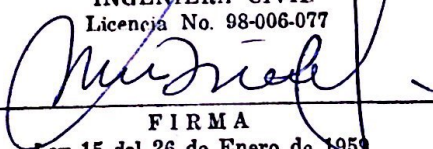


AMPLIACIÓN A ESTUDIO HIDROLÓGICO RÍO QUEBRO

SECCIONES ANÁLISIS CONSIDERANDO LA INTERVENCIÓN DEL CAUCE

MADRIGAL A. HERNANDEZ H.
INGENIERA CIVIL
Licencia No. 98-006-077

FIRMA
Ley 15 del 26 de Enero de 1959
Junta Técnica de Ingeniería y Arquitectura

MARZO 2022

AMPLIACIÓN

Tal como se expone en puntos anteriores el conocimiento y la experiencia a través de los años permite al diseñador asignar valores que mejor se ajusten a las condiciones encontradas, sin embargo cuando no se cuenta con esa experiencia, contamos con diferentes métodos estimativos para poder realizar una modelización lo más real posible.

Nuevamente se señala que Cowan, en 1956, desarrolló una expresión que permite determinar el valor del coeficiente de Manning a través de la interacción de diferentes parámetros que permiten describir o valorar características concretas de un cauce. La expresión es la siguiente:

$$n = (n_b + n_1 + n_2 + n_3 + n_4) \cdot m$$

n esta expresión, el valor del coeficiente de rugosidad de Manning n depende de:

n_b = un valor base de n para un cauce recto, uniforme y liso en función del material del fondo

n_1 = factor de corrección para implementar el efecto de las irregularidades superficiales

n_2 = un valor que añade las variaciones de forma y tamaño de la sección del cauce

n_3 = un valor que implementa el efecto de obstrucciones

n_4 = un valor que incorpora el efecto de presencia de vegetación

m = un factor corrector que implementa la sinuosidad del cauce.

La explicación de esta metodología esta recogida la “Guide for Selecting Manning’s Roughness Coefficients for Natural Channels and Flood Plains”

Tabla 5-5, Valores para el cálculo del coeficiente de rugosidad mediante la ecuación (5-12)

Condiciones del canal		Valores	
Material involucrado	Tierra	n_0	0.020
	Corte en roca		0.025
	Grava fina		0.024
	Grava gruesa		0.028
Grado de irregularidad	Suave	n_1	0.000
	Menor		0.005
	Moderado		0.010
	Severo		0.020
Variaciones de la sección transversal	Gradual	n_2	0.000
	Ocasionalmente alternante		0.005
	Frecuentemente alternante		0.010-0.015
Efecto relativo de las obstrucciones	Insignificante	n_3	0.000
	Menor		0.010-0.015
	Apreciable		0.020-0.030
	Severo		0.040-0.060
Vegetación	Baja	n_4	0.005-0.010
	Media		0.010-0.025
	Alta		0.025-0.050
	Muy alta		0.050-0.100
Grado de los efectos por meandros	Menor	n_5	1.000
	Apreciable		1.150
	Severo		1.300

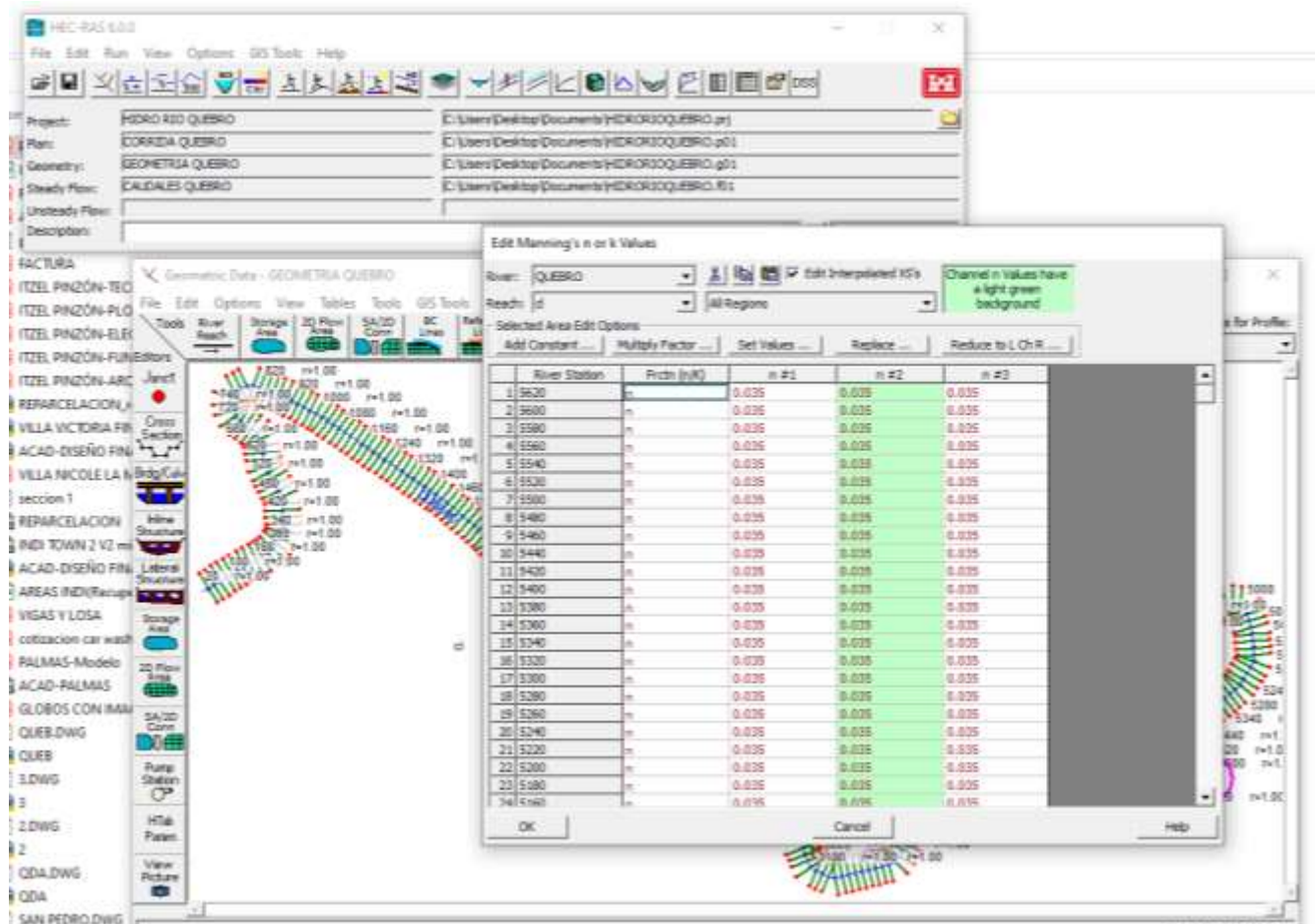
Tomando en cuenta que se realizará una extracción de material pétreo en la zona a analizar las condiciones naturales se alterarían, bajo este concepto **la Variación de la sección transversal pasa de una condición de ocasionalmente alternamente a una condición “frecuentemente alternamente”**

Según las condiciones encontradas en campo nuestros parámetros son los siguientes:

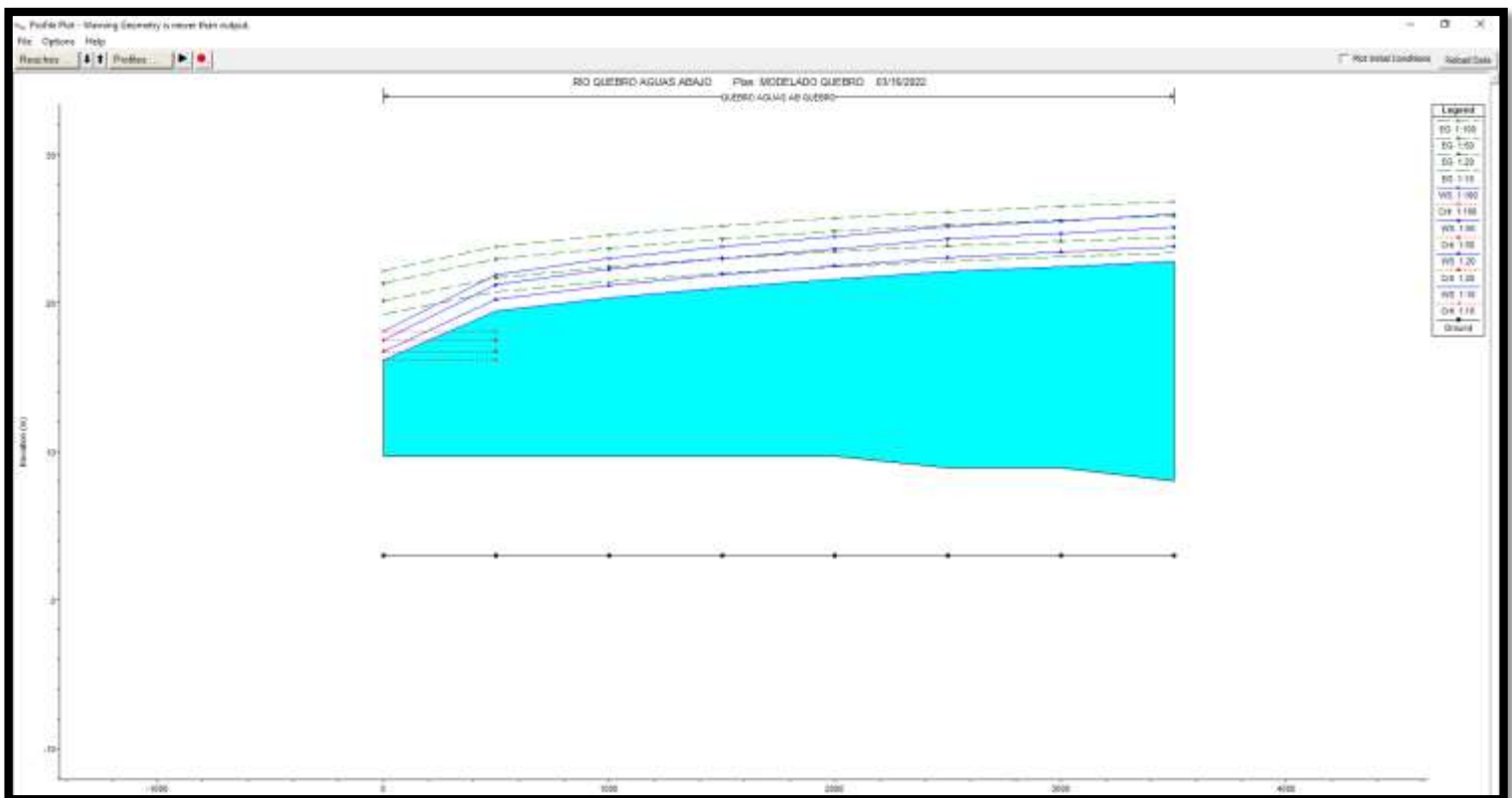
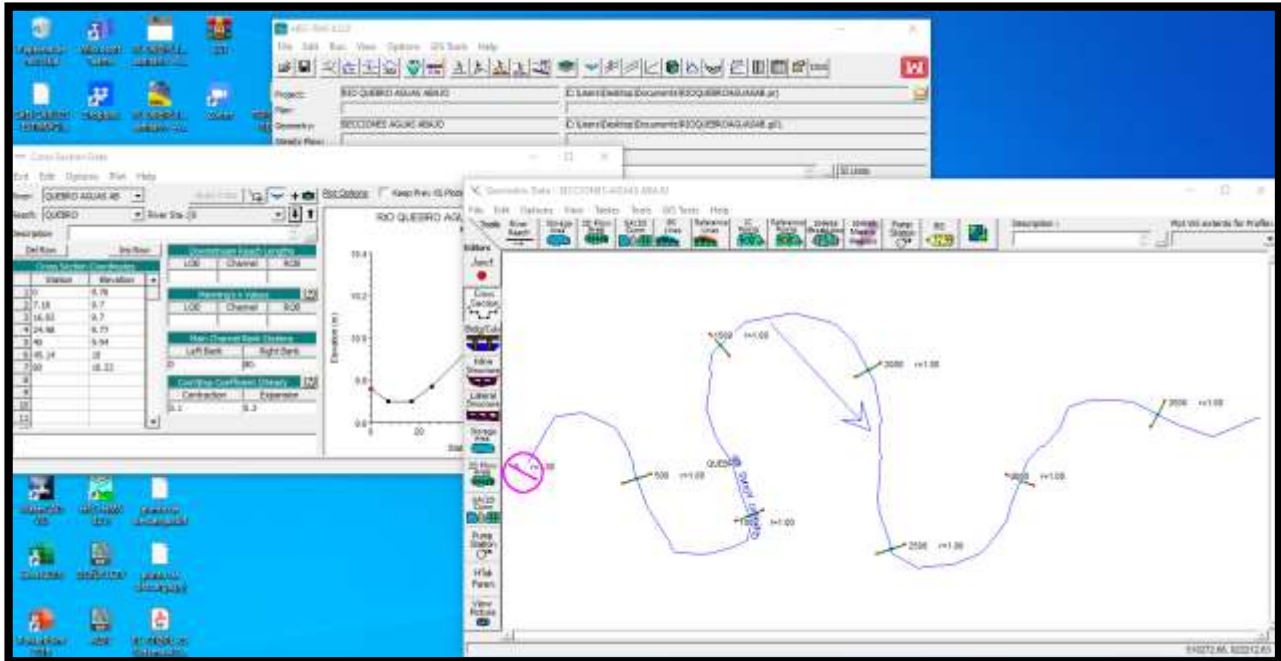
$n_b=0.020$; $n_1=0.000$; $n_2=0.010$; $n_3=0.0$; $n_4=0.005$; $m=1.0$

$n=0.035$

Esta condición dentro de las recomendaciones del Mop se aproxima a la condición para Excavaciones Naturales, cubiertas de escombros con vegetación donde $n=0.035$.

