

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

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

Project Title: Fish Creek
Project File : FishCreek.prj
Run Date and Time: 5/20/2010 10:22:06 AM

Project in English units

PLAN DATA

Plan Title: 2009-08-06
Plan File : K:\Projects\088549\Civil\01_Hydraulic Study of Fish Creek\HEC-RAS\FishCreek.p01

Geometry Title: Existing Conditions
Geometry File : K:\Projects\088549\Civil\01_Hydraulic Study of Fish
Creek\HEC-RAS\FishCreek.g01

Flow Title : 2009-08-06
Flow File : K:\Projects\088549\Civil\01_Hydraulic Study of Fish
Creek\HEC-RAS\FishCreek.f02

Plan Summary Information:

Number of:	Cross Sections =	16	Multiple Openings =	0
	Culverts =	0	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.01
Critical depth calculation tolerance =	0.01
Maximum number of iterations =	20
Maximum difference tolerance =	0.3
Flow tolerance factor =	0.001

Computation Options

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

FLOW DATA

Flow Title: 2009-08-06
Flow File : K:\Projects\088549\Civil\01_Hydraulic Study of Fish Creek\HEC-RAS\FishCreek.f02

Flow Data (cfs)

River	Reach	RS	PF 1
Fish Creek	Main	33200	1074

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Fish Creek	Main	PF 1		Known WS = 201.7

GEOMETRY DATA

Geometry Title: Existing Conditions
 Geometry File : K:\Projects\088549\Civil\01_Hydraulic Study of Fish Creek\HEC-RAS\FishCreek.g01

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 33200

INPUT

Description: Route 9P Bridge

Station	Elevation	Data	num=	11						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
-630	214	-620	204	-530	194	-350	180	-165	177	
0	178	110	179	265	183	410	198	600	204	
610	214									

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
-630 .07	-630 .055	610 .07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-630	610	6400	6400	.1	.3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 26800

INPUT

Description:

Station	Elevation	Data	num=	9					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-335	214	-325	204	-156	198	-46	197	0	195
143	191	254	199	327	204	337	214		

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
-335 .07	-335 .055	337 .07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
-335	337	2200	2200	.1	.3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 24600

INPUT

Description:

Station Elevation Data		num=		9					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-206	214	-196	204	-132	198	-65	194	0	189
50	194	100	199	210	204	220	214		

Manning's n Values		num=		3					
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
-206	.07	-206	.055	220	.07				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	-206	220		1300	1300		.1	.3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 23300

INPUT

Description: Stafford's Bridge

Station Elevation Data		num=		8					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-163	214	-153	204	-86	196	0	193	52	196
105	200	215	204	225	214				

Manning's n Values		num=		3					
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
-163	.07	-163	.055	225	.07				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	-163	225		3500	3500		.1	.3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 19800

INPUT

Description:

Station Elevation Data		num=		8					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-155	214	-145	204	-70	199	0	188	54	189
107	198	170	204	180	214				

Manning's n Values		num=		3					
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
-155	.07	-155	.055	180	.07				

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	-155	180		3200	3200		.1	.3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 16600

INPUT

Description: Railroad Crossing

Station Elevation Data		num=		7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-91	213	-81	203	-38	186	0	182	37	190
96	203	106	213						

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 -91 .07 -91 .055 106 .07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 -91 106 1500 1500 1500 .1 .3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 15100

INPUT

Description:

Station Elevation Data num= 7
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 -109 213 -99 203 -70 199 0 198 82 199
 130 203 140 213

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 -109 .07 -109 .024 140 .07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 -109 140 900 900 900 .1 .3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 14200

INPUT

Description:

Station Elevation Data num= 7
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 -75 213 -65 203 -30 199.2 0 199.2 36 199
 75 203 85 213

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 -75 .07 -75 .024 85 .07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 -75 85 400 400 400 .1 .3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 13800

INPUT

Description:

Station Elevation Data num= 7
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 -75 213 -65 203 -32 198 0 198 34 199
 78 203 88 213

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 -75 .07 -75 .024 88 .07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 -75 88 1600 1600 1600 .1 .3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 12200

INPUT

Description:

Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-56	213	-46	203	-18	193	0	192	23	193
57	203	67	213						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-56	.07	-56	.024	67	.07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-56 67 1400 1400 1400 .1 .3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 10800

INPUT

Description:

Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-79	213	-69	203	-29	194	0	199	25	200
59	203	69	213						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-79	.07	-79	.024	69	.07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-79 69 1200 1200 1200 .1 .3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 9600

INPUT

Description: Bryant's Bridge

Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-64	213	-54	203	-22	198	0	197	28	197
58	203	68	213						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
-64	.07	-64	.024	68	.07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
-64 68 1300 1300 1300 .1 .3

CROSS SECTION

RIVER: Fish Creek
REACH: Main RS: 8300

INPUT

Description:

Station Elevation Data		num=		7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-78	212	-68	202	-30	198	0	198	25	197
54	202	64	212						

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
-78	.07	-78	.024	64	.07

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	-78	64		2400	2400		.1	.3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 5900

INPUT

Description:

Station Elevation Data		num=		7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-55	212	-45	202	-26	194	0	194	28	193
61	202	71	212						

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
-55	.07	-55	.024	71	.07

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	-55	71		3100	3100		.1	.3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 2800

INPUT

Description:

Station Elevation Data		num=		7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-70	212	-60	202	-22	196	0	195	21	194
45	202	55	212						

Manning's n Values		num=		3	
Sta	n Val	Sta	n Val	Sta	n Val
-70	.07	-70	.024	55	.07

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	-70	55		2400	2400		.1	.3

CROSS SECTION

RIVER: Fish Creek
 REACH: Main RS: 400

INPUT

Description: Winnie's Reef

Station Elevation Data		num=		7					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
-55	211	-45	201	-28	194	0	194	20	194
50	201	60	211						

