.076 557.857  70.301 557.876   72.76  558.09  73.633 558.092
   74.29 558.093  75.613 558.096  76.148 558.097   76.28 558.107  77.012 558.144
  78.307 558.247  96.683  559.41  98.073 559.501

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  26.248     .06   35.14     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        26.248   35.14             3.03    4.69    1.92             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 562.545*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.661    3.12 559.414   3.245 559.398   7.684 558.624   7.916 558.583
   8.239 558.532   8.635  558.47   9.076 558.405   9.591 558.329  11.335 558.085
  11.448 558.065  12.358 557.903  12.813 557.823  15.217 557.344  15.426 557.309
   17.06 557.033  17.834 556.902  18.435   556.8  18.672  556.76  18.895 556.723
  19.131 556.683  19.204  556.67  19.373 556.642  19.395 556.639  20.455 556.338
   21.57     556   21.95 555.868  24.403  554.99  24.748 554.884  28.453 553.722
  28.686 553.636  28.917 553.276  28.977 553.184  29.945 551.693   30.18 551.444
  30.225 551.394  30.484 551.097  31.152 550.199  32.189 550.831  32.835 551.201
  33.512 551.584  33.631 551.647  34.444 552.041  35.555 552.566  36.071 552.811
   37.81 553.636  38.922  553.94  39.712 554.175  40.408 554.382  40.425 556.329
  40.449 559.291  40.718 559.293  40.816 559.294  40.936 559.295  43.367 559.296
  44.543 559.296  44.624 559.297  47.295 559.311  47.311   557.2  47.335 554.402
  47.931 554.946  49.798 556.464  50.474 556.476  55.942 556.941   56.89 556.958
  57.657 556.975  58.324  556.97  60.733 557.068  62.262 557.251  63.142 557.317
  64.901 557.442   66.77 557.525   67.77 557.652  68.138  557.67  69.533 557.824
   69.84 557.842  71.542 557.964  71.752 557.981   74.05  558.18  74.866 558.184
   75.48 558.186  76.716 558.192  77.216 558.194  77.339 558.203  78.023 558.239
  79.234 558.334  96.406 559.424  97.705 559.512

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  28.686     .06   37.81     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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```
       28.686   37.81             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 557.818*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.676   3.535  559.47   3.677 559.457   8.705 558.647   8.968 558.604
   9.335 558.553   9.783 558.491  10.283 558.429  10.866 558.356  12.842 558.127
   12.97 558.108  14.002 557.961  14.518 557.887  17.241 557.417  17.478 557.385
  19.329  557.14  20.206 557.024  20.887 556.934  21.155 556.898  21.408 556.865
  21.676 556.829  21.758 556.818  21.949 556.793  21.975  556.79   23.24  556.42
   24.57     556   24.92 555.855  27.179  554.88  27.497 554.769   30.91 553.543
  31.125 553.455  31.381 553.099  31.447 553.008  32.522  551.54  32.783 551.284
  32.833 551.232  33.121 550.915  33.863 549.984  34.894 550.632  35.535 551.014
  36.209 551.408  36.327 551.471  37.135 551.866  38.239 552.387  38.752 552.632
   40.48 553.455  41.788  553.91  42.718 554.262  43.537 554.573  43.552 556.304
  43.574 558.936   43.83 558.939  43.924  558.94  44.038 558.942  46.361 558.944
  47.484 558.945  47.561 558.945  50.112 558.966  50.126  557.09  50.148 554.603
  50.786  555.15  52.787 556.695  53.415 556.715  58.501 557.191  59.382 557.179
  60.096 557.172  60.715  557.15  62.956 557.172  64.378 557.367  65.196 557.444
  66.832 557.588   68.57 557.667    69.5 557.783  69.843   557.8  71.139 557.941
  71.425 557.957  73.007 558.071  73.203 558.087   75.34  558.27  76.099 558.275
   76.67  558.28   77.82 558.288  78.285 558.292  78.399   558.3  79.035 558.333
  80.161 558.422   96.13 559.438  97.338 559.523

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  31.125     .06   40.48     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.125   40.48             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 553.090*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.692    3.95 559.527   4.109 559.516   9.727  558.67  10.021 558.624
   10.43 558.574  10.932 558.512  11.491 558.453  12.142 558.383   14.35  558.17
  14.493 558.152  15.645 558.018  16.222 557.951  19.264  557.49  19.529 557.462
  21.598 557.248  22.578 557.146  23.338 557.067  23.638 557.036   23.92 557.006
   24.22 556.975  24.312 556.966  24.525 556.944  24.556 556.941  26.025 556.503
   27.57     556   27.89 555.842  29.955  554.77  30.246 554.654  33.366 553.363
  33.563 553.273  33.845 552.922  33.918 552.832    35.1 551.386  35.386 551.123
  35.441 551.069  35.758 550.734  36.574 549.768  37.598 550.432  38.236 550.828
  38.905 551.232  39.023 551.295  39.825 551.692  40.923 552.209  41.433 552.453
   43.15 553.273  44.655  553.88  45.724  554.35  46.666 554.764  46.679 556.278
  46.698 558.582  46.943 558.585  47.032 558.587  47.141 558.589  49.354 558.592
  50.425 558.593  50.499 558.594  52.929 558.622  52.942  556.98  52.961 554.804
  53.641 555.353  55.776 556.927  56.357 556.953   61.06 557.441  61.874 557.399
  62.534  557.37  63.107  557.33  65.179 557.275  66.494 557.483   67.25 557.571
  68.763 557.735   70.37  557.81   71.23 557.914  71.547  557.93  72.746 558.058
   73.01 558.073  74.473 558.178  74.654 558.192   76.63  558.36  77.331 558.367
  77.859 558.373  78.923 558.384  79.353 558.389  79.458 558.396  80.047 558.428
  81.087 558.509  95.854 559.452  96.971 559.534

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  33.563     .06   43.15     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.563   43.15             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 548.363*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.707   4.364 559.584    4.54 559.576  10.749 558.692  11.074 558.645
  11.526 558.594   12.08 558.533  12.698 558.477  13.417  558.41  15.857 558.212
  16.015 558.196  17.289 558.076  17.926 558.015  21.288 557.563  21.581 557.539
  23.867 557.355  24.949 557.268   25.79   557.2  26.121 557.174  26.433 557.148
  26.764 557.122  26.866 557.114  27.102 557.095  27.136 557.093   28.81 556.585
   30.57     556   30.86 555.829  32.732  554.66  32.995 554.539  35.823 553.184
  36.001 553.091  36.309 552.745  36.388 552.656  37.677 551.233   37.99 550.963
   38.05 550.906  38.395 550.552  39.285 549.553  40.303 550.233  40.937 550.641
  41.602 551.056  41.718 551.118  42.516 551.517  43.607 552.031  44.113 552.274
   45.82 553.091  47.521  553.85  48.731 554.437  49.795 554.955  49.806 556.253
  49.823 558.227  50.055 558.232   50.14 558.234  50.244 558.236  52.348 558.239
  53.365 558.241  53.436 558.242  55.746 558.277  55.757  556.87  55.774 555.005
  56.497 555.556  58.765 557.159  59.299 557.191  63.618 557.691  64.366 557.619
  64.973 557.567  65.499  557.51  67.402 557.379  68.609 557.598  69.305 557.698
  70.694 557.881   72.17 557.952   72.96 558.045  73.251 558.061  74.352 558.175
  74.595 558.189  75.939 558.285  76.105 558.298   77.92  558.45  78.564 558.459
  79.049 558.466  80.026  558.48  80.421 558.486  80.518 558.493  81.058 558.522
  82.014 558.596  95.578 559.466  96.604 559.545
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  36.001     .06   45.82     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.001   45.82             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 543.636*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.723   4.779 559.641   4.972 559.635  11.771 558.715  12.126 558.666
  12.622 558.615  13.228 558.554  13.905 558.501  14.693 558.436  17.364 558.255
  17.538  558.24  18.932 558.133   19.63 558.079  23.312 557.636  23.632 557.616
  26.136 557.463  27.321  557.39  28.242 557.333  28.604 557.311  28.946  557.29
  29.309 557.268   29.42 557.261  29.678 557.245  29.717 557.244  31.595 556.668
   33.57     556   33.83 555.815  35.508  554.55  35.745 554.424   38.28 553.005
  38.439 552.909  38.772 552.567  38.858  552.48  40.254  551.08  40.593 550.802
  40.658 550.743  41.032 550.371  41.995 549.337  43.007 550.034  43.637 550.454
  44.298  550.88  44.414 550.942  45.207 551.343  46.291 551.852  46.794 552.094
   48.49 552.909  50.388  553.82  51.737 554.525  52.925 555.145  52.934 556.227
  52.947 557.873  53.168 557.878  53.248 557.881  53.346 557.884  55.341 557.887
  56.306 557.889  56.373  557.89  58.564 557.933  58.573  556.76  58.586 555.205
  59.352 555.759  61.755 557.391  62.241 557.429  66.177 557.941  66.859 557.839
  67.411 557.765  67.891  557.69  69.625 557.482  70.725 557.714  71.359 557.825
  72.625 558.028   73.97 558.095   74.69 558.177  74.955 558.191  75.959 558.292
   76.18 558.305  77.405 558.392  77.556 558.404   79.21  558.54  79.797 558.551
  80.239 558.559  81.129 558.576  81.489 558.583  81.577 558.589   82.07 558.617
  82.941 558.683  95.301  559.48  96.236 559.555

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  38.439     .06   48.49     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.439   48.49             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 538.909*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.738   5.194 559.698   5.404 559.694  12.793 558.738  13.179 558.687
  13.717 558.636  14.377 558.575  15.112 558.524  15.968 558.463  18.872 558.297
   19.06 558.284  20.576  558.19  21.334 558.143  25.335 557.708  25.684 557.693
  28.405  557.57  29.693 557.512  30.693 557.467  31.087 557.449  31.459 557.432
  31.853 557.414  31.974 557.409  32.255 557.396  32.298 557.395   34.38  556.75
   36.57     556    36.8 555.802  38.285  554.44  38.494 554.309  40.736 552.826
  40.877 552.727  41.236  552.39  41.329 552.304  42.832 550.926  43.197 550.642
  43.267 550.581  43.669 550.189  44.706 549.122  45.712 549.834  46.338 550.267
  46.994 550.704   47.11 550.766  47.897 551.168  48.975 551.674  49.475 551.915
   51.16 552.727  53.254  553.79  54.743 554.612  56.054 555.336  56.061 556.202
  56.072 557.518   56.28 557.525  56.356 557.527  56.449 557.531  58.335 557.535
  59.247 557.537   59.31 557.539  61.381 557.588  61.388  556.65  61.399 555.406
  62.207 555.963  64.744 557.623  65.182 557.667  68.735 558.191  69.351 558.059
   69.85 557.962  70.283  557.87  71.848 557.586  72.841 557.829  73.413 557.952
  74.556 558.174   75.77 558.237   76.42 558.308  76.659 558.321  77.565 558.408
  77.765 558.421   78.87 558.499  79.007 558.509    80.5  558.63   81.03 558.643
  81.429 558.652  82.232 558.672  82.557  558.68  82.637 558.686  83.082 558.711
  83.868 558.771  95.025 559.494  95.869 559.566

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  40.877     .06   51.16     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.877   51.16             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 534.181*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.754   5.609 559.755   5.835 559.753  13.815 558.761  14.232 558.708
  14.813 558.657  15.525 558.596  16.319 558.548  17.244  558.49  20.379 558.339
  20.583 558.328  22.219 558.248  23.038 558.208  27.359 557.781  27.735  557.77
  30.673 557.677  32.065 557.634  33.145   557.6  33.571 557.587  33.972 557.574
  34.397 557.561  34.528 557.557  34.831 557.547  34.878 557.546  37.165 556.833
   39.57     556   39.77 555.789  41.061  554.33  41.243 554.195  43.193 552.647
  43.315 552.545    43.7 552.213  43.799 552.128  45.409 550.773    45.8 550.481
  45.875 550.418  46.306 550.008  47.417 548.906  48.416 549.635  49.038  550.08
  49.691 550.528  49.805 550.589  50.588 550.994  51.658 551.495  52.155 551.736
   53.83 552.545  56.121  553.76  57.749   554.7  59.183 555.527  59.188 556.176
  59.196 557.164  59.393 557.171  59.465 557.174  59.552 557.178  61.329 557.183
  62.188 557.185  62.247 557.187  64.198 557.244  64.204  556.54  64.212 555.607
  65.063 556.166  67.733 557.855  68.124 557.906  71.294  558.44  71.843 558.279
  72.288  558.16  72.674 558.049  74.071 557.689  74.957 557.945  75.467 558.079
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  76.487 558.321   77.57  558.38   78.15 558.439  78.363 558.451  79.172 558.525
   79.35 558.536  80.336 558.606  80.458 558.615   81.79  558.72  82.263 558.734
  82.619 558.746  83.336 558.768  83.625 558.777  83.697 558.782  84.093 558.806
  84.795 558.858  94.749 559.508  95.502 559.577

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.315     .06   53.83     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.315   53.83             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 529.454*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.769   6.024 559.811   6.267 559.812  14.836 558.784  15.285 558.728
  15.909 558.678  16.673 558.618  17.526 558.572  18.519 558.517  21.887 558.382
  22.105 558.372  23.863 558.305  24.742 558.272  29.383 557.854  29.787 557.846
  32.942 557.785  34.436 557.756  35.597 557.733  36.054 557.724  36.484 557.716
  36.941 557.707  37.082 557.705  37.407 557.698  37.459 557.698   39.95 556.915
   42.57     556   42.74 555.776  43.837  554.22  43.992  554.08  45.649 552.468
  45.754 552.364  46.164 552.036  46.269 551.952  47.986 550.619  48.403 550.321
  48.483 550.255  48.943 549.826  50.128 548.691  51.121 549.435  51.739 549.894
  52.387 550.352  52.501 550.413  53.279 550.819  54.342 551.317  54.836 551.557
    56.5 552.364  58.987  553.73  60.755 554.787  62.312 555.718  62.315 556.151
  62.321 556.809  62.505 556.817  62.573 556.821  62.655 556.825  64.322 556.831
  65.128 556.834  65.184 556.836  67.015 556.899  67.019  556.43  67.025 555.808
  67.918 556.369  70.722 558.086  71.066 558.144  73.853  558.69  74.335   558.5
  74.727 558.357  75.066 558.229  76.294 557.793  77.073 558.061  77.522 558.206
  78.418 558.467   79.37 558.522   79.88  558.57  80.068 558.581  80.778 558.642
  80.935 558.652  81.802 558.713  81.909 558.721   83.08  558.81  83.496 558.826
  83.809 558.839  84.439 558.864  84.694 558.874  84.756 558.879  85.105   558.9
  85.722 558.945  94.473 559.522  95.135 559.588

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.754     .06    56.5     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.754    56.5             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 524.727*

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 559.785   6.439 559.868   6.698 559.871  15.858 558.807  16.337 558.749
  17.004 558.699  17.822 558.639  18.733 558.596  19.795 558.543  23.394 558.424
  23.628 558.416  25.506 558.363  26.446 558.336  31.406 557.927  31.838 557.923
  35.211 557.893  36.808 557.878  38.048 557.867  38.537 557.862  38.997 557.858
  39.486 557.854  39.636 557.852  39.984 557.849  40.039 557.849  42.735 556.997
   45.57     556   45.71 555.763  46.614  554.11  46.741 553.965  48.106 552.289
  48.192 552.182  48.627 551.859   48.74 551.776  50.564 550.466  51.007  550.16
  51.092 550.093   51.58 549.644  52.839 548.475  53.825 549.236  54.439 549.707
  55.084 550.176  55.197 550.236  55.969 550.644  57.026 551.138  57.517 551.377
   59.17 552.182  61.854   553.7  63.761 554.875  65.441 555.909  65.443 556.125
  65.445 556.455  65.618 556.464  65.681 556.468  65.757 556.473  67.316 556.479
  68.069 556.482  68.121 556.484  69.833 556.555  69.835  556.32  69.837 556.009
  70.774 556.572  73.711 558.318  74.008 558.382  76.411  558.94  76.828  558.72
  77.165 558.555  77.458 558.409  78.517 557.896  79.189 558.176  79.576 558.333
  80.349 558.614   81.17 558.664   81.61 558.701  81.772 558.711  82.385 558.759
   82.52 558.768  83.268  558.82   83.36 558.826   84.37 558.899  84.729 558.918
  84.999 558.932  85.542  558.96  85.762 558.972  85.816 558.975  86.117 558.995
  86.649 559.032  94.196 559.536  94.767 559.599

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.192     .06   59.17     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.192   59.17             3.03    4.69    1.92             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 520

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   559.8    7.13  559.93   16.88  558.83   17.39  558.77    18.1  558.72
   18.97  558.66   19.94  558.62   21.07  558.57   25.15  558.46   27.15  558.42
   28.15   558.4   33.43     558   33.89     558   37.48     558   39.18     558
    40.5     558   41.02     558   41.51     558   42.03     558   42.19     558
   42.56     558   42.62     558   45.52  557.08   48.57     556   48.68  555.75
   49.39     554   49.49  553.85   50.63     552   51.21   551.6   53.61     550
    53.7  549.93   55.55  548.26   57.14  549.52   57.78     550   58.66  550.47
   59.71  550.96   61.84     552   64.72  553.67   68.57   556.1   68.73  556.11
   68.86  556.12   71.01  556.13   72.65  556.21    76.7  558.55   78.97  559.19
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   79.32  558.94   80.74     558   81.63  558.46   82.28  558.76   93.92  559.55
    94.4  559.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   50.63     .06   61.84     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         50.63   61.84             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 515.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.63    5.01 559.717   6.796 559.739   7.196 559.744   10.64 559.398
  17.035  558.76   17.55 558.706  17.671 558.699  18.267 558.661  19.145 558.606
  20.049 558.571  20.124 558.569  21.264 558.522  23.358 558.467  25.382 558.414
    27.4 558.374  27.954 558.363  28.409 558.353  29.101 558.305  29.759 558.238
  31.677 558.024  33.738 557.795  33.829 557.791  34.017 557.781  34.202 557.774
  34.835  557.75  36.546 557.675  37.825 557.606  38.078 557.593  39.018 557.545
  39.187 557.535  39.541 557.517  39.873   557.5  40.873 557.433  41.398 557.398
  41.892 557.365  42.063 557.354  42.417 557.323  42.579 557.309  42.952 557.277
  43.012 557.272  43.266  557.18  45.005 556.621  45.939 556.306  45.955   556.3
  47.402 555.753  47.468 555.729  47.506 555.714  47.684 555.647  49.017 555.145
  49.128 554.918  49.845 553.337  49.946 553.199  51.096   551.5  51.625 551.134
  53.527 549.858  53.811 549.668  53.893 549.604  55.579 548.093  57.038 549.231
  57.626 549.665  58.091 549.913  58.433 550.095  59.397 550.546  61.353   551.5
  62.321 552.164    62.8 552.497  64.183 553.292  65.149 553.891  66.357 554.683
  67.966 555.663  68.124 555.679  68.251 555.694  70.233 555.794  70.364 555.801
  71.738 555.923  71.976 555.943  73.664 556.875  75.956 558.143  78.187 558.789
  78.247 558.753  78.531 558.579  79.927 557.788  80.801  558.21   81.44 558.486
  85.907 558.856   89.43 559.148   92.88 559.382  93.351 559.438

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.096     .06  61.353     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.096  61.353             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 510.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.46   5.056 559.543   6.858 559.555   7.261 559.558  10.737 559.251
  17.191  558.69   17.71 558.643  17.833 558.636  18.433 558.602  19.319 558.552
  20.232  558.52  20.307 558.517  21.458 558.474  23.571 558.421  25.613 558.369
   27.65 558.328   28.21 558.317  28.668 558.306  29.367 558.261  30.031 558.177
  31.966 557.894  34.046 557.591  34.138 557.583  34.328 557.562  34.514 557.548
  35.153   557.5  36.879  557.35   38.17 557.212  38.425 557.185  39.374  557.09
  39.545  557.07  39.902 557.034  40.237     557  41.246 556.866  41.776 556.796
  42.275  556.73  42.447 556.708  42.804 556.646  42.967 556.619  43.344 556.554
  43.405 556.544  43.661  556.44  45.416 555.868  46.358 555.532  46.374 555.526
  47.835  554.94  47.901 554.915  47.939 554.898  48.119 554.826  49.465 554.289
  49.577 554.086    50.3 552.674  50.402 552.548  51.562     551  52.039 550.668
  53.756 549.509  54.013 549.336  54.087 549.278  55.607 547.925  56.937 548.941
  57.471  549.33  57.895 549.556  58.207  549.72  59.085 550.132  60.865     551
  61.817 551.756  62.287 552.141  63.646 552.914  64.594 553.493  65.782   554.3
  67.363 555.226  67.517 555.248  67.643 555.267   69.59  555.46  69.719 555.472
  71.068 555.649  71.302 555.675  72.961 556.547  75.213 557.735  77.404 558.388
  77.463  558.36  77.742 558.218  79.113 557.575  79.973 557.959    80.6 558.213
  84.989 558.644   88.45 558.984  91.839 559.213  92.303 559.265

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  51.562     .06  60.865     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        51.562  60.865             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 505.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.29   5.101 559.369    6.92  559.37   7.327 559.372  10.835 559.104
  17.346  558.62   17.87 558.579  17.994 558.573    18.6 558.543  19.494 558.498
  20.415 558.468  20.491 558.466  21.652 558.425  23.784 558.374  25.845 558.323
    27.9 558.282  28.465 558.271  28.928 558.259  29.632 558.218  30.302 558.115
  32.255 557.763  34.354 557.386  34.447 557.374  34.638 557.344  34.826 557.323
  35.471  557.25  37.213 557.025  38.515 556.818  38.773 556.777   39.73 556.635
  39.902 556.605  40.262 556.551  40.601   556.5  41.619   556.3  42.153 556.195
  42.657 556.096  42.831 556.061  43.191  555.97  43.356 555.928  43.736 555.831
  43.797 555.816  44.056   555.7  45.827 555.115  46.778 554.758  46.793 554.752
  48.267 554.127  48.334 554.101  48.373 554.081  48.554 554.005  49.912 553.434
  50.025 553.255  50.754 552.011  50.857 551.896  52.029   550.5  52.454 550.202
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  53.985 549.159  54.214 549.003   54.28 548.952  55.636 547.758  56.835 548.652
  57.317 548.995    57.7 549.198   57.98 549.346  58.772 549.717  60.377   550.5
  61.312 551.349  61.774 551.784  63.109 552.537   64.04 553.094  65.206 553.916
  66.759 554.788  66.911 554.817  67.034 554.841  68.946 555.125  69.073 555.143
  70.398 555.374  70.628 555.408  72.257 556.219  74.469 557.328  76.622 557.987
  76.679 557.967  76.954 557.857    78.3 557.363  79.144 557.709   79.76 557.939
  84.071 558.432   87.47  558.82  90.799 559.045  91.254 559.092

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.029     .06  60.377     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.029  60.377             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 500.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  559.12   5.147 559.195   6.982 559.186   7.393 559.186  10.932 558.957
  17.502  558.55  18.031 558.516  18.155 558.511  18.767 558.484  19.669 558.445
  20.598 558.417  20.675 558.414  21.846 558.377  23.997 558.327  26.076 558.278
   28.15 558.236   28.72 558.224  29.187 558.212  29.898 558.174  30.574 558.054
  32.544 557.632  34.661 557.182  34.755 557.165  34.948 557.125  35.138 557.097
  35.789     557  37.546   556.7  38.861 556.424   39.12  556.37  40.086  556.18
   40.26  556.14  40.623 556.068  40.965     556  41.992 555.733  42.531 555.593
  43.039 555.461  43.215 555.415  43.578 555.293  43.744 555.237  44.128 555.108
   44.19 555.088  44.451  554.96  46.237 554.362  47.197 553.984  47.213 553.977
    48.7 553.313  48.767 553.287  48.806 553.265   48.99 553.184  50.359 552.579
  50.473 552.423  51.209 551.348  51.313 551.245  52.495     550  52.869 549.736
  54.214 548.809  54.415 548.671  54.473 548.626  55.665  547.59  56.733 548.362
  57.163  548.66  57.504  548.84  57.754 548.971  58.459 549.303   59.89     550
  60.808 550.941  61.262 551.427  62.571 552.159  63.486 552.695  64.631 553.533
  66.156 554.351  66.305 554.385  66.426 554.414  68.303  554.79  68.428 554.814
  69.729 555.099  69.955 555.141  71.554 555.891  73.725  556.92  75.839 557.586
  75.895 557.573  76.165 557.495  77.487  557.15  78.315 557.458  78.921 557.666
  83.153 558.219   86.49 558.656  89.758 558.876  90.205  558.92

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.495     .06   59.89     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.495   59.89             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 495.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  558.95   5.193 559.021   7.044 559.002   7.458     559  11.029 558.811
  17.657  558.48  18.191 558.452  18.316 558.448  18.933 558.425  19.843 558.391
  20.781 558.365  20.858 558.363   22.04 558.329  24.211  558.28  26.308 558.232
    28.4  558.19  28.975 558.178  29.446 558.165  30.163 558.131  30.845 557.993
  32.833 557.502  34.969 556.977  35.064 556.956  35.259 556.906   35.45 556.871
  36.106  556.75   37.88 556.375  39.206 556.031  39.468 555.963  40.442 555.725
  40.617 555.675  40.984 555.585  41.328   555.5  42.365 555.166  42.909 554.991
  43.421 554.826  43.599 554.769  43.965 554.616  44.133 554.547   44.52 554.386
  44.582 554.359  44.846  554.22  46.648 553.609  47.616  553.21  47.632 553.203
  49.132   552.5  49.201 552.473   49.24 552.449  49.425 552.363  50.806 551.724
  50.921 551.591  51.664 550.686  51.769 550.594  52.961   549.5  53.283  549.27
  54.443 548.459  54.616 548.339  54.666   548.3  55.694 547.422  56.631 548.073
  57.009 548.324  57.308 548.483  57.527 548.596  58.147 548.889  59.403   549.5
  60.303 550.533  60.749  551.07  62.034 551.781  62.932 552.296  64.056  553.15
  65.552 553.914  65.699 553.954  65.817 553.988   67.66 554.455  67.782 554.485
  69.059 554.824  69.281 554.874   70.85 555.563  72.982 556.513  75.056 557.185
  75.111  557.18  75.376 557.134  76.674 556.938  77.487 557.208  78.081 557.392
  82.235 558.007   85.51 558.492  88.718 558.708  89.156 558.747

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.961     .06  59.403     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.961  59.403             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 490.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  558.78   5.239 558.848   7.106 558.818   7.524 558.814  11.126 558.664
  17.813  558.41  18.351 558.389  18.478 558.385    19.1 558.366  20.018 558.337
  20.964 558.313  21.042 558.311  22.234 558.281  24.424 558.234   26.54 558.187
   28.65 558.144   29.23 558.132  29.705 558.118  30.429 558.087  31.117 557.932
  33.122 557.371  35.277 556.772  35.373 556.747  35.569 556.688  35.763 556.645
  36.424   556.5  38.213  556.05  39.551 555.637  39.815 555.555  40.798  555.27
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  40.975  555.21  41.345 555.102  41.692     555  42.738 554.599  43.287 554.389
  43.804 554.191  43.982 554.122  44.352 553.939  44.521 553.856  44.912 553.663
  44.975 553.631   45.24  553.48  47.059 552.856  48.035 552.436  48.051 552.429
  49.565 551.687  49.634 551.658  49.673 551.633   49.86 551.542  51.254 550.868
   51.37 550.759  52.119 550.023  52.225 549.943  53.428     549  53.698 548.804
  54.672 548.109  54.818 548.007   54.86 547.974  55.722 547.255   56.53 547.783
  56.854 547.989  57.112 548.125  57.301 548.221  57.834 548.475  58.915     549
  59.799 550.125  60.236 550.714  61.497 551.403  62.378 551.898  63.481 552.767
  64.949 553.477  65.092 553.523  65.209 553.562  67.017  554.12  67.137 554.156
  68.389  554.55  68.607 554.606  70.147 555.236  72.238 556.105  74.273 556.784
  74.328 556.787  74.587 556.773   75.86 556.725  76.658 556.958  77.241 557.118
  81.316 557.795   84.53 558.328  87.677 558.539  88.108 558.575

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  53.428     .06  58.915     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        53.428  58.915             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 485.*

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  558.61   5.284 558.674   7.168 558.634    7.59 558.628  11.223 558.517
  17.968  558.34  18.511 558.325  18.639 558.323  19.267 558.307  20.193 558.283
  21.147 558.262  21.225  558.26  22.428 558.233  24.637 558.187  26.771 558.141
    28.9 558.098  29.485 558.086  29.965 558.071  30.694 558.044  31.388 557.871
  33.411 557.241  35.585 556.568  35.681 556.539   35.88 556.469  36.075 556.419
  36.742  556.25  38.547 555.725  39.896 555.243  40.163 555.147  41.154 554.815
  41.332 554.745  41.706 554.619  42.056   554.5  43.111 554.033  43.664 553.787
  44.186 553.556  44.366 553.476  44.739 553.263   44.91 553.165  45.304  552.94
  45.367 552.903  45.635  552.74  47.469 552.103  48.454 551.662  48.471 551.654
  49.997 550.873  50.067 550.844  50.107 550.816  50.295 550.721  51.701 550.013
  51.818 549.928  52.574  549.36   52.68 549.292  53.894   548.5  54.113 548.338
  54.901  547.76  55.019 547.674  55.053 547.648  55.751 547.087  56.428 547.494
    56.7 547.654  56.916 547.768  57.074 547.847  57.521  548.06  58.427   548.5
  59.294 549.718  59.723 550.357   60.96 551.025  61.824 551.499  62.905 552.383
  64.345 553.039  64.486 553.092    64.6 553.135  66.373 553.785  66.491 553.827
   67.72 554.275  67.933 554.339  69.443 554.908  71.494 555.698  73.491 556.383
  73.544 556.393  73.798 556.412  75.047 556.513   75.83 556.707  76.401 556.845
  80.398 557.582   83.55 558.164  86.637 558.371  87.059 558.402

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  53.894     .06  58.427     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        53.894  58.427             3.99    4.98    5.65             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 480

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  558.44    5.33   558.5    7.23  558.45   11.32  558.37    18.8  558.26
   21.33  558.21   24.85  558.14   29.74  558.04   30.96     558   31.66  557.81
    33.7  557.11   35.99  556.33   36.19  556.25   37.06     556   38.88   555.4
   40.51  554.74   41.51  554.36   41.69  554.28   42.42     554   44.75  552.83
   46.03     552   47.88  551.35   48.89  550.88   50.43  550.06    50.5  550.03
   50.54     550   50.73   549.9   54.36     548   55.13  547.41   55.78  546.92
   56.72  547.41   57.94     548   58.79  549.31   59.21     550   61.27   551.1
   62.33     552   65.73  553.45   67.05     554   68.74  554.58   72.76     556
   79.48  557.37   82.57     558   86.01  558.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   54.36     .06   57.94     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         54.36   57.94              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 475.555*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 558.307   5.152 558.296   6.989 558.229   9.064 558.166  10.418 558.126
  10.942  558.11  11.192 558.103  18.172 557.864  18.653 557.846  20.618 557.761
  21.361 557.729  24.021  557.61   24.47 557.589  28.747 557.417  29.927 557.357
  30.603 557.173  31.019 557.033  32.575 556.508  33.478 556.205  34.224 555.948
  34.789 555.757  34.982 555.681  35.823 555.438  36.905 555.083  37.582 554.862
  39.158  554.24  40.124 553.881  40.298 553.806  40.345 553.788  41.004 553.539
  43.256 552.441  43.786 552.112  44.494 551.672  44.684 551.606  46.282 551.039
  46.508 550.936  47.258 550.587  47.972  550.21  48.747 549.775  48.814 549.744
  48.853 549.714  49.037 549.612  49.547  549.33   50.97 548.536  52.546 547.732
  53.448 547.123  54.209 546.616  55.197 547.127   56.48 547.749  56.676 547.997
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  56.724 548.071  56.879 548.331  57.042 548.608  57.071 548.662  57.226 548.867
  57.519 549.261  57.755 549.597  58.032 549.989  58.123 550.043  58.341 550.161
  59.549 550.823  60.119 551.128  61.192     552  64.821  553.44  65.443 553.682
  66.229 553.987  66.554 554.093  68.033 554.575  71.788 555.832  72.188  555.96
  72.323     556  72.341 556.003  73.165 556.143  73.771 556.246  73.944 556.275
  74.349 556.344  75.354 556.515  75.899 556.607  76.904 556.778  79.494 557.234
  80.502 557.411  82.791 557.827  86.422 558.071  86.462 558.072

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  52.546     .06   56.48     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        52.546   56.48              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 471.111*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 558.173   4.974 558.092   6.747 558.008   8.751 557.924  10.058 557.872
  10.564  557.85  10.805  557.84  17.545 557.469  18.009 557.441  19.906 557.312
  20.623 557.263  23.191 557.079  23.625 557.048  27.755 556.795  28.893 556.713
  29.546 556.537  29.948 556.404   31.45 555.906  32.322 555.618  33.043 555.367
  33.587 555.184  33.774 555.112  34.586 554.876  35.631 554.535  36.285 554.325
  37.806  553.74  38.739 553.401  38.907 553.331  38.952 553.314  39.588 553.078
  41.763 552.053  42.274 551.749  42.957 551.345  43.141 551.282  44.684 550.729
  44.902  550.63  45.626 550.293  46.316 549.934  47.063 549.491  47.129 549.458
  47.166 549.429  47.343 549.325  47.836 549.036   49.21 548.219  50.731 547.464
  51.765 546.836  52.638 546.311  53.674 546.843   55.02 547.498  55.251 547.747
  55.309 547.833  55.492 548.158  55.684 548.507  55.718 548.579  55.901 548.793
  56.248 549.213  56.527 549.566  56.854 549.978  56.946 550.037  57.167  550.16
   58.39 550.846  58.967 551.156  60.054     552  63.911 553.429  64.572  553.67
  65.408 553.973  65.753 554.081  67.325  554.57  71.317  555.84  71.742 555.965
  71.885     556  71.904 556.003  72.781 556.125  73.424 556.215  73.608 556.241
  74.039 556.301  75.107  556.45  75.687 556.531  76.754 556.681  79.508 557.098
  80.579  557.26  83.012 557.653  86.872 557.915  86.914 557.914

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  50.731     .06   55.02     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        50.731   55.02              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 466.666*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  558.04   4.796 557.889   6.506 557.787   8.438 557.682   9.698 557.617
  10.186  557.59  10.419 557.577  16.917 557.073  17.365 557.037  19.194 556.862
  19.886 556.797  22.362 556.549   22.78 556.507  26.762 556.172   27.86  556.07
   28.49   555.9  28.877 555.775  30.325 555.303  31.166 555.031  31.861 554.786
  32.386 554.611  32.566 554.543  33.349 554.314  34.356 553.987  34.987 553.787
  36.454 553.241  37.353 552.922  37.515 552.857  37.559 552.841  38.172 552.616
  40.269 551.664  40.762 551.387  41.421 551.017  41.598 550.957  43.086 550.418
  43.296 550.324  43.994     550  44.659 549.658   45.38 549.206  45.443 549.172
  45.479 549.143   45.65 549.037  46.125 548.742   47.45 547.902  48.917 547.197
  50.083 546.548  51.067 546.007  52.152  546.56   53.56 547.247  53.827 547.498
  53.893 547.595  54.104 547.986  54.327 548.406  54.366 548.497  54.577  548.72
  54.977 549.164  55.299 549.535  55.677 549.967   55.77 550.032  55.993 550.159
  57.231  550.87  57.816 551.184  58.917     552  63.002 553.419  63.702 553.659
  64.587  553.96  64.953  554.07  66.618 554.566  70.846 555.849  71.296  555.97
  71.448     556  71.468 556.002  72.397 556.107  73.078 556.184  73.273 556.206
   73.73 556.258   74.86 556.386  75.474 556.456  76.605 556.583  79.521 556.961
  80.657 557.108  83.234  557.48  87.322 557.758  87.367 557.757

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  48.917     .06   53.56     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        48.917   53.56              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 462.222*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 557.907   4.618 557.685   6.265 557.566   8.125  557.44   9.339 557.363
   9.809  557.33  10.032 557.315   16.29 556.678   16.72 556.632  18.482 556.413
  19.148  556.33  21.532 556.019  21.935 555.966  25.769  555.55  26.826 555.427
  27.433 555.263  27.806 555.146  29.201 554.701   30.01 554.444  30.679 554.205
  31.185 554.038  31.358 553.975  32.112 553.752  33.082 553.439  33.689  553.25
  35.101 552.741  35.968 552.442  36.124 552.382  36.166 552.367  36.756 552.155
  38.775 551.275   39.25 551.024  39.884  550.69  40.055 550.633  41.487 550.107
   41.69 550.018  42.363 549.706  43.003 549.381  43.697 548.922  43.758 548.885
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  43.792 548.858  43.957 548.749  44.415 548.449   45.69 547.585  47.102 546.929
    48.4 546.261  49.496 545.702  50.629 546.276    52.1 546.996  52.402 547.248
  52.478 547.358  52.717 547.813  52.969 548.305  53.013 548.414  53.252 548.647
  53.706 549.116  54.071 549.504  54.499 549.956  54.593 550.027  54.819 550.157
  56.073 550.893  56.665 551.213  57.779     552  62.092 553.409  62.832 553.647
  63.767 553.947  64.152 554.058   65.91 554.561  70.375 555.857   70.85 555.975
   71.01     556  71.032 556.002  72.012 556.089  72.732 556.154  72.937 556.172
   73.42 556.215  74.614 556.322  75.262  556.38  76.456 556.486  79.535 556.825
  80.734 556.957  83.455 557.307  87.771 557.602  87.819 557.599