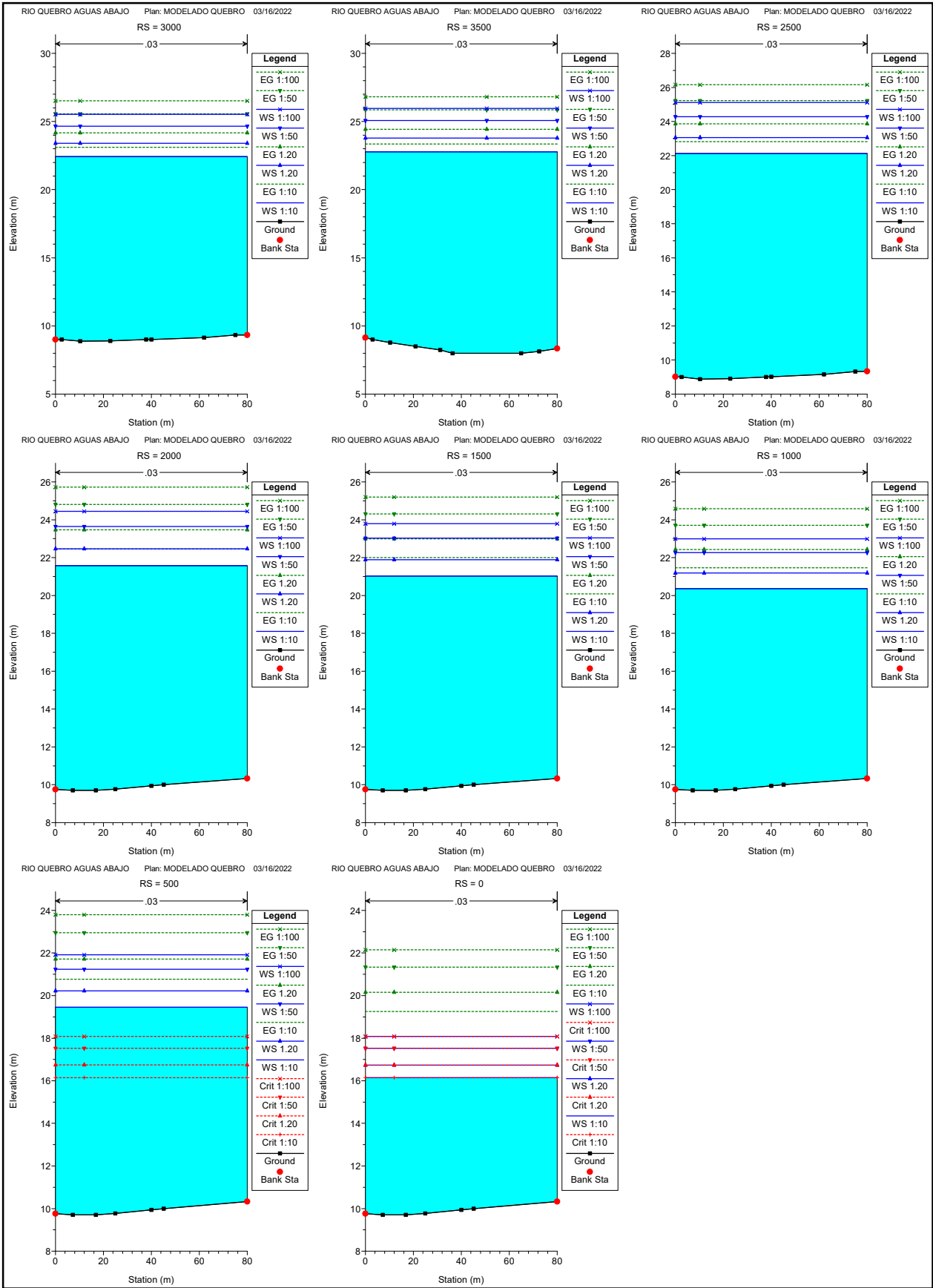


ANÁLISIS AGUAS ABAJO

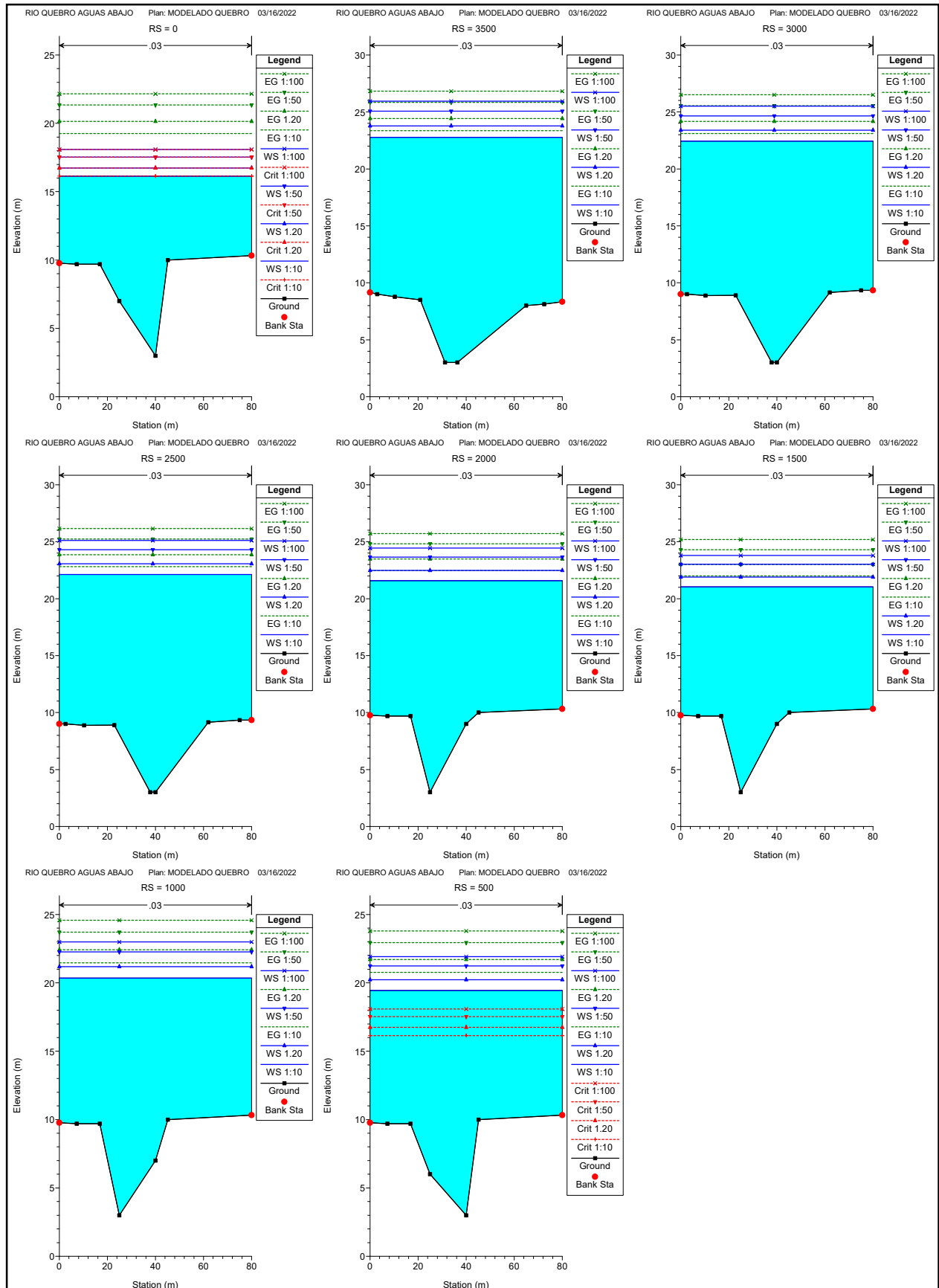


PERFIL HIDRAULICO AGUAS ABAJO

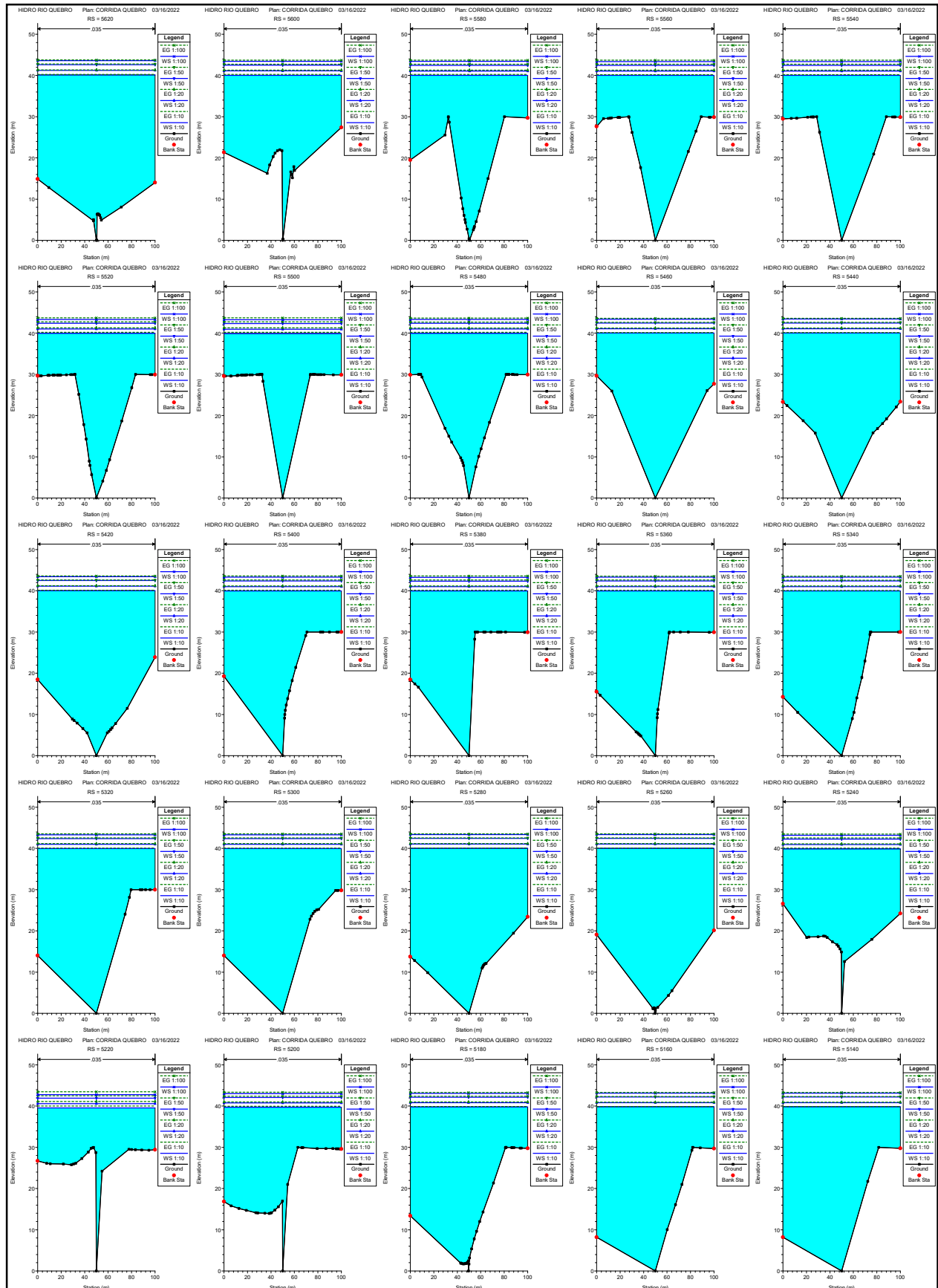
SECCIÓN AGUAS ABAJO MANNING = 0.030

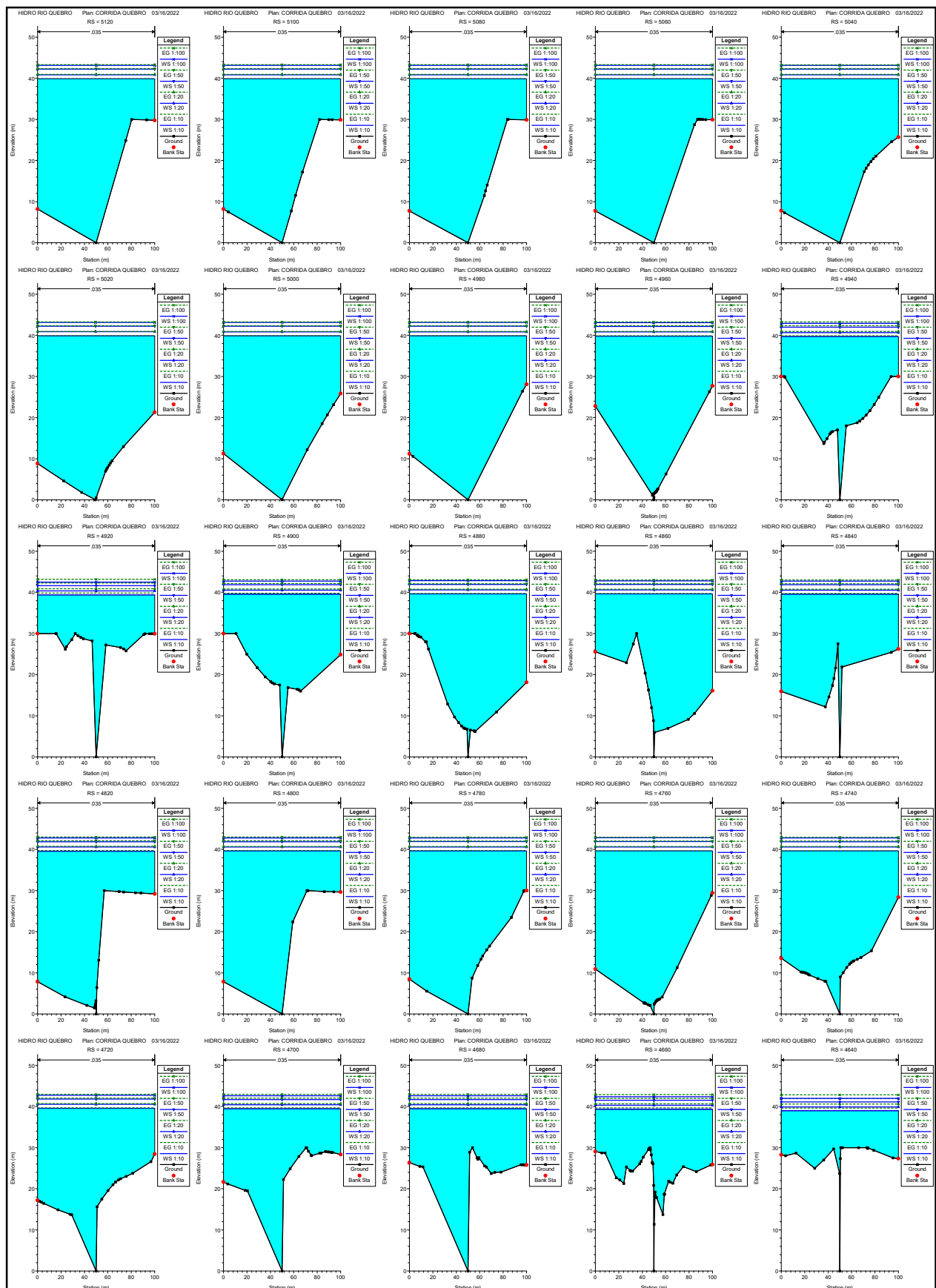


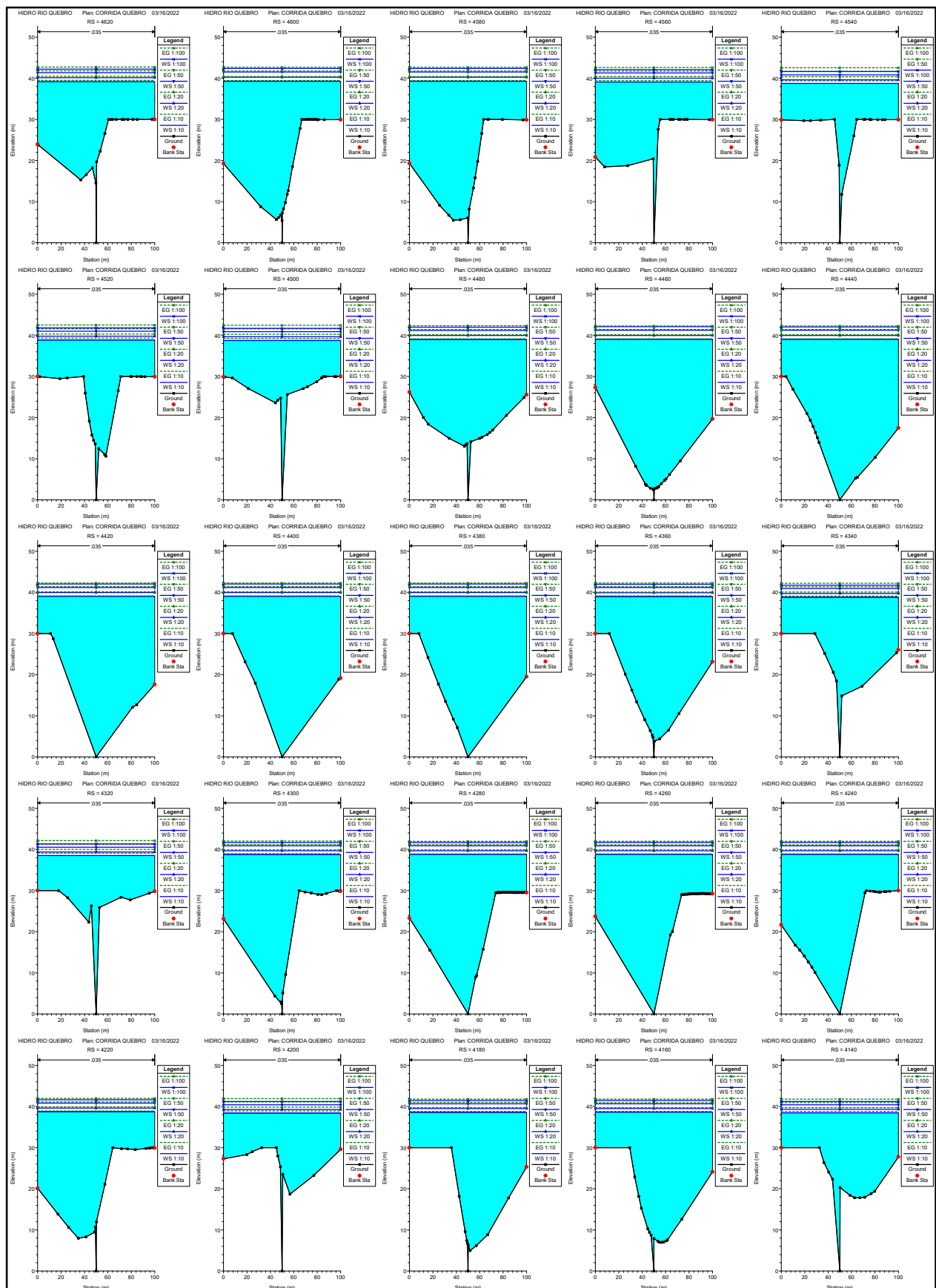
SECCIÓN DE RIO AGUAS ABAJO MANNING 0.035

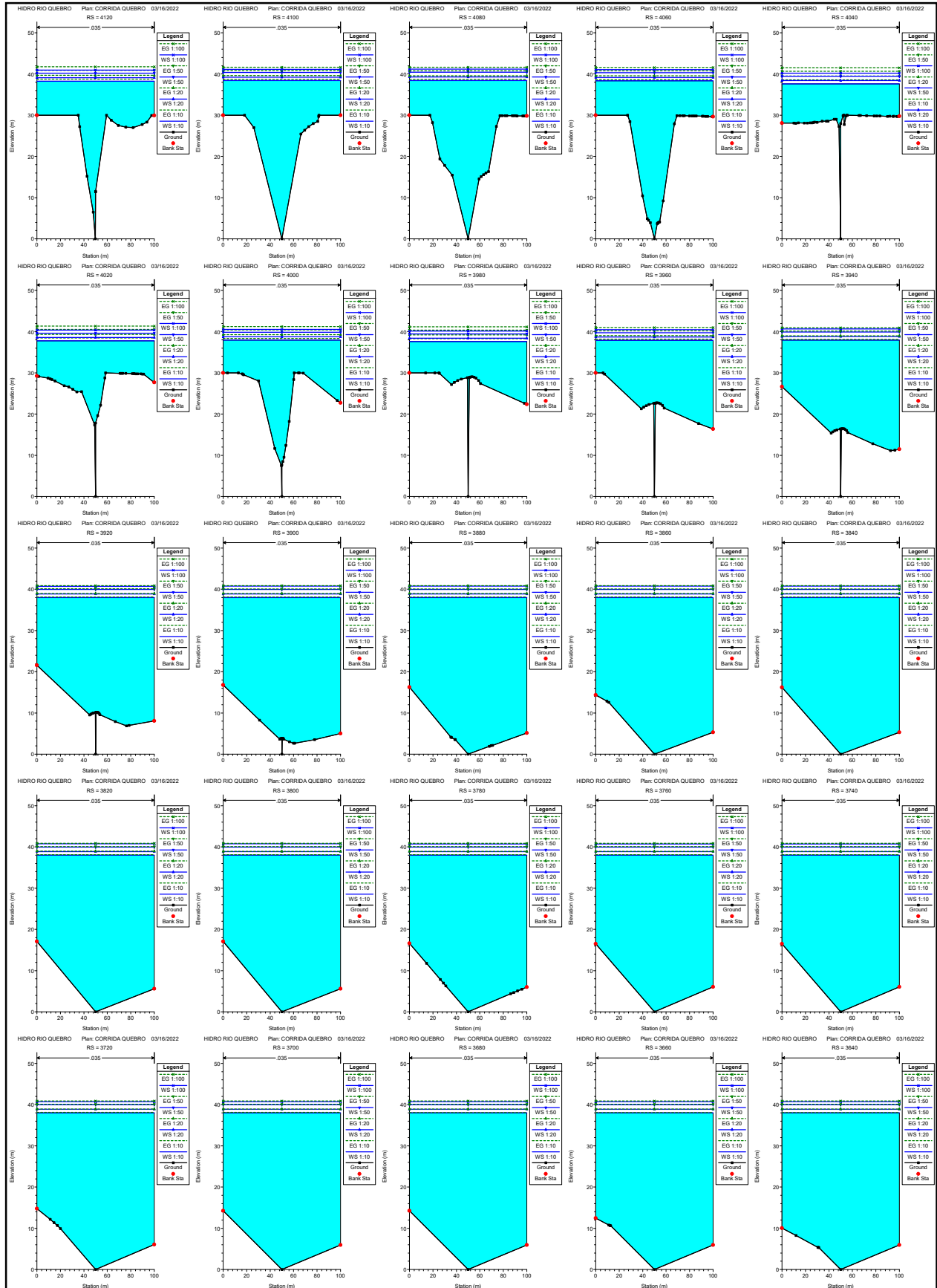


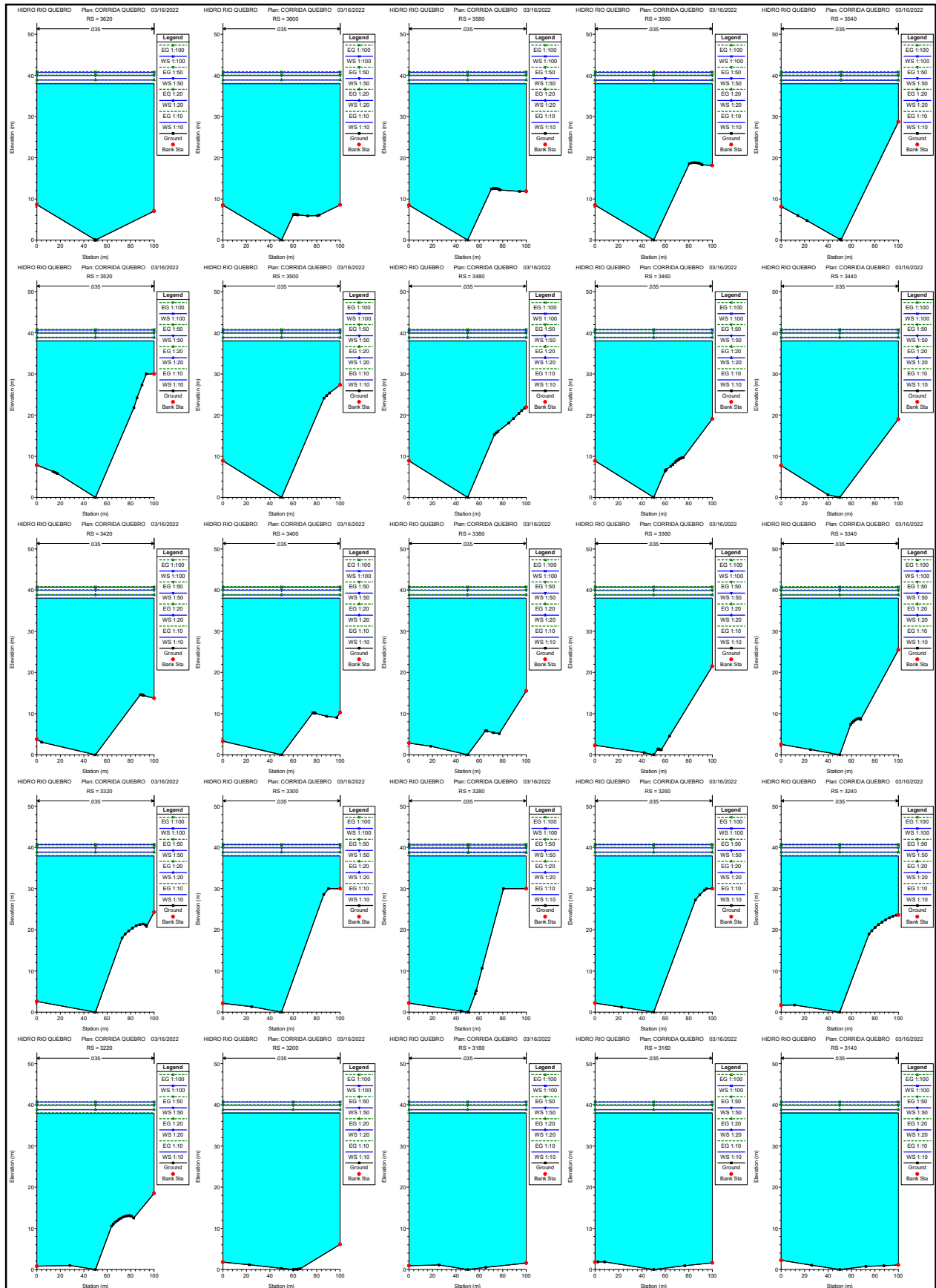
SECCIONES DE RÍO CON INTERVENCIÓN N=0.035 (Manning)