Manning's n Values		num=		3	
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Sta	n Val	Sta	n Val	Sta	n Val
-55	.07	-55	.024	60	.07

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	-55	60		400	400	400		.1	.3

SUMMARY OF MANNING'S N VALUES

River: Fish Creek

Reach	River Sta.	n1	n2	n3
Main	33200	.07	.055	.07
Main	26800	.07	.055	.07
Main	24600	.07	.055	.07
Main	23300	.07	.055	.07
Main	19800	.07	.055	.07
Main	16600	.07	.055	.07
Main	15100	.07	.024	.07
Main	14200	.07	.024	.07
Main	13800	.07	.024	.07
Main	12200	.07	.024	.07
Main	10800	.07	.024	.07
Main	9600	.07	.024	.07
Main	8300	.07	.024	.07
Main	5900	.07	.024	.07
Main	2800	.07	.024	.07
Main	400	.07	.024	.07

SUMMARY OF REACH LENGTHS

River: Fish Creek

Reach	River Sta.	Left	Channel	Right
Main	33200	6400	6400	6400
Main	26800	2200	2200	2200
Main	24600	1300	1300	1300
Main	23300	3500	3500	3500
Main	19800	3200	3200	3200
Main	16600	1500	1500	1500
Main	15100	900	900	900
Main	14200	400	400	400
Main	13800	1600	1600	1600
Main	12200	1400	1400	1400
Main	10800	1200	1200	1200
Main	9600	1300	1300	1300
Main	8300	2400	2400	2400
Main	5900	3100	3100	3100
Main	2800	2400	2400	2400
Main	400	400	400	400

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Fish Creek

Reach	River Sta.	Contr.	Expan.
Main	33200	.1	.3

Main	26800	.1	.3
Main	24600	.1	.3
Main	23300	.1	.3
Main	19800	.1	.3
Main	16600	.1	.3
Main	15100	.1	.3
Main	14200	.1	.3
Main	13800	.1	.3
Main	12200	.1	.3
Main	10800	.1	.3
Main	9600	.1	.3
Main	8300	.1	.3
Main	5900	.1	.3
Main	2800	.1	.3
Main	400	.1	.3

HEC-RAS Plan: 2009-08-06 River: Fish Creek Reach: Main Profile: PF 1

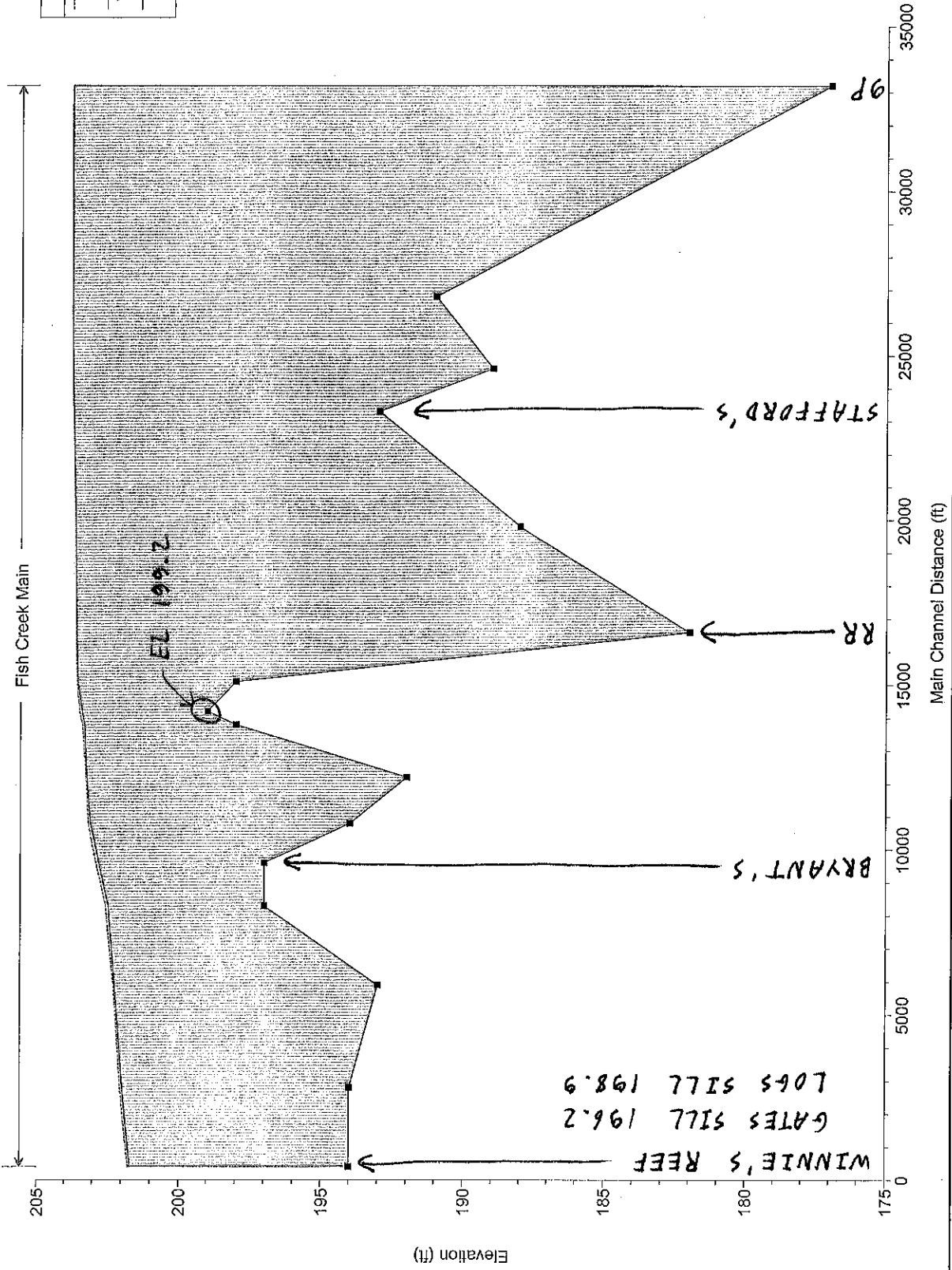
Reach	River Sta	Profile	Q Total (cfs)	W.S. Elev (ft)	Vel Chnl (ft/s)	Froude # Chl
Main	33200	PF 1	1074	203.81	0.1	0.00
Main	26800	PF 1	1074	203.80	0.3	0.02
Main	24600	PF 1	1074	203.78	0.4	0.03
Main	23300	PF 1	1074	203.75	0.5	0.04
Main	19800	PF 1	1074	203.66	0.4	0.03
Main	16600	PF 1	1074	203.61	0.5	0.02
Main	15100	PF 1	1074	203.56	1.1	0.10
Main	14200	PF 1	1074	203.40	2.4	0.23
Main	13800	PF 1	1074	203.32	2.0	0.19
Main	12200	PF 1	1074	203.23	1.4	0.09
Main	10800	PF 1	1074	203.09	2.1	0.18
Main	9600	PF 1	1074	202.81	2.4	0.22
Main	8300	PF 1	1074	202.46	2.5	0.23
Main	5900	PF 1	1074	202.25	1.5	0.11
Main	2800	PF 1	1074	201.96	2.1	0.17
Main	400	PF 1	1074	201.70	1.9	0.14

