

Appendix C

Hydrologic Parameters

<u>Topic</u>	<u>Page Number</u>
Appendix C-1 Rock Creek Supporting Hydrologic Information	75-84
Appendix C-2 Black Walnut Creek/South Branch Rock Creek/Exline Slough/Plum Creek Supporting Hydrologic Information	85-105

GridCODE	Description	Hydrologic Soil Classification			
		A	B	C	D
11	Corn	64	75	82	85
12	Soybeans	64	75	82	85
13	Winter Wheat	60	72	80	84
14	Other Small Grains and Hay	60	72	80	84
15	Winter Wheat/Soybeans	60	72	80	84
16	Other Agriculture	55	69	78	83
17	Rural Grassland	30	58	71	78
21	Forested Upland	30	55	70	77
25	Partial Canopy/Savannah Upland	32	58	72	79
26	Coniferous	36	60	73	79
31	Urban High Density	89	92	94	95
32	Urban Low/Medium Density	57	72	81	86
35	Urban Open Space	39	61	74	80
41	Shallow Marsh/Wet Meadow	40	68	81	88
42	Deep Marsh	68	79	86	89
43	Seasonally/Temporarily Flooded	36	60	73	79
44	Wetland Floodplain Forest	36	60	73	79
48	Wetland Swamp	40	68	81	88
49	Wetland Shallow Water	73	84	91	94
51	Wetland Surface Water	78	89	96	98
52	Barren and Exposed Land	77	86	91	94

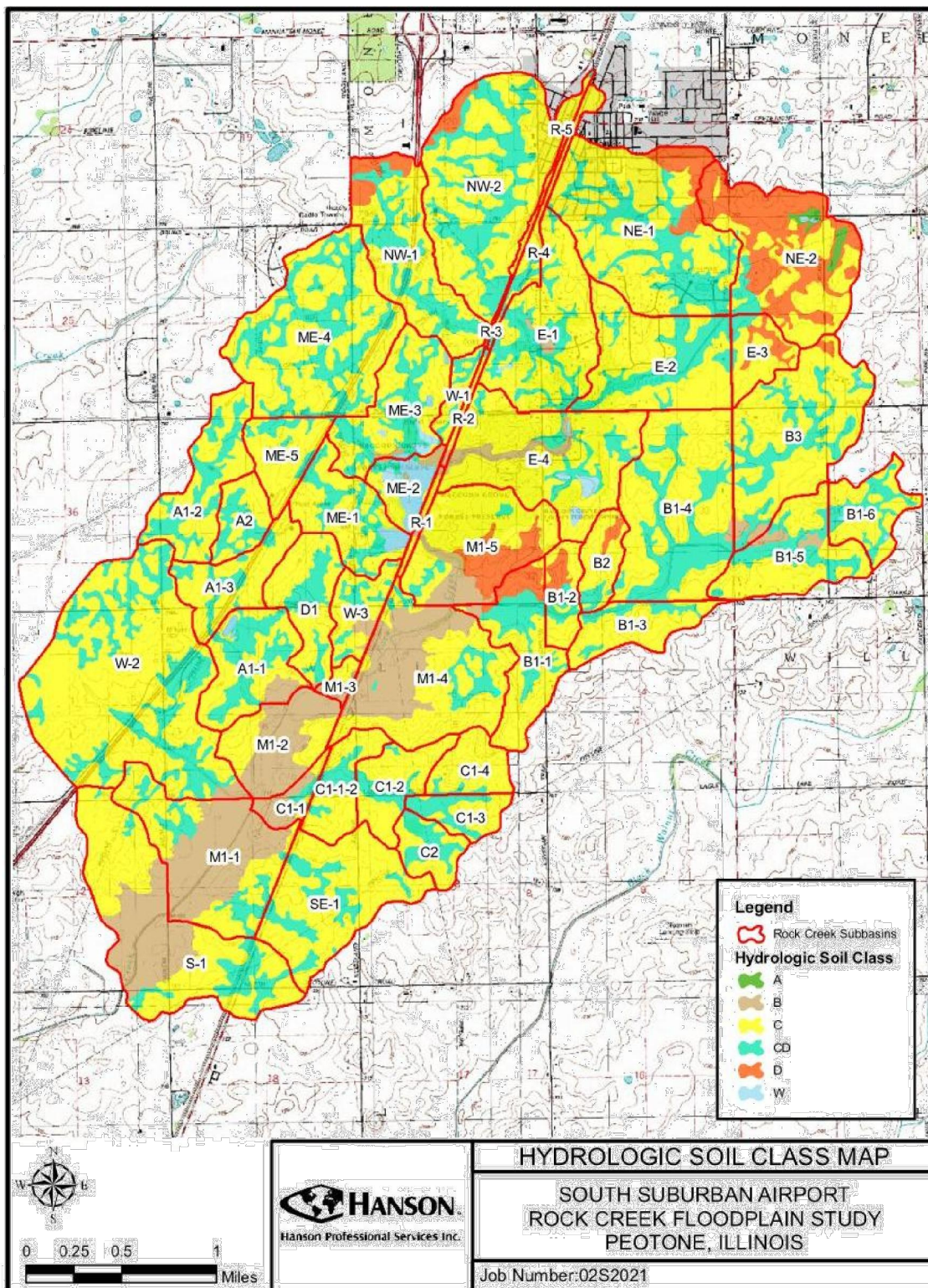
Summary of Curve Number Designations (Land Cover of Illinois 1999-2000)