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  47.102     .06    52.1     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.102    52.1              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 457.777*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 557.773    4.44 557.481   6.023 557.345   7.812 557.198   8.979 557.108
   9.431 557.069   9.646 557.052  15.662 556.282  16.076 556.228   17.77 555.964
   18.41 555.864  20.703 555.488   21.09 555.425  24.777 554.927  25.793 554.783
  26.376 554.627  26.734 554.517  28.076 554.099  28.854 553.857  29.497 553.624
  29.984 553.465   30.15 553.406  30.875  553.19  31.807 552.892  32.391 552.712
  33.749 552.241  34.582 551.963  34.732 551.908  34.773 551.894   35.34 551.694
  37.282 550.886  37.738 550.661  38.348 550.362  38.512 550.308  39.889 549.797
  40.084 549.713  40.731 549.413  41.346 549.105  42.014 548.637  42.072 548.599
  42.105 548.572  42.264 548.461  42.704 548.155   43.93 547.268  45.288 546.661
  46.718 545.974  47.924 545.398  49.106 545.993   50.64 546.744  50.978 546.998
  51.062  547.12   51.33  547.64  51.611 548.204   51.66 548.331  51.928 548.573
  52.434 549.067  52.843 549.473  53.321 549.944  53.417 550.021  53.645 550.156
  54.914 550.916  55.513 551.241  56.641     552  61.183 553.398  61.961 553.636
  62.946 553.934  63.352 554.046  65.203 554.556  69.904 555.866  70.404  555.98
  70.573     556  70.595 556.002  71.628 556.072  72.385 556.123  72.602 556.138
   73.11 556.172  74.367 556.257   75.05 556.304  76.307 556.389  79.549 556.689
  80.811 556.806  83.676 557.133  88.221 557.446  88.271 557.441

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  45.288     .06   50.64     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.288   50.64              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 453.333*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  557.64   4.263 557.277   5.782 557.124   7.499 556.956   8.619 556.854
   9.053 556.809   9.259 556.789  15.035 555.886  15.432 555.823  17.058 555.515
  17.673 555.398  19.873 554.958  20.245 554.883  23.784 554.305   24.76  554.14
  25.319  553.99  25.663 553.888  26.951 553.497  27.698 553.271  28.315 553.043
  28.782 552.892  28.942 552.837  29.638 552.628  30.533 552.344  31.094 552.175
  32.397 551.741  33.197 551.483  33.341 551.433  33.379  551.42  33.925 551.232
  35.788 550.498  36.226 550.298  36.812 550.035  36.969 549.984  38.291 549.486
  38.478 549.407  39.099 549.119   39.69 548.829   40.33 548.352  40.386 548.313
  40.418 548.286   40.57 548.174  40.993 547.861   42.17 546.951  43.473 546.393
  45.035 545.687  46.353 545.093  47.583 545.709   49.18 546.493  49.553 546.749
  49.647 546.883  49.942 547.468  50.253 548.103  50.308 548.248  50.603   548.5
  51.163 549.018  51.614 549.443  52.143 549.933   52.24 550.016  52.472 550.154
  53.756  550.94  54.362 551.269  55.503     552  60.273 553.388  61.091 553.624
  62.125  553.92  62.551 554.035  64.496 554.551  69.433 555.874  69.958 555.985
  70.135     556  70.159 556.001  71.243 556.054  72.039 556.092  72.266 556.103
   72.8 556.129   74.12 556.193  74.837 556.228  76.158 556.292  79.563 556.553
  80.888 556.654  83.897  556.96  88.671 557.289  88.723 557.283

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  43.473     .06   49.18     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.473   49.18              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 448.888*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 557.507   4.085 557.073   5.541 556.903   7.186 556.714   8.259 556.599
   8.675 556.549   8.873 556.526  14.407 555.491  14.788 555.419  16.346 555.066
  16.935 554.932  19.044 554.428    19.4 554.342  22.791 553.682  23.726 553.497
  24.263 553.353  24.592 553.258  25.826 552.894  26.542 552.684  27.134 552.462
  27.581  552.32  27.734 552.268  28.401 552.066  29.259 551.796  29.796 551.637
  31.045 551.241  31.811 551.004  31.949 550.958  31.986 550.947  32.509 550.771
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  34.294 550.109  34.714 549.936  35.275 549.707  35.426 549.659  36.693 549.176
  36.872 549.101  37.467 548.826  38.033 548.553  38.647 548.068  38.701 548.027
  38.731 548.001  38.877 547.886  39.282 547.567   40.41 546.634  41.659 546.126
  43.353   545.4  44.782 544.789  46.061 545.426   47.72 546.242  48.129 546.499
  48.231 546.645  48.555 547.295  48.896 548.002  48.955 548.166  49.279 548.427
  49.892  548.97  50.386 549.412  50.966 549.922  51.063 550.011  51.298 550.153
  52.597 550.963   53.21 551.297  54.366     552  59.364 553.378  60.221 553.613
  61.304 553.907  61.751 554.023  63.788 554.546  68.962 555.883  69.512  555.99
  69.698     556  69.723 556.001  70.859 556.036  71.693 556.061  71.931 556.069
   72.49 556.086  73.873 556.129  74.625 556.152  76.008 556.194  79.576 556.416
  80.966 556.503  84.119 556.786  89.121 557.133  89.176 557.126

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  41.659     .06   47.72     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        41.659   47.72              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 444.444*

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 557.373   3.907  556.87   5.299 556.682   6.873 556.472     7.9 556.345
   8.297 556.289   8.486 556.263   13.78 555.095  14.144 555.014  15.634 554.617
  16.198 554.466  18.214 553.897  18.555 553.801  21.799  553.06  22.693 552.853
  23.206 552.717  23.521 552.629  24.701 552.292  25.386 552.097  25.952 551.881
   26.38 551.747  26.526 551.699  27.164 551.504  27.984 551.248  28.498   551.1
  29.693 550.741  30.426 550.524  30.558 550.484  30.593 550.474  31.093  550.31
  32.801  549.72  33.202 549.573  33.739  549.38  33.883 549.335  35.095 548.865
  35.266 548.796  35.835 548.532  36.377 548.276  36.964 547.783  37.015 547.741
  37.044 547.715  37.184 547.598  37.571 547.274   38.65 546.317  39.844 545.858
   41.67 545.113  43.211 544.484  44.538 545.142   46.26 545.991  46.704  546.25
  46.816 546.408  47.167 547.123  47.538 547.901  47.603 548.083  47.954 548.353
  48.621 548.921  49.158 549.381  49.788 549.911  49.887 550.005  50.124 550.151
  51.439 550.987  52.059 551.325  53.228     552  58.454 553.368   59.35 553.601
  60.483 553.894   60.95 554.012  63.081 554.542  68.491 555.891  69.066 555.995
   69.26     556  69.286     556  70.474 556.018  71.346 556.031  71.595 556.034
   72.18 556.043  73.627 556.064  74.412 556.076  75.859 556.097   79.59  556.28
  81.043 556.351   84.34 556.613   89.57 556.976  89.628 556.968

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  39.844     .06   46.26     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.844   46.26              1.5    4.46    6.79             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 440

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  557.24    6.56  556.23    7.54  556.09     8.1     556    13.5  554.61
   15.46     554   17.71  553.26   22.45     552   24.23  551.51   24.77   551.3
   26.71   550.7    29.2     550   31.69  549.21   32.34  549.01   33.66  548.49
   34.72     548   35.86  546.98   36.89     546   38.03  545.59   41.64  544.18
    44.8  545.74   45.28     546    45.4  546.17   45.78  546.95   46.18   547.8
   46.25     548   46.63  548.28   47.93  549.35   48.61   549.9   48.71     550
   48.95  550.15   50.28  551.01   52.09     552   58.48  553.59   60.15     554
   68.02   555.9   68.62     556   68.85     556   70.09     556      71     556
   71.26     556   71.87     556   73.38     556    74.2     556   75.71     556
   81.12   556.2   90.02  556.82   90.08  556.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   38.03     .06    44.8     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.03    44.8              6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 435.555*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 556.986   3.206 556.411   6.137 555.873   7.054 555.714   7.578 555.614
   8.439 555.372   9.107 555.182  10.331  554.83   12.63 554.172  14.406 553.573
  14.464 553.553  16.298 552.901  16.569 552.806  19.749 551.872  21.004  551.52
  22.669 551.037  23.174 550.836  24.989 550.252  26.652  549.76  27.319 549.563
  27.564 549.482  29.123 548.966  29.648 548.793  30.257 548.599  31.492 548.103
  32.483  547.64   33.55 546.704  34.513 545.807   35.58 545.413  37.431 544.688
   39.18 544.006  42.234 545.511  42.716 545.769  42.837 545.927  42.864 545.979
  43.218 546.656  43.543 547.299   43.62 547.452   43.69 547.638  44.072  547.93
  44.929 548.651  45.377 549.007   46.06 549.541   46.16 549.637  46.401 549.786
  46.713 549.985  47.736 550.647  48.118  550.86  49.553 551.696  51.443 552.296
  52.228 552.521  53.255 552.776  54.157     553  55.969 553.454  56.774 553.653
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  57.645 553.867  59.924  554.42  61.514 554.806  61.523 554.829  61.931 554.907
  62.299  554.99  62.473 555.031  62.648  555.07  64.771 555.554  65.547 555.735
  66.149 555.836   66.38  555.84  67.625 555.864  68.539 555.882    68.8 555.887
  69.412 555.899  70.928 555.929  71.751 555.945  73.267 555.974  76.247  556.13
  77.032 556.167  78.525 556.227  78.699 556.232  87.634 556.782  87.694 556.773

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   35.58     .06  42.234     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.58  42.234             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 431.111*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 556.731   2.985  556.11   5.715 555.515   6.569 555.338   7.056 555.229
   7.857  554.98   8.479 554.784    9.62 554.418  11.761 553.734  13.414 553.126
  13.468 553.106  15.176 552.447  15.428 552.351  18.389 551.388  19.557  551.04
  21.108 550.565  21.578 550.373  23.269 549.803  24.816  549.32  25.438 549.125
  25.666 549.046  27.118 548.544  27.607 548.377  28.173 548.188  29.323 547.716
  30.246 547.281   31.24 546.429  32.137 545.614   33.13 545.237  34.976 544.511
   36.72 543.831  39.669 545.282  40.153 545.539  40.274 545.685  40.301 545.732
  40.657 546.363  40.983  546.96   41.06 547.104   41.13 547.276  41.513  547.58
  42.374  548.32  42.824 548.665  43.509 549.183   43.61 549.274  43.852 549.422
  44.165  549.62  45.192 550.284  45.576 550.503  47.017 551.391  48.914 552.124
  49.702  552.38  50.733 552.634  51.638 552.859  53.458 553.317  54.266 553.519
  55.141 553.735  57.429 554.293  59.025 554.681  59.034 554.725  59.443 554.784
  59.813 554.861  59.988 554.901  60.163 554.938  62.294 555.395  63.073  555.57
  63.678 555.671   63.91  555.68   65.16 555.729  66.077 555.764  66.339 555.775
  66.954 555.798  68.476 555.857  69.303 555.889  70.825 555.948  73.816  556.15
  74.604 556.194  76.103 556.259  76.278 556.264  85.248 556.744  85.309 556.737

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   33.13     .06  39.669     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.13  39.669             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 426.666*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 556.477   2.765 555.808   5.292 555.158   6.083 554.962   6.535 554.843
   7.276 554.589   7.852 554.386   8.908 554.005  10.891 553.296  12.422  552.68
  12.472 552.659  14.054 551.993  14.287 551.897   17.03 550.904  18.111  550.56
  19.547 550.092  19.983 549.909  21.548 549.355  22.981  548.88  23.557 548.688
  23.768 548.611  25.112 548.122  25.565  547.96   26.09 547.777  27.155 547.329
   28.01 546.921  28.929 546.153   29.76 545.421   30.68  545.06  32.521 544.333
   34.26 543.657  37.103 545.053  37.589 545.308   37.71 545.442  37.738 545.484
  38.095 546.069  38.422 546.621    38.5 546.756  38.571 546.913  38.955 547.229
  39.819 547.989  40.271 548.322  40.959 548.824   41.06 548.911  41.303 549.058
  41.617 549.254  42.649 549.922  43.034 550.145   44.48 551.087  46.385 551.952
  47.176 552.239  48.212 552.492   49.12 552.717  50.946 553.181  51.758 553.385
  52.636 553.602  54.933 554.165  56.535 554.557  56.545 554.622  56.955  554.66
  57.327 554.733  57.503 554.771  57.678 554.805  59.818 555.236    60.6 555.405
  61.207 555.507   61.44 555.521  62.695 555.593  63.616 555.647  63.879 555.662
  64.496 555.698  66.024 555.786  66.854 555.834  68.382 555.923  71.385  556.17
  72.177 556.222  73.681 556.292  73.856 556.297  82.863 556.707  82.923   556.7

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   30.68     .06  37.103     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         30.68  37.103             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 422.222*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 556.222   2.544 555.507    4.87 554.801   5.597 554.586   6.013 554.458
   6.695 554.197   7.225 553.989   8.197 553.593  10.021 552.857   11.43 552.233
  11.476 552.212  12.931  551.54  13.146 551.442   15.67  550.42  16.665  550.08
  17.986 549.619  18.387 549.445  19.827 548.906  21.146  548.44  21.675 548.251
   21.87 548.176  23.107   547.7  23.524 547.544  24.006 547.366  24.986 546.942
  25.773 546.561  26.619 545.878  27.384 545.228   28.23 544.883  30.066 544.156
    31.8 543.482  34.538 544.824  35.025 545.078  35.147 545.199  35.175 545.237
  35.533 545.776  35.862 546.283   35.94 546.408  36.011 546.551  36.397 546.879
  37.264 547.657  37.718 547.979  38.408 548.465   38.51 548.547  38.754 548.694
  39.069 548.888  40.105 549.559  40.491 549.788  41.944 550.782  43.855  551.78
   44.65 552.097   45.69  552.35  46.602 552.576  48.435 553.044   49.25  553.25
  50.132  553.47  52.438 554.038  54.046 554.432  54.056 554.518  54.468 554.537
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  54.841 554.604  55.017 554.641  55.194 554.673  57.342 555.076  58.127  555.24
  58.737 555.343   58.97 555.361   60.23 555.458  61.154 555.529  61.419 555.549
  62.038 555.597  63.572 555.715  64.405 555.779  65.939 555.897  68.954  556.19
  69.749  556.25  71.259 556.325  71.435 556.329  80.477 556.669  80.538 556.663

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   28.23     .06  34.538     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         28.23  34.538             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 417.777*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.968   2.323 555.206   4.447 554.443   5.111  554.21   5.491 554.072
   6.114 553.806   6.598 553.591   7.486  553.18   9.151 552.419  10.438 551.786
   10.48 551.765  11.809 551.086  12.005 550.988   14.31 549.936  15.219   549.6
  16.425 549.146  16.791 548.982  18.106 548.458  19.311     548  19.794 547.814
  19.972 547.741  21.102 547.278  21.482 547.127  21.923 546.955  22.818 546.555
  23.536 546.201  24.309 545.602  25.007 545.035   25.78 544.707  27.611 543.979
   29.34 543.308  31.972 544.596  32.462 544.847  32.584 544.957  32.612  544.99
  32.972 545.482  33.301 545.944   33.38  546.06  33.451 546.189  33.839 546.529
   34.71 547.326  35.164 547.637  35.858 548.107   35.96 548.184  36.205  548.33
  36.521 548.523  37.561 549.196  37.949  549.43  39.407 550.478  41.326 551.608
  42.124 551.956  43.168 552.208  44.083 552.435  45.924 552.908  46.742 553.116
  47.627 553.337  49.942  553.91  51.557 554.308  51.567 554.414   51.98 554.414
  52.354 554.475  52.532  554.51  52.709  554.54  54.865 554.917  55.654 555.076
  56.266 555.179    56.5 555.201  57.765 555.322  58.693 555.411  58.958 555.436
   59.58 555.496   61.12 555.644  61.957 555.724  63.497 555.871  66.524  556.21
  67.321 556.278  68.837 556.358  69.014 556.361  78.091 556.631  78.152 556.627

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   25.78     .06  31.972     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         25.78  31.972             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 413.333*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.713   2.102 554.904   4.024 554.086   4.626 553.834   4.969 553.686
   5.533 553.414   5.971 553.193   6.774 552.768   8.282 551.981   9.446  551.34
   9.484 551.318  10.687 550.632  10.864 550.534   12.95 549.452  13.772  549.12
  14.864 548.674  15.195 548.518  16.386 548.009  17.476  547.56  17.913 547.376
  18.074 547.306  19.096 546.856  19.441  546.71  19.839 546.544  20.649 546.168
  21.299 545.842  21.999 545.327  22.631 544.842   23.33  544.53  25.155 543.802
   26.88 543.133  29.407 544.367  29.898 544.617  30.021 544.714  30.049 544.742
   30.41 545.188  30.741 545.606   30.82 545.712  30.891 545.827   31.28 546.179
  32.155 546.994  32.611 547.294  33.308 547.748   33.41 547.821  33.656 547.966
  33.973 548.157  35.017 548.833  35.407 549.073  36.871 550.174  38.797 551.436
  39.598 551.814  40.646 552.066  41.565 552.294  43.413 552.771  44.234 552.982
  45.123 553.205  47.447 553.783  49.068 554.183  49.078 554.311  49.493  554.29
  49.868 554.346  50.046  554.38  50.224 554.408  52.389 554.758   53.18 554.911
  53.795 555.014   54.03 555.041    55.3 555.187  56.232 555.293  56.498 555.324
  57.122 555.395  58.668 555.572  59.508 555.668  61.054 555.845  64.093  556.23
  64.893 556.306  66.416 556.391  66.593 556.393  75.705 556.593  75.767  556.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   23.33     .06  29.407     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         23.33  29.407             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 408.888*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.459   1.882 554.603   3.602 553.729    4.14 553.458   4.447 553.301
   4.952 553.023   5.344 552.795   6.063 552.355   7.412 551.543   8.454 550.893
   8.488 550.871   9.565 550.178   9.724 550.079   11.59 548.968  12.326  548.64
  13.303 548.201    13.6 548.054  14.665 547.561   15.64  547.12  16.032 546.939
  16.176  546.87  17.091 546.434  17.399 546.294  17.756 546.133  18.481 545.781
  19.063 545.482  19.689 545.051  20.254 544.649   20.88 544.353    22.7 543.624
   24.42 542.959  26.841 544.138  27.334 544.386  27.458 544.471  27.486 544.495
  27.848 544.895  28.181 545.267   28.26 545.364  28.331 545.464  28.722 545.828
    29.6 546.663  30.058 546.951  30.757 547.389   30.86 547.458  31.107 547.603
  31.426 547.791  32.474  548.47  32.865 548.715  34.334 549.869  36.268 551.264
  37.072 551.673  38.124 551.924  39.047 552.152  40.902 552.635  41.726 552.848
  42.618 553.072  44.951 553.655  46.578 554.059  46.588 554.207  47.005 554.167
  47.382 554.218  47.561  554.25  47.739 554.275  49.913 554.599  50.707 554.746
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  51.324  554.85   51.56 554.881  52.835 555.051   53.77 555.176  54.037 555.211
  54.664 555.294  56.216 555.501  57.059 555.613  58.611  555.82  61.662  556.25
  62.466 556.334  63.994 556.424  64.172 556.425  73.319 556.556  73.381 556.553

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   20.88     .06  26.841     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.88  26.841             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 404.444*

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.204   1.661 554.301   3.179 553.371   3.654 553.082   3.925 552.915
   4.371 552.631   4.717 552.398   5.351 551.943   6.542 551.105   7.462 550.447
   7.492 550.424   8.442 549.724   8.583 549.625   10.23 548.484   10.88  548.16
  11.742 547.728  12.004  547.59  12.944 547.112  13.805  546.68  14.151 546.502
  14.278 546.435  15.085 546.012  15.358 545.877  15.673 545.722  16.312 545.394
  16.826 545.122  17.378 544.776  17.878 544.456   18.43 544.177  20.245 543.447
   21.96 542.784  24.276 543.909  24.771 544.155  24.895 544.229  24.923 544.247
  25.287 544.601   25.62 544.929  25.699 545.016  25.772 545.102  26.164 545.478
  27.045 546.331  27.505 546.609  28.207 547.031   28.31 547.095  28.558 547.239
  28.878 547.426   29.93 548.107  30.322 548.358  31.797 549.565  33.739 551.092
  34.546 551.531  35.602 551.782  36.528 552.011  38.391 552.498  39.218 552.714
  40.114 552.939  42.456 553.528  44.089 553.934  44.099 554.104  44.518 554.043
  44.896 554.089  45.075  554.12  45.255 554.143  47.436 554.439  48.234 554.581
  48.853 554.686   49.09 554.722   50.37 554.915  51.309 555.058  51.577 555.098
  52.206 555.194  53.764  555.43  54.611 555.558  56.169 555.794  59.231  556.27
  60.038 556.362  61.572 556.457  61.751 556.458  70.934 556.518  70.996 556.517

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   18.43     .06  24.276     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         18.43  24.276             6.84    4.47     .76             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 400

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  554.95    1.44     554    3.79  552.24    4.09     552    4.64  551.53
    6.47     550    7.32  549.27    8.87     548   11.97  546.24   12.38     546
   13.08  545.59   15.98     544   17.79  543.27    19.5  542.61   21.71  543.68
   22.36     544   23.06  544.59   24.49     546   26.33  547.06   27.78     548
   31.21  550.92   32.02  551.39   33.08  551.64   34.01  551.87   36.71  552.58
   39.96   553.4    41.6  553.81   41.61     554   42.03  553.92   42.41  553.96
   42.59  553.99   42.77  554.01   44.96  554.28    56.8  556.29   57.61  556.39
   59.15  556.49   68.61  556.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   15.98     .06  21.71     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         15.98   21.71             5.32    4.94    4.32             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 395.*

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.005   1.491  554.13   1.873 553.877   2.882 553.228   3.924 552.534
   4.234 552.314   4.804 551.884   6.169 550.874   6.698   550.5   7.218 550.123
   7.578 549.825   8.195 549.335   9.183 548.547   9.632 548.284   11.57 547.113
  11.643  547.07  11.683 547.043  12.392 546.568  12.817 546.277  12.959  546.18
  13.541 545.808  14.073 545.485  14.759 545.077   15.68 544.522  16.544     544
  17.385 543.682  18.496 543.257   20.34 542.576  22.883 543.685  22.959 543.717
  23.589 544.035  24.263 544.589   25.64 545.899  25.792 545.987  27.411 546.927
  27.425 546.936  28.807 547.807  32.109 550.497  32.889  550.94  33.067 550.986
  33.534 551.105  33.767 551.163  33.877 551.189  33.909 551.197  34.804 551.425
  37.404 552.123  40.532 552.933  41.935 553.294  42.111 553.338  42.121 553.504
  42.525 553.444  42.891 553.488  43.064 553.518  43.237  553.54  45.346 553.827
  47.673 554.242  50.816 554.804  51.393 554.907  51.681  554.96  51.791  554.98
  51.887 554.996  51.942 555.005  52.011 555.017  54.879 555.481  56.743 555.782
  57.523 555.876  59.006 555.974  68.113 556.032

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.544     .06  22.959     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        16.544  22.959             5.32    4.94    4.32             .1       .3
```

CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 390.*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	555.06	1.542	554.26	1.937	554.03	2.981	553.462	4.057	552.829
4.379	552.628	4.967	552.238	6.379	551.321	6.927	551	7.464	550.677
7.836	550.38	8.474	549.889	9.496	549.095	9.961	548.815	11.964	547.536
12.04	547.488	12.081	547.457	12.815	546.895	13.253	546.554	13.4	546.44
14.003	546.025	14.553	545.661	15.262	545.209	16.214	544.586	17.108	544
18.01	543.679	19.202	543.243	21.18	542.542	24.124	543.723	24.212	543.756
24.819	544.07	25.467	544.587	26.79	545.798	26.936	545.883	28.492	546.793
28.506	546.802	29.834	547.613	33.008	550.074	33.758	550.49	33.929	550.538
34.377	550.661	34.602	550.721	34.707	550.747	34.738	550.754	35.599	550.98
38.097	551.667	41.105	552.467	42.453	552.823	42.622	552.866	42.631	553.009
43.02	552.968	43.372	553.016	43.538	553.047	43.705	553.07	45.731	553.373
47.968	553.793	50.99	554.364	51.544	554.467	51.821	554.523	51.926	554.542
52.019	554.558	52.072	554.567	52.138	554.579	54.895	555.001	56.687	555.275
57.436	555.361	58.861	555.458	67.615	555.585				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	17.108	.06	24.212	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
17.108	24.212	5.32	4.94	4.32	.1	.3

CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 385.*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	555.115	1.592	554.39	2.001	554.183	3.079	553.697	4.191	553.123
4.523	552.942	5.131	552.592	6.589	551.767	7.155	551.5	7.71	551.23
8.095	550.935	8.754	550.442	9.809	549.642	10.289	549.346	12.359	547.958
12.436	547.907	12.479	547.871	13.237	547.223	13.69	546.831	13.842	546.7
14.464	546.243	15.032	545.838	15.765	545.341	16.748	544.65	17.671	544
18.635	543.676	19.907	543.23	22.02	542.509	25.365	543.761	25.465	543.795
26.048	544.105	26.67	544.586	27.94	545.697	28.08	545.779	29.574	546.66
29.586	546.668	30.861	547.42	33.907	549.651	34.626	550.041	34.791	550.09
35.221	550.218	35.436	550.279	35.538	550.304	35.568	550.312	36.393	550.535
38.791	551.21	41.677	552	42.971	552.353	43.133	552.394	43.142	552.513
43.515	552.492	43.852	552.544	44.012	552.575	44.172	552.6	46.117	552.92
48.263	553.344	51.163	553.923	51.695	554.028	51.961	554.086	52.062	554.105
52.151	554.12	52.201	554.13	52.265	554.141	54.911	554.521	56.63	554.767
57.35	554.847	58.717	554.942	67.118	555.138				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	17.671	.06	25.465	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
17.671	25.465	5.32	4.94	4.32	.1	.3

CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 380.*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	555.17	1.643	554.52	2.065	554.337	3.177	553.932	4.325	553.417
4.667	553.256	5.295	552.946	6.799	552.214	7.383	552	7.956	551.784
8.353	551.489	9.033	550.996	10.122	550.189	10.617	549.877	12.753	548.38
12.833	548.326	12.878	548.284	13.659	547.551	14.127	547.108	14.284	546.96
14.926	546.46	15.512	546.014	16.268	545.473	17.283	544.714	18.235	544
19.26	543.673	20.613	543.217	22.86	542.475	26.606	543.799	26.718	543.834
27.278	544.139	27.873	544.585	29.09	545.596	29.224	545.675	30.655	546.527
30.667	546.535	31.888	547.227	34.806	549.228	35.495	549.591	35.653	549.642
36.065	549.774	36.271	549.838	36.368	549.861	36.397	549.869	37.188	550.09
39.485	550.753	42.249	551.534	43.488	551.882	43.644	551.922	43.653	552.018
44.01	552.017	44.333	552.072	44.486	552.103	44.639	552.13	46.502	552.467
48.559	552.895	51.336	553.482	51.846	553.588	52.101	553.649	52.198	553.668
52.283	553.682	52.331	553.692	52.392	553.703	54.927	554.041	56.574	554.26
57.263	554.333	58.573	554.427	66.62	554.69				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	18.235	.06	26.718	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
18.235	26.718	5.32	4.94	4.32	.1	.3

CROSS SECTION

RIVER: arroyo_maquinas
REACH: casillas RS: 375.*

INPUT

```
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.225   1.694  554.65   2.129  554.49   3.275 554.166   4.459 553.711
   4.811  553.57   5.458   553.3   7.009  552.66   7.611   552.5   8.202 552.338
   8.611 552.044   9.312 551.549  10.435 550.737  10.945 550.408  13.147 548.803
   13.23 548.744  13.276 548.698  14.081 547.879  14.564 547.385  14.725  547.22
  15.387 546.678  15.991 546.191  16.771 545.604  17.817 544.778  18.799     544
  19.885 543.669  21.319 543.204    23.7 542.441  27.847 543.836  27.971 543.873
  28.507 544.174  29.077 544.583   30.24 545.495  30.368 545.572  31.736 546.394
  31.748 546.401  32.915 547.033  35.705 548.805  36.364 549.141  36.514 549.194
  36.909 549.331  37.106 549.396  37.199 549.418  37.226 549.426  37.982 549.645
  40.178 550.296  42.821 551.067  44.006 551.412  44.155  551.45  44.163 551.522
  44.505 551.541  44.814   551.6   44.96 551.632  45.107  551.66  46.888 552.014
  48.854 552.446   51.51 553.042  51.997 553.149   52.24 553.211  52.333 553.231
  52.414 553.244  52.461 553.254  52.519 553.265  54.943  553.56  56.517 553.752
  57.176 553.819  58.429 553.911  66.122 554.242

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.799     .06  27.971     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        18.799  27.971             5.32    4.94    4.32             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 370.*

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  555.28   1.745  554.78   2.192 554.643   3.374 554.401   4.592 554.006
   4.956 553.884   5.622 553.654    7.22 553.107    7.84     553   8.448 552.892
   8.869 552.599   9.591 552.103  10.748 551.284  11.274 550.938  13.541 549.225
  13.627 549.163  13.674 549.112  14.504 548.206      15 547.662  15.167  547.48
  15.849 546.896  16.471 546.367  17.274 545.736  18.351 544.842  19.362     544
   20.51 543.666  22.025  543.19   24.54 542.408  29.088 543.874  29.224 543.912
  29.737 544.209   30.28 544.582   31.39 545.394  31.512 545.468  32.817  546.26
  32.829 546.267  33.943  546.84  36.604 548.382  37.233 548.691  37.376 548.746
  37.752 548.887  37.941 548.954  38.029 548.976  38.055 548.983  38.777   549.2
  40.872 549.839  43.394 550.601  44.524 550.941  44.666 550.978  44.674 551.027
      45 551.065  45.295 551.127  45.435  551.16  45.574  551.19  47.274  551.56
  49.149 551.998  51.683 552.601  52.148 552.709   52.38 552.774  52.469 552.794
  52.546 552.806  52.591 552.816  52.646 552.826  54.958  553.08  56.461 553.245
  57.089 553.304  58.284 553.395  65.625 553.795

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  19.362     .06  29.224     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.362  29.224             5.32    4.94    4.32             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 365.*

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 555.335   1.796  554.91   2.256 554.797   3.472 554.635   4.726   554.3
     5.1 554.198   5.786 554.007    7.43 553.553   8.068   553.5   8.694 553.446
   9.128 553.154   9.871 552.656   11.06 551.831  11.602 551.469  13.936 549.648
  14.023 549.581  14.072 549.526  14.926 548.534  15.437 547.939  15.608  547.74
   16.31 547.113   16.95 546.544  17.777 545.868  18.886 544.906  19.926     544
  21.135 543.663  22.731 543.177   25.38 542.374  30.329 543.912  30.477 543.951
  30.966 544.244  31.483  544.58   32.54 545.293  32.656 545.364  33.899 546.127
  33.909 546.134   34.97 546.647  37.503 547.959  38.101 548.241  38.238 548.298
  38.596 548.443  38.775 548.512   38.86 548.533  38.884 548.541  39.571 548.755
  41.566 549.383  43.966 550.134  45.042 550.471  45.177 550.506  45.185 550.531
  45.495 550.589  45.776 550.655  45.909 550.688  46.042  550.72  47.659 551.107
  49.445 551.549  51.857 552.161  52.299  552.27   52.52 552.337  52.604 552.357
  52.678 552.368   52.72 552.378  52.773 552.388  54.974   552.6  56.404 552.737
  57.003  552.79   58.14 552.879  65.127 553.348

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  19.926     .06  30.477     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        19.926  30.477             5.32    4.94    4.32             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 360

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  555.39    2.32  554.95    3.57  554.87    7.64     554    8.94     554
   10.15  553.21   11.93     552   14.33  550.07   14.42     550   14.47  549.94
   16.05     548   17.43  546.72   18.28     546   19.42  544.97   20.49     544
   21.76  543.66   26.22  542.34   31.57  543.95   31.73  543.99   31.74     544
```

```
    33.8  545.26   34.99     546    39.1  547.85   39.44     548   39.61  548.07
   39.69  548.09   45.56     550   49.74   551.1   52.03  551.72   52.45  551.83
   52.66   551.9   52.74  551.92   52.81  551.93   52.85  551.94    52.9  551.95
   54.99  552.12   64.63   552.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   20.49     .06   31.74     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         20.49   31.74             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 357.111*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 554.565   2.371 554.112   3.648 554.008   7.807 553.126   9.136 553.092
  10.372 552.357  12.191 551.234  14.644 549.455  14.736  549.39  14.787 549.336
  16.402 547.569  16.678 547.339  16.731  547.29  17.812 546.391   18.68 545.729
  19.126 545.368  19.845 544.802  20.939  543.94  22.068 543.416  26.032 542.242
  26.199 542.242  26.366 542.242  31.121 543.896  31.263 543.931  33.285  545.06
  34.448 545.718  35.208 546.029  38.464  547.39  38.796 547.526  38.962 547.589
  39.041 547.608  42.477 548.654  42.526  548.67  44.777 549.443  45.803 549.737
  48.861 550.524  51.099 551.116  51.509 551.221  51.714 551.287  51.793 551.306
  51.861 551.316    51.9 551.326  51.949 551.336  53.662 551.494  53.991 551.522
  63.411 552.328

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  16.678     .06  20.939     .06  31.272     .06  35.208     .06
  53.662     .06  63.411     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        20.939  31.263             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 354.222*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  553.74   2.422 553.275   3.726 553.146   7.975 552.253   9.332 552.183
  10.595 551.505  12.453 550.469  14.958  548.84  15.052 548.781  15.104 548.731
  16.753 547.138  17.035 546.929  17.089 546.879  18.194 546.061  19.081 545.458
  19.536 545.129  20.271 544.634  21.388  543.88  22.376 543.171  25.844 542.144
  26.178 542.144  26.511 542.144  30.672 543.841  30.797 543.872   32.77  544.86
  33.906 545.436  34.648 545.708  37.828 546.929  38.153 547.051  38.315 547.109
  38.391 547.126  41.748 548.073  41.796 548.088  43.993 548.885  44.996 549.198
  47.982 549.949  50.168 550.512  50.569 550.612  50.769 550.674  50.845 550.693
  50.912 550.703   50.95 550.712  50.998 550.722  52.671 550.895  52.993 550.924
  62.192 551.756

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  17.035     .06  21.388     .06  30.804     .06  34.648     .06
  52.671     .06  62.192     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.388  30.797             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 351.333*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 552.915   2.472 552.437   3.805 552.284   8.142 551.379   9.528 551.275
  10.817 550.652  12.714 549.703  15.272 548.225  15.368 548.171  15.421 548.127
  17.105 546.708  17.393 546.519  17.448 546.468  18.576 545.732  19.481 545.187
  19.946 544.891  20.696 544.467  21.837  543.82  22.683 542.927  25.657 542.047
  26.157 542.047  26.657 542.047  30.223 543.787   30.33 543.813  32.256  544.66
  33.364 545.153  34.089 545.387  37.192 546.469  37.509 546.577  37.667 546.628
  37.742 546.643  41.018 547.493  41.065 547.507   43.21 548.328  44.188 548.659
  47.103 549.373  49.237 549.908  49.628 550.004  49.823 550.061  49.898 550.079
  49.963 550.089      50 550.098  50.047 550.107   51.68 550.295  51.994 550.325
  60.973 551.183

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  17.393     .06  21.837     .06  30.337     .06  34.089     .06
   51.68     .06  60.973     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        21.837   30.33             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
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REACH: casillas          RS: 348.444*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  552.09   2.523 551.599   3.883 551.422   8.309 550.505   9.723 550.367
  11.039 549.799  12.975 548.937  15.586  547.61  15.684 547.561  15.738 547.523
  17.456 546.277   17.75 546.109  17.807 546.056  18.957 545.403  19.882 544.916
  20.356 544.652  21.122 544.299  22.286  543.76  22.991 542.682  25.469 541.949
  26.136 541.949  26.802 541.949  29.774 543.732  29.863 543.754  31.741  544.46
  32.822 544.871  33.529 545.066  36.557 546.008  36.866 546.103   37.02 546.147
  37.093 546.161  40.288 546.912  40.334 546.926  42.426  547.77  43.381 548.119
  46.225 548.798  48.305 549.304  48.687 549.395  48.878 549.449  48.951 549.465
  49.014 549.476  49.051 549.484  49.096 549.493  50.689 549.696  50.995 549.727
  59.754 550.611

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   17.75     .06  22.286     .06  29.869     .06  33.529     .06
  50.689     .06  59.754     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       22.286  29.863             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 345.555*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 551.266   2.574 550.761   3.961  550.56   8.477 549.631   9.919 549.458
  11.262 548.946  13.237 548.172    15.9 546.995      16 546.952  16.055 546.918
  17.808 545.846  18.108 545.699  18.165 545.645  19.339 545.073  20.282 544.645
  20.766 544.414  21.547 544.131  22.734   543.7  23.299 542.438  25.281 541.851
  26.114 541.851  26.948 541.851  29.326 543.678  29.397 543.696  31.226  544.26
   32.28 544.589  32.969 544.745  35.921 545.548  36.222 545.629  36.372 545.667
  36.443 545.679  39.559 546.332  39.603 546.345  41.643 547.213  42.573  547.58
  45.346 548.222  47.374   548.7  47.746 548.786  47.932 548.836  48.003 548.852
  48.065 548.862  48.101  548.87  48.145 548.879  49.698 549.097  49.996 549.129
  58.536 550.039