← 9P
 ← STAFFORD
 ← RR
 ← BRYANT'S
 ← WINNIE'S REEF

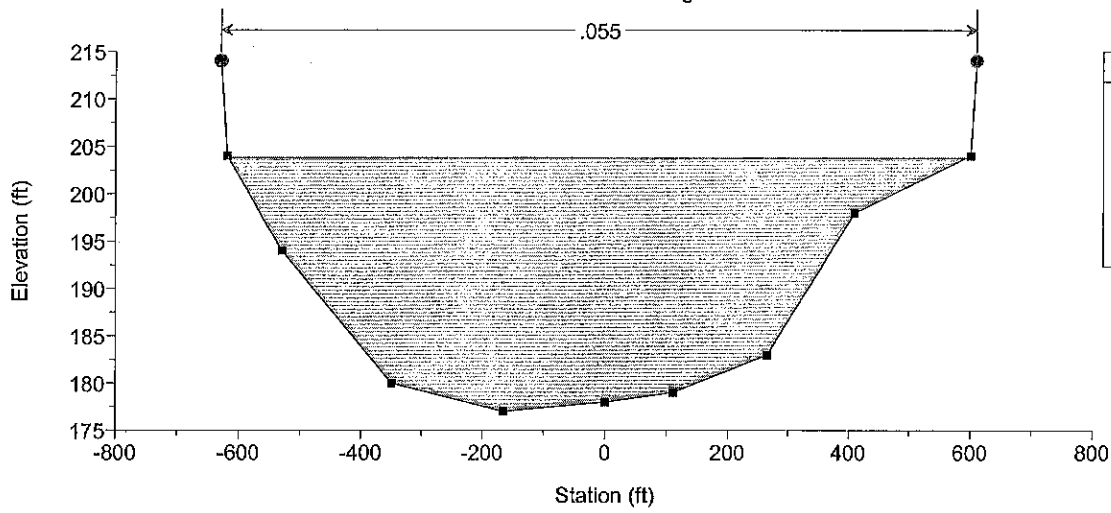
Fish Creek Plan: 2009-08-06 5/20/2010

Fish Creek Main

Legend	
EG PF 1	Ground
WS PF 1	
Ground	

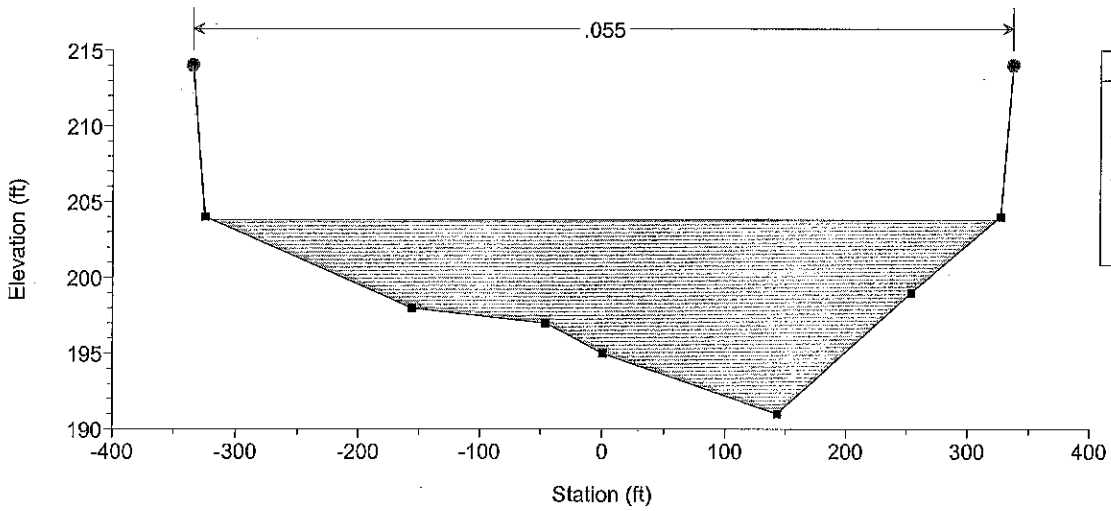


Fish Creek Plan: 2009-08-06 5/20/2010
