ROSS SECTION

RIVER: pipe3
REACH: two RS: 15

INPUT
Description:
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67	3	67	3	65.19	5	65.19	5	67
8	67								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	3	.013	5	.013

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
3	5	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100 year

			Left OB	Channel	Right OB
E.G. Elev (m)	66.43	Element			
Vel Head (m)	0.06	Wt. n-Val.		0.013	
W.S. Elev (m)	66.37	Reach Len. (m)	0.00	0.00	0.00
Crit W.S. (m)		Flow Area (m2)		2.35	
E.G. Slope (m/m)	0.000468	Area (m2)		2.35	
Q Total (m3/s)	2.60	Flow (m3/s)		2.60	
Top Width (m)	2.00	Top Width (m)		2.00	
Vel Total (m/s)	1.10	Avg. Vel. (m/s)		1.10	
Max Chl Dpth (m)	1.18	Hydr. Depth (m)		1.18	
Conv. Total (m3/s)	120.1	Conv. (m3/s)		120.1	
Length Wtd. (m)	0.00	Wetted Per. (m)		4.35	
Min Ch El (m)	65.19	Shear (N/m2)		2.48	
Alpha	1.00	Stream Power (N/m s)		2.74	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)			
C & E Loss (m)	0.00	Cum SA (1000 m2)			

ROSS SECTION

RIVER: pipe3
REACH: one RS: 14

INPUT
Description:
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67	3	67	3	64.28	5	64.28	5	67
8	67								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	3	.013	5	.013

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
3	5	198	198	198	.1	.3

CROSS SECTION OUTPUT Profile #100 year

			Left OB	Channel	Right OB
E.G. Elev (m)	66.43	Element			
Vel Head (m)	0.06	Wt. n-Val.		0.013	
W.S. Elev (m)	66.37	Reach Len. (m)	198.00	198.00	198.00
Crit W.S. (m)	65.09	Flow Area (m2)		4.17	
E.G. Slope (m/m)	0.000348	Area (m2)		4.17	
Q Total (m3/s)	4.61	Flow (m3/s)		4.61	
Top Width (m)	2.00	Top Width (m)		2.00	
Vel Total (m/s)	1.10	Avg. Vel. (m/s)		1.10	
Max Chl Dpth (m)	2.09	Hydr. Depth (m)		2.09	
Conv. Total (m3/s)	247.3	Conv. (m3/s)		247.3	
Length Wtd. (m)	198.00	Wetted Per. (m)		6.17	
Min Ch El (m)	64.28	Shear (N/m2)		2.30	
Alpha	1.00	Stream Power (N/m s)		2.54	
Frctn Loss (m)		Cum Volume (1000 m3)		1.09	
C & E Loss (m)		Cum SA (1000 m2)		0.40	

ULVERT

RIVER: pipe3
REACH: one RS: 13.5

INPUT
Description:
Distance from Upstream XS = .5

```
Deck/Roadway Width        =     197
Weir Coefficient          =    1.44
 ostream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0      67               8      67

Upstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0      67       3      67       3   64.28       5   64.28       5      67
       8      67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .013       3    .013       5    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
             3       5             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    59.5               8    59.5

Downstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    59.5       3    59.5       3   55.82       5   55.82       5    59.5
       8    59.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .013       3    .013       5    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
             3       5             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
 'aximum allowable submergence for weir flow =     .95
 levation at which weir flow begins         =      67
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular    1.37
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 .5     197     .013     .013        0                  .6                 1
Upstream   Elevation =  64.28
           Centerline Station =  4
Downstream Elevation =  55.82
           Centerline Station =  4

CULVERT OUTPUT  Profile #100 year  Culv Group:  Culvert #1

  Q Culv Group (m3/s)       4.61    Culv Full Len (m)        57.34
  # Barrels                    1    Culv Vel US (m/s)         3.13
  Q Barrel (m3/s)           4.61    Culv Vel DS (m/s)         3.13
  E.G. US. (m)             66.43    Culv Inv El Up (m)       64.28
  W.S. US. (m)             66.37    Culv Inv El Dn (m)       55.82
  E.G. DS (m)              59.28    Culv Frctn Ls (m)         6.39
  W.S. DS (m)              59.26    Culv Exit Loss (m)        0.48
  Delta EG (m)              7.15    Culv Entr Loss (m)        0.30
  Delta WS (m)              7.11    Q Weir (m3/s)
  E.G. IC (m)              66.45    Weir Sta Lft (m)
  E.G. OC (m)              66.43    Weir Sta Rgt (m)
  Culvert Control         Outlet    Weir Submerg
  Culv WS Inlet (m)        65.65    Weir Max Depth (m)
  Culv WS Outlet (m)       57.19    Weir Avg Depth (m)
  Culv Nml Depth (m)        0.60    Weir Flow Area (m2)
  Culv Crt Depth (m)        1.14    Min El Weir Flow (m)     67.00


 ROSS SECTION


RIVER: pipe3
REACH: one                RS: 13

INPUT
Description:
Station Elevation Data    num=       6
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	59.5	3	59.5	3	55.82	5	55.82	5	59.5
8	59.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	3	.013	5	.013

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
3	5	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100 year

			Left OB	Channel	Right OB
E.G. Elev (m)	59.28	Element			
Vel Head (m)	0.02	Wt. n-Val.		0.013	
W.S. Elev (m)	59.26	Reach Len. (m)	0.00	0.00	0.00
Crit W.S. (m)		Flow Area (m2)		6.87	
E.G. Slope (m/m)	0.000107	Area (m2)		6.87	
Q Total (m3/s)	4.61	Flow (m3/s)		4.61	
Top Width (m)	2.00	Top Width (m)		2.00	
Vel Total (m/s)	0.67	Avg. Vel. (m/s)		0.67	
Max Chl Dpth (m)	3.44	Hydr. Depth (m)		3.44	
Conv. Total (m3/s)	445.9	Conv. (m3/s)		445.9	
Length Wtd. (m)	0.00	Wetted Per. (m)		8.87	
Min Ch El (m)	55.82	Shear (N/m2)		0.81	
Alpha	1.00	Stream Power (N/m s)		0.54	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)			
C & E Loss (m)	0.00	Cum SA (1000 m2)			

SUMMARY OF MANNING'S N VALUES

River:pipe4

Reach	River Sta.	n1	n2	n3
one	19	.013	.013	.013
one	18.8	Culvert		
one	18.51	.013	.013	.013
one	18.5	.013	.013	.013
one	18.3	Culvert		
one	18.1	.013	.013	.013
one	18	.013	.013	.013
one	17.8	Culvert		
one	17.5	.013	.013	.013

River:pipe5

Reach	River Sta.	n1	n2	n3
one	22	.013	.013	.013
one	21.5	Culvert		
one	21.1	.013	.013	.013
one	21	.013	.013	.013
one	20.5	Culvert		
one	20	.013	.013	.013

River:pipe1

Reach	River Sta.	n1	n2	n3
two	5	.013	.013	.013
two	4.5	.013	.013	.013
two	4.1	.013	.013	.013
two	4	.013	.013	.013
two	3.8	Culvert		
two	3.51	.013	.013	.013
two	3.5	.013	.013	.013
two	3.3	Culvert		
two	3	.013	.013	.013
one	2	.013	.013	.013
one	1.8	Culvert		
one	1.51	.013	.013	.013
one	1.5	.013	.013	.013
one	1.2	Culvert		
one	1	.013	.013	.013
one	0.8	.013	.013	.013
one	0.5	.013	.013	.013
one	0.1	.013	.013	.013

River:pipe2

Reach	River Sta.	n1	n2	n3

two	12	.013	.013	.013
two	11.1	.013	.013	.013
two	11	.013	.013	.013
two	10.5	Culvert		
two	10.1	.013	.013	.013
two	10	.013	.013	.013
two	9.5	Culvert		
two	9.1	.013	.013	.013
two	9	.013	.013	.013
two	8.5	Culvert		
two	8	.013	.013	.013
one	7	.013	.013	.013
one	6.5	Culvert		
one	6	.013	.013	.013

River:pipe3

Reach	River Sta.	n1	n2	n3
two	17	.013	.013	.013
two	16.8	Culvert		
two	16.51	.013	.013	.013
two	16.5	.013	.013	.013
two	16.2	Culvert		
two	16.1	.013	.013	.013
two	16	.013	.013	.013
two	15.5	Culvert		
two	15	.013	.013	.013
one	14	.013	.013	.013
one	13.5	Culvert		
one	13	.013	.013	.013

SUMMARY OF REACH LENGTHS

River: pipe4

Reach	River Sta.	Left	Channel	Right
one	19	190	190	190
one	18.8	Culvert		
one	18.51	1	1	1
one	18.5	130	130	130
one	18.3	Culvert		
one	18.1	1	1	1
one	18	127	127	127
one	17.8	Culvert		
one	17.5	0	0	0

River: pipe5

Reach	River Sta.	Left	Channel	Right
one	22	454	454	454
one	21.5	Culvert		
one	21.1	1	1	1
one	21	195	195	195
one	20.5	Culvert		
one	20	0	0	0

River: pipe1

Reach	River Sta.	Left	Channel	Right
two	5	160	160	160
two	4.5	145	145	145
two	4.1	1	1	1
two	4	221	221	221
two	3.8	Culvert		
two	3.51	1	1	1
two	3.5	224	224	224
two	3.3	Culvert		
two	3	0	0	0
one	2	205	205	205
one	1.8	Culvert		
one	1.51	1	1	1
one	1.5	167	167	167
one	1.2	Culvert		
one	1	1	1	1
one	0.8	83	83	83
one	0.5	114	114	114
one	0.1	0	0	0

River: pipe2

Reach	River Sta.	Left	Channel	Right
two	12		160	160	160
two	11.1		1	1	1
two	11		355	355	355
two	10.5	Culvert			
two	10.1		1	1	1
two	10		32	32	32
two	9.5	Culvert			
two	9.1		1	1	1
two	9		91	91	91
two	8.5	Culvert			
two	8		0	0	0
one	7		102	102	102
one	6.5	Culvert			
one	6		0	0	1

River: pipe3

Reach	River Sta.	Left	Channel	Right
two	17		190	190	190
two	16.8	Culvert			
two	16.51		1	1	1
two	16.5		243	243	243
two	16.2	Culvert			
two	16.1		1	1	1
two	16		152	152	152
two	15.5	Culvert			
two	15		0	0	0
one	14		198	198	198
one	13.5	Culvert			
one	13		0	0	0

UMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
ver: pipe4

Reach	River Sta.	Contr.	Expan.