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.108     .06  22.734     .06  29.401     .06  32.969     .06
  49.698     .06  58.536     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       22.734  29.397             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 342.666*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 550.441   2.625 549.924   4.039 549.697   8.644 548.758  10.115  548.55
  11.484 548.094  13.498 547.406  16.214  546.38  16.315 546.342  16.372 546.314
   18.16 545.415  18.465 545.288  18.524 545.234  19.721 544.744  20.683 544.374
  21.176 544.175  21.973 543.963  23.183  543.64  23.607 542.193  25.093 541.753
  26.093 541.753  27.093 541.753  28.877 543.623   28.93 543.637  30.711  544.06
  31.738 544.307  32.409 544.423  35.285 545.088  35.578 545.154  35.725 545.186
  35.794 545.197  38.829 545.751  38.872 545.764   40.86 546.656  41.766 547.041
  44.467 547.647  46.443 548.096  46.806 548.177  46.987 548.223  47.056 548.238
  47.116 548.249  47.151 548.256  47.194 548.265  48.707 548.498  48.998 548.531
  57.317 549.467

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.465     .06  23.183     .06  28.933     .06  32.409     .06
  48.707     .06  57.317     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       23.183   28.93             2.71    4.46    6.58             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 339.777*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 549.616   2.676 549.086   4.117 548.835   8.812 547.884  10.311 547.642
  11.707 547.241   13.76 546.641  16.528 545.765  16.631 545.732  16.689  545.71
  18.511 544.984  18.823 544.878  18.883 544.823  20.103 544.415  21.083 544.103
  21.586 543.937  22.398 543.796  23.632  543.58  23.914 541.949  24.906 541.656
  26.072 541.656  27.239 541.656  28.428 543.569  28.463 543.578  30.196  543.86
  31.196 544.024   31.85 544.102  34.649 544.627  34.935  544.68  35.077 544.705
  35.145 544.714  38.099 545.171  38.142 545.182  40.076 546.098  40.959 546.502
  43.588 547.071  45.512 547.492  45.865 547.568  46.041  547.61  46.109 547.624
  46.167 547.635  46.201 547.642  46.243 547.651  47.716 547.899  47.999 547.933
  56.098 548.894
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Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  18.823     .06  23.632     .06  28.466     .06   31.85     .06
  47.716     .06  56.098     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        23.632  28.463             2.71    4.46    6.58             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 336.888*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 548.791   2.727 548.248   4.196 547.973   8.979  547.01  10.507 546.734
  11.929 546.388  14.021 545.875  16.841  545.15  16.947 545.123  17.006 545.105
  18.863 544.553   19.18 544.468  19.241 544.411  20.485 544.086  21.484 543.831
  21.996 543.698  22.824 543.628  24.081  543.52  24.222 541.704  24.718 541.558
  26.051 541.558  27.384 541.558  27.979 543.514  27.997 543.519  29.681  543.66
  30.654 543.742   31.29 543.781  34.013 544.167  34.291 544.206   34.43 544.225
  34.495 544.232   37.37 544.591  37.411 544.601  39.293 545.541  40.151 545.962
  42.709 546.496  44.581 546.888  44.924  546.96  45.096 546.997  45.161 547.011
  45.218 547.022  45.251 547.028  45.292 547.037  46.725   547.3      47 547.335
  54.879 548.322

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   19.18     .06  24.081     .06  27.998     .06   31.29     .06
  46.725     .06  54.879     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.081  27.997             2.71    4.46    6.58             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 334

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 547.966  19.538 544.058    19.6     544  22.406  543.46   24.53  543.46
   24.53  541.46   26.03  541.46   27.53  541.46   27.53  543.46   30.73  543.46
   36.64  544.01   36.68  544.02  39.344 545.423  45.734 546.701   53.66  547.75

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  19.538    .015   27.53    .015   30.73    .015  45.734    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        24.53   27.53           4.667   4.667   4.667             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 329.333*

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 549.784  19.979 544.502  20.042 544.455  22.911 543.711  25.083  543.42
  25.083  541.42  26.583  541.42  28.083  541.42  28.083  543.42  31.286 543.557
  37.201 544.176  37.242 544.184  39.908 545.234  46.304 546.359  54.237 547.397

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  19.979    .015  25.083    .015  28.083    .015  31.286    .015
  46.304    .015  54.237    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.083  28.083           4.667   4.667   4.667             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 324.666*

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 551.602  20.419 544.947  20.484 544.911  23.417 543.962  25.637  543.38
  25.637  541.38  27.137  541.38  28.637  541.38  28.637  543.38  31.842 543.654
  37.763 544.342  37.803 544.349  40.472 545.044  46.873 546.016  54.813 547.043

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  20.419    .015  25.637    .015  28.637    .015  31.842    .015
  46.873    .015  54.813    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        25.637  28.637           4.667   4.667   4.667             .1      .3
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CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 320

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  553.42   26.19  543.34   26.19  541.34   27.69  541.34   29.19  541.34
   29.19  543.34   55.39  546.69

Manning's n Values        num=       1
     Sta   n Val
       0    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         26.19   29.19             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 315.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 553.049  26.855   543.3  26.855   541.3  28.355   541.3  29.855   541.3
  29.855   543.3  56.717 546.491

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  26.855    .015  29.855    .015  56.717    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        26.855  29.855             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 310.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 552.677   27.52  543.26   27.52  541.26   29.02  541.26   30.52  541.26
   30.52  543.26  58.045 546.292

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   27.52    .015   30.52    .015  58.045    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.52   30.52             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 305.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 552.306  28.185  543.22  28.185  541.22  29.685  541.22  31.185  541.22
  31.185  543.22  59.373 546.094

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  28.185    .015  31.185    .015  59.373    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        28.185  31.185             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 300.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 551.935   28.85  543.18   28.85  541.18   30.35  541.18   31.85  541.18
   31.85  543.18    60.7 545.895

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   28.85    .015   31.85    .015    60.7    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         28.85   31.85             5.46   4.995    5.04             .1      .3

CROSS SECTION
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RIVER: arroyo_maquinas
REACH: casillas          RS: 295.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 551.564  29.515  543.14  29.515  541.14  31.015  541.14  32.515  541.14
  32.515  543.14  62.028 545.696

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  29.515    .015  32.515    .015  62.028    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        29.515  32.515             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 290.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 551.193   30.18   543.1   30.18   541.1   31.68   541.1   33.18   541.1
   33.18   543.1  63.355 545.497

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   30.18    .015   33.18    .015  63.355    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         30.18   33.18             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 285.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 550.821  30.845  543.06  30.845  541.06  32.345  541.06  33.845  541.06
  33.845  543.06  64.683 545.299

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  30.845    .015  33.845    .015  64.683    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        30.845  33.845             5.46   4.995    5.04             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 280

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  550.45   31.51  543.02   31.51  541.02   33.01  541.02   34.51  541.02
   34.51  543.02   66.01   545.1

Manning's n Values        num=       1
     Sta   n Val
       0    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         31.51   34.51             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 275.555*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 550.092  31.699 542.983  31.699 540.983  33.199 540.983  34.699 540.983
  34.699 542.983  66.389 545.089

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  31.699    .015  34.699    .015  66.389    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.699  34.699             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 271.111*
```

```
INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 549.734  31.888 542.947  31.888 540.947  33.388 540.947  34.888 540.947
  34.888 542.947  66.768 545.078

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  31.888    .015  34.888    .015  66.768    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        31.888  34.888             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 266.666*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 549.377  32.077  542.91  32.077  540.91  33.577  540.91  35.077  540.91
  35.077  542.91  67.147 545.067

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  32.077    .015  35.077    .015  67.147    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.077  35.077             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 262.222*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 549.019  32.266 542.873  32.266 540.873  33.766 540.873  35.266 540.873
  35.266 542.873  67.526 545.056

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  32.266    .015  35.266    .015  67.526    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.266  35.266             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 257.777*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 548.661  32.454 542.837  32.454 540.837  33.954 540.837  35.454 540.837
  35.454 542.837  67.904 545.044

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  32.454    .015  35.454    .015  67.904    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.454  35.454             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 253.333*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 548.303  32.643   542.8  32.643   540.8  34.143   540.8  35.643   540.8
  35.643   542.8  68.283 545.033

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  32.643    .015  35.643    .015  68.283    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.643  35.643             3.59    4.46    5.74             .1      .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 248.888*

INPUT
Description:
Station Elevation Data    num=       7
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 547.946  32.832 542.763  32.832 540.763  34.332 540.763  35.832 540.763
  35.832 542.763  68.662 545.022

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  32.832    .015  35.832    .015  68.662    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        32.832  35.832             3.59    4.46    5.74             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 244.444*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 547.588  33.021 542.727  33.021 540.727  34.521 540.727  36.021 540.727
  36.021 542.727  69.041 545.011

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.021    .015  36.021    .015  69.041    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.021  36.021             3.59    4.46    5.74             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 240

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  547.23   33.21  542.69   33.21  540.69   34.71  540.69   36.21  540.69
   36.21  542.69   69.42     545

Manning's n Values        num=       1
     Sta   n Val
       0    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.21   36.21             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 235.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 546.929  33.281 542.649  33.281 540.649  34.781 540.649  36.281 540.649
  36.281 542.649  69.562 544.977

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.281    .015  36.281    .015  69.562    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.281  36.281             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 230.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 546.628  33.353 542.607  33.353 540.607  34.853 540.607  36.353 540.607
  36.353 542.607  69.705 544.955

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.353    .015  36.353    .015  69.705    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.353  36.353             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 225.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 546.326  33.424 542.566  33.424 540.566  34.924 540.566  36.424 540.566
  36.424 542.566  69.847 544.932
```

```
Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.424    .015  36.424    .015  69.847    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.424  36.424             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 220.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 546.025  33.495 542.525  33.495 540.525  34.995 540.525  36.495 540.525
  36.495 542.525   69.99  544.91

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.495    .015  36.495    .015   69.99    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.495  36.495             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 215.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 545.724  33.566 542.484  33.566 540.484  35.066 540.484  36.566 540.484
  36.566 542.484  70.132 544.888

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.566    .015  36.566    .015  70.132    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.566  36.566             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 210.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 545.422  33.637 542.443  33.637 540.443  35.137 540.443  36.637 540.443
  36.637 542.443  70.275 544.865

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.637    .015  36.637    .015  70.275    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.637  36.637             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 205.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 545.121  33.709 542.401  33.709 540.401  35.209 540.401  36.709 540.401
  36.709 542.401  70.417 544.843

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  33.709    .015  36.709    .015  70.417    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        33.709  36.709             5.01   4.995       5             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 200

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  544.82   33.78  542.36   33.78  540.36   35.28  540.36   36.78  540.36
   36.78  542.36   70.56  544.82

Manning's n Values        num=       1
     Sta   n Val
```

```
       0    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.78   36.78            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 195.555*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.736  34.447 542.323  34.447 540.323  35.947 540.323  37.447 540.323
  37.447 542.323  71.893 544.736

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  34.447    .015  37.447    .015  71.893    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        34.447  37.447            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 191.111*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.651  35.113 542.287  35.113 540.287  36.613 540.287  38.113 540.287
  38.113 542.287  73.227 544.651

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  35.113    .015  38.113    .015  73.227    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        35.113  38.113            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 186.666*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.567   35.78  542.25   35.78  540.25   37.28  540.25   38.78  540.25
   38.78  542.25   74.56 544.567

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   35.78    .015   38.78    .015   74.56    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.78   38.78            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 182.222*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.482  36.447 542.213  36.447 540.213  37.947 540.213  39.447 540.213
  39.447 542.213  75.893 544.482

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  36.447    .015  39.447    .015  75.893    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        36.447  39.447            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 177.777*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.398  37.113 542.177  37.113 540.177  38.613 540.177  40.113 540.177
  40.113 542.177  77.227 544.398

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  37.113    .015  40.113    .015  77.227    .015

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

```
        37.113  40.113            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 173.333*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.313   37.78  542.14   37.78  540.14   39.28  540.14   40.78  540.14
   40.78  542.14   78.56 544.313

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   37.78    .015   40.78    .015   78.56    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         37.78   40.78            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 168.888*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.229  38.447 542.103  38.447 540.103  39.947 540.103  41.447 540.103
  41.447 542.103  79.893 544.229

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  38.447    .015  41.447    .015  79.893    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.447  41.447            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 164.444*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 544.144  39.113 542.067  39.113 540.067  40.613 540.067  42.113 540.067
  42.113 542.067  81.227 544.144

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  39.113    .015  42.113    .015  81.227    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.113  42.113            4.514   4.456   4.656             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 160

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  544.06   39.78  542.03   39.78  540.03   41.28  540.03   42.78  540.03
   42.78  542.03   82.56  544.06

Manning's n Values        num=       2
     Sta   n Val     Sta   n Val
       0    .015   42.78    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         39.78   42.78            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 155.555*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 543.889  39.563 541.993  39.563 539.993  41.063 539.993  42.563 539.993
  42.563 541.993  82.128 543.889

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  39.563    .015  42.563    .015  82.128    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.563  42.563            6.369   4.473   1.699             .1       .3

CROSS SECTION
```

```
RIVER: arroyo_maquinas
REACH: casillas          RS: 151.111*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 543.718  39.347 541.957  39.347 539.957  40.847 539.957  42.347 539.957
  42.347 541.957  81.696 543.718

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  39.347    .015  42.347    .015  81.696    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.347  42.347            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 146.666*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 543.547   39.13  541.92   39.13  539.92   40.63  539.92   42.13  539.92
   42.13  541.92  81.263 543.547

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   39.13    .015   42.13    .015  81.263    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         39.13   42.13            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 142.222*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 543.376  38.913 541.883  38.913 539.883  40.413 539.883  41.913 539.883
  41.913 541.883  80.831 543.376

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  38.913    .015  41.913    .015  80.831    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.913  41.913            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 137.777*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 543.204  38.697 541.847  38.697 539.847  40.197 539.847  41.697 539.847
  41.697 541.847  80.399 543.204

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  38.697    .015  41.697    .015  80.399    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.697  41.697            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas          RS: 133.333*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 543.033   38.48  541.81   38.48  539.81   39.98  539.81   41.48  539.81
   41.48  541.81  79.967 543.033

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015   38.48    .015   41.48    .015  79.967    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         38.48   41.48            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
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```
REACH: casillas           RS: 128.888*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 542.862  38.263 541.773  38.263 539.773  39.763 539.773  41.263 539.773
  41.263 541.773  79.534 542.862

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  38.263    .015  41.263    .015  79.534    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.263  41.263            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 124.444*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 542.691  38.047 541.737  38.047 539.737  39.547 539.737  41.047 539.737
  41.047 541.737  79.102 542.691

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  38.047    .015  41.047    .015  79.102    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        38.047  41.047            6.369   4.473   1.699             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 120

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  542.52   37.83   541.7   37.83   539.7   39.33   539.7   40.83   539.7
   40.83   541.7   78.67  542.52

Manning's n Values        num=       2
     Sta   n Val     Sta   n Val
       0    .015   40.83    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         37.83   40.83            5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 115.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 542.545  39.171 541.659  39.171 539.659  40.671 539.659  42.171 539.659
  42.171 541.659  81.351 542.545

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  39.171    .015  42.171    .015  81.351    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        39.171  42.171            5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 110.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  542.57  40.513 541.617  40.513 539.617  42.013 539.617  43.513 539.617
  43.513 541.617  84.033  542.57

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  40.513    .015  43.513    .015  84.033    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        40.513  43.513            5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 105.*

INPUT
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```
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 542.595  41.854 541.576  41.854 539.576  43.354 539.576  44.854 539.576
  44.854 541.576  86.714 542.595

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  41.854    .015  44.854    .015  86.714    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        41.854  44.854             5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 100.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  542.62  43.195 541.535  43.195 539.535  44.695 539.535  46.195 539.535
  46.195 541.535  89.395  542.62

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  43.195    .015  46.195    .015  89.395    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        43.195  46.195             5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 95.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 542.645  44.536 541.494  44.536 539.494  46.036 539.494  47.536 539.494
  47.536 541.494  92.076 542.645

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  44.536    .015  47.536    .015  92.076    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        44.536  47.536             5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 90.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  542.67  45.878 541.453  45.878 539.453  47.378 539.453  48.878 539.453
  48.878 541.453  94.757  542.67

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  45.878    .015  48.878    .015  94.757    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        45.878  48.878             5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 85.*

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 542.695  47.219 541.411  47.219 539.411  48.719 539.411  50.219 539.411
  50.219 541.411  97.439 542.695

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .015  47.219    .015  50.219    .015  97.439    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        47.219  50.219             5.06    4.96   4.765             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 80

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0  542.72   48.56  541.37   48.56  539.37   50.06  539.37   51.56  539.37
   51.56  541.37  100.12  542.72

Manning's n Values        num=       1
     Sta   n Val
       0    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         48.56   51.56            42.96   39.92   31.28             .1       .3

CROSS SECTION


RIVER: arroyo_maquinas
REACH: casillas           RS: 40

INPUT
Description:
Station Elevation Data    num=      71
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     538     .25     538    1.86  538.03     2.1     538    3.66  537.88
    4.61  537.84     5.7   537.8     8.9  537.71   10.83  537.74   13.06  537.68
   18.06  537.65   21.03  537.57   24.12  537.49   25.88  537.43   26.79  537.41
   27.68   537.4   28.56   537.4   28.98   537.4   29.38  537.41   38.97   536.4
   39.48  536.44   40.41  536.22   40.57  536.23   41.49     536   43.26  535.52
    44.1  535.37   47.44  534.62   51.53  534.12   52.19     534      53  533.28
   53.98     532   54.41  531.54   54.57  531.37    54.8   531.5   55.86     532
   56.95  533.73   57.13     534   61.72   535.7   62.12  535.84   62.27  535.89
   62.56     536   66.56  537.16   67.56  537.23   68.46  537.43   69.66  537.43
   70.29  537.53   72.59  537.64   74.21   537.6   74.47  537.59   75.02  537.56
    75.3  537.54   77.21  537.45   77.86  537.39   79.61  537.29   83.24  536.91
   83.92  536.87   84.94  536.78   85.59  536.71   91.96  536.05   92.09  536.04
   92.44     536   93.74  535.68   99.37     534   99.92   533.8  101.11  533.14
  103.33     532  104.15  531.63  107.58  530.39  108.38  530.09  108.69     530
     110  529.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06   52.19     .06   57.13     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         52.19   57.13              40      40   41.47             .1       .3
Right Levee     Station=   72.59      Elevation=

Profile Output Table - Standard Table 1

  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)

  casillas       1480            PF 1          7.12       589.67       590.79       590.64       590.97       0.025437
1.90         3.75          5.74           0.75
  casillas       1480            PF 2         17.37       589.67       591.27       591.14       591.59       0.028045
2.48         7.00          7.66           0.83

  casillas       1475.55*        PF 1          7.12       589.56       590.67                    590.86       0.025553
1.89         3.78          5.89           0.75
  casillas       1475.55*        PF 2         17.37       589.56       591.15                    591.46       0.028266
2.46         7.06          7.93           0.83

  casillas       1471.11*        PF 1          7.12       589.45       590.56                    590.74       0.025668
1.87         3.81          6.07           0.75
  casillas       1471.11*        PF 2         17.37       589.45       591.03                    591.33       0.028500
2.44         7.13          8.23           0.84

  casillas       1466.66*        PF 1          7.12       589.35       590.45                    590.62       0.025811
1.85         3.84          6.26           0.76
  casillas       1466.66*        PF 2         17.37       589.35       590.90                    591.20       0.028848
2.41         7.20          8.59           0.84

  casillas       1462.22*        PF 1          7.12       589.24       590.34                    590.51       0.026014
1.84         3.88          6.48           0.76
  casillas       1462.22*        PF 2         17.37       589.24       590.78                    591.07       0.029201
2.38         7.29          9.00           0.84

  casillas       1457.77*        PF 1          7.12       589.13       590.22                    590.39       0.026230
1.82         3.92          6.74           0.76
  casillas       1457.77*        PF 2         17.37       589.13       590.65                    590.93       0.029628
2.35         7.40          9.51           0.85

  casillas       1453.33*        PF 1          7.12       589.02       590.11                    590.27       0.026404
1.79         3.98          7.05           0.76
  casillas       1453.33*        PF 2         17.37       589.02       590.53                    590.80       0.029819
2.30         7.56         10.15           0.85

  casillas       1448.88*        PF 1          7.12       588.92       589.99                    590.15       0.026718
1.76         4.04          7.43           0.76
  casillas       1448.88*        PF 2         17.37       588.92       590.41       590.30       590.66       0.028790
2.20         7.90         11.08           0.83

  casillas       1444.44*        PF 1          7.12       588.81       589.88                    590.03       0.026741
1.72         4.14          7.94           0.76
  casillas       1444.44*        PF 2         17.37       588.81       590.18       590.18       590.50       0.043202
2.50         6.95         10.97           1.00

  casillas       1440            PF 1          7.12       588.70       589.70       589.65       589.88       0.037897
1.92         3.70          7.85           0.89
  casillas       1440            PF 2         17.37       588.70       590.04       590.12       590.29       0.036890
2.28         9.19         39.38           0.93

  casillas       1435.*          PF 1          7.12       588.51       589.51       589.46       589.69       0.038106
1.92         3.71          7.92           0.90
```

	casillas	1435.*	PF 2	17.37	588.51	589.85	589.92	590.11	0.036477		
2.35	8.73	35.01	0.93								
	casillas	1430.*	PF 1	7.12	588.31	589.32	589.28	589.50	0.037650		
1.91	3.72	7.90	0.89								
	casillas	1430.*	PF 2	17.37	588.31	589.65	589.73	589.93	0.036296		
2.42	8.41	32.99	0.93								
	casillas	1425.*	PF 1	7.12	588.12	589.13	589.08	589.32	0.037457		
1.91	3.72	7.90	0.89								
	casillas	1425.*	PF 2	17.37	588.12	589.44	589.54	589.75	0.037520		
2.52	7.94	26.61	0.95								
	casillas	1420.*	PF 1	7.12	587.93	588.94	588.89	589.13	0.036703		
1.90	3.74	7.85	0.88								
	casillas	1420.*	PF 2	17.37	587.93	589.23	589.35	589.56	0.038886		
2.61	7.80	22.49	0.97								
	casillas	1415.*	PF 1	7.12	587.74	588.76		588.95	0.036500		
1.93	3.70	7.93	0.88								
	casillas	1415.*	PF 2	17.37	587.74	589.03	589.13	589.37	0.039585		
2.70	7.77	21.85	0.99								
	casillas	1410.*	PF 1	7.12	587.55	588.56	588.52	588.76	0.035857		
2.00	3.64	9.60	0.88								
	casillas	1410.*	PF 2	17.37	587.55	588.83	588.93	589.17	0.039525		
2.76	7.86	21.70	0.99								
	casillas	1405.*	PF 1	7.12	587.35	588.37	588.37	588.58	0.035605		
2.07	3.66	10.90	0.89								
	casillas	1405.*	PF 2	17.37	587.35	588.63	588.73	588.98	0.040076		
2.84	7.93	21.62	1.00								
	casillas	1400	PF 1	7.12	587.16	588.18	588.21	588.40	0.036351		
2.17	3.70	11.93	0.90								
	casillas	1400	PF 2	17.37	587.16	588.43	588.54	588.78	0.041071		
2.93	8.00	21.62	1.01								
	casillas	1395.55*	PF 1	7.12	586.98	587.98	588.02	588.23	0.039878		
2.28	3.49	10.30	0.94								
	casillas	1395.55*	PF 2	17.37	586.98	588.29	588.37	588.59	0.033053		
2.76	8.70	22.87	0.92								
	casillas	1391.11*	PF 1	7.12	586.79	587.77	587.84	588.03	0.043481		
2.37	3.47	11.29	0.98								
	casillas	1391.11*	PF 2	17.37	586.79	588.06	588.16	588.40	0.040382		
2.98	7.97	20.40	1.01								
	casillas	1386.66*	PF 1	7.12	586.61	587.56	587.64	587.83	0.044629		
2.40	3.60	12.72	0.99								
	casillas	1386.66*	PF 2	17.37	586.61	587.82	587.92	588.18	0.045697		
3.08	7.84	20.49	1.07								
	casillas	1382.22*	PF 1	7.12	586.42	587.36	587.44	587.61	0.043848		
2.39	3.83	14.30	0.98								
	casillas	1382.22*	PF 2	17.37	586.42	587.61	587.68	587.92	0.043223		
2.98	8.36	22.24	1.04								
	casillas	1377.77*	PF 1	7.12	586.24	587.15	587.22	587.38	0.043739		
2.37	4.09	16.58	0.98								
	casillas	1377.77*	PF 2	17.37	586.24	587.38	587.45	587.67	0.044707		
2.96	8.58	23.61	1.05								
	casillas	1373.33*	PF 1	7.12	586.05	586.93	586.99	587.15	0.045639		
2.37	4.29	18.46	1.00								
	casillas	1373.33*	PF 2	17.37	586.05	587.15	587.20	587.40	0.042170		
2.83	9.12	25.31	1.01								
	casillas	1368.88*	PF 1	7.12	585.87	586.71	586.76	586.89	0.043829		
2.28	4.64	20.29	0.97								
	casillas	1368.88*	PF 2	17.37	585.87	586.92	586.95	587.14	0.042861		
2.76	9.38	26.66	1.01								
	casillas	1364.44*	PF 1	7.12	585.68	586.48	586.52	586.64	0.043385		
2.19	4.91	21.81	0.95								
	casillas	1364.44*	PF 2	17.37	585.68	586.68	586.70	586.88	0.040511		
2.61	9.91	28.56	0.97								
	casillas	1360	PF 1	7.12	585.50	586.25	586.27	586.38	0.041354		
2.06	5.24	23.35	0.92								
	casillas	1360	PF 2	17.37	585.50	586.44	586.45	586.61	0.040456		
2.51	10.30	30.71	0.96								
	casillas	1355.44*	PF 1	7.12	585.37	586.13	586.15	586.27	0.042113		
2.12	4.98	21.55	0.94								
	casillas	1355.44*	PF 2	17.37	585.37	586.31	586.34	586.52	0.045418		
2.69	9.40	27.14	1.03								
	casillas	1350.88*	PF 1	7.12	585.23	586.00	586.03	586.15	0.040743		
2.12	4.84	20.04	0.94								
	casillas	1350.88*	PF 2	17.37	585.23	586.19	586.22	586.41	0.043033		
2.69	9.28	25.58	1.02								
	casillas	1346.33*	PF 1	7.12	585.10	585.87	585.90	586.03	0.040220		
2.12	4.68	18.49	0.94								
	casillas	1346.33*	PF 2	17.37	585.10	586.07	586.10	586.31	0.042506		
2.71	9.03	24.07	1.02								
	casillas	1341.77*	PF 1	7.12	584.97	585.73	585.75	585.90	0.040783		
2.12	4.48	16.79	0.94								
	casillas	1341.77*	PF 2	17.37	584.97	585.94	585.98	586.19	0.041812		
2.72	8.83	22.77	1.01								

casillas	1337.22*	PF 1	7.12	584.83	585.58	585.60	585.76	0.041151	
2.11	4.33	15.34	0.95						
casillas	1337.22*	PF 2	17.37	584.83	585.81	585.85	586.07	0.041984	
2.73	8.59	21.50	1.02						
casillas	1332.66*	PF 1	7.12	584.70	585.44	585.45	585.61	0.040335	
2.07	4.27	14.40	0.94						
casillas	1332.66*	PF 2	17.37	584.70	585.68	585.72	585.94	0.040727	
2.71	8.48	20.47	1.01						
casillas	1328.11*	PF 1	7.12	584.57	585.29	585.30	585.47	0.041802	
2.07	4.15	13.68	0.95						
casillas	1328.11*	PF 2	17.37	584.57	585.53	585.58	585.81	0.042326	
2.73	8.17	19.29	1.02						
casillas	1323.55*	PF 1	7.12	584.43	585.14	585.15	585.32	0.039567	
2.00	4.20	13.23	0.92						
casillas	1323.55*	PF 2	17.37	584.43	585.39	585.43	585.67	0.041524	
2.70	8.07	18.44	1.01						
casillas	1319	PF 1	7.12	584.30	584.99	584.99	585.17	0.042013	
2.01	4.09	12.56	0.95						
casillas	1319	PF 2	17.37	584.30	585.24	585.29	585.53	0.042428	
2.70	7.89	17.64	1.02						
casillas	1314.12*	PF 1	7.12	584.06	584.75	584.77	584.94	0.042869	
2.04	3.97	12.11	0.96						
casillas	1314.12*	PF 2	17.37	584.06	585.04	585.06	585.31	0.036467	
2.59	8.19	17.49	0.96						
casillas	1309.25*	PF 1	7.12	583.83	584.52	584.53	584.72	0.043650	
2.06	3.87	11.72	0.97						
casillas	1309.25*	PF 2	17.37	583.83	584.79	584.84	585.10	0.040800	
2.71	7.71	16.54	1.01						
casillas	1304.37*	PF 1	7.12	583.59	584.28	584.30	584.49	0.044591	
2.07	3.78	11.36	0.98						
casillas	1304.37*	PF 2	17.37	583.59	584.56	584.61	584.88	0.040650	
2.71	7.60	16.03	1.01						
casillas	1299.5*	PF 1	7.12	583.35	584.05	584.07	584.26	0.044146	
2.06	3.75	11.12	0.97						
casillas	1299.5*	PF 2	17.37	583.35	584.33	584.38	584.66	0.041872	
2.74	7.42	15.49	1.02						
casillas	1294.62*	PF 1	7.12	583.12	583.82	583.84	584.03	0.044962	
2.06	3.69	10.82	0.98						
casillas	1294.62*	PF 2	17.37	583.12	584.10	584.16	584.44	0.041943	
2.74	7.33	15.10	1.02						
casillas	1289.75*	PF 1	7.12	582.88	583.59	583.60	583.80	0.045502	
2.05	3.66	10.58	0.98						
casillas	1289.75*	PF 2	17.37	582.88	583.87	583.93	584.22	0.042835	
2.75	7.21	14.71	1.03						
casillas	1284.87*	PF 1	7.12	582.65	583.37	583.37	583.57	0.044602	
2.02	3.68	10.43	0.97						
casillas	1284.87*	PF 2	17.37	582.65	583.64	583.70	583.99	0.043496	
2.75	7.12	14.39	1.04						
casillas	1280	PF 1	7.12	582.41	583.20	583.15	583.35	0.029437	
1.75	4.26	11.11	0.80						
casillas	1280	PF 2	17.37	582.41	583.53	583.48	583.76	0.025125	
2.28	8.68	15.56	0.80						
casillas	1275.*	PF 1	7.12	582.17	583.04	582.98	583.20	0.029250	
1.80	4.10	9.96	0.80						
casillas	1275.*	PF 2	17.37	582.17	583.40	583.35	583.64	0.024167	
2.32	8.55	14.81	0.79						
casillas	1270.*	PF 1	7.12	581.93	582.89	582.82	583.06	0.028157	
1.83	3.99	8.96	0.79						
casillas	1270.*	PF 2	17.37	581.93	583.28	583.22	583.53	0.022956	
2.35	8.48	14.21	0.77						
casillas	1265.*	PF 1	7.12	581.69	582.75	582.66	582.93	0.026483	
1.85	3.93	8.12	0.76						
casillas	1265.*	PF 2	17.37	581.69	583.16	583.10	583.42	0.021603	
2.37	8.49	13.83	0.75						
casillas	1260.*	PF 1	7.12	581.45	582.63	582.50	582.80	0.023650	
1.84	3.95	7.53	0.72						
casillas	1260.*	PF 2	17.37	581.45	583.07	582.98	583.32	0.019705	
2.36	8.67	13.82	0.72						
casillas	1255.*	PF 1	7.12	581.20	582.52	582.35	582.69	0.020682	
1.82	4.01	7.20	0.68						
casillas	1255.*	PF 2	17.37	581.20	582.94	582.87	583.22	0.021328	
2.49	8.43	15.11	0.74						
casillas	1250.*	PF 1	7.12	580.96	582.43	582.21	582.59	0.018565	
1.82	4.07	7.15	0.64						
casillas	1250.*	PF 2	17.37	580.96	582.82	582.82	583.11	0.022587	
2.59	8.38	15.76	0.75						
casillas	1245	PF 1	7.12	580.72	582.33	582.08	582.50	0.018662	
1.87	4.01	7.45	0.63						
casillas	1245	PF 2	17.37	580.72	582.70	582.72	583.00	0.024193	
2.68	8.45	16.77	0.75						
casillas	1240	PF 1	7.12	580.48	582.04	581.96	582.35	0.042966	
2.49	2.87	4.42	0.88						

casillas	1240	PF 2	17.37	580.48	582.55	582.61	582.87	0.028499			
2.81	8.34	17.42	0.78								
casillas	1235.60*	PF 1	7.12	580.36	581.85	581.79	582.16	0.042702			
2.50	2.89	5.14	0.90								
casillas	1235.60*	PF 2	17.37	580.36	582.25	582.40	582.71	0.041924			
3.26	6.91	14.95	0.95								
casillas	1231.21*	PF 1	7.12	580.24	581.65	581.65	581.97	0.043743			
2.53	2.89	5.72	0.93								
casillas	1231.21*	PF 2	17.37	580.24	582.03	582.19	582.51	0.045643			
3.37	6.65	14.52	1.01								
casillas	1226.82*	PF 1	7.12	580.12	581.46	581.50	581.78	0.043362			
2.52	2.95	6.44	0.94								
casillas	1226.82*	PF 2	17.37	580.12	581.81	581.98	582.31	0.047021			
3.40	6.59	14.50	1.04								
casillas	1222.43	PF 1	7.12	580.00	581.27	581.33	581.59	0.044003			
2.53	2.99	7.06	0.96								
casillas	1222.43	PF 2	17.37	580.00	581.60	581.78	582.10	0.047777			
3.41	6.60	14.59	1.06								
casillas	1220.72*	PF 1	7.12	579.95	581.22	581.26	581.51	0.038055			
2.41	3.22	7.89	0.90								
casillas	1220.72*	PF 2	17.37	579.95	581.53	581.69	582.01	0.046804			
3.38	6.69	14.77	1.06								
casillas	1219.02*	PF 1	7.12	579.90	581.12	581.19	581.44	0.043648			
2.52	3.06	7.61	0.96								
casillas	1219.02*	PF 2	17.37	579.90	581.45	581.61	581.93	0.047497			
3.39	6.67	14.79	1.07								
casillas	1217.31*	PF 1	7.12	579.86	581.08	581.12	581.35	0.037388			
2.39	3.31	8.45	0.90								
casillas	1217.31*	PF 2	17.37	579.86	581.37	581.52	581.85	0.047870			
3.39	6.68	14.83	1.08								
casillas	1215.61	PF 1	7.12	579.81	580.98	581.05	581.28	0.042295			
2.48	3.17	8.24	0.96								
casillas	1215.61	PF 2	17.37	579.81	581.29	581.44	581.76	0.046887			
3.35	6.77	15.03	1.07								
casillas	1214.63*	PF 1	7.12	579.78	580.95	581.00	581.23	0.038708			
2.40	3.32	8.70	0.92								
casillas	1214.63*	PF 2	17.37	579.78	581.25	581.39	581.71	0.047389			
3.36	6.76	15.03	1.08								
casillas	1213.65*	PF 1	7.12	579.75	580.95	580.96	581.18	0.031351			
2.23	3.67	9.59	0.84								
casillas	1213.65*	PF 2	17.37	579.75	581.20	581.35	581.67	0.047800			
3.36	6.75	15.04	1.09								
casillas	1212.68*	PF 1	7.12	579.73	580.87	580.92	581.15	0.039451			
2.41	3.33	8.91	0.93								
casillas	1212.68*	PF 2	17.37	579.73	581.15	581.30	581.62	0.048154			
3.37	6.75	15.07	1.09								
casillas	1211.70	PF 1	7.12	579.70	580.86	580.88	581.10	0.031894			
2.24	3.68	9.79	0.85								
casillas	1211.70	PF 2	17.37	579.70	581.11	581.26	581.57	0.048459			
3.37	6.75	15.10	1.10								
casillas	1209.75*	PF 1	7.12	579.65	580.72	580.79	581.02	0.044294			
2.49	3.23	8.92	0.99								
casillas	1209.75*	PF 2	17.37	579.65	581.02	581.16	581.47	0.047054			
3.31	6.88	15.34	1.09								
casillas	1207.8*	PF 1	7.12	579.59	580.63	580.71	580.93	0.045409			
2.50	3.24	9.13	1.00								
casillas	1207.8*	PF 2	17.37	579.59	580.93	581.07	581.38	0.048004			
3.32	6.86	15.36	1.10								
casillas	1205.85*	PF 1	7.12	579.54	580.56	580.62	580.84	0.042085			
2.43	3.39	9.64	0.97								
casillas	1205.85*	PF 2	17.37	579.54	580.84	580.98	581.28	0.047985			
3.30	6.91	15.49	1.10								
casillas	1203.9*	PF 1	7.12	579.49	580.46	580.54	580.75	0.045914			
2.48	3.32	9.64	1.01								
casillas	1203.9*	PF 2	17.37	579.49	580.75	580.88	581.18	0.048254			
3.29	6.93	15.57	1.11								
casillas	1201.95*	PF 1	7.12	579.43	580.39	580.45	580.65	0.041727			
2.39	3.51	10.21	0.97								
casillas	1201.95*	PF 2	17.37	579.43	580.90	580.79	581.06	0.014870			
2.13	11.27	20.26	0.64								
casillas	1200	PF 1	7.12	579.38	580.40	580.36	580.56	0.021912			
1.90	4.66	12.41	0.72								
casillas	1200	PF 2	17.37	579.38	580.91	580.69	581.02	0.009462			
1.79	13.46	21.93	0.52								
casillas	1195.5*	PF 1	7.12	579.25	580.31	580.26	580.46	0.021263			
1.79	4.66	12.48	0.70								
casillas	1195.5*	PF 2	17.37	579.25	580.89	580.60	580.98	0.006671			
1.53	15.53	24.52	0.44								
casillas	1191.*	PF 1	7.12	579.12	580.23	580.14	580.37	0.021168			
1.70	4.64	12.35	0.69								
casillas	1191.*	PF 2	17.37	579.12	580.88	580.50	580.95	0.004755			
1.31	17.91	27.63	0.37								