Route 9P Bridge



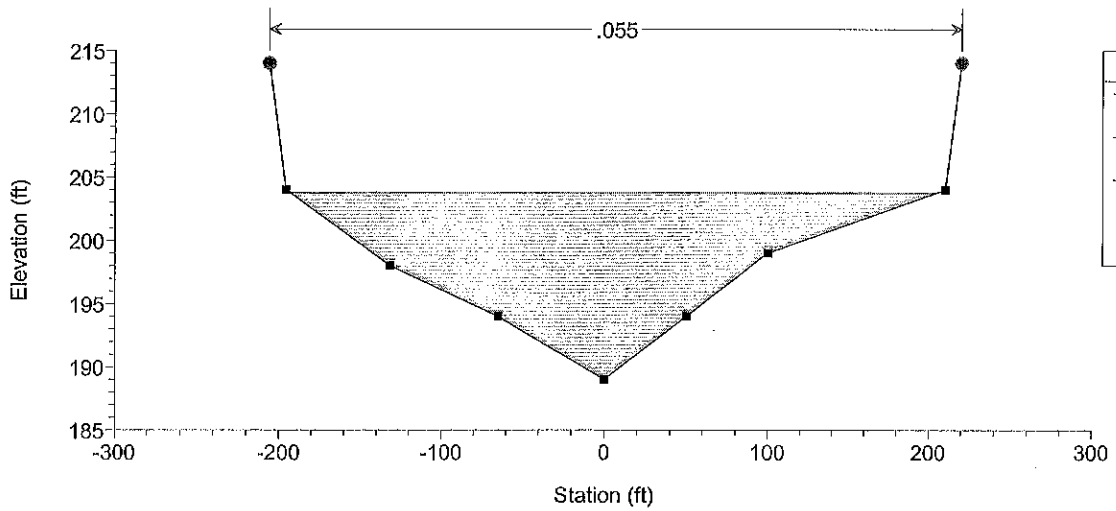
Legend	
---	EG PF 1
—	WS PF 1
■	Ground
●	Bank Sta

Fish Creek Plan: 2009-08-06 5/20/2010

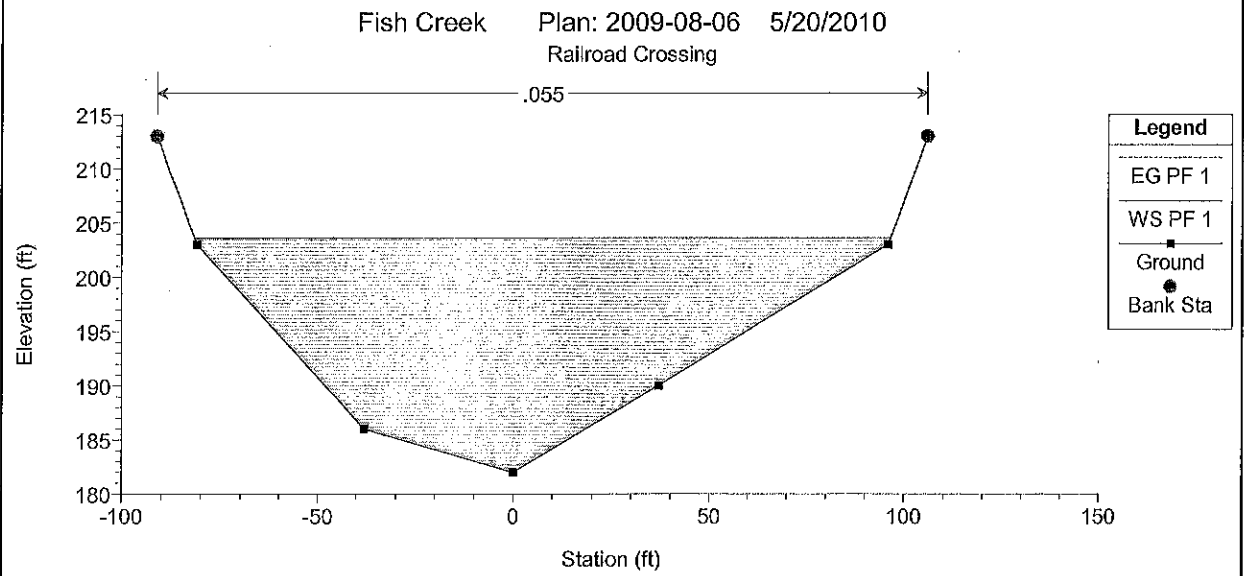
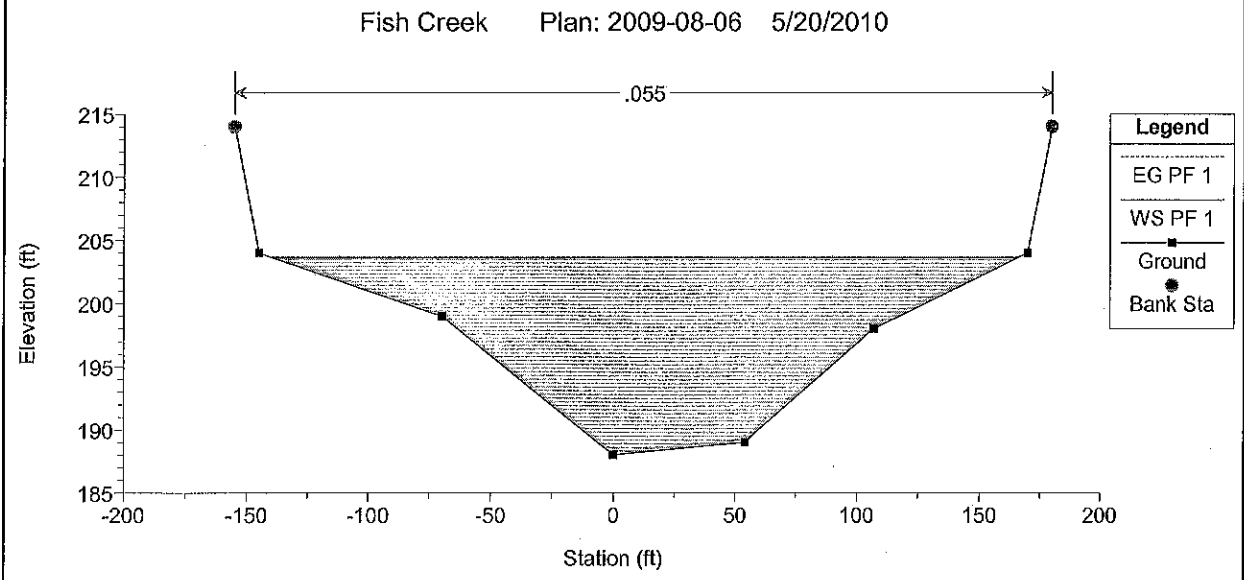
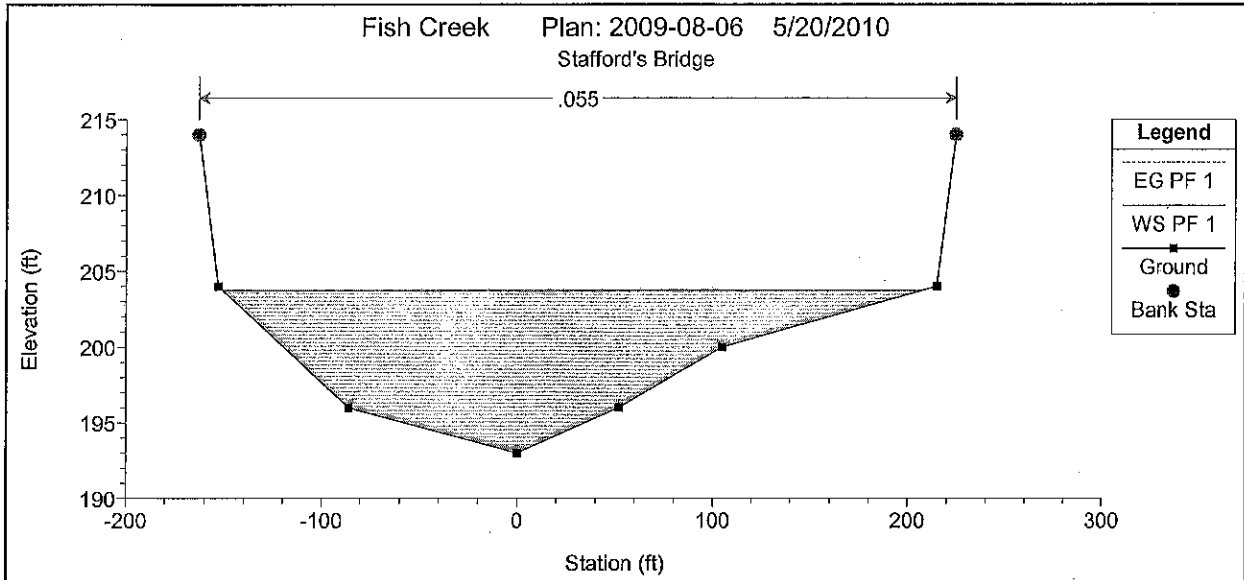