one	19	.1	.3
one	18.8	Culvert	
one	18.51	.1	.3
one	18.5	.1	.3
one	18.3	Culvert	
one	18.1	.1	.3
one	18	.1	.3
one	17.8	Culvert	
one	17.5	.1	.3

River: pipe5

Reach	River Sta.	Contr.	Expan.
one	22	.1	.3
one	21.5	Culvert	
one	21.1	.1	.3
one	21	.1	.3
one	20.5	Culvert	
one	20	.1	.3

River: pipe1

Reach	River Sta.	Contr.	Expan.
two	5	.1	.3
two	4.5	.1	.3
two	4.1	.1	.3
two	4	.1	.3
two	3.8	Culvert	
two	3.51	.1	.3
two	3.5	.1	.3
wo	3.3	Culvert	
two	3	.1	.3
one	2	.1	.3
one	1.8	Culvert	
one	1.51	.1	.3
one	1.5	.1	.3
one	1.2	Culvert	
one	1	.1	.3
one	0.8	.1	.3

one	0.5	.1	.3
one	0.1	.1	.3

iver: pipe2

Reach	River Sta.	Contr.	Expan.
two	12	.1	.3
two	11.1	.1	.3
two	11	.1	.3
two	10.5	Culvert	
two	10.1	.1	.3
two	10	.1	.3
two	9.5	Culvert	
two	9.1	.1	.3
two	9	.1	.3
two	8.5	Culvert	
two	8	.1	.3
one	7	.1	.3
one	6.5	Culvert	
one	6	.1	.3

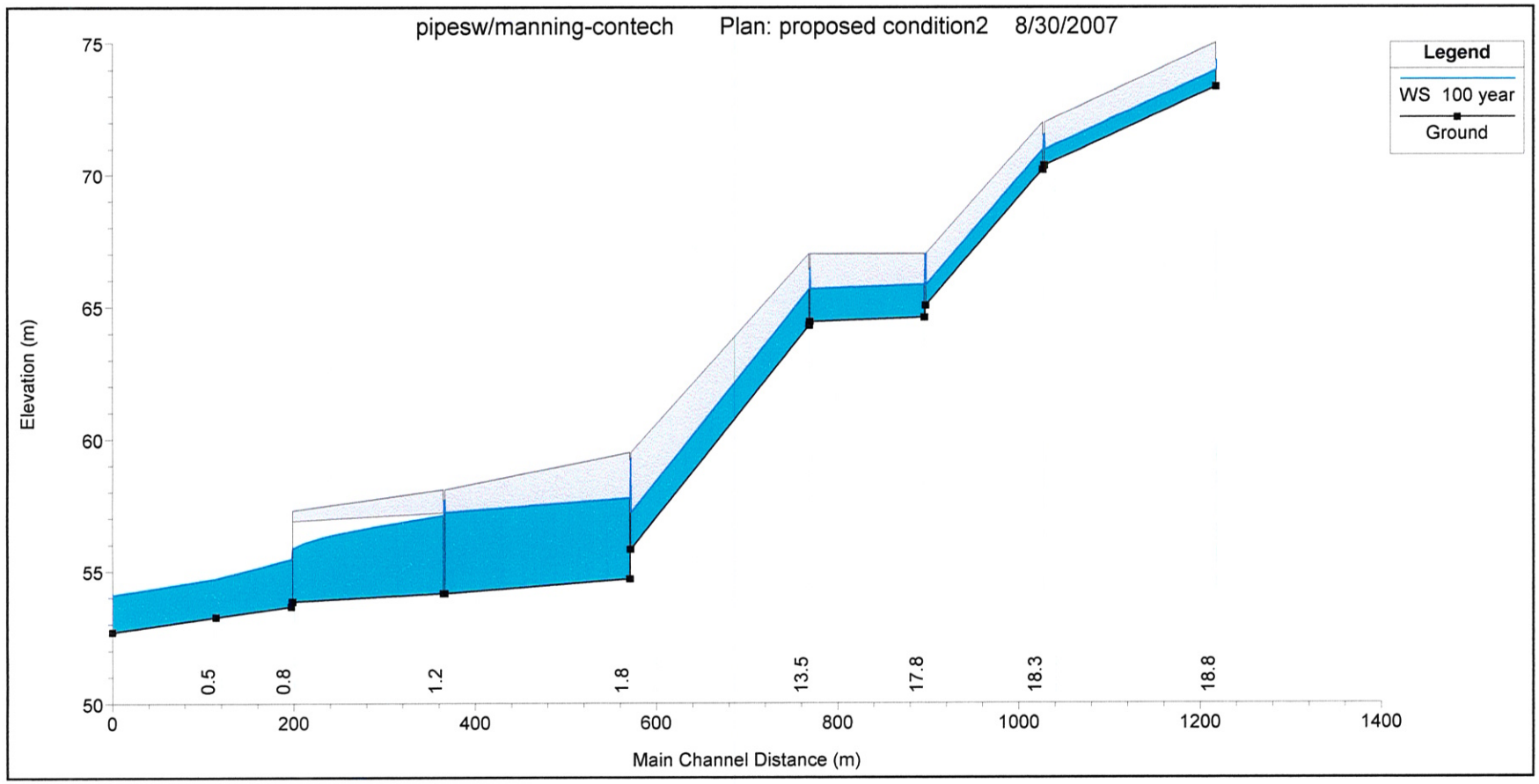
River: pipe3

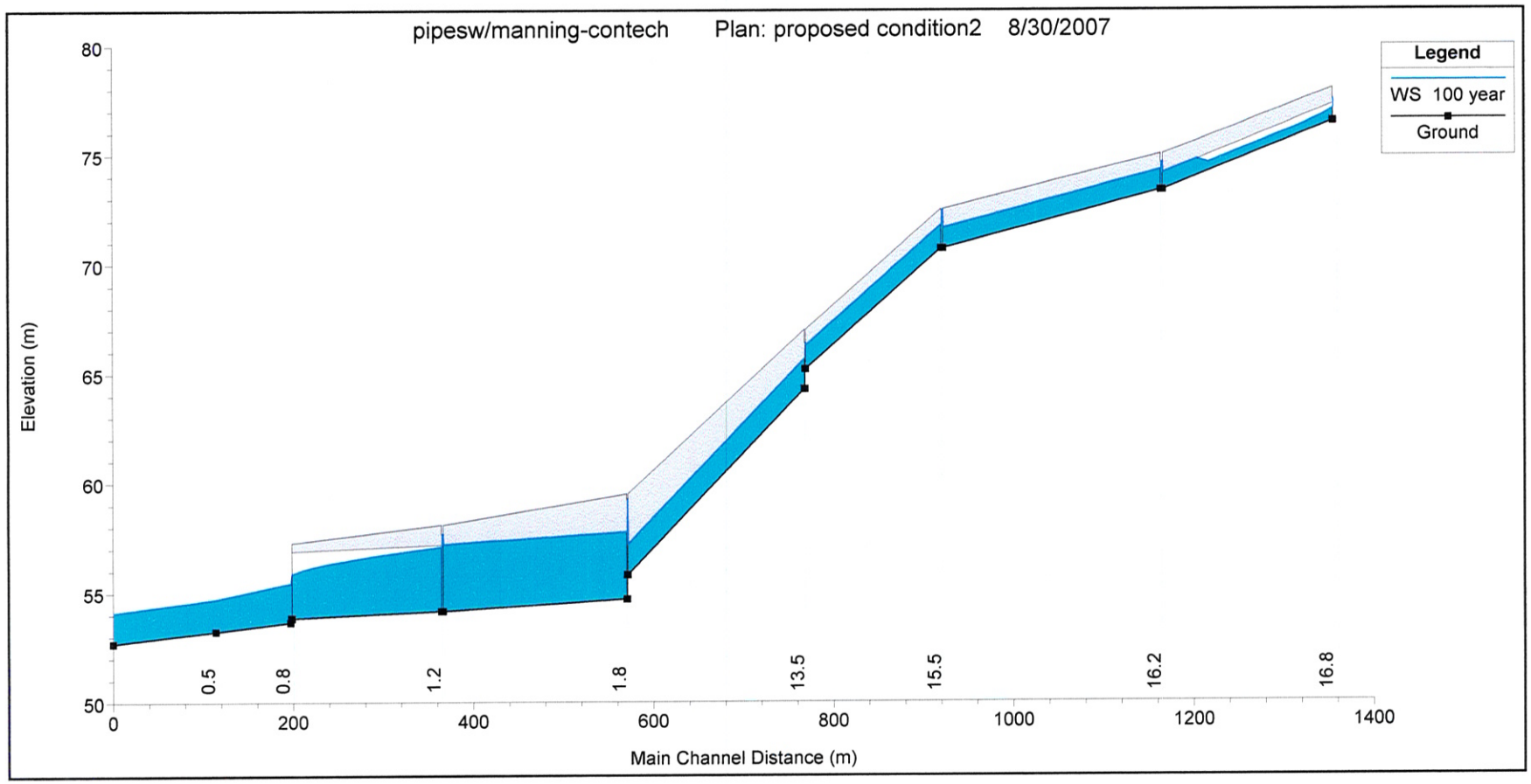
Reach	River Sta.	Contr.	Expan.
