Preliminary Drainage Report

for

Rolling Hills Ranch PUD

at

Meridian Ranch

EL PASO COUNTY, COLORADO

September 2019

Prepared For:

GTL DEVELOPMENT, INC.
P.O. Box 80036
San Diego, CA 92138

Prepared By:
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PUDSP199

PCD Project No. PUDSP-19-XXX

CERTIFICATIONS

Design Engineer's Statement:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

_____ _____

Thomas A. Kerby, P.E. #31429 Date

Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.

_____ _____

Raul Guzman, Vice President Date
GTL Development, Inc.
P.O. Box 80036
San Diego, CA 92138

El Paso County:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 & 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

_____ _____

Jennifer Irvine, P.E. Date
County Engineer / ECM Administrator

Rolling Hills Ranch at Meridian Ranch PUD
Preliminary Drainage Report

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The outlet (DP G12) for Pond G is located west of the Falcon Regional Park, upstream of Eastonville Rd (DP G06). Pond G will discharge 479 CFS during the 100-yr storm event into an existing natural drainage course that traverses the regional park. The 100-year historical peak flow rate at the western boundary of the regional park is 544 CFS. The calculated 100-year developed flow rate will be 88% of the historic flow rate. The developed peak flow rate for the full spectrum of design storms are calculated to be below that of the corresponding historic peak flow rates. See Table 9 for a complete comparative list of the peak flow rates for the key design points impacted by the development of Rolling Hills Ranch.

POND F – POND G CHANNEL

Methodology and Background

The drainage way within the proposed development is best characterized as wide sandy bottom trapezoidal/parabolic channel, with some sparse amounts of vegetation along the side embankments. The drainage way conveys the storm runoff released from existing Pond F and surrounding areas easterly to the proposed Pond G. The drainage course conveys water only during runoff events. The channel will require relocation and shaping immediately downstream of Pond F as it runs along the north side of future Rex Road. The channel will remain in its natural condition between Rex Road and Pond G. A HecRas hydraulic analysis was completed for this channel in order to determine the stability of the sandy bottom channel after development occurs in the surrounding area.

Due to the nature and conditions of the existing channel, efforts were made to preserve it as closely to natural conditions outside the limits of the development. The El Paso County/City of Colorado Springs Drainage Criteria Manual (DCM) references the report Design Guidelines and Criteria for Channels and Hydraulic Structures on Sandy Soils by Simons, Li and Associates for design within sandy bottom channels and the Urban Drainage Criteria Manual for the design calculations as needed. Both of these manuals are referenced within the DCM and were referred to while analyzing the drainage way. The Final Drainage Report for Meridian Ranch Filing 1 was also referenced while analyzing this drainage way, since this drainage course is very similar in nature to the drainage ways found in Meridian Ranch Filing 1.

"A sand-bed channel generally is continually changing its position and shape as a consequence of hydraulic forces acting on its bed and banks. Natural and man-induced changes in rivers frequently set in motion responses that can be propagated for long distances. The response of a river to natural and man-induced changes often occurs in spite of attempts to control the river environment," Simons, Li and Associates. The design of a stable channel requires the understanding of the steady-state transport of sand sized sediments. Most factors affecting alluvial stream channel geometry are: stream discharge, sediment load, longitudinal slope, vegetation, type of sediment, and manmade alterations.

This natural drainage way can be defined as a 'straight' channel, it does not follow sinuous course. It is not braided or excessively meandering. The drainage path does have some minor

meanderings, but does not have multiple channels divided by bars and islands or large alternating S-shaped bends with deep scour pools.

Development will always alter the natural drainage system, such as increasing the peak flow rates, decreasing the sediment load, encroaching in to the floodplain, etc. This drainage way ad with the construction of Pond F at the upstream lightly less than historic and higher at the lower end prior to entering the proposed Pond G detention pond. The flow rates are then lower as they are release[illegible] Pond G.

spelling.

Table 8-3. Design parameters for naturalized channels

sign Parameter	Design Value
ximum 100-year depth outside of bankfull channel	5 ft
ughness values	Per Table 8-5
ximum 5-year velocity, main channel (within bankfull nnel width) (ft/s)	5 ft/s
ximum 100-year velocity, main channel (within bankfull nnel width) (ft/s)	7 ft/s
ude No., 5-year, main channel (within bankfull channel lth)	0.7
ude No., 100-year, main channel (within bankfull channel lth)	0.8
ximum shear stress, 100-year, main channel (within kfull channel width)	1.2 lb/sf
nimum bankfull capacity of bankfull channel (based on ure development conditions)	70% of 2-year discharge or 10% of 100-yr discharge, whichever is greater[1]
nimum bankfull channel geometry	Per Table 8-2
nimum bankfull channel width/depth ratio (Equation 8-3)	9
nimum entrenchment ratio (Equation 8-4)	3
ximum longitudinal slope of low flow channel (assuming ined, unvegetated low flow channel)	0.2 percent
nkfull channel sinuosity (Equation 8-5)	1.1 to 1.3
ximum overbank side slope	4(H):1(V)
ximum bankfull side slope	2.5(H):1(V)
nimum radius of curvature	2.5 times top width

ghly equivalent to a 1.5-year event based on extrapolation of regional data.

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Velocity, depth flow shear are be important factors when working within an alluvial drainage way, with velocity being the most important. As a general rule, the sediment transport increases with flow velocity to the forth power at low discharges and larger powers at high-flow discharges. The scouring power of the water increases in proportion to a third and fifth power of the depth.

The City/County Drainage Criteria manual offers limited guidance on evaluating sandy bottom natural drainage courses for stability. Sections 4, 5 and 7 found in Chapter 8 of the Urban Storm Drainage Criteria Manual (UDCM), Open Channels, provide some additional guidance toward analyzing natural drainage courses. Section 4 introduces the concept of stream stability. Section 5 applies the principles from Chapter 4 such that engineered channels can emulate natural streams. Section 7 provides guidelines on using HecRas to create a hydraulic model for the channel. This drainage course was evaluated gleaning guidance and recommendations from both Manuals.

The DCM provided guidance on Mannings n value for evaluating sandy bottom natural drainage courses for stability. Using Table 10-1 found on page 10-9 a Mannings n value of 0.0275 for the sandy bottom channel should be used. That is derived from using the base value of 0.020 for earth bottom adding 0.005 for minor irregularities, adding another .0025 for occasional channel variations. Where vegetation is present, between stations 37+61 and 39+97, an additional 0.005 was added. See table above.

Desgin Parameters for Natural Channels			
	100-year [1]	5-year [2]	2-year [2]
Velocity	7 ft/s	5 ft/s	2.5 ft/s [1]
Shear	1.2 lb/sf	0.6 lb/sf	0.6 lb/sf
[1] 100-year storm used when assessing water surface elevation and flow depth.			
[2] 5-year and 2-yr storms used when assessing velocity and shear stress.			
[3] Sandy Loam from Table 10-3 DCM.			

Table 11 Natural Channel Design Parameters

What's the source for footnotes 1 & 2.
Per UDCM the natural channel must have the hydraulic conditions identified in Table 8-3. Assessing velocity and shear also includes the 100yr.

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Table have no reference to footnote 3.

The UDCM provided guidance on target velocity and shear stress values for natural channel in Table 8-3 found on page 8-50 of Chapter 8. The UDCM suggests multiple design storms be used to perform the evaluation, this report evaluated the 2-year, 5-year and 100-year storms using HecRas (see Appendix X for complete input and results) to determine the velocities and shear stress encountered within the channel. The table right shows the target values for velocity and shear stress. The UDCM suggests using the 100-yr storm event to analyze the water surface elevation and flow depth and use the 5-year and 2-year storms to evaluate the storm flow velocity and shear stress on the channel bottom.

Design and Analysis

The area between Pond F and Rex Road will require to be reshaped into a trapezoidal channel with a 20 ft bottom width and 4:1 side slopes. The proposed channel will be lined with light rip-rap (d_{50} = 9 in.) along the bottom and 2 ft up the side slopes.

The future Rex Road crossing is estimated to be a 10' x 4' reinforced concrete box or equivalent size. The crossing is proposed to be designed and constructed with the Rolling Hills Ranch Filing 3 project. During the interim period, the crossing area (channel) will be lined with light rip-rap similar to the upstream channel.

The drainage course downstream of the Rex Road crossing is to remain in its natural condition. The drainage way is approximately 3-4 in depth, moderately windy, with a sandy bottom through most of it. It is very similar to the two Bennett courses located to the west in Meridian Ranch Filing 1 prior to development occurring there.

The drainage way was evaluated for maximum flow depth using the flow rate from the 100-year design storm. It was further evaluated for stability using the 2-year design storm flow rate. Chapter 10 of the DCM in conjunction with sections from Chapter 8 of the UDCM provided guidance in evaluating the natural drainage course.

A Manning n value of 0.035 was used for the side slopes of the trapezoidal channel where erosion control blanket will be used to temporarily stabilize the slopes until vegetation is established. The side slopes of the natural channel have significant variations and vegetation present, therefore a value of 0.040 was used to check channel bottom and bank stability The calculation results show the channel flows depths are between 1.5 and 2.0 feet deep well below the top of the drainage course banks.

It is recommended to evaluate the drainage hydraulics over a range of flow rates. The 2-year, 5-year and 100-year peak flow rates were selected to be evaluated. The 2-year storm peak flow rate was used to evaluate the stream bottom stability. The USDCM suggests an average maximum flow velocity of 5 fps for sandy soils; where the City/County DCM suggests a lower value of 2.5 fps. The 2.5 fps value was as the bench mark value for the 2-year storm. The 5-year and 100-year design storms were used to evaluate the bank stability and flow depth. The overbank average velocities for these storms were analyzed against the need for rip-rap protection along the embankment within the natural sections of the drainage course. UDCM suggests increasing the Manning's n value for the 100-year storm for evaluating the flow depth. This is to emulate the increased vegetative cover over time that would cause an increased flow depth.

Looking at the section of the drainage way that will remain in its natural sandy bottom condition, the shear stress exhibited by the storm flow remains well below the 0.6 lbs/sf benchmark suggested by the UDCM. The velocity within the channel remained below the 2.5 fps in all sections except downstream of station 11+73 near the rip-rap section leading into the Pond G, station 23+26 to 25+00. But of particular note the shear stress remained at or below 0.3 lbs/sf and the velocity remained below 3.0 fps, indicating the drainage course is stable during the most frequent storm events.
The hydraulic analysis for the 5-year storm event yields velocities below 5 fps along the channel bottom and less than 3 fps in the overbanks within the sandy bottom section of the drainage channel. The stress shear values range from less than 0.1 lbs/sf to less than 0.6 lbs/sf. The values fall well below the target design values.

The HecRas hydraulic analysis for the 100-year shows the highest channel bottom velocity at 8.2 fps with an average velocity at 5.4 fps. The velocities along the overbanks calculated to below 5 fps. It appears there may be locations where erosion could occur along the sandy bottom during the rare 100-year event, but the more numerous lesser storm events would compensate for those events. The initial 100-year hydraulic calculations showed potential erosion along the right overbank between stations 27+00 to 20+50, therefore rip-rap protection was added the right overbank between those sections. The model was rerun showing lower velocities and shear stress along the right overbank.

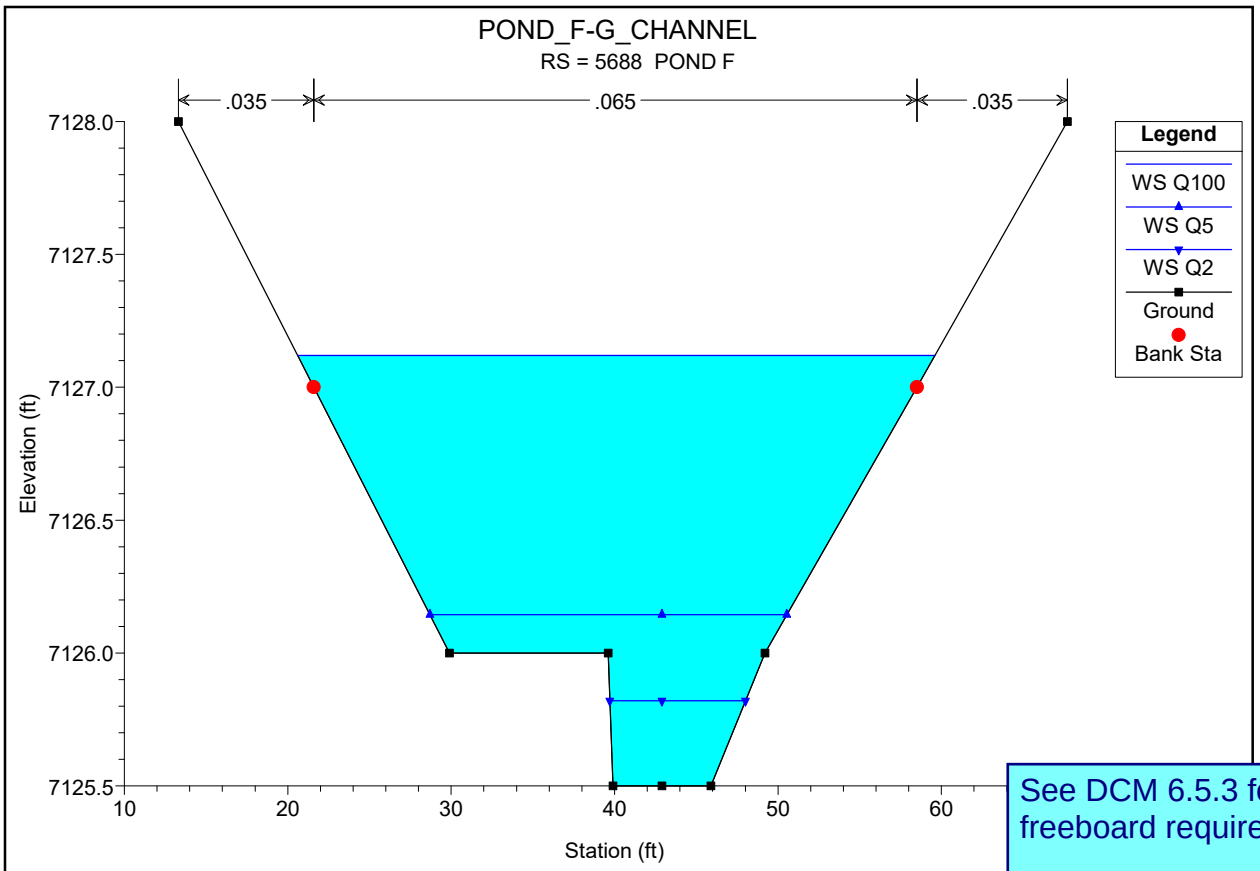
Based on the analysis of the results of the hydraulic model, it appears the drainage way is stable with little potential for erosion of the sandy bottom channel and the overbanks. However, since the drainage way is a sandy bottom channel and the unpredictability of those types of channels, no model can accurately predict how the channel will behave in post development conditions, therefore careful monitoring of the channel bottom and overbanks will need to be a part of the regular maintenance schedule every few years. Placement of additional rip-rap along the overbanks may be necessary where erosion appears. If channel bottom head cutting appears, a grade control structure may need to be installed to protect the integrity of the sandy bottom natural channel section.

Appendix D – Hec-Ras Analysis

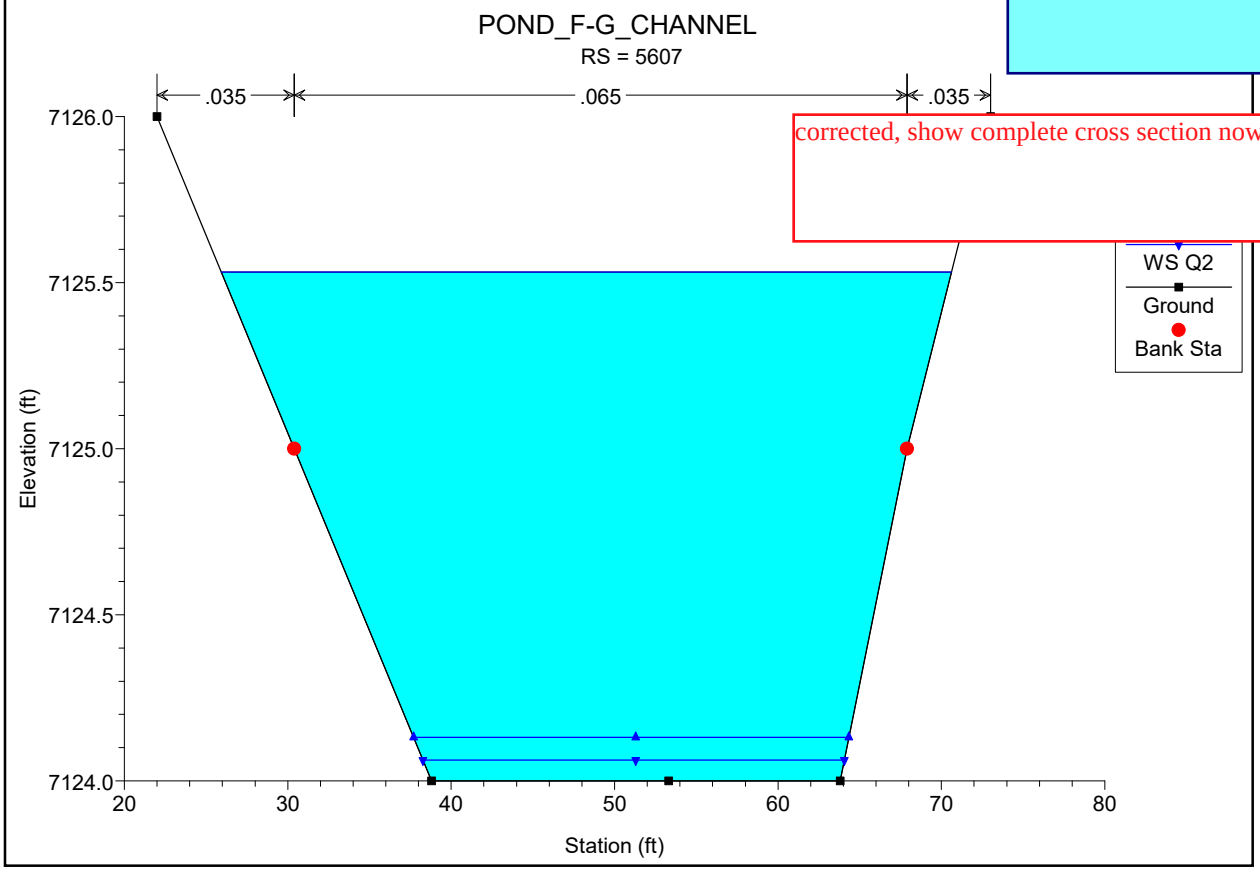
	River Sta	Profile	Q Total	Depth of Flow	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIP-RAP LINED	5688	Q100	164	1.6	7125.5	7127.1	7127.0	7127.4	0.0397	4.5	36.6	39.0	0.80
	5607	Q100	164	1.5	7124.0	7125.5		7125.7	0.0126	3.1	53.1	44.7	0.47
	5558	Q100	164	2.1	7123.0	7125.1		7125.2	0.0081	2.8	58.4	36.6	0.39
	5358	Q100	164	1.7	7121.0	7122.7	7122.2	7122.9	0.0176	3.7	44.9	33.4	0.56
	5055	Q100	164	1.2	7112.0	7113.2	7113.2	7113.7	0.0643	5.7	29.0	29.7	1.01
	4765	Q100	164	2.0	7104.0	7106.0	7105.2	7106.1	0.0095	3.0	55.5	35.9	0.42
	4750	Q100	164	1.9	7103.9	7105.8		7106.0	0.0108	3.1	53.1	35.4	0.44
	4477	Q100	191	2.2	7101.1	7103.3		7103.4	0.0083	3.0	63.6	38.5	0.40
	4469	Q100	191	2.2	7101.0	7103.2		7103.3	0.0081	3.0	64.6	38.9	0.40
	4269	Q100	191	1.8	7099.0	7100.8		7101.1	0.0175	3.8	50.0	34.6	0.56
	4162	Q100	191	1.3	7096.0	7097.3	7097.3	7097.8	0.0620	5.9	32.3	30.3	1.01
	4087	Q100	191	1.1	7089.3	7090.4	7090.5	7091.0	0.0726	5.8	32.9	35.8	1.07
	3997	Q100	208	1.8	7086.0	7087.8	7087.4	7088.1	0.0089	4.6	49.2	35.8	0.63
NATURAL SANDY BOTTOM	3761	Q100	300	2.0	7082.0	7084.0	7084.0	7084.8	0.0196	7.7	44.7	28.7	0.97
	3500	Q100	300	2.0	7077.5	7079.5	7079.3	7080.0	0.0137	6.0	58.7	45.9	0.79
	3250	Q100	300	1.4	7074.1	7075.5	7075.5	7076.1	0.0175	6.2	52.6	49.1	0.96
	3100	Q100	300	1.9	7071.1	7073.0	7072.9	7073.6	0.0134	6.8	52.8	38.4	0.89
	3011	Q100	300	1.7	7070.0	7071.7	7071.7	7072.3	0.0158	6.9	53.8	45.9	0.95
	2887	Q100	300	1.6	7068.0	7069.6	7069.4	7070.0	0.0132	5.8	58.3	50.9	0.85
	2740	Q100	300	1.4	7066.0	7067.4	7067.4	7067.6	0.0192	3.5	85.9	166.1	0.87
	2500	Q100	300	1.4	7060.8	7062.2	7062.2	7062.7	0.0217	5.8	57.2	63.1	1.03
	2326	Q100	300	1.5	7056.9	7058.4	7058.4	7058.8	0.0225	5.4	62.7	87.3	1.02
	2187	Q100	300	1.8	7054.0	7055.8	7055.8	7056.4	0.0140	6.9	58.3	60.1	0.91
	2045	Q100	300	1.7	7052.0	7053.7	7053.6	7054.1	0.0146	5.3	66.8	70.4	0.86
	1899	Q100	493	1.6	7049.3	7050.9	7050.9	7051.4	0.0191	7.0	93.6	86.7	1.02
	1770	Q100	493	1.6	7046.6	7048.2	7048.3	7048.9	0.0197	7.5	80.6	70.4	1.06
	1589	Q100	493	1.2	7042.0	7043.2	7043.4	7044.1	0.0354	8.2	67.1	70.3	1.34
	1354	Q100	493	2.0	7037.7	7039.7	7039.7	7040.4	0.0165	7.1	79.8	61.1	0.97
	1209	Q100	493	1.6	7036.0	7037.6	7037.3	7038.0	0.0107	5.5	98.2	73.7	0.78
	1173	Q100	493	2.0	7035.0	7037.0		7037.6	0.0109	6.6	88.1	53.2	0.82
RIP-RAP	1122	Q100	493	2.1	7034.0	7036.1		7036.7	0.0344	6.1	80.7	46.9	0.81
	1098	Q100	493	1.9	7033.0	7034.9	7034.9	7035.6	0.0544	7.1	69.5	44.9	1.00
	1000	Q100	493	1.6	7026.4	7028.0	7028.3	7029.1	0.0837	8.2	60.1	43.2	1.22

	River Sta	Profile	Q Total	Depth of Flow	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIP-RAP LINED	5688	Q5	7.0	0.6	7125.5	7126.1	7125.8	7126.2	0.0095	1.0	6.9	21.8	0.32
	5607	Q5	7.0	0.13	7124.0	7124.1	7124.1	7124.2	0.1290	2.1	3.4	26.6	1.03
	5558	Q5	7.0	0.42	7123.0	7123.4	7123.2	7123.4	0.0039	0.8	9.2	23.4	0.21
	5358	Q5	7.0	0.16	7121.0	7121.2	7121.2	7121.2	0.1107	2.2	3.2	21.3	0.98
	5055	Q5	7.0	0.16	7112.0	7112.2	7112.2	7112.2	0.1154	2.2	3.2	21.3	1.00
	4765	Q5	7.0	0.35	7104.0	7104.4	7104.2	7104.4	0.0075	0.9	7.5	22.8	0.29
	4750	Q5	7.0	0.30	7103.9	7104.2		7104.2	0.0124	1.1	6.4	22.4	0.36
	4477	Q5	9.0	0.39	7101.1	7101.5		7101.5	0.0084	1.1	8.5	23.3	0.31
	4469	Q5	9.0	0.42	7101.0	7101.4	7101.2	7101.4	0.0066	1.0	9.1	23.6	0.28
	4269	Q5	9.0	0.31	7099.0	7099.3	7099.2	7099.3	0.0196	1.4	6.5	22.4	0.46
	4162	Q5	9.0	0.24	7096.0	7096.2	7096.2	7096.3	0.0454	1.8	5.0	21.9	0.67
	4087	Q5	9.0	0.18	7089.3	7089.5	7089.5	7089.6	0.1043	2.3	4.0	23.1	0.97
	3997	Q5	12	0.36	7086.0	7086.4	7086.3	7086.4	0.0114	1.9	6.2	25.3	0.68
NATURAL SANDY BOTTOM	3761	Q5	21	0.37	7082.0	7082.4	7082.4	7082.5	0.0210	3.4	6.4	18.6	0.99
	3500	Q5	21	0.56	7077.5	7078.1	7078.0	7078.2	0.0114	2.5	8.6	24.6	0.72
	3250	Q5	21	0.36	7074.1	7074.5	7074.5	7074.6	0.0184	2.8	7.6	32.5	1.01
	3100	Q5	21	0.46	7071.1	7071.6	7071.5	7071.7	0.0108	2.8	7.5	22.9	0.84
	3011	Q5	21	0.37	7070.0	7070.4	7070.4	7070.5	0.0159	3.2	6.8	23.9	0.99
	2887	Q5	21	0.28	7068.0	7068.3	7068.3	7068.5	0.0471	3.8	5.6	30.4	1.56
	2740	Q5	21	0.40	7066.0	7066.4	7066.4	7066.5	0.0169	3.0	7.2	26.5	1.00
	2500	Q5	21	0.43	7060.8	7061.2	7061.3	7061.4	0.0278	3.5	6.4	27.7	1.25
	2326	Q5	21	0.45	7056.9	7057.4	7057.4	7057.5	0.0184	3.1	7.0	26.8	1.04
	2187	Q5	21	0.28	7054.0	7054.3	7054.3	7054.5	0.0258	3.7	5.9	22.2	1.23
	2045	Q5	21	0.45	7052.0	7052.5	7052.5	7052.6	0.0150	3.4	6.7	20.3	0.99
	1899	Q5	38	0.45	7049.3	7049.8	7049.8	7049.9	0.0201	3.5	12.2	45.9	1.11
	1770	Q5	38	0.30	7046.6	7046.9	7046.9	7047.1	0.0237	3.7	10.8	39.8	1.20
	1589	Q5	38	0.26	7042.0	7042.3	7042.3	7042.4	0.0278	3.4	11.4	51.5	1.24
	1354	Q5	38	0.63	7037.7	7038.3	7038.3	7038.5	0.0127	3.7	10.6	23.5	0.95
	1209	Q5	38	0.25	7036.0	7036.3	7036.3	7036.4	0.0175	2.8	13.7	56.7	1.00
	1173	Q5	38	0.30	7035.0	7035.3	7035.4	7035.6	0.0294	4.1	9.6	34.8	1.33
RIP-RAP	1122	Q5	38	0.52	7034.0	7034.5	7034.4	7034.6	0.0259	2.3	16.7	34.2	0.57
	1098	Q5	38	0.36	7033.0	7033.4	7033.4	7033.5	0.0898	3.4	11.3	32.9	1.01
	1000	Q5	38	0.39	7026.4	7026.8	7026.8	7026.9	0.0667	3.1	12.4	33.1	0.88

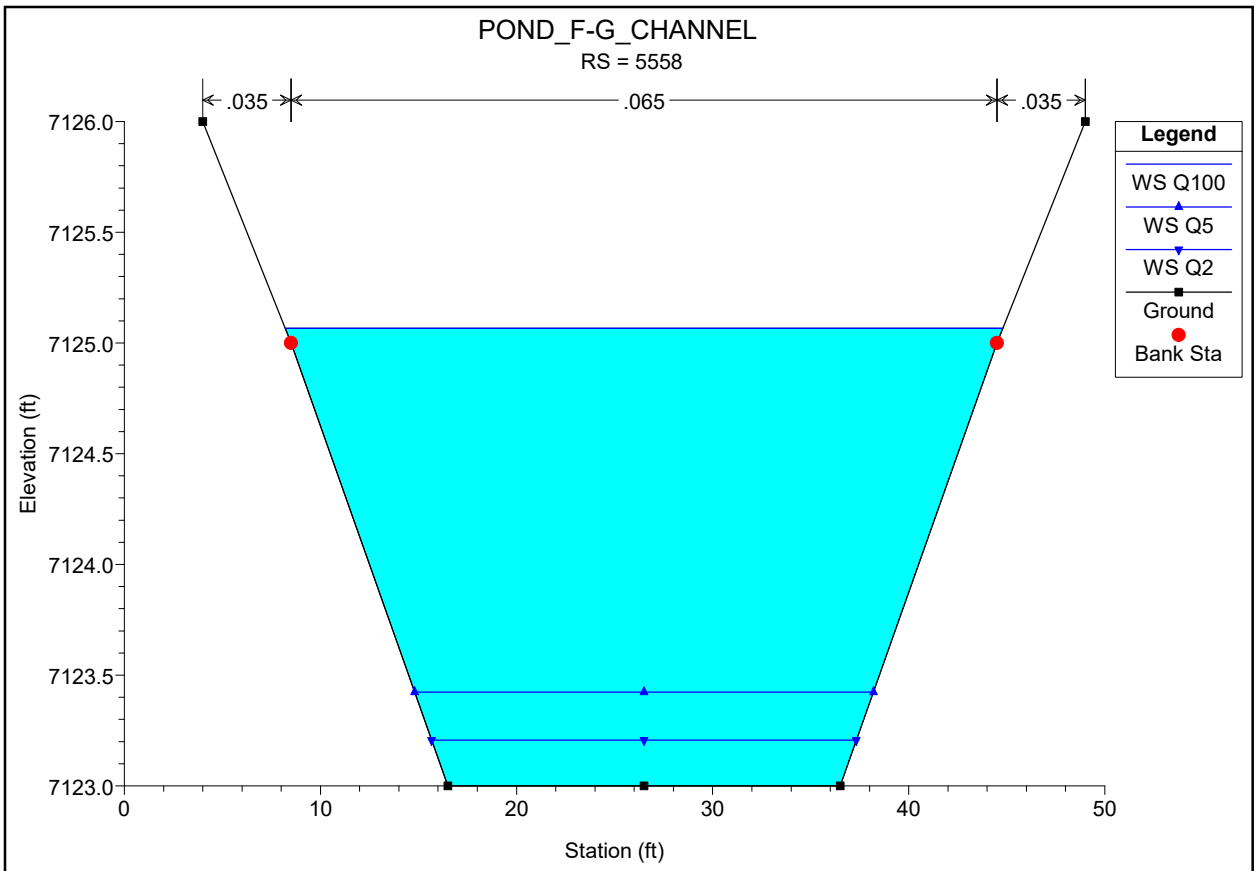
	River Sta	Profile	Q Total	Depth of Flow	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIP-RAP LINED	5688	Q2	2.0	0.32	7125.50	7125.82	7125.65	7125.83	0.0083	0.9	2.3	8.3	0.29
	5607	Q2	2.0	0.06	7124.00	7124.06	7124.06	7124.09	0.1219	1.3	1.6	25.8	0.89
	5558	Q2	2.0	0.21	7123.00	7123.21	7123.07	7123.21	0.0036	0.5	4.3	21.7	0.18
	5358	Q2	2.0	0.07	7121.00	7121.07	7121.07	7121.10	0.1263	1.4	1.5	20.6	0.92
	5055	Q2	2.0	0.06	7112.00	7112.06	7112.06	7112.10	0.1768	1.5	1.3	20.5	1.07
	4765	Q2	2.0	0.18	7104.00	7104.18	7104.07	7104.18	0.0063	0.6	3.6	21.4	0.24
	4750	Q2	2.0	0.15	7103.90	7104.05		7104.05	0.0111	0.7	3.0	21.2	0.31
	4477	Q2	2.4	0.17	7101.10	7101.27		7101.28	0.0098	0.7	3.5	21.4	0.30
	4469	Q2	2.4	0.19	7101.00	7101.19	7101.08	7101.20	0.0063	0.6	4.1	21.7	0.24
	4269	Q2	2.4	0.14	7099.00	7099.14	7099.07	7099.15	0.0201	0.9	2.8	21.1	0.41
	4162	Q2	2.4	0.11	7096.00	7096.11		7096.13	0.0422	1.1	2.3	20.9	0.57
	4087	Q2	2.4	0.08	7089.30	7089.38	7089.38	7089.41	0.1168	1.4	1.7	21.4	0.90
	3997	Q2	3.2	0.22	7086.00	7086.22	7086.15	7086.24	0.0082	1.1	2.8	19.8	0.53
NATURAL SANDY BOTTOM	3761	Q2	6.2	0.16	7082.00	7082.16	7082.16	7082.24	0.0278	2.3	2.8	17.3	0.99
	3500	Q2	6.2	0.34	7077.50	7077.84	7077.76	7077.88	0.0100	1.6	3.8	17.6	0.62
	3250	Q2	6.2	0.19	7074.10	7074.29	7074.29	7074.35	0.0212	2.1	3.0	21.8	0.99
	3100	Q2	6.2	0.28	7071.10	7071.38	7071.33	7071.42	0.0089	1.7	3.7	19.5	0.68
	3011	Q2	6.2	0.19	7070.00	7070.19	7070.19	7070.26	0.0210	2.1	2.9	20.5	1.00
	2887	Q2	6.2	0.22	7068.00	7068.22	7068.18	7068.26	0.0096	1.5	4.1	26.6	0.68
	2740	Q2	6.2	0.20	7066.00	7066.20	7066.20	7066.28	0.0201	2.2	2.8	18.3	0.99
	2500	Q2	6.2	0.20	7060.80	7061.00	7061.01	7061.11	0.0230	2.7	2.5	14.4	1.09
	2326	Q2	6.2	0.21	7056.90	7057.11	7057.12	7057.23	0.0216	2.7	2.3	11.9	1.07
	2187	Q2	6.2	0.17	7054.00	7054.17	7054.15	7054.22	0.0122	1.8	3.5	21.3	0.78
	2045	Q2	6.2	0.23	7052.00	7052.23	7052.21	7052.31	0.0147	2.3	2.9	15.3	0.89
	1899	Q2	11	0.29	7049.30	7049.59	7049.59	7049.66	0.0200	2.2	5.3	36.1	0.99
	1770	Q2	11	0.14	7046.60	7046.74	7046.75	7046.82	0.0243	2.3	4.9	36.5	1.07
	1589	Q2	11	0.14	7042.00	7042.14	7042.15	7042.21	0.0267	2.1	5.4	48.9	1.08
	1354	Q2	11	0.36	7037.70	7038.06	7038.01	7038.14	0.0101	2.3	4.9	18.6	0.77
	1209	Q2	11	0.12	7036.00	7036.12	7036.12	7036.16	0.0190	1.8	6.3	54.9	0.92
	1173	Q2	11	0.14	7035.00	7035.14	7035.16	7035.25	0.0352	2.7	4.2	32.2	1.28
RIP-RAP	1122	Q2	11	0.26	7034.00	7034.26	7034.16	7034.29	0.0220	1.4	8.1	32.1	0.47
	1098	Q2	11	0.16	7033.00	7033.16	7033.16	7033.24	0.1236	2.3	4.8	31.3	1.04
	1000	Q2	11	0.19	7026.40	7026.59	7026.56	7026.64	0.0666	1.9	5.8	31.5	0.78