Legend	
---	EG PF 1
—	WS PF 1
■	Ground
●	Bank Sta

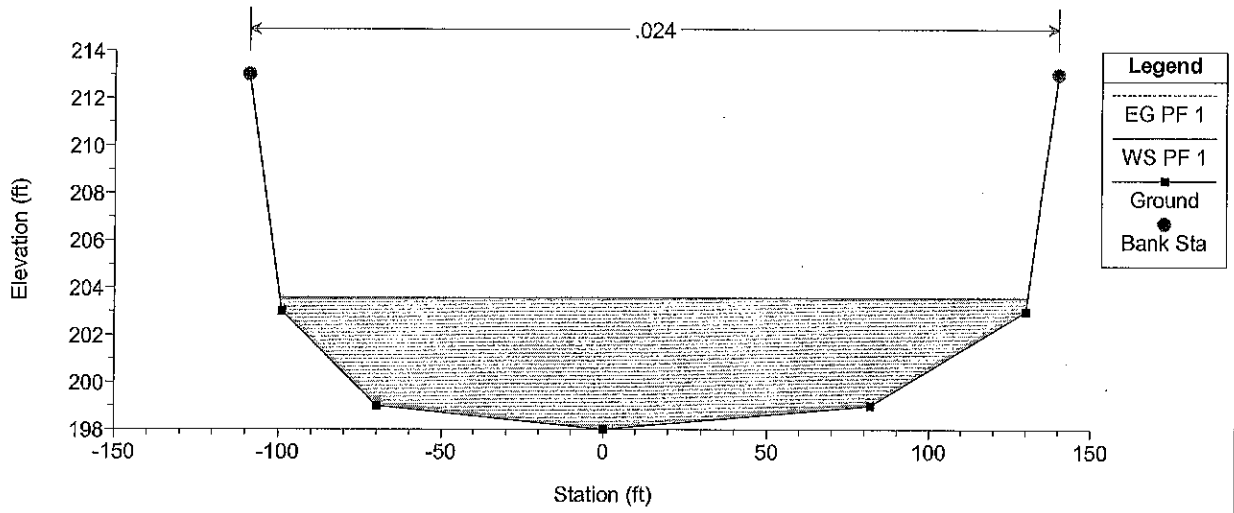
Fish Creek Plan: 2009-08-06 5/20/2010



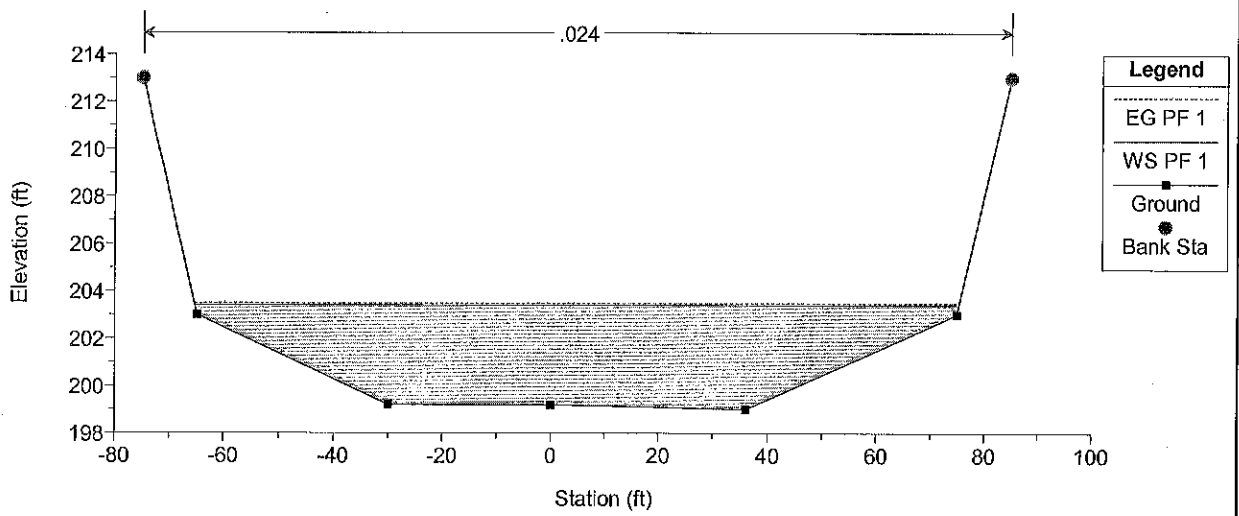
Legend	
---	EG PF 1
—	WS PF 1
■	Ground
●	Bank Sta