two	17	.1	.3
two	16.8	Culvert	
two	16.51	.1	.3
two	16.5	.1	.3
two	16.2	Culvert	
two	16.1	.1	.3
two	16	.1	.3
two	15.5	Culvert	
two	15	.1	.3
one	14	.1	.3
one	13.5	Culvert	
one	13	.1	.3

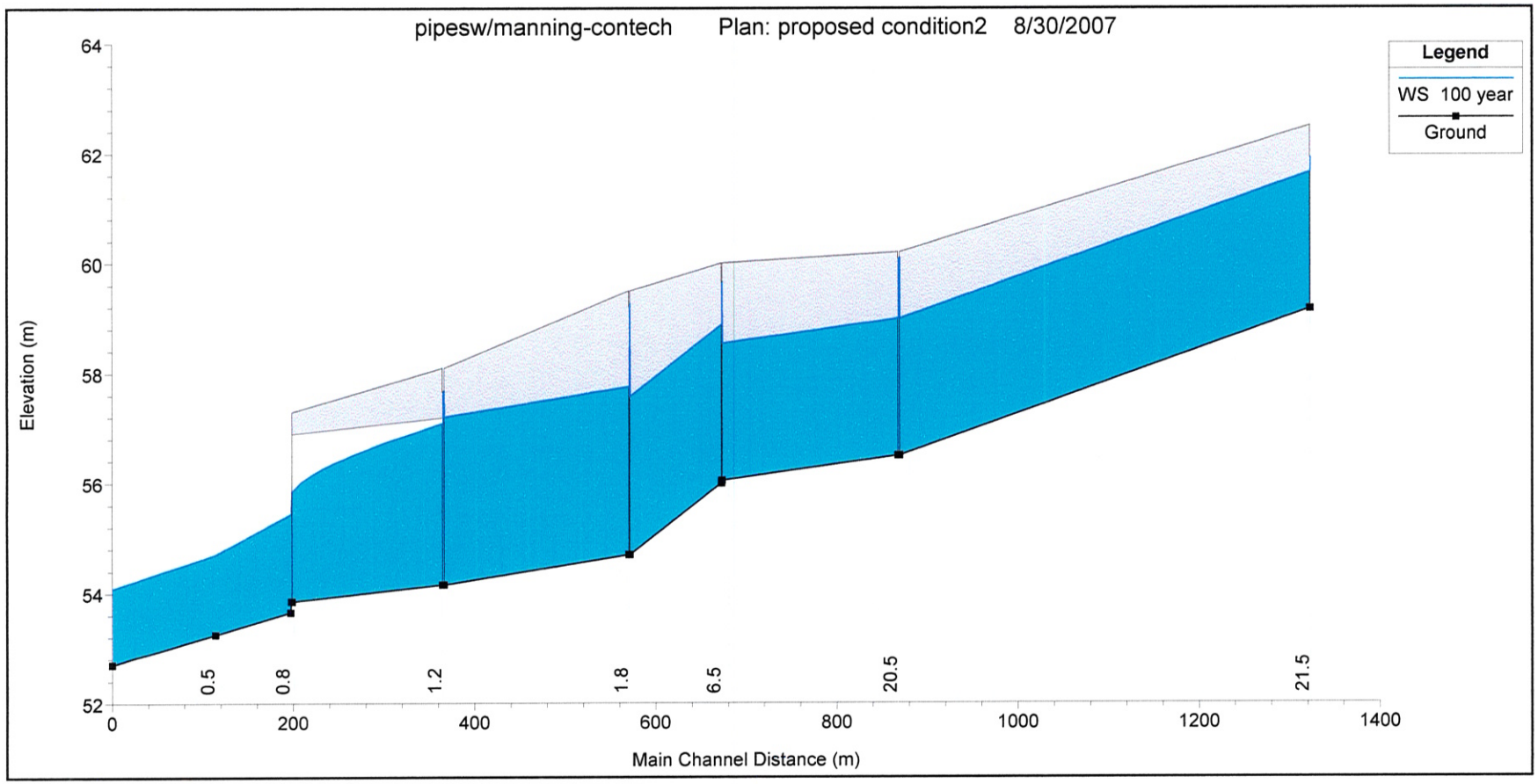
Profile Output Table - Standard Table 1

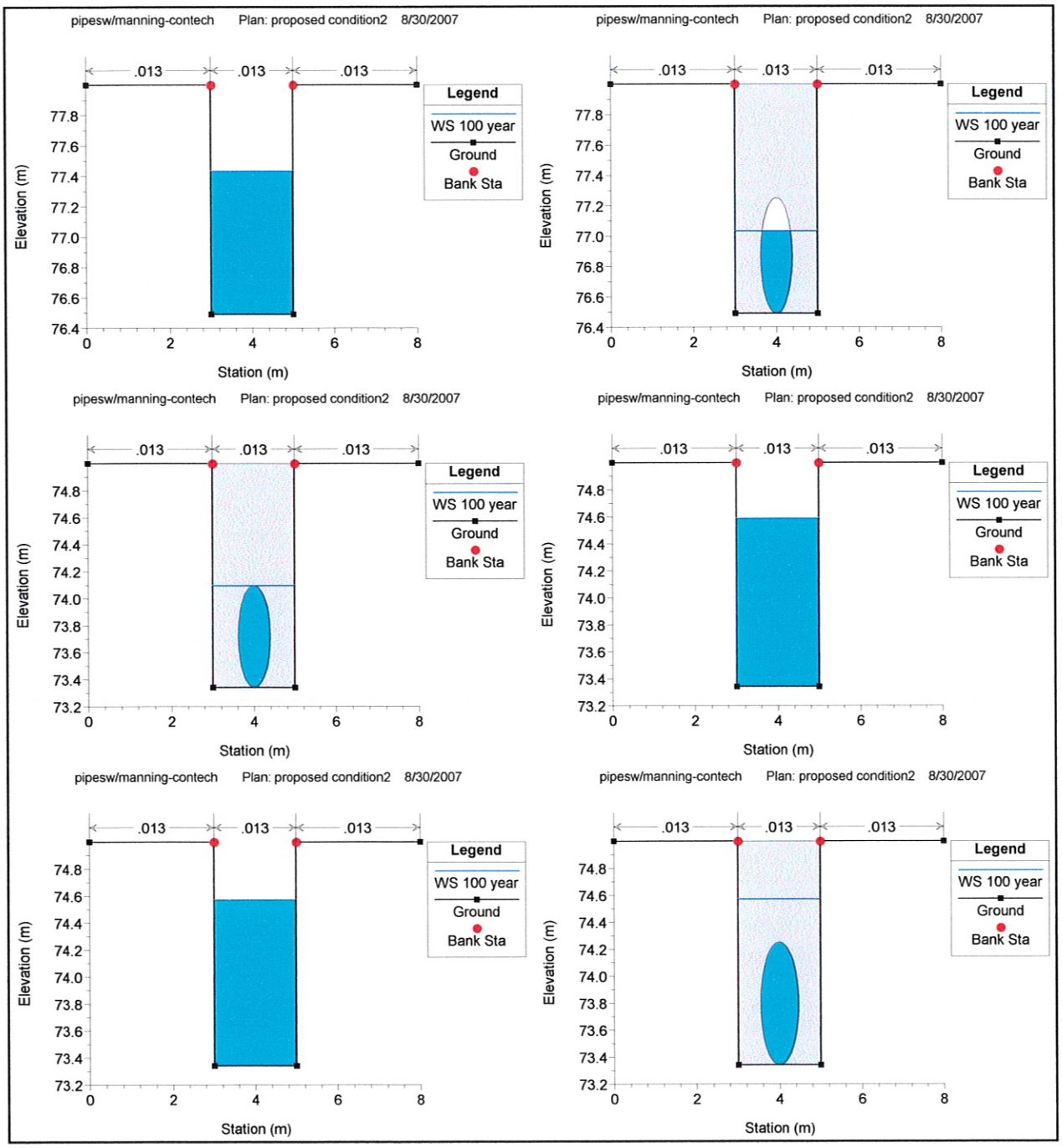
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)		(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)
two	17	100 year	0.78	76.49	77.43	76.74	77.44	0.000075	0.41	1.89	2.00	0.14
two	16.8		Culvert									
two	16.51	100 year	0.78	73.34	74.59		74.59	0.000036	0.31	2.50	2.00	0.09
two	16.5	100 year	1.56	73.34	74.57	73.73	74.59	0.000149	0.63	2.47	2.00	0.18
two	16.2		Culvert									
two	16.1	100 year	1.56	70.69	72.43		72.44	0.000062	0.45	3.48	2.00	0.11
two	16	100 year	2.60	70.69	72.41	71.24	72.44	0.000178	0.76	3.44	2.00	0.18
two	15.5		Culvert									
two	15	100 year	2.60	65.19	66.37		66.43	0.000468	1.10	2.35	2.00	0.33
one	14	100 year	4.61	64.28	66.37	65.09	66.43	0.000348	1.10	4.17	2.00	0.24
one	13.5		Culvert									
one	13	100 year	4.61	55.82	59.26		59.28	0.000107	0.67	6.87	2.00	0.12
two	12	100 year	7.92	68.64	69.67	69.67	70.05	0.002456	2.72	2.92	3.95	1.01
two	11.1	100 year	7.92	61.64	62.05	62.67	68.27	0.124271	11.05	0.72	2.56	6.67
two	11	100 year	7.92	60.58	60.91	61.75	68.04	0.149494	11.83	0.67	2.00	6.53
two	10.5		Culvert									
two	10.1	100 year	7.92	57.37	60.81		60.88	0.000315	1.15	6.88	2.00	0.20
two	10	100 year	10.28	57.12	60.84	57.99	60.87	0.000057	0.69	14.88	4.00	0.11
two	9.5		Culvert									
two	9.1	100 year	10.28	56.91	60.32		60.35	0.000070	0.75	13.66	4.00	0.13