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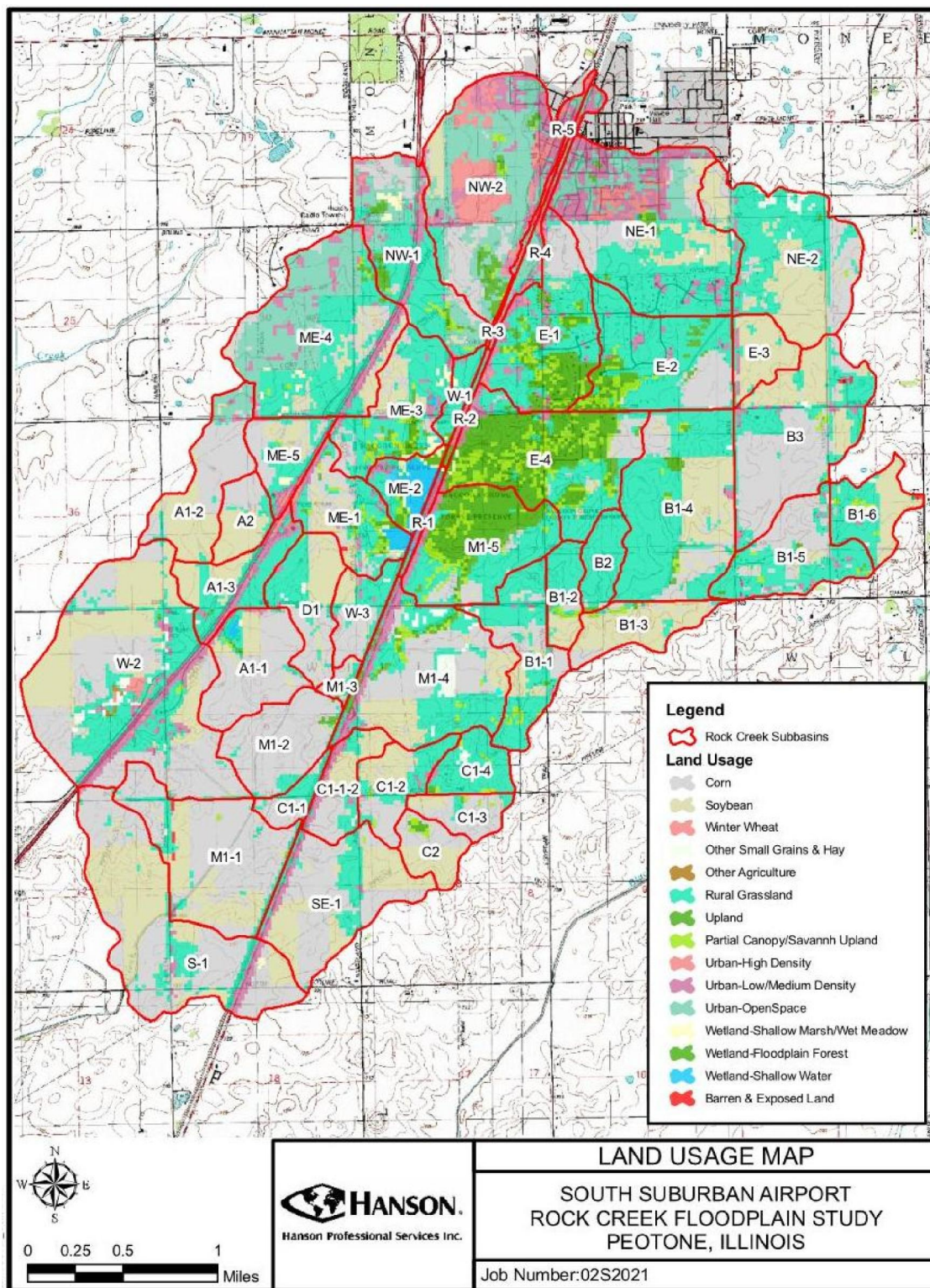
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX C-1
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION