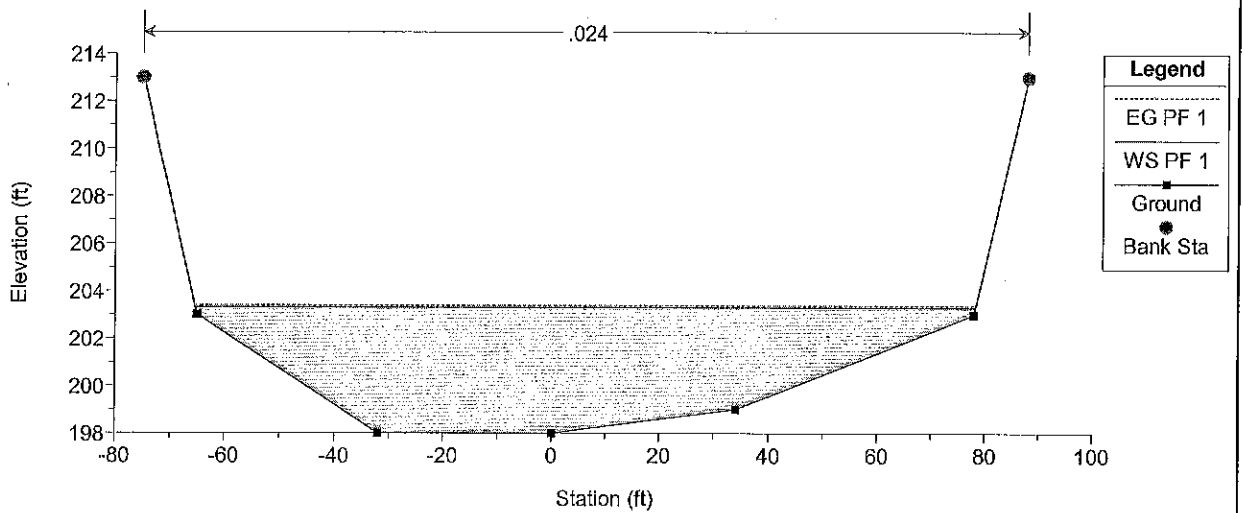
Fish Creek Plan: 2009-08-06 5/20/2010



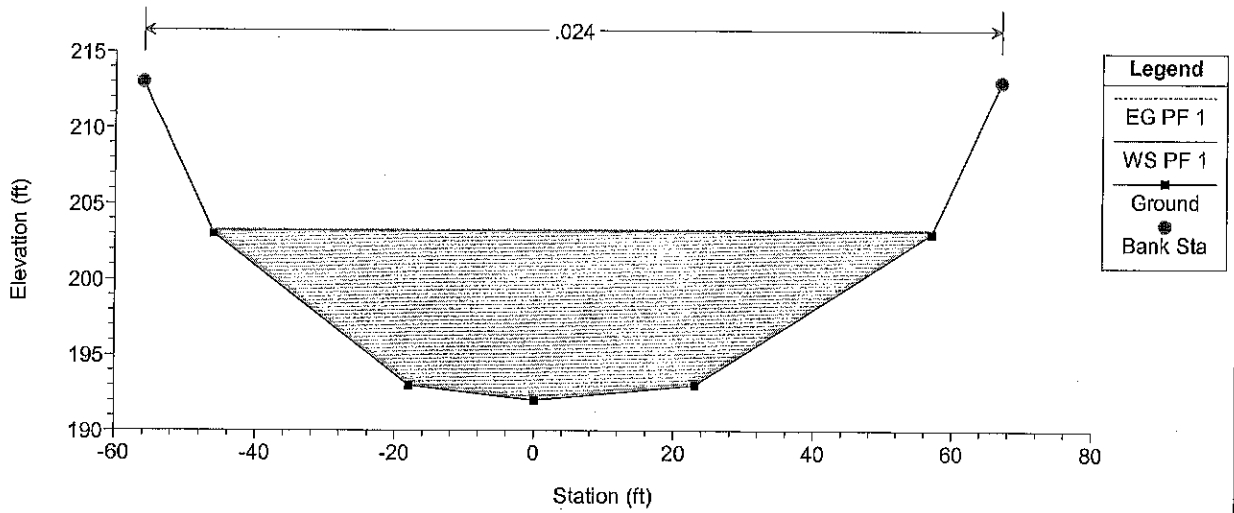
Fish Creek Plan: 2009-08-06 5/20/2010



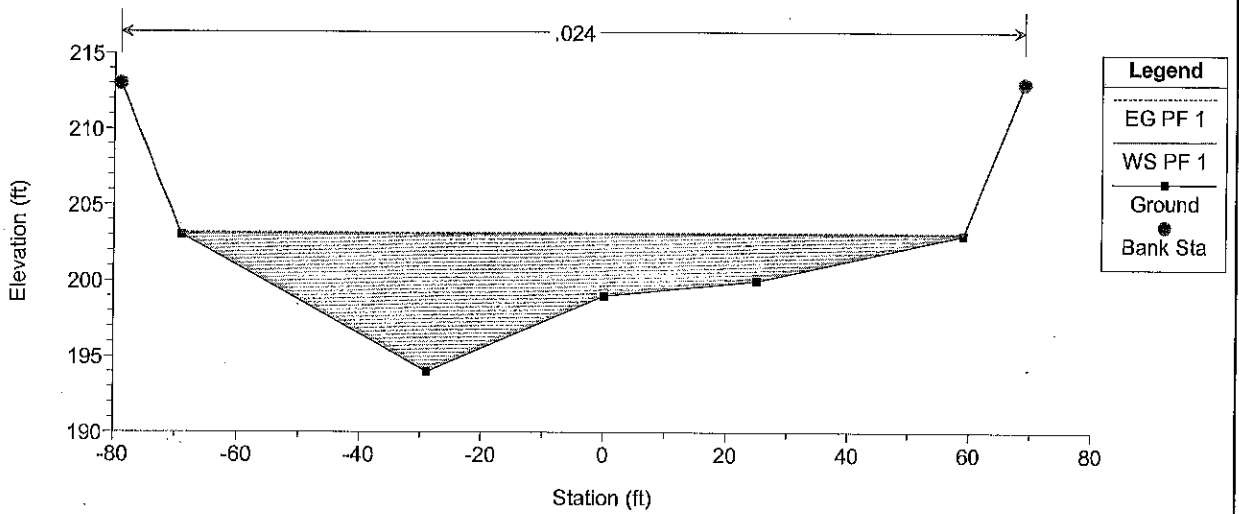
Fish Creek Plan: 2009-08-06 5/20/2010