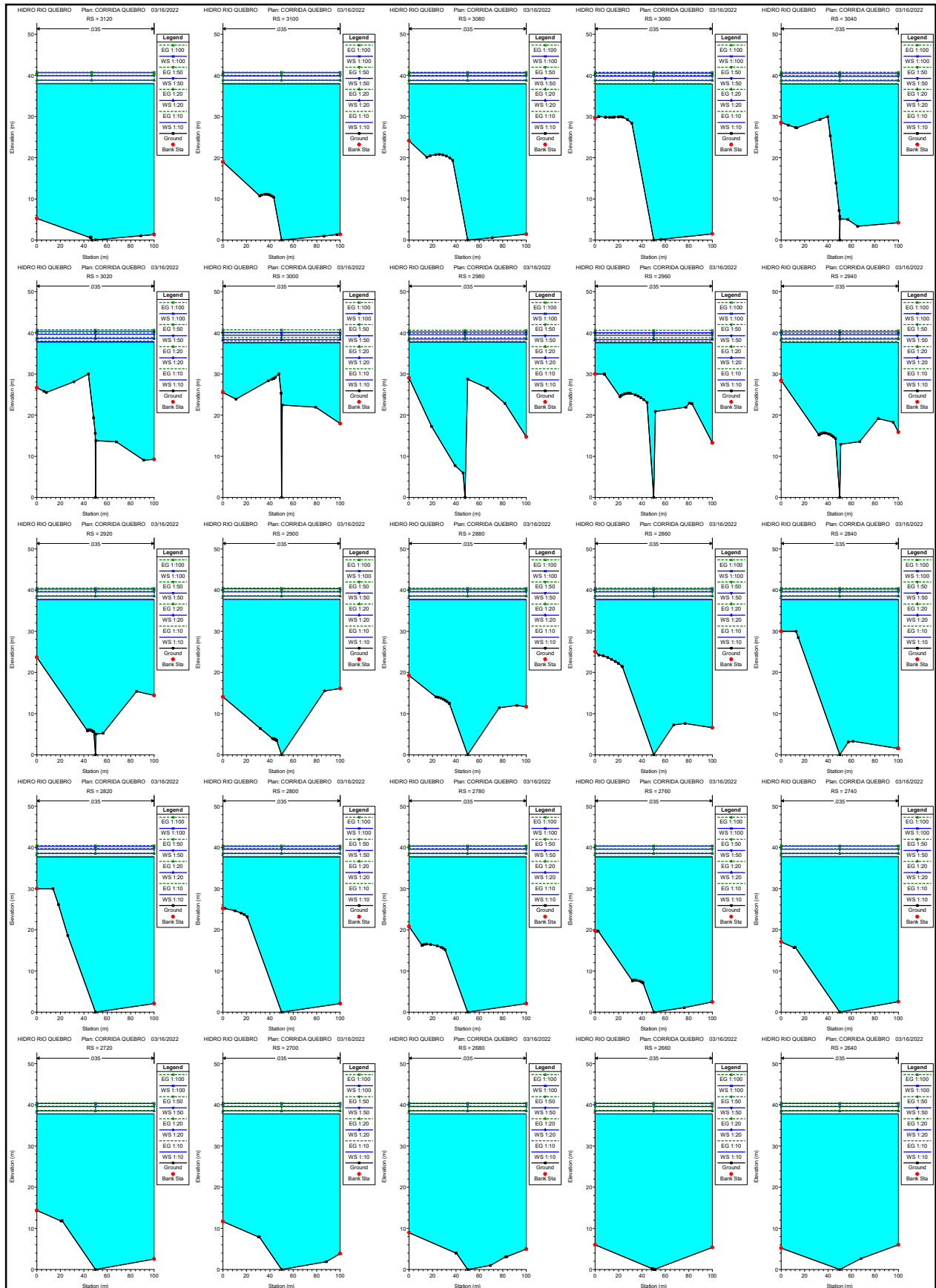


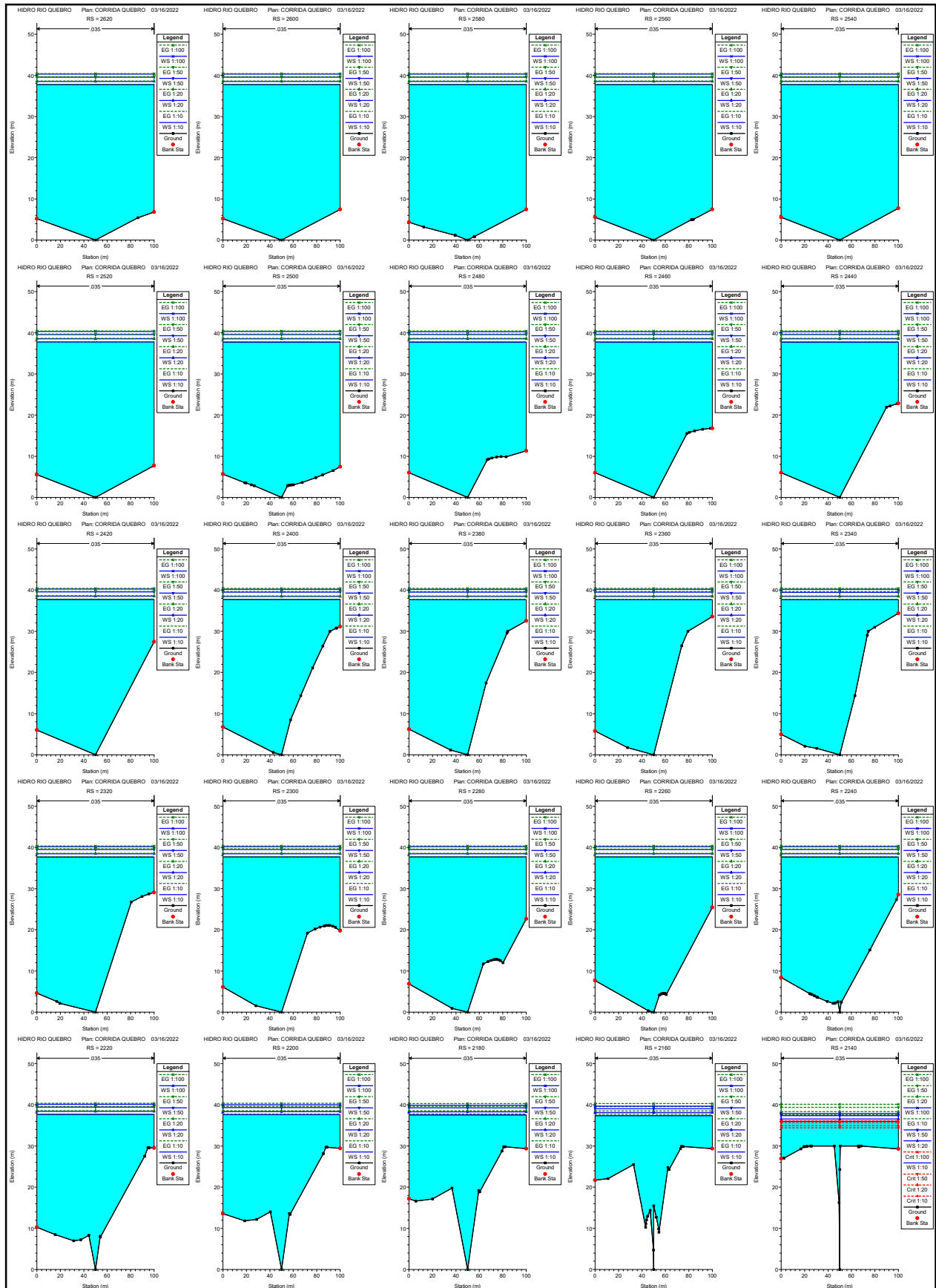


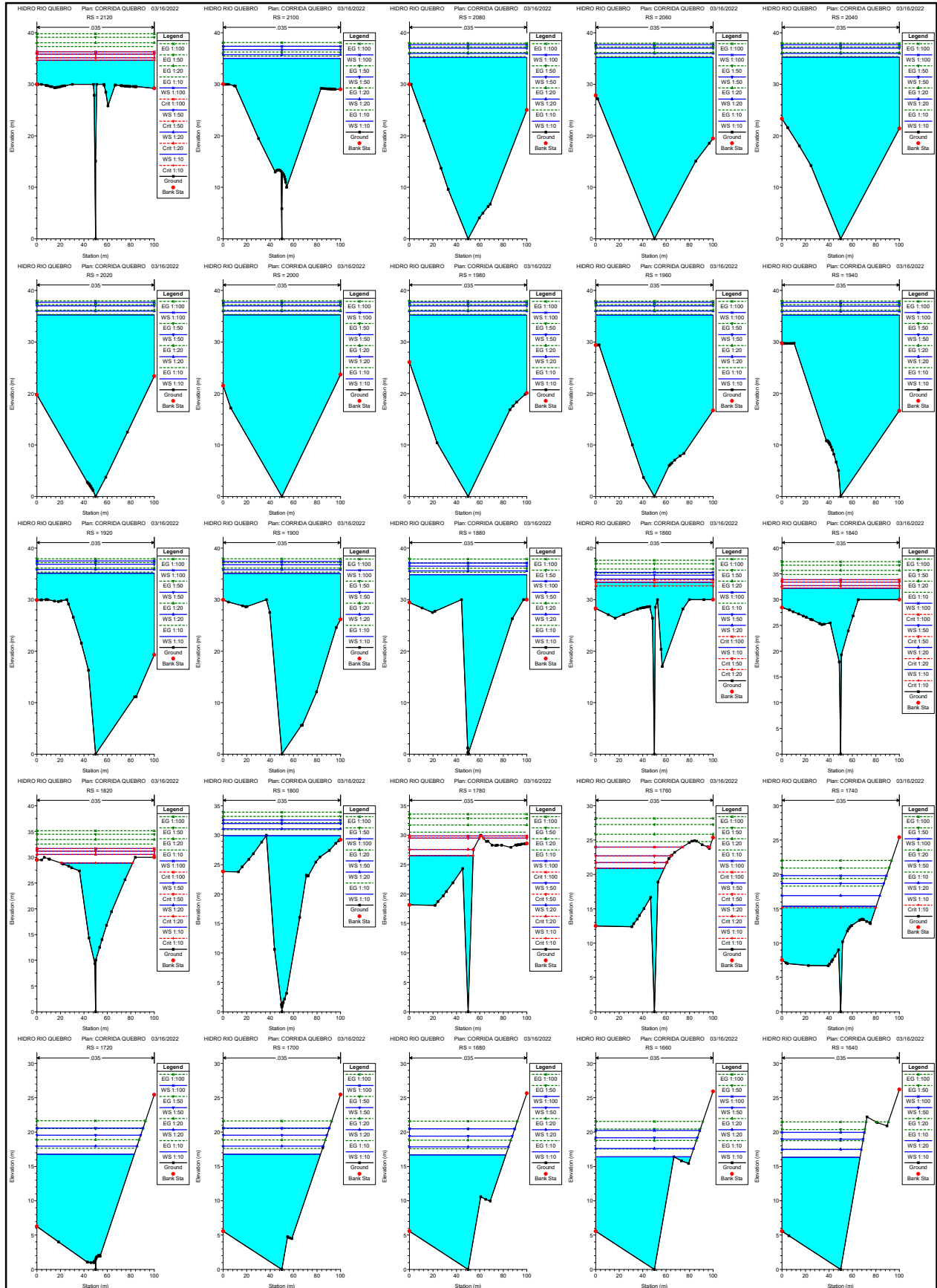


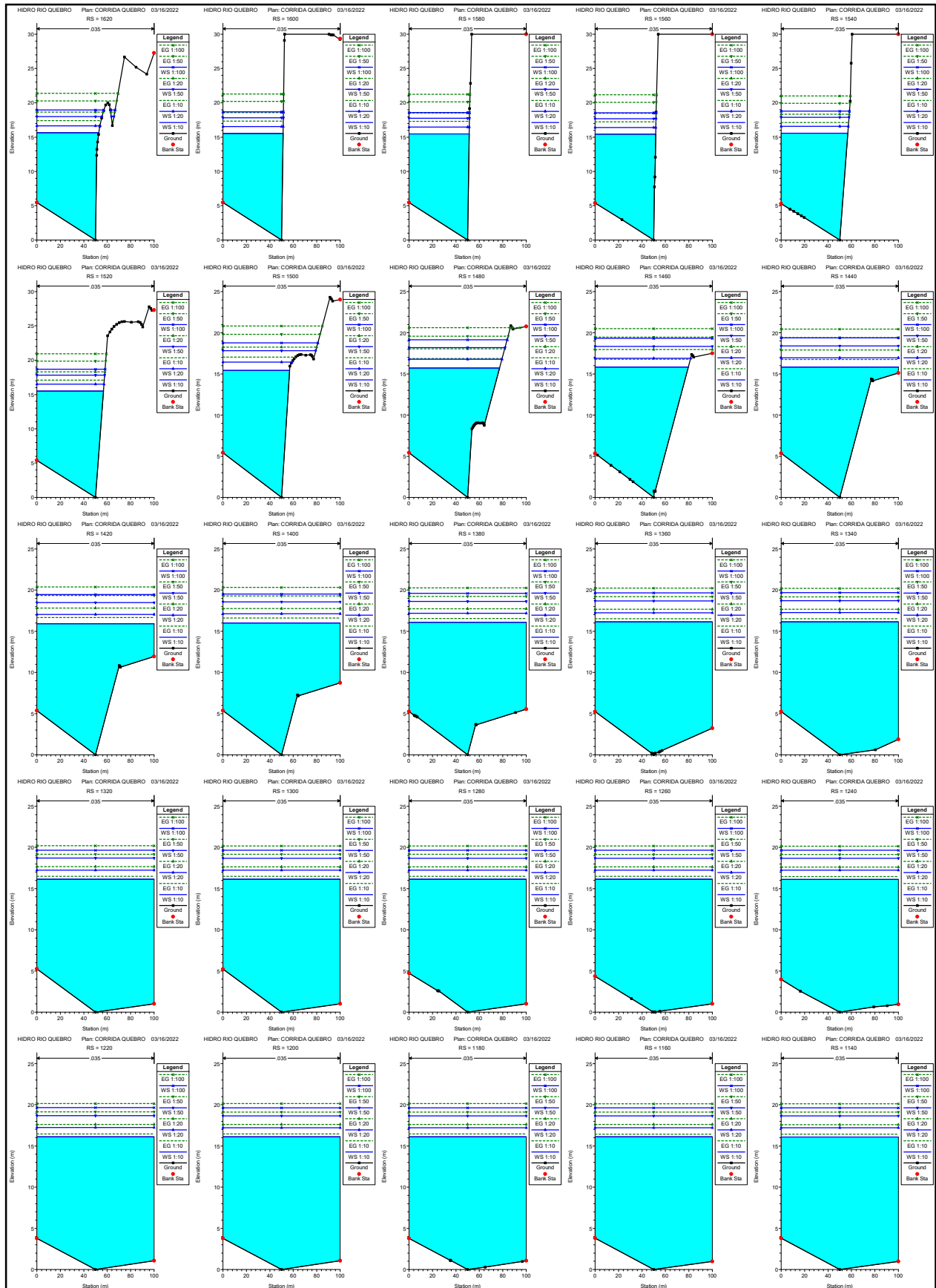


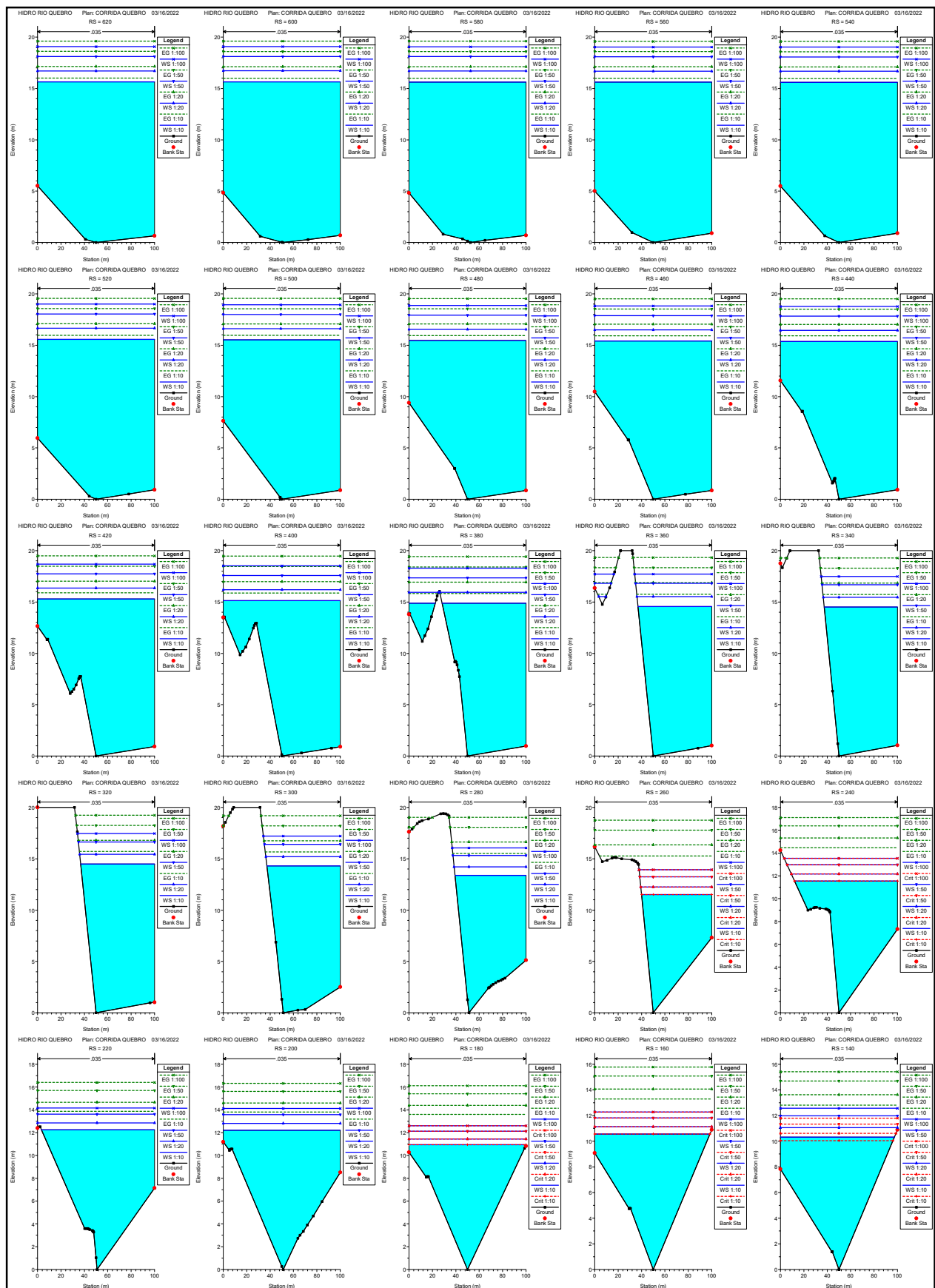












HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	5620	1:10	3865.90	0.00	40.16		40.24	0.000038	1.25	3093.35	100.00	0.07
cl	5620	1:20	4439.50	0.00	41.23		41.33	0.000045	1.39	3200.26	100.00	0.08
cl	5620	1:50	5237.70	0.00	42.64		42.76	0.000056	1.57	3340.85	100.00	0.09
cl	5620	1:100	5811.30	0.00	43.60		43.74	0.000064	1.69	3437.01	100.00	0.09
cl	5600	1:10	3865.90	0.00	40.05		40.23	0.000155	1.88	2058.26	100.00	0.13
cl	5600	1:20	4439.50	0.00	41.10		41.32	0.000176	2.05	2163.35	100.00	0.14
cl	5600	1:50	5237.70	0.00	42.48		42.75	0.000204	2.28	2301.47	100.00	0.15
cl	5600	1:100	5811.30	0.00	43.43		43.73	0.000223	2.43	2395.90	100.00	0.16
cl	5580	1:10	3865.90	0.00	40.03		40.23	0.000165	1.94	1989.84	100.00	0.14
cl	5580	1:20	4439.50	0.00	41.08		41.31	0.000187	2.12	2094.70	100.00	0.15
cl	5580	1:50	5237.70	0.00	42.46		42.74	0.000215	2.35	2232.51	100.00	0.16
cl	5580	1:100	5811.30	0.00	43.40		43.72	0.000234	2.50	2326.74	100.00	0.17
cl	5560	1:10	3865.90	0.00	40.02		40.22	0.000159	2.00	1934.11	100.00	0.15
cl	5560	1:20	4439.50	0.00	41.06		41.31	0.000179	2.18	2038.76	100.00	0.15
cl	5560	1:50	5237.70	0.00	42.44		42.74	0.000206	2.41	2176.31	100.00	0.16
cl	5560	1:100	5811.30	0.00	43.38		43.71	0.000224	2.56	2270.35	100.00	0.17
cl	5540	1:10	3865.90	0.00	40.01		40.22	0.000163	2.02	1912.93	100.00	0.15
cl	5540	1:20	4439.50	0.00	41.06		41.30	0.000183	2.20	2017.47	100.00	0.16
cl	5540	1:50	5237.70	0.00	42.43		42.73	0.000210	2.43	2154.88	100.00	0.17
cl	5540	1:100	5811.30	0.00	43.37		43.71	0.000228	2.58	2248.83	100.00	0.17
cl	5520	1:10	3865.90	0.00	39.98		40.21	0.000202	2.14	1803.77	100.00	0.16
cl	5520	1:20	4439.50	0.00	41.02		41.30	0.000225	2.33	1907.92	100.00	0.17
cl	5520	1:50	5237.70	0.00	42.39		42.72	0.000255	2.56	2044.82	100.00	0.18
cl	5520	1:100	5811.30	0.00	43.32		43.70	0.000275	2.72	2138.43	100.00	0.19
cl	5500	1:10	3865.90	0.00	39.91		40.20	0.000297	2.38	1622.07	100.00	0.19
cl	5500	1:20	4439.50	0.00	40.95		41.28	0.000324	2.57	1725.50	100.00	0.20
cl	5500	1:50	5237.70	0.00	42.31		42.71	0.000359	2.81	1861.49	100.00	0.21
cl	5500	1:100	5811.30	0.00	43.24		43.69	0.000381	2.97	1954.50	100.00	0.21
cl	5480	1:10	3865.90	0.00	39.97		40.17	0.000144	1.97	1963.85	100.00	0.14
cl	5480	1:20	4439.50	0.00	41.01		41.25	0.000163	2.15	2067.97	100.00	0.15
cl	5480	1:50	5237.70	0.00	42.38		42.67	0.000188	2.38	2204.84	100.00	0.16
cl	5480	1:100	5811.30	0.00	43.32		43.64	0.000205	2.53	2298.44	100.00	0.17
cl	5460	1:10	3865.90	0.00	40.02		40.15	0.000068	1.59	2429.32	100.00	0.10
cl	5460	1:20	4439.50	0.00	41.07		41.22	0.000080	1.75	2534.12	100.00	0.11
cl	5460	1:50	5237.70	0.00	42.44		42.64	0.000095	1.96	2671.88	100.00	0.12
cl	5460	1:100	5811.30	0.00	43.39		43.61	0.000107	2.10	2766.08	100.00	0.13
cl	5440	1:10	3865.90	0.00	40.03		40.14	0.000056	1.47	2625.66	100.00	0.09
cl	5440	1:20	4439.50	0.00	41.08		41.21	0.000066	1.63	2730.66	100.00	0.10
cl	5440	1:50	5237.70	0.00	42.46		42.63	0.000080	1.83	2868.68	100.00	0.11
cl	5440	1:100	5811.30	0.00	43.40		43.60	0.000090	1.96	2963.07	100.00	0.12
cl	5420	1:10	3865.90	0.00	40.04		40.13	0.000041	1.33	2901.85	100.00	0.08
cl	5420	1:20	4439.50	0.00	41.10		41.21	0.000049	1.48	3007.08	100.00	0.09
cl	5420	1:50	5237.70	0.00	42.48		42.62	0.000060	1.67	3145.43	100.00	0.09
cl	5420	1:100	5811.30	0.00	43.43		43.59	0.000068	1.79	3240.04	100.00	0.10
cl	5400	1:10	3865.90	0.00	39.97		40.13	0.000102	1.73	2229.33	100.00	0.12
cl	5400	1:20	4439.50	0.00	41.01		41.20	0.000118	1.90	2333.37	100.00	0.13
cl	5400	1:50	5237.70	0.00	42.38		42.61	0.000139	2.12	2470.10	100.00	0.14
cl	5400	1:100	5811.30	0.00	43.32		43.58	0.000153	2.27	2563.59	100.00	0.14
cl	5380	1:10	3865.90	0.00	39.95		40.12	0.000135	1.85	2094.56	100.00	0.13
cl	5380	1:20	4439.50	0.00	40.98		41.19	0.000154	2.02	2198.23	100.00	0.14
cl	5380	1:50	5237.70	0.00	42.35		42.60	0.000180	2.24	2334.48	100.00	0.15
cl	5380	1:100	5811.30	0.00	43.28		43.57	0.000197	2.39	2427.63	100.00	0.16
cl	5360	1:10	3865.90	0.00	39.96		40.11	0.000107	1.73	2233.06	100.00	0.12
cl	5360	1:20	4439.50	0.00	41.00		41.18	0.000123	1.90	2336.91	100.00	0.13
cl	5360	1:50	5237.70	0.00	42.36		42.59	0.000145	2.12	2473.39	100.00	0.14
cl	5360	1:100	5811.30	0.00	43.30		43.56	0.000161	2.26	2566.70	100.00	0.14
cl	5340	1:10	3865.90	0.00	39.98		40.10	0.000066	1.52	2550.27	100.00	0.10
cl	5340	1:20	4439.50	0.00	41.03		41.17	0.000077	1.67	2654.50	100.00	0.10
cl	5340	1:50	5237.70	0.00	42.40		42.58	0.000093	1.88	2791.48	100.00	0.11
cl	5340	1:100	5811.30	0.00	43.33		43.54	0.000104	2.01	2885.15	100.00	0.12

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	5320	1:10	3865.90	0.00	39.99		40.10	0.000060	1.48	2604.92	100.00	0.09
cl	5320	1:20	4439.50	0.00	41.03		41.17	0.000071	1.64	2709.18	100.00	0.10
cl	5320	1:50	5237.70	0.00	42.40		42.57	0.000086	1.84	2846.21	100.00	0.11
cl	5320	1:100	5811.30	0.00	43.34		43.53	0.000096	1.98	2939.91	100.00	0.12
cl	5300	1:10	3865.90	0.00	39.99		40.10	0.000055	1.45	2658.99	100.00	0.09
cl	5300	1:20	4439.50	0.00	41.03		41.16	0.000065	1.61	2763.28	100.00	0.10
cl	5300	1:50	5237.70	0.00	42.40		42.57	0.000079	1.81	2900.36	100.00	0.11
cl	5300	1:100	5811.30	0.00	43.34		43.53	0.000089	1.94	2994.09	100.00	0.11
cl	5280	1:10	3865.90	0.00	40.00		40.09	0.000041	1.32	2923.38	100.00	0.08
cl	5280	1:20	4439.50	0.00	41.04		41.15	0.000049	1.47	3027.90	100.00	0.09
cl	5280	1:50	5237.70	0.00	42.42		42.56	0.000061	1.65	3165.28	100.00	0.09
cl	5280	1:100	5811.30	0.00	43.36		43.52	0.000069	1.78	3259.22	100.00	0.10
cl	5260	1:10	3865.90	0.00	40.00		40.09	0.000037	1.28	3010.40	100.00	0.07
cl	5260	1:20	4439.50	0.00	41.05		41.15	0.000044	1.43	3114.97	100.00	0.08
cl	5260	1:50	5237.70	0.00	42.42		42.56	0.000055	1.61	3252.42	100.00	0.09
cl	5260	1:100	5811.30	0.00	43.36		43.52	0.000062	1.74	3346.42	100.00	0.10
cl	5240	1:10	3865.90	0.00	39.91		40.08	0.000127	1.82	2122.83	100.00	0.13
cl	5240	1:20	4439.50	0.00	40.94		41.14	0.000145	1.99	2225.81	100.00	0.14
cl	5240	1:50	5237.70	0.00	42.29		42.54	0.000170	2.22	2361.09	100.00	0.15
cl	5240	1:100	5811.30	0.00	43.22		43.50	0.000187	2.37	2453.57	100.00	0.15
cl	5220	1:10	3865.90	0.00	39.59		40.04	0.000743	2.98	1295.79	100.00	0.26
cl	5220	1:20	4439.50	0.00	40.59		41.10	0.000777	3.18	1395.58	100.00	0.27
cl	5220	1:50	5237.70	0.00	41.90		42.50	0.000817	3.43	1526.84	100.00	0.28
cl	5220	1:100	5811.30	0.00	42.80		43.46	0.000843	3.59	1616.66	100.00	0.29
cl	5200	1:10	3865.90	0.00	39.75		39.97	0.000220	2.08	1860.12	100.00	0.15
cl	5200	1:20	4439.50	0.00	40.76		41.02	0.000247	2.26	1961.32	100.00	0.16
cl	5200	1:50	5237.70	0.00	42.09		42.41	0.000282	2.50	2094.34	100.00	0.17
cl	5200	1:100	5811.30	0.00	43.00		43.36	0.000306	2.66	2185.30	100.00	0.18
cl	5180	1:10	3865.90	0.00	39.82		39.93	0.000066	1.52	2547.55	100.00	0.10
cl	5180	1:20	4439.50	0.00	40.84		40.98	0.000078	1.68	2649.79	100.00	0.10
cl	5180	1:50	5237.70	0.00	42.18		42.36	0.000095	1.88	2784.19	100.00	0.11
cl	5180	1:100	5811.30	0.00	43.10		43.31	0.000106	2.02	2876.09	100.00	0.12
cl	5160	1:10	3865.90	0.00	39.83		39.93	0.000051	1.40	2758.74	100.00	0.09
cl	5160	1:20	4439.50	0.00	40.85		40.97	0.000061	1.55	2861.18	100.00	0.09
cl	5160	1:50	5237.70	0.00	42.20		42.35	0.000075	1.75	2995.84	100.00	0.10
cl	5160	1:100	5811.30	0.00	43.12		43.30	0.000084	1.88	3087.93	100.00	0.11
cl	5140	1:10	3865.90	0.00	39.82		39.93	0.000052	1.41	2743.41	100.00	0.09
cl	5140	1:20	4439.50	0.00	40.85		40.97	0.000062	1.56	2845.80	100.00	0.09
cl	5140	1:50	5237.70	0.00	42.19		42.35	0.000076	1.76	2980.40	100.00	0.10
cl	5140	1:100	5811.30	0.00	43.11		43.30	0.000086	1.89	3072.45	100.00	0.11
cl	5120	1:10	3865.90	0.00	39.82		39.92	0.000053	1.41	2738.18	100.00	0.09
cl	5120	1:20	4439.50	0.00	40.85		40.97	0.000063	1.56	2840.55	100.00	0.09
cl	5120	1:50	5237.70	0.00	42.19		42.35	0.000077	1.76	2975.11	100.00	0.10
cl	5120	1:100	5811.30	0.00	43.11		43.30	0.000087	1.89	3067.13	100.00	0.11
cl	5100	1:10	3865.90	0.00	39.82		39.92	0.000052	1.41	2745.93	100.00	0.09
cl	5100	1:20	4439.50	0.00	40.85		40.97	0.000062	1.56	2848.28	100.00	0.09
cl	5100	1:50	5237.70	0.00	42.19		42.35	0.000076	1.76	2982.83	100.00	0.10
cl	5100	1:100	5811.30	0.00	43.11		43.29	0.000086	1.89	3074.84	100.00	0.11
cl	5080	1:10	3865.90	0.00	39.82		39.92	0.000049	1.38	2806.87	100.00	0.08
cl	5080	1:20	4439.50	0.00	40.85		40.97	0.000058	1.53	2909.26	100.00	0.09
cl	5080	1:50	5237.70	0.00	42.19		42.34	0.000071	1.72	3043.85	100.00	0.10
cl	5080	1:100	5811.30	0.00	43.11		43.29	0.000080	1.85	3135.90	100.00	0.11
cl	5060	1:10	3865.90	0.00	39.82		39.92	0.000047	1.36	2834.00	100.00	0.08
cl	5060	1:20	4439.50	0.00	40.85		40.96	0.000056	1.51	2936.39	100.00	0.09
cl	5060	1:50	5237.70	0.00	42.19		42.34	0.000068	1.71	3070.99	100.00	0.10
cl	5060	1:100	5811.30	0.00	43.11		43.29	0.000077	1.84	3163.04	100.00	0.10
cl	5040	1:10	3865.90	0.00	39.83		39.92	0.000040	1.30	2965.70	100.00	0.08
cl	5040	1:20	4439.50	0.00	40.85		40.96	0.000048	1.45	3068.19	100.00	0.08
cl	5040	1:50	5237.70	0.00	42.20		42.34	0.000060	1.64	3202.92	100.00	0.09