casillas	1186.5	PF 1	7.12	578.98	580.14			580.27	0.021649	
1.63	4.58	11.84	0.69							
casillas	1186.5	PF 2	17.37	578.98	580.88			580.92	0.003539	
1.15	22.50	46.52	0.32							
casillas	1182	PF 1	7.12	578.85	580.04	579.92		580.17	0.023540	
1.60	4.48	10.32	0.71							
casillas	1182	PF 2	17.37	578.85	580.88	580.31		580.91	0.002209	
0.93	27.59	51.28	0.26							
casillas	1180.25*	PF 1	7.12	578.80	579.99	579.87		580.13	0.025473	
1.61	4.41	8.96	0.73							
casillas	1180.25*	PF 2	17.37	578.80	580.88	580.27		580.90	0.001860	
0.86	29.72	53.30	0.24							
casillas	1178.5*	PF 1	7.12	578.75	579.94	579.82		580.08	0.026535	
1.64	4.33	8.81	0.75							
casillas	1178.5*	PF 2	17.37	578.75	580.88	580.24		580.90	0.001574	
0.80	31.93	55.42	0.22							
casillas	1176.75*	PF 1	7.12	578.70	579.89	579.78		580.03	0.028317	
1.69	4.21	8.57	0.77							
casillas	1176.75*	PF 2	17.37	578.70	580.88	580.20		580.89	0.001339	
0.74	34.24	57.63	0.20							
casillas	1175	PF 1	7.12	578.64	579.80	579.74		579.97	0.035752	
1.87	3.81	7.93	0.86							
casillas	1175	PF 2	17.37	578.64	580.81	580.12		580.89	0.003853	
1.23	14.12	57.73	0.34							
casillas	1173.2*	PF 1	7.12	578.58	579.72	579.67		579.91	0.038581	
1.95	3.66	7.54	0.89							
casillas	1173.2*	PF 2	17.37	578.58	580.79	580.04		580.88	0.004039	
1.32	13.16	59.52	0.35							
casillas	1171.4*	PF 1	7.12	578.51	579.62	579.59		579.84	0.041705	
2.04	3.48	7.03	0.93							
casillas	1171.4*	PF 2	17.37	578.51	580.76	579.99		580.87	0.004498	
1.46	11.92	61.09	0.37							
casillas	1169.6*	PF 1	7.12	578.44	579.54	579.49		579.77	0.037706	
2.12	3.36	6.64	0.89							
casillas	1169.6*	PF 2	17.37	578.44	580.71	579.93		580.86	0.005428	
1.67	10.38	62.01	0.41							
casillas	1167.8*	PF 1	7.12	578.37	579.45	579.38		579.71	0.032218	
2.22	3.20	6.26	0.84							
casillas	1167.8*	PF 2	17.37	578.37	580.62	579.89		580.84	0.007554	
2.06	8.45	61.07	0.48							
casillas	1166	PF 1	7.12	578.30	579.46	579.30		579.63	0.026776	
1.79	3.97	6.79	0.75							
casillas	1166	PF 2	17.37	578.30	580.76	579.80		580.77	0.000748	
0.57	44.09	69.24	0.15							
casillas	1155	Culvert								
casillas	1147	PF 1	7.12	577.30	577.73	578.23		580.34	0.837154	
7.17	0.99	11.56	3.97							
casillas	1147	PF 2	17.37	577.30	578.19	578.91		580.94	0.277383	
7.35	2.36	19.07	2.64							
casillas	1145.07*	PF 1	7.12	577.11	577.66	578.03		579.04	0.313731	
5.21	1.37	12.61	2.53							
casillas	1145.07*	PF 2	17.37	577.11	578.04	578.68		580.32	0.218750	
6.68	2.60	19.16	2.36							
casillas	1143.14*	PF 1	7.12	576.91	577.56	577.83		578.46	0.166219	
4.20	1.69	12.70	1.89							
casillas	1143.14*	PF 2	17.37	576.91	577.90	578.45		579.83	0.181312	
6.17	2.82	19.09	2.15							
casillas	1141.21*	PF 1	7.12	576.72	577.43	577.64		578.13	0.118190	
3.71	1.92	12.26	1.61							
casillas	1141.21*	PF 2	17.37	576.72	577.74	578.24		579.43	0.156453	
5.77	3.01	17.82	2.00							
casillas	1139.28*	PF 1	7.12	576.53	577.27	577.44		577.89	0.105492	
3.51	2.03	11.23	1.52							
casillas	1139.28*	PF 2	17.37	576.53	577.58	578.03		579.09	0.139786	
5.46	3.18	17.63	1.89							
casillas	1137.35*	PF 1	7.12	576.33	577.09	577.25		577.68	0.102648	
3.42	2.08	9.21	1.49							
casillas	1137.35*	PF 2	17.37	576.33	577.41	577.82		578.80	0.128897	
5.22	3.33	16.55	1.81							
casillas	1135.42*	PF 1	7.12	576.14	576.91	577.07		577.48	0.100346	
3.33	2.14	5.70	1.47							
casillas	1135.42*	PF 2	17.37	576.14	577.23	577.62		578.52	0.121237	
5.03	3.45	14.24	1.75							
casillas	1133.5*	PF 1	7.12	575.94	576.73	576.88		577.28	0.099304	
3.26	2.19	5.18	1.45							
casillas	1133.5*	PF 2	17.37	575.94	577.06	577.42		578.27	0.116230	
4.88	3.56	13.39	1.70							
casillas	1131.57*	PF 1	7.12	575.75	576.56	576.70		577.08	0.097948	
3.19	2.23	5.15	1.43							
casillas	1131.57*	PF 2	17.37	575.75	576.88	577.22		578.03	0.112547	
4.75	3.66	12.60	1.67							

	casillas	1129.64*	PF 1	7.12	575.56	576.39	576.51	576.88	0.096402		
3.12	2.28	5.14	1.42								
	casillas	1129.64*	PF 2	17.37	575.56	576.70	577.02	577.80	0.109529		
4.63	3.75	11.94	1.64								
	casillas	1127.71*	PF 1	7.12	575.36	576.21	576.34	576.69	0.097299		
3.08	2.31	5.12	1.42								
	casillas	1127.71*	PF 2	17.37	575.36	576.53	576.83	577.57	0.107355		
4.53	3.84	11.37	1.62								
	casillas	1125.78*	PF 1	7.12	575.17	576.04	576.16	576.50	0.094238		
3.00	2.37	5.15	1.39								
	casillas	1125.78*	PF 2	17.37	575.17	576.35	576.63	577.35	0.105371		
4.43	3.92	8.15	1.60								
	casillas	1123.85*	PF 1	7.12	574.98	575.87	575.98	576.32	0.094763		
2.97	2.40	5.15	1.39								
	casillas	1123.85*	PF 2	17.37	574.98	576.18	576.45	577.14	0.103603		
4.35	4.00	6.86	1.58								
	casillas	1121.92*	PF 1	7.12	574.78	575.69	575.81	576.13	0.093372		
2.95	2.41	5.15	1.37								
	casillas	1121.92*	PF 2	17.37	574.78	576.00	576.27	576.93	0.101957		
4.26	4.07	6.84	1.56								
	casillas	1120	PF 1	7.12	574.59	575.51	575.63	575.95	0.092706		
2.94	2.42	5.14	1.37								
	casillas	1120	PF 2	17.37	574.59	575.83	576.08	576.72	0.100841		
4.19	4.15	6.83	1.54								
	casillas	1118.57*	PF 1	7.12	574.51	575.53	575.55	575.82	0.052926		
2.38	2.99	5.76	1.05								
	casillas	1118.57*	PF 2	17.37	574.51	575.76	576.03	576.54	0.108752		
3.90	4.46	7.00	1.56								
	casillas	1117.15	PF 1	7.12	574.42	575.43	575.47	575.74	0.058381		
2.46	2.90	5.71	1.10								
	casillas	1117.15	PF 2	17.37	574.42	575.77	575.92	576.35	0.074269		
3.38	5.14	7.61	1.31								
	casillas	1115.57*	PF 1	7.12	574.32	575.34	575.37	575.64	0.057030		
2.43	2.93	5.81	1.09								
	casillas	1115.57*	PF 2	17.37	574.32	575.73	575.82	576.22	0.056869		
3.11	5.62	8.17	1.16								
	casillas	1113.99*	PF 1	7.12	574.23	575.24	575.28	575.54	0.060098		
2.46	2.89	5.82	1.12								
	casillas	1113.99*	PF 2	17.37	574.23	575.62	575.72	576.12	0.059103		
3.16	5.54	8.21	1.18								
	casillas	1112.42	PF 1	7.12	574.14	575.14	575.19	575.45	0.059913		
2.45	2.91	5.90	1.11								
	casillas	1112.42	PF 2	17.37	574.14	575.51	575.62	576.03	0.060518		
3.19	5.49	8.28	1.19								
	casillas	1110.68*	PF 1	7.12	574.03	575.04	575.08	575.34	0.059520		
2.43	2.93	5.99	1.11								
	casillas	1110.68*	PF 2	17.37	574.03	575.39	575.51	575.92	0.061382		
3.22	5.47	8.38	1.20								
	casillas	1108.94*	PF 1	7.12	573.93	574.92	574.97	575.23	0.062066		
2.45	2.90	6.04	1.13								
	casillas	1108.94*	PF 2	17.37	573.93	575.28	575.41	575.81	0.062148		
3.24	5.46	8.47	1.21								
	casillas	1107.21*	PF 1	7.12	573.82	574.82	574.86	575.12	0.061271		
2.43	2.93	6.16	1.12								
	casillas	1107.21*	PF 2	17.37	573.82	575.16	575.29	575.70	0.062719		
3.26	5.45	8.57	1.22								
	casillas	1105.47*	PF 1	7.12	573.72	574.71	574.75	575.01	0.060439		
2.40	2.97	6.30	1.11								
	casillas	1105.47*	PF 2	17.37	573.72	575.05	575.18	575.59	0.063348		
3.28	5.45	8.65	1.22								
	casillas	1103.73*	PF 1	7.12	573.61	574.60	574.64	574.90	0.062170		
2.42	2.95	6.39	1.13								
	casillas	1103.73*	PF 2	17.37	573.61	574.93	575.07	575.47	0.063858		
3.29	5.45	8.74	1.23								
	casillas	1102	PF 1	7.12	573.51	574.60	574.53	574.79	0.031433		
1.94	3.71	7.28	0.83								
	casillas	1102	PF 2	17.37	573.51	574.81	574.95	575.36	0.064048		
3.30	5.47	8.82	1.23								
	casillas	1100.5*	PF 1	7.12	573.44	574.54	574.48	574.74	0.031659		
1.96	3.68	7.09	0.83								
	casillas	1100.5*	PF 2	17.37	573.44	574.98	574.91	575.28	0.026695		
2.48	7.45	10.21	0.82								
	casillas	1099	PF 1	7.12	573.37	574.49	574.42	574.69	0.032110		
1.98	3.63	6.88	0.83								
	casillas	1099	PF 2	17.37	573.37	574.93	574.87	575.24	0.027178		
2.51	7.35	10.09	0.83								
	casillas	1094.25*	PF 1	7.12	573.14	574.33	574.25	574.54	0.031778		
2.00	3.57	6.28	0.83								
	casillas	1094.25*	PF 2	17.37	573.14	574.79	574.72	575.11	0.026651		
2.56	7.25	9.92	0.82								
	casillas	1089.5*	PF 1	7.12	572.92	574.19	574.08	574.39	0.030352		
1.99	3.57	5.71	0.80								

casillas	1089.5*	PF 2	17.37	572.92	574.68	574.59	574.99	0.024164	
2.53	7.42	10.49	0.78						
casillas	1084.75*	PF 1	7.12	572.69	574.06	573.92	574.25	0.026829	
1.95	3.66	5.40	0.75						
casillas	1084.75*	PF 2	17.37	572.69	574.59	574.46	574.88	0.020607	
2.44	7.80	10.06	0.72						
casillas	1080	PF 1	7.12	572.47	573.75	573.75	574.07	0.050665	
2.50	2.85	4.50	1.00						
casillas	1080	PF 2	17.37	572.47	574.31	574.31	574.74	0.034092	
2.93	6.31	8.32	0.90						
casillas	1078.*	PF 1	7.12	572.39	573.56	573.68	573.95	0.070945	
2.81	2.69	6.26	1.18						
casillas	1078.*	PF 2	17.37	572.39	573.83	574.08	574.60	0.111906	
4.09	4.79	9.70	1.53						
casillas	1076	PF 1	7.12	572.30	573.20	573.38	573.74	0.161309	
3.56	2.32	7.51	1.70						
casillas	1076	PF 2	17.37	572.30	573.42	573.68	574.31	0.204436	
4.64	4.32	10.53	1.99						
casillas	1074.25*	PF 1	7.12	572.22	573.28	573.33	573.51	0.054698	
2.32	3.59	10.04	1.03						
casillas	1074.25*	PF 2	17.37	572.22	573.47	573.63	573.98	0.101154	
3.56	5.69	13.10	1.44						
casillas	1072.5*	PF 1	7.12	572.15	573.17	573.23	573.42	0.061082	
2.41	3.47	10.07	1.08						
casillas	1072.5*	PF 2	17.37	572.15	573.43	573.52	573.82	0.067490	
3.16	6.53	13.71	1.20						
casillas	1070.75*	PF 1	7.12	572.07	573.08	573.12	573.32	0.061852	
2.41	3.52	10.48	1.09						
casillas	1070.75*	PF 2	17.37	572.07	573.32	573.41	573.72	0.065892	
3.18	6.50	13.07	1.20						
casillas	1069	PF 1	7.12	572.00	573.02	573.05	573.22	0.045586	
2.21	3.95	11.73	0.96						
casillas	1069	PF 2	17.37	572.00	573.30	573.32	573.62	0.041753	
2.79	7.35	12.48	0.98						
casillas	1067.*	PF 1	7.12	571.91	572.81	572.90	573.10	0.080668	
2.69	3.29	11.72	1.25						
casillas	1067.*	PF 2	17.37	571.91	573.36	573.16	573.52	0.015842	
2.00	10.11	13.06	0.63						
casillas	1065.*	PF 1	7.12	571.83	572.66	572.74	572.95	0.085033	
2.73	3.26	11.85	1.29						
casillas	1065.*	PF 2	17.37	571.83	573.38	573.01	573.49	0.008440	
1.62	12.36	13.45	0.48						
casillas	1063.*	PF 1	7.12	571.74	572.75	572.60	572.83	0.013060	
1.41	5.99	12.29	0.55						
casillas	1063.*	PF 2	17.37	571.74	573.39	572.87	573.47	0.005232	
1.39	14.35	13.77	0.39						
casillas	1061.*	PF 1	7.12	571.66	572.76	572.46	572.80	0.005587	
1.06	7.86	12.80	0.37						
casillas	1061.*	PF 2	17.37	571.66	573.40	572.73	573.46	0.003459	
1.22	16.37	13.99	0.32						
casillas	1059	PF 1	7.12	571.57	572.76	572.31	572.79	0.002814	
0.84	9.81	12.71	0.27						
casillas	1059	PF 2	17.37	571.57	573.40	572.57	573.45	0.002506	
1.11	18.21	13.81	0.28						
casillas	1057.07*	PF 1	7.12	571.49	572.65	572.59	572.77	0.013809	
1.78	5.47	12.87	0.60						
casillas	1057.07*	PF 2	17.37	571.49	573.36	572.87	573.44	0.004581	
1.51	15.08	14.17	0.38						
casillas	1055.14*	PF 1	7.12	571.40	572.43	572.42	572.72	0.036268	
2.50	3.14	5.24	0.93						
casillas	1055.14*	PF 2	17.37	571.40	573.11	573.11	573.40	0.017751	
2.70	8.82	14.13	0.72						
casillas	1053.21*	PF 1	7.12	571.32	572.36	572.35	572.65	0.035911	
2.45	3.17	5.38	0.92						
casillas	1053.21*	PF 2	17.37	571.32	572.85	572.85	573.34	0.033407	
3.32	6.01	6.40	0.96						
casillas	1051.29*	PF 1	7.12	571.23	572.30	572.28	572.57	0.035512	
2.40	3.20	5.51	0.91						
casillas	1051.29*	PF 2	17.37	571.23	572.70	572.77	573.26	0.041910	
3.51	5.58	6.42	1.06						
casillas	1049.36*	PF 1	7.12	571.14	572.23	572.22	572.50	0.035301	
2.36	3.22	5.64	0.90						
casillas	1049.36*	PF 2	17.37	571.14	572.63	572.70	573.18	0.041819	
3.45	5.62	6.59	1.05						
casillas	1047.43*	PF 1	7.12	571.06	572.17	572.15	572.43	0.035200	
2.31	3.24	5.75	0.89						
casillas	1047.43*	PF 2	17.37	571.06	572.54	572.62	573.10	0.043179	
3.43	5.59	6.73	1.06						
casillas	1045.51	PF 1	7.12	570.97	572.10	572.08	572.36	0.035103	
2.28	3.27	5.85	0.89						
casillas	1045.51	PF 2	17.37	570.97	572.48	572.55	573.02	0.042545	
3.36	5.64	6.91	1.05						

	casillas	1043.72*	PF 1	7.12	570.90	572.04	572.02	572.30	0.035531		
2.25	3.28	5.90	0.89								
	casillas	1043.72*	PF 2	17.37	570.90	572.41	572.49	572.94	0.043778		
3.35	5.61	7.03	1.06								
	casillas	1041.93*	PF 1	7.12	570.82	571.98	571.94	572.23	0.036575		
2.25	3.25	5.85	0.89								
	casillas	1041.93*	PF 2	17.37	570.82	572.34	572.42	572.87	0.044120		
3.31	5.62	7.15	1.06								
	casillas	1040.14*	PF 1	7.12	570.74	571.90	571.87	572.16	0.038139		
2.27	3.20	5.66	0.91								
	casillas	1040.14*	PF 2	17.37	570.74	572.27	572.34	572.80	0.044360		
3.27	5.64	7.26	1.05								
	casillas	1038.36*	PF 1	7.12	570.66	571.83	571.80	572.09	0.038287		
2.26	3.19	5.56	0.91								
	casillas	1038.36*	PF 2	17.37	570.66	572.21	572.29	572.72	0.043926		
3.22	5.68	7.37	1.05								
	casillas	1036.57*	PF 1	7.12	570.58	571.76	571.72	572.02	0.038031		
2.24	3.20	5.49	0.90								
	casillas	1036.57*	PF 2	17.37	570.58	572.15	572.22	572.65	0.043843		
3.18	5.71	7.43	1.04								
	casillas	1034.78*	PF 1	7.12	570.50	571.70	571.65	571.95	0.036856		
2.20	3.25	5.47	0.89								
	casillas	1034.78*	PF 2	17.37	570.50	572.09	572.14	572.58	0.043837		
3.14	5.74	7.41	1.04								
	casillas	1033	PF 1	7.12	570.42	571.58	571.58	571.87	0.047580		
2.38	2.99	5.21	1.00								
	casillas	1033	PF 2	17.37	570.42	572.03	572.08	572.51	0.043744		
3.10	5.77	7.30	1.03								
	casillas	1031.05*	PF 1	7.12	570.35	571.45	571.48	571.77	0.056863		
2.51	2.84	5.23	1.09								
	casillas	1031.05*	PF 2	17.37	570.35	571.85	571.97	572.40	0.055833		
3.31	5.37	7.19	1.15								
	casillas	1029.11*	PF 1	7.12	570.27	571.37	571.38	571.66	0.051835		
2.40	2.97	5.50	1.04								
	casillas	1029.11*	PF 2	17.37	570.27	571.73	571.86	572.29	0.059190		
3.33	5.32	7.41	1.19								
	casillas	1027.17*	PF 1	7.12	570.20	571.25	571.28	571.55	0.055333		
2.43	2.93	5.61	1.07								
	casillas	1027.17*	PF 2	17.37	570.20	571.62	571.74	572.17	0.059563		
3.29	5.39	7.72	1.19								
	casillas	1025.23*	PF 1	7.12	570.13	571.17	571.18	571.45	0.050909		
2.33	3.06	5.90	1.03								
	casillas	1025.23*	PF 2	17.37	570.13	571.52	571.64	572.05	0.059336		
3.24	5.46	8.11	1.19								
	casillas	1023.29*	PF 1	7.12	570.05	571.06	571.09	571.34	0.055442		
2.38	3.00	6.02	1.07								
	casillas	1023.29*	PF 2	17.37	570.05	571.41	571.53	571.93	0.058882		
3.20	5.54	8.53	1.19								
	casillas	1021.35*	PF 1	7.12	569.98	570.98	570.99	571.24	0.050144		
2.26	3.15	6.35	1.02								
	casillas	1021.35*	PF 2	17.37	569.98	571.31	571.42	571.81	0.058172		
3.15	5.63	8.98	1.18								
	casillas	1019.40*	PF 1	7.12	569.91	570.86	570.89	571.14	0.055244		
2.31	3.08	6.47	1.07								
	casillas	1019.40*	PF 2	17.37	569.91	571.20	571.31	571.69	0.057343		
3.10	5.72	9.42	1.17								
	casillas	1017.46*	PF 1	7.12	569.83	570.78	570.79	571.03	0.049914		
2.20	3.24	6.85	1.02								
	casillas	1017.46*	PF 2	17.37	569.83	571.09	571.20	571.57	0.057918		
3.07	5.78	9.82	1.17								
	casillas	1015.52*	PF 1	7.12	569.76	570.67	570.70	570.93	0.055075		
2.25	3.17	6.98	1.07								
	casillas	1015.52*	PF 2	17.37	569.76	570.99	571.09	571.45	0.056799		
3.02	5.89	10.35	1.16								
	casillas	1013.58*	PF 1	7.12	569.68	570.59	570.60	570.82	0.049418		
2.13	3.35	7.41	1.01								
	casillas	1013.58*	PF 2	17.37	569.68	570.88	570.99	571.34	0.057407		
2.99	5.94	10.85	1.17								
	casillas	1011.64*	PF 1	7.12	569.61	570.48	570.50	570.72	0.055425		
2.19	3.25	7.55	1.06								
	casillas	1011.64*	PF 2	17.37	569.61	570.78	570.88	571.22	0.057070		
2.96	6.04	11.41	1.16								
	casillas	1009.70	PF 1	7.12	569.54	570.40	570.40	570.62	0.050048		
2.07	3.44	8.03	1.01								
	casillas	1009.70	PF 2	17.37	569.54	570.67	570.77	571.10	0.056960		
2.92	6.13	12.00	1.16								
	casillas	1000	PF 1	7.12	569.17	569.90	569.91	570.09	0.055648		
1.96	3.64	10.17	1.04								
	casillas	1000	PF 2	17.37	569.17	570.13	570.24	570.52	0.058744		
2.79	6.52	15.06	1.16								
	casillas	995.333*	PF 1	7.12	568.87	569.59	569.62	569.81	0.063647		
2.10	3.39	9.43	1.12								

casillas	995.333*	PF 2	17.37	568.87	569.85	569.95	570.25	0.062808		
2.79	6.36	14.12	1.19							
casillas	990.666*	PF 1	7.12	568.57	569.31	569.33	569.53	0.059723		
2.07	3.44	9.31	1.09							
casillas	990.666*	PF 2	17.37	568.57	569.58	569.66	569.96	0.060883		
2.71	6.48	13.60	1.17							
casillas	986.*	PF 1	7.12	568.27	569.01	569.04	569.24	0.063134		
2.13	3.34	9.01	1.12							
casillas	986.*	PF 2	17.37	568.27	569.30	569.38	569.67	0.063298		
2.69	6.46	12.86	1.19							
casillas	981.333*	PF 1	7.12	567.97	568.72	568.75	568.95	0.062534		
2.14	3.33	8.89	1.12							
casillas	981.333*	PF 2	17.37	567.97	569.03	569.08	569.38	0.060901		
2.64	6.58	12.60	1.16							
casillas	976.666*	PF 1	7.12	567.68	568.43	568.46	568.67	0.063466		
2.16	3.29	8.76	1.13							
casillas	976.666*	PF 2	17.37	567.68	568.73	568.80	569.09	0.061442		
2.67	6.52	12.36	1.17							
casillas	972.*	PF 1	7.12	567.38	568.14	568.17	568.37	0.062234		
2.15	3.31	8.71	1.12							
casillas	972.*	PF 2	17.37	567.38	568.44	568.51	568.81	0.062419		
2.70	6.44	12.15	1.18							
casillas	967.333*	PF 1	7.12	567.08	567.84	567.87	568.08	0.063378		
2.18	3.27	8.61	1.13							
casillas	967.333*	PF 2	17.37	567.08	568.14	568.21	568.52	0.062269		
2.71	6.42	12.02	1.18							
casillas	962.666*	PF 1	7.12	566.78	567.54	567.58	567.79	0.064029		
2.19	3.25	8.53	1.13							
casillas	962.666*	PF 2	17.37	566.78	567.85	567.92	568.23	0.062553		
2.72	6.39	11.90	1.19							
casillas	958	PF 1	7.12	566.48	567.25	567.28	567.49	0.063496		
2.19	3.25	8.49	1.13							
casillas	958	PF 2	17.37	566.48	567.55	567.63	567.93	0.062839		
2.73	6.36	11.81	1.19							
casillas	953.5*	PF 1	7.12	566.24	567.05	567.05	567.26	0.050036		
2.02	3.52	8.62	1.01							
casillas	953.5*	PF 2	17.37	566.24	567.40	567.40	567.70	0.044383		
2.43	7.16	12.25	1.01							
casillas	949.*	PF 1	7.12	565.99	566.82	566.83	567.04	0.052805		
2.09	3.40	8.25	1.04							
casillas	949.*	PF 2	17.37	565.99	567.17	567.19	567.49	0.046792		
2.50	6.94	11.74	1.04							
casillas	944.5*	PF 1	7.12	565.75	566.59	566.61	566.83	0.056325		
2.18	3.27	7.83	1.08							
casillas	944.5*	PF 2	17.37	565.75	566.97	566.97	567.29	0.045156		
2.51	6.91	11.34	1.03							
casillas	940	PF 1	7.12	565.51	566.41	566.40	566.62	0.045289		
2.04	3.49	7.77	0.97							
casillas	940	PF 2	17.37	565.51	566.77	566.77	567.10	0.038632		
2.53	6.97	12.10	0.97							
casillas	935.5*	PF 1	7.12	565.26	566.25	566.18	566.43	0.034561		
1.89	3.77	7.70	0.86							
casillas	935.5*	PF 2	17.37	565.26	566.62	566.59	566.92	0.028301		
2.45	7.64	13.22	0.85							
casillas	931	PF 1	7.12	565.02	565.99	565.99	566.24	0.045606		
2.20	3.25	6.68	0.99							
casillas	931	PF 2	17.37	565.02	566.43	566.43	566.78	0.029683		
2.69	7.17	11.44	0.88							
casillas	927.333*	PF 1	7.12	564.75	565.46	565.61	565.94	0.144329		
3.09	2.31	6.61	1.67							
casillas	927.333*	PF 2	17.37	564.75	565.72	565.98	566.53	0.152602		
3.97	4.38	8.97	1.81							
casillas	923.666*	PF 1	7.12	564.47	565.23	565.30	565.51	0.075830		
2.35	3.03	8.14	1.23							
casillas	923.666*	PF 2	17.37	564.47	565.48	565.63	566.01	0.097504		
3.22	5.40	10.90	1.46							
casillas	920	PF 1	7.12	564.20	564.92	565.00	565.22	0.087005		
2.43	2.93	8.26	1.31							
casillas	920	PF 2	17.37	564.20	565.21	565.34	565.65	0.083751		
2.96	5.86	11.98	1.35							
casillas	915.5*	PF 1	7.12	563.90	564.73	564.73	564.94	0.049193		
2.01	3.55	8.68	1.00							
casillas	915.5*	PF 2	17.37	563.90	565.05	565.08	565.37	0.050505		
2.52	6.89	12.24	1.07							
casillas	911.*	PF 1	7.12	563.60	564.45	564.48	564.69	0.057710		
2.19	3.25	7.83	1.09							
casillas	911.*	PF 2	17.37	563.60	564.81	564.84	565.15	0.048034		
2.57	6.76	11.17	1.05							
casillas	906.5*	PF 1	7.12	563.30	564.23	564.23	564.45	0.048683		
2.12	3.36	7.43	1.01							
casillas	906.5*	PF 2	17.37	563.30	564.66	564.61	564.95	0.036195		
2.40	7.25	10.68	0.93							

casillas	902.*	PF 1	7.12	563.00	564.05	564.00	564.25	0.036279		
1.98	3.59	6.96	0.88							
casillas	902.*	PF 2	17.37	563.00	564.55	564.42	564.79	0.026235		
2.19	7.93	10.37	0.80							
casillas	897.5*	PF 1	7.12	562.70	563.95	563.79	564.10	0.023318		
1.76	4.04	6.54	0.72							
casillas	897.5*	PF 2	17.37	562.70	564.28	564.25	564.64	0.038626		
2.66	6.53	8.34	0.96							
casillas	893	PF 1	7.12	562.40	563.64	563.64	563.94	0.048611		
2.43	2.92	4.79	0.99							
casillas	893	PF 2	17.37	562.40	564.25	564.25	564.48	0.021141		
2.29	9.53	20.74	0.72							
casillas	888.333*	PF 1	7.12	562.13	563.27	563.34	563.67	0.067789		
2.80	2.54	4.28	1.16							
casillas	888.333*	PF 2	17.37	562.13	563.81	563.99	564.31	0.048744		
3.16	6.06	16.66	1.05							
casillas	883.666*	PF 1	7.12	561.86	563.02	563.05	563.37	0.056003		
2.64	2.69	4.21	1.06							
casillas	883.666*	PF 2	17.37	561.86	563.52	563.72	564.07	0.053146		
3.30	5.56	13.08	1.09							
casillas	879.*	PF 1	7.12	561.60	562.69	562.75	563.09	0.064032		
2.82	2.53	3.91	1.12							
casillas	879.*	PF 2	17.37	561.60	563.24	563.45	563.82	0.055388		
3.39	5.33	10.43	1.10							
casillas	874.333*	PF 1	7.12	561.33	562.41	562.45	562.80	0.060329		
2.79	2.55	3.76	1.08							
casillas	874.333*	PF 2	17.37	561.33	562.96	563.18	563.56	0.055967		
3.45	5.22	9.19	1.10							
casillas	869.666*	PF 1	7.12	561.06	562.10	562.15	562.52	0.063429		
2.87	2.48	3.55	1.10							
casillas	869.666*	PF 2	17.37	561.06	562.68	562.90	563.30	0.056121		
3.49	5.16	8.42	1.08							
casillas	865.*	PF 1	7.12	560.79	561.80	561.85	562.22	0.062411		
2.88	2.48	3.40	1.08							
casillas	865.*	PF 2	17.37	560.79	562.41	562.60	563.04	0.056167		
3.52	5.11	7.88	1.07							
casillas	860.333*	PF 1	7.12	560.53	561.50	561.54	561.93	0.063585		
2.91	2.45	3.25	1.07							
casillas	860.333*	PF 2	17.37	560.53	562.14	562.30	562.78	0.056363		
3.55	5.08	7.46	1.04							
casillas	855.666*	PF 1	7.12	560.26	561.20	561.24	561.64	0.064127		
2.92	2.44	3.13	1.05							
casillas	855.666*	PF 2	17.37	560.26	562.19	561.96	562.57	0.025385		
2.77	6.51	15.50	0.70							
casillas	851	PF 1	7.12	559.99	560.90	560.93	561.35	0.060756		
2.97	2.40	3.01	1.05							
casillas	851	PF 2	17.37	559.99	561.92	561.61	562.44	0.024099		
3.18	5.47	14.66	0.75							
casillas	845	Culvert								
casillas	838	PF 1	7.12	559.20	559.64	560.02	561.10	0.305686		
5.36	1.33	4.26	2.57							
casillas	838	PF 2	17.37	559.20	560.12	560.71	562.14	0.159749		
6.30	2.76	5.04	2.10							
casillas	834.5*	PF 1	7.12	559.00	560.55	559.85	560.65	0.005563		
1.42	5.02	5.51	0.38							
casillas	834.5*	PF 2	17.37	559.00	561.25	560.48	561.52	0.008738		
2.32	7.49	6.69	0.51							
casillas	831.*	PF 1	7.12	558.80	560.53	559.77	560.63	0.006134		
1.41	5.05	5.22	0.39							
casillas	831.*	PF 2	17.37	558.80	561.23	560.47	561.48	0.009704		
2.21	7.85	6.52	0.51							
casillas	827.5*	PF 1	7.12	558.60	560.50	559.71	560.61	0.006706		
1.46	4.87	4.90	0.40							
casillas	827.5*	PF 2	17.37	558.60	561.18	560.48	561.44	0.012176		
2.26	7.67	6.38	0.56							
casillas	824.*	PF 1	7.12	558.40	560.46	559.72	560.58	0.008270		
1.56	4.56	4.59	0.44							
casillas	824.*	PF 2	17.37	558.40	561.11	560.55	561.39	0.014871		
2.36	7.35	6.25	0.62							
casillas	820.5*	PF 1	7.12	558.20	560.39	559.81	560.55	0.011904		
1.72	4.13	4.30	0.52							
casillas	820.5*	PF 2	17.37	558.20	561.02	560.65	561.33	0.019139		
2.46	7.05	6.26	0.70							
casillas	817	PF 1	7.12	558.00	560.20	559.97	560.46	0.049074		
2.27	3.13	3.63	0.78							
casillas	817	PF 2	17.37	558.00	560.84	560.73	561.22	0.048700		
2.75	6.33	6.30	0.87							
casillas	812.75*	PF 1	7.12	558.00	559.97	559.84	560.24	0.051419		
2.33	3.05	3.83	0.83							
casillas	812.75*	PF 2	17.37	558.00	560.66	560.50	561.03	0.042104		
2.68	6.48	6.06	0.83							

casillas		808.5*		PF 1		7.12	558.00	559.77	559.64	560.03	0.045448
2.28	3.12		3.90		0.82						
casillas		808.5*		PF 2		17.37	558.00	560.52	560.27	560.86	0.032904
2.55	6.80		5.95		0.75						
casillas		804.25*		PF 1		7.12	558.00	559.64	559.42	559.86	0.031829
2.07	3.44		3.96		0.71						
casillas		804.25*		PF 2		17.37	558.00	560.43	560.06	560.73	0.024635
2.42	7.26		6.16		0.66						
casillas		800		PF 1		7.12	558.00	559.57	559.20	559.74	0.020447
1.82	3.91		3.94		0.58						
casillas		800		PF 2		17.37	558.00	560.36	559.86	560.62	0.019208
2.30	7.78		6.52		0.58						
casillas		795.*		PF 1		7.12	557.92	559.47	559.09	559.63	0.019590
1.81	3.94		3.95		0.58						
casillas		795.*		PF 2		17.37	557.92	560.24	559.76	560.53	0.019294
2.36	7.48		5.13		0.59						
casillas		790.*		PF 1		7.12	557.84	559.37	559.00	559.54	0.019024
1.80	3.96		3.96		0.57						
casillas		790.*		PF 2		17.37	557.84	560.14	559.65	560.43	0.019158
2.40	7.40		4.97		0.59						
casillas		785.*		PF 1		7.12	557.76	559.28	558.91	559.44	0.018524
1.80	3.96		3.95		0.57						
casillas		785.*		PF 2		17.37	557.76	560.03	559.55	560.33	0.019741
2.47	7.24		4.85		0.60						
casillas		780.*		PF 1		7.12	557.68	559.18	558.83	559.35	0.017844
1.83	3.91		3.88		0.57						
casillas		780.*		PF 2		17.37	557.68	559.89	559.47	560.22	0.021553
2.60	6.94		4.71		0.62						
casillas		775.*		PF 1		7.12	557.61	559.08	558.74	559.26	0.018329
1.89	3.80		3.80		0.58						
casillas		775.*		PF 2		17.37	557.61	559.70	559.40	560.10	0.026594
2.85	6.36		4.68		0.70						
casillas		770.*		PF 1		7.12	557.53	558.95	558.67	559.16	0.021440
2.05	3.55		3.68		0.63						
casillas		770.*		PF 2		17.37	557.53	559.45	559.45	559.94	0.032954
3.20	6.07		7.34		0.81						
casillas		765.*		PF 1		7.12	557.45	558.69	558.69	559.01	0.036611
2.55	3.02		6.33		0.85						
casillas		765.*		PF 2		17.37	557.45	558.97	559.18	559.70	0.066972
4.09	5.08		7.82		1.19						
casillas		760		PF 1		7.12	557.37	558.71	558.37	558.78	0.007014
1.32	6.34		8.15		0.42						
casillas		760		PF 2		17.37	557.37	559.27	558.73	559.41	0.007662
1.85	11.12		8.77		0.47						
casillas		755.*		PF 1		7.12	557.31	558.66		558.73	0.007645
1.36	6.11		8.07		0.43						
casillas		755.*		PF 2		17.37	557.31	559.22		559.36	0.008154
1.89	10.92		9.20		0.48						
casillas		750.*		PF 1		7.12	557.25	558.61		558.69	0.008358
1.41	5.87		7.98		0.45						
casillas		750.*		PF 2		17.37	557.25	559.16		559.31	0.008892
1.95	10.45		8.67		0.50						
casillas		745.*		PF 1		7.12	557.19	558.55		558.64	0.009185
1.45	5.64		7.87		0.47						
casillas		745.*		PF 2		17.37	557.19	559.09		559.26	0.009639
2.01	10.10		8.60		0.52						
casillas		740.*		PF 1		7.12	557.13	558.49		558.59	0.010101
1.49	5.40		7.75		0.50						
casillas		740.*		PF 2		17.37	557.13	559.02		559.20	0.010522
2.06	9.73		8.51		0.55						
casillas		735.*		PF 1		7.12	557.07	558.42		558.53	0.011197
1.53	5.16		7.61		0.52						
casillas		735.*		PF 2		17.37	557.07	558.94		559.14	0.011626
2.12	9.33		8.40		0.57						
casillas		730.*		PF 1		7.12	557.01	558.35		558.47	0.012679
1.58	4.90		7.44		0.55						
casillas		730.*		PF 2		17.37	557.01	558.85		559.07	0.013132
2.20	8.87		8.25		0.60						
casillas		725.*		PF 1		7.12	556.95	558.26		558.39	0.015271
1.65	4.57		7.23		0.60						
casillas		725.*		PF 2		17.37	556.95	558.75		559.00	0.015602
2.30	8.29		8.06		0.65						
casillas		720		PF 1		7.12	556.89	558.11		558.29	0.024553
1.88	3.88		6.91		0.74						
casillas		720		PF 2		17.37	556.89	558.46	558.44	558.87	0.032916
2.88	6.39		7.53		0.91						
casillas		715.555*		PF 1		7.12	556.81	558.02		558.18	0.024374
1.78	4.01		7.78		0.73						
casillas		715.555*		PF 2		17.37	556.81	558.37	558.31	558.71	0.029250
2.65	6.90		8.71		0.87						
casillas		711.111*		PF 1		7.12	556.73	557.92		558.07	0.023552
1.71	4.16		7.34		0.72						