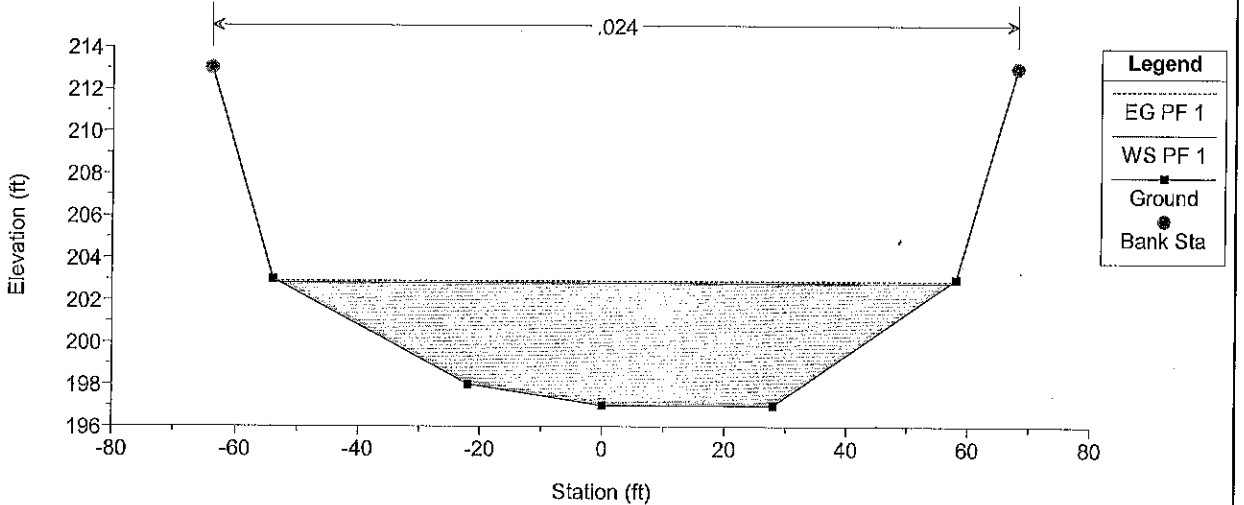
Fish Creek Plan: 2009-08-06 5/20/2010



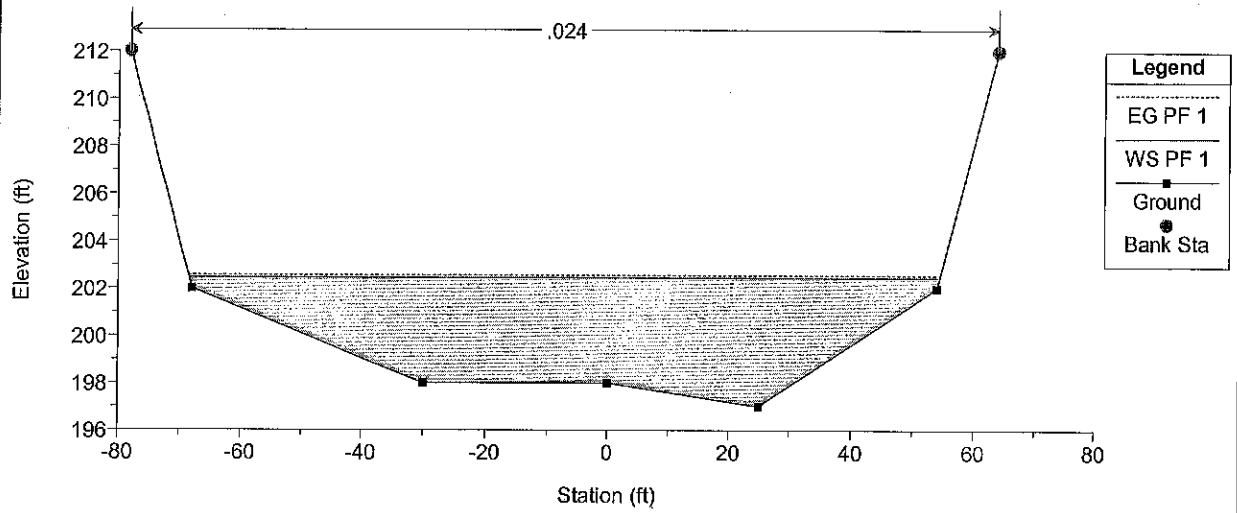
Fish Creek Plan: 2009-08-06 5/20/2010



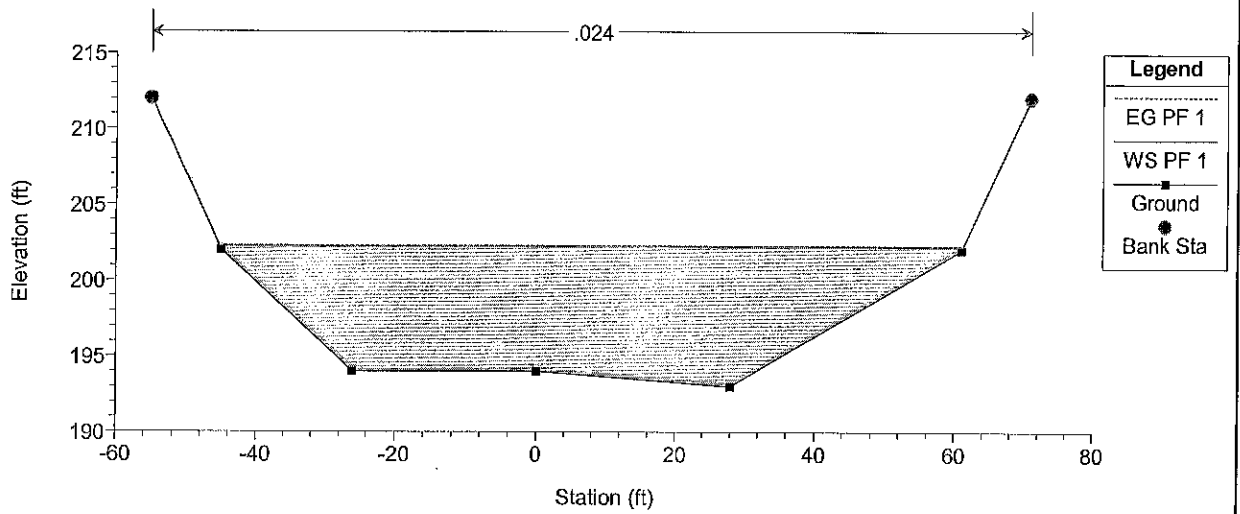
Fish Creek Plan: 2009-08-06 5/20/2010