two	9	100 year	10.28	56.91	60.32	57.78	60.35	0.000070	0.75	13.66	4.00	0.13
two	8.5		Culvert									
two	8	100 year	10.28	56.17	59.64		59.66	0.000068	0.74	13.86	4.00	0.13
one	7	100 year	33.44	56.00	59.63	56.98	59.66	0.000042	0.84	39.90	11.00	0.14
one	6.5		Culvert									
one	6	100 year	33.44	54.70	59.26		59.28	0.000022	0.67	50.13	11.00	0.10
two	5	100 year	0.70	76.34	76.65	76.65	76.76	0.003043	1.48	0.47	2.15	1.01
two	4.5	100 year	23.95	72.17	73.40	73.90	75.13	0.009558	5.83	4.11	5.17	2.09
two	4.1	100 year	23.95	68.34	69.34	70.07	72.81	0.026227	8.25	2.90	4.92	3.43
two	4	100 year	23.95	66.36	69.75	67.90	69.91	0.000388	1.77	13.56	4.00	0.31
two	3.8		Culvert									
two	3.51	100 year	23.95	62.50	65.63		65.81	0.000476	1.92	12.51	4.00	0.35
two	3.5	100 year	26.36	62.50	65.57	64.14	65.81	0.000601	2.14	12.30	4.00	0.39
two	3.3		Culvert									
two	3	100 year	26.36	54.70	59.18		59.29	0.000238	1.47	17.90	4.00	0.22
one	2	100 year	64.42	54.70	59.20	56.13	59.27	0.000068	1.19	54.03	12.00	0.18
one	1.8		Culvert									
one	1.51	100 year	64.42	54.15	57.67		57.79	0.000136	1.53	42.23	12.00	0.26
one	1.5	100 year	68.59	54.15	57.65	55.64	57.79	0.000157	1.63	42.00	12.00	0.28
one	1.2		Culvert									
one	1	100 year	68.59	53.85	55.85		56.27	0.000804	2.86	24.00	12.00	0.65
one	0.8	100 year	68.59	53.65	55.44	55.44	56.23	0.001751	3.95	17.39	11.00	1.00

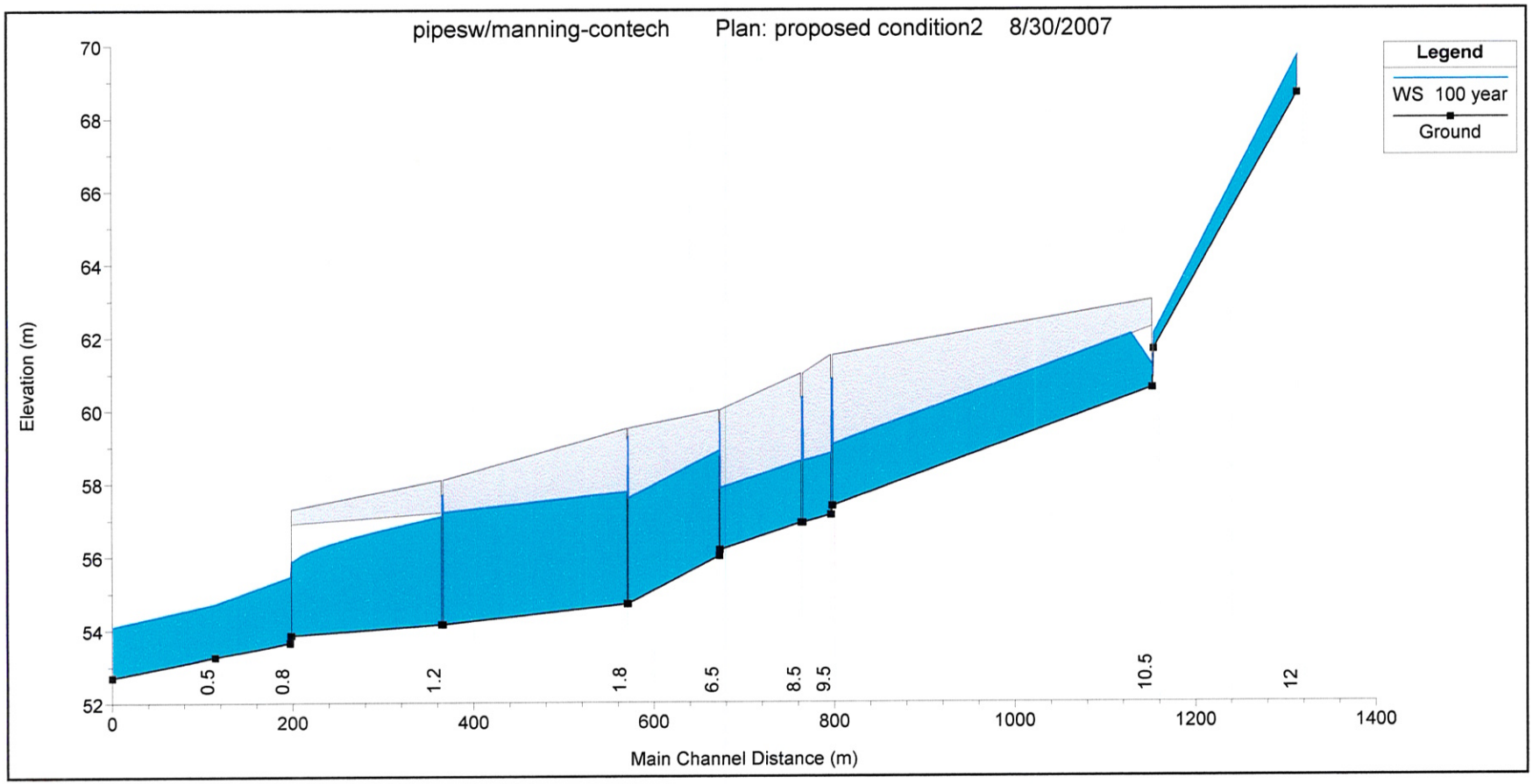
one	0.5	100 year	68.59	53.25	54.70	55.04	55.98	0.003597	5.01	13.69	10.90	1.43
one	0.1	100 year	68.59	52.70	54.08	54.49	55.52	0.004282	5.32	12.90	10.75	1.55