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	5040	1:100	5811.30	0.00	43.12		43.28	0.000068	1.76	3295.06	100.00	0.10
cl	5020	1:10	3865.90	0.00	39.83		39.91	0.000034	1.23	3132.68	100.00	0.07
cl	5020	1:20	4439.50	0.00	40.86		40.96	0.000041	1.37	3235.28	100.00	0.08
cl	5020	1:50	5237.70	0.00	42.21		42.33	0.000051	1.55	3370.15	100.00	0.09
cl	5020	1:100	5811.30	0.00	43.13		43.28	0.000058	1.68	3462.41	100.00	0.09
cl	5000	1:10	3865.90	0.00	39.83		39.91	0.000037	1.28	3024.76	100.00	0.07
cl	5000	1:20	4439.50	0.00	40.85		40.96	0.000044	1.42	3127.22	100.00	0.08
cl	5000	1:50	5237.70	0.00	42.20		42.33	0.000054	1.61	3261.91	100.00	0.09
cl	5000	1:100	5811.30	0.00	43.12		43.27	0.000062	1.73	3354.02	100.00	0.10
cl	4980	1:10	3865.90	0.00	39.83		39.91	0.000037	1.29	2991.90	100.00	0.08
cl	4980	1:20	4439.50	0.00	40.85		40.95	0.000045	1.43	3094.30	100.00	0.08
cl	4980	1:50	5237.70	0.00	42.20		42.33	0.000056	1.62	3228.91	100.00	0.09
cl	4980	1:100	5811.30	0.00	43.12		43.27	0.000063	1.75	3320.97	100.00	0.10
cl	4960	1:10	3865.90	0.00	39.80		39.91	0.000051	1.44	2684.01	100.00	0.09
cl	4960	1:20	4439.50	0.00	40.82		40.95	0.000060	1.59	2785.98	100.00	0.10
cl	4960	1:50	5237.70	0.00	42.16		42.33	0.000074	1.79	2919.97	100.00	0.11
cl	4960	1:100	5811.30	0.00	43.08		43.27	0.000083	1.93	3011.59	100.00	0.11
cl	4940	1:10	3865.90	0.00	39.67		39.89	0.000192	2.08	1859.07	100.00	0.15
cl	4940	1:20	4439.50	0.00	40.67		40.94	0.000216	2.27	1959.06	100.00	0.16
cl	4940	1:50	5237.70	0.00	41.99		42.31	0.000248	2.51	2090.41	100.00	0.17
cl	4940	1:100	5811.30	0.00	42.88		43.25	0.000269	2.67	2180.21	100.00	0.18
cl	4920	1:10	3865.90	0.00	39.39		39.86	0.000760	3.05	1267.89	100.00	0.27
cl	4920	1:20	4439.50	0.00	40.36		40.90	0.000796	3.25	1365.20	100.00	0.28
cl	4920	1:50	5237.70	0.00	41.64		42.27	0.000838	3.51	1493.17	100.00	0.29
cl	4920	1:100	5811.30	0.00	42.52		43.21	0.000865	3.68	1580.76	100.00	0.30
cl	4900	1:10	3865.90	0.00	39.56		39.78	0.000189	2.06	1874.02	100.00	0.15
cl	4900	1:20	4439.50	0.00	40.55		40.81	0.000214	2.25	1972.94	100.00	0.16
cl	4900	1:50	5237.70	0.00	41.85		42.17	0.000246	2.49	2102.93	100.00	0.17
cl	4900	1:100	5811.30	0.00	42.74		43.10	0.000268	2.65	2191.83	100.00	0.18
cl	4880	1:10	3865.90	0.00	39.62		39.75	0.000073	1.57	2457.06	100.00	0.10
cl	4880	1:20	4439.50	0.00	40.62		40.77	0.000086	1.74	2556.90	100.00	0.11
cl	4880	1:50	5237.70	0.00	41.93		42.13	0.000104	1.95	2688.12	100.00	0.12
cl	4880	1:100	5811.30	0.00	42.83		43.05	0.000116	2.09	2777.87	100.00	0.13
cl	4860	1:10	3865.90	0.00	39.60		39.75	0.000101	1.66	2327.60	100.00	0.11
cl	4860	1:20	4439.50	0.00	40.60		40.77	0.000117	1.83	2427.14	100.00	0.12
cl	4860	1:50	5237.70	0.00	41.91		42.12	0.000140	2.05	2557.96	100.00	0.13
cl	4860	1:100	5811.30	0.00	42.80		43.05	0.000155	2.20	2647.42	100.00	0.14
cl	4840	1:10	3865.90	0.00	39.56		39.74	0.000187	1.89	2042.02	100.00	0.13
cl	4840	1:20	4439.50	0.00	40.54		40.76	0.000214	2.07	2140.79	100.00	0.14
cl	4840	1:50	5237.70	0.00	41.84		42.11	0.000249	2.31	2270.58	100.00	0.15
cl	4840	1:100	5811.30	0.00	42.73		43.04	0.000273	2.46	2359.33	100.00	0.16
cl	4820	1:10	3865.90	0.00	39.58		39.72	0.000100	1.64	2351.62	100.00	0.11
cl	4820	1:20	4439.50	0.00	40.58		40.74	0.000117	1.81	2450.84	100.00	0.12
cl	4820	1:50	5237.70	0.00	41.88		42.09	0.000140	2.03	2581.23	100.00	0.13
cl	4820	1:100	5811.30	0.00	42.77		43.01	0.000156	2.18	2670.39	100.00	0.13
cl	4800	1:10	3865.90	0.00	39.59		39.72	0.000076	1.56	2486.11	100.00	0.10
cl	4800	1:20	4439.50	0.00	40.59		40.74	0.000090	1.72	2585.48	100.00	0.11
cl	4800	1:50	5237.70	0.00	41.89		42.08	0.000108	1.93	2716.06	100.00	0.12
cl	4800	1:100	5811.30	0.00	42.79		43.00	0.000121	2.07	2805.36	100.00	0.12
cl	4780	1:10	3865.90	0.00	39.61		39.71	0.000047	1.37	2825.71	100.00	0.08
cl	4780	1:20	4439.50	0.00	40.61		40.73	0.000056	1.52	2925.41	100.00	0.09
cl	4780	1:50	5237.70	0.00	41.92		42.07	0.000069	1.71	3056.45	100.00	0.10
cl	4780	1:100	5811.30	0.00	42.81		42.99	0.000078	1.85	3146.07	100.00	0.11
cl	4760	1:10	3865.90	0.00	39.62		39.70	0.000040	1.32	2930.23	100.00	0.08
cl	4760	1:20	4439.50	0.00	40.61		40.72	0.000049	1.47	3030.00	100.00	0.08
cl	4760	1:50	5237.70	0.00	41.92		42.06	0.000060	1.66	3161.14	100.00	0.09
cl	4760	1:100	5811.30	0.00	42.82		42.98	0.000068	1.79	3250.84	100.00	0.10
cl	4740	1:10	3865.90	0.00	39.59		39.70	0.000056	1.45	2674.74	100.00	0.09
cl	4740	1:20	4439.50	0.00	40.59		40.72	0.000067	1.60	2774.12	100.00	0.10

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	4740	1:50	5237.70	0.00	41.89		42.06	0.000082	1.80	2904.72	100.00	0.11
cl	4740	1:100	5811.30	0.00	42.79		42.98	0.000092	1.94	2994.03	100.00	0.11
cl	4720	1:10	3865.90	0.00	39.54		39.70	0.000102	1.72	2247.07	100.00	0.12
cl	4720	1:20	4439.50	0.00	40.53		40.71	0.000119	1.89	2345.59	100.00	0.12
cl	4720	1:50	5237.70	0.00	41.82		42.05	0.000141	2.12	2475.00	100.00	0.14
cl	4720	1:100	5811.30	0.00	42.71		42.97	0.000157	2.27	2563.47	100.00	0.14
cl	4700	1:10	3865.90	0.00	39.47		39.69	0.000194	2.07	1870.32	100.00	0.15
cl	4700	1:20	4439.50	0.00	40.44		40.70	0.000220	2.26	1967.69	100.00	0.16
cl	4700	1:50	5237.70	0.00	41.72		42.04	0.000253	2.50	2095.59	100.00	0.17
cl	4700	1:100	5811.30	0.00	42.59		42.96	0.000276	2.66	2183.02	100.00	0.18
cl	4680	1:10	3865.90	0.00	39.47		39.68	0.000194	2.04	1898.03	100.00	0.15
cl	4680	1:20	4439.50	0.00	40.44		40.69	0.000220	2.22	1995.41	100.00	0.16
cl	4680	1:50	5237.70	0.00	41.72		42.03	0.000254	2.47	2123.31	100.00	0.17
cl	4680	1:100	5811.30	0.00	42.60		42.95	0.000277	2.63	2210.75	100.00	0.18
cl	4660	1:10	3865.90	0.00	39.33		39.66	0.000482	2.56	1510.98	100.00	0.21
cl	4660	1:20	4439.50	0.00	40.29		40.67	0.000525	2.76	1606.69	100.00	0.22
cl	4660	1:50	5237.70	0.00	41.54		42.01	0.000579	3.02	1732.42	100.00	0.23
cl	4660	1:100	5811.30	0.00	42.40		42.92	0.000614	3.20	1818.41	100.00	0.24
cl	4640	1:10	3865.90	0.00	38.96		39.61	0.001420	3.57	1082.81	100.00	0.35
cl	4640	1:20	4439.50	0.00	39.90		40.62	0.001441	3.77	1176.10	100.00	0.35
cl	4640	1:50	5237.70	0.00	41.13		41.95	0.001467	4.03	1298.88	100.00	0.36
cl	4640	1:100	5811.30	0.00	41.97		42.87	0.001483	4.20	1382.99	100.00	0.36
cl	4620	1:10	3865.90	0.00	39.18		39.50	0.000393	2.51	1541.95	100.00	0.20
cl	4620	1:20	4439.50	0.00	40.13		40.50	0.000432	2.71	1636.68	100.00	0.21
cl	4620	1:50	5237.70	0.00	41.37		41.83	0.000480	2.97	1761.23	100.00	0.23
cl	4620	1:100	5811.30	0.00	42.23		42.73	0.000511	3.15	1846.46	100.00	0.23
cl	4600	1:10	3865.90	0.00	39.28		39.46	0.000137	1.87	2064.54	100.00	0.13
cl	4600	1:20	4439.50	0.00	40.24		40.45	0.000158	2.05	2160.49	100.00	0.14
cl	4600	1:50	5237.70	0.00	41.50		41.77	0.000186	2.29	2286.61	100.00	0.15
cl	4600	1:100	5811.30	0.00	42.36		42.67	0.000206	2.45	2372.90	100.00	0.16
cl	4580	1:10	3865.90	0.00	39.28		39.45	0.000136	1.86	2080.34	100.00	0.13
cl	4580	1:20	4439.50	0.00	40.24		40.45	0.000157	2.04	2176.27	100.00	0.14
cl	4580	1:50	5237.70	0.00	41.50		41.76	0.000184	2.27	2302.37	100.00	0.15
cl	4580	1:100	5811.30	0.00	42.36		42.66	0.000204	2.43	2388.65	100.00	0.16
cl	4560	1:10	3865.90	0.00	39.10		39.43	0.000440	2.55	1518.06	100.00	0.21
cl	4560	1:20	4439.50	0.00	40.04		40.43	0.000482	2.75	1611.72	100.00	0.22
cl	4560	1:50	5237.70	0.00	41.27		41.73	0.000534	3.02	1734.87	100.00	0.23
cl	4560	1:100	5811.30	0.00	42.11		42.63	0.000569	3.19	1819.15	100.00	0.24
cl	4540	1:10	3865.90	0.00	38.73		39.39	0.001283	3.59	1076.11	100.00	0.35
cl	4540	1:20	4439.50	0.00	39.64		40.38	0.001311	3.80	1167.09	100.00	0.36
cl	4540	1:50	5237.70	0.00	40.84		41.68	0.001342	4.07	1286.95	100.00	0.36
cl	4540	1:100	5811.30	0.00	41.66		42.58	0.001362	4.24	1369.12	100.00	0.37
cl	4520	1:10	3865.90	0.00	38.86		39.30	0.000662	2.96	1305.57	100.00	0.26
cl	4520	1:20	4439.50	0.00	39.77		40.29	0.000707	3.18	1397.31	100.00	0.27
cl	4520	1:50	5237.70	0.00	40.98		41.59	0.000761	3.45	1518.08	100.00	0.28
cl	4520	1:100	5811.30	0.00	41.81		42.48	0.000796	3.63	1600.83	100.00	0.29
cl	4500	1:10	3865.90	0.00	38.76		39.28	0.000864	3.19	1211.74	100.00	0.29
cl	4500	1:20	4439.50	0.00	39.67		40.27	0.000909	3.41	1302.79	100.00	0.30
cl	4500	1:50	5237.70	0.00	40.87		41.56	0.000961	3.68	1422.71	100.00	0.31
cl	4500	1:100	5811.30	0.00	41.69		42.46	0.000994	3.86	1504.91	100.00	0.32
cl	4480	1:10	3865.90	0.00	39.00		39.17	0.000126	1.83	2110.38	100.00	0.13
cl	4480	1:20	4439.50	0.00	39.94		40.14	0.000147	2.01	2203.98	100.00	0.14
cl	4480	1:50	5237.70	0.00	41.17		41.43	0.000174	2.25	2327.14	100.00	0.15
cl	4480	1:100	5811.30	0.00	42.01		42.31	0.000193	2.41	2411.49	100.00	0.16
cl	4460	1:10	3865.90	0.00	39.05		39.15	0.000051	1.43	2696.53	100.00	0.09
cl	4460	1:20	4439.50	0.00	39.99		40.12	0.000061	1.59	2790.90	100.00	0.10
cl	4460	1:50	5237.70	0.00	41.23		41.40	0.000075	1.80	2915.14	100.00	0.11
cl	4460	1:100	5811.30	0.00	42.08		42.27	0.000085	1.94	3000.23	100.00	0.11
cl	4440	1:10	3865.90	0.00	39.03		39.15	0.000058	1.50	2582.95	100.00	0.09

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	4440	1:20	4439.50	0.00	39.98		40.12	0.000069	1.66	2677.11	100.00	0.10
cl	4440	1:50	5237.70	0.00	41.22		41.39	0.000084	1.87	2801.04	100.00	0.11
cl	4440	1:100	5811.30	0.00	42.06		42.27	0.000095	2.01	2885.92	100.00	0.12
cl	4420	1:10	3865.90	0.00	39.03		39.15	0.000064	1.54	2513.83	100.00	0.10
cl	4420	1:20	4439.50	0.00	39.97		40.11	0.000076	1.70	2607.83	100.00	0.11
cl	4420	1:50	5237.70	0.00	41.20		41.39	0.000092	1.92	2731.55	100.00	0.12
cl	4420	1:100	5811.30	0.00	42.05		42.27	0.000104	2.06	2816.28	100.00	0.12
cl	4400	1:10	3865.90	0.00	39.03		39.15	0.000062	1.54	2518.19	100.00	0.10
cl	4400	1:20	4439.50	0.00	39.97		40.11	0.000074	1.70	2612.18	100.00	0.11
cl	4400	1:50	5237.70	0.00	41.20		41.39	0.000091	1.91	2735.87	100.00	0.12
cl	4400	1:100	5811.30	0.00	42.05		42.27	0.000102	2.06	2820.58	100.00	0.12
cl	4380	1:10	3865.90	0.00	39.03		39.14	0.000060	1.52	2547.36	100.00	0.10
cl	4380	1:20	4439.50	0.00	39.97		40.11	0.000071	1.68	2641.36	100.00	0.10
cl	4380	1:50	5237.70	0.00	41.20		41.39	0.000087	1.89	2765.06	100.00	0.12
cl	4380	1:100	5811.30	0.00	42.05		42.26	0.000099	2.04	2849.79	100.00	0.12
cl	4360	1:10	3865.90	0.00	38.99		39.14	0.000087	1.69	2293.06	100.00	0.11
cl	4360	1:20	4439.50	0.00	39.93		40.11	0.000102	1.86	2386.50	100.00	0.12
cl	4360	1:50	5237.70	0.00	41.16		41.38	0.000123	2.09	2509.42	100.00	0.13
cl	4360	1:100	5811.30	0.00	42.00		42.26	0.000137	2.24	2593.59	100.00	0.14
cl	4340	1:10	3865.90	0.00	38.82		39.12	0.000328	2.44	1587.50	100.00	0.20
cl	4340	1:20	4439.50	0.00	39.73		40.08	0.000365	2.65	1678.37	100.00	0.21
cl	4340	1:50	5237.70	0.00	40.92		41.36	0.000412	2.91	1797.90	100.00	0.22
cl	4340	1:100	5811.30	0.00	41.74		42.23	0.000443	3.09	1879.75	100.00	0.23
cl	4320	1:10	3865.90	0.00	38.52		39.08	0.001006	3.31	1166.62	100.00	0.31
cl	4320	1:20	4439.50	0.00	39.41		40.04	0.001055	3.54	1254.76	100.00	0.32
cl	4320	1:50	5237.70	0.00	40.57		41.31	0.001114	3.82	1370.86	100.00	0.33
cl	4320	1:100	5811.30	0.00	41.36		42.18	0.001150	4.01	1450.49	100.00	0.34
cl	4300	1:10	3865.90	0.00	38.77		38.97	0.000155	1.97	1962.06	100.00	0.14
cl	4300	1:20	4439.50	0.00	39.68		39.92	0.000179	2.16	2052.77	100.00	0.15
cl	4300	1:50	5237.70	0.00	40.87		41.17	0.000211	2.41	2172.14	100.00	0.17
cl	4300	1:100	5811.30	0.00	41.69		42.03	0.000233	2.58	2253.91	100.00	0.17
cl	4280	1:10	3865.90	0.00	38.79		38.96	0.000106	1.79	2163.03	100.00	0.12
cl	4280	1:20	4439.50	0.00	39.70		39.90	0.000124	1.97	2254.10	100.00	0.13
cl	4280	1:50	5237.70	0.00	40.90		41.15	0.000148	2.21	2373.94	100.00	0.14
cl	4280	1:100	5811.30	0.00	41.72		42.01	0.000165	2.37	2456.04	100.00	0.15
cl	4260	1:10	3865.90	0.00	38.79		38.95	0.000107	1.79	2153.91	100.00	0.12
cl	4260	1:20	4439.50	0.00	39.70		39.90	0.000125	1.98	2244.91	100.00	0.13
cl	4260	1:50	5237.70	0.00	40.90		41.15	0.000150	2.21	2364.67	100.00	0.15
cl	4260	1:100	5811.30	0.00	41.72		42.01	0.000167	2.38	2446.71	100.00	0.15
cl	4240	1:10	3865.90	0.00	38.79		38.95	0.000110	1.80	2144.03	100.00	0.12
cl	4240	1:20	4439.50	0.00	39.70		39.90	0.000129	1.99	2234.96	100.00	0.13
cl	4240	1:50	5237.70	0.00	40.89		41.14	0.000154	2.22	2354.64	100.00	0.15
cl	4240	1:100	5811.30	0.00	41.71		42.00	0.000172	2.38	2436.61	100.00	0.15
cl	4220	1:10	3865.90	0.00	38.73		38.94	0.000188	2.03	1901.61	100.00	0.15
cl	4220	1:20	4439.50	0.00	39.63		39.89	0.000216	2.23	1991.71	100.00	0.16
cl	4220	1:50	5237.70	0.00	40.82		41.13	0.000253	2.48	2110.26	100.00	0.17
cl	4220	1:100	5811.30	0.00	41.63		41.99	0.000278	2.65	2191.46	100.00	0.18
cl	4200	1:10	3865.90	0.00	38.43		38.91	0.000814	3.07	1259.97	100.00	0.28
cl	4200	1:20	4439.50	0.00	39.30		39.85	0.000872	3.30	1346.50	100.00	0.29
cl	4200	1:50	5237.70	0.00	40.44		41.09	0.000942	3.59	1460.46	100.00	0.30
cl	4200	1:100	5811.30	0.00	41.22		41.94	0.000986	3.78	1538.61	100.00	0.31
cl	4180	1:10	3865.90	0.00	38.60		38.83	0.000190	2.08	1856.34	100.00	0.15
cl	4180	1:20	4439.50	0.00	39.49		39.76	0.000217	2.28	1944.87	100.00	0.17
cl	4180	1:50	5237.70	0.00	40.66		40.98	0.000254	2.54	2061.38	100.00	0.18
cl	4180	1:100	5811.30	0.00	41.45		41.83	0.000280	2.71	2141.22	100.00	0.19
cl	4160	1:10	3865.90	0.00	38.62		38.82	0.000155	1.97	1965.91	100.00	0.14
cl	4160	1:20	4439.50	0.00	39.51		39.74	0.000179	2.16	2054.64	100.00	0.15
cl	4160	1:50	5237.70	0.00	40.67		40.97	0.000212	2.41	2171.43	100.00	0.17
cl	4160	1:100	5811.30	0.00	41.47		41.81	0.000234	2.58	2251.45	100.00	0.17