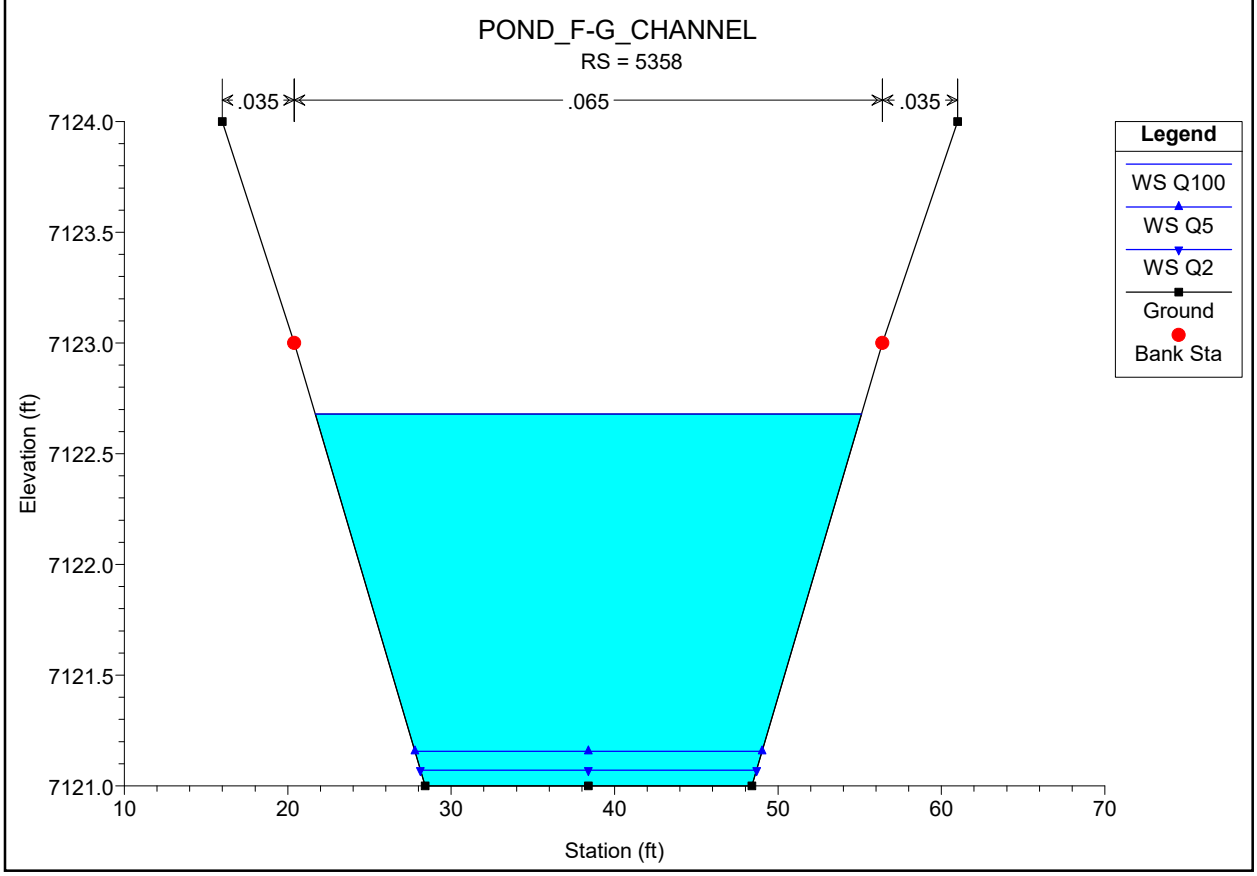


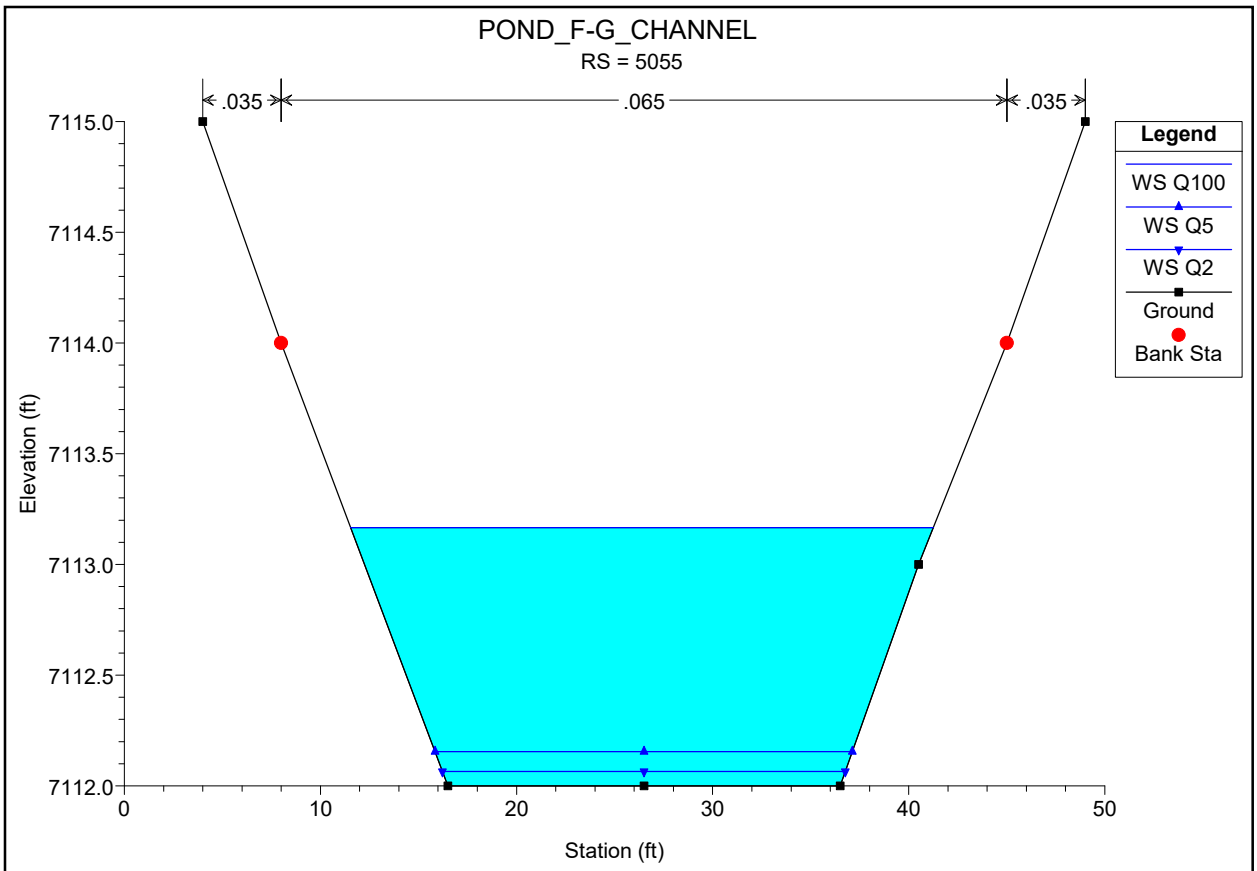
See DCM 6.5.3 for channel freeboard requirements.

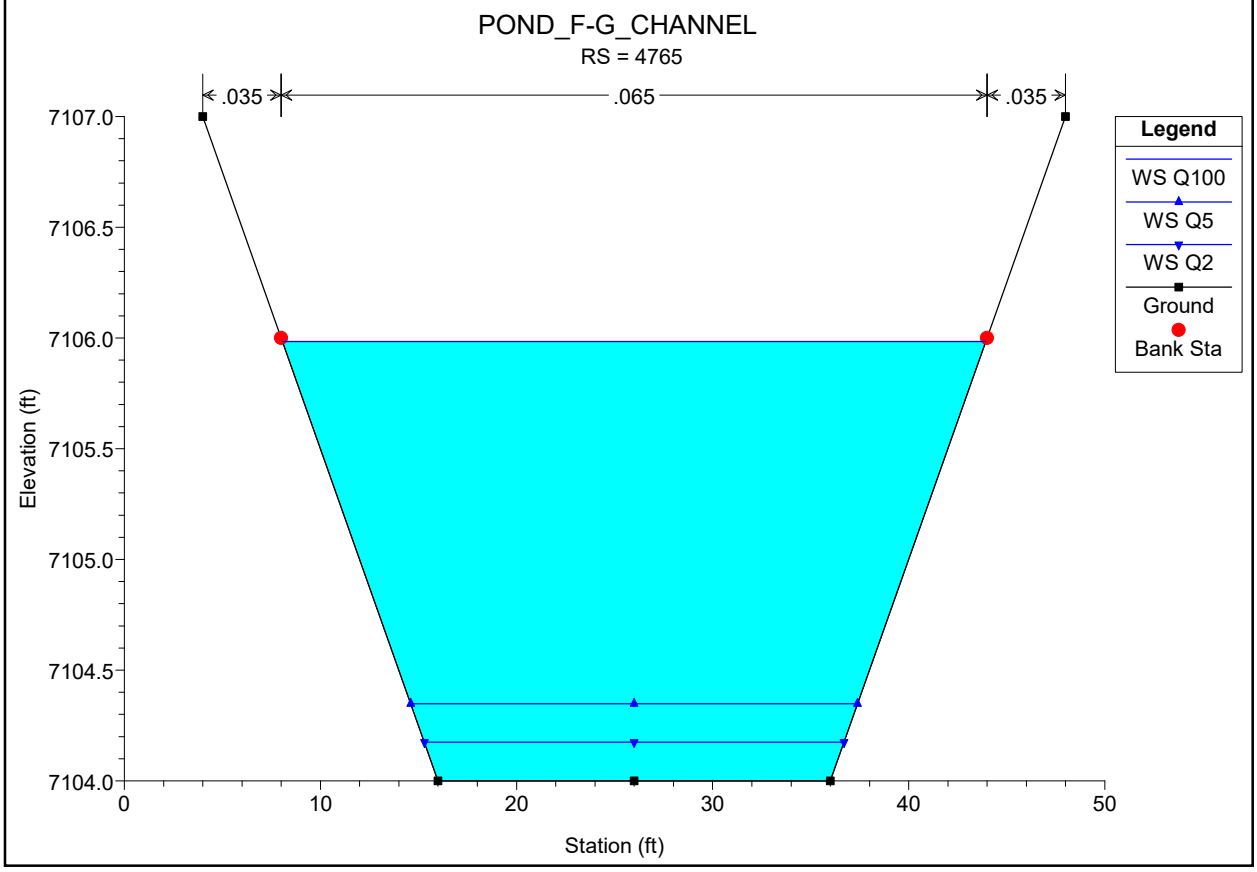


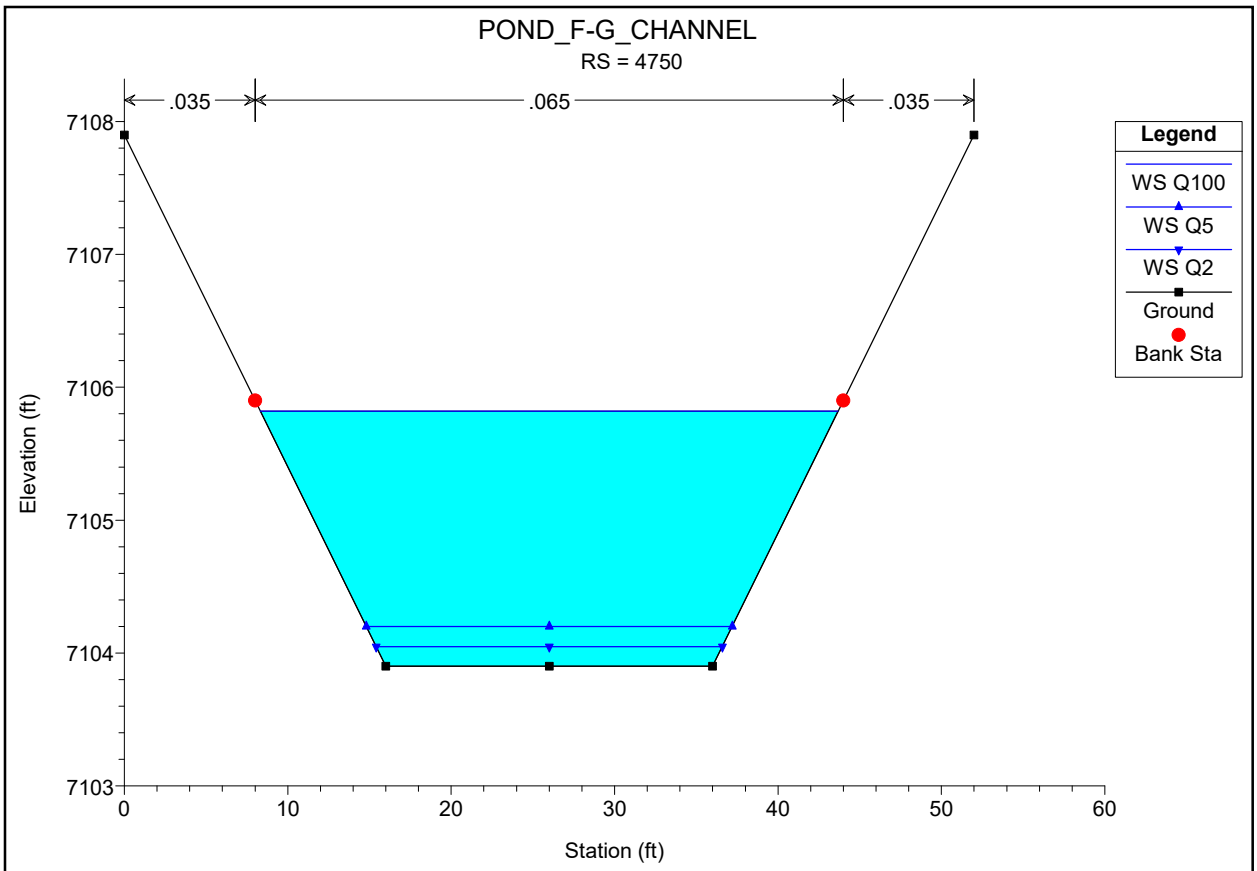
corrected, show complete cross section now

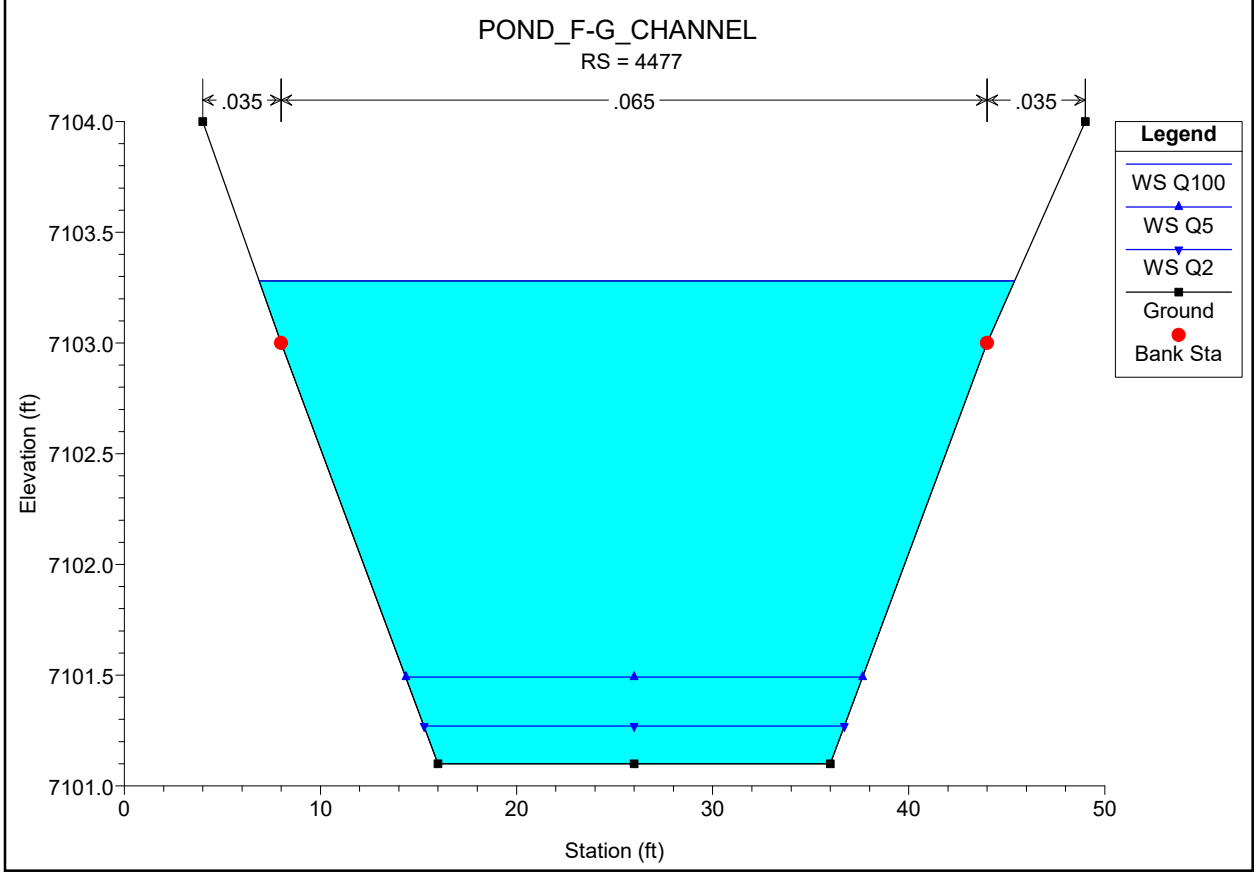

POND_F-G_CHANNEL
RS = 5558
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7126.0
7125.5
7125.0
7124.5
7124.0
7123.5
7123.0
0
10
20
30
40
50
Station (ft)

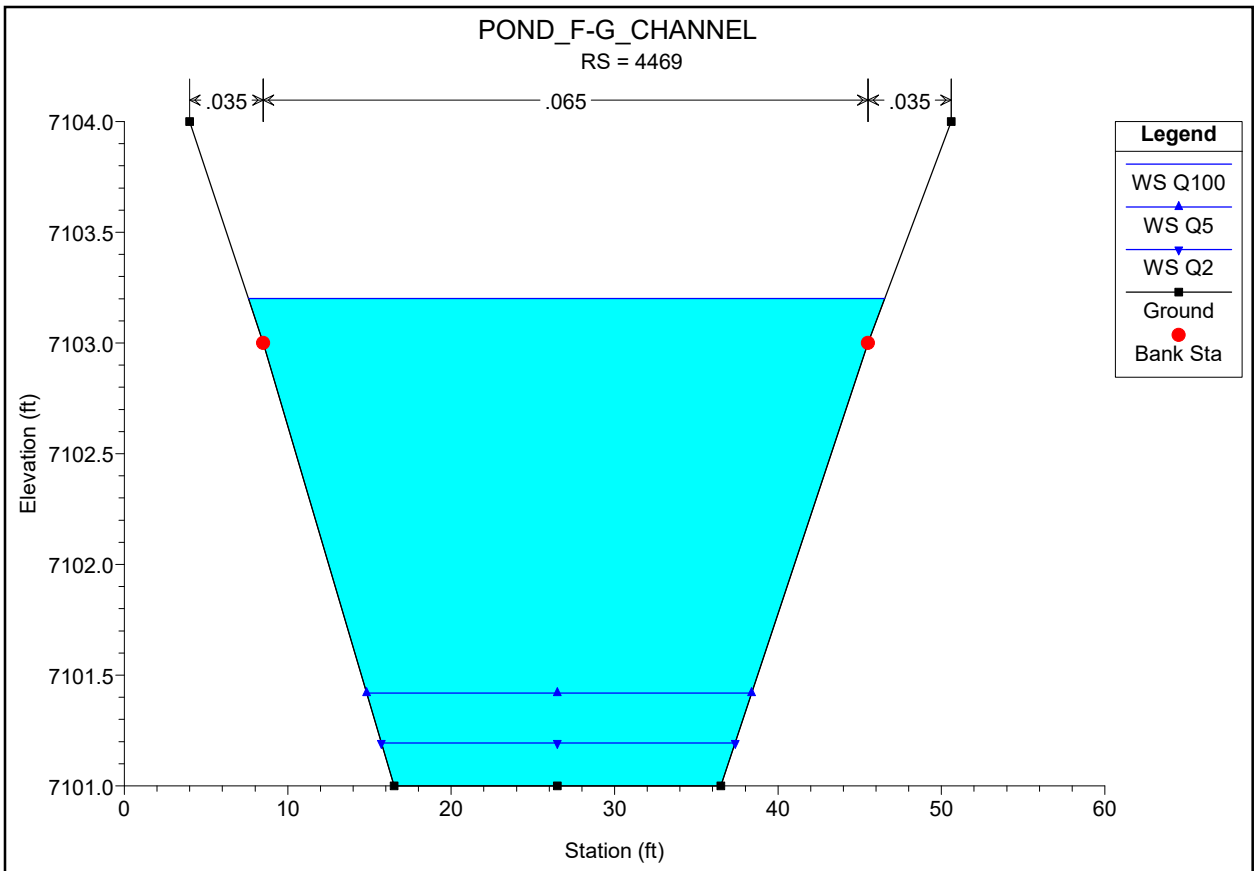

POND_F-G_CHANNEL
RS = 5358
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7124.0
7123.5
7123.0
7122.5
7122.0
7121.5
7121.0
10
20
30
40
50
60
70
Station (ft)

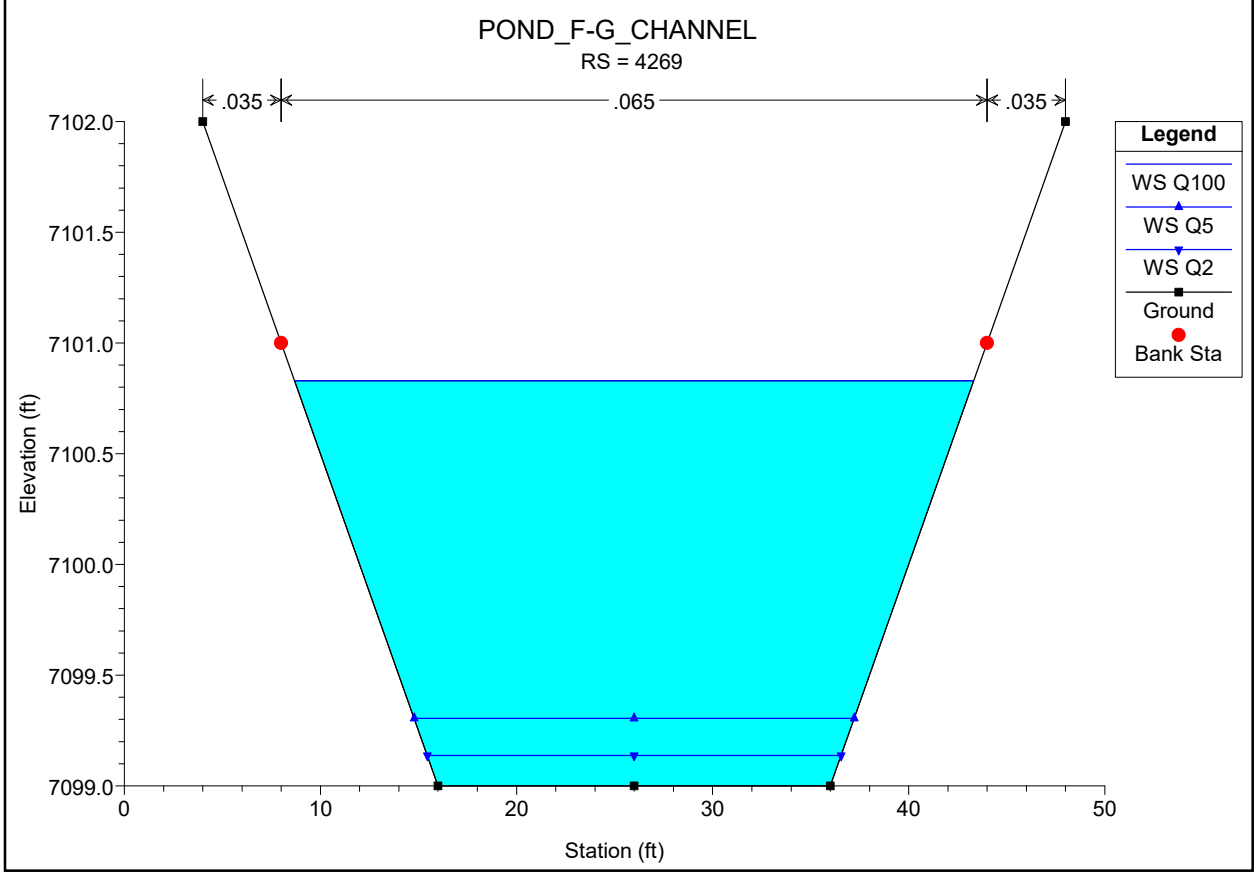

POND_F-G_CHANNEL
RS = 5055
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7115.0
7114.5
7114.0
7113.5
7113.0
7112.5
7112.0
0
10
20
30
40
50
Station (ft)

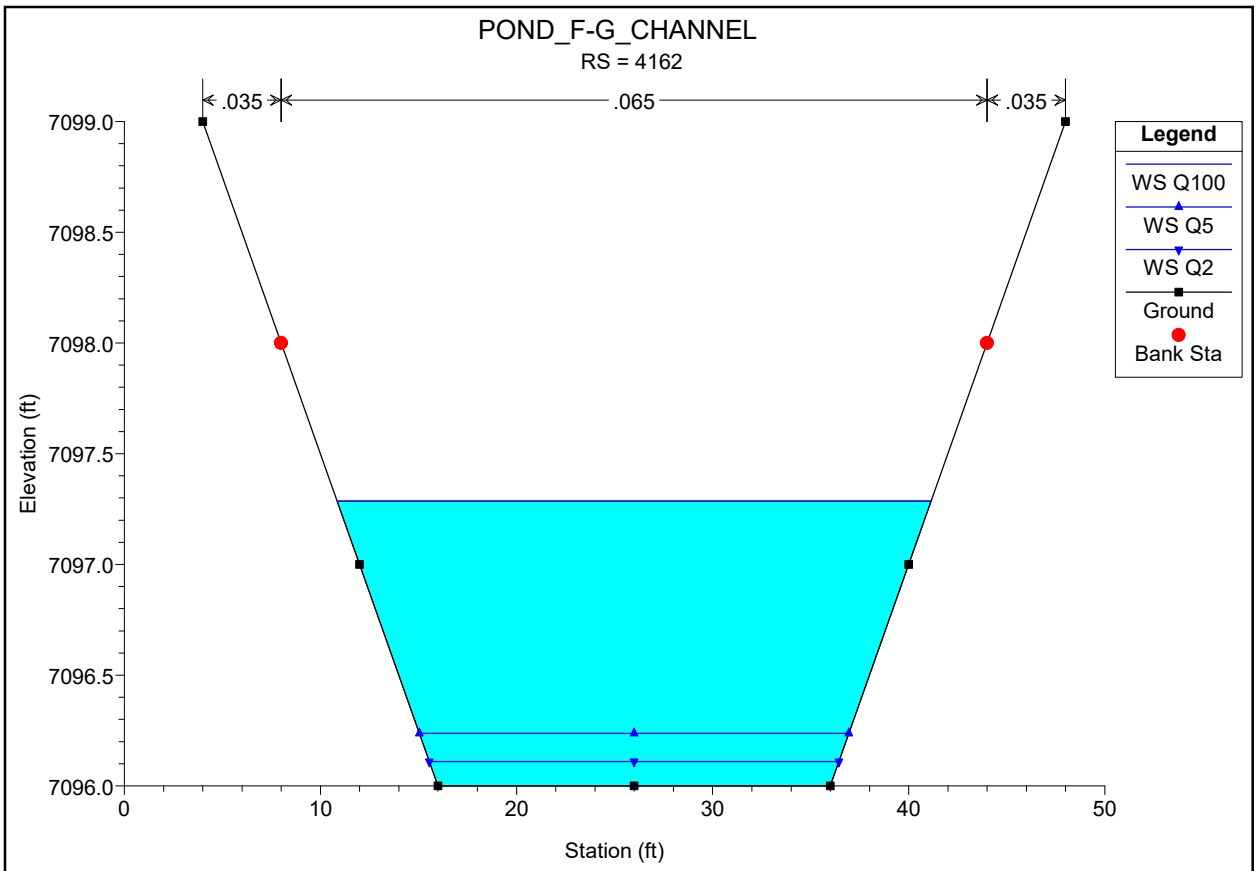

POND_F-G_CHANNEL
RS = 4765
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7107.0
7106.5
7106.0
7105.5
7105.0
7104.5
7104.0
0
10
20
30
40
50
Station (ft)

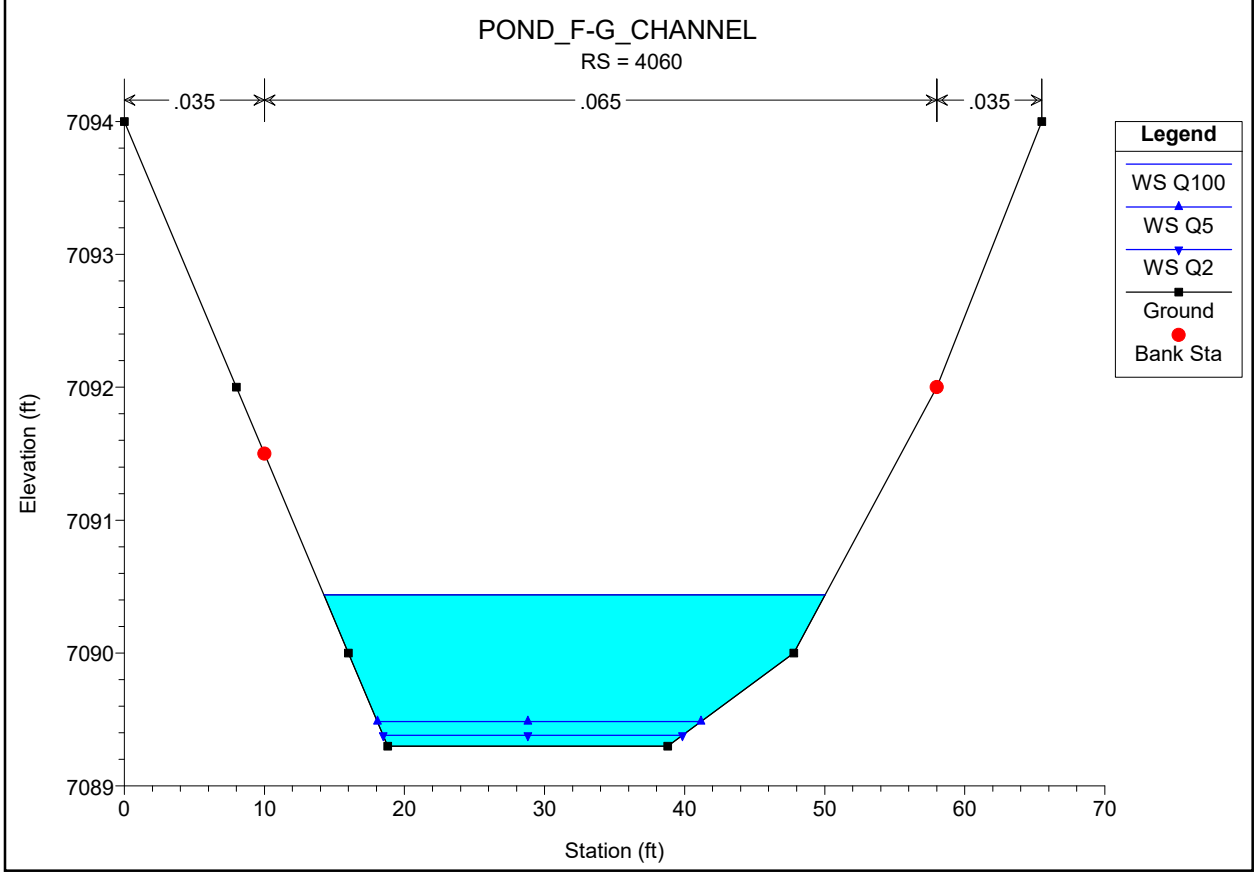

POND_F-G_CHANNEL
RS = 4750
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7108
7107
7106
7105
7104
7103
0
10
20
30
40
50
60
Station (ft)