casillas	711.111*	PF 2	17.37	556.73	558.27	558.20	558.57	0.026854	
2.47	7.39	9.97	0.83						
casillas	706.666*	PF 1	7.12	556.64	557.82		557.96	0.022801	
1.66	4.29	7.88	0.71						
casillas	706.666*	PF 2	17.37	556.64	558.18	558.09	558.45	0.025335	
2.32	7.84	11.33	0.80						
casillas	702.222*	PF 1	7.12	556.56	557.72		557.85	0.022332	
1.62	4.40	8.39	0.70						
casillas	702.222*	PF 2	17.37	556.56	558.08	557.99	558.33	0.024917	
2.21	8.21	12.78	0.79						
casillas	697.777*	PF 1	7.12	556.48	557.62		557.75	0.022033	
1.59	4.49	8.91	0.69						
casillas	697.777*	PF 2	17.37	556.48	557.98		558.21	0.025079	
2.15	8.48	13.55	0.79						
casillas	693.333*	PF 1	7.12	556.40	557.53		557.65	0.021713	
1.56	4.58	9.47	0.69						
casillas	693.333*	PF 2	17.37	556.40	557.87	557.78	558.09	0.024751	
2.11	8.73	14.71	0.78						
casillas	688.888*	PF 1	7.12	556.31	557.43		557.55	0.021061	
1.53	4.70	10.12	0.68						
casillas	688.888*	PF 2	17.37	556.31	557.77	557.68	557.97	0.024111	
2.06	9.05	16.08	0.77						
casillas	684.444*	PF 1	7.12	556.23	557.35		557.46	0.019848	
1.49	4.88	11.03	0.66						
casillas	684.444*	PF 2	17.37	556.23	557.67		557.86	0.022480	
1.98	9.58	17.90	0.74						
casillas	680	PF 1	7.12	556.15	557.11	557.10	557.32	0.048867	
2.02	3.53	8.49	1.00						
casillas	680	PF 2	17.37	556.15	557.48	557.48	557.73	0.033751	
2.27	8.34	17.68	0.90						
casillas	675.5*	PF 1	7.12	555.91	556.88	556.88	557.10	0.049775	
2.07	3.43	7.99	1.01						
casillas	675.5*	PF 2	17.37	555.91	557.21	557.27	557.55	0.047122	
2.61	6.97	14.22	1.05						
casillas	671.*	PF 1	7.12	555.66	556.64	556.65	556.87	0.050575	
2.13	3.35	7.56	1.02						
casillas	671.*	PF 2	17.37	555.66	557.02	557.04	557.34	0.042152	
2.53	7.05	13.20	1.00						
casillas	666.5*	PF 1	7.12	555.42	556.41	556.42	556.65	0.050363	
2.16	3.29	7.19	1.02						
casillas	666.5*	PF 2	17.37	555.42	556.78	556.82	557.15	0.047490	
2.67	6.54	11.22	1.05						
casillas	662.*	PF 1	7.12	555.17	556.18	556.19	556.43	0.050513	
2.21	3.23	6.83	1.02						
casillas	662.*	PF 2	17.37	555.17	556.59	556.59	556.94	0.044078	
2.64	6.59	10.01	1.02						
casillas	657.5*	PF 1	7.12	554.93	555.95	555.95	556.21	0.050243	
2.24	3.18	6.50	1.02						
casillas	657.5*	PF 2	17.37	554.93	556.36	556.38	556.74	0.046304	
2.74	6.34	9.02	1.04						
casillas	653.*	PF 1	7.12	554.69	555.72	555.73	555.99	0.049455	
2.27	3.14	6.19	1.02						
casillas	653.*	PF 2	17.37	554.69	556.16	556.16	556.54	0.043537	
2.74	6.33	8.51	1.02						
casillas	648.5*	PF 1	7.12	554.44	555.50	555.50	555.77	0.048981	
2.30	3.09	5.86	1.01						
casillas	648.5*	PF 2	17.37	554.44	555.99	555.95	556.35	0.037855	
2.67	6.51	8.11	0.95						
casillas	644	PF 1	7.12	554.20	555.29	555.28	555.56	0.044845	
2.28	3.13	5.60	0.97						
casillas	644	PF 2	17.37	554.20	555.74	555.74	556.16	0.043180	
2.87	6.06	7.37	1.01						
casillas	639.111*	PF 1	7.12	553.98	555.07	555.06	555.34	0.045083	
2.28	3.13	5.62	0.97						
casillas	639.111*	PF 2	17.37	553.98	555.49	555.53	555.94	0.047909	
2.97	5.85	7.34	1.06						
casillas	634.222*	PF 1	7.12	553.76	554.85	554.84	555.11	0.044887	
2.27	3.13	5.65	0.97						
casillas	634.222*	PF 2	17.37	553.76	555.30	555.31	555.71	0.042796	
2.84	6.12	7.58	1.01						
casillas	629.333*	PF 1	7.12	553.54	554.63	554.62	554.89	0.044965	
2.27	3.13	5.67	0.98						
casillas	629.333*	PF 2	17.37	553.54	555.06	555.09	555.49	0.046851	
2.92	5.95	7.56	1.05						
casillas	624.444*	PF 1	7.12	553.32	554.41	554.40	554.67	0.044863	
2.27	3.14	5.70	0.97						
casillas	624.444*	PF 2	17.37	553.32	554.86	554.87	555.26	0.042320	
2.80	6.20	7.79	1.00						
casillas	619.555*	PF 1	7.12	553.11	554.19	554.18	554.45	0.044894	
2.26	3.14	5.72	0.98						
casillas	619.555*	PF 2	17.37	553.11	554.61	554.65	555.04	0.047022	
2.90	5.99	7.75	1.05						

casillas	614.666*	PF 1	7.12	552.89	553.97	553.96	554.23	0.044894		
2.26	3.15	5.76	0.98							
casillas	614.666*	PF 2	17.37	552.89	554.42	554.43	554.82	0.042237		
2.78	6.25	8.00	1.00							
casillas	609.777*	PF 1	7.12	552.67	553.76	553.74	554.01	0.044108		
2.24	3.18	5.80	0.97							
casillas	609.777*	PF 2	17.37	552.67	554.17	554.21	554.59	0.047764		
2.90	6.00	7.91	1.06							
casillas	604.888*	PF 1	7.12	552.45	553.53	553.52	553.79	0.046096		
2.27	3.13	5.79	0.99							
casillas	604.888*	PF 2	17.37	552.45	553.98	553.98	554.37	0.042781		
2.77	6.28	8.17	1.01							
casillas	600	PF 1	7.12	552.23	553.35	553.30	553.58	0.037661		
2.10	3.38	6.04	0.90							
casillas	600	PF 2	17.37	552.23	553.86	553.76	554.16	0.030315		
2.42	7.18	8.86	0.86							
casillas	595.333*	PF 1	7.12	551.96	553.15	553.10	553.39	0.038547		
2.18	3.27	5.53	0.90							
casillas	595.333*	PF 2	17.37	551.96	553.69	553.59	554.01	0.030962		
2.51	6.91	8.00	0.86							
casillas	590.666*	PF 1	7.12	551.70	552.96	552.90	553.21	0.037805		
2.21	3.23	5.15	0.89							
casillas	590.666*	PF 2	17.37	551.70	553.52	553.41	553.86	0.031089		
2.57	6.75	7.38	0.86							
casillas	586.*	PF 1	7.12	551.43	552.77	552.70	553.02	0.038342		
2.25	3.16	4.80	0.89							
casillas	586.*	PF 2	17.37	551.43	553.37		553.71	0.030662		
2.60	6.68	6.90	0.84							
casillas	581.333*	PF 1	7.12	551.16	552.59	552.50	552.84	0.037140		
2.25	3.16	4.53	0.86							
casillas	581.333*	PF 2	17.37	551.16	553.22		553.57	0.029777		
2.59	6.69	6.53	0.82							
casillas	576.666*	PF 1	7.12	550.90	552.42		552.67	0.035242		
2.22	3.21	4.31	0.82							
casillas	576.666*	PF 2	17.37	550.90	553.09		553.43	0.029102		
2.58	6.72	6.21	0.79							
casillas	572	PF 1	7.12	550.63	552.17	552.11	552.47	0.045652		
2.45	2.91	3.88	0.90							
casillas	572	PF 2	17.37	550.63	552.76	552.72	553.24	0.046415		
3.07	5.65	5.42	0.96							
casillas	567.272*	PF 1	7.12	550.41	551.95	551.89	552.26	0.045341		
2.45	2.91	3.90	0.90							
casillas	567.272*	PF 2	17.37	550.41	552.54	552.51	553.02	0.045933		
3.07	5.67	5.47	0.96							
casillas	562.545*	PF 1	7.12	550.20	551.74	551.67	552.04	0.045191		
2.45	2.91	3.91	0.91							
casillas	562.545*	PF 2	17.37	550.20	552.33	552.30	552.80	0.045555		
3.06	5.68	5.52	0.96							
casillas	557.818*	PF 1	7.12	549.98	551.53	551.46	551.83	0.045208		
2.45	2.90	3.90	0.91							
casillas	557.818*	PF 2	17.37	549.98	552.12	552.08	552.59	0.045259		
3.05	5.69	5.56	0.96							
casillas	553.090*	PF 1	7.12	549.77	551.31	551.25	551.62	0.045224		
2.46	2.89	3.87	0.91							
casillas	553.090*	PF 2	17.37	549.77	551.91	551.87	552.38	0.044904		
3.04	5.71	5.60	0.96							
casillas	548.363*	PF 1	7.12	549.55	551.10	551.03	551.41	0.045205		
2.47	2.89	3.84	0.91							
casillas	548.363*	PF 2	17.37	549.55	551.69	551.66	552.16	0.044865		
3.04	5.71	5.63	0.96							
casillas	543.636*	PF 1	7.12	549.34	550.88	550.82	551.19	0.045294		
2.48	2.88	3.80	0.91							
casillas	543.636*	PF 2	17.37	549.34	551.48	551.45	551.95	0.044570		
3.03	5.73	5.66	0.96							
casillas	538.909*	PF 1	7.12	549.12	550.67	550.60	550.98	0.045213		
2.48	2.87	3.77	0.91							
casillas	538.909*	PF 2	17.37	549.12	551.27	551.24	551.74	0.044496		
3.03	5.73	5.67	0.96							
casillas	534.181*	PF 1	7.12	548.91	550.45	550.39	550.77	0.045394		
2.49	2.86	3.75	0.91							
casillas	534.181*	PF 2	17.37	548.91	551.07	551.03	551.53	0.044328		
3.03	5.74	5.68	0.96							
casillas	529.454*	PF 1	7.12	548.69	550.24	550.17	550.55	0.045341		
2.49	2.86	3.72	0.91							
casillas	529.454*	PF 2	17.37	548.69	550.86	550.82	551.32	0.044294		
3.03	5.74	5.68	0.96							
casillas	524.727*	PF 1	7.12	548.48	550.04	549.96	550.34	0.043335		
2.45	2.90	3.74	0.89							
casillas	524.727*	PF 2	17.37	548.48	550.65	550.61	551.11	0.043282		
3.00	5.79	5.69	0.95							
casillas	520	PF 1	7.12	548.26	549.88		550.15	0.035337		
2.27	3.13	3.87	0.81							

casillas	520		PF 2		17.37	548.26	550.49	550.39	550.91	0.038577
2.87	6.05	5.83		0.90						
casillas	515.*		PF 1		7.12	548.09	549.70		549.97	0.036188
2.29	3.12	3.94		0.82						
casillas	515.*		PF 2		17.37	548.09	550.29	550.21	550.72	0.039820
2.89	6.02	5.97		0.92						
casillas	510.*		PF 1		7.12	547.93	549.52		549.78	0.037478
2.29	3.10	4.07		0.84						
casillas	510.*		PF 2		17.37	547.93	550.08	550.02	550.51	0.040955
2.90	5.98	6.08		0.93						
casillas	505.*		PF 1		7.12	547.76	549.32	549.22	549.59	0.038766
2.31	3.09	4.19		0.86						
casillas	505.*		PF 2		17.37	547.76	549.88	549.83	550.31	0.041557
2.91	5.97	6.17		0.95						
casillas	500.*		PF 1		7.12	547.59	549.12	549.04	549.39	0.040145
2.32	3.07	4.31		0.88						
casillas	500.*		PF 2		17.37	547.59	549.67	549.63	550.10	0.041163
2.90	5.99	6.26		0.95						
casillas	495.*		PF 1		7.12	547.42	548.91		549.19	0.041437
2.34	3.05	4.40		0.90						
casillas	495.*		PF 2		17.37	547.42	549.44	549.42	549.89	0.043535
2.96	5.87	6.24		0.97						
casillas	490.*		PF 1		7.12	547.26	548.70	548.65	548.98	0.042618
2.36	3.02	4.45		0.91						
casillas	490.*		PF 2		17.37	547.26	549.23	549.19	549.69	0.037922
3.00	5.84	5.96		0.93						
casillas	485.*		PF 1		7.12	547.09	548.53	548.44	548.78	0.035608
2.23	3.20	4.59		0.85						
casillas	485.*		PF 2		17.37	547.09	549.06	548.99	549.52	0.031432
3.04	5.94	5.78		0.87						
casillas	480		PF 1		7.12	546.92	548.21	548.21	548.57	0.046418
2.65	2.72	4.12		0.98						
casillas	480		PF 2		17.37	546.92	548.82	548.82	549.35	0.033333
3.34	5.68	5.67		0.92						
casillas	475.555*		PF 1		7.12	546.62	547.75	547.88	548.27	0.093279
3.18	2.24	3.98		1.34						
casillas	475.555*		PF 2		17.37	546.62	548.19	548.46	549.10	0.078177
4.26	4.26	5.16		1.35						
casillas	471.111*		PF 1		7.12	546.31	547.51	547.56	547.89	0.063213
2.75	2.59	4.38		1.13						
casillas	471.111*		PF 2		17.37	546.31	547.84	548.11	548.74	0.082916
4.23	4.24	5.35		1.39						
casillas	466.666*		PF 1		7.12	546.01	547.14	547.23	547.57	0.077251
2.92	2.44	4.32		1.24						
casillas	466.666*		PF 2		17.37	546.01	547.53	547.76	548.36	0.079628
4.07	4.38	5.62		1.36						
casillas	462.222*		PF 1		7.12	545.70	546.84	546.91	547.24	0.070701
2.81	2.54	4.49		1.19						
casillas	462.222*		PF 2		17.37	545.70	547.21	547.43	548.00	0.078433
3.95	4.47	5.85		1.35						
casillas	457.777*		PF 1		7.12	545.40	546.51	546.60	546.92	0.073167
2.83	2.52	4.55		1.21						
casillas	457.777*		PF 2		17.37	545.40	546.90	547.10	547.64	0.076573
3.83	4.59	6.08		1.33						
casillas	453.333*		PF 1		7.12	545.09	546.19	546.27	546.59	0.071796
2.80	2.55	4.65		1.21						
casillas	453.333*		PF 2		17.37	545.09	546.58	546.77	547.29	0.075707
3.73	4.69	6.28		1.32						
casillas	448.888*		PF 1		7.12	544.79	545.87	545.95	546.27	0.072429
2.79	2.55	4.71		1.21						
casillas	448.888*		PF 2		17.37	544.79	546.27	546.44	546.95	0.074351
3.63	4.80	6.48		1.31						
casillas	444.444*		PF 1		7.12	544.48	545.56	545.64	545.95	0.071027
2.76	2.58	4.80		1.20						
casillas	444.444*		PF 2		17.37	544.48	545.96	546.12	546.61	0.073660
3.56	4.89	6.63		1.30						
casillas	440		PF 1		7.12	544.18	545.24	545.32	545.63	0.071965
2.76	2.58	4.86		1.21						
casillas	440		PF 2		17.37	544.18	545.65	545.80	546.28	0.072803
3.51	4.96	6.76		1.29						
casillas	435.555*		PF 1		7.12	544.01	545.19	545.14	545.44	0.039220
2.20	3.24	5.45		0.91						
casillas	435.555*		PF 2		17.37	544.01	545.63	545.62	546.06	0.039197
2.90	6.06	7.46		0.98						
casillas	431.111*		PF 1		7.12	543.83	545.02	544.97	545.26	0.039175
2.20	3.24	5.45		0.91						
casillas	431.111*		PF 2		17.37	543.83	545.45	545.45	545.88	0.038959
2.91	6.03	7.43		0.97						
casillas	426.666*		PF 1		7.12	543.66	544.84	544.80	545.09	0.039210
2.20	3.24	5.45		0.91						
casillas	426.666*		PF 2		17.37	543.66	545.27	545.27	545.71	0.039042
2.93	6.00	7.39		0.98						

casillas		422.222*	PF 1		7.12	543.48	544.67	544.62	544.91	0.039063	
2.20	3.24	5.45		0.91							
casillas		422.222*	PF 2		17.37	543.48	545.10	545.09	545.54	0.038689	
2.95	5.99	7.34		0.98							
casillas		417.777*	PF 1		7.12	543.31	544.49	544.45	544.74	0.039264	
2.20	3.23	5.44		0.91							
casillas		417.777*	PF 2		17.37	543.31	544.92	544.92	545.37	0.038114	
2.95	6.00	7.28		0.97							
casillas		413.333*	PF 1		7.12	543.13	544.32	544.27	544.56	0.039158	
2.20	3.24	5.44		0.91							
casillas		413.333*	PF 2		17.37	543.13	544.74	544.75	545.19	0.038522	
2.98	5.95	7.20		0.98							
casillas		408.888*	PF 1		7.12	542.96	544.16	544.10	544.39	0.035385	
2.13	3.35	5.53		0.87							
casillas		408.888*	PF 2		17.37	542.96	544.60	544.58	545.02	0.034677	
2.91	6.14	7.21		0.93							
casillas		404.444*	PF 1		7.12	542.78	544.07		544.25	0.023551	
1.87	3.83	5.91		0.72							
casillas		404.444*	PF 2		17.37	542.78	544.53	544.40	544.87	0.024412	
2.62	6.89	7.44		0.80							
casillas		400	PF 1		7.12	542.61	544.04		544.16	0.013008	
1.54	4.69	6.49		0.55							
casillas		400	PF 2		17.37	542.61	544.50		544.76	0.015526	
2.29	8.04	7.89		0.65							
casillas		395.*	PF 1		7.12	542.58	543.98		544.09	0.012381	
1.47	4.90	6.88		0.54							
casillas		395.*	PF 2		17.37	542.58	544.45		544.68	0.014076	
2.15	8.46	8.29		0.62							
casillas		390.*	PF 1		7.12	542.54	543.93		544.03	0.011939	
1.41	5.06	7.22		0.53							
casillas		390.*	PF 2		17.37	542.54	544.40		544.60	0.013004	
2.03	8.86	8.73		0.60							
casillas		385.*	PF 1		7.12	542.51	543.87		543.97	0.011971	
1.38	5.17	7.55		0.53							
casillas		385.*	PF 2		17.37	542.51	544.35		544.54	0.012266	
1.93	9.22	9.18		0.58							
casillas		380.*	PF 1		7.12	542.48	543.81		543.91	0.012371	
1.36	5.22	7.82		0.53							
casillas		380.*	PF 2		17.37	542.48	544.30		544.47	0.011801	
1.85	9.54	9.65		0.57							
casillas		375.*	PF 1		7.12	542.44	543.75		543.84	0.012774	
1.37	5.20	7.96		0.54							
casillas		375.*	PF 2		17.37	542.44	544.25		544.41	0.011561	
1.79	9.81	10.12		0.56							
casillas		370.*	PF 1		7.12	542.41	543.68		543.78	0.013818	
1.40	5.08	8.00		0.56							
casillas		370.*	PF 2		17.37	542.41	544.19		544.35	0.011603	
1.75	10.01	10.58		0.56							
casillas		365.*	PF 1		7.12	542.37	543.59		543.70	0.016147	
1.48	4.82	7.92		0.60							
casillas		365.*	PF 2		17.37	542.37	544.14		544.29	0.011951	
1.72	10.14	11.03		0.56							
casillas		360	PF 1		7.12	542.34	543.44		543.60	0.025969	
1.75	4.06	7.38		0.75							
casillas		360	PF 2		17.37	542.34	544.08		544.23	0.012768	
1.71	10.16	11.47		0.57							
casillas		357.111*	PF 1		7.12	542.24	543.32		543.48	0.026404	
1.79	3.98	7.06		0.76							
casillas		357.111*	PF 2		17.37	542.24	544.03		544.18	0.010806	
1.68	10.38	10.62		0.53							
casillas		354.222*	PF 1		7.12	542.14	543.20		543.36	0.025889	
1.81	3.94	6.76		0.76							
casillas		354.222*	PF 2		17.37	542.14	543.99		544.13	0.009461	
1.66	10.49	9.81		0.50							
casillas		351.333*	PF 1		7.12	542.05	543.09		543.25	0.023482	
1.80	3.96	6.26		0.72							
casillas		351.333*	PF 2		17.37	542.05	543.95		544.09	0.008729	
1.67	10.45	9.02		0.48							
casillas		348.444*	PF 1		7.12	541.95	542.99		543.15	0.020739	
1.77	4.01	5.76		0.68							
casillas		348.444*	PF 2		17.37	541.95	543.90		544.05	0.008577	
1.71	10.23	8.27		0.47							
casillas		345.555*	PF 1		7.12	541.85	542.91		543.07	0.018654	
1.76	4.05	5.24		0.64							
casillas		345.555*	PF 2		17.37	541.85	543.85		544.01	0.009120	
1.78	9.79	7.55		0.47							
casillas		342.666*	PF 1		7.12	541.75	542.82		542.98	0.018203	
1.78	4.00	4.69		0.62							
casillas		342.666*	PF 2		17.37	541.75	543.77		543.96	0.010762	
1.92	9.10	6.82		0.49							
casillas		339.777*	PF 1		7.12	541.66	542.71		542.89	0.020839	
1.89	3.76	4.11		0.63							

casillas	339.777*	PF 2	17.37	541.66	543.66		543.90	0.014833	
2.16	8.07	5.83	0.54						
casillas	336.888*	PF 1	7.12	541.56	542.49	542.36	542.76	0.037171	
2.33	3.05	3.51	0.80						
casillas	336.888*	PF 2	17.37	541.56	543.45		543.80	0.026354	
2.63	6.61	3.87	0.64						
casillas	334	PF 1	7.12	541.46	542.29	542.29	542.71	0.004271	
2.87	2.48	3.00	1.01						
casillas	334	PF 2	17.37	541.46	542.96	542.96	543.72	0.004907	
3.86	4.50	3.00	1.00						
casillas	329.333*	PF 1	7.12	541.42	542.18	542.25	542.68	0.005369	
3.10	2.29	3.00	1.13						
casillas	329.333*	PF 2	17.37	541.42	542.85	542.93	543.68	0.005549	
4.04	4.30	3.00	1.08						
casillas	324.666*	PF 1	7.12	541.38	542.12	542.21	542.64	0.005902	
3.21	2.22	3.00	1.19						
casillas	324.666*	PF 2	17.37	541.38	542.87	542.89	543.64	0.005034	
3.89	4.46	3.00	1.02						
casillas	320	PF 1	7.12	541.34	542.06	542.17	542.61	0.006421	
3.30	2.16	3.00	1.24						
casillas	320	PF 2	17.37	541.34	542.76	542.85	543.61	0.005676	
4.07	4.27	3.00	1.09						
casillas	315.*	PF 1	7.12	541.30	542.01	542.13	542.58	0.006675	
3.35	2.13	3.00	1.27						
casillas	315.*	PF 2	17.37	541.30	542.77	542.81	543.56	0.005201	
3.94	4.41	3.00	1.04						
casillas	310.*	PF 1	7.12	541.26	541.96	542.09	542.54	0.006892	
3.38	2.10	3.00	1.29						
casillas	310.*	PF 2	17.37	541.26	542.68	542.77	543.53	0.005739	
4.09	4.25	3.00	1.10						
casillas	305.*	PF 1	7.12	541.22	541.92	542.05	542.51	0.006985	
3.40	2.09	3.00	1.30						
casillas	305.*	PF 2	17.37	541.22	542.69	542.73	543.48	0.005226	
3.95	4.40	3.00	1.04						
casillas	300.*	PF 1	7.12	541.18	541.87	542.01	542.47	0.007087	
3.42	2.08	3.00	1.31						
casillas	300.*	PF 2	17.37	541.18	542.60	542.69	543.45	0.005743	
4.09	4.25	3.00	1.10						
casillas	295.*	PF 1	7.12	541.14	541.83	541.97	542.43	0.007191	
3.43	2.07	3.00	1.32						
casillas	295.*	PF 2	17.37	541.14	542.61	542.65	543.40	0.005234	
3.95	4.40	3.00	1.04						
casillas	290.*	PF 1	7.12	541.10	541.79	541.93	542.39	0.007292	
3.45	2.06	3.00	1.33						
casillas	290.*	PF 2	17.37	541.10	542.51	542.61	543.37	0.005752	
4.09	4.24	3.00	1.10						
casillas	285.*	PF 1	7.12	541.06	541.74	541.89	542.36	0.007407	
3.47	2.05	3.00	1.34						
casillas	285.*	PF 2	17.37	541.06	542.52	542.57	543.32	0.005243	
3.95	4.39	3.00	1.04						
casillas	280	PF 1	7.12	541.02	541.70	541.85	542.32	0.007528	
3.49	2.04	3.00	1.35						
casillas	280	PF 2	17.37	541.02	542.43	542.53	543.29	0.005834	
4.11	4.22	3.00	1.11						
casillas	275.555*	PF 1	7.12	540.98	541.66	541.81	542.29	0.007635	
3.50	2.03	3.00	1.36						
casillas	275.555*	PF 2	17.37	540.98	542.44	542.49	543.24	0.005314	
3.97	4.37	3.00	1.05						
casillas	271.111*	PF 1	7.12	540.95	541.63	541.78	542.25	0.007564	
3.49	2.04	3.00	1.35						
casillas	271.111*	PF 2	17.37	540.95	542.45	542.45	543.21	0.004936	
3.86	4.49	3.00	1.01						
casillas	266.666*	PF 1	7.12	540.91	541.59	541.74	542.21	0.007677	
3.51	2.03	3.00	1.36						
casillas	266.666*	PF 2	17.37	540.91	542.33	542.42	543.18	0.005657	
4.07	4.27	3.00	1.09						
casillas	262.222*	PF 1	7.12	540.87	541.55	541.70	542.18	0.007809	
3.53	2.02	3.00	1.38						
casillas	262.222*	PF 2	17.37	540.87	542.34	542.38	543.13	0.005182	
3.94	4.41	3.00	1.04						
casillas	257.777*	PF 1	7.12	540.84	541.51	541.67	542.14	0.007760	
3.52	2.02	3.00	1.37						
casillas	257.777*	PF 2	17.37	540.84	542.26	542.34	543.10	0.005696	
4.08	4.26	3.00	1.09						
casillas	253.333*	PF 1	7.12	540.80	541.47	541.63	542.11	0.007905	
3.55	2.01	3.00	1.38						
casillas	253.333*	PF 2	17.37	540.80	542.27	542.31	543.06	0.005206	
3.94	4.41	3.00	1.04						
casillas	248.888*	PF 1	7.12	540.76	541.43	541.59	542.07	0.007841	
3.54	2.01	3.00	1.38						
casillas	248.888*	PF 2	17.37	540.76	542.18	542.27	543.03	0.005725	
4.09	4.25	3.00	1.10						

	casillas	244.444*	PF 1	7.12	540.73	541.40	541.55	542.03	0.007812		
3.53	2.02	3.00	1.38								
	casillas	244.444*	PF 2	17.37	540.73	542.19	542.23	542.99	0.005277		
3.96	4.38	3.00	1.05								
	casillas	240	PF 1	7.12	540.69	541.36	541.52	542.00	0.007964		
3.56	2.00	3.00	1.39								
	casillas	240	PF 2	17.37	540.69	542.20	542.20	542.95	0.004869		
3.85	4.52	3.00	1.00								
	casillas	235.*	PF 1	7.12	540.65	541.32	541.48	541.96	0.007914		
3.55	2.01	3.00	1.38								
	casillas	235.*	PF 2	17.37	540.65	542.07	542.16	542.92	0.005666		
4.07	4.27	3.00	1.09								
	casillas	230.*	PF 1	7.12	540.61	541.27	541.44	541.92	0.008028		
3.57	2.00	3.00	1.39								
	casillas	230.*	PF 2	17.37	540.61	542.09	542.11	542.87	0.005094		
3.91	4.44	3.00	1.03								
	casillas	225.*	PF 1	7.12	540.57	541.23	541.39	541.88	0.007981		
3.56	2.00	3.00	1.39								
	casillas	225.*	PF 2	17.37	540.57	541.99	542.07	542.83	0.005661		
4.07	4.27	3.00	1.09								
	casillas	220.*	PF 1	7.12	540.53	541.19	541.35	541.84	0.007951		
3.55	2.00	3.00	1.39								
	casillas	220.*	PF 2	17.37	540.53	542.00	542.03	542.79	0.005131		
3.92	4.43	3.00	1.03								
	casillas	215.*	PF 1	7.12	540.48	541.15	541.31	541.79	0.007904		
3.55	2.01	3.00	1.38								
	casillas	215.*	PF 2	17.37	540.48	541.90	541.99	542.75	0.005731		
4.09	4.25	3.00	1.10								
	casillas	210.*	PF 1	7.12	540.44	541.11	541.27	541.75	0.007861		
3.54	2.01	3.00	1.38								
	casillas	210.*	PF 2	17.37	540.44	541.91	541.95	542.70	0.005192		
3.94	4.41	3.00	1.04								
	casillas	205.*	PF 1	7.12	540.40	541.07	541.23	541.71	0.007988		
3.56	2.00	3.00	1.39								
	casillas	205.*	PF 2	17.37	540.40	541.81	541.91	542.67	0.005822		
4.11	4.23	3.00	1.11								
	casillas	200	PF 1	7.12	540.36	541.03	541.19	541.67	0.007944		
3.55	2.00	3.00	1.39								
	casillas	200	PF 2	17.37	540.36	541.82	541.87	542.62	0.005264		
3.96	4.39	3.00	1.04								
	casillas	195.555*	PF 1	7.12	540.32	540.99	541.15	541.63	0.007884		
3.54	2.01	3.00	1.38								
	casillas	195.555*	PF 2	17.37	540.32	541.82	541.83	542.58	0.004907		
3.86	4.50	3.00	1.00								
	casillas	191.111*	PF 1	7.12	540.29	540.96	541.12	541.60	0.007859		
3.54	2.01	3.00	1.38								
	casillas	191.111*	PF 2	17.37	540.29	541.72	541.79	542.55	0.005606		
4.05	4.29	3.00	1.08								
	casillas	186.666*	PF 1	7.12	540.25	540.92	541.08	541.56	0.007799		
3.53	2.02	3.00	1.37								
	casillas	186.666*	PF 2	17.37	540.25	541.73	541.76	542.51	0.005139		
3.92	4.43	3.00	1.03								
	casillas	182.222*	PF 1	7.12	540.21	540.88	541.04	541.52	0.007953		
3.55	2.00	3.00	1.39								
	casillas	182.222*	PF 2	17.37	540.21	541.63	541.72	542.48	0.005703		
4.08	4.26	3.00	1.09								
	casillas	177.777*	PF 1	7.12	540.18	540.85	541.01	541.49	0.007922		
3.55	2.01	3.00	1.39								
	casillas	177.777*	PF 2	17.37	540.18	541.64	541.68	542.44	0.005255		
3.96	4.39	3.00	1.04								
	casillas	173.333*	PF 1	7.12	540.14	540.81	540.97	541.45	0.007868		
3.54	2.01	3.00	1.38								
	casillas	173.333*	PF 2	17.37	540.14	541.64	541.65	542.40	0.004906		
3.86	4.50	3.00	1.00								
	casillas	168.888*	PF 1	7.12	540.10	540.78	540.93	541.41	0.007809		
3.53	2.02	3.00	1.38								
	casillas	168.888*	PF 2	17.37	540.10	541.53	541.61	542.37	0.005633		
4.06	4.28	3.00	1.09								
	casillas	164.444*	PF 1	7.12	540.07	540.74	540.90	541.37	0.007765		
3.52	2.02	3.00	1.37								
	casillas	164.444*	PF 2	17.37	540.07	541.54	541.57	542.33	0.005184		
3.94	4.41	3.00	1.04								
	casillas	160	PF 1	7.12	540.03	540.70	540.86	541.34	0.007833		
3.54	2.01	3.00	1.38								
	casillas	160	PF 2	17.37	540.03	541.45	541.54	542.30	0.005717		
4.08	4.25	3.00	1.09								
	casillas	155.555*	PF 1	7.12	539.99	540.66	540.82	541.30	0.007946		
3.55	2.00	3.00	1.39								
	casillas	155.555*	PF 2	17.37	539.99	541.46	541.50	542.25	0.005228		
3.95	4.40	3.00	1.04								
	casillas	151.111*	PF 1	7.12	539.96	540.63	540.78	541.27	0.007920		
3.55	2.01	3.00	1.39								

casillas	151.111*	PF 2	17.37	539.96	541.46	541.46	542.22	0.004873	
3.85	4.52	3.00	1.00						
casillas	146.666*	PF 1	7.12	539.92	540.59	540.75	541.23	0.007872	
3.54	2.01	3.00	1.38						
casillas	146.666*	PF 2	17.37	539.92	541.35	541.43	542.19	0.005632	
4.06	4.28	3.00	1.09						
casillas	142.222*	PF 1	7.12	539.88	540.55	540.71	541.19	0.007819	
3.53	2.02	3.00	1.38						
casillas	142.222*	PF 2	17.37	539.88	541.36	541.39	542.14	0.005163	
3.93	4.42	3.00	1.03						
casillas	137.777*	PF 1	7.12	539.85	540.52	540.67	541.15	0.007780	
3.53	2.02	3.00	1.37						
casillas	137.777*	PF 2	17.37	539.85	541.27	541.35	542.11	0.005688	
4.08	4.26	3.00	1.09						
casillas	133.333*	PF 1	7.12	539.81	540.48	540.64	541.11	0.007714	
3.52	2.02	3.00	1.37						
casillas	133.333*	PF 2	17.37	539.81	541.28	541.32	542.07	0.005215	
3.95	4.40	3.00	1.04						
casillas	128.888*	PF 1	7.12	539.77	540.45	540.60	541.08	0.007787	
3.53	2.02	3.00	1.37						
casillas	128.888*	PF 2	17.37	539.77	541.19	541.28	542.04	0.005732	
4.09	4.25	3.00	1.10						
casillas	124.444*	PF 1	7.12	539.74	540.41	540.57	541.04	0.007741	
3.52	2.02	3.00	1.37						
casillas	124.444*	PF 2	17.37	539.74	541.20	541.24	542.00	0.005280	
3.96	4.38	3.00	1.05						
casillas	120	PF 1	7.12	539.70	540.37	540.53	541.01	0.007888	
3.54	2.01	3.00	1.38						
casillas	120	PF 2	17.37	539.70	541.21	541.21	541.96	0.004872	
3.85	4.52	3.00	1.00						
casillas	115.*	PF 1	7.12	539.66	540.33	540.49	540.97	0.007819	
3.53	2.02	3.00	1.38						
casillas	115.*	PF 2	17.37	539.66	541.08	541.17	541.93	0.005668	
4.07	4.27	3.00	1.09						
casillas	110.*	PF 1	7.12	539.62	540.29	540.45	540.93	0.007951	
3.55	2.00	3.00	1.39						
casillas	110.*	PF 2	17.37	539.62	541.10	541.12	541.88	0.005087	
3.91	4.44	3.00	1.03						
casillas	105.*	PF 1	7.12	539.58	540.25	540.40	540.89	0.007879	
3.54	2.01	3.00	1.38						
casillas	105.*	PF 2	17.37	539.58	541.00	541.08	541.84	0.005667	
4.07	4.27	3.00	1.09						
casillas	100.*	PF 1	7.12	539.54	540.21	540.36	540.84	0.007827	
3.53	2.01	3.00	1.38						
casillas	100.*	PF 2	17.37	539.54	541.01	541.04	541.80	0.005137	
3.92	4.43	3.00	1.03						
casillas	95.*	PF 1	7.12	539.49	540.17	540.32	540.80	0.007761	
3.52	2.02	3.00	1.37						
casillas	95.*	PF 2	17.37	539.49	540.90	541.00	541.76	0.005816	
4.11	4.23	3.00	1.10						
casillas	90.*	PF 1	7.12	539.45	540.12	540.28	540.76	0.007902	
3.55	2.01	3.00	1.38						
casillas	90.*	PF 2	17.37	539.45	540.92	540.96	541.71	0.005240	
3.95	4.39	3.00	1.04						
casillas	85.*	PF 1	7.12	539.41	540.08	540.24	540.72	0.008014	
3.56	2.00	3.00	1.39						
casillas	85.*	PF 2	17.37	539.41	540.82	540.92	541.68	0.005839	
4.11	4.22	3.00	1.11						
casillas	80	PF 1	7.12	539.37	540.04	540.20	540.68	0.007967	
3.56	2.00	3.00	1.39						
casillas	80	PF 2	17.37	539.37	540.83	540.88	541.63	0.005253	
3.96	4.39	3.00	1.04						
casillas	40	PF 1	7.12	531.37	532.02	532.79	538.91	2.910504	
11.63	0.61	1.90	6.55						
casillas	40	PF 2	17.37	531.37	532.38	533.50	540.18	1.675942	
12.37	1.40	2.41	5.18						