Bryant's Bridge



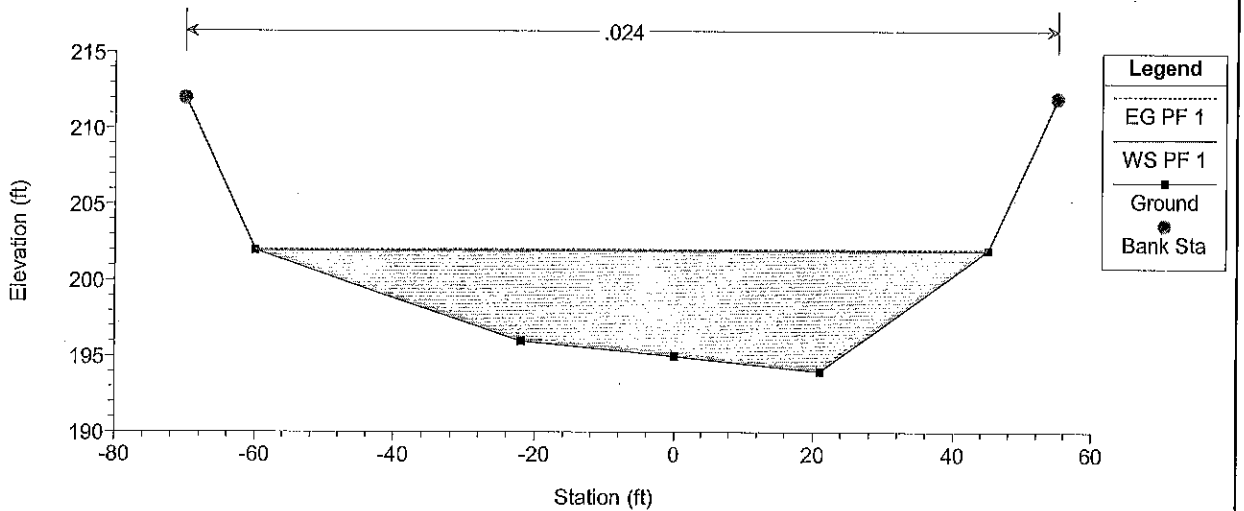
Fish Creek Plan: 2009-08-06 5/20/2010



Fish Creek Plan: 2009-08-06 5/20/2010



Fish Creek Plan: 2009-08-06 5/20/2010



Fish Creek Plan: 2009-08-06 5/20/2010
Winnie's Reef