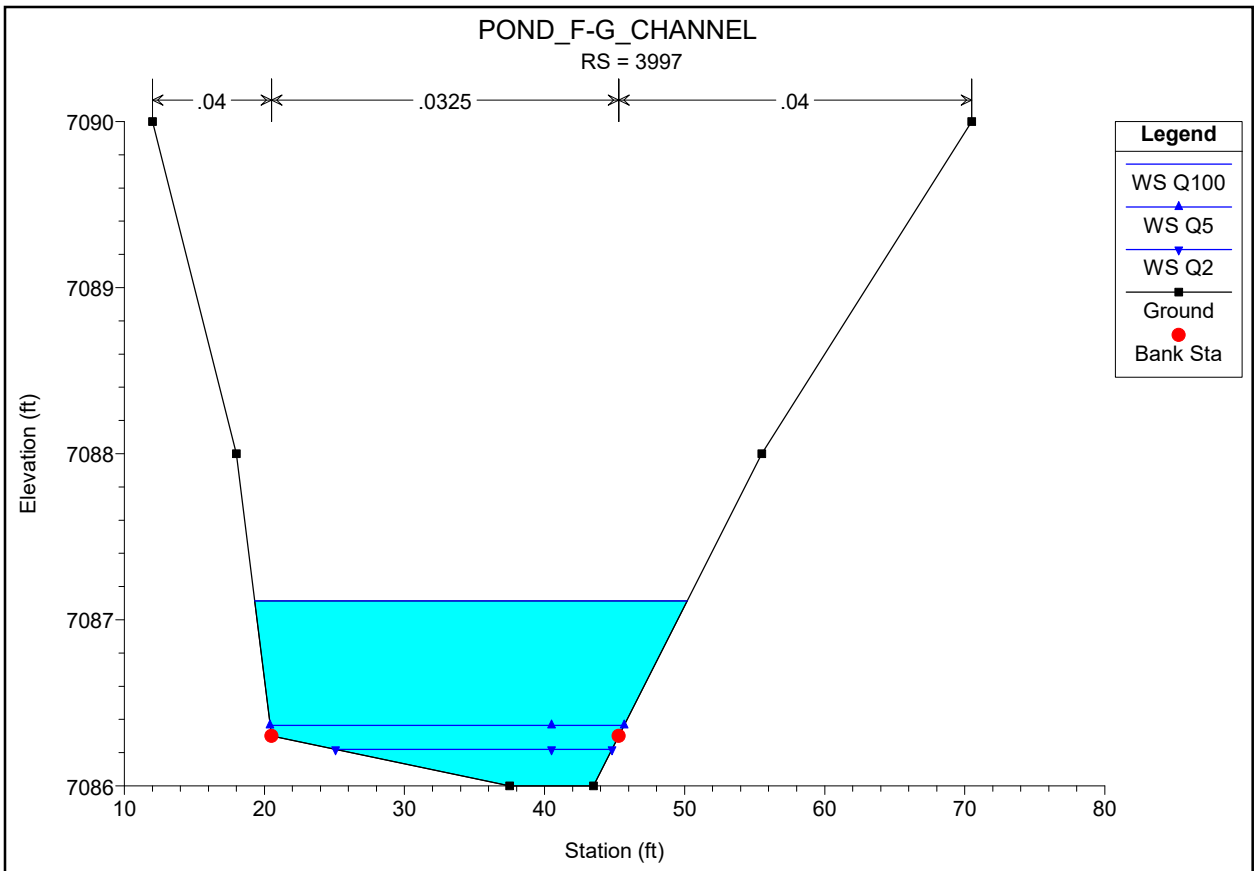

POND_F-G_CHANNEL
RS = 4477
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7104.0
7103.5
7103.0
7102.5
7102.0
7101.5
7101.0
0
10
20
30
40
50
Station (ft)

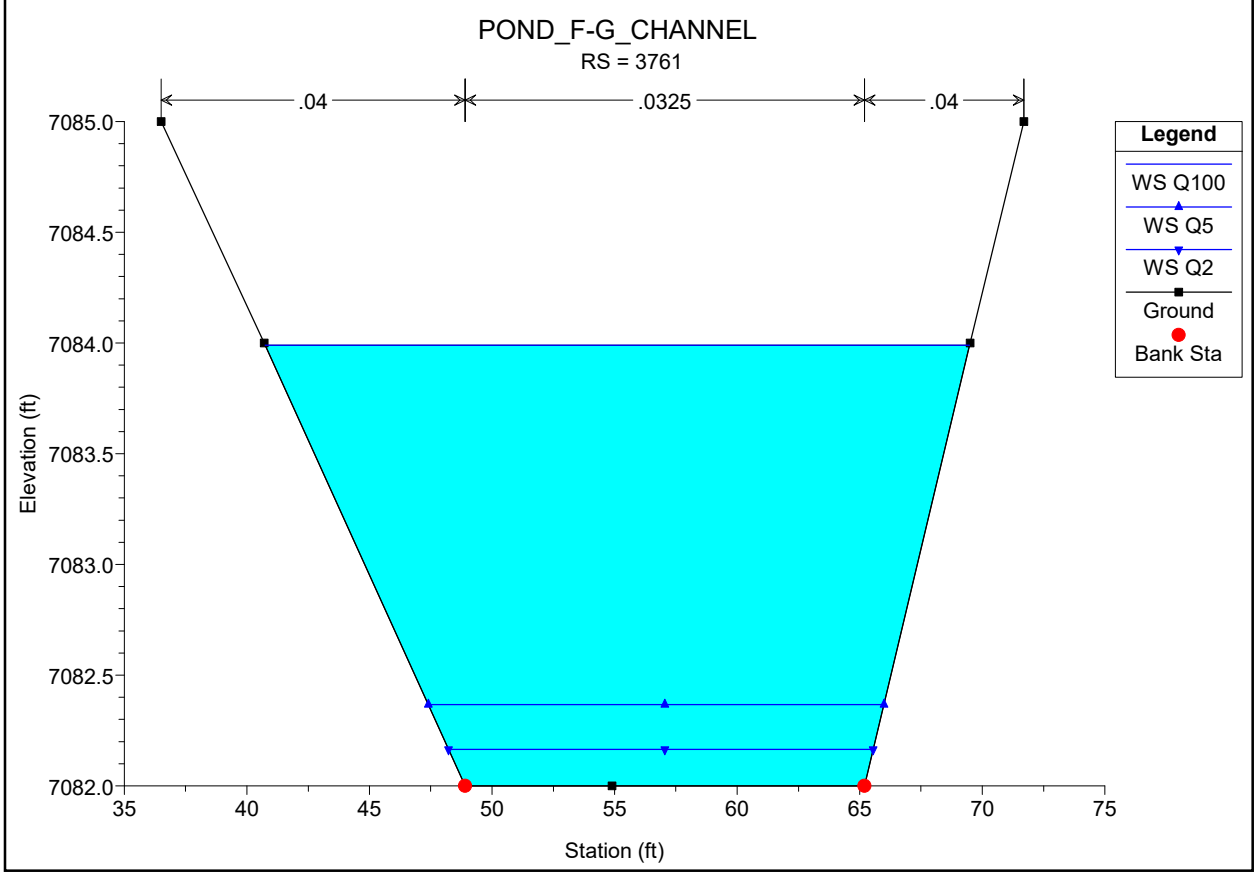

POND_F-G_CHANNEL
RS = 4469
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7104.0
7103.5
7103.0
7102.5
7102.0
7101.5
7101.0
0
10
20
30
40
50
60
Station (ft)

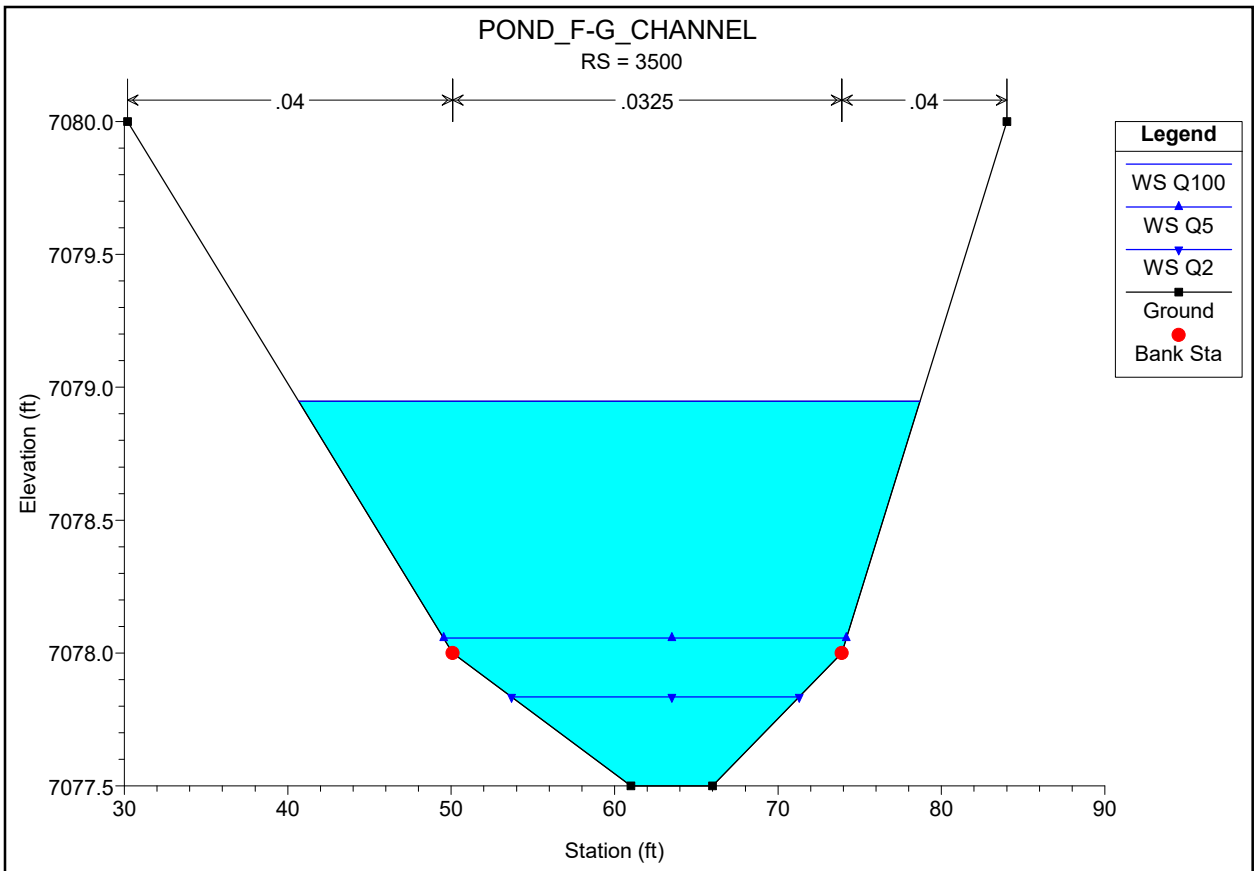

POND_F-G_CHANNEL
RS = 4269
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7102.0
7101.5
7101.0
7100.5
7100.0
7099.5
7099.0
0
10
20
30
40
50
Station (ft)

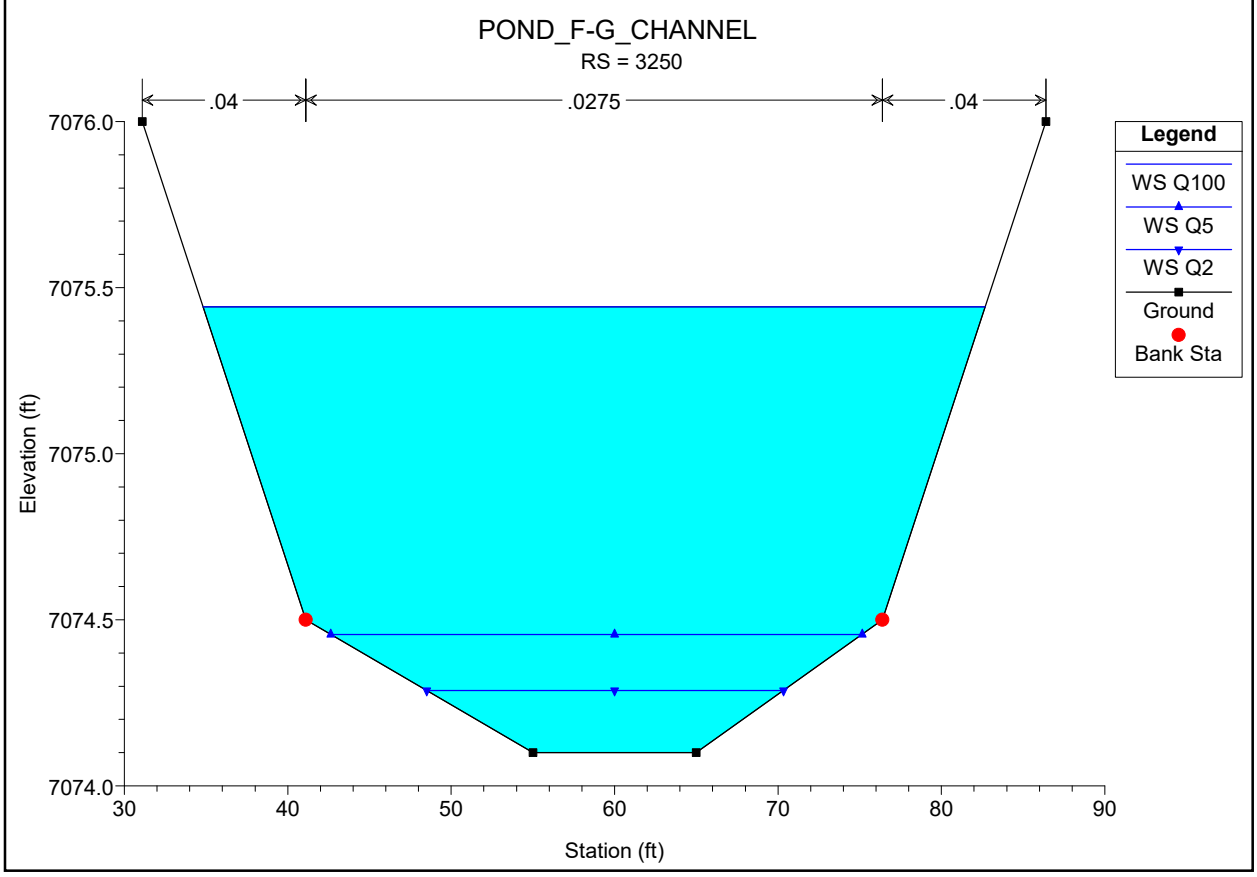

POND_F-G_CHANNEL
RS = 4162
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7099.0
7098.5
7098.0
7097.5
7097.0
7096.5
7096.0
0
10
20
30
40
50
Station (ft)

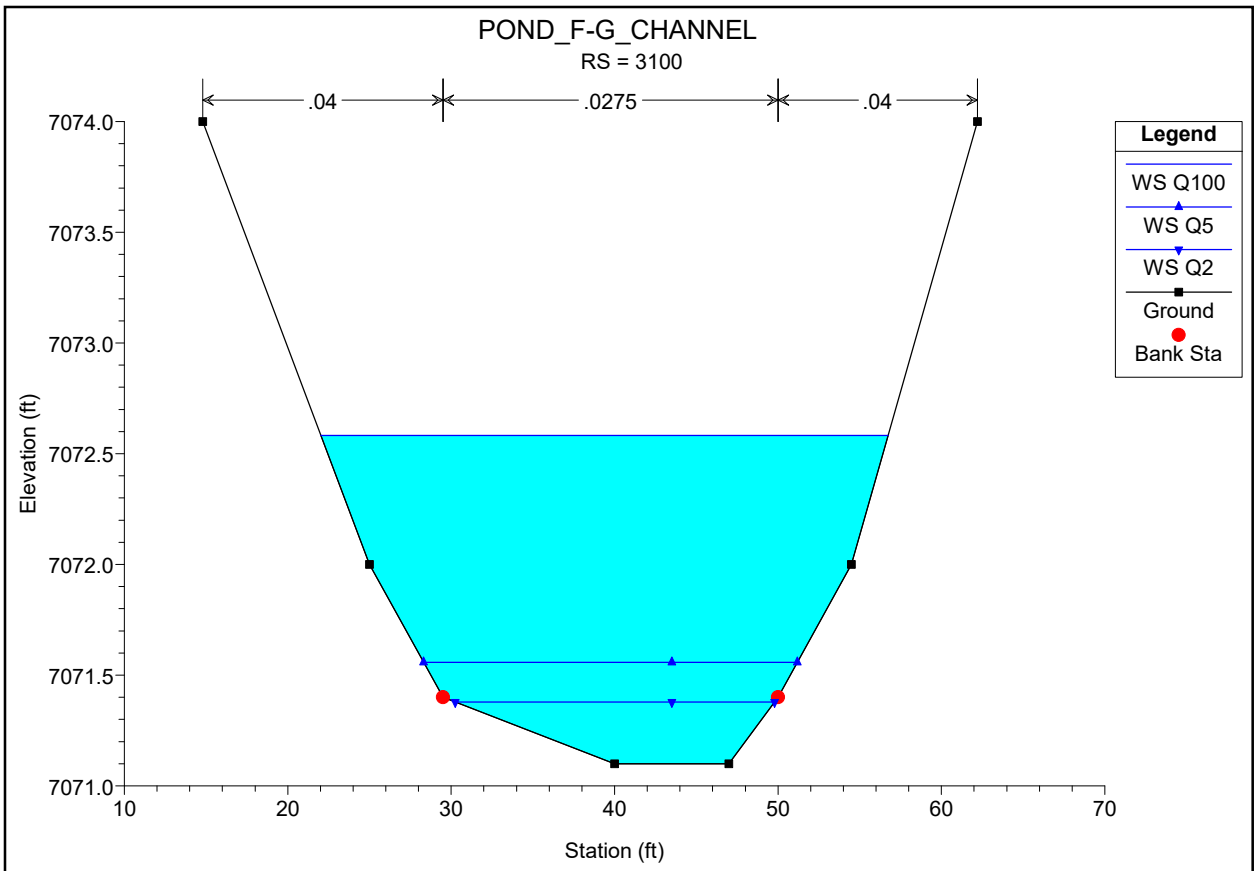

POND_F-G_CHANNEL
RS = 4060
.035
.065
.035
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7094
7093
7092
7091
7090
7089
0
10
20
30
40
50
60
70
Station (ft)

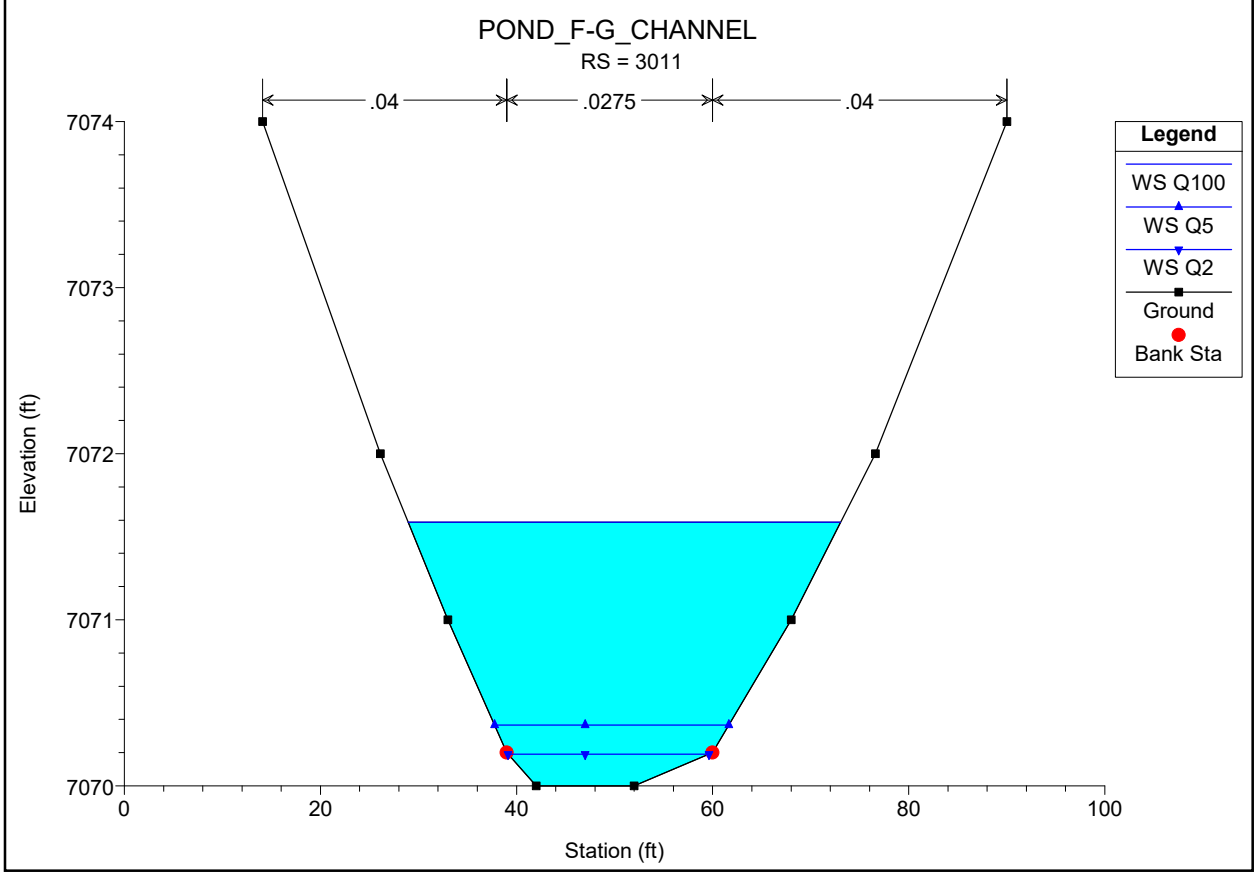

POND_F-G_CHANNEL
RS = 3997
.04
.0325
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7090
7089
7088
7087
7086
10
20
30
40
50
60
70
80
Station (ft)

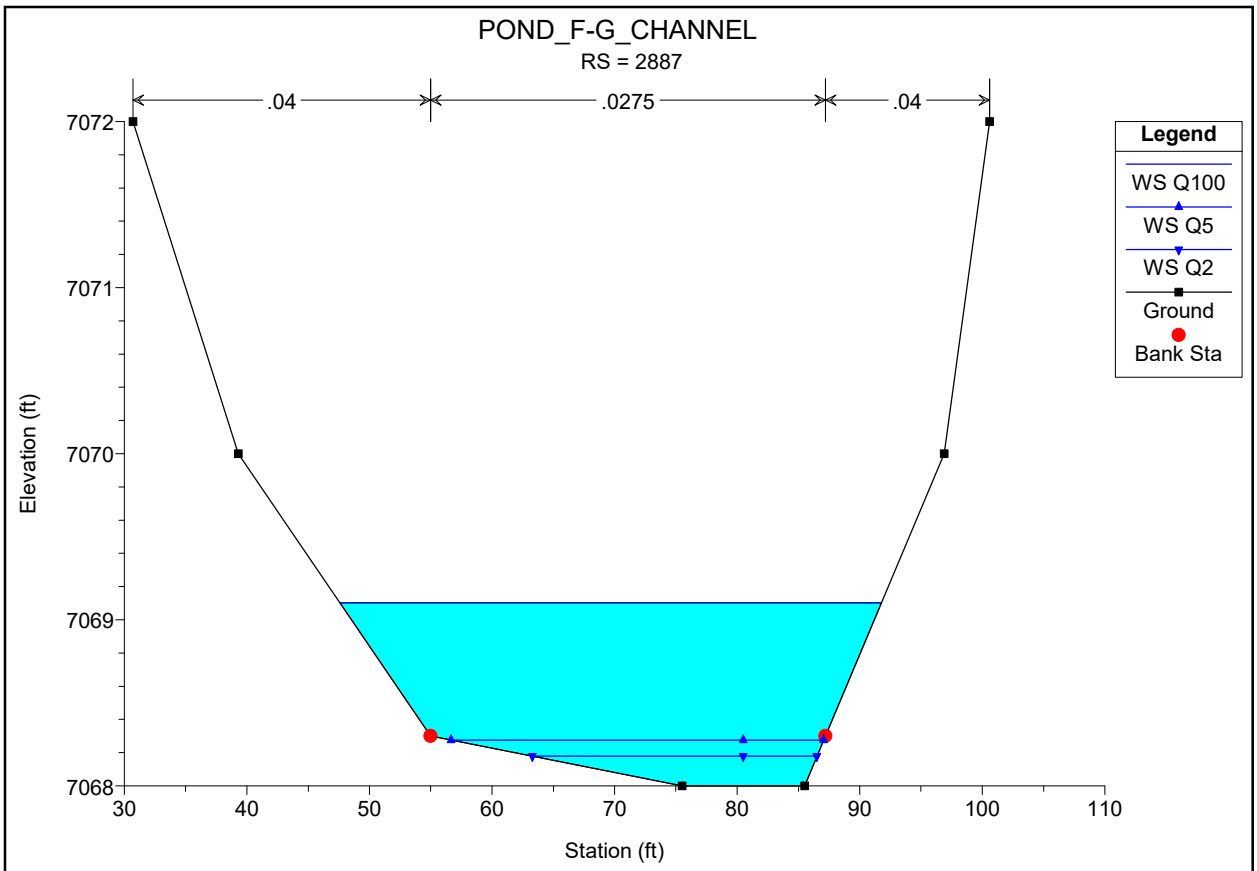

POND_F-G_CHANNEL
RS = 3761
.04
.0325
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7085.0
7084.5
7084.0
7083.5
7083.0
7082.5
7082.0
35
40
45
50
55
60
65
70
75
Station (ft)

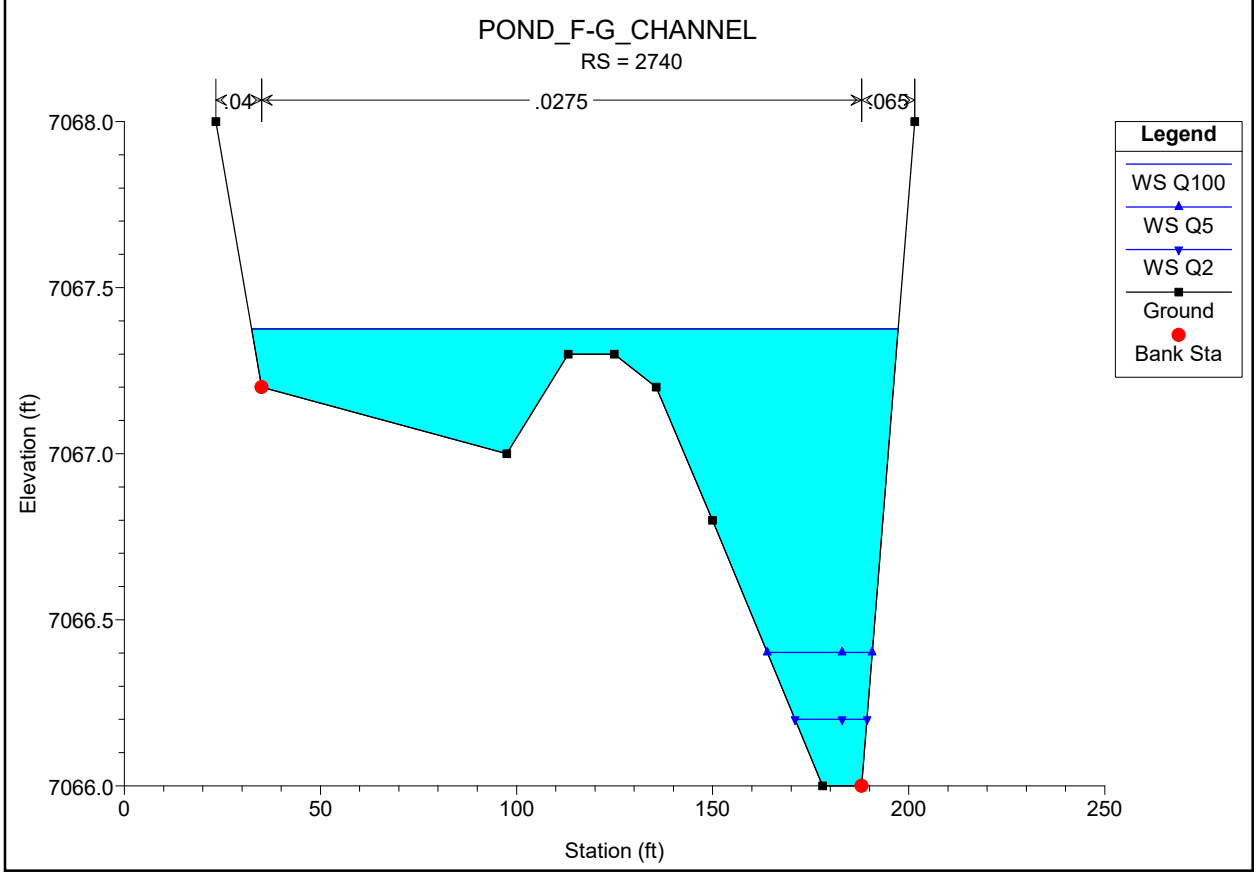

POND_F-G_CHANNEL
RS = 3500
.04
.0325
.04
7080.0
7079.5
7079.0
7078.5
7078.0
7077.5
Elevation (ft)
30
40
50
60
70
80
90
Station (ft)
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta

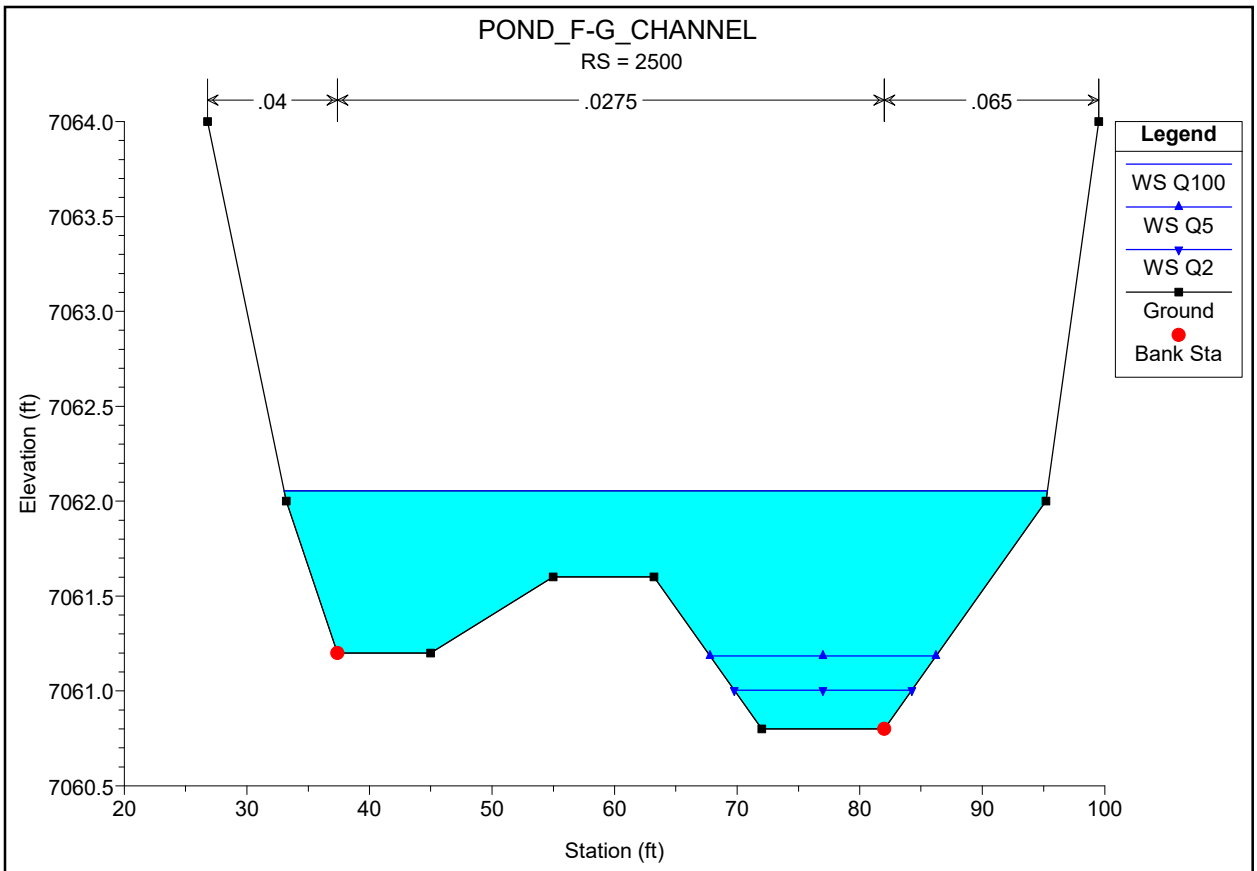

POND_F-G_CHANNEL
RS = 3250
.04
.0275
.04
7076.0
7075.5
7075.0
7074.5
7074.0
Elevation (ft)
30
40
50
60
70
80
90
Station (ft)
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta