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	4140	1:10	3865.90	0.00	38.45		38.80	0.000428	2.60	1485.56	100.00	0.22
cl	4140	1:20	4439.50	0.00	39.31		39.72	0.000474	2.82	1571.98	100.00	0.23
cl	4140	1:50	5237.70	0.00	40.45		40.94	0.000532	3.11	1685.71	100.00	0.24
cl	4140	1:100	5811.30	0.00	41.23		41.78	0.000571	3.30	1763.66	100.00	0.25
cl	4120	1:10	3865.90	0.00	38.24		38.77	0.000848	3.21	1204.00	100.00	0.30
cl	4120	1:20	4439.50	0.00	39.08		39.69	0.000906	3.45	1288.28	100.00	0.31
cl	4120	1:50	5237.70	0.00	40.19		40.91	0.000975	3.74	1399.32	100.00	0.32
cl	4120	1:100	5811.30	0.00	40.96		41.75	0.001018	3.94	1475.51	100.00	0.33
cl	4100	1:10	3865.90	0.00	38.38		38.69	0.000312	2.47	1565.32	100.00	0.20
cl	4100	1:20	4439.50	0.00	39.24		39.61	0.000350	2.69	1651.05	100.00	0.21
cl	4100	1:50	5237.70	0.00	40.37		40.82	0.000399	2.97	1763.93	100.00	0.23
cl	4100	1:100	5811.30	0.00	41.14		41.65	0.000431	3.16	1841.31	100.00	0.23
cl	4080	1:10	3865.90	0.00	38.41		38.67	0.000234	2.26	1709.13	100.00	0.17
cl	4080	1:20	4439.50	0.00	39.27		39.58	0.000266	2.47	1795.27	100.00	0.19
cl	4080	1:50	5237.70	0.00	40.41		40.79	0.000308	2.74	1908.66	100.00	0.20
cl	4080	1:100	5811.30	0.00	41.18		41.62	0.000337	2.93	1986.40	100.00	0.21
cl	4060	1:10	3865.90	0.00	38.32		38.66	0.000368	2.56	1510.41	100.00	0.21
cl	4060	1:20	4439.50	0.00	39.17		39.57	0.000411	2.78	1595.39	100.00	0.22
cl	4060	1:50	5237.70	0.00	40.29		40.77	0.000465	3.07	1707.27	100.00	0.24
cl	4060	1:100	5811.30	0.00	41.06		41.60	0.000501	3.26	1783.98	100.00	0.25
cl	4040	1:10	3865.90	0.00	37.59		38.58	0.002771	4.40	878.48	100.00	0.47
cl	4040	1:20	4439.50	0.00	38.39		39.48	0.002768	4.63	958.24	100.00	0.48
cl	4040	1:50	5237.70	0.00	39.44		40.68	0.002763	4.92	1063.72	100.00	0.48
cl	4040	1:100	5811.30	0.00	40.17		41.50	0.002759	5.11	1136.36	100.00	0.48
cl	4020	1:10	3865.90	0.00	37.77		38.45	0.001313	3.63	1065.79	100.00	0.35
cl	4020	1:20	4439.50	0.00	38.58		39.34	0.001376	3.87	1146.37	100.00	0.37
cl	4020	1:50	5237.70	0.00	39.64		40.54	0.001450	4.18	1252.80	100.00	0.38
cl	4020	1:100	5811.30	0.00	40.38		41.36	0.001494	4.38	1326.02	100.00	0.38
cl	4000	1:10	3865.90	0.00	37.92		38.36	0.000626	2.91	1329.96	100.00	0.25
cl	4000	1:20	4439.50	0.00	38.74		39.25	0.000685	3.14	1411.84	100.00	0.27
cl	4000	1:50	5237.70	0.00	39.82		40.43	0.000759	3.45	1519.88	100.00	0.28
cl	4000	1:100	5811.30	0.00	40.57		41.24	0.000807	3.65	1594.11	100.00	0.29
cl	3980	1:10	3865.90	0.00	37.61		38.31	0.001622	3.71	1042.20	100.00	0.37
cl	3980	1:20	4439.50	0.00	38.40		39.20	0.001696	3.96	1121.25	100.00	0.38
cl	3980	1:50	5237.70	0.00	39.44		40.37	0.001781	4.27	1225.79	100.00	0.39
cl	3980	1:100	5811.30	0.00	40.16		41.19	0.001831	4.48	1297.78	100.00	0.40
cl	3960	1:10	3865.90	0.00	37.87		38.18	0.000407	2.48	1560.47	100.00	0.20
cl	3960	1:20	4439.50	0.00	38.68		39.05	0.000459	2.70	1642.03	100.00	0.21
cl	3960	1:50	5237.70	0.00	39.76		40.21	0.000525	2.99	1749.71	100.00	0.23
cl	3960	1:100	5811.30	0.00	40.50		41.02	0.000569	3.19	1823.74	100.00	0.24
cl	3940	1:10	3865.90	0.00	37.96		38.13	0.000141	1.82	2128.33	100.00	0.13
cl	3940	1:20	4439.50	0.00	38.79		39.00	0.000166	2.01	2211.40	100.00	0.14
cl	3940	1:50	5237.70	0.00	39.89		40.15	0.000199	2.26	2321.09	100.00	0.15
cl	3940	1:100	5811.30	0.00	40.64		40.94	0.000223	2.42	2396.49	100.00	0.16
cl	3920	1:10	3865.90	0.00	38.00		38.11	0.000065	1.46	2655.85	100.00	0.09
cl	3920	1:20	4439.50	0.00	38.84		38.97	0.000079	1.62	2739.69	100.00	0.10
cl	3920	1:50	5237.70	0.00	39.95		40.12	0.000098	1.84	2850.44	100.00	0.11
cl	3920	1:100	5811.30	0.00	40.71		40.91	0.000112	1.99	2926.60	100.00	0.12
cl	3900	1:10	3865.90	0.00	38.02		38.10	0.000037	1.24	3125.79	100.00	0.07
cl	3900	1:20	4439.50	0.00	38.87		38.96	0.000045	1.38	3210.05	100.00	0.08
cl	3900	1:50	5237.70	0.00	39.98		40.11	0.000057	1.58	3321.40	100.00	0.09
cl	3900	1:100	5811.30	0.00	40.74		40.89	0.000066	1.71	3397.99	100.00	0.09
cl	3880	1:10	3865.90	0.00	38.03		38.10	0.000030	1.18	3281.47	100.00	0.07
cl	3880	1:20	4439.50	0.00	38.87		38.96	0.000036	1.32	3365.82	100.00	0.07
cl	3880	1:50	5237.70	0.00	39.99		40.10	0.000046	1.51	3477.31	100.00	0.08
cl	3880	1:100	5811.30	0.00	40.75		40.89	0.000054	1.64	3554.01	100.00	0.09
cl	3860	1:10	3865.90	0.00	38.03		38.10	0.000030	1.18	3274.49	100.00	0.07
cl	3860	1:20	4439.50	0.00	38.87		38.96	0.000037	1.32	3358.82	100.00	0.07
cl	3860	1:50	5237.70	0.00	39.98		40.10	0.000047	1.51	3470.28	100.00	0.08
cl	3860	1:100	5811.30	0.00	40.75		40.89	0.000055	1.64	3546.95	100.00	0.09

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	3840	1:10	3865.90	0.00	38.03		38.10	0.000030	1.18	3264.27	100.00	0.07
cl	3840	1:20	4439.50	0.00	38.87		38.96	0.000037	1.33	3348.57	100.00	0.07
cl	3840	1:50	5237.70	0.00	39.98		40.10	0.000047	1.51	3460.00	100.00	0.08
cl	3840	1:100	5811.30	0.00	40.75		40.89	0.000055	1.64	3536.65	100.00	0.09
cl	3820	1:10	3865.90	0.00	38.02		38.10	0.000031	1.19	3236.32	100.00	0.07
cl	3820	1:20	4439.50	0.00	38.87		38.96	0.000038	1.34	3320.58	100.00	0.07
cl	3820	1:50	5237.70	0.00	39.98		40.10	0.000048	1.53	3431.94	100.00	0.08
cl	3820	1:100	5811.30	0.00	40.75		40.89	0.000056	1.66	3508.54	100.00	0.09
cl	3800	1:10	3865.90	0.00	38.02		38.10	0.000031	1.19	3236.26	100.00	0.07
cl	3800	1:20	4439.50	0.00	38.87		38.96	0.000038	1.34	3320.50	100.00	0.07
cl	3800	1:50	5237.70	0.00	39.98		40.10	0.000048	1.53	3431.84	100.00	0.08
cl	3800	1:100	5811.30	0.00	40.74		40.88	0.000056	1.66	3508.43	100.00	0.09
cl	3780	1:10	3865.90	0.00	38.02		38.09	0.000031	1.19	3236.92	100.00	0.07
cl	3780	1:20	4439.50	0.00	38.86		38.96	0.000038	1.34	3321.15	100.00	0.07
cl	3780	1:50	5237.70	0.00	39.98		40.10	0.000048	1.53	3432.47	100.00	0.08
cl	3780	1:100	5811.30	0.00	40.74		40.88	0.000056	1.66	3509.04	100.00	0.09
cl	3760	1:10	3865.90	0.00	38.02		38.09	0.000031	1.19	3237.88	100.00	0.07
cl	3760	1:20	4439.50	0.00	38.86		38.95	0.000038	1.34	3322.10	100.00	0.07
cl	3760	1:50	5237.70	0.00	39.98		40.10	0.000048	1.53	3433.40	100.00	0.08
cl	3760	1:100	5811.30	0.00	40.74		40.88	0.000056	1.66	3509.96	100.00	0.09
cl	3740	1:10	3865.90	0.00	38.02		38.09	0.000031	1.19	3237.82	100.00	0.07
cl	3740	1:20	4439.50	0.00	38.86		38.95	0.000038	1.34	3322.03	100.00	0.07
cl	3740	1:50	5237.70	0.00	39.98		40.09	0.000048	1.53	3433.30	100.00	0.08
cl	3740	1:100	5811.30	0.00	40.74		40.88	0.000056	1.66	3509.85	100.00	0.09
cl	3720	1:10	3865.90	0.00	38.02		38.09	0.000031	1.19	3253.34	100.00	0.07
cl	3720	1:20	4439.50	0.00	38.86		38.95	0.000038	1.33	3337.54	100.00	0.07
cl	3720	1:50	5237.70	0.00	39.98		40.09	0.000048	1.52	3448.82	100.00	0.08
cl	3720	1:100	5811.30	0.00	40.74		40.88	0.000055	1.65	3525.35	100.00	0.09
cl	3700	1:10	3865.90	0.00	38.02		38.09	0.000029	1.17	3297.64	100.00	0.07
cl	3700	1:20	4439.50	0.00	38.86		38.95	0.000036	1.31	3381.86	100.00	0.07
cl	3700	1:50	5237.70	0.00	39.98		40.09	0.000046	1.50	3493.15	100.00	0.08
cl	3700	1:100	5811.30	0.00	40.74		40.88	0.000053	1.63	3569.71	100.00	0.09
cl	3680	1:10	3865.90	0.00	38.02		38.09	0.000029	1.17	3297.58	100.00	0.07
cl	3680	1:20	4439.50	0.00	38.86		38.95	0.000036	1.31	3381.78	100.00	0.07
cl	3680	1:50	5237.70	0.00	39.98		40.09	0.000046	1.50	3493.06	100.00	0.08
cl	3680	1:100	5811.30	0.00	40.74		40.88	0.000053	1.63	3569.60	100.00	0.09
cl	3660	1:10	3865.90	0.00	38.02		38.09	0.000029	1.17	3309.67	100.00	0.06
cl	3660	1:20	4439.50	0.00	38.86		38.95	0.000036	1.31	3393.87	100.00	0.07
cl	3660	1:50	5237.70	0.00	39.98		40.09	0.000046	1.49	3505.14	100.00	0.08
cl	3660	1:100	5811.30	0.00	40.74		40.87	0.000053	1.62	3581.67	100.00	0.09
cl	3640	1:10	3865.90	0.00	38.02		38.09	0.000028	1.15	3364.51	100.00	0.06
cl	3640	1:20	4439.50	0.00	38.86		38.95	0.000035	1.29	3448.74	100.00	0.07
cl	3640	1:50	5237.70	0.00	39.98		40.09	0.000044	1.47	3560.04	100.00	0.08
cl	3640	1:100	5811.30	0.00	40.74		40.87	0.000051	1.60	3636.59	100.00	0.08
cl	3620	1:10	3865.90	0.00	38.02		38.09	0.000027	1.13	3410.50	100.00	0.06
cl	3620	1:20	4439.50	0.00	38.86		38.95	0.000033	1.27	3494.74	100.00	0.07
cl	3620	1:50	5237.70	0.00	39.98		40.09	0.000042	1.45	3606.06	100.00	0.08
cl	3620	1:100	5811.30	0.00	40.74		40.87	0.000049	1.58	3682.63	100.00	0.08
cl	3600	1:10	3865.90	0.00	38.02		38.09	0.000030	1.17	3295.28	100.00	0.07
cl	3600	1:20	4439.50	0.00	38.86		38.95	0.000037	1.31	3379.39	100.00	0.07
cl	3600	1:50	5237.70	0.00	39.97		40.08	0.000047	1.50	3490.52	100.00	0.08
cl	3600	1:100	5811.30	0.00	40.73		40.87	0.000055	1.63	3566.96	100.00	0.09
cl	3580	1:10	3865.90	0.00	38.01		38.09	0.000036	1.25	3103.44	100.00	0.07
cl	3580	1:20	4439.50	0.00	38.84		38.94	0.000045	1.39	3187.32	100.00	0.08
cl	3580	1:50	5237.70	0.00	39.95		40.08	0.000056	1.59	3298.12	100.00	0.09
cl	3580	1:100	5811.30	0.00	40.71		40.87	0.000065	1.72	3374.30	100.00	0.09
cl	3560	1:10	3865.90	0.00	38.00		38.08	0.000042	1.31	2942.19	100.00	0.08
cl	3560	1:20	4439.50	0.00	38.83		38.94	0.000051	1.47	3025.84	100.00	0.09
cl	3560	1:50	5237.70	0.00	39.94		40.08	0.000064	1.67	3136.30	100.00	0.10

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	3560	1:100	5811.30	0.00	40.70		40.86	0.000074	1.81	3212.25	100.00	0.10
cl	3540	1:10	3865.90	0.00	37.99		38.08	0.000042	1.34	2886.15	100.00	0.08
cl	3540	1:20	4439.50	0.00	38.83		38.94	0.000051	1.49	2969.70	100.00	0.09
cl	3540	1:50	5237.70	0.00	39.93		40.08	0.000064	1.70	3080.02	100.00	0.10
cl	3540	1:100	5811.30	0.00	40.69		40.86	0.000073	1.84	3155.86	100.00	0.10
cl	3520	1:10	3865.90	0.00	37.98		38.08	0.000049	1.40	2752.74	100.00	0.09
cl	3520	1:20	4439.50	0.00	38.81		38.94	0.000060	1.57	2836.06	100.00	0.09
cl	3520	1:50	5237.70	0.00	39.91		40.07	0.000074	1.78	2946.06	100.00	0.10
cl	3520	1:100	5811.30	0.00	40.67		40.86	0.000085	1.92	3021.66	100.00	0.11
cl	3500	1:10	3865.90	0.00	37.98		38.08	0.000047	1.39	2784.44	100.00	0.08
cl	3500	1:20	4439.50	0.00	38.81		38.94	0.000057	1.55	2867.77	100.00	0.09
cl	3500	1:50	5237.70	0.00	39.91		40.07	0.000072	1.76	2977.79	100.00	0.10
cl	3500	1:100	5811.30	0.00	40.67		40.85	0.000082	1.90	3053.40	100.00	0.11
cl	3480	1:10	3865.90	0.00	37.98		38.08	0.000043	1.33	2898.91	100.00	0.08
cl	3480	1:20	4439.50	0.00	38.82		38.93	0.000052	1.49	2982.34	100.00	0.09
cl	3480	1:50	5237.70	0.00	39.92		40.07	0.000065	1.69	3092.48	100.00	0.10
cl	3480	1:100	5811.30	0.00	40.68		40.85	0.000075	1.83	3168.19	100.00	0.10
cl	3460	1:10	3865.90	0.00	37.99		38.07	0.000036	1.26	3061.58	100.00	0.07
cl	3460	1:20	4439.50	0.00	38.83		38.93	0.000044	1.41	3145.13	100.00	0.08
cl	3460	1:50	5237.70	0.00	39.93		40.06	0.000056	1.61	3255.45	100.00	0.09
cl	3460	1:100	5811.30	0.00	40.69		40.84	0.000064	1.74	3331.29	100.00	0.10
cl	3440	1:10	3865.90	0.00	37.99		38.07	0.000033	1.23	3150.95	100.00	0.07
cl	3440	1:20	4439.50	0.00	38.83		38.93	0.000040	1.37	3234.55	100.00	0.08
cl	3440	1:50	5237.70	0.00	39.93		40.06	0.000051	1.57	3344.96	100.00	0.09
cl	3440	1:100	5811.30	0.00	40.69		40.84	0.000059	1.70	3420.85	100.00	0.09
cl	3420	1:10	3865.90	0.00	38.00		38.07	0.000031	1.18	3270.31	100.00	0.07
cl	3420	1:20	4439.50	0.00	38.83		38.92	0.000038	1.32	3353.98	100.00	0.07
cl	3420	1:50	5237.70	0.00	39.94		40.05	0.000048	1.51	3464.49	100.00	0.08
cl	3420	1:100	5811.30	0.00	40.70		40.84	0.000056	1.64	3540.45	100.00	0.09
cl	3400	1:10	3865.90	0.00	38.00		38.07	0.000029	1.15	3358.29	100.00	0.06
cl	3400	1:20	4439.50	0.00	38.84		38.92	0.000036	1.29	3442.01	100.00	0.07
cl	3400	1:50	5237.70	0.00	39.94		40.05	0.000046	1.47	3552.58	100.00	0.08
cl	3400	1:100	5811.30	0.00	40.70		40.83	0.000053	1.60	3628.59	100.00	0.08
cl	3380	1:10	3865.90	0.00	38.00		38.07	0.000028	1.15	3374.92	100.00	0.06
cl	3380	1:20	4439.50	0.00	38.84		38.92	0.000034	1.28	3458.63	100.00	0.07
cl	3380	1:50	5237.70	0.00	39.94		40.05	0.000044	1.47	3569.19	100.00	0.08
cl	3380	1:100	5811.30	0.00	40.70		40.83	0.000051	1.59	3645.20	100.00	0.08
cl	3360	1:10	3865.90	0.00	37.99		38.06	0.000031	1.19	3236.07	100.00	0.07
cl	3360	1:20	4439.50	0.00	38.83		38.92	0.000038	1.34	3319.62	100.00	0.07
cl	3360	1:50	5237.70	0.00	39.93		40.05	0.000048	1.53	3429.95	100.00	0.08
cl	3360	1:100	5811.30	0.00	40.69		40.83	0.000056	1.66	3505.79	100.00	0.09
cl	3340	1:10	3865.90	0.00	37.98		38.06	0.000036	1.26	3080.24	100.00	0.07
cl	3340	1:20	4439.50	0.00	38.82		38.92	0.000044	1.40	3163.59	100.00	0.08
cl	3340	1:50	5237.70	0.00	39.92		40.05	0.000055	1.60	3273.64	100.00	0.09
cl	3340	1:100	5811.30	0.00	40.67		40.83	0.000064	1.74	3349.27	100.00	0.10
cl	3320	1:10	3865.90	0.00	37.97		38.06	0.000042	1.31	2958.38	100.00	0.08
cl	3320	1:20	4439.50	0.00	38.81		38.91	0.000051	1.46	3041.56	100.00	0.08
cl	3320	1:50	5237.70	0.00	39.90		40.04	0.000064	1.66	3151.35	100.00	0.09
cl	3320	1:100	5811.30	0.00	40.66		40.82	0.000074	1.80	3226.79	100.00	0.10
cl	3300	1:10	3865.90	0.00	37.96		38.06	0.000049	1.38	2806.32	100.00	0.08
cl	3300	1:20	4439.50	0.00	38.79		38.91	0.000059	1.54	2889.25	100.00	0.09
cl	3300	1:50	5237.70	0.00	39.89		40.04	0.000074	1.75	2998.69	100.00	0.10
cl	3300	1:100	5811.30	0.00	40.64		40.82	0.000085	1.89	3073.87	100.00	0.11
cl	3280	1:10	3865.90	0.00	37.96		38.06	0.000054	1.42	2728.21	100.00	0.09
cl	3280	1:20	4439.50	0.00	38.78		38.91	0.000066	1.58	2810.99	100.00	0.10
cl	3280	1:50	5237.70	0.00	39.88		40.04	0.000082	1.79	2920.21	100.00	0.11
cl	3280	1:100	5811.30	0.00	40.63		40.82	0.000094	1.94	2995.24	100.00	0.11
cl	3260	1:10	3865.90	0.00	37.96		38.05	0.000047	1.36	2836.07	100.00	0.08
cl	3260	1:20	4439.50	0.00	38.79		38.91	0.000057	1.52	2918.94	100.00	0.09

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	3260	1:50	5237.70	0.00	39.88		40.03	0.000071	1.73	3028.29	100.00	0.10
cl	3260	1:100	5811.30	0.00	40.63		40.81	0.000082	1.87	3103.41	100.00	0.11
cl	3240	1:10	3865.90	0.00	37.96		38.05	0.000042	1.31	2957.52	100.00	0.08
cl	3240	1:20	4439.50	0.00	38.79		38.90	0.000051	1.46	3040.48	100.00	0.08
cl	3240	1:50	5237.70	0.00	39.89		40.03	0.000065	1.66	3149.96	100.00	0.09
cl	3240	1:100	5811.30	0.00	40.64		40.81	0.000074	1.80	3225.18	100.00	0.10
cl	3220	1:10	3865.90	0.00	37.97		38.05	0.000034	1.21	3186.02	100.00	0.07
cl	3220	1:20	4439.50	0.00	38.80		38.90	0.000042	1.36	3269.16	100.00	0.08
cl	3220	1:50	5237.70	0.00	39.90		40.02	0.000053	1.55	3378.88	100.00	0.09
cl	3220	1:100	5811.30	0.00	40.65		40.80	0.000061	1.68	3454.27	100.00	0.09
cl	3200	1:10	3865.90	0.00	37.98		38.04	0.000023	1.06	3636.32	100.00	0.06
cl	3200	1:20	4439.50	0.00	38.82		38.89	0.000029	1.19	3719.71	100.00	0.06
cl	3200	1:50	5237.70	0.00	39.92		40.01	0.000037	1.37	3829.82	100.00	0.07
cl	3200	1:100	5811.30	0.00	40.68		40.79	0.000043	1.49	3905.49	100.00	0.08
cl	3180	1:10	3865.90	0.00	37.98		38.04	0.000022	1.04	3719.41	100.00	0.05
cl	3180	1:20	4439.50	0.00	38.82		38.89	0.000028	1.17	3802.83	100.00	0.06
cl	3180	1:50	5237.70	0.00	39.92		40.01	0.000035	1.34	3912.98	100.00	0.07
cl	3180	1:100	5811.30	0.00	40.68		40.79	0.000041	1.46	3988.69	100.00	0.07
cl	3160	1:10	3865.90	0.00	37.98		38.04	0.000022	1.04	3702.85	100.00	0.05
cl	3160	1:20	4439.50	0.00	38.82		38.89	0.000028	1.17	3786.25	100.00	0.06
cl	3160	1:50	5237.70	0.00	39.92		40.01	0.000036	1.34	3896.37	100.00	0.07
cl	3160	1:100	5811.30	0.00	40.68		40.78	0.000042	1.46	3972.05	100.00	0.07
cl	3140	1:10	3865.90	0.00	37.98		38.04	0.000022	1.04	3708.23	100.00	0.05
cl	3140	1:20	4439.50	0.00	38.82		38.89	0.000028	1.17	3791.63	100.00	0.06
cl	3140	1:50	5237.70	0.00	39.92		40.01	0.000036	1.34	3901.73	100.00	0.07
cl	3140	1:100	5811.30	0.00	40.68		40.78	0.000042	1.46	3977.41	100.00	0.07
cl	3120	1:10	3865.90	0.00	37.98		38.04	0.000023	1.07	3629.35	100.00	0.06
cl	3120	1:20	4439.50	0.00	38.81		38.89	0.000029	1.20	3712.67	100.00	0.06
cl	3120	1:50	5237.70	0.00	39.91		40.01	0.000037	1.37	3822.67	100.00	0.07
cl	3120	1:100	5811.30	0.00	40.67		40.78	0.000044	1.49	3898.26	100.00	0.08
cl	3100	1:10	3865.90	0.00	37.96		38.04	0.000036	1.24	3129.91	100.00	0.07
cl	3100	1:20	4439.50	0.00	38.79		38.88	0.000044	1.38	3212.71	100.00	0.08
cl	3100	1:50	5237.70	0.00	39.88		40.01	0.000056	1.58	3321.97	100.00	0.09
cl	3100	1:100	5811.30	0.00	40.63		40.78	0.000065	1.71	3397.01	100.00	0.09
cl	3080	1:10	3865.90	0.00	37.94		38.03	0.000049	1.36	2846.98	100.00	0.08
cl	3080	1:20	4439.50	0.00	38.76		38.88	0.000060	1.52	2929.39	100.00	0.09
cl	3080	1:50	5237.70	0.00	39.85		40.00	0.000075	1.72	3038.06	100.00	0.10
cl	3080	1:100	5811.30	0.00	40.60		40.77	0.000086	1.87	3112.67	100.00	0.11
cl	3060	1:10	3865.90	0.00	37.91		38.03	0.000070	1.51	2557.12	100.00	0.10
cl	3060	1:20	4439.50	0.00	38.73		38.88	0.000084	1.68	2638.99	100.00	0.10
cl	3060	1:50	5237.70	0.00	39.81		40.00	0.000104	1.91	2746.89	100.00	0.12
cl	3060	1:100	5811.30	0.00	40.55		40.77	0.000119	2.06	2820.95	100.00	0.12
cl	3040	1:10	3865.90	0.00	37.88		38.02	0.000111	1.70	2275.32	100.00	0.11
cl	3040	1:20	4439.50	0.00	38.69		38.87	0.000132	1.88	2356.49	100.00	0.12
cl	3040	1:50	5237.70	0.00	39.76		39.99	0.000162	2.13	2463.42	100.00	0.14
cl	3040	1:100	5811.30	0.00	40.49		40.76	0.000182	2.29	2536.78	100.00	0.15
cl	3020	1:10	3865.90	0.00	37.79		38.01	0.000233	2.08	1861.29	100.00	0.15
cl	3020	1:20	4439.50	0.00	38.59		38.86	0.000270	2.29	1940.98	100.00	0.17
cl	3020	1:50	5237.70	0.00	39.64		39.97	0.000321	2.56	2045.86	100.00	0.18
cl	3020	1:100	5811.30	0.00	40.36		40.74	0.000355	2.74	2117.77	100.00	0.19
cl	3000	1:10	3865.90	0.00	37.60		37.99	0.000631	2.78	1391.65	100.00	0.24
cl	3000	1:20	4439.50	0.00	38.36		38.83	0.000704	3.02	1468.39	100.00	0.25
cl	3000	1:50	5237.70	0.00	39.37		39.94	0.000796	3.34	1569.35	100.00	0.27
cl	3000	1:100	5811.30	0.00	40.07		40.71	0.000857	3.55	1638.56	100.00	0.28
cl	2980	1:10	3865.90	0.00	37.70		37.93	0.000239	2.13	1812.85	100.00	0.16
cl	2980	1:20	4439.50	0.00	38.49		38.77	0.000277	2.35	1891.13	100.00	0.17
cl	2980	1:50	5237.70	0.00	39.52		39.87	0.000328	2.63	1994.13	100.00	0.19
cl	2980	1:100	5811.30	0.00	40.22		40.63	0.000364	2.81	2064.74	100.00	0.20
cl	2960	1:10	3865.90	0.00	37.59		37.92	0.000437	2.54	1521.54	100.00	0.21