ne	22	100 year	14.98	59.16	61.91	59.87	61.93	0.000041	0.68	21.97	8.00	0.13
ne	21.5		Culvert									
one	21.1	100 year	14.98	56.50	60.07		60.08	0.000020	0.52	28.57	8.00	0.09
one	21	100 year	20.09	56.50	60.06	57.29	60.08	0.000027	0.63	32.08	9.00	0.11
one	20.5		Culvert									
one	20	100 year	20.09	56.05	59.64		59.66	0.000026	0.62	32.35	9.00	0.10
one	19	100 year	0.60	73.34	74.30	73.55	74.30	0.000043	0.31	1.91	2.00	0.10
one	18.8		Culvert									
one	18.51	100 year	0.60	70.34	71.52		71.52	0.000025	0.26	2.35	2.00	0.08
one	18.5	100 year	1.20	70.19	71.51	70.52	71.52	0.000074	0.46	2.64	2.00	0.13
one	18.3		Culvert									
one	18.1	100 year	1.20	65.04	66.96		66.97	0.000029	0.31	3.85	2.00	0.07
one	18	100 year	2.01	64.59	66.96	65.06	66.97	0.000049	0.42	4.74	2.00	0.09
one	17.8		Culvert									
one	17.5	100 year	2.01	64.43	66.42		66.43	0.000074	0.50	3.98	2.00	0.11

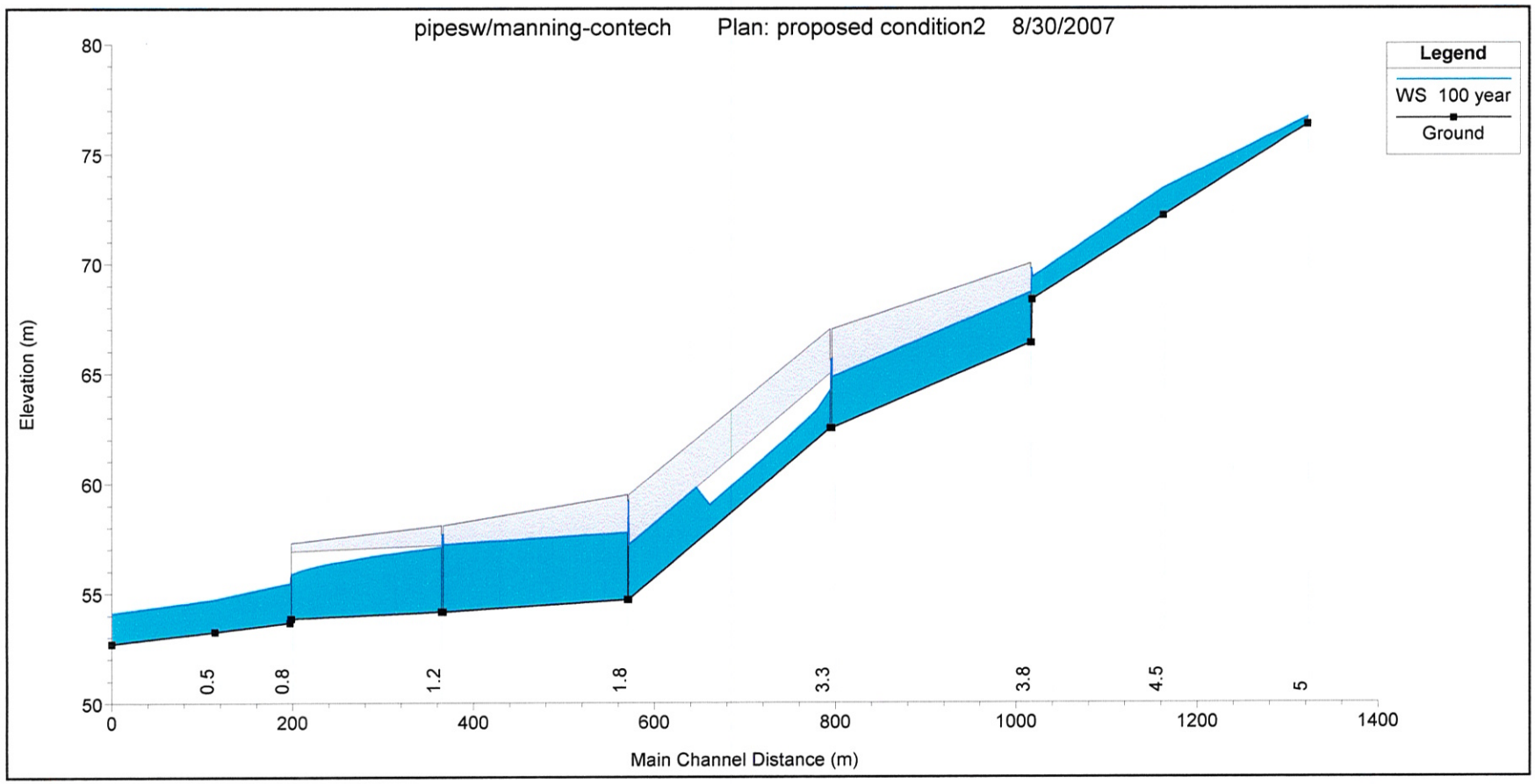

pipesw/manning-contech Plan: proposed condition2 8/30/2007
Legend
WS 100 year
Ground
Elevation (m)
75
70
65
60
55
50
0.5
0.8
1.2
1.8
13.5
17.8
18.3
18.8
0
200
400
600
800
1000
1200
1400
Main Channel Distance (m)

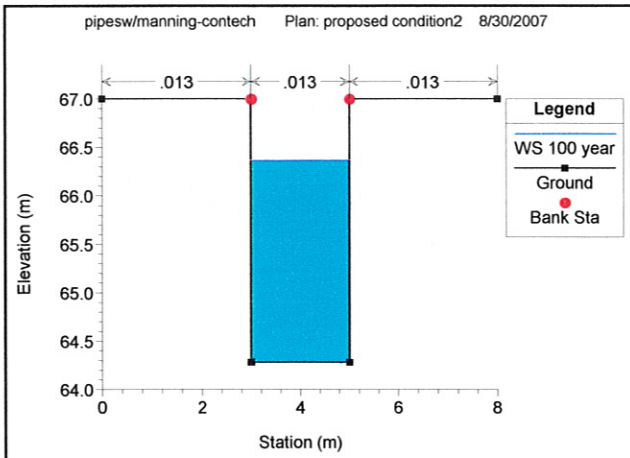

pipesw/manning-contech Plan: proposed condition2 8/30/2007
Legend
WS 100 year
Ground
Elevation (m)
80
75
70
65
60
55
50
0
200
400
600
800
1000
1200
1400
Main Channel Distance (m)
0.5
0.8
1.2
1.8
13.5
15.5
16.2
16.8


pipesw/manning-contech Plan: proposed condition2 8/30/2007
Legend
WS 100 year
Ground
Elevation (m)
64
62
60
58
56
54
52
0
200
400
600
800
1000
1200
1400
Main Channel Distance (m)
0.5