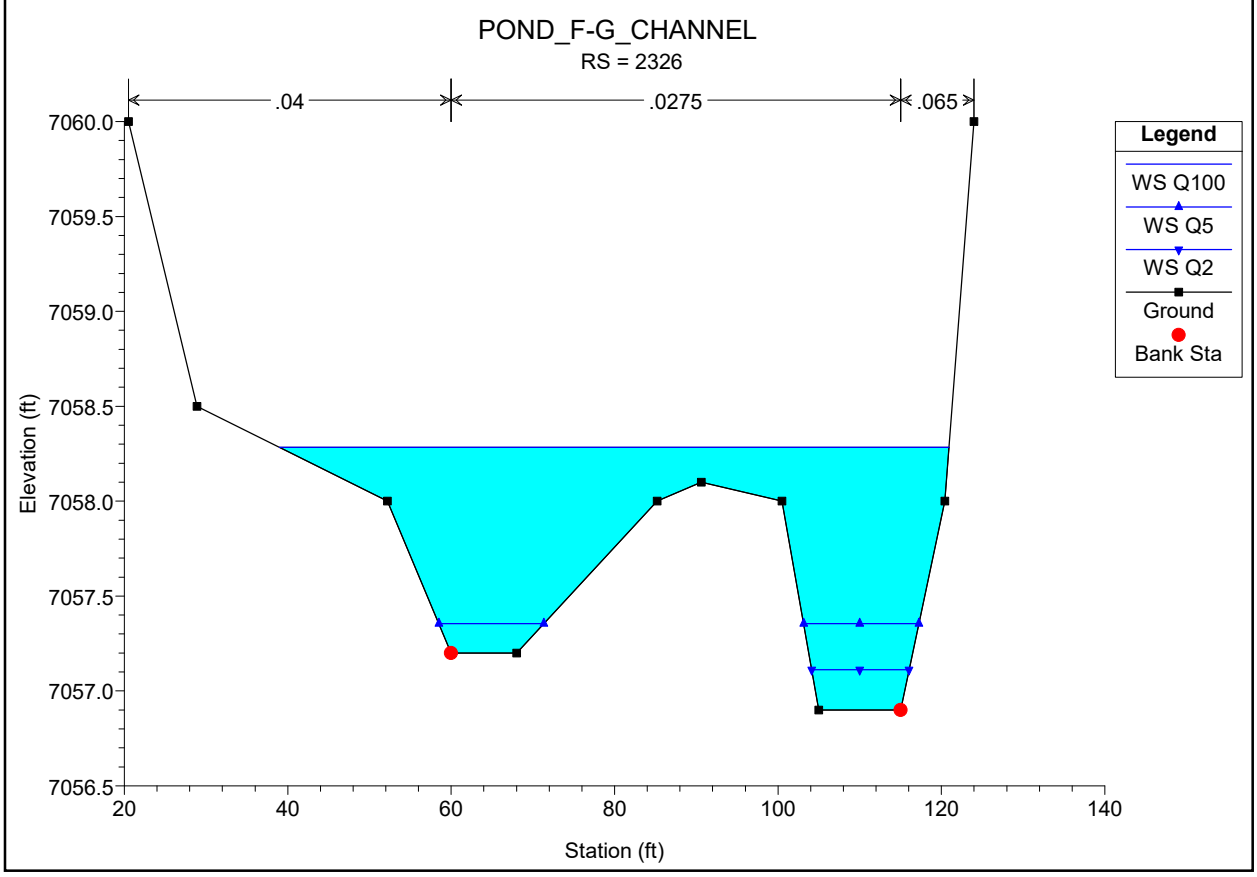

POND_F-G_CHANNEL
RS = 3100
.04
.0275
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7074.0
7073.5
7073.0
7072.5
7072.0
7071.5
7071.0
10
20
30
40
50
60
70
Station (ft)

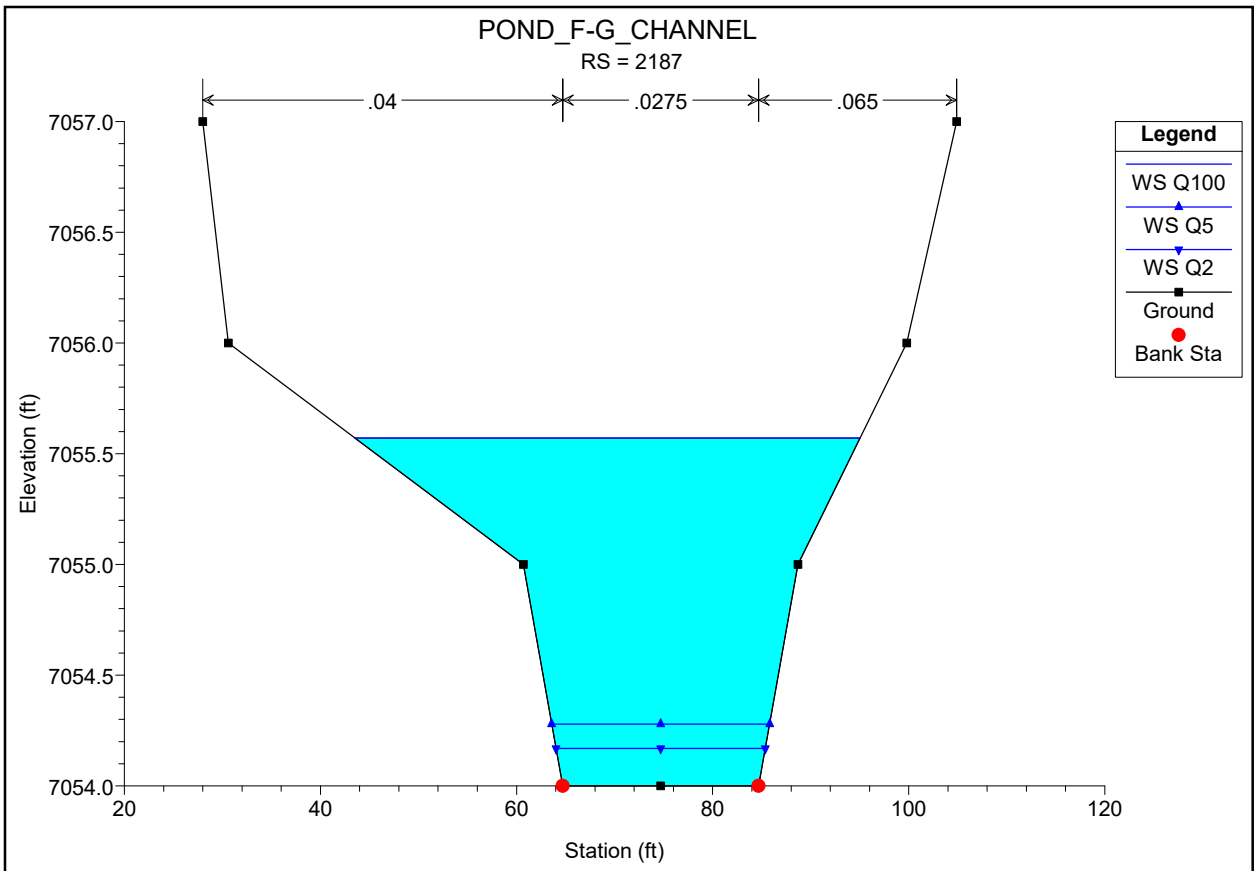

POND_F-G_CHANNEL
RS = 3011
.04
.0275
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7074
7073
7072
7071
7070
0
20
40
60
80
100
Station (ft)

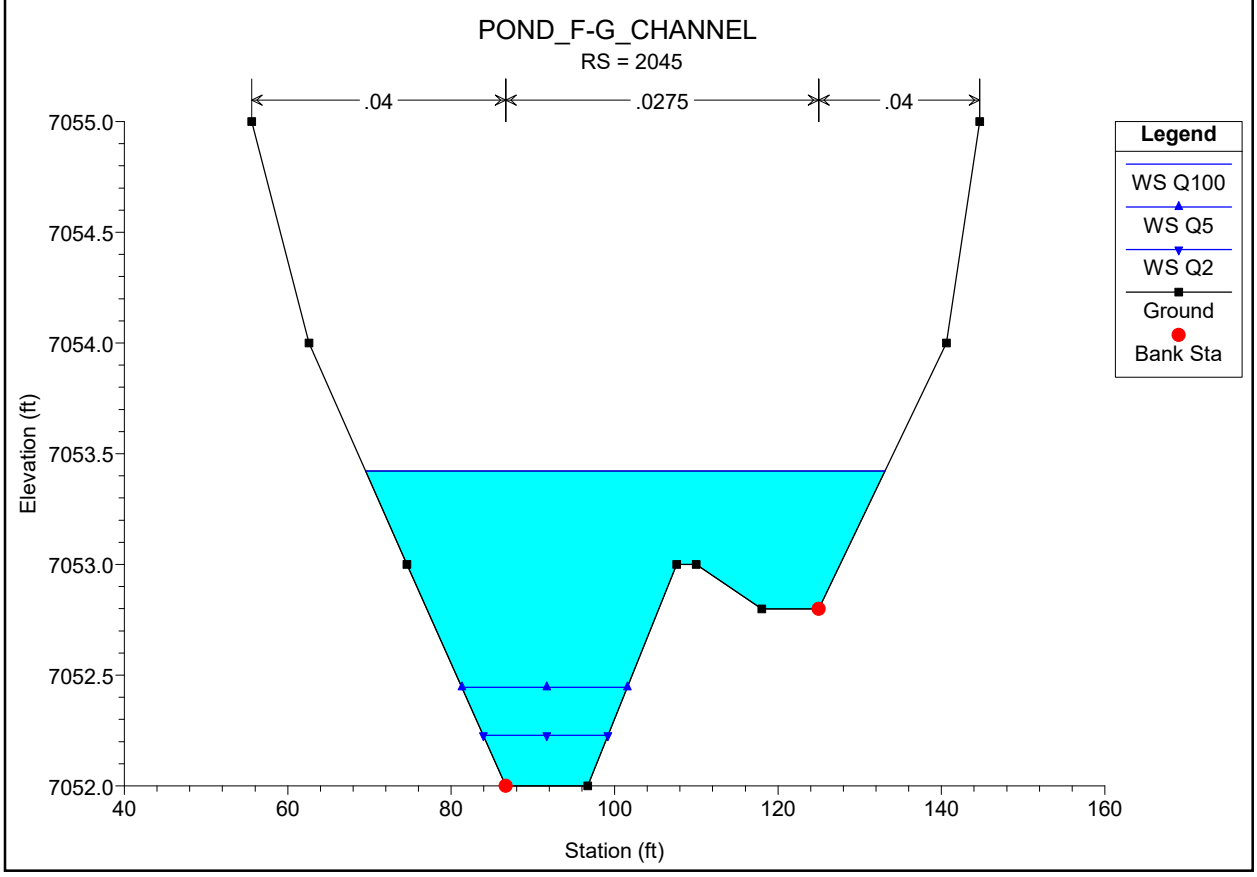

POND_F-G_CHANNEL
RS = 2887
.04
.0275
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7072
7071
7070
7069
7068
30
40
50
60
70
80
90
100
110
Station (ft)

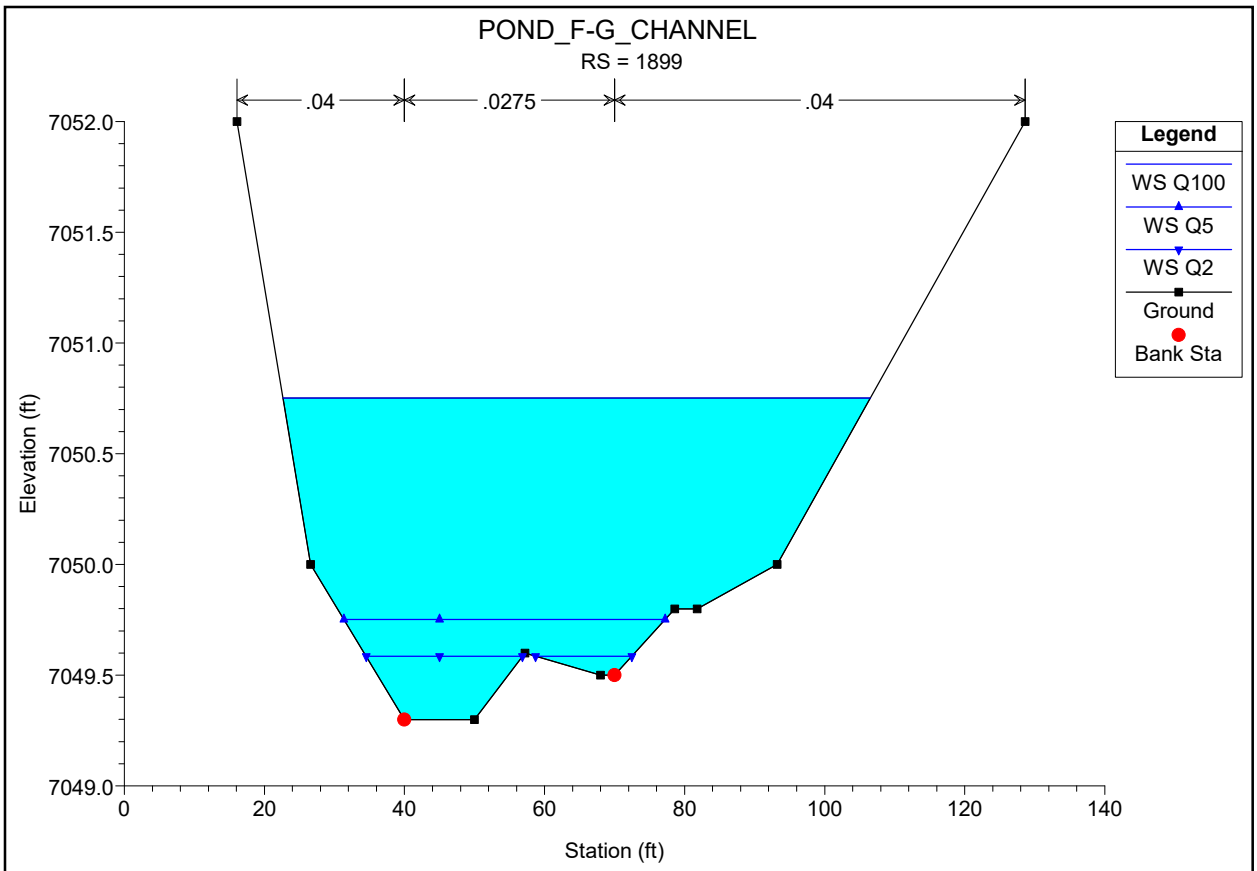

POND_F-G_CHANNEL
RS = 2740
.04
.0275
.065
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7068.0
7067.5
7067.0
7066.5
7066.0
0
50
100
150
200
250
Station (ft)

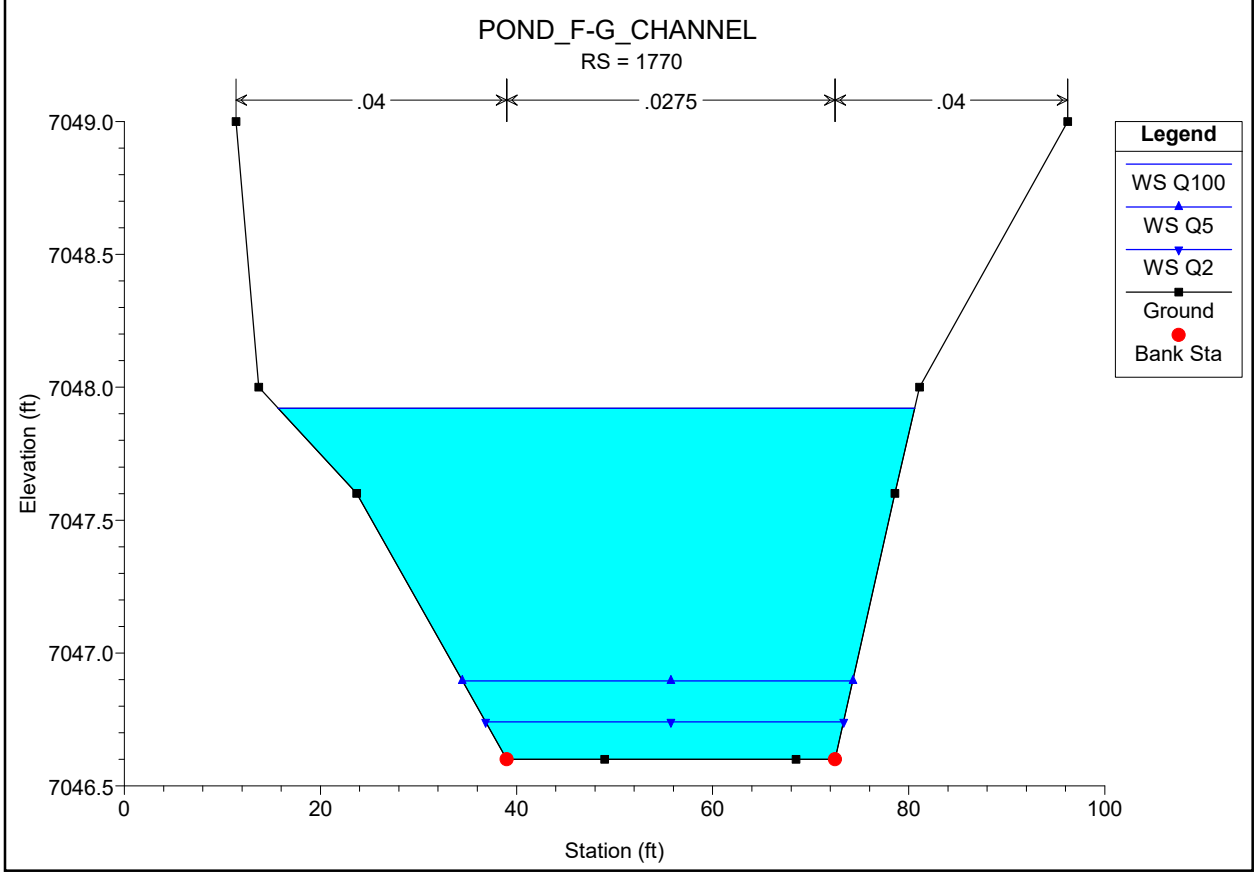

POND_F-G_CHANNEL
RS = 2500
.04
.0275
.065
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7064.0
7063.5
7063.0
7062.5
7062.0
7061.5
7061.0
7060.5
20
30
40
50
60
70
80
90
100
Station (ft)

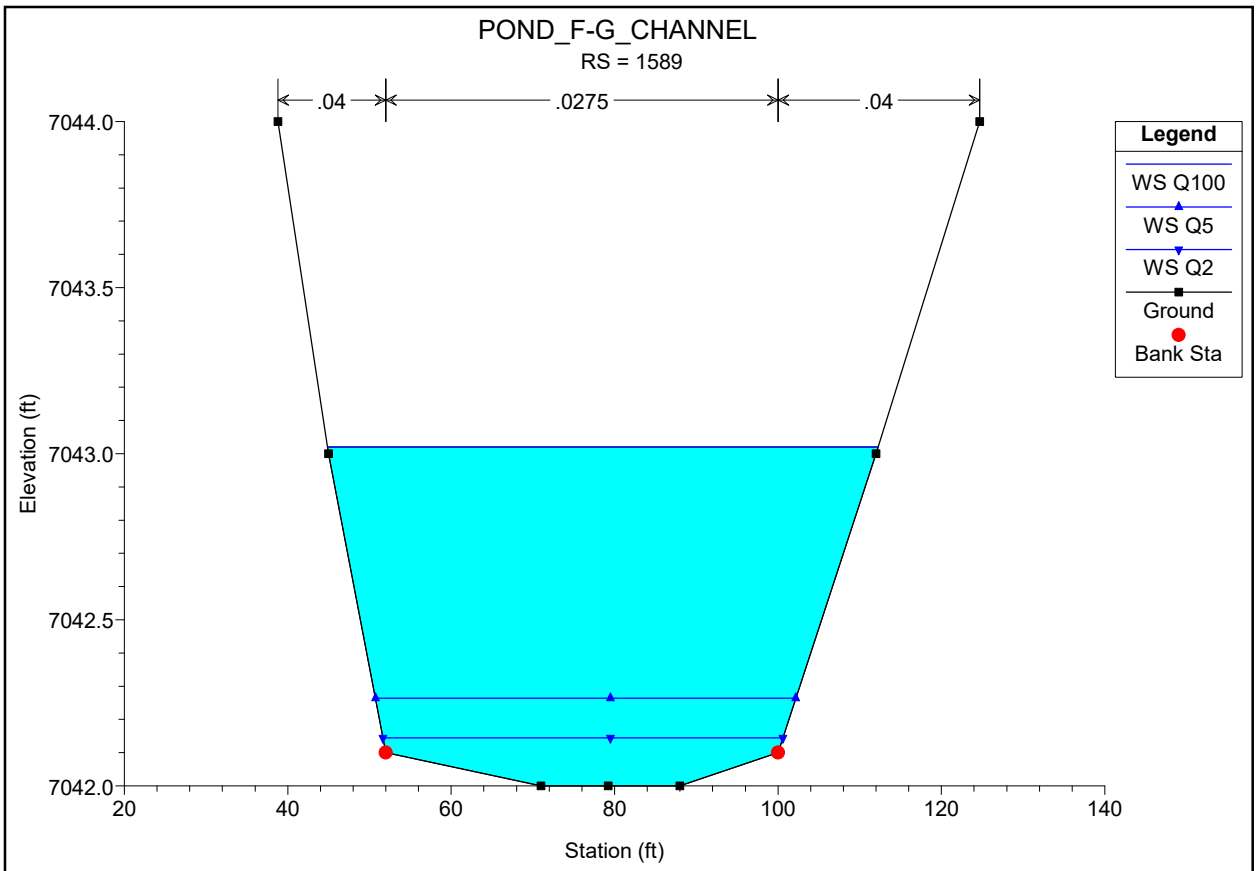

POND_F-G_CHANNEL
RS = 2326
.04
.0275
.065
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7060.0
7059.5
7059.0
7058.5
7058.0
7057.5
7057.0
7056.5
20
40
60
80
100
120
140
Station (ft)

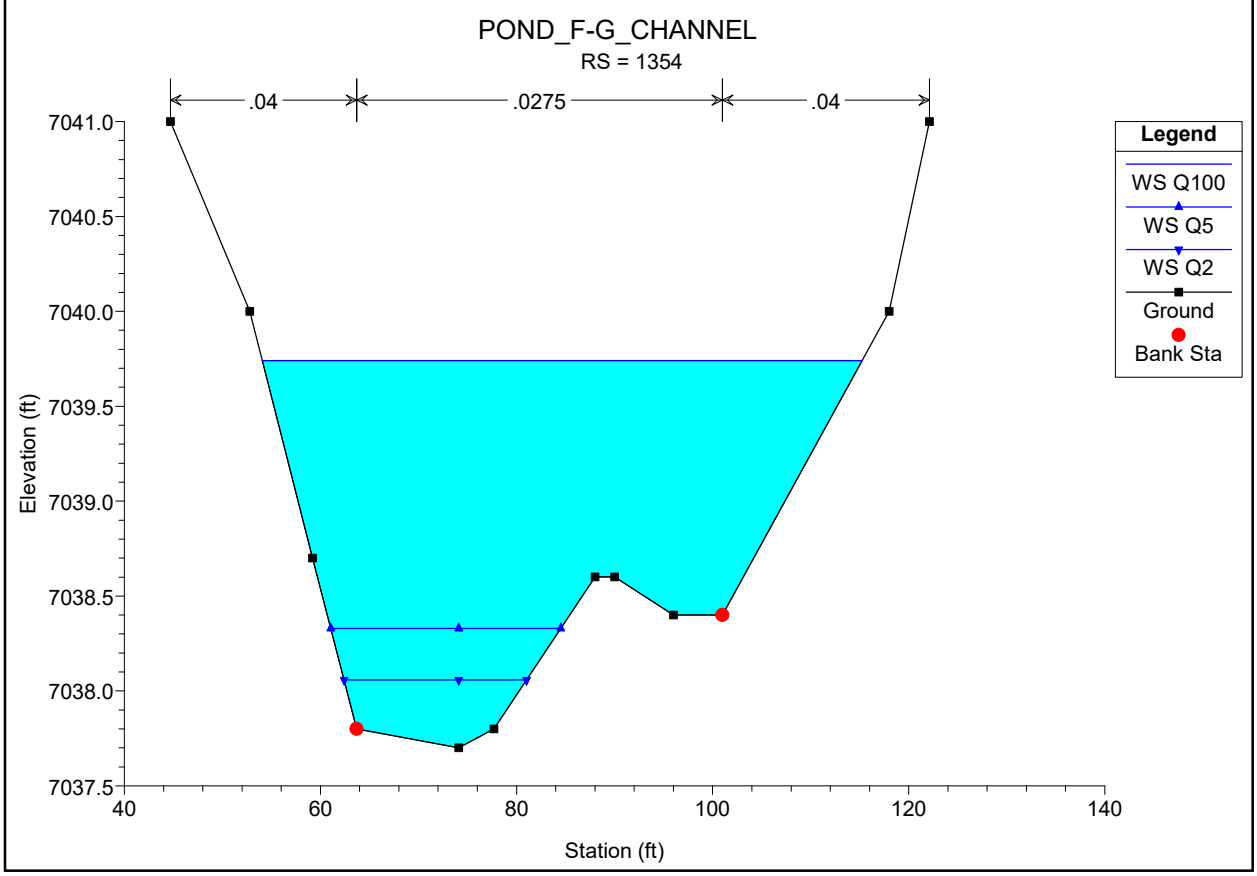

POND_F-G_CHANNEL
RS = 2187
.04
.0275
.065
Elevation (ft)
7057.0
7056.5
7056.0
7055.5
7055.0
7054.5
7054.0
20
40
60
80
100
120
Station (ft)
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta

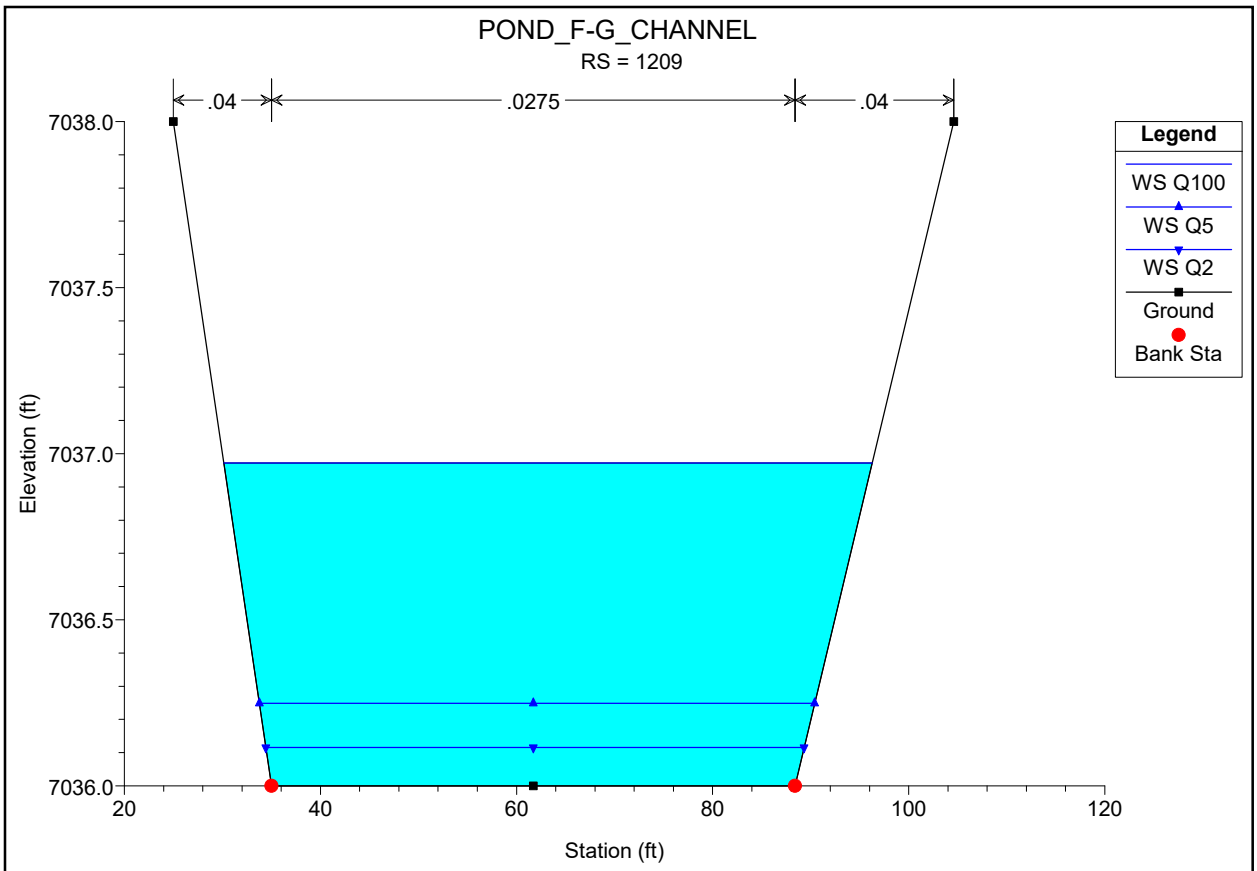

POND_F-G_CHANNEL
RS = 2045
.04
.0275
.04
Elevation (ft)
7055.0
7054.5
7054.0
7053.5
7053.0
7052.5
7052.0
40
60
80
100
120
140
160
Station (ft)
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta


POND_F-G_CHANNEL
RS = 1899
.04
.0275
.04
Elevation (ft)
7052.0
7051.5
7051.0
7050.5
7050.0
7049.5
7049.0
0
20
40
60
80
100
120
140
Station (ft)
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta


POND_F-G_CHANNEL
RS = 1770
.04
.0275
.04
Elevation (ft)
7049.0
7048.5
7048.0
7047.5
7047.0
7046.5
0
20
40
60
80
100
Station (ft)
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta


POND_F-G_CHANNEL
RS = 1589
.04
.0275
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7044.0
7043.5
7043.0
7042.5
7042.0
20
40
60
80
100
120
140
Station (ft)