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Plan 07

River: arroyo_maquinas Reach: casillas RS: 1444.44* 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 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:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

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River: arroyo_maquinas  Reach: casillas     RS: 1440     Profile: PF 2
     Note:   Program found supercritical flow starting at this cross section.
River: arroyo_maquinas  Reach: casillas     RS: 1425.*     Profile: PF 2
     Warning:Divided flow computed for this cross-section.
River: arroyo_maquinas  Reach: casillas     RS: 1405.*     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_maquinas  Reach: casillas     RS: 1400     Profile: PF 1
     Note:   Program found supercritical flow starting at this cross section.
River: arroyo_maquinas  Reach: casillas     RS: 1280     Profile: PF 1
     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_maquinas  Reach: casillas     RS: 1280     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_maquinas  Reach: casillas     RS: 1275.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1275.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1270.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1270.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1265.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1265.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1260.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1260.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1255.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1255.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1250.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1250.*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1245     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:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1245     Profile: PF 2
     Note:   Program found supercritical flow starting at this cross section.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1231.21*     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_maquinas  Reach: casillas     RS: 1226.82*     Profile: PF 1
     Note:   Program found supercritical flow starting at this cross section.
River: arroyo_maquinas  Reach: casillas     RS: 1222.43     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1222.43     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1220.72*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1220.72*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1219.02*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1219.02*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1217.31*     Profile: PF 1
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     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1217.31*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1215.61     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1215.61     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1211.70     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1211.70     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1209.75*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1209.75*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1207.8*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1207.8*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1205.85*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1205.85*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1203.9*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1203.9*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1201.95*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1201.95*     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_maquinas  Reach: casillas     RS: 1200     Profile: PF 1
     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_maquinas  Reach: casillas     RS: 1200     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1195.5*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1195.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1191.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1191.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1182     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1182     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1180.25*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1180.25*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1178.5*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1178.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1176.75*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1176.75*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1175     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1175     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1173.2*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
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River: arroyo_maquinas  Reach: casillas     RS: 1173.2*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1171.4*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1171.4*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1169.6*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1169.6*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1167.8*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1167.8*     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.
     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_maquinas  Reach: casillas     RS: 1166     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_maquinas  Reach: casillas     RS: 1166     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_maquinas  Reach: casillas     RS: 1155     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_maquinas  Reach: casillas     RS: 1155     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 flow in the culvert is entirely supercritical.
River: arroyo_maquinas  Reach: casillas     RS: 1145.07*     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_maquinas  Reach: casillas     RS: 1145.07*     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_maquinas  Reach: casillas     RS: 1143.14*     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_maquinas  Reach: casillas     RS: 1143.14*     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 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_maquinas  Reach: casillas     RS: 1141.21*     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_maquinas  Reach: casillas     RS: 1141.21*     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 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_maquinas  Reach: casillas     RS: 1139.28*     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.
     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_maquinas  Reach: casillas     RS: 1137.35*     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
River: arroyo_maquinas  Reach: casillas     RS: 1135.42*     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
River: arroyo_maquinas  Reach: casillas     RS: 1125.78*     Profile: PF 2
     Warning:Divided flow computed for this cross-section.
River: arroyo_maquinas  Reach: casillas     RS: 1118.57*     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.
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River: arroyo_maquinas  Reach: casillas     RS: 1117.15     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1117.15     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_maquinas  Reach: casillas     RS: 1115.57*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1115.57*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1113.99*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1113.99*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1112.42     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1112.42     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1110.68*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1110.68*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1108.94*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1108.94*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1107.21*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1107.21*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1105.47*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1105.47*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1103.73*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1103.73*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1102     Profile: PF 1
     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_maquinas  Reach: casillas     RS: 1102     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1100.5*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1100.5*     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_maquinas  Reach: casillas     RS: 1099     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1099     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1094.25*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1094.25*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1089.5*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1089.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1084.75*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1084.75*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1080     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.
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     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1080     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1078.*     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1078.*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1076     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
     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_maquinas  Reach: casillas     RS: 1076     Profile: PF 2
     Warning:Divided flow computed for this cross-section.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1074.25*     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
cross sections.
     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_maquinas  Reach: casillas     RS: 1074.25*     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 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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1072.5*     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1072.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1070.75*     Profile: PF 1
     Warning:Divided flow computed for this cross-section.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1070.75*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1069     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1069     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1067.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1067.*     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_maquinas  Reach: casillas     RS: 1065.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1065.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1063.*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1063.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1061.*     Profile: PF 1
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     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1061.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1059     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:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1059     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1057.07*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1057.07*     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_maquinas  Reach: casillas     RS: 1055.14*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1055.14*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1053.21*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1053.21*     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_maquinas  Reach: casillas     RS: 1051.29*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1051.29*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1049.36*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1049.36*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1047.43*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1047.43*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1045.51     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1045.51     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1043.72*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1043.72*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1041.93*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1041.93*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1040.14*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
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River: arroyo_maquinas  Reach: casillas     RS: 1040.14*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1038.36*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1038.36*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1036.57*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1036.57*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1034.78*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1034.78*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1033     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1033     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1031.05*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1031.05*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1029.11*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1029.11*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1027.17*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1027.17*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1025.23*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1025.23*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1023.29*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1023.29*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1021.35*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1021.35*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1019.40*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1019.40*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1017.46*     Profile: PF 1
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     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1017.46*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1015.52*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1015.52*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1013.58*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1013.58*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1011.64*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1011.64*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1009.70     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1009.70     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1000     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 1000     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 953.5*     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.
River: arroyo_maquinas  Reach: casillas     RS: 953.5*     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.
River: arroyo_maquinas  Reach: casillas     RS: 949.*     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_maquinas  Reach: casillas     RS: 944.5*     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_maquinas  Reach: casillas     RS: 944.5*     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_maquinas  Reach: casillas     RS: 940     Profile: PF 1
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 935.5*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 931     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 931     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 927.333*     Profile: PF 1
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     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_maquinas  Reach: casillas     RS: 927.333*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 923.666*     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 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_maquinas  Reach: casillas     RS: 923.666*     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.
     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_maquinas  Reach: casillas     RS: 920     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 920     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 915.5*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 915.5*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 911.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 911.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 906.5*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 906.5*     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_maquinas  Reach: casillas     RS: 902.*     Profile: PF 1
     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_maquinas  Reach: casillas     RS: 902.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 897.5*     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:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 897.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 893     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 893     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
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            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_maquinas  Reach: casillas     RS: 888.333*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 888.333*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 883.666*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 883.666*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 879.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 879.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 874.333*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 874.333*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 869.666*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 869.666*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 865.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 865.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 860.333*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 860.333*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 855.666*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 855.666*     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_maquinas  Reach: casillas     RS: 851     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_maquinas  Reach: casillas     RS: 851     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_maquinas  Reach: casillas     RS: 845     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_maquinas  Reach: casillas     RS: 845     Profile: PF 1     Culv: Culvert #1
     Note:   The flow in the culvert is entirely supercritical.
River: arroyo_maquinas  Reach: casillas     RS: 845     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_maquinas  Reach: casillas     RS: 845     Profile: PF 2     Culv: Culvert #1
     Note:   The flow in the culvert is entirely supercritical.
River: arroyo_maquinas  Reach: casillas     RS: 834.5*     Profile: PF 1
     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_maquinas  Reach: casillas     RS: 834.5*     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_maquinas  Reach: casillas     RS: 831.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 831.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 827.5*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 827.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 824.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 824.*     Profile: PF 2
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     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 820.5*     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:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 820.5*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 817     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 817     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 812.75*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 812.75*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 808.5*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 808.5*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 804.25*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 804.25*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 800     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 800     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 795.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 795.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 790.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 790.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 785.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 785.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 780.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 780.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 775.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 775.*     Profile: PF 2
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 770.*     Profile: PF 1
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 770.*     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 765.*     Profile: PF 1
     Warning:The energy equation could not be balanced within the specified number of iterations.  The program used
critical depth
             for the water surface and continued on with the calculations.
     Warning:The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
cross sections.
     Warning:The 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:During the standard step iterations, when the assumed water surface was set equal to critical depth, the
calculated
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            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_maquinas  Reach: casillas     RS: 765.*     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_maquinas  Reach: casillas     RS: 760     Profile: PF 1
     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_maquinas  Reach: casillas     RS: 760     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_maquinas  Reach: casillas     RS: 755.*     Profile: PF 2
     Warning:Divided flow computed for this cross-section.
River: arroyo_maquinas  Reach: casillas     RS: 725.*     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_maquinas  Reach: casillas     RS: 684.444*     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_maquinas  Reach: casillas     RS: 680     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_maquinas  Reach: casillas     RS: 675.5*     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_maquinas  Reach: casillas     RS: 648.5*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 644     Profile: PF 1
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 644     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_maquinas  Reach: casillas     RS: 639.111*     Profile: PF 2
     Note:   Program found supercritical flow starting at this cross section.
River: arroyo_maquinas  Reach: casillas     RS: 634.222*     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_maquinas  Reach: casillas     RS: 614.666*     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_maquinas  Reach: casillas     RS: 604.888*     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_maquinas  Reach: casillas     RS: 600     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 480     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_maquinas  Reach: casillas     RS: 480     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
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            program defaulted to critical depth.
River: arroyo_maquinas  Reach: casillas     RS: 475.555*     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_maquinas  Reach: casillas     RS: 475.555*     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_maquinas  Reach: casillas     RS: 471.111*     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_maquinas  Reach: casillas     RS: 471.111*     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_maquinas  Reach: casillas     RS: 466.666*     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_maquinas  Reach: casillas     RS: 466.666*     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_maquinas  Reach: casillas     RS: 462.222*     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_maquinas  Reach: casillas     RS: 462.222*     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_maquinas  Reach: casillas     RS: 457.777*     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_maquinas  Reach: casillas     RS: 457.777*     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_maquinas  Reach: casillas     RS: 453.333*     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_maquinas  Reach: casillas     RS: 453.333*     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_maquinas  Reach: casillas     RS: 448.888*     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_maquinas  Reach: casillas     RS: 448.888*     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_maquinas  Reach: casillas     RS: 444.444*     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_maquinas  Reach: casillas     RS: 444.444*     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_maquinas  Reach: casillas     RS: 440     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_maquinas  Reach: casillas     RS: 440     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_maquinas  Reach: casillas     RS: 435.555*     Profile: PF 1
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 435.555*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 417.777*     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_maquinas  Reach: casillas     RS: 408.888*     Profile: PF 2
     Note:   Hydraulic jump has occurred between this cross section and the previous upstream section.
River: arroyo_maquinas  Reach: casillas     RS: 336.888*     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_maquinas  Reach: casillas     RS: 336.888*     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_maquinas  Reach: casillas     RS: 334     Profile: PF 1
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     Warning:The energy equation could not be balanced within the specified number of iterations.  The program used
critical depth
             for the water surface and continued on with the calculations.
     Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the
calculated
             water surface came back below critical depth.  This indicates that there is not a valid subcritical
answer.  The
             program defaulted to critical depth.
River: arroyo_maquinas  Reach: casillas     RS: 334     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_maquinas  Reach: casillas     RS: 195.555*     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_maquinas  Reach: casillas     RS: 173.333*     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_maquinas  Reach: casillas     RS: 40     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
River: arroyo_maquinas  Reach: casillas     RS: 40     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.
     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.
     Note:   Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.
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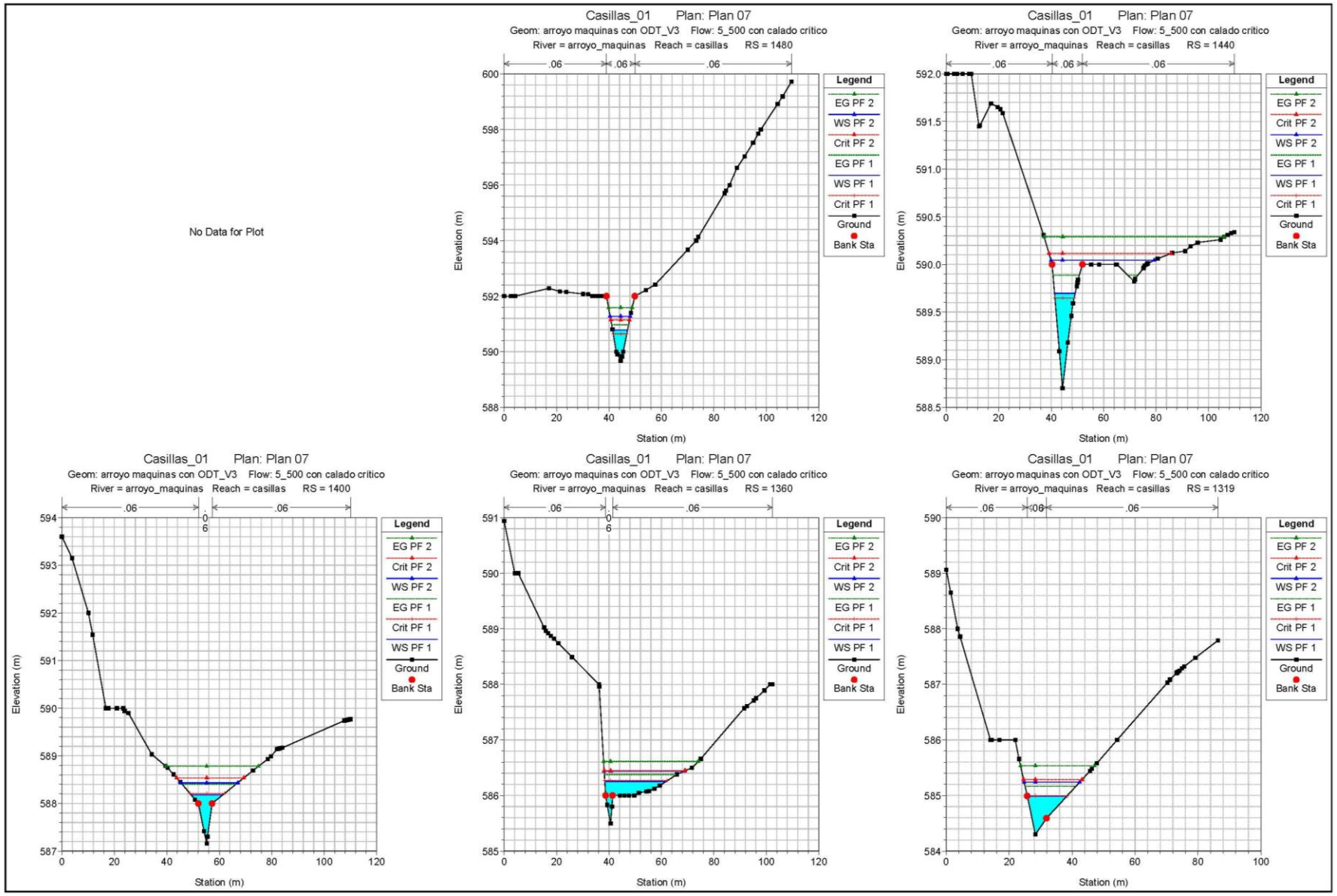
APÉNDICE 2.C. SECCIONES TRANSVERSALES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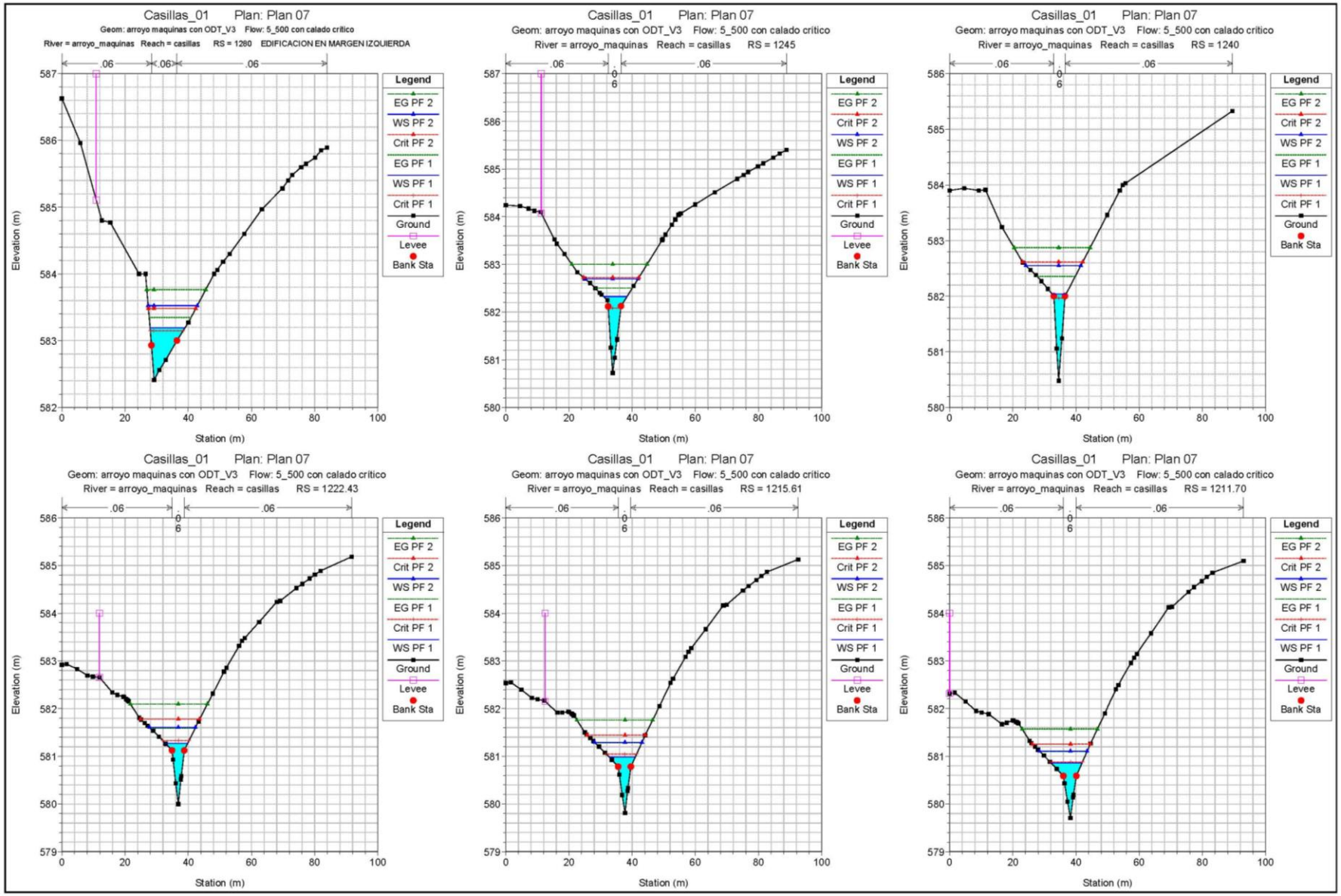
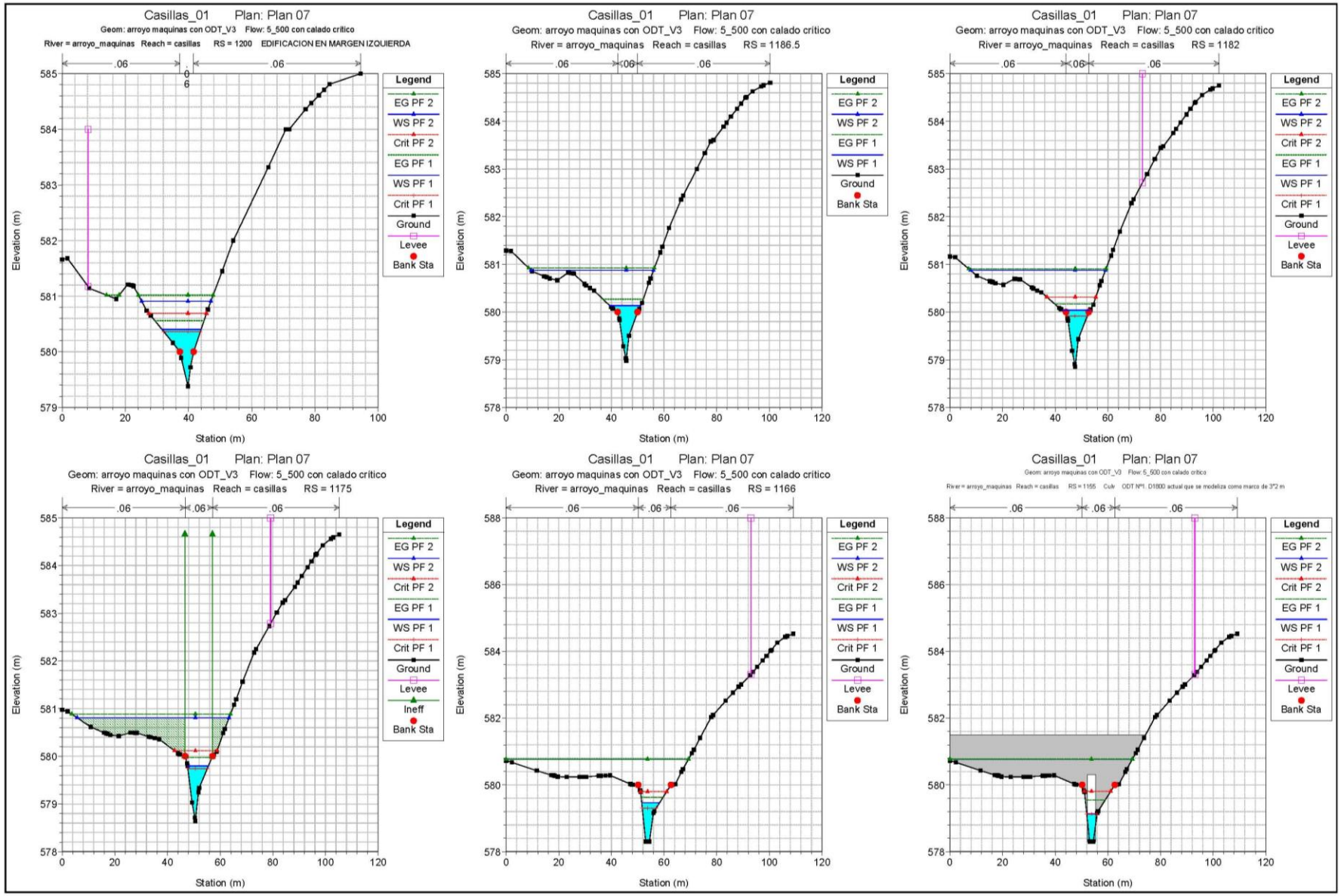
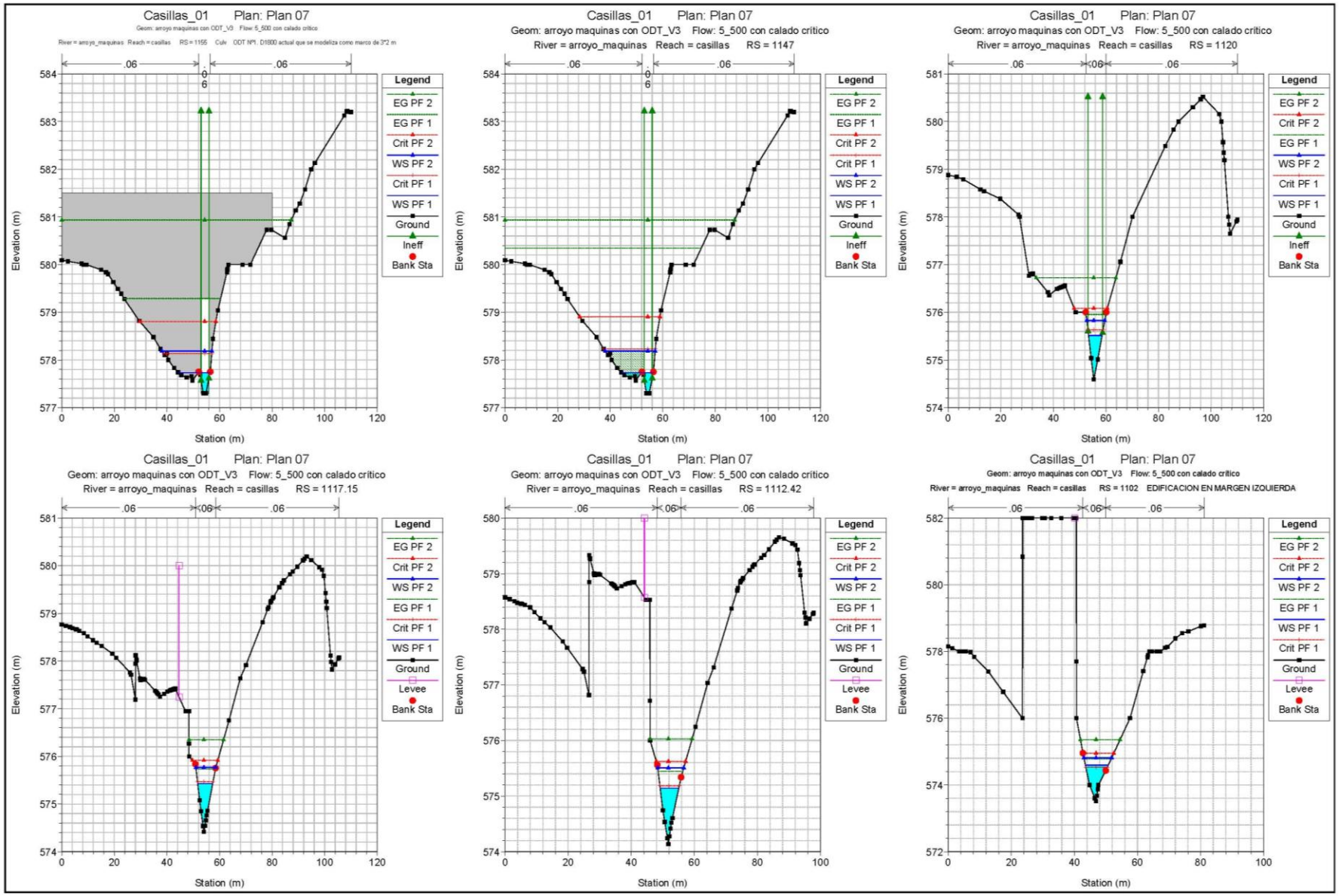
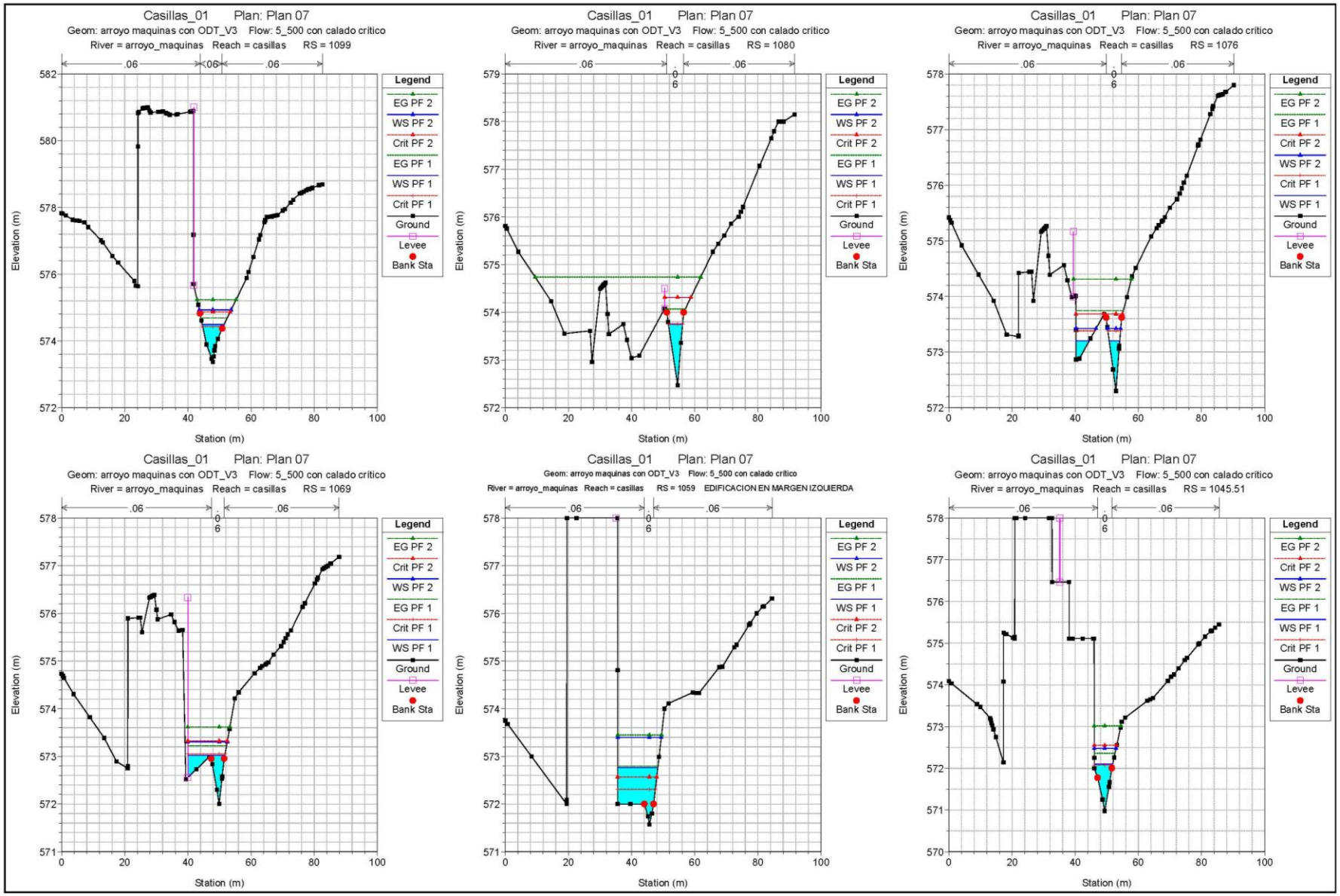
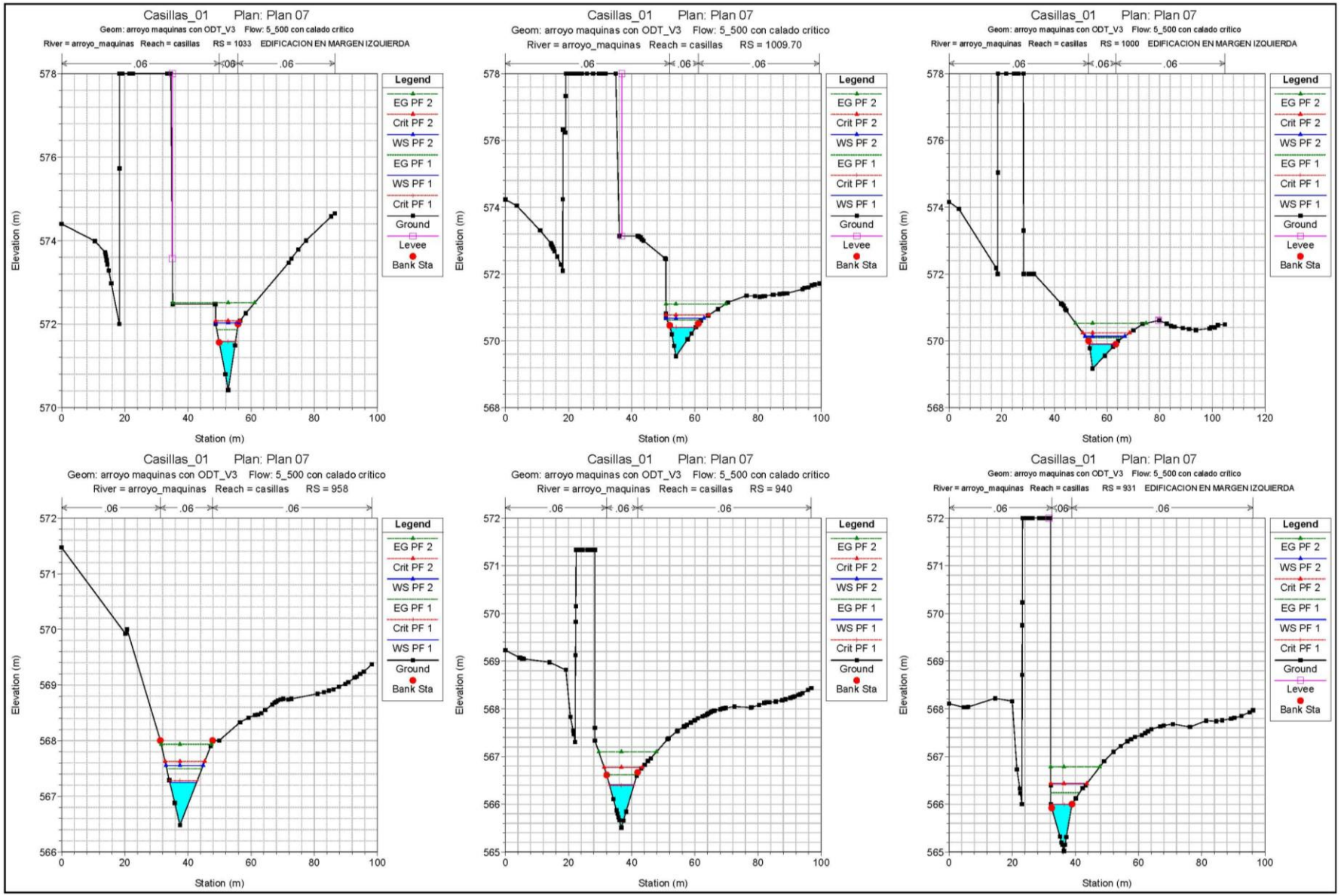
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1480
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1440
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1400
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1360
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1319
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

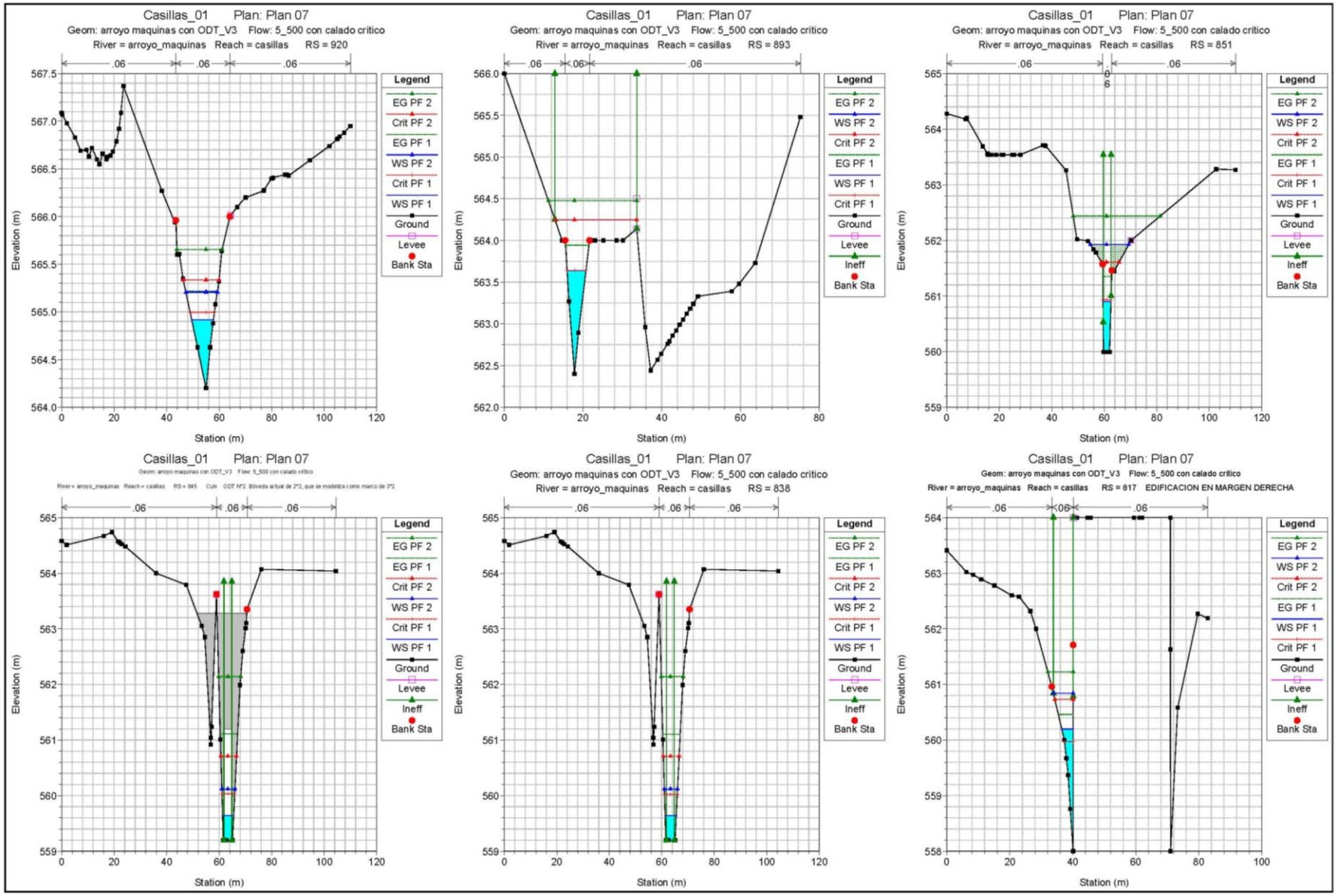

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1280 EDIFICACION EN MARGEN IZQUIERDA
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1245
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1240
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1222.43
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1215.61
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1211.70
Legend
EG PF 2
Crit PF 2
WS PF 2
EG PF 1
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