0.8
1.2
1.8
6.5
20.5
21.5


pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
.013
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
77.8
77.6
77.4
77.2
77.0
76.8
76.6
76.4
74.8
74.6
74.4
74.2
74.0
73.8
73.6
73.4
73.2
0
2
4
6
8


pipesw/manning-contech
Plan: proposed condition2
8/30/2007
Legend
WS 100 year
Ground
Elevation (m)
70
68
66
64
62
60
58
56
54
52
0
200
400
600
800
1000
1200
1400
Main Channel Distance (m)
0.5
0.8
1.2
1.8
6.5
8.5
9.5
10.5
12


pipesw/manning-contech Plan: proposed condition2 8/30/2007
Legend
WS 100 year
Ground
Elevation (m)
80
75
70
65
60
55
50
0
200
400
600
800
1000
1200
1400
Main Channel Distance (m)
0.5
0.8
1.2
1.8
3.3
3.8
4.5
5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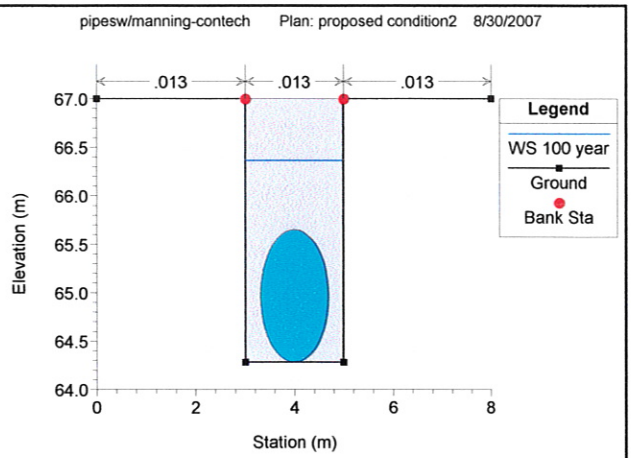
.013
.013
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)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.013
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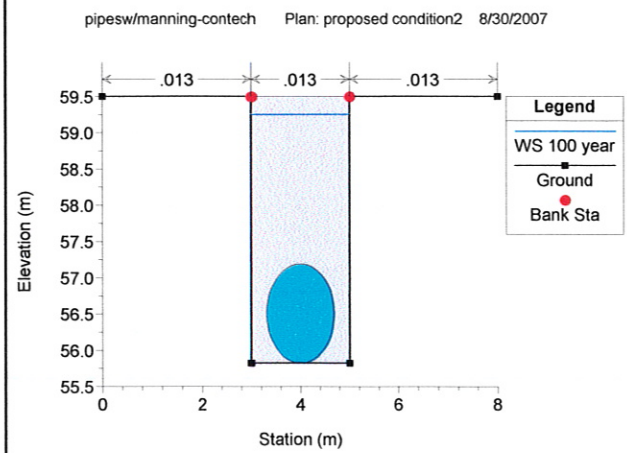
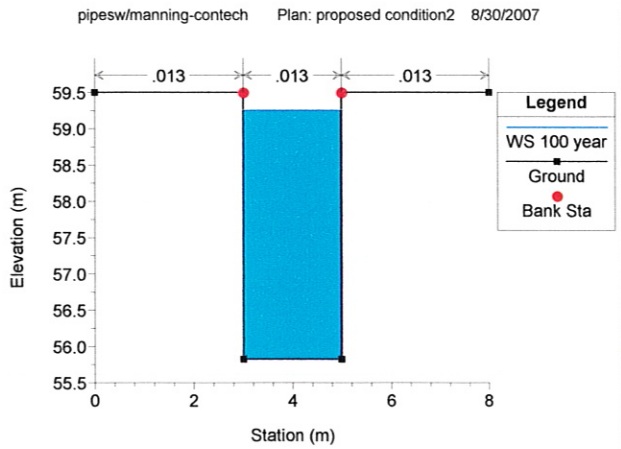
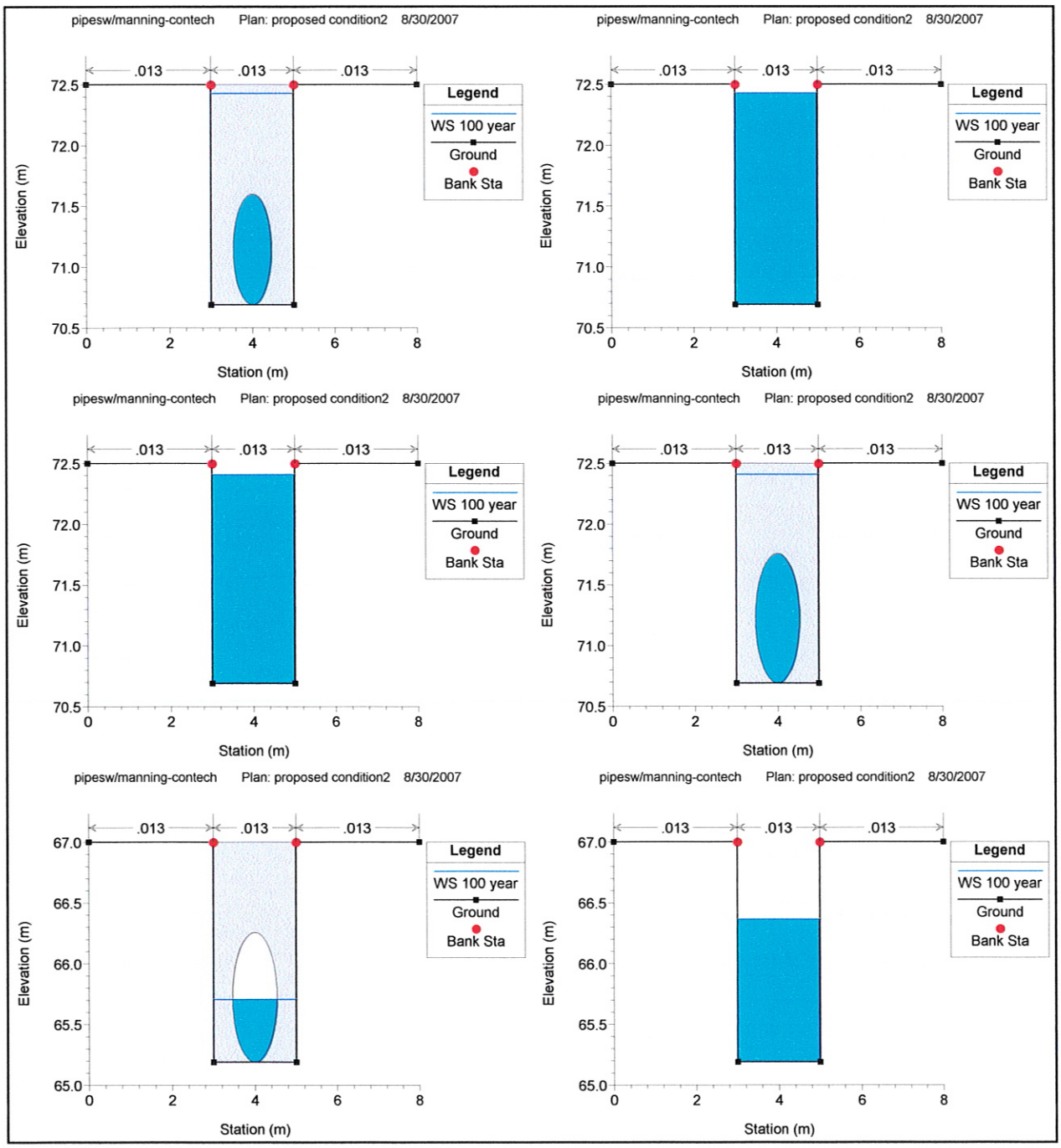
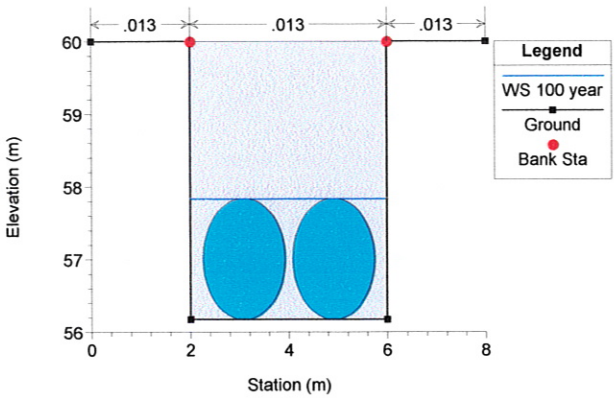
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)


pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
.013
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)


pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
.013
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)


pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
.013
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
72.5
72.0
71.5
71.0
70.5
67.0
66.5
66.0
65.5
65.0
0
2
4
6
8