POND_F-G_CHANNEL
RS = 1354
.04
.0275
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7041.0
7040.5
7040.0
7039.5
7039.0
7038.5
7038.0
7037.5
40
60
80
100
120
140
Station (ft)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.0275
.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
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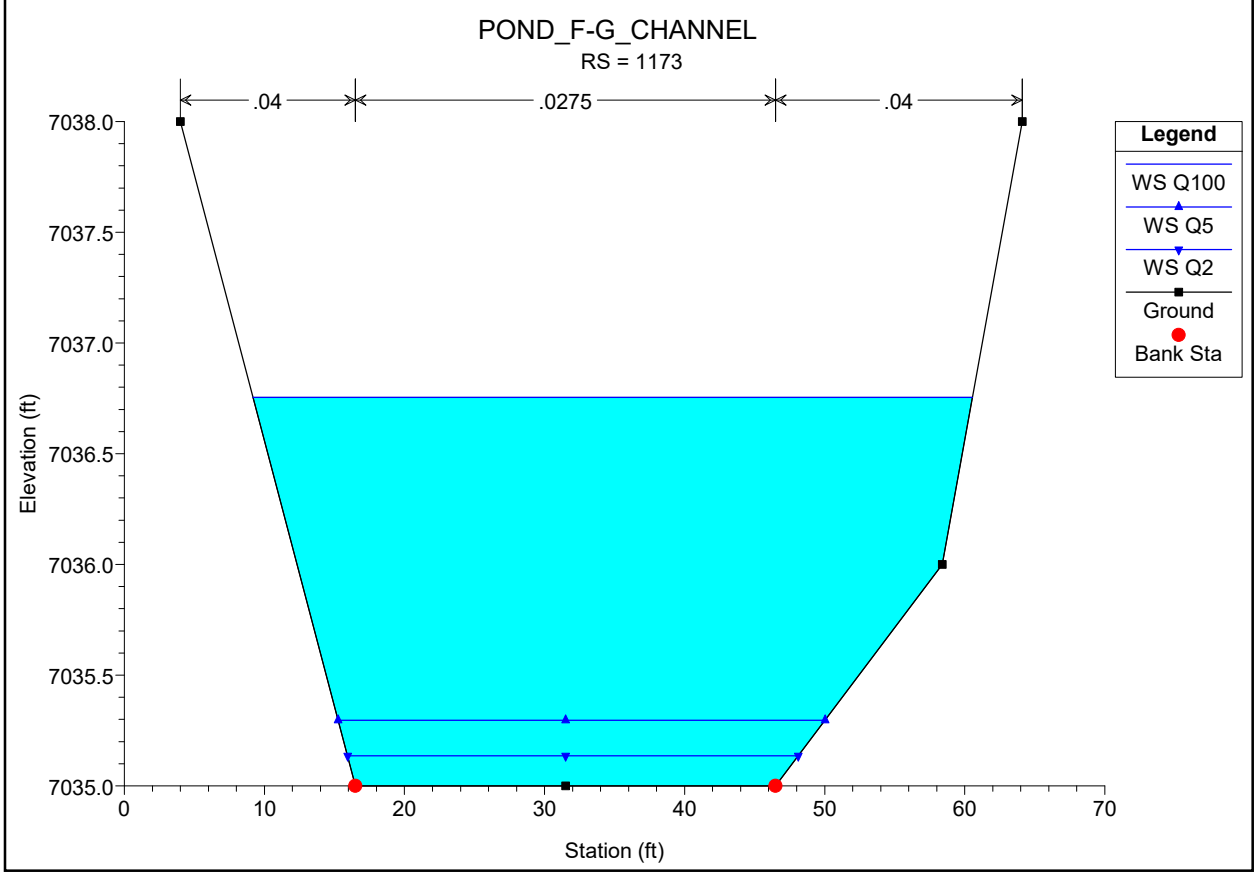
7036.0
20
40
60
80
100
120
Station (ft)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.04
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
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7037.5
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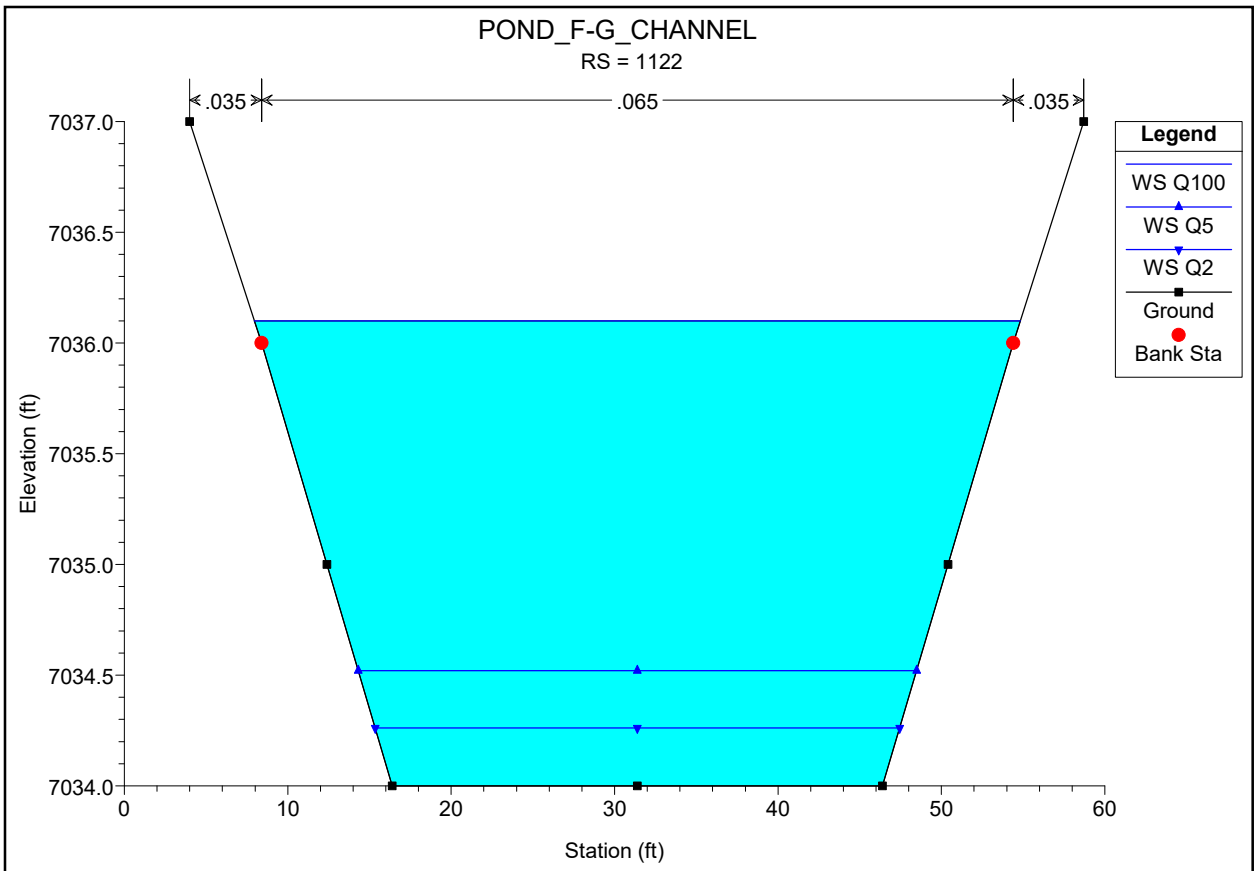
7036.0
7035.5
7035.0
0
10
20
30
40
50
60
70
Station (ft)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Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
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7036.5
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7035.0
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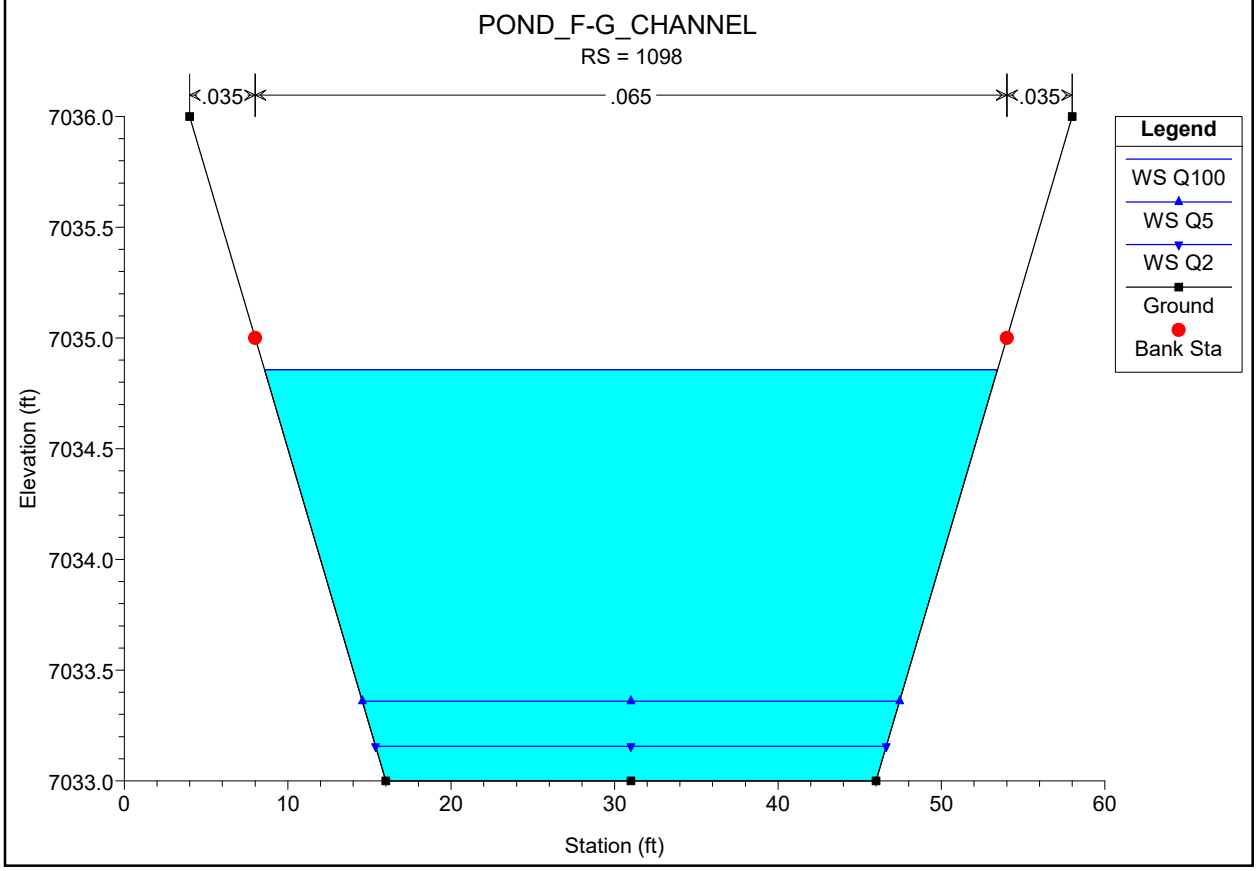
0
10
20
30
40
50
60
Station (ft)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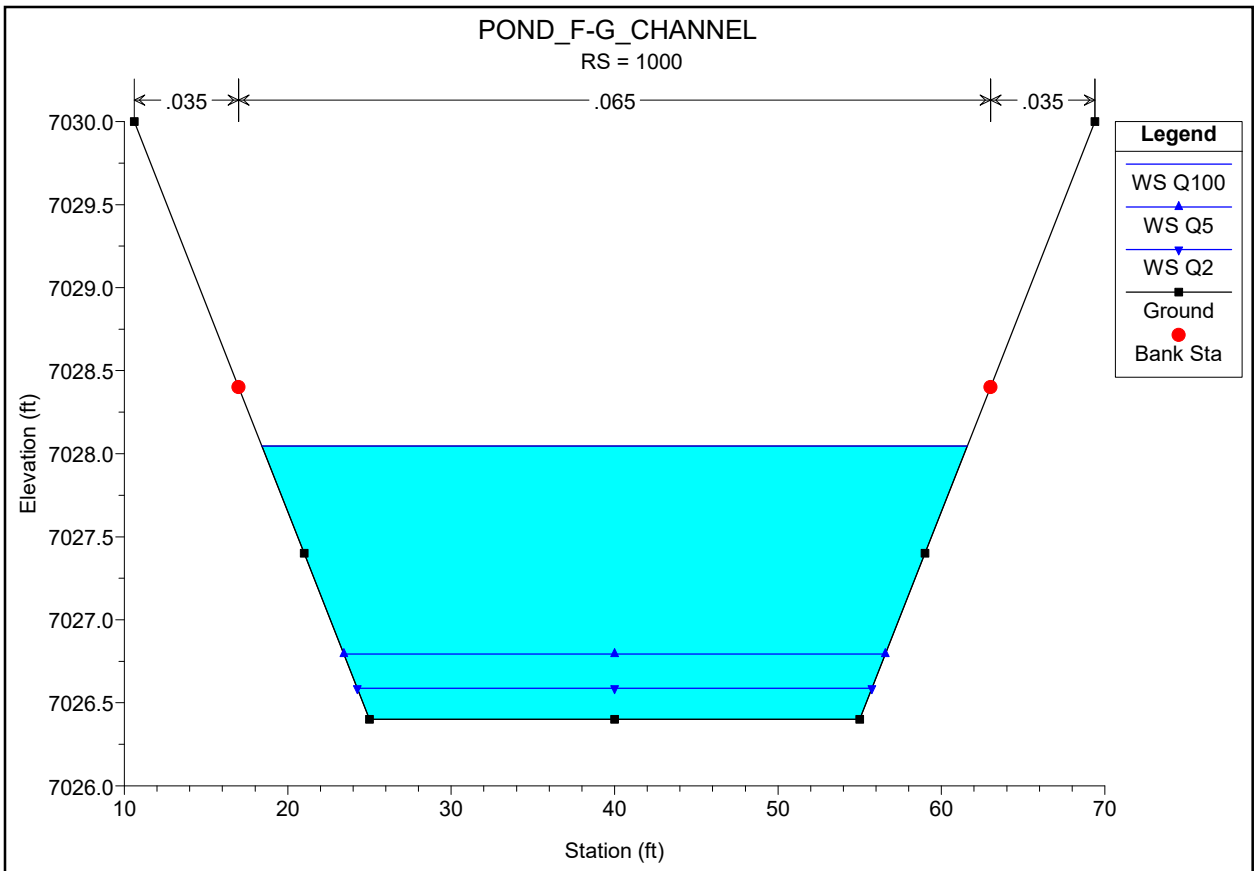
Legend
WS Q100
WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
7036.0
7035.5
7035.0
7034.5
7034.0
7033.5
7033.0
0
10
20
30
40
50
60
Station (ft)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Legend
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WS Q5
WS Q2
Ground
Bank Sta
Elevation (ft)
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7029.0
7028.5
7028.0
7027.5
7027.0
7026.5
7026.0
10
20
30
40
50
60
70
Station (ft)

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5688 Profile: Q100

E.G. Elev (ft)	7127.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.045	0.065	0.045
W.S. Elev (ft)	7127.12	Reach Len. (ft)	81.00	83.00	89.00
Crit W.S. (ft)	7126.98	Flow Area (sq ft)	0.06	36.50	0.07
E.G. Slope (ft/ft)	0.039733	Area (sq ft)	0.06	36.50	0.07
Q Total (cfs)	164.00	Flow (cfs)	0.06	163.87	0.07
Top Width (ft)	39.04	Top Width (ft)	1.01	36.90	1.12
Vel Total (ft/s)	4.48	Avg. Vel. (ft/s)	1.02	4.49	1.02
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)	0.06	0.99	0.06
Conv. Total (cfs)	822.8	Conv. (cfs)	0.3	822.1	0.3
Length Wtd. (ft)	83.01	Wetted Per. (ft)	1.02	37.33	1.13
Min Ch El (ft)	7125.50	Shear (lb/sq ft)	0.15	2.43	0.15
Alpha	1.00	Stream Power (lb/ft s)	0.15	10.89	0.15
Frctn Loss (ft)	1.71	Cum Volume (acre-ft)	0.58	5.21	0.56
C & E Loss (ft)	0.05	Cum SA (acres)	0.83	4.17	0.78

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5607 Profile: Q100

E.G. Elev (ft)	7125.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.045	0.065	0.045
W.S. Elev (ft)	7125.53	Reach Len. (ft)	46.00	49.00	50.00
Crit W.S. (ft)		Flow Area (sq ft)	1.19	51.23	0.72
E.G. Slope (ft/ft)	0.012563	Area (sq ft)	1.19	51.23	0.72
Q Total (cfs)	164.00	Flow (cfs)	1.82	161.09	1.09
Top Width (ft)	44.69	Top Width (ft)	4.47	37.50	2.72
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.53	3.14	1.51
Max Chl Dpth (ft)	1.53	Hydr. Depth (ft)	0.27	1.37	0.27
Conv. Total (cfs)	1463.2	Conv. (cfs)	16.2	1437.2	9.8
Length Wtd. (ft)	48.99	Wetted Per. (ft)	4.51	37.68	2.77
Min Ch El (ft)	7124.00	Shear (lb/sq ft)	0.21	1.07	0.21
Alpha	1.02	Stream Power (lb/ft s)	0.32	3.35	0.31
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.58	5.13	0.56
C & E Loss (ft)	0.01	Cum SA (acres)	0.83	4.09	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5558 Profile: Q100

E.G. Elev (ft)	7125.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.045	0.065	0.045
W.S. Elev (ft)	7125.07	Reach Len. (ft)	200.00	200.00	201.00
Crit W.S. (ft)		Flow Area (sq ft)	0.01	58.37	0.01
E.G. Slope (ft/ft)	0.008073	Area (sq ft)	0.01	58.37	0.01
Q Total (cfs)	164.00	Flow (cfs)	0.00	163.99	0.00
Top Width (ft)	36.59	Top Width (ft)	0.30	36.00	0.30
Vel Total (ft/s)	2.81	Avg. Vel. (ft/s)	0.30	2.81	0.30
Max Chl Dpth (ft)	2.07	Hydr. Depth (ft)	0.03	1.62	0.03
Conv. Total (cfs)	1825.2	Conv. (cfs)	0.0	1825.2	0.0
Length Wtd. (ft)	200.00	Wetted Per. (ft)	0.30	36.49	0.30
Min Ch El (ft)	7123.00	Shear (lb/sq ft)	0.02	0.81	0.02
Alpha	1.00	Stream Power (lb/ft s)	0.00	2.27	0.00
Frctn Loss (ft)	2.29	Cum Volume (acre-ft)	0.58	5.07	0.56
C & E Loss (ft)	0.01	Cum SA (acres)	0.82	4.05	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5358 Profile: Q100

E.G. Elev (ft)	7122.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.		0.065	
W.S. Elev (ft)	7122.68	Reach Len. (ft)	303.00	303.00	301.00
Crit W.S. (ft)	7122.18	Flow Area (sq ft)		44.85	
E.G. Slope (ft/ft)	0.017581	Area (sq ft)		44.85	
Q Total (cfs)	164.00	Flow (cfs)		164.00	
Top Width (ft)	33.43	Top Width (ft)		33.43	
Vel Total (ft/s)	3.66	Avg. Vel. (ft/s)		3.66	
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)		1.34	
Conv. Total (cfs)	1236.9	Conv. (cfs)		1236.9	
Length Wtd. (ft)	303.00	Wetted Per. (ft)		33.84	
Min Ch El (ft)	7121.00	Shear (lb/sq ft)		1.45	
Alpha	1.00	Stream Power (lb/ft s)		5.32	
Frctn Loss (ft)	9.19	Cum Volume (acre-ft)	0.58	4.83	0.56
C & E Loss (ft)	0.03	Cum SA (acres)	0.82	3.89	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5055 Profile: Q100

E.G. Elev (ft)	7113.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.065	
W.S. Elev (ft)	7113.17	Reach Len. (ft)	291.00	290.00	289.00
Crit W.S. (ft)	7113.17	Flow Area (sq ft)		28.95	
E.G. Slope (ft/ft)	0.064349	Area (sq ft)		28.95	
Q Total (cfs)	164.00	Flow (cfs)		164.00	
Top Width (ft)	29.71	Top Width (ft)		29.71	
Vel Total (ft/s)	5.66	Avg. Vel. (ft/s)		5.66	
Max Chl Dpth (ft)	1.17	Hydr. Depth (ft)		0.97	
Conv. Total (cfs)	646.5	Conv. (cfs)		646.5	
Length Wtd. (ft)	290.00	Wetted Per. (ft)		29.98	
Min Ch El (ft)	7112.00	Shear (lb/sq ft)		3.88	
Alpha	1.00	Stream Power (lb/ft s)		21.97	
Frctn Loss (ft)	5.77	Cum Volume (acre-ft)	0.58	4.57	0.56
C & E Loss (ft)	0.11	Cum SA (acres)	0.82	3.67	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4765 Profile: Q100

E.G. Elev (ft)	7106.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.065	
W.S. Elev (ft)	7105.99	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	7105.17	Flow Area (sq ft)		55.46	
E.G. Slope (ft/ft)	0.009535	Area (sq ft)		55.46	
Q Total (cfs)	164.00	Flow (cfs)		164.00	
Top Width (ft)	35.88	Top Width (ft)		35.88	
Vel Total (ft/s)	2.96	Avg. Vel. (ft/s)		2.96	
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)		1.55	
Conv. Total (cfs)	1679.5	Conv. (cfs)		1679.5	
Length Wtd. (ft)	15.00	Wetted Per. (ft)		36.37	
Min Ch El (ft)	7104.00	Shear (lb/sq ft)		0.91	
Alpha	1.00	Stream Power (lb/ft s)		2.68	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.58	4.29	0.56
C & E Loss (ft)	0.00	Cum SA (acres)	0.82	3.46	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4750 Profile: Q100

E.G. Elev (ft)	7105.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.065	
W.S. Elev (ft)	7105.82	Reach Len. (ft)	273.00	273.00	270.00
Crit W.S. (ft)		Flow Area (sq ft)		53.14	
E.G. Slope (ft/ft)	0.010775	Area (sq ft)		53.14	
Q Total (cfs)	164.00	Flow (cfs)		164.00	
Top Width (ft)	35.36	Top Width (ft)		35.36	
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)		3.09	
Max Chl Dpth (ft)	1.92	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	1579.9	Conv. (cfs)		1579.9	
Length Wtd. (ft)	273.00	Wetted Per. (ft)		35.83	
Min Ch El (ft)	7103.90	Shear (lb/sq ft)		1.00	
Alpha	1.00	Stream Power (lb/ft s)		3.08	
Frctn Loss (ft)	2.55	Cum Volume (acre-ft)	0.58	4.27	0.56
C & E Loss (ft)	0.00	Cum SA (acres)	0.82	3.44	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4477 Profile: Q100

E.G. Elev (ft)	7103.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.045	0.065	0.045
W.S. Elev (ft)	7103.28	Reach Len. (ft)	27.00	10.00	1.00
Crit W.S. (ft)		Flow Area (sq ft)	0.16	63.29	0.20
E.G. Slope (ft/ft)	0.008326	Area (sq ft)	0.16	63.29	0.20
Q Total (cfs)	191.00	Flow (cfs)	0.13	190.72	0.16
Top Width (ft)	38.52	Top Width (ft)	1.12	36.00	1.40
Vel Total (ft/s)	3.00	Avg. Vel. (ft/s)	0.80	3.01	0.80
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.14	1.76	0.14
Conv. Total (cfs)	2093.3	Conv. (cfs)	1.4	2090.2	1.7
Length Wtd. (ft)	10.00	Wetted Per. (ft)	1.16	36.45	1.43
Min Ch El (ft)	7101.10	Shear (lb/sq ft)	0.07	0.90	0.07
Alpha	1.01	Stream Power (lb/ft s)	0.06	2.72	0.06
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	0.58	3.91	0.56
C & E Loss (ft)	0.00	Cum SA (acres)	0.82	3.22	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4469 Profile: Q100

E.G. Elev (ft)	7103.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.045	0.065	0.045
W.S. Elev (ft)	7103.20	Reach Len. (ft)	199.00	198.00	193.00
Crit W.S. (ft)		Flow Area (sq ft)	0.09	64.44	0.10
E.G. Slope (ft/ft)	0.008146	Area (sq ft)	0.09	64.44	0.10
Q Total (cfs)	191.00	Flow (cfs)	0.06	190.88	0.07
Top Width (ft)	38.93	Top Width (ft)	0.91	37.00	1.03
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	0.63	2.96	0.64
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.10	1.74	0.10
Conv. Total (cfs)	2116.3	Conv. (cfs)	0.6	2114.9	0.7
Length Wtd. (ft)	198.00	Wetted Per. (ft)	0.93	37.47	1.05
Min Ch El (ft)	7101.00	Shear (lb/sq ft)	0.05	0.87	0.05
Alpha	1.00	Stream Power (lb/ft s)	0.03	2.59	0.03
Frctn Loss (ft)	2.28	Cum Volume (acre-ft)	0.58	3.89	0.56
C & E Loss (ft)	0.01	Cum SA (acres)	0.82	3.21	0.77

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4269 Profile: Q100

E.G. Elev (ft)	7101.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.065	
W.S. Elev (ft)	7100.83	Reach Len. (ft)	105.00	107.00	105.00
Crit W.S. (ft)		Flow Area (sq ft)		49.95	
E.G. Slope (ft/ft)	0.017468	Area (sq ft)		49.95	
Q Total (cfs)	191.00	Flow (cfs)		191.00	
Top Width (ft)	34.63	Top Width (ft)		34.63	
Vel Total (ft/s)	3.82	Avg. Vel. (ft/s)		3.82	
Max Chl Dpth (ft)	1.83	Hydr. Depth (ft)		1.44	
Conv. Total (cfs)	1445.1	Conv. (cfs)		1445.1	
Length Wtd. (ft)	107.00	Wetted Per. (ft)		35.08	
Min Ch El (ft)	7099.00	Shear (lb/sq ft)		1.55	
Alpha	1.00	Stream Power (lb/ft s)		5.94	
Frctn Loss (ft)	3.19	Cum Volume (acre-ft)	0.58	3.63	0.56
C & E Loss (ft)	0.03	Cum SA (acres)	0.82	3.05	0.76

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4162 Profile: Q100

E.G. Elev (ft)	7097.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.065	
W.S. Elev (ft)	7097.29	Reach Len. (ft)	100.00	102.00	86.00
Crit W.S. (ft)	7097.29	Flow Area (sq ft)		32.34	
E.G. Slope (ft/ft)	0.062021	Area (sq ft)		32.34	
Q Total (cfs)	191.00	Flow (cfs)		191.00	
Top Width (ft)	30.29	Top Width (ft)		30.29	
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)		5.91	
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)		1.07	
Conv. Total (cfs)	766.9	Conv. (cfs)		766.9	
Length Wtd. (ft)	102.00	Wetted Per. (ft)		30.61	
Min Ch El (ft)	7096.00	Shear (lb/sq ft)		4.09	
Alpha	1.00	Stream Power (lb/ft s)		24.16	
Frctn Loss (ft)	6.87	Cum Volume (acre-ft)	0.58	3.53	0.56
C & E Loss (ft)	0.01	Cum SA (acres)	0.82	2.97	0.76

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4060 Profile: Q100

E.G. Elev (ft)	7090.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.065	
W.S. Elev (ft)	7090.44	Reach Len. (ft)	47.00	63.00	108.00
Crit W.S. (ft)	7090.48	Flow Area (sq ft)		32.92	
E.G. Slope (ft/ft)	0.072560	Area (sq ft)		32.92	
Q Total (cfs)	191.00	Flow (cfs)		191.00	
Top Width (ft)	35.78	Top Width (ft)		35.78	
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)		5.80	
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		0.92	
Conv. Total (cfs)	709.1	Conv. (cfs)		709.1	
Length Wtd. (ft)	64.53	Wetted Per. (ft)		35.99	
Min Ch El (ft)	7089.30	Shear (lb/sq ft)		4.14	
Alpha	1.00	Stream Power (lb/ft s)		24.04	
Frctn Loss (ft)	1.18	Cum Volume (acre-ft)	0.58	3.46	0.56
C & E Loss (ft)	0.05	Cum SA (acres)	0.82	2.89	0.76

why are these blank

These values are blank because there is no flow in either overbank.

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3997 Profile: Q100

E.G. Elev (ft)	7088.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	7087.77	Reach Len. (ft)	235.00	236.00	233.00
Crit W.S. (ft)	7087.38	Flow Area (sq ft)	1.59	41.09	6.49
E.G. Slope (ft/ft)	0.008941	Area (sq ft)	1.59	41.09	6.49
Q Total (cfs)	208.00	Flow (cfs)	3.21	190.07	14.72
Top Width (ft)	35.79	Top Width (ft)	2.16	24.80	8.82
Vel Total (ft/s)	4.23	Avg. Vel. (ft/s)	2.02	4.63	2.27
Max Chl Dpth (ft)	1.77	Hydr. Depth (ft)	0.74	1.66	0.74
Conv. Total (cfs)	2199.7	Conv. (cfs)	33.9	2010.1	155.7
Length Wtd. (ft)	235.74	Wetted Per. (ft)	2.62	24.83	8.94
Min Ch El (ft)	7086.00	Shear (lb/sq ft)	0.34	0.92	0.40
Alpha	1.12	Stream Power (lb/ft s)	0.68	4.27	0.92
Frctn Loss (ft)	3.23	Cum Volume (acre-ft)	0.58	3.40	0.55
C & E Loss (ft)	0.05	Cum SA (acres)	0.82	2.85	0.75

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3761 Profile: Q100

E.G. Elev (ft)	7084.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	7083.99	Reach Len. (ft)	263.00	261.00	255.00
Crit W.S. (ft)	7083.99	Flow Area (sq ft)	8.09	32.39	4.24
E.G. Slope (ft/ft)	0.019617	Area (sq ft)	8.09	32.39	4.24
Q Total (cfs)	300.00	Flow (cfs)	32.89	250.63	16.47
Top Width (ft)	28.72	Top Width (ft)	8.15	16.30	4.27
Vel Total (ft/s)	6.71	Avg. Vel. (ft/s)	4.06	7.74	3.88
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)	0.99	1.99	0.99
Conv. Total (cfs)	2142.0	Conv. (cfs)	234.9	1789.5	117.6
Length Wtd. (ft)	260.89	Wetted Per. (ft)	8.38	16.30	4.71
Min Ch El (ft)	7082.00	Shear (lb/sq ft)	1.18	2.43	1.10
Alpha	1.17	Stream Power (lb/ft s)	4.80	18.83	4.28
Frctn Loss (ft)	4.24	Cum Volume (acre-ft)	0.55	3.20	0.52
C & E Loss (ft)	0.10	Cum SA (acres)	0.79	2.74	0.72

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3500 Profile: Q100

E.G. Elev (ft)	7079.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	7079.48	Reach Len. (ft)	256.00	250.00	250.00
Crit W.S. (ft)	7079.31	Flow Area (sq ft)	10.83	42.32	5.50
E.G. Slope (ft/ft)	0.013694	Area (sq ft)	10.83	42.32	5.50
Q Total (cfs)	300.00	Flow (cfs)	30.66	253.93	15.41
Top Width (ft)	45.93	Top Width (ft)	14.68	23.80	7.45
Vel Total (ft/s)	5.12	Avg. Vel. (ft/s)	2.83	6.00	2.80
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)	0.74	1.78	0.74
Conv. Total (cfs)	2563.6	Conv. (cfs)	262.0	2169.9	131.7
Length Wtd. (ft)	250.40	Wetted Per. (ft)	14.76	23.83	7.60
Min Ch El (ft)	7077.50	Shear (lb/sq ft)	0.63	1.52	0.62
Alpha	1.21	Stream Power (lb/ft s)	1.78	9.11	1.73
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	0.50	2.98	0.49
C & E Loss (ft)	0.01	Cum SA (acres)	0.72	2.62	0.68

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3250 Profile: Q100

E.G. Elev (ft)	7076.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7075.53	Reach Len. (ft)	147.00	150.00	157.00
Crit W.S. (ft)	7075.53	Flow Area (sq ft)	3.55	45.48	3.55
E.G. Slope (ft/ft)	0.017500	Area (sq ft)	3.55	45.48	3.55
Q Total (cfs)	300.00	Flow (cfs)	8.91	282.19	8.91
Top Width (ft)	49.06	Top Width (ft)	6.88	35.30	6.88
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)	2.51	6.20	2.51
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.52	1.29	0.52
Conv. Total (cfs)	2267.8	Conv. (cfs)	67.3	2133.1	67.3
Length Wtd. (ft)	150.22	Wetted Per. (ft)	6.96	35.31	6.96
Min Ch El (ft)	7074.10	Shear (lb/sq ft)	0.56	1.41	0.56
Alpha	1.12	Stream Power (lb/ft s)	1.40	8.73	1.40
Frctn Loss (ft)	2.29	Cum Volume (acre-ft)	0.45	2.73	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	0.66	2.45	0.64

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3100 Profile: Q100

E.G. Elev (ft)	7073.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7072.99	Reach Len. (ft)	109.00	89.00	65.00
Crit W.S. (ft)	7072.91	Flow Area (sq ft)	8.33	36.78	7.72
E.G. Slope (ft/ft)	0.013416	Area (sq ft)	8.33	36.78	7.72
Q Total (cfs)	300.00	Flow (cfs)	25.93	249.14	24.93
Top Width (ft)	38.39	Top Width (ft)	9.57	20.50	8.32
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)	3.11	6.77	3.23
Max Chl Dpth (ft)	1.89	Hydr. Depth (ft)	0.87	1.79	0.93
Conv. Total (cfs)	2590.0	Conv. (cfs)	223.8	2150.9	215.2
Length Wtd. (ft)	88.35	Wetted Per. (ft)	9.70	20.52	8.49
Min Ch El (ft)	7071.10	Shear (lb/sq ft)	0.72	1.50	0.76
Alpha	1.23	Stream Power (lb/ft s)	2.24	10.17	2.46
Frctn Loss (ft)	1.28	Cum Volume (acre-ft)	0.43	2.59	0.44
C & E Loss (ft)	0.00	Cum SA (acres)	0.63	2.35	0.61

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3011 Profile: Q100

E.G. Elev (ft)	7072.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7071.70	Reach Len. (ft)	108.00	124.00	132.00
Crit W.S. (ft)	7071.70	Flow Area (sq ft)	8.29	34.60	10.91
E.G. Slope (ft/ft)	0.015751	Area (sq ft)	8.29	34.60	10.91
Q Total (cfs)	300.00	Flow (cfs)	25.72	240.00	34.29
Top Width (ft)	45.85	Top Width (ft)	10.83	21.00	14.02
Vel Total (ft/s)	5.58	Avg. Vel. (ft/s)	3.10	6.94	3.14
Max Chl Dpth (ft)	1.70	Hydr. Depth (ft)	0.77	1.65	0.78
Conv. Total (cfs)	2390.4	Conv. (cfs)	204.9	1912.3	273.2
Length Wtd. (ft)	123.44	Wetted Per. (ft)	10.93	21.01	14.10
Min Ch El (ft)	7070.00	Shear (lb/sq ft)	0.75	1.62	0.76
Alpha	1.30	Stream Power (lb/ft s)	2.31	11.23	2.39
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	0.41	2.51	0.43
C & E Loss (ft)	0.04	Cum SA (acres)	0.60	2.31	0.60

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2887 Profile: Q100

E.G. Elev (ft)	7070.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7069.55	Reach Len. (ft)	137.00	147.00	150.00
Crit W.S. (ft)	7069.44	Flow Area (sq ft)	7.20	46.53	4.45
E.G. Slope (ft/ft)	0.013250	Area (sq ft)	7.20	46.53	4.45
Q Total (cfs)	300.00	Flow (cfs)	17.91	271.09	11.00
Top Width (ft)	50.85	Top Width (ft)	11.53	32.20	7.12
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	2.49	5.83	2.47
Max Chl Dpth (ft)	1.55	Hydr. Depth (ft)	0.62	1.44	0.62
Conv. Total (cfs)	2606.3	Conv. (cfs)	155.6	2355.1	95.6
Length Wtd. (ft)	146.84	Wetted Per. (ft)	11.60	32.23	7.23
Min Ch El (ft)	7068.00	Shear (lb/sq ft)	0.51	1.19	0.51
Alpha	1.18	Stream Power (lb/ft s)	1.28	6.96	1.26
Frctn Loss (ft)	2.31	Cum Volume (acre-ft)	0.39	2.40	0.41
C & E Loss (ft)	0.09	Cum SA (acres)	0.57	2.23	0.57

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2740 Profile: Q100

E.G. Elev (ft)	7067.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.038	0.065
W.S. Elev (ft)	7067.44	Reach Len. (ft)	250.00	240.00	248.00
Crit W.S. (ft)	7067.37	Flow Area (sq ft)	0.43	79.77	7.03
E.G. Slope (ft/ft)	0.018959	Area (sq ft)	0.43	79.77	7.03
Q Total (cfs)	300.00	Flow (cfs)	0.43	281.91	17.66
Top Width (ft)	166.29	Top Width (ft)	3.55	153.00	9.74
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)	1.00	3.53	2.51
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)	0.12	0.52	0.72
Conv. Total (cfs)	2178.8	Conv. (cfs)	3.1	2047.4	128.3
Length Wtd. (ft)	240.80	Wetted Per. (ft)	3.56	153.02	9.85
Min Ch El (ft)	7066.00	Shear (lb/sq ft)	0.14	0.62	0.84
Alpha	1.02	Stream Power (lb/ft s)	0.14	2.18	2.12
Frctn Loss (ft)	4.90	Cum Volume (acre-ft)	0.38	2.18	0.39
C & E Loss (ft)	0.03	Cum SA (acres)	0.55	1.92	0.54