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	2960	1:20	4439.50	0.00	38.35		38.75	0.000496	2.78	1598.05	100.00	0.22
cl	2960	1:50	5237.70	0.00	39.36		39.85	0.000571	3.08	1698.68	100.00	0.24
cl	2960	1:100	5811.30	0.00	40.05		40.60	0.000622	3.29	1767.64	100.00	0.25
cl	2940	1:10	3865.90	0.00	37.69		37.87	0.000149	1.90	2029.66	100.00	0.14
cl	2940	1:20	4439.50	0.00	38.47		38.69	0.000175	2.11	2107.72	100.00	0.15
cl	2940	1:50	5237.70	0.00	39.49		39.78	0.000212	2.37	2210.42	100.00	0.16
cl	2940	1:100	5811.30	0.00	40.20		40.53	0.000237	2.55	2280.82	100.00	0.17
cl	2920	1:10	3865.90	0.00	37.73		37.85	0.000065	1.52	2550.89	100.00	0.10
cl	2920	1:20	4439.50	0.00	38.52		38.67	0.000079	1.69	2629.81	100.00	0.11
cl	2920	1:50	5237.70	0.00	39.56		39.75	0.000098	1.92	2733.74	100.00	0.12
cl	2920	1:100	5811.30	0.00	40.27		40.49	0.000112	2.07	2805.02	100.00	0.12
cl	2900	1:10	3865.90	0.00	37.75		37.84	0.000043	1.34	2879.30	100.00	0.08
cl	2900	1:20	4439.50	0.00	38.54		38.65	0.000053	1.50	2958.58	100.00	0.09
cl	2900	1:50	5237.70	0.00	39.58		39.73	0.000067	1.71	3063.00	100.00	0.10
cl	2900	1:100	5811.30	0.00	40.30		40.48	0.000077	1.85	3134.65	100.00	0.11
cl	2880	1:10	3865.90	0.00	37.73		37.84	0.000053	1.42	2713.45	100.00	0.09
cl	2880	1:20	4439.50	0.00	38.52		38.65	0.000065	1.59	2792.43	100.00	0.10
cl	2880	1:50	5237.70	0.00	39.56		39.73	0.000081	1.81	2896.43	100.00	0.11
cl	2880	1:100	5811.30	0.00	40.28		40.47	0.000093	1.96	2967.76	100.00	0.11
cl	2860	1:10	3865.90	0.00	37.73		37.84	0.000059	1.46	2642.83	100.00	0.09
cl	2860	1:20	4439.50	0.00	38.51		38.65	0.000071	1.63	2721.66	100.00	0.10
cl	2860	1:50	5237.70	0.00	39.55		39.73	0.000089	1.85	2825.44	100.00	0.11
cl	2860	1:100	5811.30	0.00	40.26		40.47	0.000102	2.01	2896.61	100.00	0.12
cl	2840	1:10	3865.90	0.00	37.73		37.83	0.000055	1.42	2716.32	100.00	0.09
cl	2840	1:20	4439.50	0.00	38.52		38.65	0.000066	1.59	2795.21	100.00	0.10
cl	2840	1:50	5237.70	0.00	39.56		39.72	0.000083	1.81	2899.07	100.00	0.11
cl	2840	1:100	5811.30	0.00	40.27		40.46	0.000096	1.96	2970.31	100.00	0.11
cl	2820	1:10	3865.90	0.00	37.73		37.83	0.000050	1.39	2781.15	100.00	0.08
cl	2820	1:20	4439.50	0.00	38.52		38.64	0.000061	1.55	2860.08	100.00	0.09
cl	2820	1:50	5237.70	0.00	39.56		39.72	0.000077	1.77	2964.02	100.00	0.10
cl	2820	1:100	5811.30	0.00	40.27		40.46	0.000088	1.91	3035.30	100.00	0.11
cl	2800	1:10	3865.90	0.00	37.74		37.83	0.000046	1.34	2877.35	100.00	0.08
cl	2800	1:20	4439.50	0.00	38.53		38.64	0.000056	1.50	2956.37	100.00	0.09
cl	2800	1:50	5237.70	0.00	39.57		39.72	0.000070	1.71	3060.41	100.00	0.10
cl	2800	1:100	5811.30	0.00	40.28		40.45	0.000081	1.86	3131.77	100.00	0.11
cl	2780	1:10	3865.90	0.00	37.74		37.82	0.000038	1.27	3054.05	100.00	0.07
cl	2780	1:20	4439.50	0.00	38.53		38.64	0.000047	1.42	3133.20	100.00	0.08
cl	2780	1:50	5237.70	0.00	39.58		39.71	0.000059	1.62	3237.45	100.00	0.09
cl	2780	1:100	5811.30	0.00	40.29		40.45	0.000069	1.76	3308.96	100.00	0.10
cl	2760	1:10	3865.90	0.00	37.74		37.82	0.000034	1.22	3166.58	100.00	0.07
cl	2760	1:20	4439.50	0.00	38.54		38.63	0.000041	1.37	3245.80	100.00	0.08
cl	2760	1:50	5237.70	0.00	39.58		39.71	0.000053	1.56	3350.15	100.00	0.09
cl	2760	1:100	5811.30	0.00	40.30		40.44	0.000061	1.70	3421.74	100.00	0.09
cl	2740	1:10	3865.90	0.00	37.75		37.82	0.000032	1.20	3214.90	100.00	0.07
cl	2740	1:20	4439.50	0.00	38.54		38.63	0.000040	1.35	3294.14	100.00	0.07
cl	2740	1:50	5237.70	0.00	39.58		39.70	0.000051	1.54	3398.52	100.00	0.08
cl	2740	1:100	5811.30	0.00	40.30		40.44	0.000059	1.67	3470.13	100.00	0.09
cl	2720	1:10	3865.90	0.00	37.75		37.82	0.000031	1.19	3262.23	100.00	0.07
cl	2720	1:20	4439.50	0.00	38.54		38.63	0.000038	1.33	3341.50	100.00	0.07
cl	2720	1:50	5237.70	0.00	39.58		39.70	0.000049	1.52	3445.91	100.00	0.08
cl	2720	1:100	5811.30	0.00	40.30		40.44	0.000057	1.65	3517.54	100.00	0.09
cl	2700	1:10	3865.90	0.00	37.75		37.82	0.000029	1.16	3326.76	100.00	0.06
cl	2700	1:20	4439.50	0.00	38.54		38.63	0.000036	1.30	3406.05	100.00	0.07
cl	2700	1:50	5237.70	0.00	39.59		39.70	0.000047	1.49	3510.51	100.00	0.08
cl	2700	1:100	5811.30	0.00	40.30		40.44	0.000054	1.62	3582.17	100.00	0.09
cl	2680	1:10	3865.90	0.00	37.75		37.82	0.000028	1.14	3388.15	100.00	0.06
cl	2680	1:20	4439.50	0.00	38.54		38.63	0.000035	1.28	3467.47	100.00	0.07
cl	2680	1:50	5237.70	0.00	39.59		39.70	0.000044	1.47	3571.96	100.00	0.08
cl	2680	1:100	5811.30	0.00	40.30		40.43	0.000052	1.59	3643.65	100.00	0.08

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	2660	1:10	3865.90	0.00	37.75		37.81	0.000026	1.11	3489.22	100.00	0.06
cl	2660	1:20	4439.50	0.00	38.54		38.62	0.000032	1.24	3568.58	100.00	0.07
cl	2660	1:50	5237.70	0.00	39.59		39.69	0.000041	1.43	3673.15	100.00	0.08
cl	2660	1:100	5811.30	0.00	40.31		40.43	0.000048	1.55	3744.89	100.00	0.08
cl	2640	1:10	3865.90	0.00	37.75		37.81	0.000026	1.11	3482.29	100.00	0.06
cl	2640	1:20	4439.50	0.00	38.54		38.62	0.000032	1.25	3561.64	100.00	0.07
cl	2640	1:50	5237.70	0.00	39.59		39.69	0.000041	1.43	3666.17	100.00	0.08
cl	2640	1:100	5811.30	0.00	40.31		40.43	0.000048	1.55	3737.89	100.00	0.08
cl	2620	1:10	3865.90	0.00	37.75		37.81	0.000026	1.12	3463.63	100.00	0.06
cl	2620	1:20	4439.50	0.00	38.54		38.62	0.000032	1.25	3542.95	100.00	0.07
cl	2620	1:50	5237.70	0.00	39.59		39.69	0.000042	1.44	3647.44	100.00	0.08
cl	2620	1:100	5811.30	0.00	40.30		40.43	0.000049	1.56	3719.12	100.00	0.08
cl	2600	1:10	3865.90	0.00	37.75		37.81	0.000026	1.12	3459.59	100.00	0.06
cl	2600	1:20	4439.50	0.00	38.54		38.62	0.000032	1.25	3538.90	100.00	0.07
cl	2600	1:50	5237.70	0.00	39.59		39.69	0.000042	1.44	3643.36	100.00	0.08
cl	2600	1:100	5811.30	0.00	40.30		40.43	0.000049	1.56	3715.03	100.00	0.08
cl	2580	1:10	3865.90	0.00	37.75		37.81	0.000026	1.11	3477.62	100.00	0.06
cl	2580	1:20	4439.50	0.00	38.54		38.62	0.000032	1.25	3556.92	100.00	0.07
cl	2580	1:50	5237.70	0.00	39.59		39.69	0.000041	1.43	3661.39	100.00	0.08
cl	2580	1:100	5811.30	0.00	40.30		40.43	0.000048	1.56	3733.05	100.00	0.08
cl	2560	1:10	3865.90	0.00	37.75		37.81	0.000026	1.12	3447.00	100.00	0.06
cl	2560	1:20	4439.50	0.00	38.54		38.62	0.000033	1.26	3526.26	100.00	0.07
cl	2560	1:50	5237.70	0.00	39.58		39.69	0.000042	1.44	3630.66	100.00	0.08
cl	2560	1:100	5811.30	0.00	40.30		40.43	0.000049	1.57	3702.28	100.00	0.08
cl	2540	1:10	3865.90	0.00	37.75		37.81	0.000026	1.12	3443.09	100.00	0.06
cl	2540	1:20	4439.50	0.00	38.54		38.62	0.000033	1.26	3522.34	100.00	0.07
cl	2540	1:50	5237.70	0.00	39.58		39.69	0.000042	1.44	3626.72	100.00	0.08
cl	2540	1:100	5811.30	0.00	40.30		40.42	0.000049	1.57	3698.32	100.00	0.08
cl	2520	1:10	3865.90	0.00	37.75		37.81	0.000026	1.12	3443.04	100.00	0.06
cl	2520	1:20	4439.50	0.00	38.54		38.62	0.000033	1.26	3522.27	100.00	0.07
cl	2520	1:50	5237.70	0.00	39.58		39.69	0.000042	1.44	3626.63	100.00	0.08
cl	2520	1:100	5811.30	0.00	40.30		40.42	0.000049	1.57	3698.22	100.00	0.08
cl	2500	1:10	3865.90	0.00	37.74		37.81	0.000028	1.13	3408.67	100.00	0.06
cl	2500	1:20	4439.50	0.00	38.54		38.62	0.000034	1.27	3487.86	100.00	0.07
cl	2500	1:50	5237.70	0.00	39.58		39.69	0.000044	1.46	3592.15	100.00	0.08
cl	2500	1:100	5811.30	0.00	40.29		40.42	0.000051	1.59	3663.69	100.00	0.08
cl	2480	1:10	3865.90	0.00	37.73		37.81	0.000033	1.20	3208.84	100.00	0.07
cl	2480	1:20	4439.50	0.00	38.52		38.62	0.000041	1.35	3287.80	100.00	0.08
cl	2480	1:50	5237.70	0.00	39.56		39.68	0.000052	1.54	3391.76	100.00	0.08
cl	2480	1:100	5811.30	0.00	40.28		40.42	0.000060	1.68	3463.05	100.00	0.09
cl	2460	1:10	3865.90	0.00	37.72		37.81	0.000038	1.27	3048.05	100.00	0.07
cl	2460	1:20	4439.50	0.00	38.51		38.61	0.000046	1.42	3126.80	100.00	0.08
cl	2460	1:50	5237.70	0.00	39.55		39.68	0.000059	1.62	3230.44	100.00	0.09
cl	2460	1:100	5811.30	0.00	40.26		40.42	0.000068	1.76	3301.50	100.00	0.10
cl	2440	1:10	3865.90	0.00	37.72		37.80	0.000040	1.31	2958.84	100.00	0.08
cl	2440	1:20	4439.50	0.00	38.50		38.61	0.000049	1.46	3037.44	100.00	0.08
cl	2440	1:50	5237.70	0.00	39.54		39.68	0.000062	1.67	3140.89	100.00	0.10
cl	2440	1:100	5811.30	0.00	40.25		40.41	0.000072	1.81	3211.79	100.00	0.10
cl	2420	1:10	3865.90	0.00	37.72		37.80	0.000040	1.32	2935.55	100.00	0.08
cl	2420	1:20	4439.50	0.00	38.50		38.61	0.000049	1.47	3014.10	100.00	0.09
cl	2420	1:50	5237.70	0.00	39.53		39.68	0.000062	1.68	3117.47	100.00	0.10
cl	2420	1:100	5811.30	0.00	40.24		40.41	0.000072	1.82	3188.32	100.00	0.10
cl	2400	1:10	3865.90	0.00	37.69		37.80	0.000055	1.46	2653.82	100.00	0.09
cl	2400	1:20	4439.50	0.00	38.47		38.61	0.000067	1.63	2731.88	100.00	0.10
cl	2400	1:50	5237.70	0.00	39.50		39.67	0.000084	1.85	2834.55	100.00	0.11
cl	2400	1:100	5811.30	0.00	40.20		40.41	0.000097	2.00	2904.88	100.00	0.12
cl	2380	1:10	3865.90	0.00	37.68		37.80	0.000063	1.51	2559.44	100.00	0.10
cl	2380	1:20	4439.50	0.00	38.46		38.61	0.000076	1.68	2637.29	100.00	0.10
cl	2380	1:50	5237.70	0.00	39.48		39.67	0.000095	1.91	2739.65	100.00	0.12
cl	2380	1:100	5811.30	0.00	40.19		40.40	0.000109	2.07	2809.76	100.00	0.12

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	2360	1:10	3865.90	0.00	37.68		37.80	0.000067	1.54	2515.66	100.00	0.10
cl	2360	1:20	4439.50	0.00	38.45		38.60	0.000081	1.71	2593.39	100.00	0.11
cl	2360	1:50	5237.70	0.00	39.48		39.67	0.000101	1.94	2695.58	100.00	0.12
cl	2360	1:100	5811.30	0.00	40.18		40.40	0.000116	2.10	2765.57	100.00	0.13
cl	2340	1:10	3865.90	0.00	37.67		37.80	0.000070	1.55	2489.87	100.00	0.10
cl	2340	1:20	4439.50	0.00	38.45		38.60	0.000085	1.73	2567.52	100.00	0.11
cl	2340	1:50	5237.70	0.00	39.47		39.67	0.000106	1.96	2669.59	100.00	0.12
cl	2340	1:100	5811.30	0.00	40.17		40.40	0.000121	2.12	2739.49	100.00	0.13
cl	2320	1:10	3865.90	0.00	37.69		37.79	0.000053	1.42	2716.09	100.00	0.09
cl	2320	1:20	4439.50	0.00	38.46		38.59	0.000065	1.59	2794.00	100.00	0.10
cl	2320	1:50	5237.70	0.00	39.49		39.66	0.000081	1.81	2896.44	100.00	0.11
cl	2320	1:100	5811.30	0.00	40.19		40.39	0.000093	1.96	2966.61	100.00	0.11
cl	2300	1:10	3865.90	0.00	37.69		37.78	0.000047	1.35	2861.62	100.00	0.08
cl	2300	1:20	4439.50	0.00	38.47		38.59	0.000057	1.51	2939.66	100.00	0.09
cl	2300	1:50	5237.70	0.00	39.50		39.65	0.000072	1.72	3042.29	100.00	0.10
cl	2300	1:100	5811.30	0.00	40.20		40.38	0.000083	1.87	3112.60	100.00	0.11
cl	2280	1:10	3865.90	0.00	37.70		37.78	0.000039	1.29	2989.99	100.00	0.08
cl	2280	1:20	4439.50	0.00	38.48		38.58	0.000048	1.45	3068.13	100.00	0.08
cl	2280	1:50	5237.70	0.00	39.51		39.64	0.000061	1.65	3170.90	100.00	0.09
cl	2280	1:100	5811.30	0.00	40.21		40.37	0.000070	1.79	3241.32	100.00	0.10
cl	2260	1:10	3865.90	0.00	37.69		37.78	0.000039	1.30	2968.53	100.00	0.08
cl	2260	1:20	4439.50	0.00	38.47		38.58	0.000048	1.46	3046.62	100.00	0.08
cl	2260	1:50	5237.70	0.00	39.50		39.64	0.000060	1.66	3149.33	100.00	0.09
cl	2260	1:100	5811.30	0.00	40.21		40.37	0.000070	1.80	3219.70	100.00	0.10
cl	2240	1:10	3865.90	0.00	37.68		37.78	0.000047	1.39	2791.01	100.00	0.08
cl	2240	1:20	4439.50	0.00	38.46		38.58	0.000057	1.55	2868.80	100.00	0.09
cl	2240	1:50	5237.70	0.00	39.48		39.64	0.000072	1.76	2971.09	100.00	0.10
cl	2240	1:100	5811.30	0.00	40.18		40.37	0.000083	1.91	3041.14	100.00	0.11
cl	2220	1:10	3865.90	0.00	37.65		37.77	0.000073	1.57	2456.08	100.00	0.10
cl	2220	1:20	4439.50	0.00	38.42		38.58	0.000089	1.75	2533.20	100.00	0.11
cl	2220	1:50	5237.70	0.00	39.43		39.63	0.000110	1.99	2634.50	100.00	0.12
cl	2220	1:100	5811.30	0.00	40.13		40.36	0.000126	2.15	2703.84	100.00	0.13
cl	2200	1:10	3865.90	0.00	37.60		37.77	0.000123	1.83	2115.96	100.00	0.13
cl	2200	1:20	4439.50	0.00	38.36		38.57	0.000146	2.03	2192.08	100.00	0.14
cl	2200	1:50	5237.70	0.00	39.36		39.62	0.000178	2.29	2291.99	100.00	0.15
cl	2200	1:100	5811.30	0.00	40.04		40.35	0.000201	2.46	2360.32	100.00	0.16
cl	2180	1:10	3865.90	0.00	37.52		37.76	0.000211	2.14	1804.32	100.00	0.16
cl	2180	1:20	4439.50	0.00	38.27		38.56	0.000247	2.36	1879.11	100.00	0.17
cl	2180	1:50	5237.70	0.00	39.25		39.61	0.000295	2.65	1977.18	100.00	0.19
cl	2180	1:100	5811.30	0.00	39.92		40.34	0.000328	2.84	2044.19	100.00	0.20
cl	2160	1:10	3865.90	0.00	37.37		37.74	0.000532	2.68	1442.32	100.00	0.23
cl	2160	1:20	4439.50	0.00	38.10		38.53	0.000603	2.93	1514.69	100.00	0.24
cl	2160	1:50	5237.70	0.00	39.04		39.58	0.000695	3.25	1609.45	100.00	0.26
cl	2160	1:100	5811.30	0.00	39.69		40.31	0.000758	3.47	1674.17	100.00	0.27
cl	2140	1:10	3865.90	0.00	35.98	34.44	37.59	0.006049	5.61	688.89	100.00	0.68
cl	2140	1:20	4439.50	0.00	36.57	34.95	38.37	0.006122	5.94	747.87	100.00	0.69
cl	2140	1:50	5237.70	0.00	37.35	35.63	39.40	0.006211	6.35	825.23	100.00	0.71
cl	2140	1:100	5811.30	0.00	37.88	36.10	40.11	0.006262	6.62	878.32	100.00	0.71
cl	2120	1:10	3865.90	0.00	34.63	34.63	37.31	0.014046	7.24	533.87	100.00	1.00
cl	2120	1:20	4439.50	0.00	35.15	35.15	38.08	0.013723	7.58	585.55	100.00	1.00
cl	2120	1:50	5237.70	0.00	35.83	35.83	39.10	0.013360	8.01	653.92	100.00	1.00
cl	2120	1:100	5811.30	0.00	36.30	36.30	39.81	0.013144	8.29	700.91	100.00	1.00
cl	2100	1:10	3865.90	0.00	35.01		35.47	0.000594	2.98	1298.11	100.00	0.26
cl	2100	1:20	4439.50	0.00	35.75		36.29	0.000660	3.24	1371.87	100.00	0.28
cl	2100	1:50	5237.70	0.00	36.72		37.37	0.000744	3.57	1468.86	100.00	0.30
cl	2100	1:100	5811.30	0.00	37.38		38.11	0.000801	3.79	1534.85	100.00	0.31
cl	2080	1:10	3865.90	0.00	35.22		35.37	0.000087	1.75	2205.08	100.00	0.12
cl	2080	1:20	4439.50	0.00	35.99		36.18	0.000103	1.95	2281.95	100.00	0.13
cl	2080	1:50	5237.70	0.00	37.00		37.24	0.000127	2.20	2383.13	100.00	0.14