pipesw/manning-contech Plan: proposed condition2 8/30/2007



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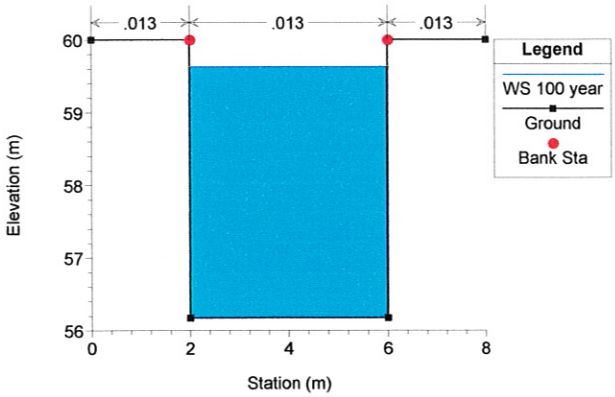

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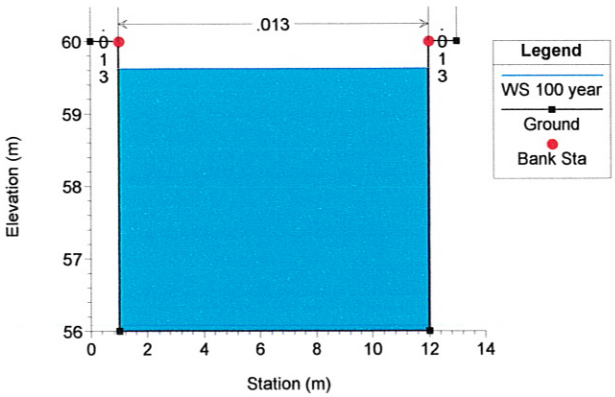
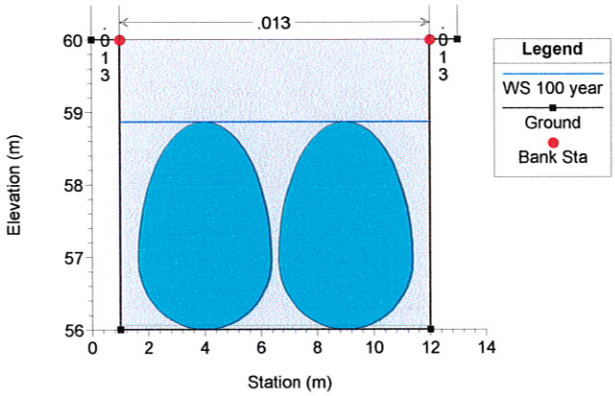
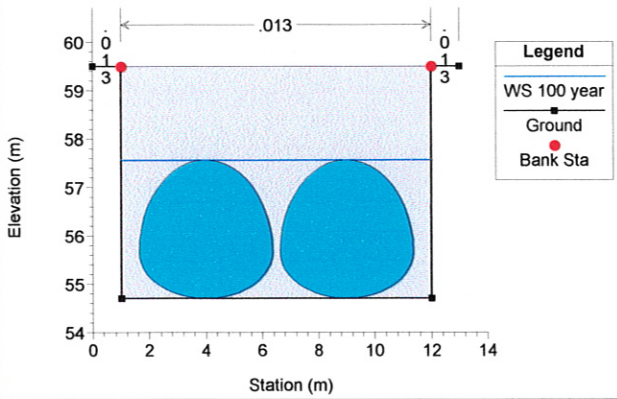


pipesw/manning-contech Plan: proposed condition2 8/30/2007



pipesw/manning-contech Plan: proposed condition2 8/30/2007



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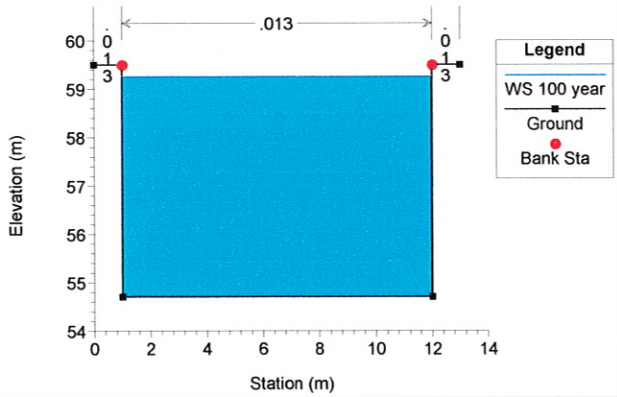

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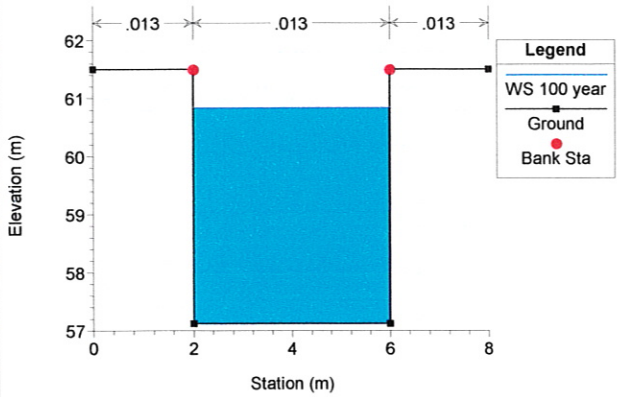

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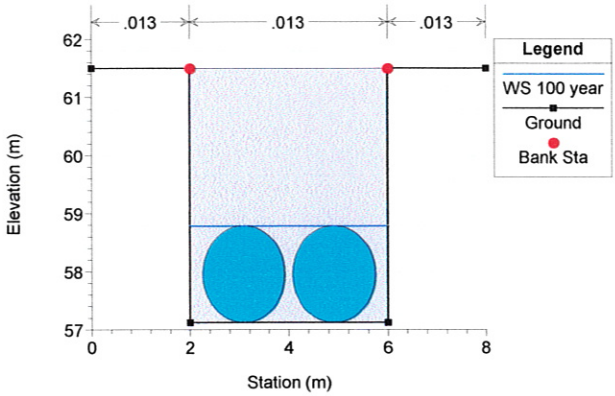

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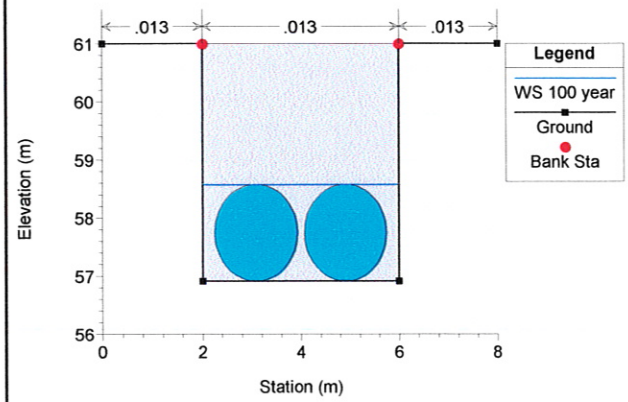

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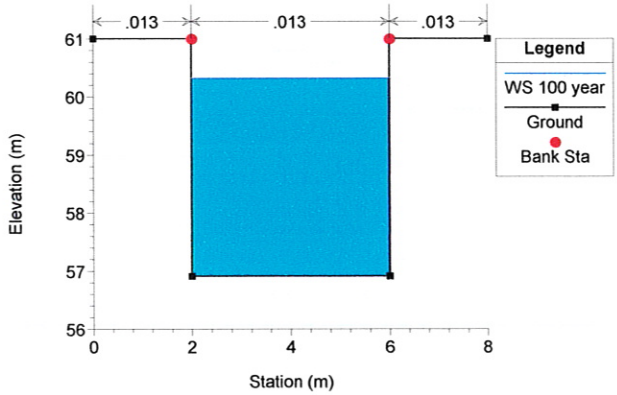

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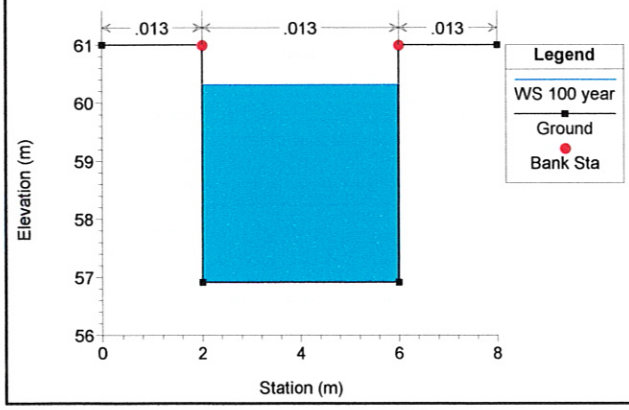

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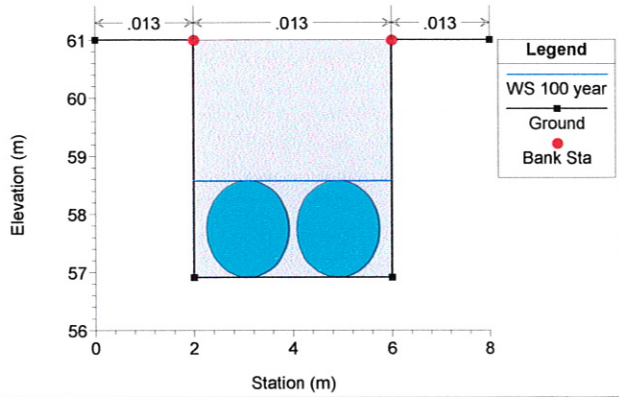

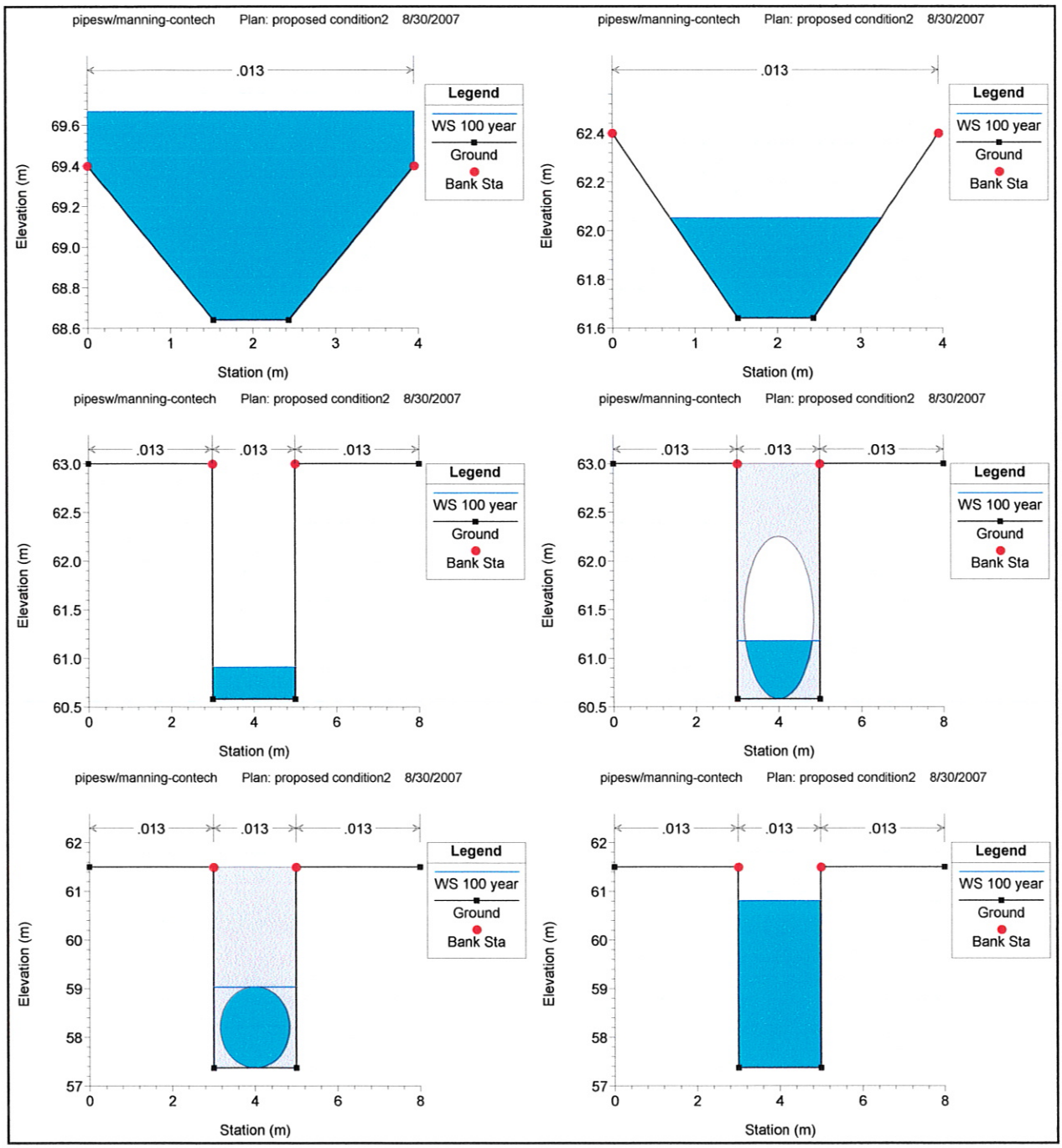
pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
pipesw/manning-contech Plan: proposed condition2 8/30/2007
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Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
pipesw/manning-contech Plan: proposed condition2 8/30/2007
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.013
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