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2500 Profile: Q100

E.G. Elev (ft)	7062.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.050	0.038	0.065
W.S. Elev (ft)	7062.23	Reach Len. (ft)	182.00	174.00	176.00
Crit W.S. (ft)	7062.23	Flow Area (sq ft)	2.71	44.48	10.96
E.G. Slope (ft/ft)	0.021914	Area (sq ft)	2.71	44.48	10.96
Q Total (cfs)	300.00	Flow (cfs)	7.89	260.28	31.82
Top Width (ft)	63.21	Top Width (ft)	4.92	44.60	13.69
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	2.91	5.85	2.90
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.55	1.00	0.80
Conv. Total (cfs)	2026.6	Conv. (cfs)	53.3	1758.3	215.0
Length Wtd. (ft)	174.58	Wetted Per. (ft)	5.03	44.64	13.79
Min Ch El (ft)	7060.80	Shear (lb/sq ft)	0.74	1.36	1.09
Alpha	1.16	Stream Power (lb/ft s)	2.15	7.98	3.16
Frctn Loss (ft)	3.87	Cum Volume (acre-ft)	0.37	1.84	0.34
C & E Loss (ft)	0.02	Cum SA (acres)	0.53	1.38	0.47

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2326 Profile: Q100

E.G. Elev (ft)	7058.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.050	0.038	0.065
W.S. Elev (ft)	7058.40	Reach Len. (ft)	113.00	139.00	138.00
Crit W.S. (ft)	7058.40	Flow Area (sq ft)	10.02	48.09	5.29
E.G. Slope (ft/ft)	0.022466	Area (sq ft)	10.02	48.09	5.29
Q Total (cfs)	300.00	Flow (cfs)	23.28	260.67	16.05
Top Width (ft)	87.65	Top Width (ft)	26.53	55.00	6.12
Vel Total (ft/s)	4.73	Avg. Vel. (ft/s)	2.32	5.42	3.04
Max Chl Dpth (ft)	1.50	Hydr. Depth (ft)	0.38	0.87	0.86
Conv. Total (cfs)	2001.5	Conv. (cfs)	155.3	1739.1	107.1
Length Wtd. (ft)	136.47	Wetted Per. (ft)	26.57	55.15	6.34
Min Ch El (ft)	7056.90	Shear (lb/sq ft)	0.53	1.22	1.17
Alpha	1.18	Stream Power (lb/ft s)	1.23	6.63	3.55
Frctn Loss (ft)	2.37	Cum Volume (acre-ft)	0.35	1.66	0.30
C & E Loss (ft)	0.02	Cum SA (acres)	0.46	1.18	0.43

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2187 Profile: Q100

E.G. Elev (ft)	7056.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.050	0.038	0.065
W.S. Elev (ft)	7055.80	Reach Len. (ft)	152.00	142.00	133.00
Crit W.S. (ft)	7055.83	Flow Area (sq ft)	14.85	36.02	8.76
E.G. Slope (ft/ft)	0.013802	Area (sq ft)	14.85	36.02	8.76
Q Total (cfs)	300.00	Flow (cfs)	33.79	248.16	18.05
Top Width (ft)	60.99	Top Width (ft)	28.10	20.00	12.89
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)	2.28	6.89	2.06
Max Chl Dpth (ft)	1.80	Hydr. Depth (ft)	0.53	1.80	0.68
Conv. Total (cfs)	2553.6	Conv. (cfs)	287.6	2112.3	153.6
Length Wtd. (ft)	143.07	Wetted Per. (ft)	28.24	20.00	13.05
Min Ch El (ft)	7054.00	Shear (lb/sq ft)	0.45	1.55	0.58
Alpha	1.58	Stream Power (lb/ft s)	1.03	10.69	1.19
Frctn Loss (ft)	1.96	Cum Volume (acre-ft)	0.31	1.52	0.28
C & E Loss (ft)	0.07	Cum SA (acres)	0.39	1.06	0.40

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2045 Profile: Q100

E.G. Elev (ft)	7054.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7053.69	Reach Len. (ft)	180.00	146.00	152.00
Crit W.S. (ft)	7053.57	Flow Area (sq ft)	17.34	44.25	5.20
E.G. Slope (ft/ft)	0.014635	Area (sq ft)	17.34	44.25	5.20
Q Total (cfs)	300.00	Flow (cfs)	55.77	233.31	10.91
Top Width (ft)	70.36	Top Width (ft)	20.43	38.30	11.63
Vel Total (ft/s)	4.49	Avg. Vel. (ft/s)	3.22	5.27	2.10
Max Chl Dpth (ft)	1.69	Hydr. Depth (ft)	0.85	1.16	0.45
Conv. Total (cfs)	2479.9	Conv. (cfs)	461.0	1928.6	90.2
Length Wtd. (ft)	152.64	Wetted Per. (ft)	20.50	38.35	11.66
Min Ch El (ft)	7052.00	Shear (lb/sq ft)	0.77	1.05	0.41
Alpha	1.18	Stream Power (lb/ft s)	2.49	5.56	0.86
Frctn Loss (ft)	2.62	Cum Volume (acre-ft)	0.26	1.39	0.26
C & E Loss (ft)	0.02	Cum SA (acres)	0.31	0.96	0.36

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1899 Profile: Q100

E.G. Elev (ft)	7051.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7050.88	Reach Len. (ft)	136.00	129.00	118.00
Crit W.S. (ft)	7050.88	Flow Area (sq ft)	18.47	43.15	31.96
E.G. Slope (ft/ft)	0.019077	Area (sq ft)	18.47	43.15	31.96
Q Total (cfs)	493.00	Flow (cfs)	76.82	300.81	115.37
Top Width (ft)	86.74	Top Width (ft)	18.01	30.00	38.73
Vel Total (ft/s)	5.27	Avg. Vel. (ft/s)	4.16	6.97	3.61
Max Chl Dpth (ft)	1.58	Hydr. Depth (ft)	1.03	1.44	0.83
Conv. Total (cfs)	3569.4	Conv. (cfs)	556.2	2177.9	835.3
Length Wtd. (ft)	128.49	Wetted Per. (ft)	18.11	30.01	38.76
Min Ch El (ft)	7049.30	Shear (lb/sq ft)	1.21	1.71	0.98
Alpha	1.28	Stream Power (lb/ft s)	5.05	11.94	3.54
Frctn Loss (ft)	2.49	Cum Volume (acre-ft)	0.18	1.25	0.19
C & E Loss (ft)	0.02	Cum SA (acres)	0.23	0.85	0.27

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1770 Profile: Q100

E.G. Elev (ft)	7048.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7048.17	Reach Len. (ft)	185.00	181.00	227.00
Crit W.S. (ft)	7048.28	Flow Area (sq ft)	20.18	52.69	7.70
E.G. Slope (ft/ft)	0.019732	Area (sq ft)	20.18	52.69	7.70
Q Total (cfs)	493.00	Flow (cfs)	71.54	396.61	24.86
Top Width (ft)	70.41	Top Width (ft)	25.70	33.50	11.21
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	3.55	7.53	3.23
Max Chl Dpth (ft)	1.57	Hydr. Depth (ft)	0.79	1.57	0.69
Conv. Total (cfs)	3509.6	Conv. (cfs)	509.3	2823.4	176.9
Length Wtd. (ft)	183.85	Wetted Per. (ft)	25.77	33.50	11.33
Min Ch El (ft)	7046.60	Shear (lb/sq ft)	0.96	1.94	0.84
Alpha	1.28	Stream Power (lb/ft s)	3.42	14.58	2.70
Frctn Loss (ft)	4.76	Cum Volume (acre-ft)	0.12	1.10	0.14
C & E Loss (ft)	0.02	Cum SA (acres)	0.16	0.75	0.21

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1589 Profile: Q100

E.G. Elev (ft)	7044.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7043.18	Reach Len. (ft)	227.00	235.00	218.00
Crit W.S. (ft)	7043.43	Flow Area (sq ft)	4.48	54.89	7.70
E.G. Slope (ft/ft)	0.035433	Area (sq ft)	4.48	54.89	7.70
Q Total (cfs)	493.00	Flow (cfs)	16.78	447.65	28.58
Top Width (ft)	70.32	Top Width (ft)	8.09	48.00	14.23
Vel Total (ft/s)	7.35	Avg. Vel. (ft/s)	3.75	8.16	3.71
Max Chl Dpth (ft)	1.18	Hydr. Depth (ft)	0.55	1.14	0.54
Conv. Total (cfs)	2619.1	Conv. (cfs)	89.1	2378.1	151.8
Length Wtd. (ft)	233.43	Wetted Per. (ft)	8.16	48.00	14.27
Min Ch El (ft)	7042.00	Shear (lb/sq ft)	1.21	2.53	1.19
Alpha	1.14	Stream Power (lb/ft s)	4.55	20.63	4.43
Frctn Loss (ft)	3.59	Cum Volume (acre-ft)	0.07	0.88	0.10
C & E Loss (ft)	0.02	Cum SA (acres)	0.09	0.58	0.14

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1354 Profile: Q100

E.G. Elev (ft)	7040.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7039.74	Reach Len. (ft)	141.00	145.00	164.00
Crit W.S. (ft)	7039.74	Flow Area (sq ft)	9.32	60.99	9.47
E.G. Slope (ft/ft)	0.016528	Area (sq ft)	9.32	60.99	9.47
Q Total (cfs)	493.00	Flow (cfs)	34.47	430.96	27.57
Top Width (ft)	61.09	Top Width (ft)	9.60	37.30	14.19
Vel Total (ft/s)	6.18	Avg. Vel. (ft/s)	3.70	7.07	2.91
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)	0.97	1.63	0.67
Conv. Total (cfs)	3834.8	Conv. (cfs)	268.1	3352.2	214.5
Length Wtd. (ft)	145.81	Wetted Per. (ft)	9.79	37.33	14.25
Min Ch El (ft)	7037.70	Shear (lb/sq ft)	0.98	1.69	0.69
Alpha	1.18	Stream Power (lb/ft s)	3.63	11.91	2.00
Frctn Loss (ft)	1.92	Cum Volume (acre-ft)	0.04	0.57	0.06
C & E Loss (ft)	0.08	Cum SA (acres)	0.04	0.35	0.07

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1209 Profile: Q100

E.G. Elev (ft)	7037.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7037.55	Reach Len. (ft)	35.00	36.00	32.00
Crit W.S. (ft)	7037.33	Flow Area (sq ft)	5.97	82.55	9.68
E.G. Slope (ft/ft)	0.010718	Area (sq ft)	5.97	82.55	9.68
Q Total (cfs)	493.00	Flow (cfs)	15.28	452.76	24.95
Top Width (ft)	73.65	Top Width (ft)	7.73	53.40	12.52
Vel Total (ft/s)	5.02	Avg. Vel. (ft/s)	2.56	5.48	2.58
Max Chl Dpth (ft)	1.55	Hydr. Depth (ft)	0.77	1.55	0.77
Conv. Total (cfs)	4761.9	Conv. (cfs)	147.6	4373.3	241.0
Length Wtd. (ft)	35.57	Wetted Per. (ft)	7.88	53.40	12.62
Min Ch El (ft)	7036.00	Shear (lb/sq ft)	0.51	1.03	0.51
Alpha	1.12	Stream Power (lb/ft s)	1.30	5.67	1.32
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	0.01	0.33	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.01	0.20	0.02

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1173 Profile: Q100

E.G. Elev (ft)	7037.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	7037.01	Reach Len. (ft)	50.00	51.00	50.00
Crit W.S. (ft)		Flow Area (sq ft)	8.41	60.26	19.40
E.G. Slope (ft/ft)	0.010852	Area (sq ft)	8.41	60.26	19.40
Q Total (cfs)	493.00	Flow (cfs)	25.62	396.02	71.36
Top Width (ft)	53.15	Top Width (ft)	8.37	30.00	14.78
Vel Total (ft/s)	5.60	Avg. Vel. (ft/s)	3.05	6.57	3.68
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)	1.00	2.01	1.31
Conv. Total (cfs)	4732.6	Conv. (cfs)	245.9	3801.7	685.0
Length Wtd. (ft)	50.90	Wetted Per. (ft)	8.61	30.00	14.99
Min Ch El (ft)	7035.00	Shear (lb/sq ft)	0.66	1.36	0.88
Alpha	1.19	Stream Power (lb/ft s)	2.02	8.94	3.23
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	0.00	0.27	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.01	0.17	0.01

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1122 Profile: Q100

E.G. Elev (ft)	7036.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.045	0.065	0.045
W.S. Elev (ft)	7036.10	Reach Len. (ft)	24.00	24.00	24.00
Crit W.S. (ft)		Flow Area (sq ft)	0.02	80.60	0.02
E.G. Slope (ft/ft)	0.034365	Area (sq ft)	0.02	80.60	0.02
Q Total (cfs)	493.00	Flow (cfs)	0.02	492.96	0.02
Top Width (ft)	46.87	Top Width (ft)	0.44	46.00	0.43
Vel Total (ft/s)	6.11	Avg. Vel. (ft/s)	0.82	6.12	0.82
Max Chl Dpth (ft)	2.10	Hydr. Depth (ft)	0.05	1.75	0.05
Conv. Total (cfs)	2659.4	Conv. (cfs)	0.1	2659.3	0.1
Length Wtd. (ft)	24.00	Wetted Per. (ft)	0.45	46.49	0.44
Min Ch El (ft)	7034.00	Shear (lb/sq ft)	0.10	3.72	0.10
Alpha	1.00	Stream Power (lb/ft s)	0.09	22.75	0.09
Frctn Loss (ft)	1.02	Cum Volume (acre-ft)	0.00	0.19	0.00
C & E Loss (ft)	0.02	Cum SA (acres)	0.00	0.12	0.00

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1098 Profile: Q100

E.G. Elev (ft)	7035.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.		0.065	
W.S. Elev (ft)	7034.86	Reach Len. (ft)	99.00	98.00	100.00
Crit W.S. (ft)	7034.86	Flow Area (sq ft)		69.50	
E.G. Slope (ft/ft)	0.054432	Area (sq ft)		69.50	
Q Total (cfs)	493.00	Flow (cfs)		493.00	
Top Width (ft)	44.86	Top Width (ft)		44.86	
Vel Total (ft/s)	7.09	Avg. Vel. (ft/s)		7.09	
Max Chl Dpth (ft)	1.86	Hydr. Depth (ft)		1.55	
Conv. Total (cfs)	2113.1	Conv. (cfs)		2113.1	
Length Wtd. (ft)	98.00	Wetted Per. (ft)		45.31	
Min Ch El (ft)	7033.00	Shear (lb/sq ft)		5.21	
Alpha	1.00	Stream Power (lb/ft s)		36.97	
Frctn Loss (ft)	6.53	Cum Volume (acre-ft)		0.15	
C & E Loss (ft)	0.03	Cum SA (acres)		0.10	

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1000 Profile: Q100

E.G. Elev (ft)	7029.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.04	Wt. n-Val.		0.065	
W.S. Elev (ft)	7028.04	Reach Len. (ft)			
Crit W.S. (ft)	7028.26	Flow Area (sq ft)		60.13	
E.G. Slope (ft/ft)	0.083670	Area (sq ft)		60.13	
Q Total (cfs)	493.00	Flow (cfs)		493.00	
Top Width (ft)	43.15	Top Width (ft)		43.15	
Vel Total (ft/s)	8.20	Avg. Vel. (ft/s)		8.20	
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)		1.39	
Conv. Total (cfs)	1704.4	Conv. (cfs)		1704.4	
Length Wtd. (ft)		Wetted Per. (ft)		43.56	
Min Ch El (ft)	7026.40	Shear (lb/sq ft)		7.21	
Alpha	1.00	Stream Power (lb/ft s)		59.12	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5688 Profile: Q5

E.G. Elev (ft)	7126.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.065	
W.S. Elev (ft)	7126.14	Reach Len. (ft)	81.00	83.00	89.00
Crit W.S. (ft)	7125.83	Flow Area (sq ft)		6.86	
E.G. Slope (ft/ft)	0.009509	Area (sq ft)		6.86	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	21.84	Top Width (ft)		21.84	
Vel Total (ft/s)	1.02	Avg. Vel. (ft/s)		1.02	
Max Chl Dpth (ft)	0.64	Hydr. Depth (ft)		0.31	
Conv. Total (cfs)	71.8	Conv. (cfs)		71.8	
Length Wtd. (ft)	83.00	Wetted Per. (ft)		22.17	
Min Ch El (ft)	7125.50	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	1.95	Cum Volume (acre-ft)	0.02	0.77	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	2.72	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5607 Profile: Q5

E.G. Elev (ft)	7124.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.065	
W.S. Elev (ft)	7124.13	Reach Len. (ft)	46.00	49.00	50.00
Crit W.S. (ft)	7124.13	Flow Area (sq ft)		3.38	
E.G. Slope (ft/ft)	0.129046	Area (sq ft)		3.38	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	26.64	Top Width (ft)		26.64	
Vel Total (ft/s)	2.07	Avg. Vel. (ft/s)		2.07	
Max Chl Dpth (ft)	0.13	Hydr. Depth (ft)		0.13	
Conv. Total (cfs)	19.5	Conv. (cfs)		19.5	
Length Wtd. (ft)	49.00	Wetted Per. (ft)		26.66	
Min Ch El (ft)	7124.00	Shear (lb/sq ft)		1.02	
Alpha	1.00	Stream Power (lb/ft s)		2.12	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	0.02	0.76	0.02
C & E Loss (ft)	0.02	Cum SA (acres)	0.12	2.68	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5558 Profile: Q5

E.G. Elev (ft)	7123.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7123.42	Reach Len. (ft)	200.00	200.00	201.00
Crit W.S. (ft)	7123.16	Flow Area (sq ft)		9.20	
E.G. Slope (ft/ft)	0.003874	Area (sq ft)		9.20	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	23.39	Top Width (ft)		23.39	
Vel Total (ft/s)	0.76	Avg. Vel. (ft/s)		0.76	
Max Chl Dpth (ft)	0.42	Hydr. Depth (ft)		0.39	
Conv. Total (cfs)	112.5	Conv. (cfs)		112.5	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		23.49	
Min Ch El (ft)	7123.00	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.07	
Frctn Loss (ft)	2.20	Cum Volume (acre-ft)	0.02	0.75	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	2.65	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5358 Profile: Q5

E.G. Elev (ft)	7121.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.065	
W.S. Elev (ft)	7121.16	Reach Len. (ft)	303.00	303.00	301.00
Crit W.S. (ft)	7121.16	Flow Area (sq ft)		3.23	
E.G. Slope (ft/ft)	0.110739	Area (sq ft)		3.23	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	21.25	Top Width (ft)		21.25	
Vel Total (ft/s)	2.17	Avg. Vel. (ft/s)		2.17	
Max Chl Dpth (ft)	0.16	Hydr. Depth (ft)		0.15	
Conv. Total (cfs)	21.0	Conv. (cfs)		21.0	
Length Wtd. (ft)		Wetted Per. (ft)		21.29	
Min Ch El (ft)	7121.00	Shear (lb/sq ft)		1.05	
Alpha	1.00	Stream Power (lb/ft s)		2.27	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.02	0.72	0.02
C & E Loss (ft)		Cum SA (acres)	0.12	2.55	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5055 Profile: Q5

E.G. Elev (ft)	7112.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.065	
W.S. Elev (ft)	7112.16	Reach Len. (ft)	291.00	290.00	289.00
Crit W.S. (ft)	7112.16	Flow Area (sq ft)		3.19	
E.G. Slope (ft/ft)	0.115406	Area (sq ft)		3.19	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	21.28	Top Width (ft)		21.28	
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)		2.19	
Max Chl Dpth (ft)	0.15	Hydr. Depth (ft)		0.15	
Conv. Total (cfs)	20.6	Conv. (cfs)		20.6	
Length Wtd. (ft)	290.00	Wetted Per. (ft)		21.31	
Min Ch El (ft)	7112.00	Shear (lb/sq ft)		1.08	
Alpha	1.00	Stream Power (lb/ft s)		2.37	
Frctn Loss (ft)	5.55	Cum Volume (acre-ft)	0.02	0.70	0.02
C & E Loss (ft)	0.02	Cum SA (acres)	0.12	2.40	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4765 Profile: Q5

E.G. Elev (ft)	7104.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7104.35	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	7104.16	Flow Area (sq ft)		7.45	
E.G. Slope (ft/ft)	0.007545	Area (sq ft)		7.45	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	22.79	Top Width (ft)		22.79	
Vel Total (ft/s)	0.94	Avg. Vel. (ft/s)		0.94	
Max Chl Dpth (ft)	0.35	Hydr. Depth (ft)		0.33	
Conv. Total (cfs)	80.6	Conv. (cfs)		80.6	
Length Wtd. (ft)	15.00	Wetted Per. (ft)		22.87	
Min Ch El (ft)	7104.00	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.14	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	0.02	0.66	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	2.25	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4750 Profile: Q5

E.G. Elev (ft)	7104.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.065	
W.S. Elev (ft)	7104.20	Reach Len. (ft)	273.00	273.00	270.00
Crit W.S. (ft)		Flow Area (sq ft)		6.37	
E.G. Slope (ft/ft)	0.012435	Area (sq ft)		6.37	
Q Total (cfs)	7.00	Flow (cfs)		7.00	
Top Width (ft)	22.40	Top Width (ft)		22.40	
Vel Total (ft/s)	1.10	Avg. Vel. (ft/s)		1.10	
Max Chl Dpth (ft)	0.30	Hydr. Depth (ft)		0.28	
Conv. Total (cfs)	62.8	Conv. (cfs)		62.8	
Length Wtd. (ft)	273.00	Wetted Per. (ft)		22.48	
Min Ch El (ft)	7103.90	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.24	
Frctn Loss (ft)	2.70	Cum Volume (acre-ft)	0.02	0.66	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	2.25	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4477 Profile: Q5

E.G. Elev (ft)	7101.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.065	
W.S. Elev (ft)	7101.49	Reach Len. (ft)	27.00	10.00	1.00
Crit W.S. (ft)		Flow Area (sq ft)		8.46	
E.G. Slope (ft/ft)	0.008416	Area (sq ft)		8.46	
Q Total (cfs)	9.00	Flow (cfs)		9.00	
Top Width (ft)	23.29	Top Width (ft)		23.29	
Vel Total (ft/s)	1.06	Avg. Vel. (ft/s)		1.06	
Max Chl Dpth (ft)	0.39	Hydr. Depth (ft)		0.36	
Conv. Total (cfs)	98.1	Conv. (cfs)		98.1	
Length Wtd. (ft)	10.00	Wetted Per. (ft)		23.38	
Min Ch El (ft)	7101.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.20	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.02	0.62	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	2.10	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4469 Profile: Q5

E.G. Elev (ft)	7101.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.065	
W.S. Elev (ft)	7101.42	Reach Len. (ft)	199.00	198.00	193.00
Crit W.S. (ft)	7101.18	Flow Area (sq ft)		9.14	
E.G. Slope (ft/ft)	0.006604	Area (sq ft)		9.14	
Q Total (cfs)	9.00	Flow (cfs)		9.00	
Top Width (ft)	23.57	Top Width (ft)		23.57	
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)		0.99	
Max Chl Dpth (ft)	0.42	Hydr. Depth (ft)		0.39	
Conv. Total (cfs)	110.7	Conv. (cfs)		110.7	
Length Wtd. (ft)	198.00	Wetted Per. (ft)		23.66	
Min Ch El (ft)	7101.00	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.16	
Frctn Loss (ft)	2.09	Cum Volume (acre-ft)	0.02	0.61	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	2.10	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4269 Profile: Q5

E.G. Elev (ft)	7099.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.		0.065	
W.S. Elev (ft)	7099.31	Reach Len. (ft)	105.00	107.00	105.00
Crit W.S. (ft)	7099.18	Flow Area (sq ft)		6.47	
E.G. Slope (ft/ft)	0.019572	Area (sq ft)		6.47	
Q Total (cfs)	9.00	Flow (cfs)		9.00	
Top Width (ft)	22.44	Top Width (ft)		22.44	
Vel Total (ft/s)	1.39	Avg. Vel. (ft/s)		1.39	
Max Chl Dpth (ft)	0.30	Hydr. Depth (ft)		0.29	
Conv. Total (cfs)	64.3	Conv. (cfs)		64.3	
Length Wtd. (ft)	107.00	Wetted Per. (ft)		22.51	
Min Ch El (ft)	7099.00	Shear (lb/sq ft)		0.35	
Alpha	1.00	Stream Power (lb/ft s)		0.49	
Frctn Loss (ft)	3.05	Cum Volume (acre-ft)	0.02	0.58	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	1.99	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4162 Profile: Q5

E.G. Elev (ft)	7096.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.065	
W.S. Elev (ft)	7096.24	Reach Len. (ft)	100.00	102.00	86.00
Crit W.S. (ft)	7096.18	Flow Area (sq ft)		4.97	
E.G. Slope (ft/ft)	0.045447	Area (sq ft)		4.97	
Q Total (cfs)	9.00	Flow (cfs)		9.00	
Top Width (ft)	21.90	Top Width (ft)		21.90	
Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)		1.81	
Max Chl Dpth (ft)	0.24	Hydr. Depth (ft)		0.23	
Conv. Total (cfs)	42.2	Conv. (cfs)		42.2	
Length Wtd. (ft)	102.00	Wetted Per. (ft)		21.96	
Min Ch El (ft)	7096.00	Shear (lb/sq ft)		0.64	
Alpha	1.00	Stream Power (lb/ft s)		1.16	
Frctn Loss (ft)	6.73	Cum Volume (acre-ft)	0.02	0.56	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	1.94	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4060 Profile: Q5

E.G. Elev (ft)	7089.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.065	
W.S. Elev (ft)	7089.48	Reach Len. (ft)	47.00	63.00	108.00
Crit W.S. (ft)	7089.48	Flow Area (sq ft)		3.96	
E.G. Slope (ft/ft)	0.104292	Area (sq ft)		3.96	
Q Total (cfs)	9.00	Flow (cfs)		9.00	
Top Width (ft)	23.09	Top Width (ft)		23.09	
Vel Total (ft/s)	2.28	Avg. Vel. (ft/s)		2.28	
Max Chl Dpth (ft)	0.18	Hydr. Depth (ft)		0.17	
Conv. Total (cfs)	27.9	Conv. (cfs)		27.9	
Length Wtd. (ft)	63.01	Wetted Per. (ft)		23.12	
Min Ch El (ft)	7089.30	Shear (lb/sq ft)		1.11	
Alpha	1.00	Stream Power (lb/ft s)		2.53	
Frctn Loss (ft)	1.41	Cum Volume (acre-ft)	0.02	0.55	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	1.88	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3997 Profile: Q5

E.G. Elev (ft)	7086.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.000	0.033	0.040
W.S. Elev (ft)	7086.36	Reach Len. (ft)	235.00	236.00	233.00
Crit W.S. (ft)	7086.30	Flow Area (sq ft)	0.00	6.20	0.01
E.G. Slope (ft/ft)	0.011364	Area (sq ft)	0.00	6.20	0.01
Q Total (cfs)	12.00	Flow (cfs)	0.00	11.99	0.00
Top Width (ft)	25.28	Top Width (ft)	0.09	24.80	0.38
Vel Total (ft/s)	1.93	Avg. Vel. (ft/s)	0.35	1.93	0.40
Max Chl Dpth (ft)	0.36	Hydr. Depth (ft)	0.03	0.25	0.03
Conv. Total (cfs)	112.6	Conv. (cfs)	0.0	112.5	0.0
Length Wtd. (ft)	235.96	Wetted Per. (ft)	0.11	24.83	0.39
Min Ch El (ft)	7086.00	Shear (lb/sq ft)		0.18	0.02
Alpha	1.00	Stream Power (lb/ft s)		0.34	0.01
Frctn Loss (ft)	3.88	Cum Volume (acre-ft)	0.02	0.55	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	1.85	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3761 Profile: Q5

E.G. Elev (ft)	7082.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.040	0.033	0.040
W.S. Elev (ft)	7082.37	Reach Len. (ft)	263.00	261.00	255.00
Crit W.S. (ft)	7082.37	Flow Area (sq ft)	0.28	5.98	0.14
E.G. Slope (ft/ft)	0.021012	Area (sq ft)	0.28	5.98	0.14
Q Total (cfs)	21.00	Flow (cfs)	0.47	20.29	0.24
Top Width (ft)	18.59	Top Width (ft)	1.50	16.30	0.79
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	1.70	3.40	1.63
Max Chl Dpth (ft)	0.37	Hydr. Depth (ft)	0.18	0.37	0.18
Conv. Total (cfs)	144.9	Conv. (cfs)	3.2	140.0	1.6
Length Wtd. (ft)	260.99	Wetted Per. (ft)	1.55	16.30	0.87
Min Ch El (ft)	7082.00	Shear (lb/sq ft)	0.23	0.48	0.22
Alpha	1.04	Stream Power (lb/ft s)	0.40	1.63	0.36
Frctn Loss (ft)	3.94	Cum Volume (acre-ft)	0.02	0.51	0.02
C & E Loss (ft)	0.02	Cum SA (acres)	0.11	1.74	0.11

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3500 Profile: Q5

E.G. Elev (ft)	7078.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.040	0.033	0.040
W.S. Elev (ft)	7078.06	Reach Len. (ft)	256.00	250.00	250.00
Crit W.S. (ft)	7077.98	Flow Area (sq ft)	0.02	8.54	0.01
E.G. Slope (ft/ft)	0.011369	Area (sq ft)	0.02	8.54	0.01
Q Total (cfs)	21.00	Flow (cfs)	0.01	20.99	0.00
Top Width (ft)	24.64	Top Width (ft)	0.56	23.80	0.28
Vel Total (ft/s)	2.45	Avg. Vel. (ft/s)	0.36	2.46	0.36
Max Chl Dpth (ft)	0.56	Hydr. Depth (ft)	0.03	0.36	0.03
Conv. Total (cfs)	197.0	Conv. (cfs)	0.1	196.9	0.0
Length Wtd. (ft)	250.00	Wetted Per. (ft)	0.56	23.83	0.29
Min Ch El (ft)	7077.50	Shear (lb/sq ft)	0.02	0.25	0.02
Alpha	1.00	Stream Power (lb/ft s)	0.01	0.63	0.01
Frctn Loss (ft)	3.57	Cum Volume (acre-ft)	0.02	0.47	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.11	1.62	0.10

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3250 Profile: Q5

E.G. Elev (ft)	7074.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.028	
W.S. Elev (ft)	7074.46	Reach Len. (ft)	147.00	150.00	157.00
Crit W.S. (ft)	7074.46	Flow Area (sq ft)		7.57	
E.G. Slope (ft/ft)	0.018435	Area (sq ft)		7.57	
Q Total (cfs)	21.00	Flow (cfs)		21.00	
Top Width (ft)	32.52	Top Width (ft)		32.52	
Vel Total (ft/s)	2.77	Avg. Vel. (ft/s)		2.77	
Max Chl Dpth (ft)	0.36	Hydr. Depth (ft)		0.23	
Conv. Total (cfs)	154.7	Conv. (cfs)		154.7	
Length Wtd. (ft)	150.01	Wetted Per. (ft)		32.53	
Min Ch El (ft)	7074.10	Shear (lb/sq ft)		0.27	
Alpha	1.00	Stream Power (lb/ft s)		0.74	
Frctn Loss (ft)	2.08	Cum Volume (acre-ft)	0.02	0.42	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.11	1.46	0.10

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3100 Profile: Q5

E.G. Elev (ft)	7071.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7071.56	Reach Len. (ft)	109.00	89.00	65.00
Crit W.S. (ft)	7071.52	Flow Area (sq ft)	0.09	7.36	0.09
E.G. Slope (ft/ft)	0.010827	Area (sq ft)	0.09	7.36	0.09
Q Total (cfs)	21.00	Flow (cfs)	0.07	20.87	0.07
Top Width (ft)	22.87	Top Width (ft)	1.18	20.50	1.18
Vel Total (ft/s)	2.78	Avg. Vel. (ft/s)	0.71	2.84	0.71
Max Chl Dpth (ft)	0.46	Hydr. Depth (ft)	0.08	0.36	0.08
Conv. Total (cfs)	201.8	Conv. (cfs)	0.6	200.6	0.6
Length Wtd. (ft)	88.97	Wetted Per. (ft)	1.19	20.52	1.19
Min Ch El (ft)	7071.10	Shear (lb/sq ft)	0.05	0.24	0.05
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.69	0.04
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	0.02	0.40	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	1.37	0.10

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3011 Profile: Q5

E.G. Elev (ft)	7070.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7070.37	Reach Len. (ft)	108.00	124.00	132.00
Crit W.S. (ft)	7070.37	Flow Area (sq ft)	0.10	6.60	0.14
E.G. Slope (ft/ft)	0.015908	Area (sq ft)	0.10	6.60	0.14
Q Total (cfs)	21.00	Flow (cfs)	0.09	20.78	0.12
Top Width (ft)	23.91	Top Width (ft)	1.25	21.00	1.67
Vel Total (ft/s)	3.07	Avg. Vel. (ft/s)	0.89	3.15	0.89
Max Chl Dpth (ft)	0.37	Hydr. Depth (ft)	0.08	0.31	0.08
Conv. Total (cfs)	166.5	Conv. (cfs)	0.7	164.8	1.0
Length Wtd. (ft)	123.99	Wetted Per. (ft)	1.26	21.01	1.67
Min Ch El (ft)	7070.00	Shear (lb/sq ft)	0.08	0.31	0.08
Alpha	1.04	Stream Power (lb/ft s)	0.07	0.98	0.07
Frctn Loss (ft)	2.11	Cum Volume (acre-ft)	0.02	0.38	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	1.32	0.10

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2887 Profile: Q5

E.G. Elev (ft)	7068.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.028	
W.S. Elev (ft)	7068.28	Reach Len. (ft)	137.00	147.00	150.00
Crit W.S. (ft)	7068.34	Flow Area (sq ft)		5.56	
E.G. Slope (ft/ft)	0.047051	Area (sq ft)		5.56	
Q Total (cfs)	21.00	Flow (cfs)		21.00	
Top Width (ft)	30.39	Top Width (ft)		30.39	
Vel Total (ft/s)	3.78	Avg. Vel. (ft/s)		3.78	
Max Chl Dpth (ft)	0.28	Hydr. Depth (ft)		0.18	
Conv. Total (cfs)	96.8	Conv. (cfs)		96.8	
Length Wtd. (ft)	147.06	Wetted Per. (ft)		30.42	
Min Ch El (ft)	7068.00	Shear (lb/sq ft)		0.54	
Alpha	1.00	Stream Power (lb/ft s)		2.03	
Frctn Loss (ft)	1.93	Cum Volume (acre-ft)	0.02	0.37	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	1.25	0.09