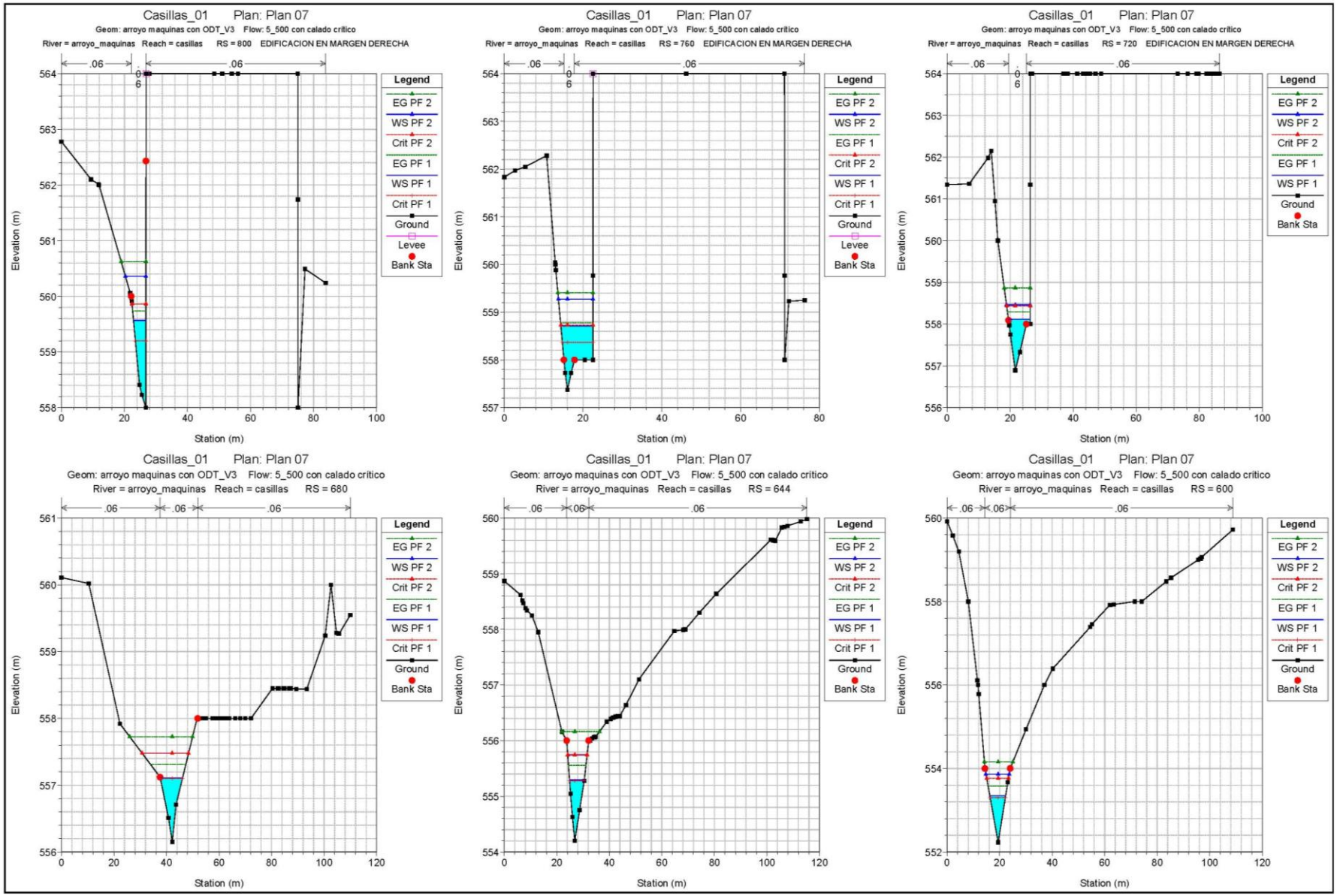

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1200 EDIFICACION EN MARGEN IZQUIERDA
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1186.5
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1182
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1175
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1166
Casillas_01 Plan: Plan 07
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

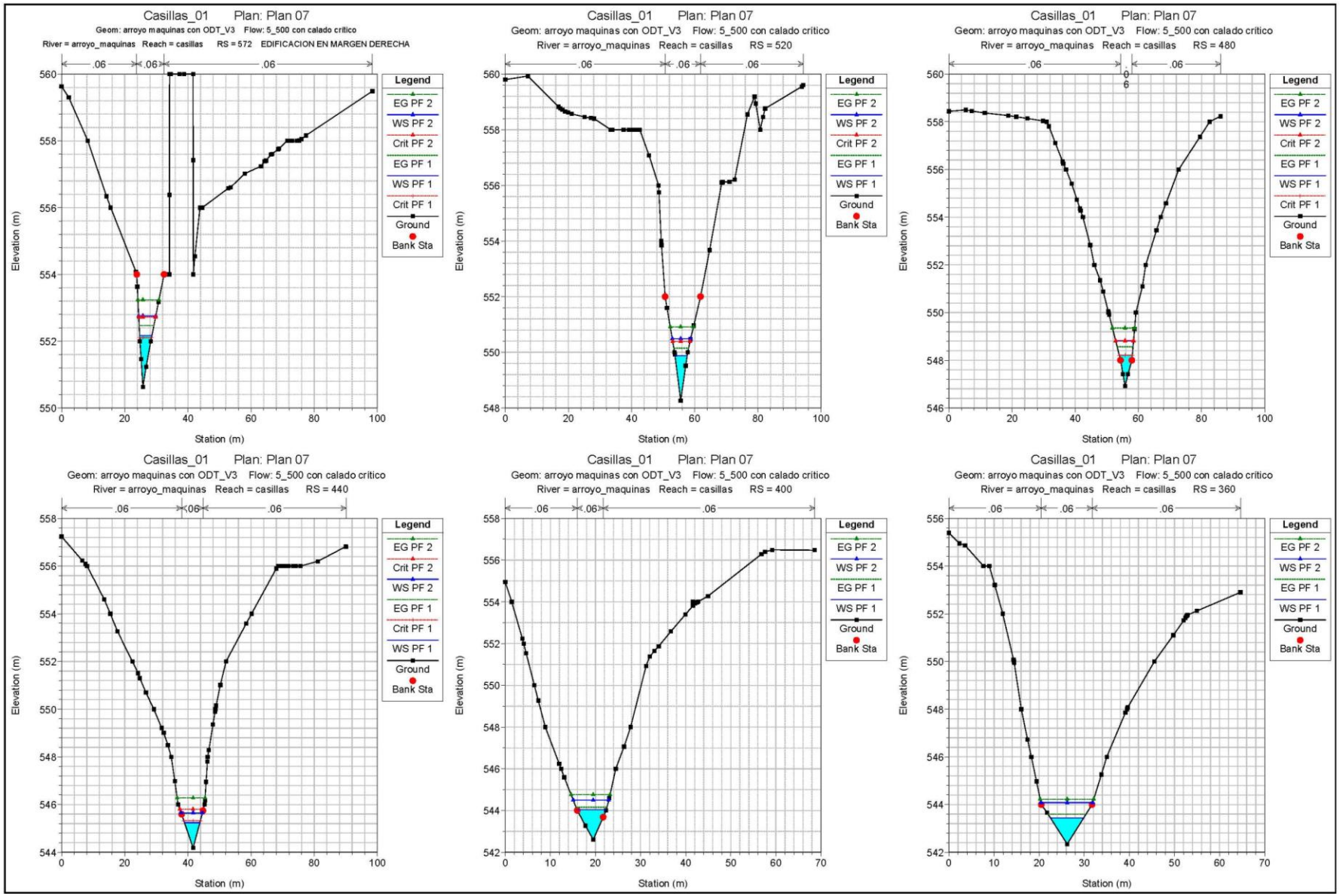

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1155
River = arroyo_maquinas Reach = casillas RS = 1147
River = arroyo_maquinas Reach = casillas RS = 1120
River = arroyo_maquinas Reach = casillas RS = 1117.15
River = arroyo_maquinas Reach = casillas RS = 1112.42
River = arroyo_maquinas Reach = casillas RS = 1102 EDIFICACION EN MARGEN IZQUIERDA
Elevation (m)
Station (m)
Legend
EG PF 2
EG PF 1
Crit PF 2
WS PF 2
Crit PF 1
WS PF 1
Ground
Ineff
Levee
Bank Sta

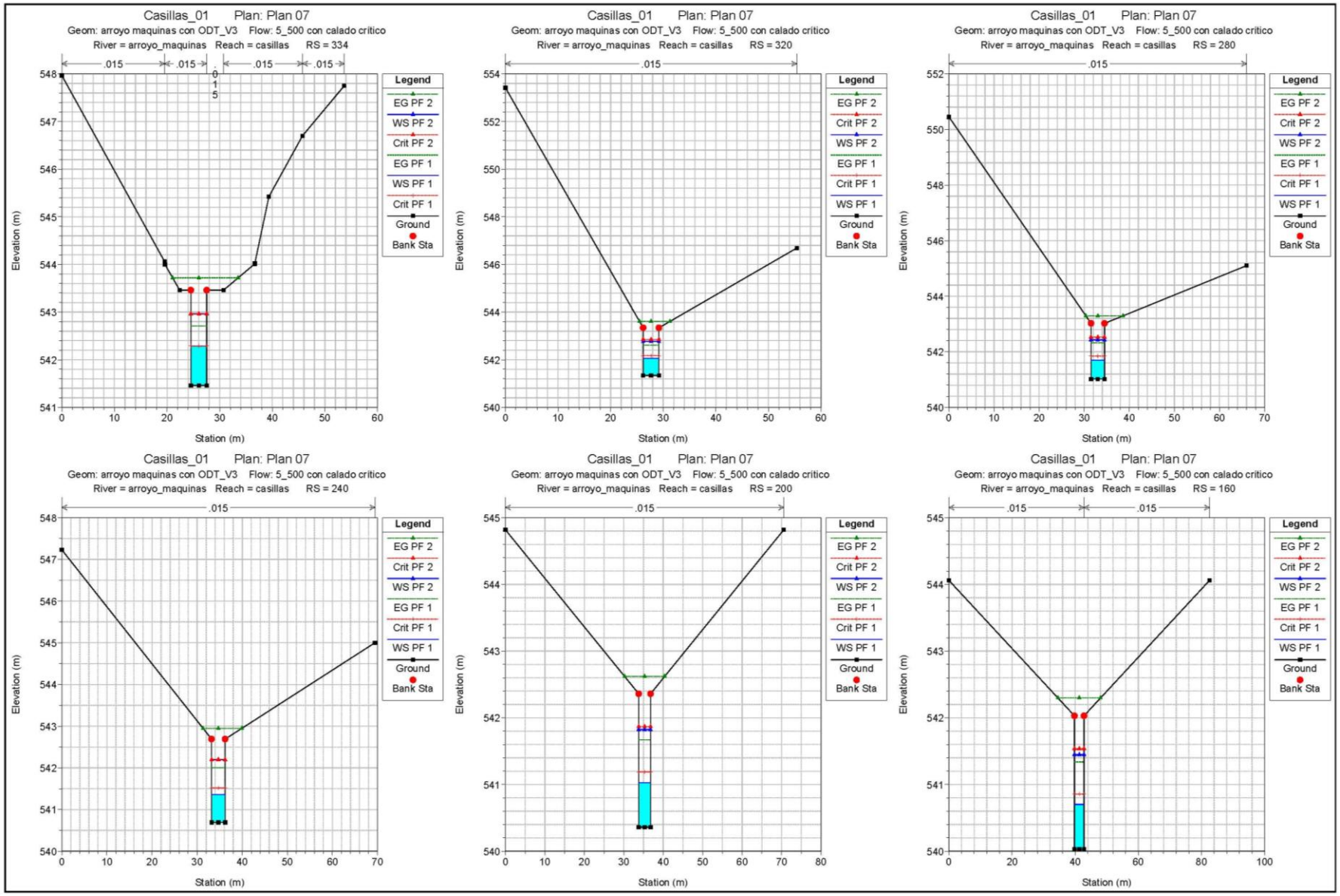

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1099
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1080
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1076
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1069
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1059 EDIFICACION EN MARGEN IZQUIERDA
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1045.51

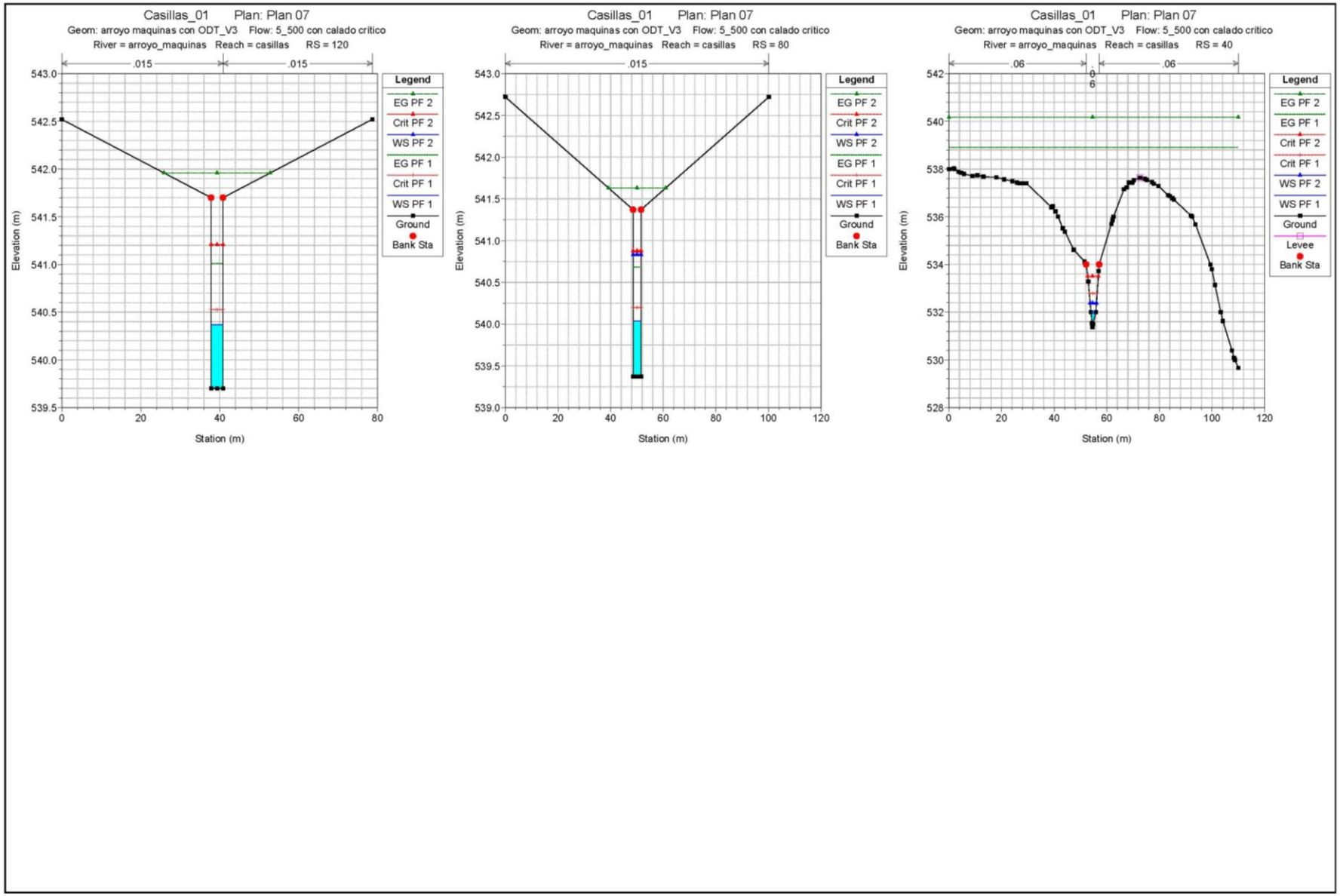

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1033 EDIFICACION EN MARGEN IZQUIERDA
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1009.70
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 1000 EDIFICACION EN MARGEN IZQUIERDA
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 958
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 940
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 931 EDIFICACION EN MARGEN IZQUIERDA
Legend
EG PF 2
Crit PF 2
WS PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
.06


Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 920
Legend
EG PF 2
Crit PF 2
EG PF 1
WS PF 2
Crit PF 1
WS PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 893
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 851
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 845 Culv ODT Nº2. Bóveda actual de 2*2, que se modeliza como marco de 3*2
Legend
EG PF 2
EG PF 1
Crit PF 2
WS PF 2
Crit PF 1
WS PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 838
Legend
EG PF 2
EG PF 1
Crit PF 2
WS PF 2
Crit PF 1
WS PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 817 EDIFICACION EN MARGEN DERECHA
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

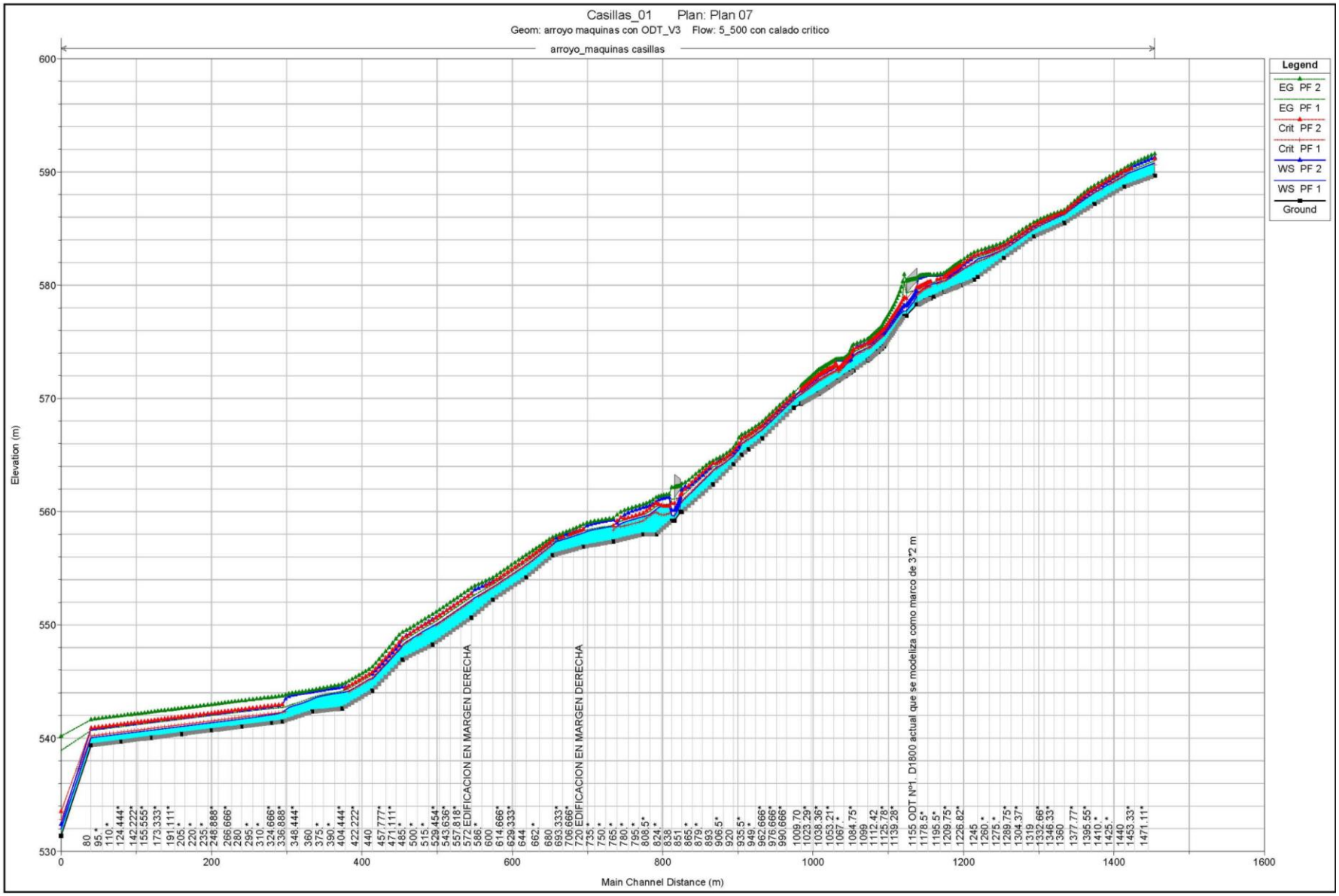

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 800 EDIFICACION EN MARGEN DERECHA
Elevation (m)
Station (m)
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 760 EDIFICACION EN MARGEN DERECHA
Elevation (m)
Station (m)
Legend
EG PF 2
WS PF 2
EG PF 1
Crit PF 2
WS PF 1
Crit PF 1
Ground
Levee
Bank Sta
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 720 EDIFICACION EN MARGEN DERECHA
Elevation (m)
Station (m)
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Ground
Bank Sta
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 680
Elevation (m)
Station (m)
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 644
Elevation (m)
Station (m)
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 600
Elevation (m)
Station (m)
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta


Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 572 EDIFICACION EN MARGEN DERECHA
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 520
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 480
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 440
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 400
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 360
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (m)
Station (m)

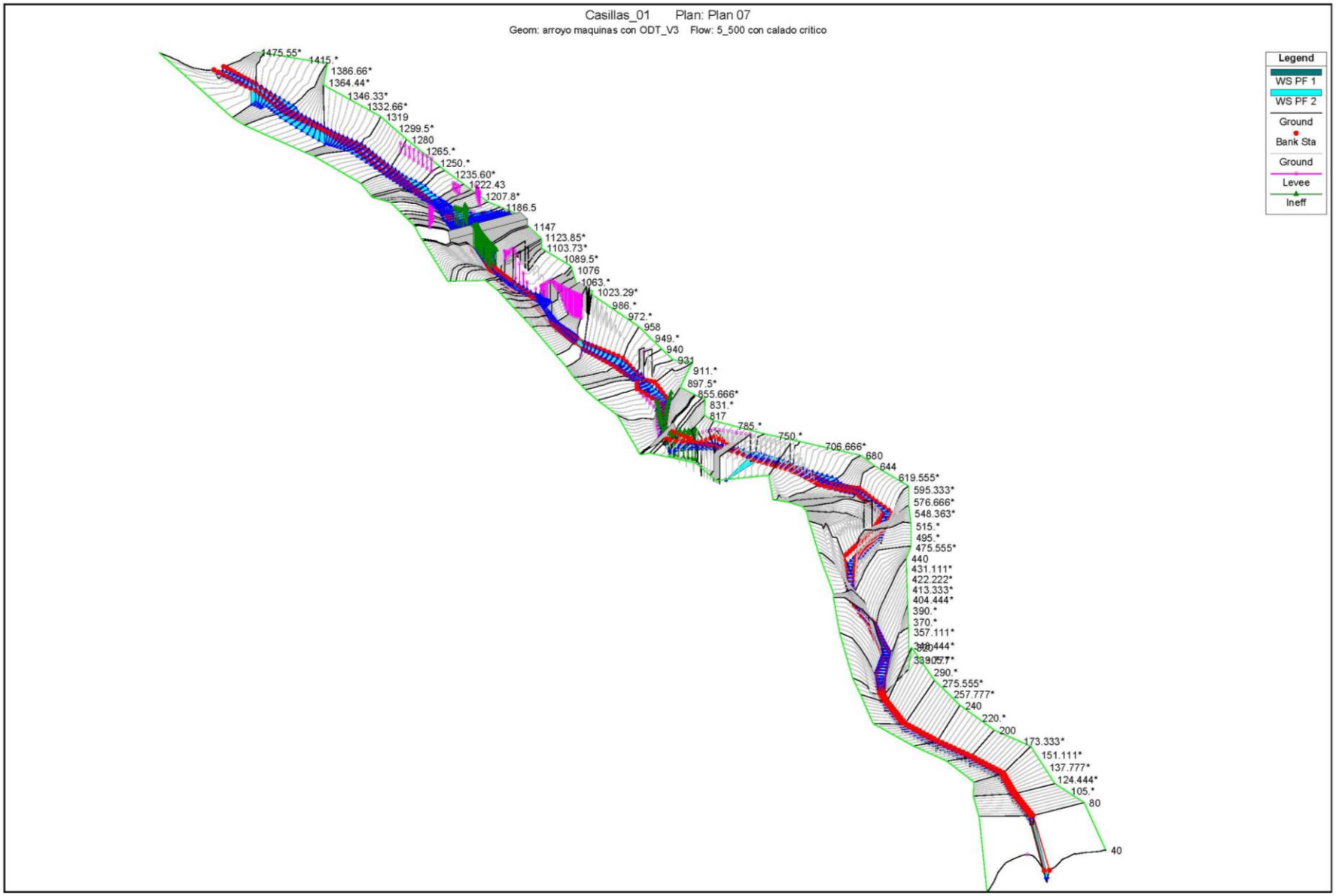

Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 334
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 320
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 280
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 240
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 200
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 160
Legend
EG PF 2
WS PF 2
Crit PF 2
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (m)
Station (m)


Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 120
.015
.015
Legend
EG PF 2
Crit PF 2
WS PF 2
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 80
.015
Legend
EG PF 2
Crit PF 2
WS PF 2
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (m)
Station (m)
Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
River = arroyo_maquinas Reach = casillas RS = 40
.06
.06
Legend
EG PF 2
EG PF 1
Crit PF 2
Crit PF 1
WS PF 2
WS PF 1
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

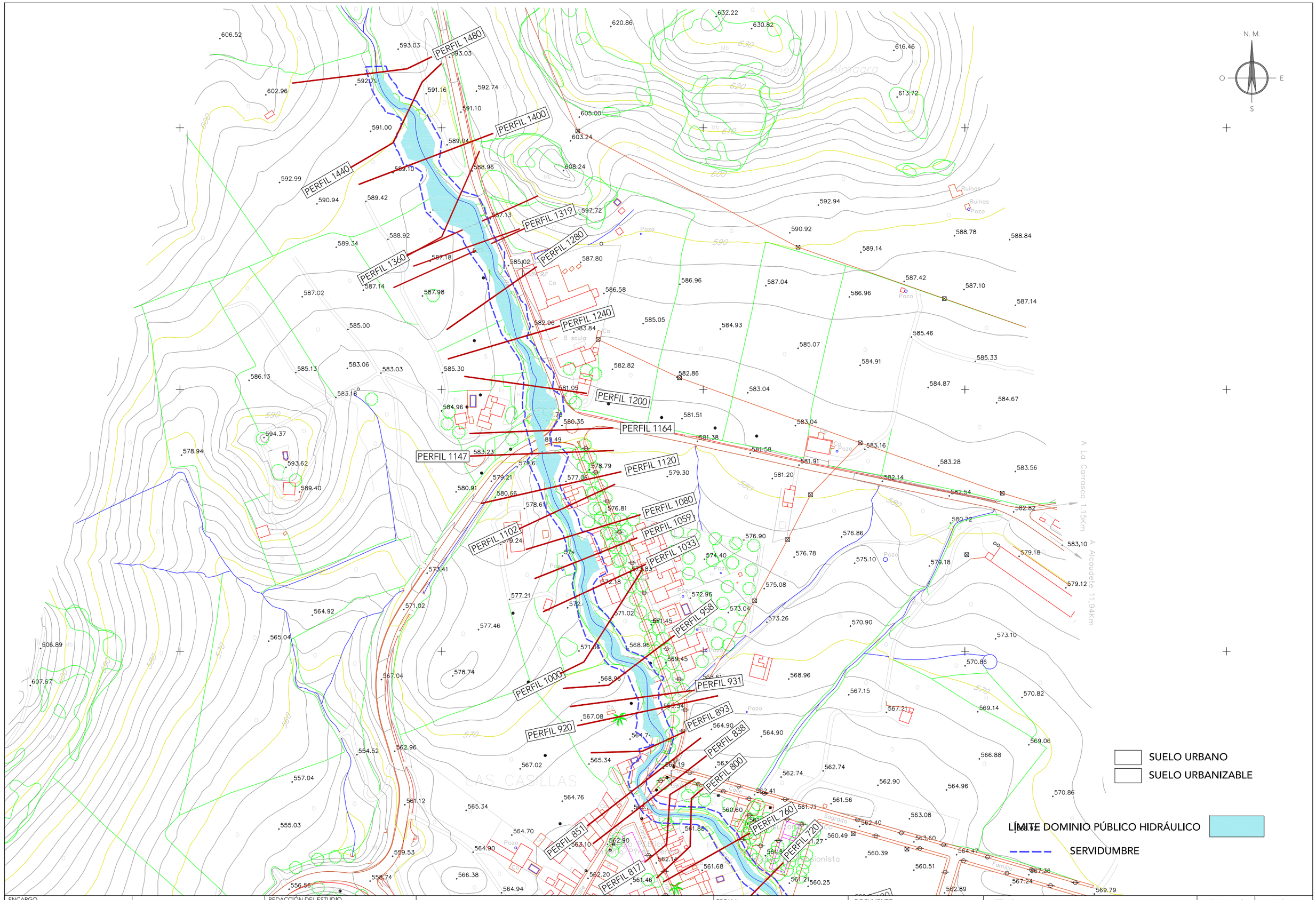
APÉNDICE 2.D. PERFIL LONGITUDINAL


Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
arroyo_maquinas casillas
Legend
EG PF 2
EG PF 1
Crit PF 2
Crit PF 1
WS PF 2
WS PF 1
Ground
Elevation (m)
Main Channel Distance (m)
EDIFICACION EN MARGEN DERECHA
EDIFICACION EN MARGEN DERECHA
ODT Nº1. D1800 actual que se modeliza como marco de 3*2 m

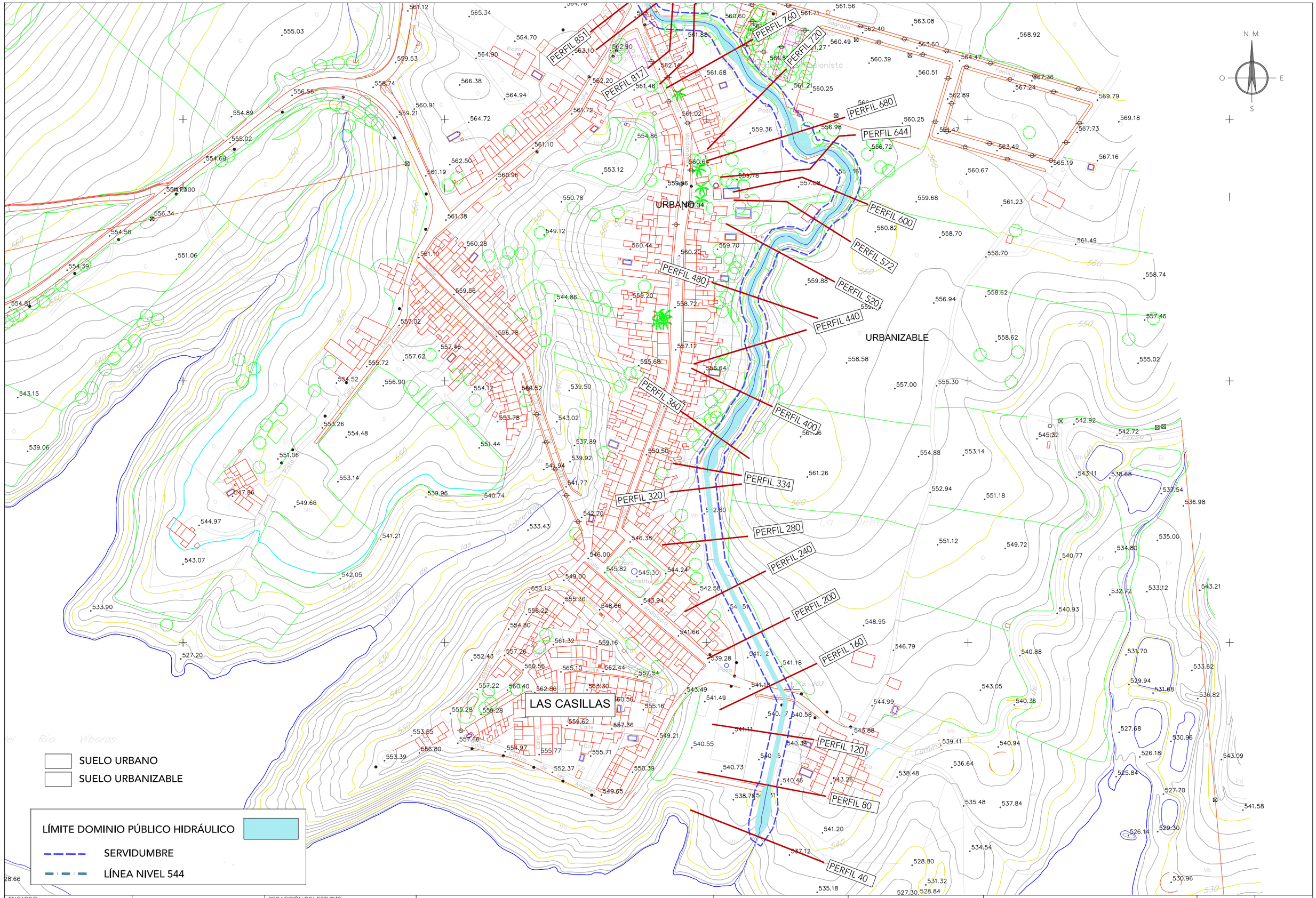
APÉNDICE 2.E. PERSPECTIVA DE LA LLANURA DE INUNDACIÓN


Casillas_01 Plan: Plan 07
Geom: arroyo maquinas con ODT_V3 Flow: 5_500 con calado crítico
Legend
WS PF 1
WS PF 2
Ground
Bank Sta
Ground
Levee
Ineff
1475.55*
1415.*
1386.66*
1364.44*
1346.33*
1332.66*
1319
1299.5*
1280
1265.*
1250.*
1235.60*
1222.43
1207.8*
1186.5
1147
1123.85*
1103.73*
1089.5*
1076
1063.*
1023.29*
986.*
972.*
958
949.*
940
931
911.*
897.5*
855.666*
831.*
817
785.*
750.*
706.666*
680
644
619.555*
595.333*
576.666*
548.363*
515.*
495.*
475.555*
440
431.111*
422.222*
413.333*
404.444*
390.*
370.*
357.111*
290.*
275.555*
257.777*
240
220.*
200
173.333*
151.111*
137.777*
124.444*
105.*
80
40