pipesw/manning-contech Plan: proposed condition2 8/30/2007
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.013
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Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)
pipesw/manning-contech Plan: proposed condition2 8/30/2007
.013
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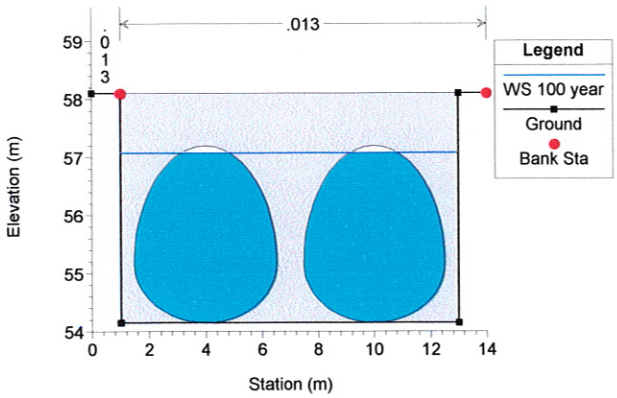
.013
Legend
WS 100 year
Ground
Bank Sta
Elevation (m)
Station (m)

pipesw/manning-contech Plan: proposed condition2 8/30/2007



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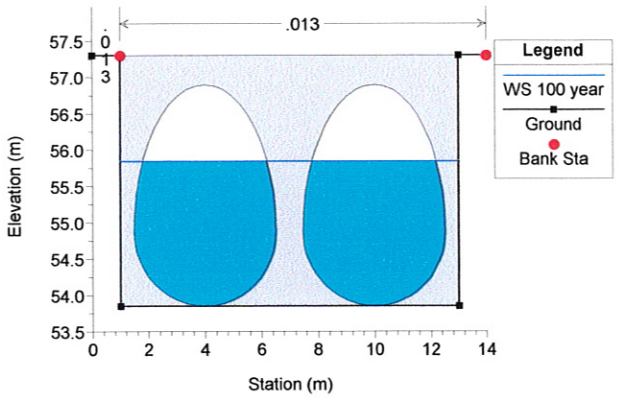

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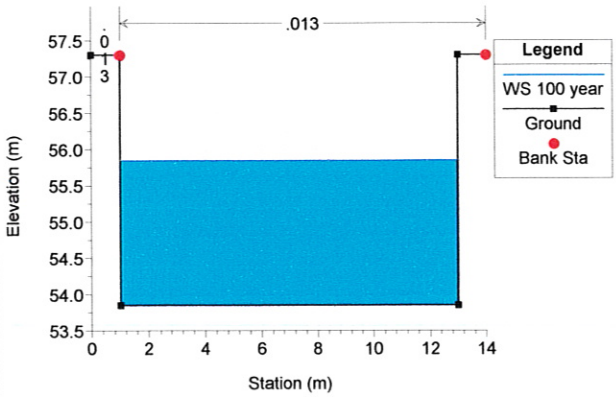

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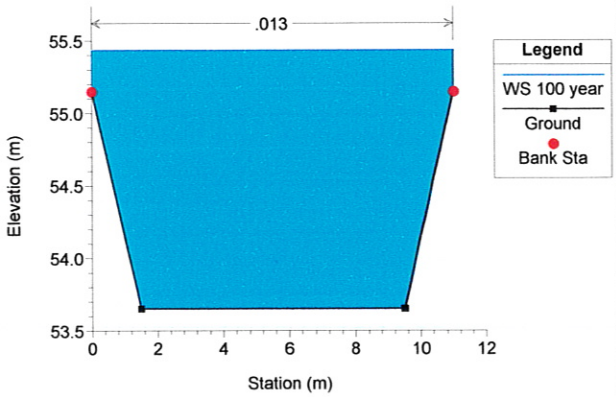
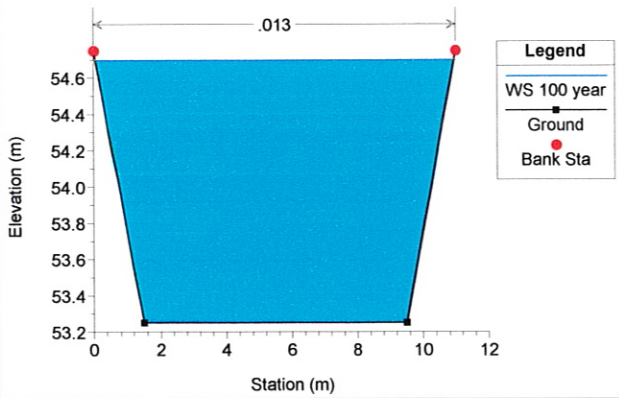
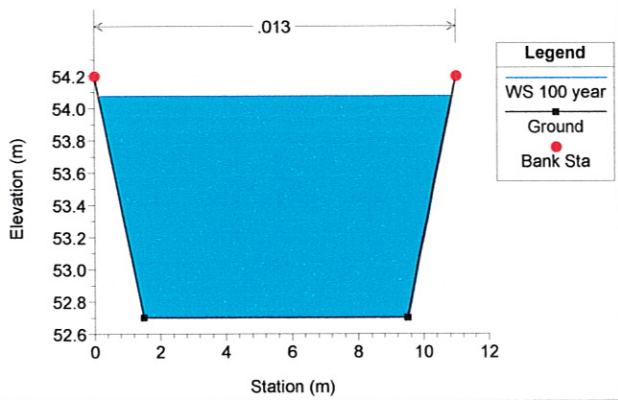


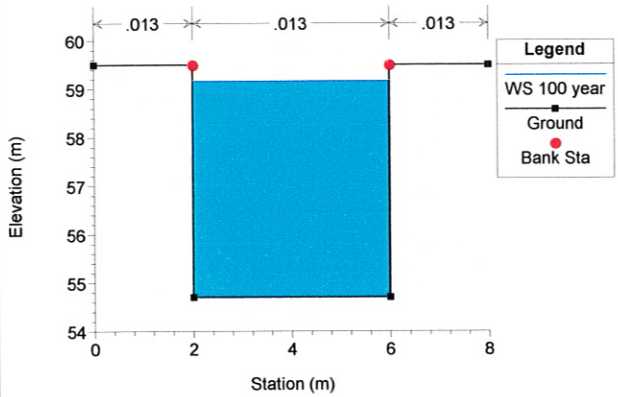
pipesw/manning-contech Plan: proposed condition2 8/30/2007



pipesw/manning-contech Plan: proposed condition2 8/30/2007



pipesw/manning-contech Plan: proposed condition2 8/30/2007



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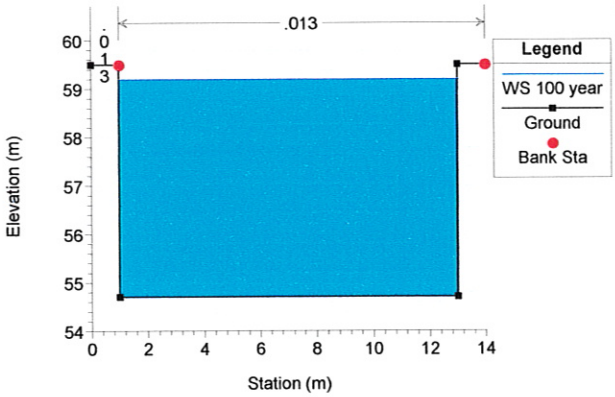

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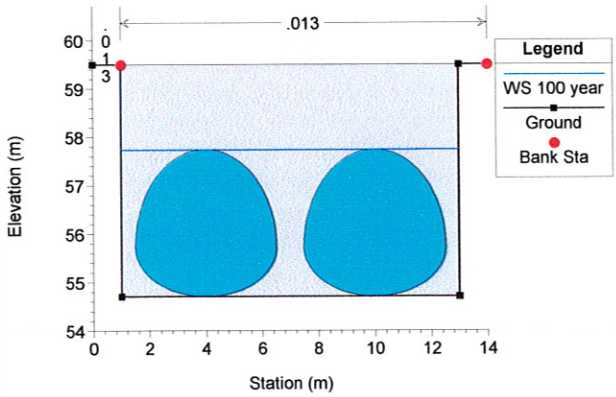

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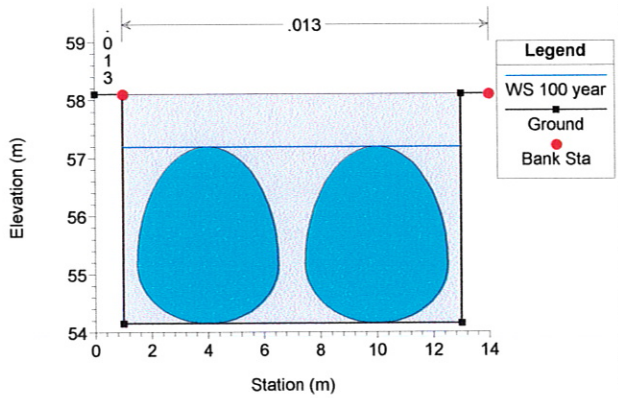
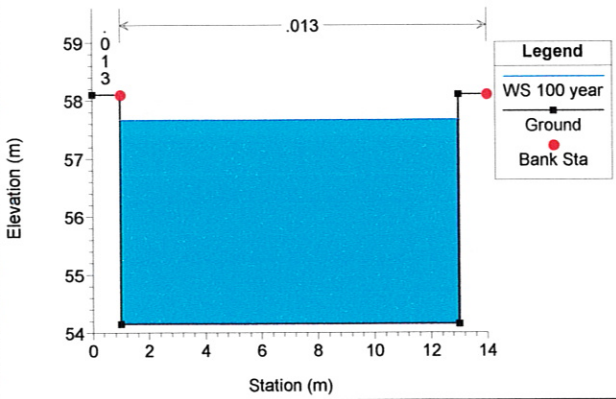
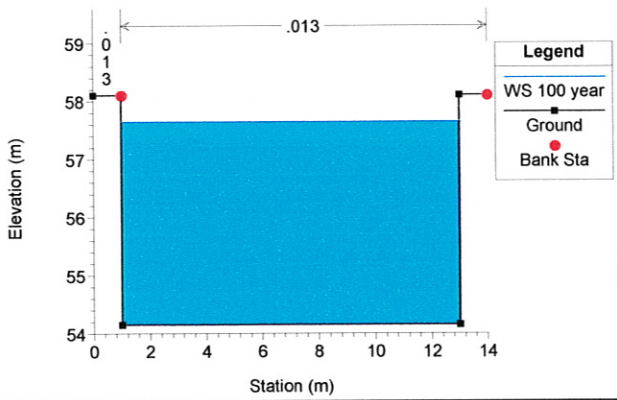


pipesw/manning-contech Plan: proposed condition2 8/30/2007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