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2740 Profile: Q5

E.G. Elev (ft)	7066.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.028	0.040
W.S. Elev (ft)	7066.40	Reach Len. (ft)	250.00	240.00	248.00
Crit W.S. (ft)	7066.40	Flow Area (sq ft)		6.69	0.53
E.G. Slope (ft/ft)	0.016882	Area (sq ft)		6.69	0.53
Q Total (cfs)	21.00	Flow (cfs)		20.14	0.86
Top Width (ft)	26.52	Top Width (ft)		23.85	2.67
Vel Total (ft/s)	2.91	Avg. Vel. (ft/s)		3.01	1.63
Max Chl Dpth (ft)	0.40	Hydr. Depth (ft)		0.28	0.20
Conv. Total (cfs)	161.6	Conv. (cfs)		155.0	6.6
Length Wtd. (ft)	240.58	Wetted Per. (ft)		23.85	2.70
Min Ch El (ft)	7066.00	Shear (lb/sq ft)		0.30	0.21
Alpha	1.04	Stream Power (lb/ft s)		0.89	0.34
Frctn Loss (ft)	5.13	Cum Volume (acre-ft)	0.02	0.35	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	1.16	0.09

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2500 Profile: Q5

E.G. Elev (ft)	7061.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.000	0.028	0.040
W.S. Elev (ft)	7061.23	Reach Len. (ft)	182.00	174.00	176.00
Crit W.S. (ft)	7061.26	Flow Area (sq ft)	0.00	5.44	0.99
E.G. Slope (ft/ft)	0.027793	Area (sq ft)	0.00	5.44	0.99
Q Total (cfs)	21.00	Flow (cfs)	0.00	18.81	2.19
Top Width (ft)	27.71	Top Width (ft)	0.13	22.90	4.68
Vel Total (ft/s)	3.26	Avg. Vel. (ft/s)	0.33	3.46	2.20
Max Chl Dpth (ft)	0.43	Hydr. Depth (ft)	0.01	0.24	0.21
Conv. Total (cfs)	126.0	Conv. (cfs)	0.0	112.8	13.1
Length Wtd. (ft)	174.17	Wetted Per. (ft)	0.13	22.92	4.70
Min Ch El (ft)	7060.80	Shear (lb/sq ft)		0.41	0.37
Alpha	1.05	Stream Power (lb/ft s)		1.42	0.81
Frctn Loss (ft)	3.90	Cum Volume (acre-ft)	0.02	0.31	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	1.03	0.07

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2326 Profile: Q5

E.G. Elev (ft)	7057.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7057.35	Reach Len. (ft)	113.00	139.00	138.00
Crit W.S. (ft)	7057.36	Flow Area (sq ft)	0.11	6.41	0.50
E.G. Slope (ft/ft)	0.018421	Area (sq ft)	0.11	6.41	0.50
Q Total (cfs)	21.00	Flow (cfs)	0.10	19.97	0.93
Top Width (ft)	26.84	Top Width (ft)	1.49	23.13	2.22
Vel Total (ft/s)	2.99	Avg. Vel. (ft/s)	0.90	3.11	1.85
Max Chl Dpth (ft)	0.45	Hydr. Depth (ft)	0.08	0.28	0.23
Conv. Total (cfs)	154.7	Conv. (cfs)	0.8	147.1	6.8
Length Wtd. (ft)	138.76	Wetted Per. (ft)	1.49	23.19	2.27
Min Ch El (ft)	7056.90	Shear (lb/sq ft)	0.09	0.32	0.26
Alpha	1.05	Stream Power (lb/ft s)	0.08	0.99	0.47
Frctn Loss (ft)	3.00	Cum Volume (acre-ft)	0.02	0.29	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.09	0.94	0.06

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2187 Profile: Q5

E.G. Elev (ft)	7054.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7054.28	Reach Len. (ft)	152.00	142.00	133.00
Crit W.S. (ft)	7054.32	Flow Area (sq ft)	0.15	5.56	0.15
E.G. Slope (ft/ft)	0.025755	Area (sq ft)	0.15	5.56	0.15
Q Total (cfs)	21.00	Flow (cfs)	0.24	20.52	0.24
Top Width (ft)	22.22	Top Width (ft)	1.11	20.00	1.11
Vel Total (ft/s)	3.58	Avg. Vel. (ft/s)	1.57	3.69	1.57
Max Chl Dpth (ft)	0.28	Hydr. Depth (ft)	0.14	0.28	0.14
Conv. Total (cfs)	130.9	Conv. (cfs)	1.5	127.8	1.5
Length Wtd. (ft)	142.49	Wetted Per. (ft)	1.15	20.00	1.15
Min Ch El (ft)	7054.00	Shear (lb/sq ft)	0.22	0.45	0.22
Alpha	1.04	Stream Power (lb/ft s)	0.34	1.65	0.34
Frctn Loss (ft)	1.86	Cum Volume (acre-ft)	0.02	0.27	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.87	0.05

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2045 Profile: Q5

E.G. Elev (ft)	7052.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.040	0.028	
W.S. Elev (ft)	7052.45	Reach Len. (ft)	180.00	146.00	152.00
Crit W.S. (ft)	7052.45	Flow Area (sq ft)	1.20	5.54	
E.G. Slope (ft/ft)	0.015018	Area (sq ft)	1.20	5.54	
Q Total (cfs)	21.00	Flow (cfs)	2.01	18.99	
Top Width (ft)	20.25	Top Width (ft)	5.39	14.86	
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	1.67	3.43	
Max Chl Dpth (ft)	0.45	Hydr. Depth (ft)	0.22	0.37	
Conv. Total (cfs)	171.4	Conv. (cfs)	16.4	155.0	
Length Wtd. (ft)	149.47	Wetted Per. (ft)	5.41	14.88	
Min Ch El (ft)	7052.00	Shear (lb/sq ft)	0.21	0.35	
Alpha	1.12	Stream Power (lb/ft s)	0.35	1.20	
Frctn Loss (ft)	2.69	Cum Volume (acre-ft)	0.02	0.25	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.81	0.05

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1899 Profile: Q5

E.G. Elev (ft)	7049.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7049.75	Reach Len. (ft)	136.00	129.00	118.00
Crit W.S. (ft)	7049.78	Flow Area (sq ft)	1.95	9.37	0.91
E.G. Slope (ft/ft)	0.020079	Area (sq ft)	1.95	9.37	0.91
Q Total (cfs)	38.00	Flow (cfs)	3.81	33.00	1.20
Top Width (ft)	45.86	Top Width (ft)	8.64	30.00	7.21
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	1.95	3.52	1.32
Max Chl Dpth (ft)	0.45	Hydr. Depth (ft)	0.23	0.31	0.13
Conv. Total (cfs)	268.2	Conv. (cfs)	26.9	232.9	8.5
Length Wtd. (ft)	129.21	Wetted Per. (ft)	8.66	30.01	7.22
Min Ch El (ft)	7049.30	Shear (lb/sq ft)	0.28	0.39	0.16
Alpha	1.16	Stream Power (lb/ft s)	0.55	1.38	0.21
Frctn Loss (ft)	2.81	Cum Volume (acre-ft)	0.01	0.23	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	0.74	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1770 Profile: Q5

E.G. Elev (ft)	7047.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7046.90	Reach Len. (ft)	185.00	181.00	227.00
Crit W.S. (ft)	7046.93	Flow Area (sq ft)	0.67	9.90	0.27
E.G. Slope (ft/ft)	0.023699	Area (sq ft)	0.67	9.90	0.27
Q Total (cfs)	38.00	Flow (cfs)	1.07	36.51	0.42
Top Width (ft)	39.82	Top Width (ft)	4.52	33.50	1.80
Vel Total (ft/s)	3.51	Avg. Vel. (ft/s)	1.60	3.69	1.58
Max Chl Dpth (ft)	0.30	Hydr. Depth (ft)	0.15	0.30	0.15
Conv. Total (cfs)	246.8	Conv. (cfs)	6.9	237.2	2.7
Length Wtd. (ft)	181.44	Wetted Per. (ft)	4.53	33.50	1.83
Min Ch El (ft)	7046.60	Shear (lb/sq ft)	0.22	0.44	0.22
Alpha	1.07	Stream Power (lb/ft s)	0.35	1.61	0.34
Frctn Loss (ft)	4.65	Cum Volume (acre-ft)	0.01	0.20	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.64	0.02

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1589 Profile: Q5

E.G. Elev (ft)	7042.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7042.26	Reach Len. (ft)	227.00	235.00	218.00
Crit W.S. (ft)	7042.30	Flow Area (sq ft)	0.10	11.10	0.18
E.G. Slope (ft/ft)	0.027755	Area (sq ft)	0.10	11.10	0.18
Q Total (cfs)	38.00	Flow (cfs)	0.12	37.67	0.21
Top Width (ft)	51.45	Top Width (ft)	1.27	48.00	2.18
Vel Total (ft/s)	3.34	Avg. Vel. (ft/s)	1.16	3.39	1.16
Max Chl Dpth (ft)	0.26	Hydr. Depth (ft)	0.08	0.23	0.08
Conv. Total (cfs)	228.1	Conv. (cfs)	0.7	226.1	1.2
Length Wtd. (ft)	234.80	Wetted Per. (ft)	1.28	48.00	2.19
Min Ch El (ft)	7042.00	Shear (lb/sq ft)	0.14	0.40	0.14
Alpha	1.03	Stream Power (lb/ft s)	0.16	1.36	0.16
Frctn Loss (ft)	3.43	Cum Volume (acre-ft)	0.00	0.15	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.02	0.47	0.01

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1354 Profile: Q5

E.G. Elev (ft)	7038.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.040	0.028	
W.S. Elev (ft)	7038.33	Reach Len. (ft)	141.00	145.00	164.00
Crit W.S. (ft)	7038.31	Flow Area (sq ft)	0.70	9.92	
E.G. Slope (ft/ft)	0.012685	Area (sq ft)	0.70	9.92	
Q Total (cfs)	38.00	Flow (cfs)	1.19	36.81	
Top Width (ft)	23.47	Top Width (ft)	2.65	20.82	
Vel Total (ft/s)	3.58	Avg. Vel. (ft/s)	1.70	3.71	
Max Chl Dpth (ft)	0.63	Hydr. Depth (ft)	0.26	0.48	
Conv. Total (cfs)	337.4	Conv. (cfs)	10.6	326.8	
Length Wtd. (ft)	145.00	Wetted Per. (ft)	2.70	20.84	
Min Ch El (ft)	7037.70	Shear (lb/sq ft)	0.21	0.38	
Alpha	1.05	Stream Power (lb/ft s)	0.35	1.40	
Frctn Loss (ft)	2.15	Cum Volume (acre-ft)	0.00	0.10	0.00
C & E Loss (ft)	0.03	Cum SA (acres)	0.01	0.29	0.01

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1209 Profile: Q5

E.G. Elev (ft)	7036.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7036.25	Reach Len. (ft)	35.00	36.00	32.00
Crit W.S. (ft)	7036.25	Flow Area (sq ft)	0.15	13.27	0.25
E.G. Slope (ft/ft)	0.017508	Area (sq ft)	0.15	13.27	0.25
Q Total (cfs)	38.00	Flow (cfs)	0.19	37.51	0.30
Top Width (ft)	56.66	Top Width (ft)	1.24	53.40	2.01
Vel Total (ft/s)	2.78	Avg. Vel. (ft/s)	1.21	2.83	1.22
Max Chl Dpth (ft)	0.25	Hydr. Depth (ft)	0.12	0.25	0.12
Conv. Total (cfs)	287.2	Conv. (cfs)	1.4	283.5	2.3
Length Wtd. (ft)	35.93	Wetted Per. (ft)	1.27	53.40	2.03
Min Ch El (ft)	7036.00	Shear (lb/sq ft)	0.13	0.27	0.13
Alpha	1.02	Stream Power (lb/ft s)	0.16	0.77	0.16
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	0.00	0.06	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.16	0.00

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1173 Profile: Q5

E.G. Elev (ft)	7035.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7035.30	Reach Len. (ft)	50.00	51.00	50.00
Crit W.S. (ft)	7035.37	Flow Area (sq ft)	0.18	8.91	0.52
E.G. Slope (ft/ft)	0.029436	Area (sq ft)	0.18	8.91	0.52
Q Total (cfs)	38.00	Flow (cfs)	0.32	36.74	0.93
Top Width (ft)	34.77	Top Width (ft)	1.24	30.00	3.53
Vel Total (ft/s)	3.95	Avg. Vel. (ft/s)	1.75	4.13	1.78
Max Chl Dpth (ft)	0.30	Hydr. Depth (ft)	0.15	0.30	0.15
Conv. Total (cfs)	221.5	Conv. (cfs)	1.9	214.2	5.4
Length Wtd. (ft)	50.98	Wetted Per. (ft)	1.27	30.00	3.55
Min Ch El (ft)	7035.00	Shear (lb/sq ft)	0.27	0.55	0.27
Alpha	1.06	Stream Power (lb/ft s)	0.47	2.25	0.48
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)	0.02	Cum SA (acres)	0.00	0.13	0.00

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1122 Profile: Q5

E.G. Elev (ft)	7034.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.065	
W.S. Elev (ft)	7034.52	Reach Len. (ft)	24.00	24.00	24.00
Crit W.S. (ft)	7034.36	Flow Area (sq ft)		16.68	
E.G. Slope (ft/ft)	0.025947	Area (sq ft)		16.68	
Q Total (cfs)	38.00	Flow (cfs)		38.00	
Top Width (ft)	34.16	Top Width (ft)		34.16	
Vel Total (ft/s)	2.28	Avg. Vel. (ft/s)		2.28	
Max Chl Dpth (ft)	0.52	Hydr. Depth (ft)		0.49	
Conv. Total (cfs)	235.9	Conv. (cfs)		235.9	
Length Wtd. (ft)	24.00	Wetted Per. (ft)		34.29	
Min Ch El (ft)	7034.00	Shear (lb/sq ft)		0.79	
Alpha	1.00	Stream Power (lb/ft s)		1.80	
Frctn Loss (ft)	1.05	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		0.09	

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1098 Profile: Q5

E.G. Elev (ft)	7033.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.065	
W.S. Elev (ft)	7033.36	Reach Len. (ft)	99.00	98.00	100.00
Crit W.S. (ft)	7033.36	Flow Area (sq ft)		11.31	
E.G. Slope (ft/ft)	0.089841	Area (sq ft)		11.31	
Q Total (cfs)	38.00	Flow (cfs)		38.00	
Top Width (ft)	32.88	Top Width (ft)		32.88	
Vel Total (ft/s)	3.36	Avg. Vel. (ft/s)		3.36	
Max Chl Dpth (ft)	0.36	Hydr. Depth (ft)		0.34	
Conv. Total (cfs)	126.8	Conv. (cfs)		126.8	
Length Wtd. (ft)		Wetted Per. (ft)		32.97	
Min Ch El (ft)	7033.00	Shear (lb/sq ft)		1.92	
Alpha	1.00	Stream Power (lb/ft s)		6.46	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.03	
C & E Loss (ft)		Cum SA (acres)		0.07	

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1000 Profile: Q5

E.G. Elev (ft)	7026.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.065	
W.S. Elev (ft)	7026.79	Reach Len. (ft)			
Crit W.S. (ft)	7026.76	Flow Area (sq ft)		12.41	
E.G. Slope (ft/ft)	0.066742	Area (sq ft)		12.41	
Q Total (cfs)	38.00	Flow (cfs)		38.00	
Top Width (ft)	33.14	Top Width (ft)		33.14	
Vel Total (ft/s)	3.06	Avg. Vel. (ft/s)		3.06	
Max Chl Dpth (ft)	0.39	Hydr. Depth (ft)		0.37	
Conv. Total (cfs)	147.1	Conv. (cfs)		147.1	
Length Wtd. (ft)		Wetted Per. (ft)		33.24	
Min Ch El (ft)	7026.40	Shear (lb/sq ft)		1.56	
Alpha	1.00	Stream Power (lb/ft s)		4.76	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5688 Profile: Q2

E.G. Elev (ft)	7125.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7125.82	Reach Len. (ft)	81.00	83.00	89.00
Crit W.S. (ft)	7125.65	Flow Area (sq ft)		2.30	
E.G. Slope (ft/ft)	0.008344	Area (sq ft)		2.30	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	8.31	Top Width (ft)		8.31	
Vel Total (ft/s)	0.87	Avg. Vel. (ft/s)		0.87	
Max Chl Dpth (ft)	0.32	Hydr. Depth (ft)		0.28	
Conv. Total (cfs)	21.9	Conv. (cfs)		21.9	
Length Wtd. (ft)	83.00	Wetted Per. (ft)		8.52	
Min Ch El (ft)	7125.50	Shear (lb/sq ft)		0.14	
Alpha	1.00	Stream Power (lb/ft s)		0.12	
Frctn Loss (ft)	1.74	Cum Volume (acre-ft)	0.01	0.35	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	2.39	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5607 Profile: Q2

E.G. Elev (ft)	7124.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.065	
W.S. Elev (ft)	7124.06	Reach Len. (ft)	46.00	49.00	50.00
Crit W.S. (ft)	7124.06	Flow Area (sq ft)		1.60	
E.G. Slope (ft/ft)	0.121920	Area (sq ft)		1.60	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	25.79	Top Width (ft)		25.79	
Vel Total (ft/s)	1.25	Avg. Vel. (ft/s)		1.25	
Max Chl Dpth (ft)	0.06	Hydr. Depth (ft)		0.06	
Conv. Total (cfs)	5.7	Conv. (cfs)		5.7	
Length Wtd. (ft)	49.00	Wetted Per. (ft)		25.80	
Min Ch El (ft)	7124.00	Shear (lb/sq ft)		0.47	
Alpha	1.00	Stream Power (lb/ft s)		0.59	
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	0.01	0.35	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	2.35	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5558 Profile: Q2

E.G. Elev (ft)	7123.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.		0.065	
W.S. Elev (ft)	7123.21	Reach Len. (ft)	200.00	200.00	201.00
Crit W.S. (ft)	7123.07	Flow Area (sq ft)		4.30	
E.G. Slope (ft/ft)	0.003580	Area (sq ft)		4.30	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	21.65	Top Width (ft)		21.65	
Vel Total (ft/s)	0.46	Avg. Vel. (ft/s)		0.46	
Max Chl Dpth (ft)	0.21	Hydr. Depth (ft)		0.20	
Conv. Total (cfs)	33.4	Conv. (cfs)		33.4	
Length Wtd. (ft)	200.00	Wetted Per. (ft)		21.70	
Min Ch El (ft)	7123.00	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.02	
Frctn Loss (ft)	2.10	Cum Volume (acre-ft)	0.01	0.34	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	2.33	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5358 Profile: Q2

E.G. Elev (ft)	7121.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.		0.065	
W.S. Elev (ft)	7121.07	Reach Len. (ft)	303.00	303.00	301.00
Crit W.S. (ft)	7121.07	Flow Area (sq ft)		1.45	
E.G. Slope (ft/ft)	0.126291	Area (sq ft)		1.45	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	20.57	Top Width (ft)		20.57	
Vel Total (ft/s)	1.38	Avg. Vel. (ft/s)		1.38	
Max Chl Dpth (ft)	0.07	Hydr. Depth (ft)		0.07	
Conv. Total (cfs)	5.6	Conv. (cfs)		5.6	
Length Wtd. (ft)		Wetted Per. (ft)		20.59	
Min Ch El (ft)	7121.00	Shear (lb/sq ft)		0.55	
Alpha	1.00	Stream Power (lb/ft s)		0.77	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	0.33	0.00
C & E Loss (ft)		Cum SA (acres)	0.05	2.23	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 5055 Profile: Q2

E.G. Elev (ft)	7112.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.065	
W.S. Elev (ft)	7112.06	Reach Len. (ft)	291.00	290.00	289.00
Crit W.S. (ft)	7112.06	Flow Area (sq ft)		1.31	
E.G. Slope (ft/ft)	0.176821	Area (sq ft)		1.31	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	20.53	Top Width (ft)		20.53	
Vel Total (ft/s)	1.53	Avg. Vel. (ft/s)		1.53	
Max Chl Dpth (ft)	0.06	Hydr. Depth (ft)		0.06	
Conv. Total (cfs)	4.8	Conv. (cfs)		4.8	
Length Wtd. (ft)	290.00	Wetted Per. (ft)		20.55	
Min Ch El (ft)	7112.00	Shear (lb/sq ft)		0.70	
Alpha	1.00	Stream Power (lb/ft s)		1.07	
Frctn Loss (ft)	5.15	Cum Volume (acre-ft)	0.01	0.32	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	2.09	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4765 Profile: Q2

E.G. Elev (ft)	7104.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.		0.065	
W.S. Elev (ft)	7104.18	Reach Len. (ft)	15.00	15.00	15.00
Crit W.S. (ft)	7104.07	Flow Area (sq ft)		3.62	
E.G. Slope (ft/ft)	0.006269	Area (sq ft)		3.62	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	21.40	Top Width (ft)		21.40	
Vel Total (ft/s)	0.55	Avg. Vel. (ft/s)		0.55	
Max Chl Dpth (ft)	0.17	Hydr. Depth (ft)		0.17	
Conv. Total (cfs)	25.3	Conv. (cfs)		25.3	
Length Wtd. (ft)	15.00	Wetted Per. (ft)		21.44	
Min Ch El (ft)	7104.00	Shear (lb/sq ft)		0.07	
Alpha	1.00	Stream Power (lb/ft s)		0.04	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	0.01	0.31	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.95	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4750 Profile: Q2

E.G. Elev (ft)	7104.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7104.05	Reach Len. (ft)	273.00	273.00	270.00
Crit W.S. (ft)		Flow Area (sq ft)		3.04	
E.G. Slope (ft/ft)	0.011092	Area (sq ft)		3.04	
Q Total (cfs)	2.00	Flow (cfs)		2.00	
Top Width (ft)	21.18	Top Width (ft)		21.18	
Vel Total (ft/s)	0.66	Avg. Vel. (ft/s)		0.66	
Max Chl Dpth (ft)	0.15	Hydr. Depth (ft)		0.14	
Conv. Total (cfs)	19.0	Conv. (cfs)		19.0	
Length Wtd. (ft)	273.00	Wetted Per. (ft)		21.22	
Min Ch El (ft)	7103.90	Shear (lb/sq ft)		0.10	
Alpha	1.00	Stream Power (lb/ft s)		0.07	
Frctn Loss (ft)	2.79	Cum Volume (acre-ft)	0.01	0.30	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.94	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4477 Profile: Q2

E.G. Elev (ft)	7101.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7101.27	Reach Len. (ft)	27.00	10.00	1.00
Crit W.S. (ft)		Flow Area (sq ft)		3.53	
E.G. Slope (ft/ft)	0.009819	Area (sq ft)		3.53	
Q Total (cfs)	2.40	Flow (cfs)		2.40	
Top Width (ft)	21.44	Top Width (ft)		21.44	
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)		0.68	
Max Chl Dpth (ft)	0.17	Hydr. Depth (ft)		0.16	
Conv. Total (cfs)	24.2	Conv. (cfs)		24.2	
Length Wtd. (ft)	10.00	Wetted Per. (ft)		21.48	
Min Ch El (ft)	7101.10	Shear (lb/sq ft)		0.10	
Alpha	1.00	Stream Power (lb/ft s)		0.07	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	0.01	0.28	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.81	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4469 Profile: Q2

E.G. Elev (ft)	7101.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7101.19	Reach Len. (ft)	199.00	198.00	193.00
Crit W.S. (ft)	7101.08	Flow Area (sq ft)		4.05	
E.G. Slope (ft/ft)	0.006313	Area (sq ft)		4.05	
Q Total (cfs)	2.40	Flow (cfs)		2.40	
Top Width (ft)	21.65	Top Width (ft)		21.65	
Vel Total (ft/s)	0.59	Avg. Vel. (ft/s)		0.59	
Max Chl Dpth (ft)	0.19	Hydr. Depth (ft)		0.19	
Conv. Total (cfs)	30.2	Conv. (cfs)		30.2	
Length Wtd. (ft)	198.00	Wetted Per. (ft)		21.70	
Min Ch El (ft)	7101.00	Shear (lb/sq ft)		0.07	
Alpha	1.00	Stream Power (lb/ft s)		0.04	
Frctn Loss (ft)	2.05	Cum Volume (acre-ft)	0.01	0.28	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.80	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4269 Profile: Q2

E.G. Elev (ft)	7099.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.065	
W.S. Elev (ft)	7099.14	Reach Len. (ft)	105.00	107.00	105.00
Crit W.S. (ft)	7099.07	Flow Area (sq ft)		2.83	
E.G. Slope (ft/ft)	0.020096	Area (sq ft)		2.83	
Q Total (cfs)	2.40	Flow (cfs)		2.40	
Top Width (ft)	21.10	Top Width (ft)		21.10	
Vel Total (ft/s)	0.85	Avg. Vel. (ft/s)		0.85	
Max Chl Dpth (ft)	0.14	Hydr. Depth (ft)		0.13	
Conv. Total (cfs)	16.9	Conv. (cfs)		16.9	
Length Wtd. (ft)	107.00	Wetted Per. (ft)		21.14	
Min Ch El (ft)	7099.00	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.14	
Frctn Loss (ft)	3.01	Cum Volume (acre-ft)	0.01	0.27	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.71	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4162 Profile: Q2

E.G. Elev (ft)	7096.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.065	
W.S. Elev (ft)	7096.11	Reach Len. (ft)	100.00	102.00	86.00
Crit W.S. (ft)		Flow Area (sq ft)		2.26	
E.G. Slope (ft/ft)	0.042179	Area (sq ft)		2.26	
Q Total (cfs)	2.40	Flow (cfs)		2.40	
Top Width (ft)	20.88	Top Width (ft)		20.88	
Vel Total (ft/s)	1.06	Avg. Vel. (ft/s)		1.06	
Max Chl Dpth (ft)	0.11	Hydr. Depth (ft)		0.11	
Conv. Total (cfs)	11.7	Conv. (cfs)		11.7	
Length Wtd. (ft)	102.00	Wetted Per. (ft)		20.91	
Min Ch El (ft)	7096.00	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		0.30	
Frctn Loss (ft)	6.72	Cum Volume (acre-ft)	0.01	0.26	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.65	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 4060 Profile: Q2

E.G. Elev (ft)	7089.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.		0.065	
W.S. Elev (ft)	7089.38	Reach Len. (ft)	47.00	63.00	108.00
Crit W.S. (ft)	7089.38	Flow Area (sq ft)		1.68	
E.G. Slope (ft/ft)	0.116844	Area (sq ft)		1.68	
Q Total (cfs)	2.40	Flow (cfs)		2.40	
Top Width (ft)	21.37	Top Width (ft)		21.37	
Vel Total (ft/s)	1.43	Avg. Vel. (ft/s)		1.43	
Max Chl Dpth (ft)	0.08	Hydr. Depth (ft)		0.08	
Conv. Total (cfs)	7.0	Conv. (cfs)		7.0	
Length Wtd. (ft)	63.00	Wetted Per. (ft)		21.38	
Min Ch El (ft)	7089.30	Shear (lb/sq ft)		0.57	
Alpha	1.00	Stream Power (lb/ft s)		0.82	
Frctn Loss (ft)	1.11	Cum Volume (acre-ft)	0.01	0.26	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.60	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3997 Profile: Q2

E.G. Elev (ft)	7086.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.033	
W.S. Elev (ft)	7086.22	Reach Len. (ft)	235.00	236.00	233.00
Crit W.S. (ft)	7086.15	Flow Area (sq ft)		2.82	
E.G. Slope (ft/ft)	0.008240	Area (sq ft)		2.82	
Q Total (cfs)	3.20	Flow (cfs)		3.20	
Top Width (ft)	19.75	Top Width (ft)		19.75	
Vel Total (ft/s)	1.13	Avg. Vel. (ft/s)		1.13	
Max Chl Dpth (ft)	0.22	Hydr. Depth (ft)		0.14	
Conv. Total (cfs)	35.3	Conv. (cfs)		35.3	
Length Wtd. (ft)	235.98	Wetted Per. (ft)		19.77	
Min Ch El (ft)	7086.00	Shear (lb/sq ft)		0.07	
Alpha	1.00	Stream Power (lb/ft s)		0.08	
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	0.01	0.25	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	1.58	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3761 Profile: Q2

E.G. Elev (ft)	7082.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.040	0.033	0.040
W.S. Elev (ft)	7082.16	Reach Len. (ft)	263.00	261.00	255.00
Crit W.S. (ft)	7082.16	Flow Area (sq ft)	0.06	2.67	0.03
E.G. Slope (ft/ft)	0.027760	Area (sq ft)	0.06	2.67	0.03
Q Total (cfs)	6.20	Flow (cfs)	0.06	6.11	0.03
Top Width (ft)	17.33	Top Width (ft)	0.67	16.30	0.35
Vel Total (ft/s)	2.25	Avg. Vel. (ft/s)	1.15	2.28	1.09
Max Chl Dpth (ft)	0.16	Hydr. Depth (ft)	0.08	0.16	0.08
Conv. Total (cfs)	37.2	Conv. (cfs)	0.4	36.6	0.2
Length Wtd. (ft)	260.99	Wetted Per. (ft)	0.69	16.30	0.39
Min Ch El (ft)	7082.00	Shear (lb/sq ft)	0.14	0.28	0.13
Alpha	1.02	Stream Power (lb/ft s)	0.16	0.65	0.14
Frctn Loss (ft)	4.07	Cum Volume (acre-ft)	0.01	0.24	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	1.48	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3500 Profile: Q2

E.G. Elev (ft)	7077.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.033	
W.S. Elev (ft)	7077.84	Reach Len. (ft)	256.00	250.00	250.00
Crit W.S. (ft)	7077.76	Flow Area (sq ft)		3.78	
E.G. Slope (ft/ft)	0.009979	Area (sq ft)		3.78	
Q Total (cfs)	6.20	Flow (cfs)		6.20	
Top Width (ft)	17.59	Top Width (ft)		17.59	
Vel Total (ft/s)	1.64	Avg. Vel. (ft/s)		1.64	
Max Chl Dpth (ft)	0.33	Hydr. Depth (ft)		0.22	
Conv. Total (cfs)	62.1	Conv. (cfs)		62.1	
Length Wtd. (ft)	250.00	Wetted Per. (ft)		17.61	
Min Ch El (ft)	7077.50	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.22	
Frctn Loss (ft)	3.51	Cum Volume (acre-ft)	0.01	0.22	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.38	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3250 Profile: Q2

E.G. Elev (ft)	7074.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.028	
W.S. Elev (ft)	7074.29	Reach Len. (ft)	147.00	150.00	157.00
Crit W.S. (ft)	7074.29	Flow Area (sq ft)		2.98	
E.G. Slope (ft/ft)	0.021187	Area (sq ft)		2.98	
Q Total (cfs)	6.20	Flow (cfs)		6.20	
Top Width (ft)	21.83	Top Width (ft)		21.83	
Vel Total (ft/s)	2.08	Avg. Vel. (ft/s)		2.08	
Max Chl Dpth (ft)	0.19	Hydr. Depth (ft)		0.14	
Conv. Total (cfs)	42.6	Conv. (cfs)		42.6	
Length Wtd. (ft)	150.00	Wetted Per. (ft)		21.84	
Min Ch El (ft)	7074.10	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.38	
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	0.01	0.20	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	1.26	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3100 Profile: Q2

E.G. Elev (ft)	7071.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.028	
W.S. Elev (ft)	7071.38	Reach Len. (ft)	109.00	89.00	65.00
Crit W.S. (ft)	7071.33	Flow Area (sq ft)		3.69	
E.G. Slope (ft/ft)	0.008913	Area (sq ft)		3.69	
Q Total (cfs)	6.20	Flow (cfs)		6.20	
Top Width (ft)	19.53	Top Width (ft)		19.53	
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)		1.68	
Max Chl Dpth (ft)	0.28	Hydr. Depth (ft)		0.19	
Conv. Total (cfs)	65.7	Conv. (cfs)		65.7	
Length Wtd. (ft)	89.00	Wetted Per. (ft)		19.55	
Min Ch El (ft)	7071.10	Shear (lb/sq ft)		0.11	
Alpha	1.00	Stream Power (lb/ft s)		0.18	
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	0.01	0.19	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.19	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 3011 Profile: Q2

E.G. Elev (ft)	7070.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.028	
W.S. Elev (ft)	7070.19	Reach Len. (ft)	108.00	124.00	132.00
Crit W.S. (ft)	7070.19	Flow Area (sq ft)		2.91	
E.G. Slope (ft/ft)	0.020982	Area (sq ft)		2.91	
Q Total (cfs)	6.20	Flow (cfs)		6.20	
Top Width (ft)	20.49	Top Width (ft)		20.49	
Vel Total (ft/s)	2.13	Avg. Vel. (ft/s)		2.13	
Max Chl Dpth (ft)	0.19	Hydr. Depth (ft)		0.14	
Conv. Total (cfs)	42.8	Conv. (cfs)		42.8	
Length Wtd. (ft)	124.00	Wetted Per. (ft)		20.50	
Min Ch El (ft)	7070.00	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.40	
Frctn Loss (ft)	1.69	Cum Volume (acre-ft)	0.01	0.18	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	1.15	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2887 Profile: Q2

E.G. Elev (ft)	7068.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.028	
W.S. Elev (ft)	7068.22	Reach Len. (ft)	137.00	147.00	150.00
Crit W.S. (ft)	7068.18	Flow Area (sq ft)		4.09	
E.G. Slope (ft/ft)	0.009561	Area (sq ft)		4.09	
Q Total (cfs)	6.20	Flow (cfs)		6.20	
Top Width (ft)	26.56	Top Width (ft)		26.56	
Vel Total (ft/s)	1.52	Avg. Vel. (ft/s)		1.52	
Max Chl Dpth (ft)	0.22	Hydr. Depth (ft)		0.15	
Conv. Total (cfs)	63.4	Conv. (cfs)		63.4	
Length Wtd. (ft)	147.04	Wetted Per. (ft)		26.58	
Min Ch El (ft)	7068.00	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.14	
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	0.01	0.17	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.08	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2740 Profile: Q2