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	2080	1:100	5811.30	0.00	37.69		37.97	0.000144	2.37	2452.04	100.00	0.15
cl	2060	1:10	3865.90	0.00	35.22		35.37	0.000078	1.68	2298.69	100.00	0.11
cl	2060	1:20	4439.50	0.00	35.99		36.17	0.000094	1.87	2375.70	100.00	0.12
cl	2060	1:50	5237.70	0.00	37.01		37.24	0.000116	2.11	2477.07	100.00	0.14
cl	2060	1:100	5811.30	0.00	37.70		37.96	0.000132	2.28	2546.12	100.00	0.14
cl	2040	1:10	3865.90	0.00	35.23		35.37	0.000075	1.65	2341.20	100.00	0.11
cl	2040	1:20	4439.50	0.00	36.00		36.17	0.000090	1.84	2418.25	100.00	0.12
cl	2040	1:50	5237.70	0.00	37.01		37.23	0.000111	2.08	2519.68	100.00	0.13
cl	2040	1:100	5811.30	0.00	37.70		37.96	0.000127	2.24	2588.76	100.00	0.14
cl	2020	1:10	3865.90	0.00	35.23		35.36	0.000065	1.58	2452.21	100.00	0.10
cl	2020	1:20	4439.50	0.00	36.01		36.16	0.000078	1.76	2529.41	100.00	0.11
cl	2020	1:50	5237.70	0.00	37.02		37.22	0.000097	1.99	2631.04	100.00	0.12
cl	2020	1:100	5811.30	0.00	37.71		37.95	0.000111	2.15	2700.27	100.00	0.13
cl	2000	1:10	3865.90	0.00	35.23		35.36	0.000066	1.59	2431.43	100.00	0.10
cl	2000	1:20	4439.50	0.00	36.00		36.16	0.000079	1.77	2508.56	100.00	0.11
cl	2000	1:50	5237.70	0.00	37.02		37.22	0.000099	2.01	2610.08	100.00	0.13
cl	2000	1:100	5811.30	0.00	37.71		37.95	0.000113	2.17	2679.24	100.00	0.13
cl	1980	1:10	3865.90	0.00	35.22		35.36	0.000070	1.62	2386.49	100.00	0.11
cl	1980	1:20	4439.50	0.00	35.99		36.16	0.000084	1.80	2463.48	100.00	0.12
cl	1980	1:50	5237.70	0.00	37.01		37.22	0.000104	2.04	2564.81	100.00	0.13
cl	1980	1:100	5811.30	0.00	37.70		37.95	0.000119	2.21	2633.82	100.00	0.14
cl	1960	1:10	3865.90	0.00	35.22		35.36	0.000073	1.64	2357.28	100.00	0.11
cl	1960	1:20	4439.50	0.00	35.99		36.16	0.000088	1.82	2434.17	100.00	0.12
cl	1960	1:50	5237.70	0.00	37.00		37.22	0.000109	2.07	2535.35	100.00	0.13
cl	1960	1:100	5811.30	0.00	37.69		37.94	0.000125	2.23	2604.25	100.00	0.14
cl	1940	1:10	3865.90	0.00	35.19		35.35	0.000103	1.80	2144.01	100.00	0.12
cl	1940	1:20	4439.50	0.00	35.95		36.15	0.000122	2.00	2220.25	100.00	0.14
cl	1940	1:50	5237.70	0.00	36.95		37.21	0.000150	2.26	2320.51	100.00	0.15
cl	1940	1:100	5811.30	0.00	37.63		37.93	0.000169	2.43	2388.76	100.00	0.16
cl	1920	1:10	3865.90	0.00	35.12		35.34	0.000178	2.11	1831.97	100.00	0.16
cl	1920	1:20	4439.50	0.00	35.86		36.14	0.000208	2.33	1906.92	100.00	0.17
cl	1920	1:50	5237.70	0.00	36.85		37.20	0.000250	2.61	2005.41	100.00	0.19
cl	1920	1:100	5811.30	0.00	37.52		37.92	0.000279	2.80	2072.38	100.00	0.20
cl	1900	1:10	3865.90	0.00	35.05		35.33	0.000255	2.35	1646.72	100.00	0.18
cl	1900	1:20	4439.50	0.00	35.79		36.13	0.000295	2.58	1720.60	100.00	0.20
cl	1900	1:50	5237.70	0.00	36.76		37.18	0.000348	2.88	1817.62	100.00	0.22
cl	1900	1:100	5811.30	0.00	37.42		37.91	0.000385	3.09	1883.55	100.00	0.23
cl	1880	1:10	3865.90	0.00	34.84		35.31	0.000604	3.01	1283.62	100.00	0.27
cl	1880	1:20	4439.50	0.00	35.55		36.10	0.000674	3.28	1354.44	100.00	0.28
cl	1880	1:50	5237.70	0.00	36.48		37.15	0.000765	3.62	1447.37	100.00	0.30
cl	1880	1:100	5811.30	0.00	37.11		37.87	0.000826	3.85	1510.45	100.00	0.32
cl	1860	1:10	3865.90	0.00	33.42		35.15	0.007104	5.83	662.79	100.00	0.72
cl	1860	1:20	4439.50	0.00	34.00	32.65	35.93	0.007147	6.16	720.76	100.00	0.73
cl	1860	1:50	5237.70	0.00	34.76	33.33	36.96	0.007188	6.57	797.29	100.00	0.74
cl	1860	1:100	5811.30	0.00	35.28	33.80	37.67	0.007232	6.84	849.02	100.00	0.75
cl	1840	1:10	3865.90	0.00	32.21	32.21	34.88	0.011625	7.24	534.11	100.00	1.00
cl	1840	1:20	4439.50	0.00	32.72	32.72	35.65	0.011388	7.58	585.56	100.00	1.00
cl	1840	1:50	5237.70	0.00	33.40	33.40	36.68	0.011127	8.01	653.50	100.00	1.00
cl	1840	1:100	5811.30	0.00	33.87	33.87	37.38	0.010936	8.29	700.93	100.00	1.00
cl	1820	1:10	3865.90	0.00	28.88	28.88	32.59	0.010983	8.53	453.20	61.02	1.00
cl	1820	1:20	4439.50	0.00	30.52	30.52	33.45	0.009967	7.58	585.63	100.00	1.00
cl	1820	1:50	5237.70	0.00	31.20	31.20	34.47	0.009740	8.01	653.82	100.00	1.00
cl	1820	1:100	5811.30	0.00	31.67	31.67	35.18	0.009593	8.29	701.00	100.00	1.00
cl	1800	1:10	3865.90	0.00	29.92		30.93	0.002074	4.43	872.38	99.72	0.48
cl	1800	1:20	4439.50	0.00	31.07		32.10	0.001860	4.50	986.80	100.00	0.46
cl	1800	1:50	5237.70	0.00	31.97		33.17	0.001968	4.86	1076.79	100.00	0.47
cl	1800	1:100	5811.30	0.00	32.59		33.92	0.002030	5.10	1139.40	100.00	0.48
cl	1780	1:10	3865.90	0.00	26.52	26.52	30.54	0.014669	8.87	435.74	54.26	1.00
cl	1780	1:20	4439.50	0.00	27.58	27.58	31.71	0.013172	9.01	492.86	54.43	0.96

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	1780	1:50	5237.70	0.00	29.52	29.52	32.88	0.011939	8.12	644.96	96.49	1.00
cl	1780	1:100	5811.30	0.00	29.88	29.88	33.60	0.012669	8.54	680.36	99.12	1.04
cl	1760	1:10	3865.90	0.00	20.91	20.91	24.76	0.012216	8.69	445.09	58.34	1.00
cl	1760	1:20	4439.50	0.00	21.72	21.72	25.85	0.011956	9.01	492.81	60.46	1.01
cl	1760	1:50	5237.70	0.00	22.70	22.70	27.26	0.011986	9.45	554.12	64.19	1.03
cl	1760	1:100	5811.30	0.00	23.98	23.98	28.16	0.010505	9.05	641.80	75.31	0.99
cl	1740	1:10	3865.90	0.00	15.38	15.14	18.31	0.008623	7.58	510.16	80.29	0.96
cl	1740	1:20	4439.50	0.00	16.92		19.40	0.005796	6.98	635.98	83.32	0.81
cl	1740	1:50	5237.70	0.00	18.69		20.95	0.004240	6.66	786.99	86.81	0.71
cl	1740	1:100	5811.30	0.00	19.84		22.02	0.003637	6.54	888.05	89.07	0.66
cl	1720	1:10	3865.90	0.00	16.79		17.64	0.001013	4.08	948.58	83.01	0.38
cl	1720	1:20	4439.50	0.00	17.97		18.89	0.001006	4.23	1048.32	85.34	0.39
cl	1720	1:50	5237.70	0.00	19.54		20.54	0.000993	4.42	1184.19	88.42	0.39
cl	1720	1:100	5811.30	0.00	20.60		21.65	0.000985	4.54	1279.04	90.50	0.39
cl	1700	1:10	3865.90	0.00	16.79		17.61	0.000950	4.01	964.69	82.95	0.38
cl	1700	1:20	4439.50	0.00	17.97		18.86	0.000949	4.17	1064.33	85.30	0.38
cl	1700	1:50	5237.70	0.00	19.54		20.51	0.000943	4.36	1200.09	88.37	0.38
cl	1700	1:100	5811.30	0.00	20.60		21.62	0.000939	4.49	1294.86	90.46	0.38
cl	1680	1:10	3865.90	0.00	16.66		17.58	0.001147	4.24	912.25	82.14	0.41
cl	1680	1:20	4439.50	0.00	17.85		18.83	0.001129	4.39	1011.02	84.50	0.41
cl	1680	1:50	5237.70	0.00	19.41		20.48	0.001103	4.57	1145.75	87.61	0.40
cl	1680	1:100	5811.30	0.00	20.47		21.59	0.001088	4.69	1239.86	89.73	0.40
cl	1660	1:10	3865.90	0.00	16.41		17.53	0.001595	4.68	825.36	81.10	0.47
cl	1660	1:20	4439.50	0.00	17.61		18.79	0.001521	4.81	923.72	83.47	0.46
cl	1660	1:50	5237.70	0.00	19.19		20.44	0.001436	4.95	1057.92	86.62	0.45
cl	1660	1:100	5811.30	0.00	20.25		21.55	0.001390	5.05	1151.60	88.74	0.45
cl	1640	1:10	3865.90	0.00	16.35		17.50	0.001350	4.76	812.94	66.52	0.43
cl	1640	1:20	4439.50	0.00	17.47		18.75	0.001380	5.00	888.72	67.66	0.44
cl	1640	1:50	5237.70	0.00	18.96		20.39	0.001413	5.29	990.61	69.17	0.45
cl	1640	1:100	5811.30	0.00	19.97		21.50	0.001434	5.48	1060.76	70.19	0.45
cl	1620	1:10	3865.90	0.00	15.64		17.40	0.002416	5.88	657.07	52.79	0.53
cl	1620	1:20	4439.50	0.00	16.65		18.64	0.002552	6.24	711.16	53.78	0.55
cl	1620	1:50	5237.70	0.00	18.01		20.27	0.002845	6.66	786.73	57.85	0.58
cl	1620	1:100	5811.30	0.00	18.94		21.37	0.003016	6.90	842.44	61.00	0.59
cl	1600	1:10	3865.90	0.00	15.55		17.35	0.002463	5.94	651.07	51.35	0.53
cl	1600	1:20	4439.50	0.00	16.54		18.58	0.002616	6.32	701.99	51.43	0.55
cl	1600	1:50	5237.70	0.00	17.83		20.20	0.002815	6.82	768.23	51.54	0.56
cl	1600	1:100	5811.30	0.00	18.68		21.29	0.002960	7.15	812.27	51.62	0.58
cl	1580	1:10	3865.90	0.00	15.48		17.30	0.002504	5.97	647.33	51.34	0.54
cl	1580	1:20	4439.50	0.00	16.46		18.53	0.002660	6.36	697.91	51.42	0.55
cl	1580	1:50	5237.70	0.00	17.74		20.14	0.002863	6.86	763.68	51.54	0.57
cl	1580	1:100	5811.30	0.00	18.59		21.23	0.003011	7.20	807.37	51.61	0.58
cl	1560	1:10	3865.90	0.00	15.43		17.25	0.002497	5.97	648.03	51.77	0.54
cl	1560	1:20	4439.50	0.00	16.42		18.47	0.002648	6.35	698.96	51.87	0.55
cl	1560	1:50	5237.70	0.00	17.69		20.08	0.002846	6.84	765.21	52.00	0.57
cl	1560	1:100	5811.30	0.00	18.54		21.17	0.002989	7.18	809.23	52.09	0.58
cl	1540	1:10	3865.90	0.00	15.56		17.13	0.002012	5.54	697.50	56.86	0.51
cl	1540	1:20	4439.50	0.00	16.57		18.34	0.002109	5.88	755.36	57.30	0.52
cl	1540	1:50	5237.70	0.00	17.90		19.92	0.002231	6.30	831.47	57.89	0.53
cl	1540	1:100	5811.30	0.00	18.78		20.99	0.002318	6.58	882.64	58.28	0.54
cl	1520	1:10	3865.90	0.00	15.50		17.08	0.002053	5.58	692.45	56.83	0.51
cl	1520	1:20	4439.50	0.00	16.50		18.29	0.002150	5.92	750.03	57.28	0.52
cl	1520	1:50	5237.70	0.00	17.82		19.87	0.002273	6.34	825.78	57.86	0.54
cl	1520	1:100	5811.30	0.00	18.70		20.94	0.002360	6.63	876.69	58.24	0.55
cl	1500	1:10	3865.90	0.00	15.44		17.04	0.002081	5.61	689.14	56.80	0.51
cl	1500	1:20	4439.50	0.00	16.44		18.25	0.002224	5.94	746.97	58.83	0.53
cl	1500	1:50	5237.70	0.00	17.82		19.80	0.002884	6.23	840.62	79.16	0.61
cl	1500	1:100	5811.30	0.00	18.78		20.83	0.002753	6.33	917.82	80.97	0.60
cl	1480	1:10	3865.90	0.00	15.71		16.87	0.001608	4.78	809.43	77.26	0.47

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	1480	1:20	4439.50	0.00	16.79		18.05	0.001597	4.97	893.78	79.29	0.47
cl	1480	1:50	5237.70	0.00	18.20		19.58	0.001581	5.20	1007.55	81.94	0.47
cl	1480	1:100	5811.30	0.00	19.15		20.61	0.001572	5.35	1086.58	83.74	0.47
cl	1460	1:10	3865.90	0.00	15.82		16.79	0.001168	4.35	888.92	79.56	0.42
cl	1460	1:20	4439.50	0.00	16.90		17.96	0.001182	4.55	975.99	81.59	0.42
cl	1460	1:50	5237.70	0.00	18.34		19.47	0.001371	4.70	1113.69	100.00	0.45
cl	1460	1:100	5811.30	0.00	19.32		20.50	0.001302	4.80	1211.67	100.00	0.44
cl	1440	1:10	3865.90	0.00	15.84		16.74	0.001360	4.21	918.90	100.00	0.44
cl	1440	1:20	4439.50	0.00	16.95		17.90	0.001256	4.31	1030.28	100.00	0.43
cl	1440	1:50	5237.70	0.00	18.40		19.41	0.001166	4.46	1174.82	100.00	0.42
cl	1440	1:100	5811.30	0.00	19.38		20.44	0.001123	4.57	1272.57	100.00	0.41
cl	1420	1:10	3865.90	0.00	15.93		16.67	0.001008	3.81	1013.88	100.00	0.38
cl	1420	1:20	4439.50	0.00	17.04		17.83	0.000964	3.95	1124.78	100.00	0.38
cl	1420	1:50	5237.70	0.00	18.48		19.35	0.000927	4.13	1268.91	100.00	0.37
cl	1420	1:100	5811.30	0.00	19.46		20.38	0.000910	4.25	1366.46	100.00	0.37
cl	1400	1:10	3865.90	0.00	16.01		16.61	0.000723	3.42	1129.28	100.00	0.33
cl	1400	1:20	4439.50	0.00	17.12		17.77	0.000715	3.58	1240.02	100.00	0.32
cl	1400	1:50	5237.70	0.00	18.56		19.29	0.000712	3.78	1384.01	100.00	0.32
cl	1400	1:100	5811.30	0.00	19.54		20.32	0.000713	3.92	1481.52	100.00	0.33
cl	1380	1:10	3865.90	0.00	16.09		16.56	0.000510	3.06	1264.89	100.00	0.27
cl	1380	1:20	4439.50	0.00	17.19		17.72	0.000520	3.23	1375.71	100.00	0.28
cl	1380	1:50	5237.70	0.00	18.64		19.24	0.000536	3.45	1519.84	100.00	0.28
cl	1380	1:100	5811.30	0.00	19.61		20.27	0.000547	3.59	1617.45	100.00	0.29
cl	1360	1:10	3865.90	0.00	16.14		16.53	0.000369	2.76	1400.47	100.00	0.24
cl	1360	1:20	4439.50	0.00	17.25		17.69	0.000387	2.94	1511.50	100.00	0.24
cl	1360	1:50	5237.70	0.00	18.69		19.20	0.000409	3.16	1655.89	100.00	0.25
cl	1360	1:100	5811.30	0.00	19.67		20.23	0.000424	3.31	1753.67	100.00	0.25
cl	1340	1:10	3865.90	0.00	16.15		16.51	0.000333	2.67	1450.55	100.00	0.22
cl	1340	1:20	4439.50	0.00	17.26		17.67	0.000352	2.84	1561.64	100.00	0.23
cl	1340	1:50	5237.70	0.00	18.71		19.19	0.000375	3.07	1706.11	100.00	0.24
cl	1340	1:100	5811.30	0.00	19.68		20.21	0.000391	3.22	1803.94	100.00	0.24
cl	1320	1:10	3865.90	0.00	16.15		16.50	0.000330	2.65	1458.35	100.00	0.22
cl	1320	1:20	4439.50	0.00	17.26		17.66	0.000349	2.83	1569.42	100.00	0.23
cl	1320	1:50	5237.70	0.00	18.70		19.18	0.000373	3.06	1713.86	100.00	0.24
cl	1320	1:100	5811.30	0.00	19.68		20.20	0.000389	3.21	1811.68	100.00	0.24
cl	1300	1:10	3865.90	0.00	16.14		16.50	0.000331	2.65	1457.65	100.00	0.22
cl	1300	1:20	4439.50	0.00	17.25		17.66	0.000349	2.83	1568.68	100.00	0.23
cl	1300	1:50	5237.70	0.00	18.69		19.17	0.000373	3.06	1713.06	100.00	0.24
cl	1300	1:100	5811.30	0.00	19.67		20.20	0.000390	3.21	1810.85	100.00	0.24
cl	1280	1:10	3865.90	0.00	16.13		16.49	0.000327	2.64	1464.44	100.00	0.22
cl	1280	1:20	4439.50	0.00	17.24		17.65	0.000346	2.82	1575.44	100.00	0.23
cl	1280	1:50	5237.70	0.00	18.69		19.16	0.000370	3.05	1719.79	100.00	0.23
cl	1280	1:100	5811.30	0.00	19.67		20.19	0.000386	3.20	1817.55	100.00	0.24
cl	1260	1:10	3865.90	0.00	16.13		16.48	0.000317	2.61	1479.75	100.00	0.22
cl	1260	1:20	4439.50	0.00	17.24		17.64	0.000336	2.79	1590.74	100.00	0.22
cl	1260	1:50	5237.70	0.00	18.69		19.15	0.000361	3.02	1735.08	100.00	0.23
cl	1260	1:100	5811.30	0.00	19.66		20.18	0.000377	3.17	1832.83	100.00	0.24
cl	1240	1:10	3865.90	0.00	16.13		16.47	0.000310	2.59	1491.68	100.00	0.21
cl	1240	1:20	4439.50	0.00	17.24		17.63	0.000329	2.77	1602.66	100.00	0.22
cl	1240	1:50	5237.70	0.00	18.68		19.14	0.000354	3.00	1746.98	100.00	0.23
cl	1240	1:100	5811.30	0.00	19.66		20.17	0.000371	3.15	1844.72	100.00	0.23
cl	1220	1:10	3865.90	0.00	16.12		16.47	0.000310	2.59	1491.21	100.00	0.21
cl	1220	1:20	4439.50	0.00	17.23		17.63	0.000330	2.77	1602.14	100.00	0.22
cl	1220	1:50	5237.70	0.00	18.68		19.14	0.000354	3.00	1746.41	100.00	0.23
cl	1220	1:100	5811.30	0.00	19.65		20.16	0.000371	3.15	1844.11	100.00	0.23
cl	1200	1:10	3865.90	0.00	16.12		16.46	0.000311	2.59	1490.55	100.00	0.21
cl	1200	1:20	4439.50	0.00	17.23		17.62	0.000330	2.77	1601.44	100.00	0.22
cl	1200	1:50	5237.70	0.00	18.67		19.13	0.000355	3.00	1745.65	100.00	0.23
cl	1200	1:100	5811.30	0.00	19.65		20.15	0.000372	3.15	1843.32	100.00	0.23

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	1180	1:10	3865.90	0.00	16.11		16.45	0.000311	2.59	1490.68	100.00	0.21
cl	1180	1:20	4439.50	0.00	17.22		17.61	0.000330	2.77	1601.53	100.00	0.22
cl	1180	1:50	5237.70	0.00	18.66		19.12	0.000355	3.00	1745.69	100.00	0.23
cl	1180	1:100	5811.30	0.00	19.64		20.14	0.000372	3.15	1843.32	100.00	0.23
cl	1160	1:10	3865.90	0.00	16.11		16.45	0.000311	2.59	1490.82	100.00	0.21
cl	1160	1:20	4439.50	0.00	17.21		17.61	0.000330	2.77	1601.63	100.00	0.22
cl	1160	1:50	5237.70	0.00	18.65		19.11	0.000355	3.00	1745.74	100.00	0.23
cl	1160	1:100	5811.30	0.00	19.63		20.14	0.000372	3.15	1843.33	100.00	0.23
cl	1140	1:10	3865.90	0.00	16.10		16.44	0.000311	2.59	1490.17	100.00	0.21
cl	1140	1:20	4439.50	0.00	17.21		17.60	0.000330	2.77	1600.93	100.00	0.22
cl	1140	1:50	5237.70	0.00	18.65		19.11	0.000355	3.00	1744.99	100.00	0.23
cl	1140	1:100	5811.30	0.00	19.62		20.13	0.000372	3.15	1842.54	100.00	0.23
cl	1120	1:10	3865.90	0.00	16.09		16.44	0.000311	2.60	1489.51	100.00	0.21
cl	1120	1:20	4439.50	0.00	17.20		17.59	0.000331	2.77	1600.24	100.00	0.22
cl	1120	1:50	5237.70	0.00	18.64		19.10	0.000356	3.00	1744.24	100.00	0.23
cl	1120	1:100	5811.30	0.00	19.62		20.12	0.000373	3.16	1841.75	100.00	0.23
cl	1100	1:10	3865.90	0.00	16.09		16.43	0.000308	2.59	1494.67	100.00	0.21
cl	1100	1:20	4439.50	0.00	17.19		17.58	0.000328	2.77	1605.37	100.00	0.22
cl	1100	1:50	5237.70	0.00	18.63		19.09	0.000353	2.99	1749.32	100.00	0.23
cl	1100	1:100	5811.30	0.00	19.61		20.11	0.000370	3.15	1846.82	100.00	0.23
cl	1080	1:10	3865.90	0.00	16.08		16.42	0.000304	2.57	1501.92	100.00	0.21
cl	1080	1:20	4439.50	0.00	17.19		17.58	0.000324	2.75	1612.58	100.00	0.22
cl	1080	1:50	5237.70	0.00	18.63		19.08	0.000349	2.98	1756.51	100.00	0.23
cl	1080	1:100	5811.30	0.00	19.60		20.11	0.000366	3.13	1853.98	100.00	0.23
cl	1060	1:10	3865.90	0.00	16.08		16.42	0.000305	2.58	1501.28	100.00	0.21
cl	1060	1:20	4439.50	0.00	17.18		17.57	0.000325	2.75	1611.90	100.00	0.22
cl	1060	1:50	5237.70	0.00	18.62		19.08	0.000350	2.98	1755.77	100.00	0.23
cl	1060	1:100	5811.30	0.00	19.60		20.10	0.000367	3.14	1853.20	100.00	0.23
cl	1040	1:10	3865.90	0.00	16.07		16.41	0.000304	2.57	1502.54	100.00	0.21
cl	1040	1:20	4439.50	0.00	17.18		17.56	0.000324	2.75	1613.13	100.00	0.22
cl	1040	1:50	5237.70	0.00	18.62		19.07	0.000349	2.98	1756.94	100.00	0.23
cl	1040	1:100	5811.30	0.00	19.59		20.09	0.000366	3.13	1854.34	100.00	0.23
cl	1020	1:10	3865.90	0.00	16.07		16.40	0.000305	2.57	1501.72	100.00	0.21
cl	1020	1:20	4439.50	0.00	17.17		17.56	0.000325	2.75	1612.26	100.00	0.22
cl	1020	1:50	5237.70	0.00	18.61		19.06	0.000350	2.98	1756.02	100.00	0.23
cl	1020	1:100	5811.30	0.00	19.58		20.08	0.000367	3.14	1853.38	100.00	0.23
cl	1000	1:10	3865.90	0.00	16.06		16.40	0.000307	2.58	1498.03	100.00	0.21
cl	1000	1:20	4439.50	0.00	17.16		17.55	0.000327	2.76	1608.52	100.00	0.22
cl	1000	1:50	5237.70	0.00	18.60		19.06	0.000352	2.99	1752.22	100.00	0.23
cl	1000	1:100	5811.30	0.00	19.57		20.08	0.000369	3.14	1849.53	100.00	0.23
cl	980	1:10	3865.90	0.00	16.05		16.39	0.000307	2.58	1496.85	100.00	0.21
cl	980	1:20	4439.50	0.00	17.16		17.54	0.000327	2.76	1607.29	100.00	0.22
cl	980	1:50	5237.70	0.00	18.59		19.05	0.000353	2.99	1750.93	100.00	0.23
cl	980	1:100	5811.30	0.00	19.56		20.07	0.000369	3.14	1848.20	100.00	0.23
cl	960	1:10	3865.90	0.00	16.05		16.38	0.000306	2.58	1498.62	100.00	0.21
cl	960	1:20	4439.50	0.00	17.15		17.54	0.000326	2.76	1609.03	100.00	0.22
cl	960	1:50	5237.70	0.00	18.59		19.04	0.000352	2.99	1752.62	100.00	0.23
cl	960	1:100	5811.30	0.00	19.56		20.06	0.000369	3.14	1849.86	100.00	0.23
cl	940	1:10	3865.90	0.00	16.04		16.38	0.000307	2.58	1498.68	100.00	0.21
cl	940	1:20	4439.50	0.00	17.14		17.53	0.000326	2.76	1609.05	100.00	0.22
cl	940	1:50	5237.70	0.00	18.58		19.03	0.000352	2.99	1752.58	100.00	0.23
cl	940	1:100	5811.30	0.00	19.55		20.05	0.000369	3.14	1849.79	100.00	0.23
cl	920	1:10	3865.90	0.00	16.03		16.37	0.000306	2.58	1499.65	100.00	0.21
cl	920	1:20	4439.50	0.00	17.14		17.52	0.000326	2.76	1609.98	100.00	0.22
cl	920	1:50	5237.70	0.00	18.57		19.03	0.000351	2.99	1753.46	100.00	0.23
cl	920	1:100	5811.30	0.00	19.54		20.05	0.000369	3.14	1850.63	100.00	0.23
cl	900	1:10	3865.90	0.00	15.95		16.36	0.000411	2.84	1359.79	100.00	0.25
cl	900	1:20	4439.50	0.00	17.04		17.51	0.000429	3.02	1469.60	100.00	0.25
cl	900	1:50	5237.70	0.00	18.47		19.01	0.000451	3.25	1612.44	100.00	0.26
cl	900	1:100	5811.30	0.00	19.44		20.03	0.000466	3.40	1709.18	100.00	0.26