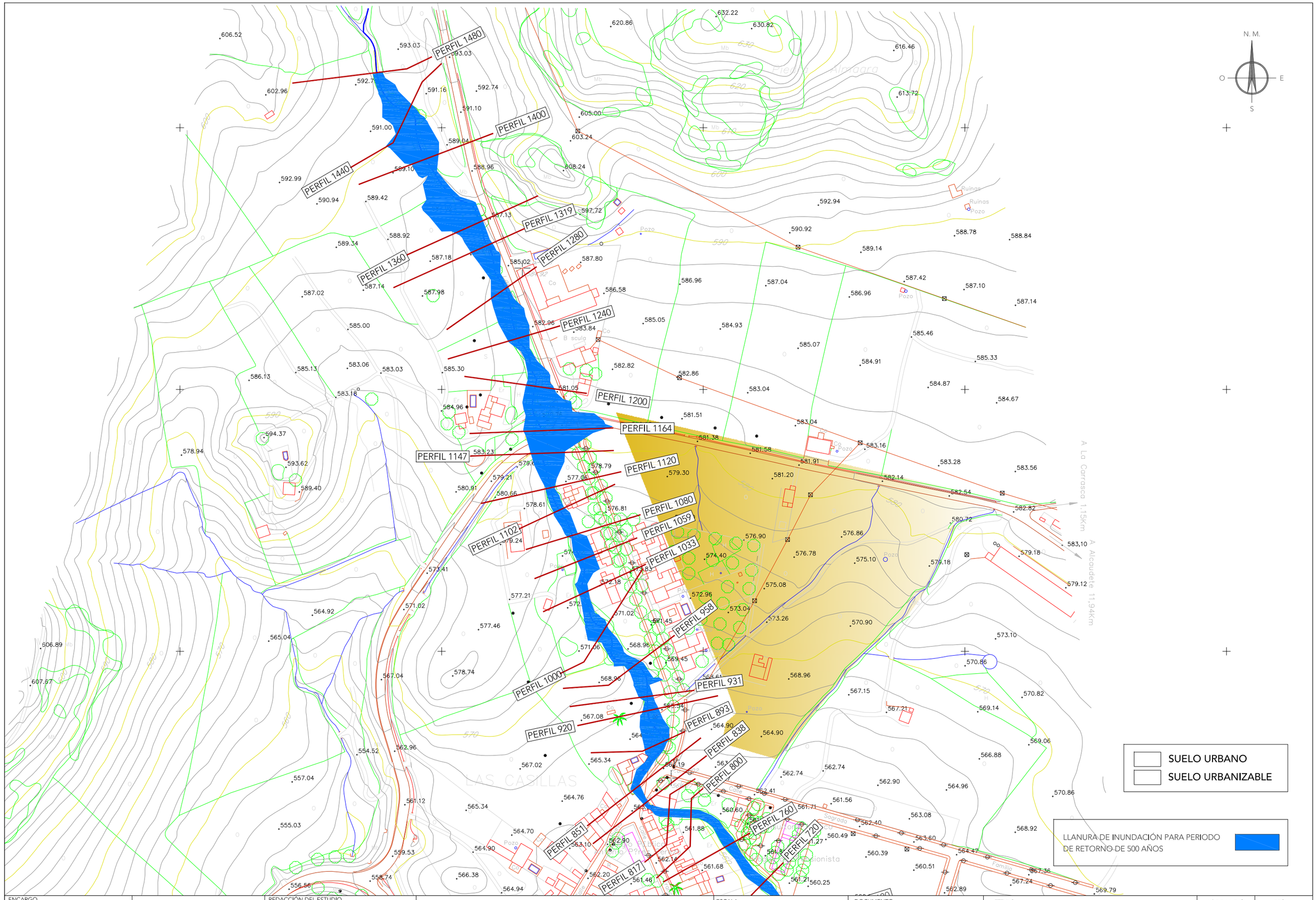
APÉNDICE 2.F. PLANOS



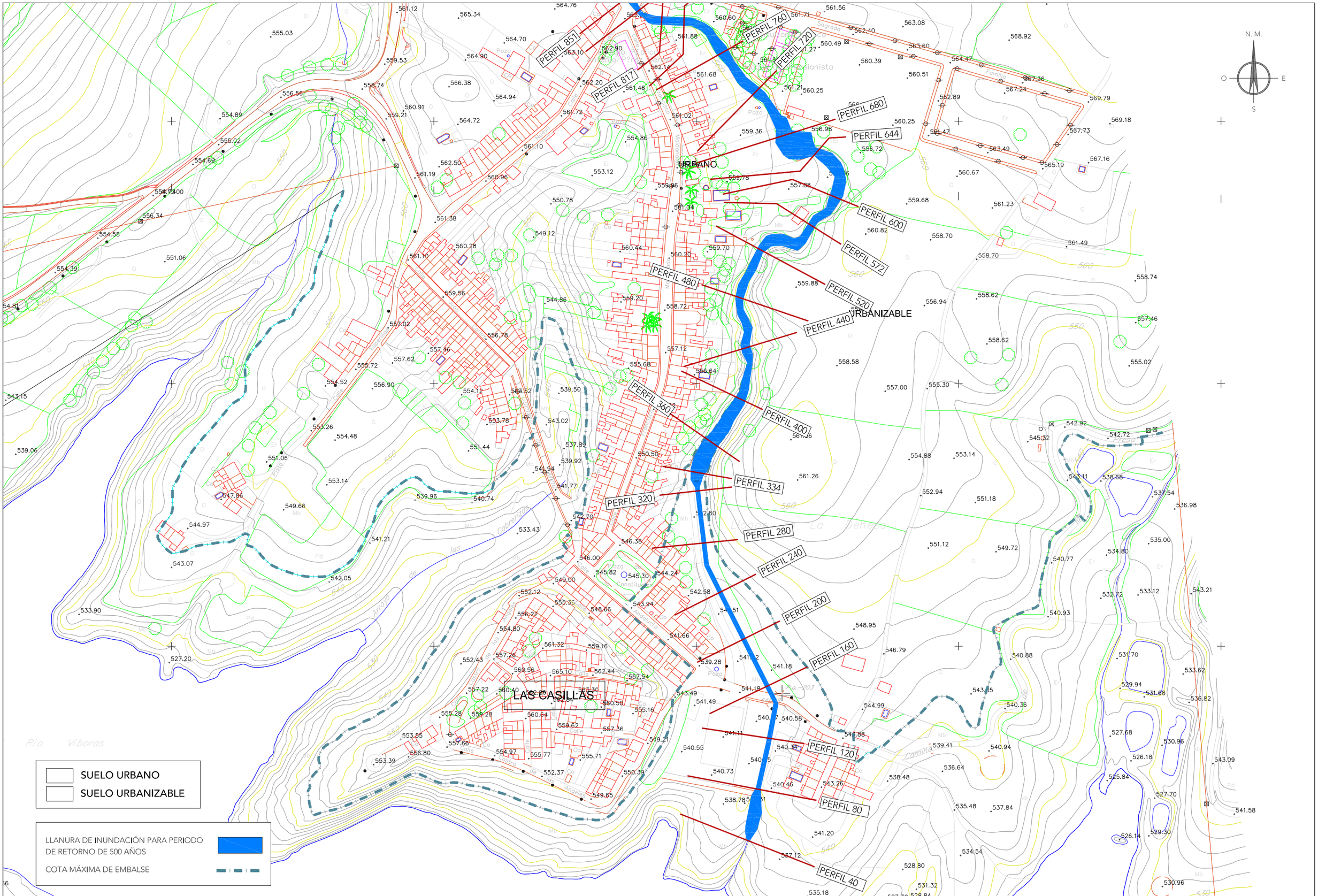
ENCARGO		REDACCIÓN DEL ESTUDIO		ESCALA	DOCUMENTO	TITULO	Nº DE ANEJO	FECHA
PLANEO	UNGESA	LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C.Y P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	1:2.500	PLANOS	DELIMITACIÓN D.P.H.	2 PLANO Nº 1	AGOSTO 2013 1 DE 2



ENCARGO		REDACCIÓN DEL ESTUDIO		ESCALA	DOCUMENTO	TITULO	Nº DE ANEJO	FECHA
PLANEO	UNGESA	LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	1:2.500	PLANOS	DELIMITACIÓN D.P.H.	2 PLANO Nº 1	AGOSTO 2013 2 DE 2



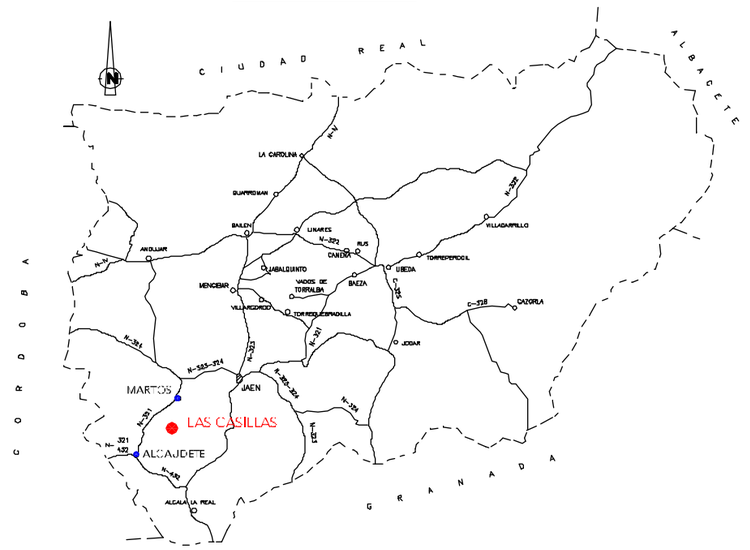
ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ JUGUERA, INGENIERO DE CAMINOS C.Y P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	ESCALA: 1:2.500	DOCUMENTO: PLANOS	TITULO: LLANURA DE INUNDACIÓN PARA T500 AÑOS	Nº DE ANEJO: 2 PLANO Nº 2 / FECHA: AGOSTO 2013 / 1 DE 2

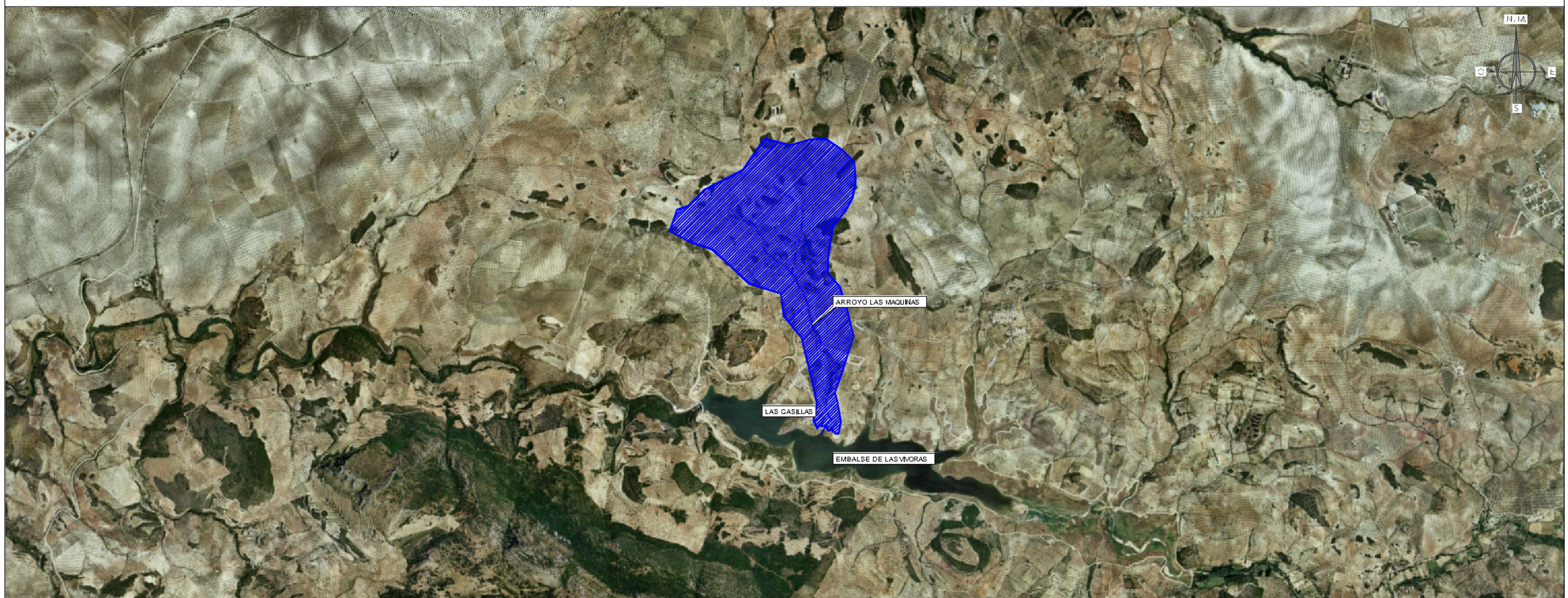


ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ JUGUERA, INGENIERO DE CAMINOS C.Y.P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	ESCALA: 1:2.500	DOCUMENTO: PLANOS	TITULO: LLANURA DE INUNDACIÓN PARA T500 AÑOS	Nº DE ANEJO: 2 PLANO Nº 2	FECHA: AGOSTO 2013 — 2 DE 2

DOCUMENTO NÚMERO 2. PLANOS

PROVINCIA DE JAÉN





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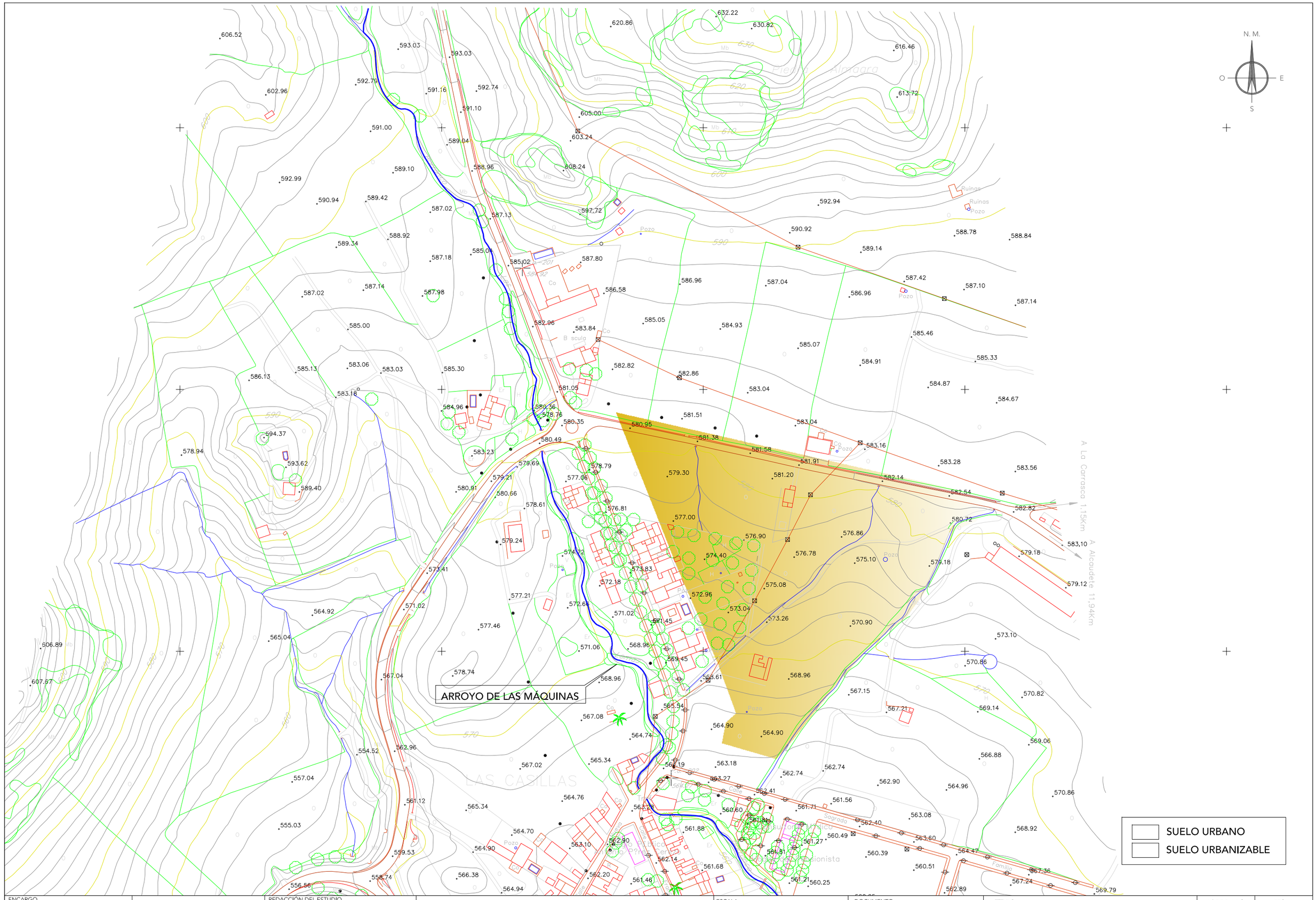

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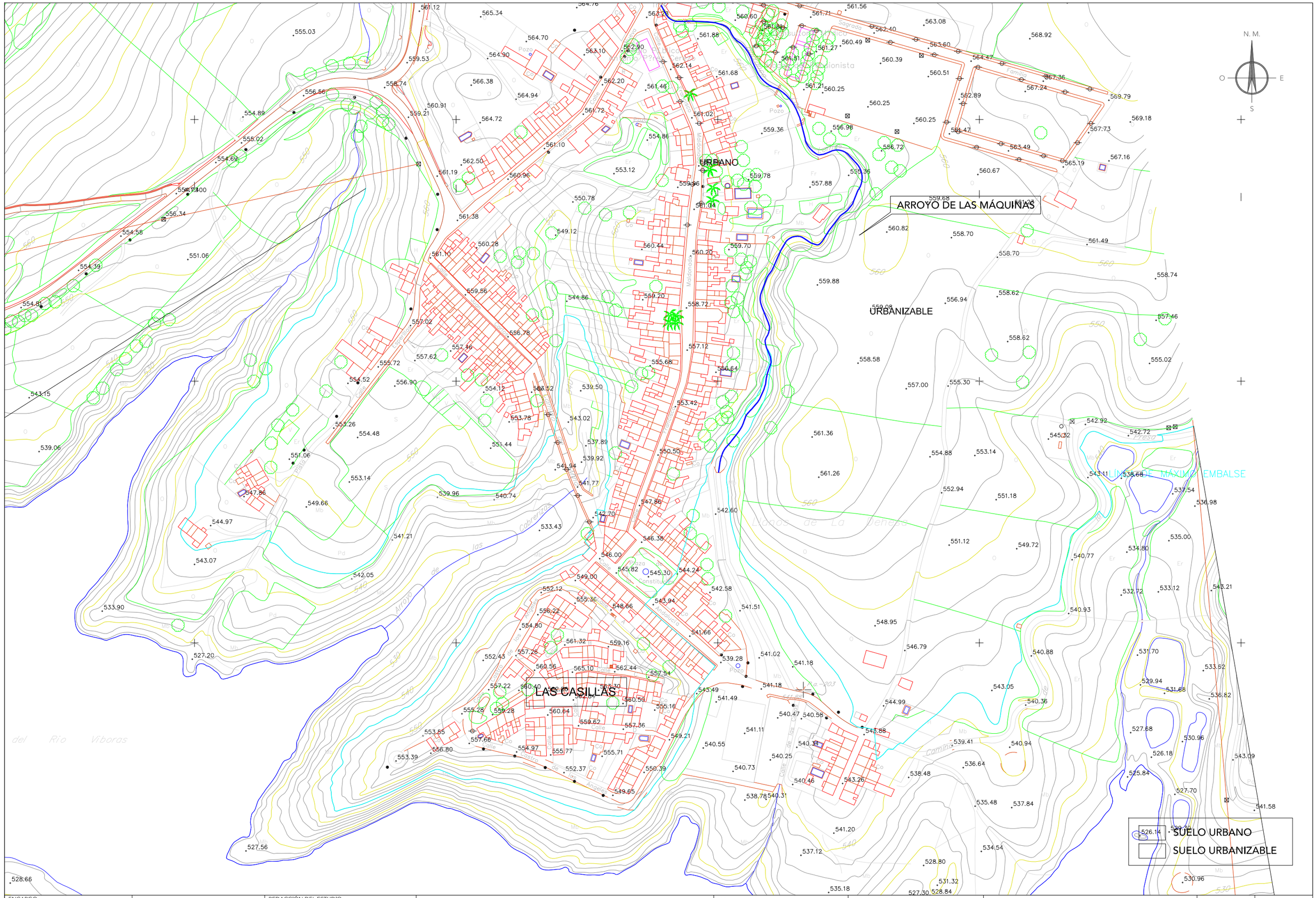
PLANEO	UNGESA	LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	1:2.500	PLANOS	TOPOGRAFÍA Y CLASIFICACIÓN DEL SUELO	02	AGOSTO 2013 1 DE 2



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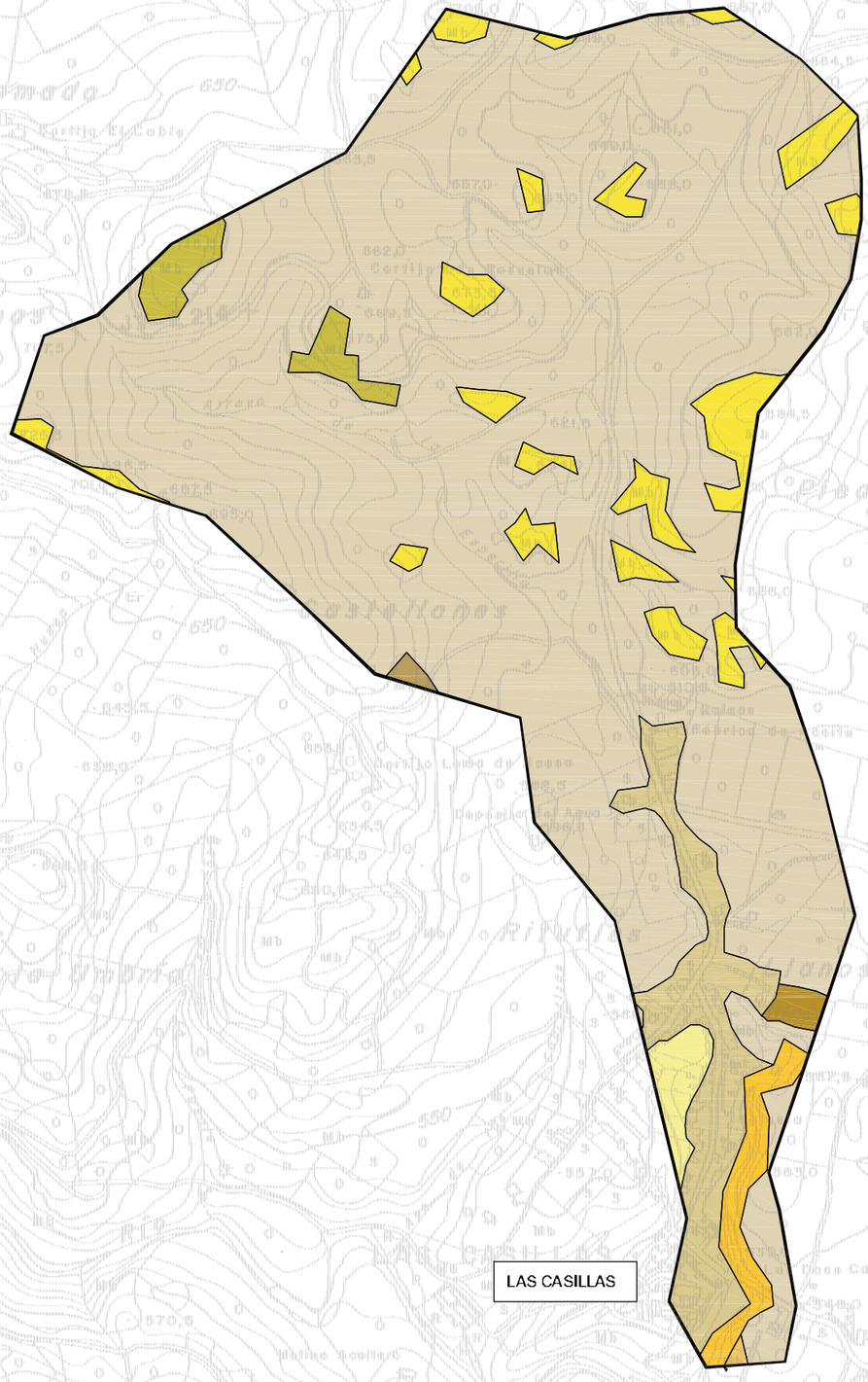
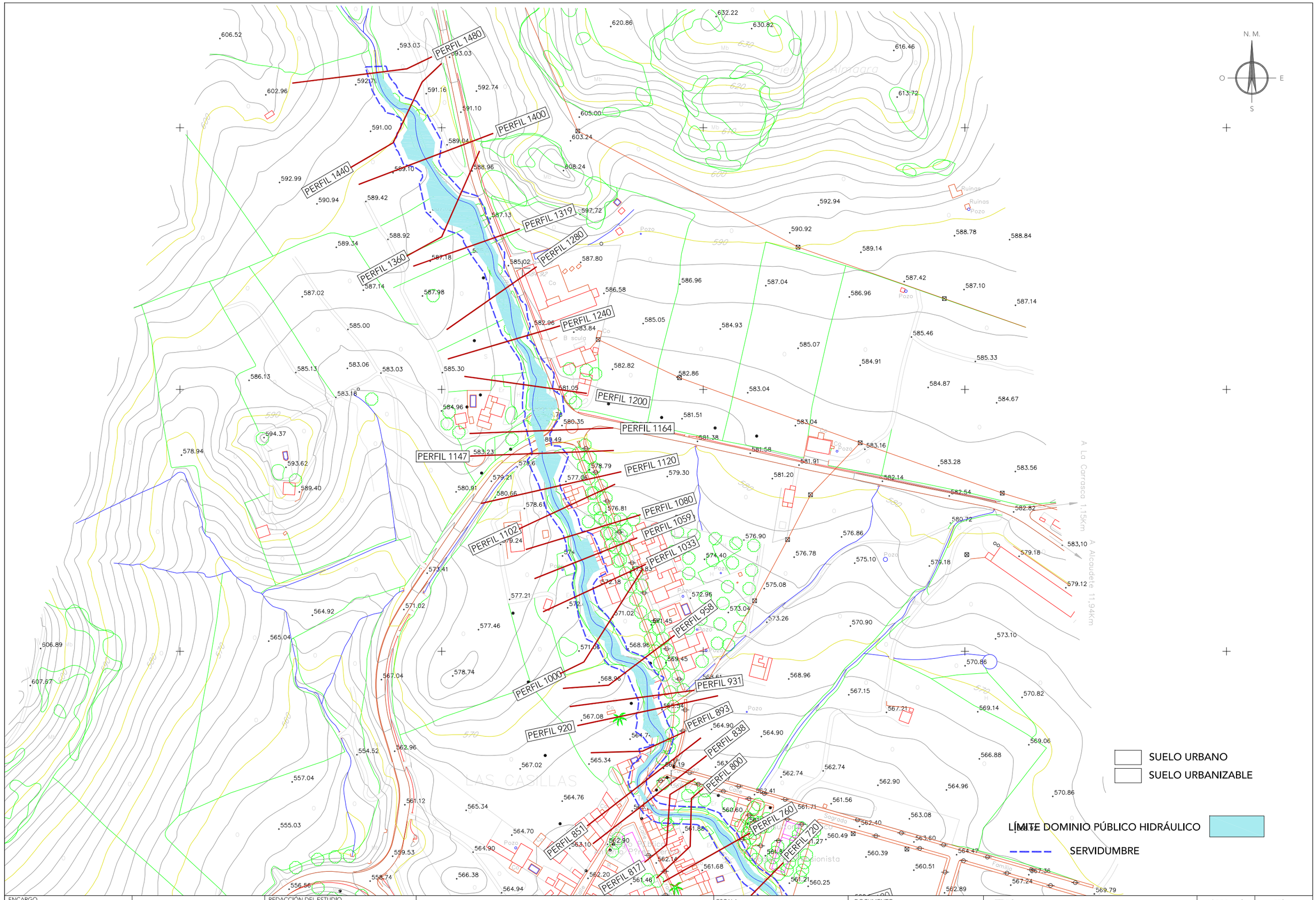


- CULTIVOS LEÑOSOS EN SECANO: OLIVAR
- EQUIPAMIENTO DEPORTIVO Y RECREATIVO
- MATORRAL DENSO
- MATORRAL DENSO ARBOLADO: QUERCINEAS DISPERSAS
- MATORRAL DISPERSO CON PASTIZAL
- OTROS CULTIVOS LEÑOSOS EN SECANO
- PASTIZAL CONTINUO
- RIOS Y CAUCES NAT.:OTRAS FORM. RIPARIAS
- TEJIDO URBANO

ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ JUGUERA, INGENIERO DE CAMINOS	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	ESCALA: 1:25.000	DOCUMENTO: PLANOS	TÍTULO: CUENCA Y USOS DEL SUELO	Nº DE PLANO: 03	FECHA: AGOSTO 2013 / 1 DE 1



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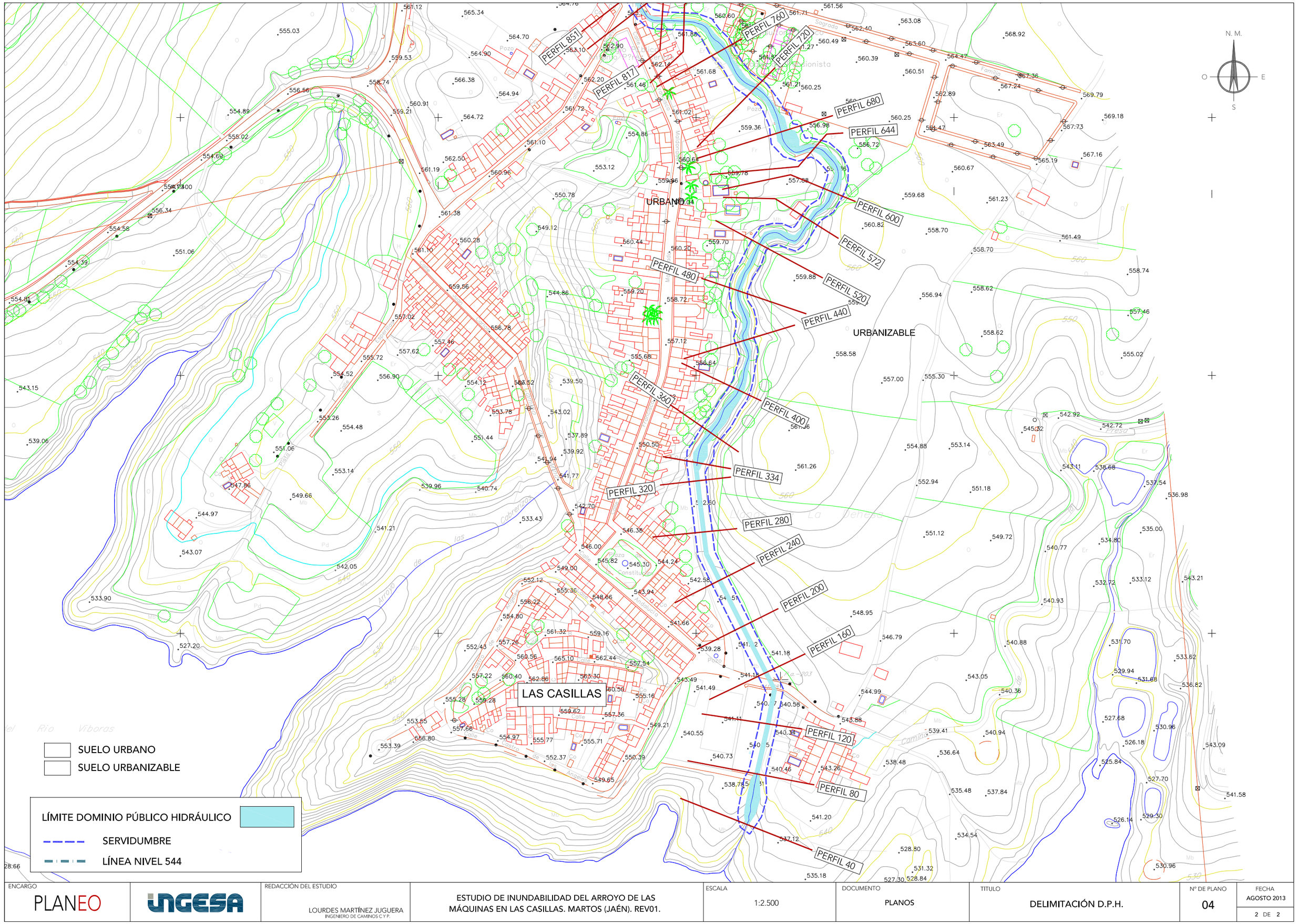
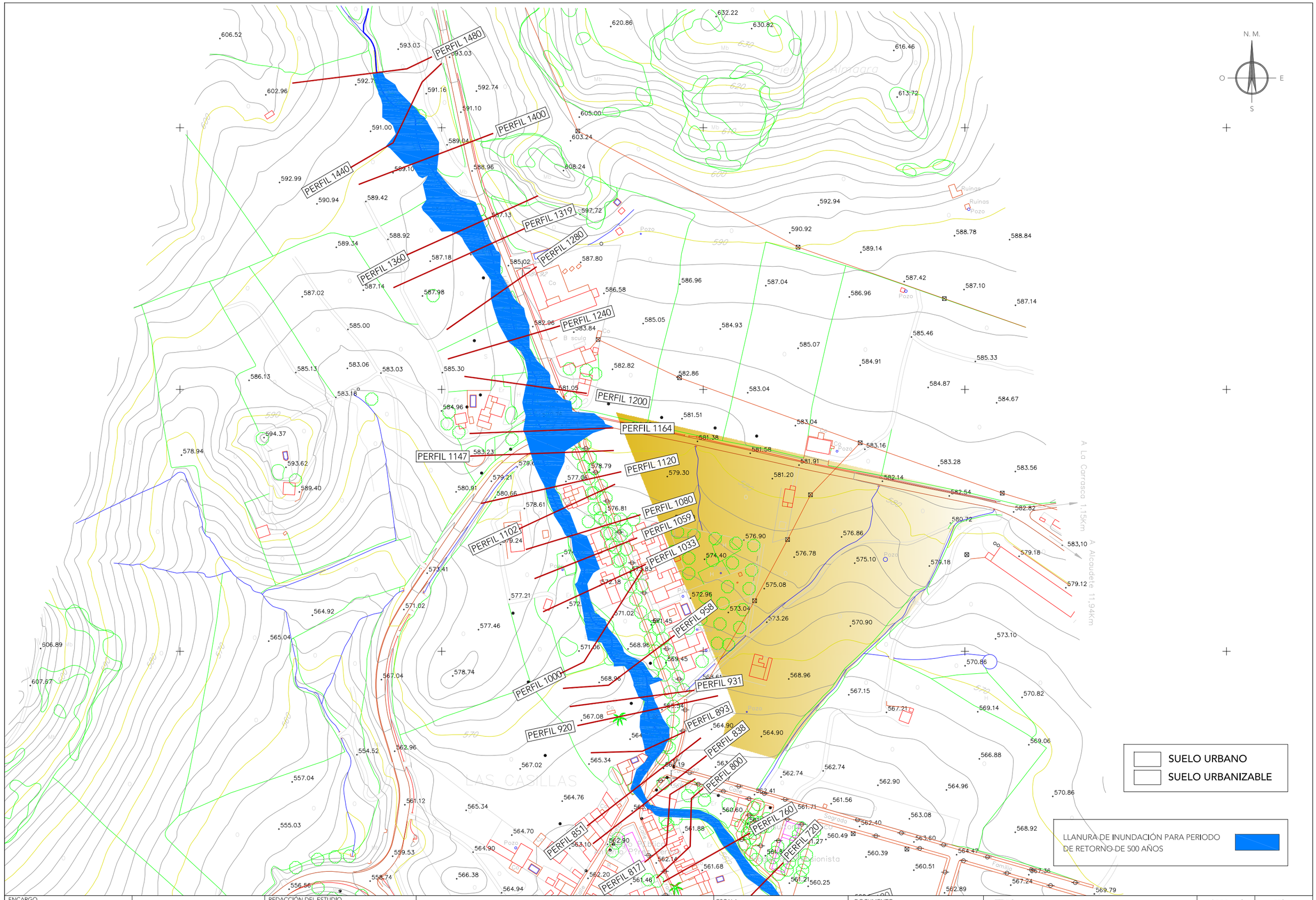
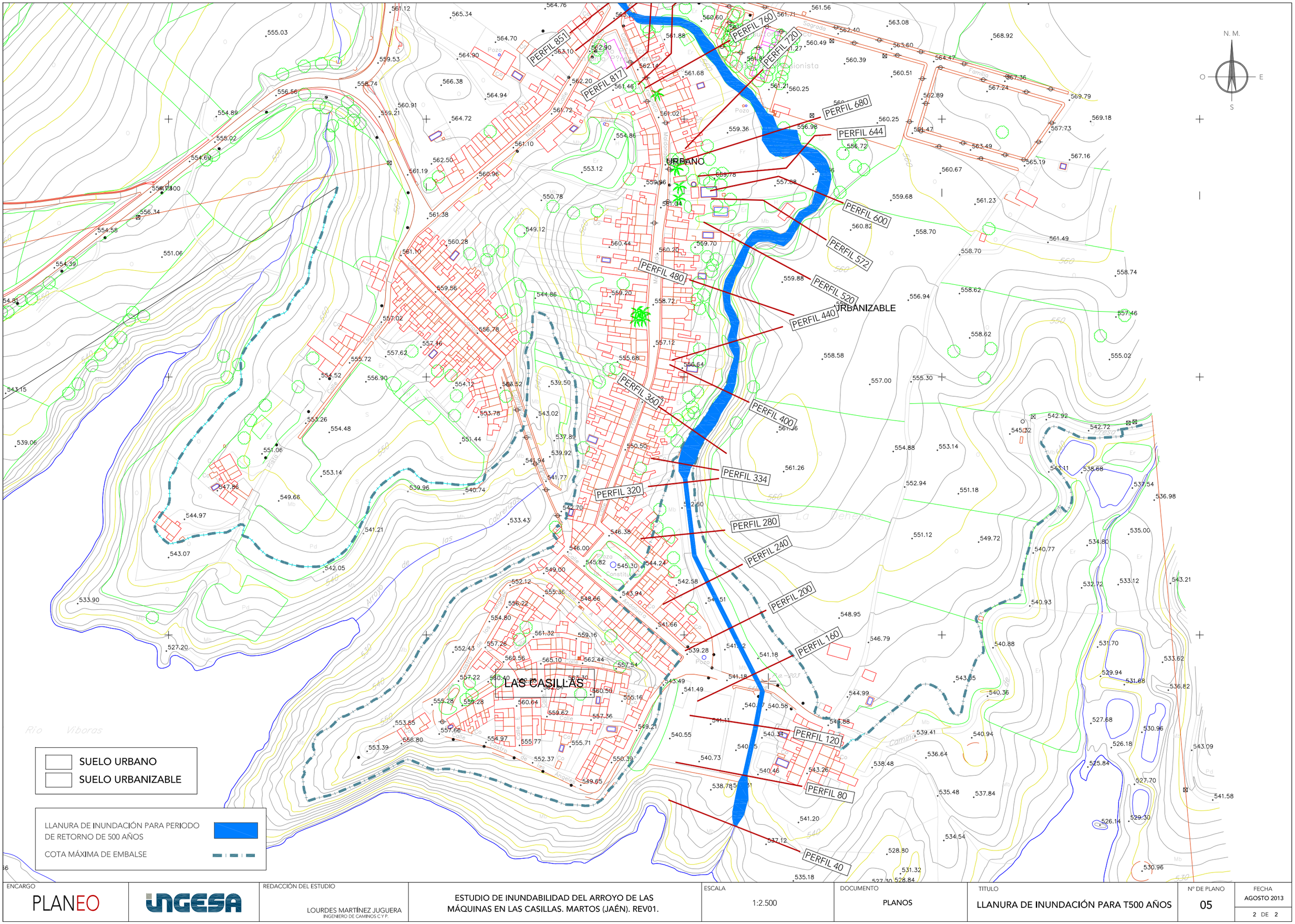


ENCARGO		REDACCIÓN DEL ESTUDIO		ESCALA	DOCUMENTO	TITULO	Nº DE PLANO	FECHA
PLANEO	UNGESA	LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	1:2.500	PLANOS	DELIMITACIÓN D.P.H.	04	AGOSTO 2013 2 DE 2



ENCARGO PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO LOURDES MARTÍNEZ JUGUERA INGENIERO DE CAMINOS C Y P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	ESCALA 1:2.500	DOCUMENTO PLANOS	TITULO LLANURA DE INUNDACIÓN PARA T500 AÑOS	Nº DE PLANO 05	FECHA AGOSTO 2013 1 DE 2



ENCARGO: PLANEO	UNGESA	REDACCIÓN DEL ESTUDIO: LOURDES MARTÍNEZ JUGUERA, INGENIERO DE CAMINOS C.Y.P.	ESTUDIO DE INUNDABILIDAD DEL ARROYO DE LAS MÁQUINAS EN LAS CASILLAS. MARTOS (JAÉN). REV01.	ESCALA: 1:2.500	DOCUMENTO: PLANOS	TITULO: LLANURA DE INUNDACIÓN PARA T500 AÑOS	Nº DE PLANO: 05	FECHA: AGOSTO 2013
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