E.G. Elev (ft)	7066.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.028	0.040
W.S. Elev (ft)	7066.20	Reach Len. (ft)	250.00	240.00	248.00
Crit W.S. (ft)	7066.20	Flow Area (sq ft)		2.70	0.13
E.G. Slope (ft/ft)	0.020095	Area (sq ft)		2.70	0.13
Q Total (cfs)	6.20	Flow (cfs)		6.05	0.15
Top Width (ft)	18.34	Top Width (ft)		16.99	1.35
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)		2.24	1.13
Max Chl Dpth (ft)	0.20	Hydr. Depth (ft)		0.16	0.10
Conv. Total (cfs)	43.7	Conv. (cfs)		42.7	1.1
Length Wtd. (ft)	240.27	Wetted Per. (ft)		16.99	1.36
Min Ch El (ft)	7066.00	Shear (lb/sq ft)		0.20	0.12
Alpha	1.03	Stream Power (lb/ft s)		0.45	0.14
Frctn Loss (ft)	5.16	Cum Volume (acre-ft)	0.01	0.16	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	1.01	0.04

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2500 Profile: Q2

E.G. Elev (ft)	7061.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.028	0.040
W.S. Elev (ft)	7061.00	Reach Len. (ft)	182.00	174.00	176.00
Crit W.S. (ft)	7061.01	Flow Area (sq ft)		2.24	0.22
E.G. Slope (ft/ft)	0.023044	Area (sq ft)		2.24	0.22
Q Total (cfs)	6.20	Flow (cfs)		5.93	0.27
Top Width (ft)	14.44	Top Width (ft)		12.22	2.22
Vel Total (ft/s)	2.52	Avg. Vel. (ft/s)		2.65	1.22
Max Chl Dpth (ft)	0.20	Hydr. Depth (ft)		0.18	0.10
Conv. Total (cfs)	40.8	Conv. (cfs)		39.0	1.8
Length Wtd. (ft)	174.07	Wetted Per. (ft)		12.23	2.23
Min Ch El (ft)	7060.80	Shear (lb/sq ft)		0.26	0.14
Alpha	1.07	Stream Power (lb/ft s)		0.70	0.18
Frctn Loss (ft)	3.88	Cum Volume (acre-ft)	0.01	0.15	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	0.93	0.03

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2326 Profile: Q2

E.G. Elev (ft)	7057.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.028	0.040
W.S. Elev (ft)	7057.11	Reach Len. (ft)	113.00	139.00	138.00
Crit W.S. (ft)	7057.12	Flow Area (sq ft)		2.21	0.11
E.G. Slope (ft/ft)	0.021619	Area (sq ft)		2.21	0.11
Q Total (cfs)	6.20	Flow (cfs)		6.07	0.13
Top Width (ft)	11.91	Top Width (ft)		10.87	1.04
Vel Total (ft/s)	2.67	Avg. Vel. (ft/s)		2.74	1.21
Max Chl Dpth (ft)	0.21	Hydr. Depth (ft)		0.20	0.11
Conv. Total (cfs)	42.2	Conv. (cfs)		41.3	0.9
Length Wtd. (ft)	138.89	Wetted Per. (ft)		10.89	1.06
Min Ch El (ft)	7056.90	Shear (lb/sq ft)		0.27	0.14
Alpha	1.04	Stream Power (lb/ft s)		0.75	0.17
Frctn Loss (ft)	2.10	Cum Volume (acre-ft)	0.01	0.14	0.00
C & E Loss (ft)	0.02	Cum SA (acres)	0.05	0.88	0.02

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2187 Profile: Q2

E.G. Elev (ft)	7054.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7054.17	Reach Len. (ft)	152.00	142.00	133.00
Crit W.S. (ft)	7054.15	Flow Area (sq ft)	0.06	3.36	0.06
E.G. Slope (ft/ft)	0.012237	Area (sq ft)	0.06	3.36	0.06
Q Total (cfs)	6.20	Flow (cfs)	0.04	6.11	0.04
Top Width (ft)	21.34	Top Width (ft)	0.67	20.00	0.67
Vel Total (ft/s)	1.79	Avg. Vel. (ft/s)	0.77	1.82	0.77
Max Chl Dpth (ft)	0.17	Hydr. Depth (ft)	0.08	0.17	0.08
Conv. Total (cfs)	56.0	Conv. (cfs)	0.4	55.3	0.4
Length Wtd. (ft)	142.27	Wetted Per. (ft)	0.69	20.00	0.69
Min Ch El (ft)	7054.00	Shear (lb/sq ft)	0.06	0.13	0.06
Alpha	1.03	Stream Power (lb/ft s)	0.05	0.23	0.05
Frctn Loss (ft)	1.90	Cum Volume (acre-ft)	0.01	0.13	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	0.83	0.02

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 2045 Profile: Q2

E.G. Elev (ft)	7052.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.040	0.028	
W.S. Elev (ft)	7052.23	Reach Len. (ft)	180.00	146.00	152.00
Crit W.S. (ft)	7052.21	Flow Area (sq ft)	0.32	2.57	
E.G. Slope (ft/ft)	0.014710	Area (sq ft)	0.32	2.57	
Q Total (cfs)	6.20	Flow (cfs)	0.33	5.87	
Top Width (ft)	15.26	Top Width (ft)	2.77	12.49	
Vel Total (ft/s)	2.15	Avg. Vel. (ft/s)	1.06	2.28	
Max Chl Dpth (ft)	0.23	Hydr. Depth (ft)	0.11	0.21	
Conv. Total (cfs)	51.1	Conv. (cfs)	2.8	48.4	
Length Wtd. (ft)	148.91	Wetted Per. (ft)	2.77	12.50	
Min Ch El (ft)	7052.00	Shear (lb/sq ft)	0.10	0.19	
Alpha	1.08	Stream Power (lb/ft s)	0.11	0.43	
Frctn Loss (ft)	2.65	Cum Volume (acre-ft)	0.00	0.12	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.04	0.78	0.02

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1899 Profile: Q2

E.G. Elev (ft)	7049.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7049.59	Reach Len. (ft)	136.00	129.00	118.00
Crit W.S. (ft)	7049.59	Flow Area (sq ft)	0.78	4.41	0.11
E.G. Slope (ft/ft)	0.019999	Area (sq ft)	0.78	4.41	0.11
Q Total (cfs)	11.00	Flow (cfs)	1.12	9.81	0.07
Top Width (ft)	36.07	Top Width (ft)	5.48	28.13	2.47
Vel Total (ft/s)	2.07	Avg. Vel. (ft/s)	1.44	2.22	0.64
Max Chl Dpth (ft)	0.29	Hydr. Depth (ft)	0.14	0.16	0.04
Conv. Total (cfs)	77.8	Conv. (cfs)	8.0	69.3	0.5
Length Wtd. (ft)	129.34	Wetted Per. (ft)	5.48	28.14	2.47
Min Ch El (ft)	7049.30	Shear (lb/sq ft)	0.18	0.20	0.05
Alpha	1.07	Stream Power (lb/ft s)	0.26	0.44	0.03
Frctn Loss (ft)	2.84	Cum Volume (acre-ft)	0.00	0.11	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.03	0.71	0.01

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1770 Profile: Q2

E.G. Elev (ft)	7046.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7046.74	Reach Len. (ft)	185.00	181.00	227.00
Crit W.S. (ft)	7046.75	Flow Area (sq ft)	0.15	4.73	0.06
E.G. Slope (ft/ft)	0.024289	Area (sq ft)	0.15	4.73	0.06
Q Total (cfs)	11.00	Flow (cfs)	0.15	10.79	0.06
Top Width (ft)	36.52	Top Width (ft)	2.16	33.50	0.86
Vel Total (ft/s)	2.23	Avg. Vel. (ft/s)	0.99	2.28	0.98
Max Chl Dpth (ft)	0.14	Hydr. Depth (ft)	0.07	0.14	0.07
Conv. Total (cfs)	70.6	Conv. (cfs)	1.0	69.2	0.4
Length Wtd. (ft)	181.17	Wetted Per. (ft)	2.16	33.50	0.87
Min Ch El (ft)	7046.60	Shear (lb/sq ft)	0.11	0.21	0.11
Alpha	1.03	Stream Power (lb/ft s)	0.11	0.49	0.10
Frctn Loss (ft)	4.61	Cum Volume (acre-ft)	0.00	0.09	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.01	0.62	0.01

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1589 Profile: Q2

E.G. Elev (ft)	7042.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7042.14	Reach Len. (ft)	227.00	235.00	218.00
Crit W.S. (ft)	7042.15	Flow Area (sq ft)	0.01	5.36	0.01
E.G. Slope (ft/ft)	0.026737	Area (sq ft)	0.01	5.36	0.01
Q Total (cfs)	11.00	Flow (cfs)	0.00	10.99	0.01
Top Width (ft)	48.93	Top Width (ft)	0.34	48.00	0.59
Vel Total (ft/s)	2.04	Avg. Vel. (ft/s)	0.47	2.05	0.48
Max Chl Dpth (ft)	0.14	Hydr. Depth (ft)	0.02	0.11	0.02
Conv. Total (cfs)	67.3	Conv. (cfs)	0.0	67.2	0.0
Length Wtd. (ft)	234.94	Wetted Per. (ft)	0.34	48.00	0.59
Min Ch El (ft)	7042.00	Shear (lb/sq ft)	0.04	0.19	0.04
Alpha	1.01	Stream Power (lb/ft s)	0.02	0.38	0.02
Frctn Loss (ft)	3.54	Cum Volume (acre-ft)	0.00	0.07	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.01	0.45	0.01

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1354 Profile: Q2

E.G. Elev (ft)	7038.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.040	0.028	
W.S. Elev (ft)	7038.06	Reach Len. (ft)	141.00	145.00	164.00
Crit W.S. (ft)	7038.01	Flow Area (sq ft)	0.17	4.74	
E.G. Slope (ft/ft)	0.010080	Area (sq ft)	0.17	4.74	
Q Total (cfs)	11.00	Flow (cfs)	0.16	10.84	
Top Width (ft)	18.62	Top Width (ft)	1.29	17.32	
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)	0.94	2.29	
Max Chl Dpth (ft)	0.36	Hydr. Depth (ft)	0.13	0.27	
Conv. Total (cfs)	109.6	Conv. (cfs)	1.6	108.0	
Length Wtd. (ft)	145.00	Wetted Per. (ft)	1.32	17.34	
Min Ch El (ft)	7037.70	Shear (lb/sq ft)	0.08	0.17	
Alpha	1.03	Stream Power (lb/ft s)	0.07	0.39	
Frctn Loss (ft)	1.96	Cum Volume (acre-ft)	0.00	0.04	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.28	0.00

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1209 Profile: Q2

E.G. Elev (ft)	7036.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7036.12	Reach Len. (ft)	35.00	36.00	32.00
Crit W.S. (ft)	7036.12	Flow Area (sq ft)	0.03	6.18	0.05
E.G. Slope (ft/ft)	0.019012	Area (sq ft)	0.03	6.18	0.05
Q Total (cfs)	11.00	Flow (cfs)	0.03	10.93	0.04
Top Width (ft)	54.92	Top Width (ft)	0.58	53.40	0.94
Vel Total (ft/s)	1.76	Avg. Vel. (ft/s)	0.76	1.77	0.76
Max Chl Dpth (ft)	0.12	Hydr. Depth (ft)	0.06	0.12	0.06
Conv. Total (cfs)	79.8	Conv. (cfs)	0.2	79.3	0.3
Length Wtd. (ft)	35.97	Wetted Per. (ft)	0.59	53.40	0.94
Min Ch El (ft)	7036.00	Shear (lb/sq ft)	0.07	0.14	0.07
Alpha	1.01	Stream Power (lb/ft s)	0.05	0.24	0.05
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	0.00	0.03	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.16	0.00

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1173 Profile: Q2

E.G. Elev (ft)	7035.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.040	0.028	0.040
W.S. Elev (ft)	7035.14	Reach Len. (ft)	50.00	51.00	50.00
Crit W.S. (ft)	7035.16	Flow Area (sq ft)	0.04	4.06	0.11
E.G. Slope (ft/ft)	0.035152	Area (sq ft)	0.04	4.06	0.11
Q Total (cfs)	11.00	Flow (cfs)	0.04	10.83	0.13
Top Width (ft)	32.17	Top Width (ft)	0.56	30.00	1.61
Vel Total (ft/s)	2.62	Avg. Vel. (ft/s)	1.13	2.67	1.15
Max Chl Dpth (ft)	0.14	Hydr. Depth (ft)	0.07	0.14	0.07
Conv. Total (cfs)	58.7	Conv. (cfs)	0.2	57.8	0.7
Length Wtd. (ft)	50.99	Wetted Per. (ft)	0.58	30.00	1.62
Min Ch El (ft)	7035.00	Shear (lb/sq ft)	0.14	0.30	0.15
Alpha	1.03	Stream Power (lb/ft s)	0.16	0.79	0.17
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.00	0.02	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.12	0.00

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1122 Profile: Q2

E.G. Elev (ft)	7034.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.		0.065	
W.S. Elev (ft)	7034.26	Reach Len. (ft)	24.00	24.00	24.00
Crit W.S. (ft)	7034.16	Flow Area (sq ft)		8.13	
E.G. Slope (ft/ft)	0.021953	Area (sq ft)		8.13	
Q Total (cfs)	11.00	Flow (cfs)		11.00	
Top Width (ft)	32.09	Top Width (ft)		32.09	
Vel Total (ft/s)	1.35	Avg. Vel. (ft/s)		1.35	
Max Chl Dpth (ft)	0.26	Hydr. Depth (ft)		0.25	
Conv. Total (cfs)	74.2	Conv. (cfs)		74.2	
Length Wtd. (ft)	24.00	Wetted Per. (ft)		32.16	
Min Ch El (ft)	7034.00	Shear (lb/sq ft)		0.35	
Alpha	1.00	Stream Power (lb/ft s)		0.47	
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.01	Cum SA (acres)		0.09	

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1098 Profile: Q2

E.G. Elev (ft)	7033.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.065	
W.S. Elev (ft)	7033.16	Reach Len. (ft)	99.00	98.00	100.00
Crit W.S. (ft)	7033.16	Flow Area (sq ft)		4.79	
E.G. Slope (ft/ft)	0.123637	Area (sq ft)		4.79	
Q Total (cfs)	11.00	Flow (cfs)		11.00	
Top Width (ft)	31.25	Top Width (ft)		31.25	
Vel Total (ft/s)	2.30	Avg. Vel. (ft/s)		2.30	
Max Chl Dpth (ft)	0.16	Hydr. Depth (ft)		0.15	
Conv. Total (cfs)	31.3	Conv. (cfs)		31.3	
Length Wtd. (ft)		Wetted Per. (ft)		31.29	
Min Ch El (ft)	7033.00	Shear (lb/sq ft)		1.18	
Alpha	1.00	Stream Power (lb/ft s)		2.71	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.01	
C & E Loss (ft)		Cum SA (acres)		0.07	

Plan: Plan 02 POND F-G CHANNEL MAIN CHANNEL RS: 1000 Profile: Q2

E.G. Elev (ft)	7026.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.065	
W.S. Elev (ft)	7026.59	Reach Len. (ft)			
Crit W.S. (ft)	7026.56	Flow Area (sq ft)		5.78	
E.G. Slope (ft/ft)	0.066570	Area (sq ft)		5.78	
Q Total (cfs)	11.00	Flow (cfs)		11.00	
Top Width (ft)	31.50	Top Width (ft)		31.50	
Vel Total (ft/s)	1.90	Avg. Vel. (ft/s)		1.90	
Max Chl Dpth (ft)	0.19	Hydr. Depth (ft)		0.18	
Conv. Total (cfs)	42.6	Conv. (cfs)		42.6	
Length Wtd. (ft)		Wetted Per. (ft)		31.55	
Min Ch El (ft)	7026.40	Shear (lb/sq ft)		0.76	
Alpha	1.00	Stream Power (lb/ft s)		1.45	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

HEC-RAS CROSS SECTION MAP

POND F - POND G CHANNEL

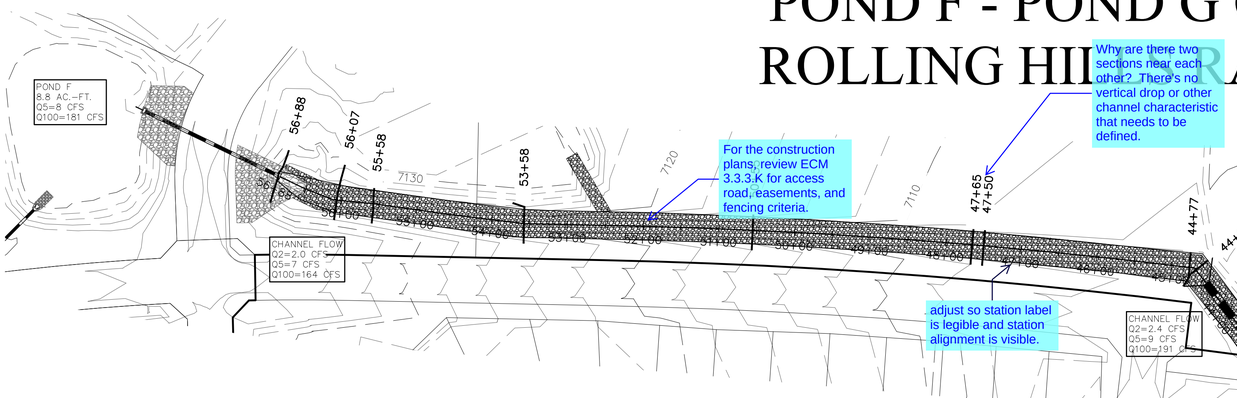
ROLLING HILLS RANCH PUD

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

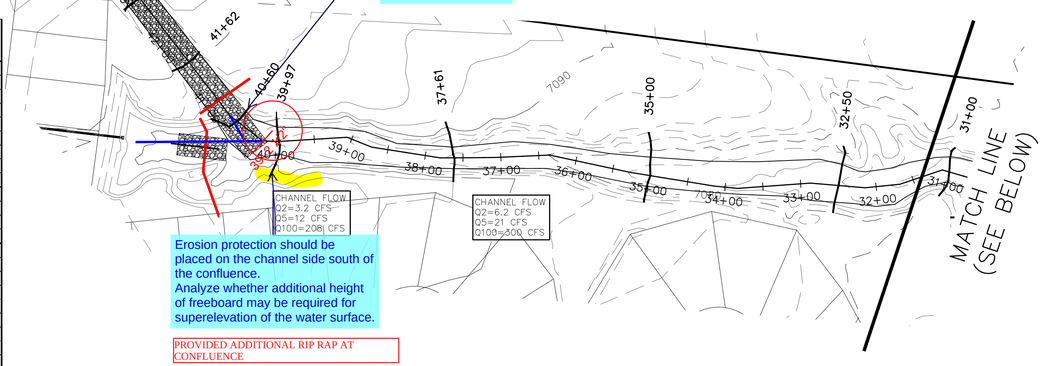
1 inch = 100 ft.



Why are there two sections near each other? There's no vertical drop or other channel characteristic that needs to be defined.

For the construction plans, review ECM 3.3.3.K for access road, easements, and fencing criteria.

adjust so station label is legible and station alignment is visible.



Adjust cross section. Provide a junction and model incoming flow to the west

Erosion protection should be placed on the channel side south of the confluence.
Analyze whether additional height of freeboard may be required for superelevation of the water surface.

PROVIDED ADDITIONAL RIP RAP AT CONFLUENCE

station does not match the plan view (40+60)

	River Sta	Profile	Q Total	Depth of Flow	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIP-RAP LINED	5688	Q100	164	1.6	7125.5	7127.1	7127.0	7127.4	0.0397	4.5	36.6	39.0	0.80
	5607	Q100	164	1.5	7124.0	7125.5		7125.7	0.0126	3.1	53.1	44.7	0.47
	5558	Q100	164	2.1	7123.0	7125.1		7125.2	0.0081	2.8	58.4	36.6	0.39
	5358	Q100	164	1.7	7121.0	7122.7	7122.2	7122.9	0.0176	3.7	44.9	33.4	0.56
	5055	Q100	164	1.2	7112.0	7113.2	7113.2	7113.7	0.0643	5.7	29.0	29.7	1.01
	4765	Q100	164	2.0	7104.0	7106.0	7105.2	7106.1	0.0095	3.0	55.5	35.9	0.42
	4750	Q100	164	1.9	7103.9	7105.8		7106.0	0.0108	3.1	53.1	35.4	0.44
	4477	Q100	191	2.2	7101.1	7103.3		7103.4	0.0083	3.0	63.6	38.5	0.40
	4469	Q100	191	2.2	7101.0	7103.2		7103.3	0.0081	3.0	64.6	38.9	0.40
	4269	Q100	191	1.8	7099.0	7100.8		7101.1	0.0175	3.8	50.0	34.6	0.56
	4162	Q100	191	1.3	7096.0	7097.3	7097.3	7097.8	0.0620	5.9	32.3	30.3	1.01
	4087	Q100	191	1.1	7089.3	7090.4	7090.5	7091.0	0.0726	5.8	32.9	35.8	1.07
	3997	Q100	208	1.8	7086.0	7087.8	7087.4	7088.1	0.0089	4.6	49.2	35.8	0.63
NATURAL SANDY BOTTOM	3761	Q100	300	2.0	7082.0	7084.0	7084.0	7084.8	0.0196	7.7	44.7	28.7	0.97
	3500	Q100	300	2.0	7077.5	7079.5	7079.3	7080.0	0.0137	6.0	58.7	45.9	0.79
	3250	Q100	300	1.4	7074.1	7075.5	7075.5	7076.1	0.0175	6.2	52.6	49.1	0.96
	3100	Q100	300	1.9	7071.1	7073.0	7072.9	7073.6	0.0134	6.8	52.8	38.4	0.89
	3011	Q100	300	1.7	7070.0	7071.7	7071.7	7072.3	0.0158	6.9	53.8	45.9	0.95
	2887	Q100	300	1.6	7068.0	7069.6	7069.4	7070.0	0.0132	5.8	58.3	50.9	0.85
	2740	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]7.4	7067.6	0.0192	3.5	85.9	166.1	0.87
	2500	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]2.2	7062.7	0.0217	5.8	57.2	63.1	1.03
	2326	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]3.4	7058.8	0.0225	5.4	62.7	87.3	1.02
	2187	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]5.8	7056.4	0.0140	6.9	58.3	60.1	0.91
	2045	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]5.6	7054.1	0.0146	5.3	66.8	70.4	0.86
	1899	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]5.9	7051.4	0.0191	7.0	93.6	86.7	1.02
	1770	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]8.3	7048.9	0.0197	7.5	80.6	70.4	1.06
	1589	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]3.4	7044.1	0.0354	8.2	67.1	70.3	1.34
	1354	Q100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]6.7	7040.4	0.0165	7.1	79.8	61.1	0.97
	1209	Q100	493	1.6	7036.0	7037.6	7037.3	7038.0	0.0107	5.5	98.2	73.7	0.78
	1173	Q100	493	2.0	7035.0	7037.0		7037.6	0.0109	6.6	88.1	53.2	0.82
RIP-RAP	1122	Q100	493	2.1	7034.0	7036.1		7036.7	0.0344	6.1	80.7	46.9	0.81
	1098	Q100	493	1.9	7033.0	7034.9	7034.9	7035.6	0.0544	7.1	69.5	44.9	1.00
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]28.0	7028.3	7029.1	0.0837	8.2	60.1	43.2	1.22

This chart is for a 'naturalized' manufactured/designed channel not a natural sandy bottom arroyo. These design parameters assume a small main channel that carries the more frequent smaller storms and vegetated overbanks that carry the less frequent larger storms. The sandy bottom arroyos in Meridian Ranch have flatter bottoms with no vegetated overbanks that carry the larger storms. All design storms stay within the steep stream embankments.

Table 8-3. Design parameters for naturalized channels

Design Parameter	Design Value
Maximum 100-year depth outside of bankfull channel	5 ft
Roughness values	Per Table 8-5
Maximum 5-year velocity, main channel (within bankfull channel width) (ft/s)	5 ft/s
Maximum 100-year velocity, main channel (within bankfull channel width) (ft/s)	7 ft/s
Froude No., 5-year, main channel (within bankfull channel width)	0.7
Froude No., 100-year, main channel (within bankfull channel width)	0.8
Maximum shear stress, 100-year, main channel (within bankfull channel width)	1.2 lb/sf
Minimum bankfull capacity of bankfull channel (based on future development conditions)	70% of 2-year discharge or 10% of 100-yr discharge, whichever is greater[1]
Minimum bankfull channel geometry	Per Table 8-2
Minimum bankfull channel width/depth ratio (Equation 8-3)	9
Minimum entrenchment ratio (Equation 8-4)	3
Maximum longitudinal slope of low flow channel (assuming unlined, unvegetated low flow channel)	0.2 percent
Bankfull channel sinuosity (Equation 8-5)	1.1 to 1.3
Maximum overbank side slope	4(H):1(V)
Maximum bankfull side slope	2.5(H):1(V)
Minimum radius of curvature	2.5 times top width

[1]Roughly equivalent to a 1.5-year event based on extrapolation of regional data.

	River Sta	Profile	Q Total	Depth of Flow	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIP-RAP LINED	5688	Q2	2.0	0.32	7125.50	7125.82	7125.65	7125.83	0.0083	0.9	2.3	8.3	0.29
	5607	Q2	2.0	0.06	7124.00	7124.06	7124.06	7124.09	0.1219	1.3	1.6	25.8	0.89
	5558	Q2	2.0	0.21	7123.00	7123.21	7123.07	7123.21	0.0036	0.5	4.3	21.7	0.18
	5358	Q2	2.0	0.07	7121.00	7121.07	7121.07	7121.10	0.1263	1.4	1.5	20.6	0.92
	5055	Q2	2.0	0.06	7112.00	7112.06	7112.06	7112.10	0.1768	1.5	1.3	20.5	1.07
	4765	Q2	2.0	0.18	7104.00	7104.18	7104.07	7104.18	0.0063	0.6	3.6	21.4	0.24
	4750	Q2	2.0	0.15	7103.90	7104.05		7104.05	0.0111	0.7	3.0	21.2	0.31
	4477	Q2	2.4	0.17	[illegible]	[illegible]		7101.28	0.0098	0.7	3.5	21.4	0.30
	4469	Q2	2.4	0.19	[illegible]	[illegible]	[illegible]08	7101.20	0.0063	0.6	4.1	21.7	0.24
	4269	Q2	2.4	0.14	[illegible]	[illegible]	[illegible]07	7099.15	0.0201	0.9	2.8	21.1	0.41
	4162	Q2	2.4	0.11	[illegible]	7096.11		7096.13	0.0422	1.1	2.3	20.9	0.57
	4087	Q2	2.4	0.08	7089.30	7089.38	7089.38	7089.41	0.1168	1.4	1.7	21.4	0.90
	3997	Q2	3.2	0.22	7086.00	7086.22	7086.15	7086.24	0.0082	1.1	2.8	19.8	0.53
NATURAL SANDY BOTTOM	3761	Q2	6.2	0.16	7082.00	7082.16	7082.16	7082.24	0.0278	2.3	2.8	17.3	0.99
	3500	Q2	6.2	0.34	7077.50	7077.84	7077.76	7077.88	0.0100	1.6	3.8	17.6	0.62
	3250	Q2	6.2	0.19	7074.10	7074.29	7074.29	7074.35	0.0212	2.1	3.0	21.8	0.99
	3100	Q2	6.2	0.28	7071.10	7071.38	7071.33	7071.42	0.0089	1.7	3.7	19.5	0.68
	3011	Q2	6.2	0.19	7070.00	7070.19	7070.19	7070.26	0.0210	2.1	2.9	20.5	1.00
	2887	Q2	6.2	0.22	7068.00	7068.22	7068.18	7068.26	0.0096	1.5	4.1	26.6	0.68
	2740	Q2	6.2	0.20	7066.00	7066.20	7066.20	7066.28	0.0201	2.2	2.8	18.3	0.99
	2500	Q2	6.2	0.20	7060.80	7061.00	7061.01	7061.11	0.0230	2.7	2.5	14.4	1.09
	2326	Q2	6.2	0.21	7056.90	7057.11	7057.12	7057.23	0.0216	2.7	2.3	11.9	1.07
	2187	Q2	6.2	0.17	7054.00	7054.17	7054.15	7054.22	0.0122	1.8	3.5	21.3	0.78
	2045	Q2	6.2	0.23	7052.00	7052.23	7052.21	7052.31	0.0147	2.3	2.9	15.3	0.89
	1899	Q2	11	0.29	7049.30	7049.59	7049.59	7049.66	0.0200	2.2	5.3	36.1	0.99
	1770	Q2	11	0.14	7046.60	7046.74	7046.75	7046.82	0.0243	2.3	4.9	36.5	1.07
	1589	Q2	11	0.14	7042.00	7042.14	7042.15	7042.21	0.0267	2.1	5.4	48.9	1.08
	1354	Q2	11	0.36	7037.70	7038.06	7038.01	7038.14	0.0101	2.3	4.9	18.6	0.77
	1209	Q2	11	0.12	7036.00	7036.12	7036.12	7036.16	0.0190	1.8	6.3	54.9	0.92
	1173	Q2	11	0.14	7035.00	7035.14	7035.16	7035.25	0.0352	2.7	4.2	32.2	1.28
RIP-RAP	1122	Q2	11	0.26	7034.00	7034.26	7034.16	7034.29	0.0220	1.4	8.1	32.1	0.47
	1098	Q2	11	0.16	7033.00	7033.16	7033.16	7033.24	0.1236	2.3	4.8	31.3	1.04
	1000	Q2	11	0.19	7026.40	7026.59	7026.56	7026.64	0.0666	1.9	5.8	31.5	0.78

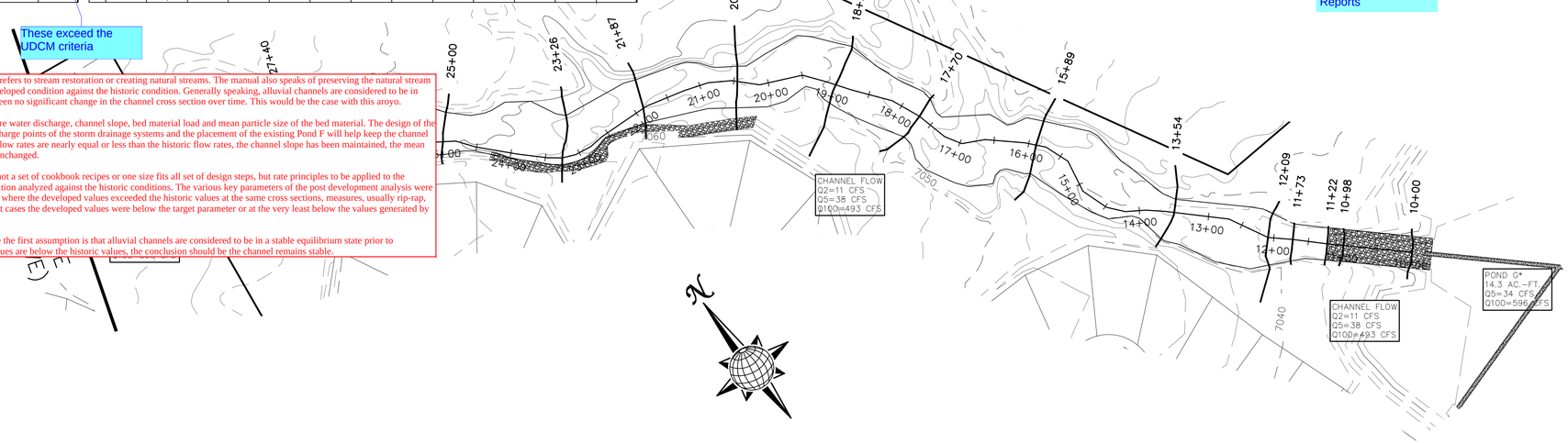
These exceed the UDCM criteria

Much of the MHFD criteria in Chapter 8 refers to stream restoration or creating natural streams. The manual also speaks of preserving the natural stream corridor; modeling and analyzing the developed condition against the historic condition. Generally speaking, alluvial channels are considered to be in stable and equilibrium state if there has been no significant change in the channel cross section over time. This would be the case with this arroyo.

The four parameters of a stable channel are water discharge, channel slope, bed material load and mean particle size of the bed material. The design of the surrounding development, the future discharge points of the storm drainage systems and the placement of the existing Pond F will help keep the channel in a state of equilibrium. The developed flow rates are nearly equal or less than the historic flow rates, the channel slope has been maintained, the mean particle size of the channel bed remains unchanged.

The criteria points out the principles are not a set of cookbook recipes or one size fits all set of design steps, but rate principles to be applied to the channel reaches with the developed condition analyzed against the historic conditions. The various key parameters of the post development analysis were evaluated against the historic values. The where the developed values exceeded the historic values at the same cross sections, measures, usually rip-rap, were taken to mitigate the impact. In most cases the developed values were below the target parameter or at the very least below the values generated by the historic model.

I believe this is a correct conclusion since the first assumption is that alluvial channels are considered to be in a stable equilibrium state prior to development. If the post development values are below the historic values, the conclusion should be the channel remains stable.



Hydraulic analysis is not required with the Preliminary Drainage Report. HEC-RAS and other hydraulic calculations will be reviewed with the Final Drainage Reports

No.	Revisions	Date	Init.	Appr.	Date
-					
-					
-					
-					

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MERIDIAN RANCH

HEC RAS CROSS SECTION MAP
POND F - POND G CHANNEL
ROLLING HILLS RANCH

Drawn by TAK
Checked by RG
Date APR 2019
Scale AS SHOWN
8 of -

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