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	880	1:10	3865.90	0.00	15.81		16.34	0.000601	3.21	1203.03	100.00	0.30
cl	880	1:20	4439.50	0.00	16.90		17.49	0.000607	3.38	1312.41	100.00	0.30
cl	880	1:50	5237.70	0.00	18.33		18.99	0.000618	3.60	1454.67	100.00	0.30
cl	880	1:100	5811.30	0.00	19.29		20.01	0.000627	3.75	1551.02	100.00	0.30
cl	860	1:10	3865.90	0.00	15.66		16.31	0.000838	3.58	1079.12	100.00	0.35
cl	860	1:20	4439.50	0.00	16.75		17.46	0.000820	3.74	1188.48	100.00	0.35
cl	860	1:50	5237.70	0.00	18.17		18.96	0.000808	3.94	1330.63	100.00	0.34
cl	860	1:100	5811.30	0.00	19.13		19.98	0.000804	4.07	1426.87	100.00	0.34
cl	840	1:10	3865.90	0.00	15.51		16.28	0.000864	3.88	995.84	81.13	0.35
cl	840	1:20	4439.50	0.00	16.58		17.43	0.000973	4.09	1086.35	90.44	0.38
cl	840	1:50	5237.70	0.00	17.99		18.93	0.001040	4.28	1223.64	100.00	0.39
cl	840	1:100	5811.30	0.00	18.96		19.95	0.001015	4.40	1320.10	100.00	0.39
cl	820	1:10	3865.90	0.00	15.44		16.26	0.000954	3.99	967.75	80.99	0.37
cl	820	1:20	4439.50	0.00	16.50		17.40	0.000989	4.21	1054.28	83.10	0.38
cl	820	1:50	5237.70	0.00	17.88		18.90	0.001026	4.47	1170.74	85.87	0.39
cl	820	1:100	5811.30	0.00	18.82		19.91	0.001048	4.64	1252.22	87.75	0.39
cl	800	1:10	3865.90	0.00	15.50		16.21	0.000785	3.72	1039.28	85.41	0.34
cl	800	1:20	4439.50	0.00	16.56		17.35	0.000818	3.92	1131.22	87.83	0.35
cl	800	1:50	5237.70	0.00	17.95		18.84	0.000853	4.17	1255.28	90.93	0.36
cl	800	1:100	5811.30	0.00	18.90		19.85	0.000870	4.33	1342.05	92.77	0.36
cl	780	1:10	3865.90	0.00	15.49		16.19	0.000788	3.73	1037.75	85.37	0.34
cl	780	1:20	4439.50	0.00	16.55		17.33	0.000821	3.93	1129.58	87.79	0.35
cl	780	1:50	5237.70	0.00	17.93		18.82	0.000857	4.18	1253.51	90.96	0.36
cl	780	1:100	5811.30	0.00	18.88		19.84	0.000877	4.34	1340.44	93.12	0.36
cl	760	1:10	3865.90	0.00	15.49		16.17	0.000791	3.66	1056.77	90.60	0.34
cl	760	1:20	4439.50	0.00	16.55		17.31	0.000815	3.84	1154.90	93.48	0.35
cl	760	1:50	5237.70	0.00	17.95		18.79	0.000840	4.07	1287.92	97.24	0.36
cl	760	1:100	5811.30	0.00	18.90		19.80	0.000852	4.21	1381.59	99.81	0.36
cl	740	1:10	3865.90	0.00	15.57		16.12	0.000595	3.27	1182.24	98.52	0.30
cl	740	1:20	4439.50	0.00	16.64		17.25	0.000609	3.44	1289.25	100.00	0.31
cl	740	1:50	5237.70	0.00	18.05		18.73	0.000620	3.66	1429.40	100.00	0.31
cl	740	1:100	5811.30	0.00	19.00		19.74	0.000629	3.81	1524.64	100.00	0.31
cl	720	1:10	3865.90	0.00	15.59		16.09	0.000532	3.12	1237.39	100.00	0.28
cl	720	1:20	4439.50	0.00	16.67		17.22	0.000544	3.30	1344.87	100.00	0.29
cl	720	1:50	5237.70	0.00	18.07		18.70	0.000561	3.53	1485.08	100.00	0.29
cl	720	1:100	5811.30	0.00	19.02		19.71	0.000573	3.68	1580.37	100.00	0.30
cl	700	1:10	3865.90	0.00	15.59		16.08	0.000519	3.10	1247.63	100.00	0.28
cl	700	1:20	4439.50	0.00	16.66		17.21	0.000532	3.28	1355.10	100.00	0.28
cl	700	1:50	5237.70	0.00	18.06		18.69	0.000549	3.50	1495.30	100.00	0.29
cl	700	1:100	5811.30	0.00	19.02		19.70	0.000562	3.65	1590.58	100.00	0.29
cl	680	1:10	3865.90	0.00	15.59		16.06	0.000483	3.03	1276.94	100.00	0.27
cl	680	1:20	4439.50	0.00	16.67		17.19	0.000498	3.21	1384.43	100.00	0.28
cl	680	1:50	5237.70	0.00	18.07		18.67	0.000518	3.44	1524.65	100.00	0.28
cl	680	1:100	5811.30	0.00	19.02		19.68	0.000532	3.59	1619.94	100.00	0.28
cl	660	1:10	3865.90	0.00	15.60		16.04	0.000459	2.95	1310.78	100.00	0.26
cl	660	1:20	4439.50	0.00	16.68		17.17	0.000476	3.13	1418.30	100.00	0.27
cl	660	1:50	5237.70	0.00	18.08		18.65	0.000498	3.36	1558.57	100.00	0.27
cl	660	1:100	5811.30	0.00	19.03		19.66	0.000513	3.51	1653.88	100.00	0.28
cl	640	1:10	3865.90	0.00	15.62		16.02	0.000392	2.81	1377.67	100.00	0.24
cl	640	1:20	4439.50	0.00	16.70		17.15	0.000411	2.99	1485.30	100.00	0.25
cl	640	1:50	5237.70	0.00	18.10		18.63	0.000436	3.22	1625.69	100.00	0.26
cl	640	1:100	5811.30	0.00	19.05		19.64	0.000453	3.38	1721.09	100.00	0.26
cl	620	1:10	3865.90	0.00	15.63		16.01	0.000351	2.71	1427.18	100.00	0.23
cl	620	1:20	4439.50	0.00	16.71		17.14	0.000372	2.89	1534.88	100.00	0.24
cl	620	1:50	5237.70	0.00	18.11		18.61	0.000398	3.13	1675.36	100.00	0.24
cl	620	1:100	5811.30	0.00	19.07		19.62	0.000415	3.28	1770.81	100.00	0.25
cl	600	1:10	3865.90	0.00	15.64		16.00	0.000331	2.66	1455.60	100.00	0.22
cl	600	1:20	4439.50	0.00	16.71		17.12	0.000352	2.84	1563.32	100.00	0.23
cl	600	1:50	5237.70	0.00	18.12		18.60	0.000378	3.07	1703.83	100.00	0.24

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	600	1:100	5811.30	0.00	19.07		19.60	0.000396	3.23	1799.29	100.00	0.24
cl	580	1:10	3865.90	0.00	15.63		15.99	0.000333	2.66	1453.01	100.00	0.22
cl	580	1:20	4439.50	0.00	16.70		17.12	0.000354	2.84	1560.68	100.00	0.23
cl	580	1:50	5237.70	0.00	18.11		18.59	0.000380	3.08	1701.12	100.00	0.24
cl	580	1:100	5811.30	0.00	19.06		19.60	0.000398	3.23	1796.55	100.00	0.24
cl	560	1:10	3865.90	0.00	15.61		15.98	0.000346	2.69	1434.62	100.00	0.23
cl	560	1:20	4439.50	0.00	16.69		17.11	0.000367	2.88	1542.17	100.00	0.23
cl	560	1:50	5237.70	0.00	18.09		18.58	0.000393	3.11	1682.47	100.00	0.24
cl	560	1:100	5811.30	0.00	19.04		19.59	0.000410	3.27	1777.80	100.00	0.25
cl	540	1:10	3865.90	0.00	15.59		15.97	0.000359	2.73	1416.59	100.00	0.23
cl	540	1:20	4439.50	0.00	16.67		17.10	0.000379	2.91	1524.03	100.00	0.24
cl	540	1:50	5237.70	0.00	18.07		18.57	0.000406	3.15	1664.19	100.00	0.25
cl	540	1:100	5811.30	0.00	19.02		19.58	0.000423	3.30	1759.43	100.00	0.25
cl	520	1:10	3865.90	0.00	15.57		15.96	0.000376	2.77	1395.24	100.00	0.24
cl	520	1:20	4439.50	0.00	16.65		17.09	0.000396	2.95	1502.57	100.00	0.24
cl	520	1:50	5237.70	0.00	18.05		18.56	0.000422	3.19	1642.57	100.00	0.25
cl	520	1:100	5811.30	0.00	19.00		19.57	0.000439	3.34	1737.70	100.00	0.26
cl	500	1:10	3865.90	0.00	15.53		15.95	0.000422	2.88	1340.75	100.00	0.25
cl	500	1:20	4439.50	0.00	16.60		17.08	0.000441	3.07	1447.84	100.00	0.26
cl	500	1:50	5237.70	0.00	18.00		18.55	0.000465	3.30	1587.54	100.00	0.26
cl	500	1:100	5811.30	0.00	18.95		19.55	0.000481	3.45	1682.48	100.00	0.27
cl	480	1:10	3865.90	0.00	15.46		15.94	0.000501	3.05	1267.06	100.00	0.27
cl	480	1:20	4439.50	0.00	16.53		17.06	0.000517	3.23	1373.86	100.00	0.28
cl	480	1:50	5237.70	0.00	17.93		18.54	0.000537	3.46	1513.20	100.00	0.28
cl	480	1:100	5811.30	0.00	18.87		19.54	0.000550	3.61	1607.91	100.00	0.29
cl	460	1:10	3865.90	0.00	15.42		15.93	0.000556	3.16	1224.43	100.00	0.29
cl	460	1:20	4439.50	0.00	16.48		17.05	0.000568	3.34	1331.07	100.00	0.29
cl	460	1:50	5237.70	0.00	17.87		18.52	0.000585	3.56	1470.22	100.00	0.30
cl	460	1:100	5811.30	0.00	18.82		19.52	0.000597	3.71	1564.79	100.00	0.30
cl	440	1:10	3865.90	0.00	15.37		15.91	0.000610	3.25	1188.43	100.00	0.30
cl	440	1:20	4439.50	0.00	16.44		17.04	0.000619	3.43	1294.96	100.00	0.30
cl	440	1:50	5237.70	0.00	17.83		18.51	0.000632	3.65	1433.96	100.00	0.31
cl	440	1:100	5811.30	0.00	18.77		19.51	0.000641	3.80	1528.43	100.00	0.31
cl	420	1:10	3865.90	0.00	15.28		15.89	0.000742	3.45	1120.83	100.00	0.33
cl	420	1:20	4439.50	0.00	16.35		17.02	0.000740	3.62	1227.25	100.00	0.33
cl	420	1:50	5237.70	0.00	17.74		18.49	0.000743	3.83	1366.09	100.00	0.33
cl	420	1:100	5811.30	0.00	18.68		19.49	0.000747	3.98	1460.44	100.00	0.33
cl	400	1:10	3865.90	0.00	15.13		15.86	0.001013	3.78	1021.55	100.00	0.38
cl	400	1:20	4439.50	0.00	16.20		16.99	0.000982	3.94	1128.14	100.00	0.37
cl	400	1:50	5237.70	0.00	17.59		18.46	0.000956	4.13	1267.06	100.00	0.37
cl	400	1:100	5811.30	0.00	18.53		19.46	0.000945	4.27	1361.43	100.00	0.37
cl	380	1:10	3865.90	0.00	14.87		15.82	0.001462	4.30	899.87	94.15	0.44
cl	380	1:20	4439.50	0.00	15.94		16.94	0.001462	4.43	1002.79	99.11	0.44
cl	380	1:50	5237.70	0.00	17.34		18.41	0.001370	4.58	1142.89	100.00	0.43
cl	380	1:100	5811.30	0.00	18.29		19.42	0.001318	4.69	1237.84	100.00	0.43
cl	360	1:10	3865.90	0.00	14.57		15.76	0.001405	4.84	798.71	63.06	0.43
cl	360	1:20	4439.50	0.00	15.52		16.87	0.001640	5.15	861.63	70.06	0.47
cl	360	1:50	5237.70	0.00	16.82		18.34	0.001872	5.46	959.25	79.07	0.50
cl	360	1:100	5811.30	0.00	17.72		19.34	0.001939	5.63	1032.02	82.36	0.51
cl	340	1:10	3865.90	0.00	14.51		15.73	0.001439	4.88	791.42	62.57	0.44
cl	340	1:20	4439.50	0.00	15.45		16.84	0.001546	5.22	850.31	63.38	0.46
cl	340	1:50	5237.70	0.00	16.67		18.29	0.001678	5.64	928.21	64.43	0.47
cl	340	1:100	5811.30	0.00	17.50		19.28	0.001764	5.92	981.79	65.15	0.49
cl	320	1:10	3865.90	0.00	14.49		15.70	0.001433	4.87	793.67	63.13	0.44
cl	320	1:20	4439.50	0.00	15.42		16.80	0.001538	5.20	853.05	63.97	0.46
cl	320	1:50	5237.70	0.00	16.64		18.25	0.001668	5.62	931.71	65.08	0.47
cl	320	1:100	5811.30	0.00	17.47		19.24	0.001751	5.89	985.85	65.83	0.49
cl	300	1:10	3865.90	0.00	14.29		15.65	0.001678	5.17	748.01	62.72	0.48
cl	300	1:20	4439.50	0.00	15.21		16.76	0.001789	5.51	805.94	63.65	0.49

HEC-RAS Plan: QUEBRO River: QUEBRO Reach: cl (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cl	300	1:50	5237.70	0.00	16.41		18.20	0.001924	5.93	882.92	64.88	0.51
cl	300	1:100	5811.30	0.00	17.22		19.18	0.002010	6.21	936.06	65.71	0.53
cl	280	1:10	3865.90	0.00	13.38		15.53	0.003279	6.49	595.46	60.76	0.66
cl	280	1:20	4439.50	0.00	14.22		16.62	0.003397	6.86	646.80	61.50	0.68
cl	280	1:50	5237.70	0.00	15.32		18.06	0.003537	7.33	714.92	62.48	0.69
cl	280	1:100	5811.30	0.00	16.07		19.03	0.003626	7.63	761.83	63.14	0.70
cl	260	1:10	3865.90	0.00	11.50	11.50	15.27	0.007586	8.60	449.49	60.00	1.00
cl	260	1:20	4439.50	0.00	12.26	12.26	16.35	0.007484	8.96	495.29	60.66	1.00
cl	260	1:50	5237.70	0.00	13.25	13.25	17.78	0.007393	9.42	555.95	61.53	1.00
cl	260	1:100	5811.30	0.00	13.93	13.93	18.75	0.007340	9.72	598.05	62.12	1.00
cl	240	1:10	3865.90	0.00	11.55	11.55	14.48	0.007720	7.58	509.70	87.97	1.01
cl	240	1:20	4439.50	0.00	12.18	12.18	15.31	0.007530	7.84	565.91	90.77	1.00
cl	240	1:50	5237.70	0.00	12.97	12.97	16.39	0.007376	8.19	639.79	94.32	1.00
cl	240	1:100	5811.30	0.00	13.53	13.53	17.12	0.007229	8.38	693.10	96.80	1.00
cl	220	1:10	3865.90	0.00	12.25		13.88	0.003192	5.64	685.23	96.73	0.68
cl	220	1:20	4439.50	0.00	12.84		14.66	0.003382	5.97	743.72	100.00	0.70
cl	220	1:50	5237.70	0.00	13.62		15.70	0.003440	6.37	821.73	100.00	0.71
cl	220	1:100	5811.30	0.00	14.16		16.41	0.003477	6.64	875.17	100.00	0.72
cl	200	1:10	3865.90	0.00	12.21		13.80	0.003169	5.59	691.67	100.00	0.68
cl	200	1:20	4439.50	0.00	12.80		14.59	0.003226	5.91	750.84	100.00	0.69
cl	200	1:50	5237.70	0.00	13.58		15.62	0.003293	6.32	828.78	100.00	0.70
cl	200	1:100	5811.30	0.00	14.12		16.33	0.003335	6.59	882.18	100.00	0.71
cl	180	1:10	3865.90	0.00	10.93	10.93	13.60	0.007160	7.24	534.05	100.00	1.00
cl	180	1:20	4439.50	0.00	11.45	11.45	14.38	0.007036	7.58	585.66	100.00	1.00
cl	180	1:50	5237.70	0.00	12.13	12.13	15.40	0.006900	8.01	653.92	100.00	1.00
cl	180	1:100	5811.30	0.00	12.60	12.60	16.11	0.006822	8.29	700.85	100.00	1.00
cl	160	1:10	3865.90	0.00	10.56	10.56	13.28	0.007298	7.31	528.72	98.47	1.01
cl	160	1:20	4439.50	0.00	11.13	11.13	14.06	0.007050	7.58	585.86	100.00	1.00
cl	160	1:50	5237.70	0.00	11.81	11.81	15.08	0.006914	8.01	654.13	100.00	1.00
cl	160	1:100	5811.30	0.00	12.28	12.28	15.79	0.006841	8.29	700.90	100.00	1.00
cl	140	1:10	3865.90	0.00	10.31	10.04	12.81	0.006253	6.99	552.97	97.35	0.94
cl	140	1:20	4439.50	0.00	11.06	10.62	13.62	0.005682	7.08	627.09	100.00	0.90
cl	140	1:50	5237.70	0.00	11.98	11.33	14.69	0.005136	7.29	718.75	100.00	0.87
cl	140	1:100	5811.30	0.00	12.57	11.80	15.42	0.004924	7.47	778.16	100.00	0.85
cl	120	1:10	3865.90	0.00	10.55		12.55	0.004306	6.26	617.18	94.99	0.78
cl	120	1:20	4439.50	0.00	11.25		13.40	0.004241	6.48	684.77	98.44	0.78
cl	120	1:50	5237.70	0.00	12.15		14.48	0.004076	6.77	774.10	100.00	0.78
cl	120	1:100	5811.30	0.00	12.74		15.22	0.003986	6.98	833.01	100.00	0.77
cl	100	1:10	3865.90	0.00	10.61		12.42	0.003570	5.95	649.68	92.28	0.72
cl	100	1:20	4439.50	0.00	11.29		13.27	0.003608	6.22	713.39	94.99	0.73
cl	100	1:50	5237.70	0.00	12.17		14.36	0.003656	6.56	798.10	98.48	0.74
cl	100	1:100	5811.30	0.00	12.76		15.10	0.003660	6.78	856.53	100.00	0.74
cl	80	1:10	3865.90	0.00	10.46		12.34	0.003779	6.06	637.74	91.69	0.73
cl	80	1:20	4439.50	0.00	11.14		13.19	0.003817	6.34	700.36	94.37	0.74
cl	80	1:50	5237.70	0.00	12.00		14.28	0.003865	6.68	783.53	97.82	0.75
cl	80	1:100	5811.30	0.00	12.58		15.02	0.003890	6.91	841.17	100.00	0.76
cl	60	1:10	3865.90	0.00	10.34		12.26	0.003933	6.13	630.69	92.05	0.75
cl	60	1:20	4439.50	0.00	11.02		13.10	0.003950	6.40	693.94	94.80	0.76
cl	60	1:50	5237.70	0.00	11.89		14.20	0.003968	6.73	778.56	98.37	0.76
cl	60	1:100	5811.30	0.00	12.48		14.94	0.003954	6.94	837.04	100.00	0.77
cl	40	1:10	3865.90	0.00	10.03	8.99	12.15	0.004564	6.46	598.88	90.75	0.80
cl	40	1:20	4439.50	0.00	10.69	9.63	13.00	0.004552	6.72	660.33	93.47	0.81
cl	40	1:50	5237.70	0.00	11.56	10.44	14.09	0.004539	7.05	742.56	96.98	0.81
cl	40	1:100	5811.30	0.00	12.14	10.99	14.83	0.004530	7.27	799.71	99.34	0.82
cl	20	1:10	3865.90	0.00	9.01	9.01	11.95	0.007298	7.60	508.82	86.63	1.00
cl	20	1:20	4439.50	0.00	9.63	9.63	12.80	0.007183	7.88	563.08	89.14	1.00
cl	20	1:50	5237.70	0.00	10.44	10.44	13.89	0.007031	8.23	636.65	92.43	1.00
cl	20	1:100	5811.30	0.00	10.99	10.99	14.63	0.006932	8.44	688.23	94.67	1.00