Hydrologic Soil Classifications Map



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APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION



Land Usage Map



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APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION

South Suburban Airport
Time of Concentration and Storage Coeff. Calculations
Clark's Method-Based on WRI 00-4184
Project No: 02S2021 Prepared by: AJM 1/10/2011
Reviewed by: BJW 1/21/2011

Formulas:
 $T_c = 1.54 (L^{0.875} S^{-0.181})$
 $R = 16.4 (L^{0.342} S^{-0.790})$

$T_c * 1.25$

Watershed Name	Drainage Area (ac)	10-85 slope (ft/mi)	Stream Length (mi)	Tc (hrs)	R (hrs)	R*1.25
A1-1	163	42.23	0.789	0.636	0.786	0.983
A1-2	282	38.34	1.495	1.132	1.056	1.319
A1-3	120	59.36	0.575	0.453	0.539	0.674
A2	67	52.51	0.584	0.470	0.597	0.746
B1-1	162	48.23	1.161	0.870	0.808	1.010
B1-2	63	94.74	0.408	0.308	0.331	0.414
B1-3	100	42.71	0.812	0.650	0.786	0.983
B1-4	352	41.00	1.366	1.033	0.970	1.213
B1-5	172	36.12	0.775	0.644	0.884	1.105
B1-6	98	29.30	0.546	0.492	0.925	1.156
B2	62	54.98	0.631	0.498	0.591	0.739
B3	310	28.60	1.445	1.158	1.315	1.644
C1-1	128	37.61	0.957	0.769	0.920	1.150
C1-2	99	82.07	0.747	0.538	0.456	0.571
C1-3	60	52.80	0.631	0.502	0.610	0.763
C1-4	74	91.32	0.511	0.378	0.368	0.460
C2	65	21.09	0.569	0.542	1.217	1.521
D1	129	59.18	0.969	0.716	0.646	0.807
E-1	256	40.72	1.375	1.041	0.978	1.223
E-2	255	27.52	1.163	0.965	1.259	1.574
E-3	73	55.81	0.550	0.440	0.557	0.697
E-4	318	29.31	1.410	1.129	1.279	1.599
M1-1	300	39.12	1.125	0.879	0.942	1.178
M1-2	151	15.97	0.835	0.796	1.728	2.159
M1-3	19	3.41	0.391	0.781	4.508	5.635
M1-4	336	29.75	1.434	1.143	1.272	1.590
M1-5	239	57.56	0.996	0.737	0.666	0.833
ME-1	148	56.49	0.802	0.612	0.628	0.785
ME-2	67	27.83	0.192	0.199	0.673	0.842
ME-3	184	77.10	0.657	0.486	0.459	0.574
ME-4	401	52.07	1.127	0.836	0.752	0.941
ME-5	92	63.22	0.591	0.459	0.518	0.647
NE-1	428	24.36	1.423	1.176	1.485	1.856
NE-2	318	28.52	0.842	0.722	1.096	1.370
NW-1	239	46.79	1.411	1.037	0.884	1.105
NW-2	411	19.72	1.488	1.271	1.782	2.228
R-1	13	13.35	0.399	0.431	1.546	1.933
R-2	12	54.60	0.659	0.519	0.603	0.754
R-3	2	13.21	0.202	0.238	1.235	1.544
R-4	48	12.48	1.496	1.387	2.562	3.202
R-5	27	11.72	1.366	1.296	2.611	3.264
S-1	404	29.06	1.422	1.139	1.292	1.615
SE-1	261	33.87	0.866	0.718	0.966	1.207
W-1	34	82.40	0.647	0.474	0.433	0.541
W-2	639	41.55	1.829	1.331	1.061	1.327
W-3	77	54.40	0.637	0.504	0.598	0.748

I:\02jobs\02S2021\Admin\3160-H&H\13-Calculations\TCCalcs.xls

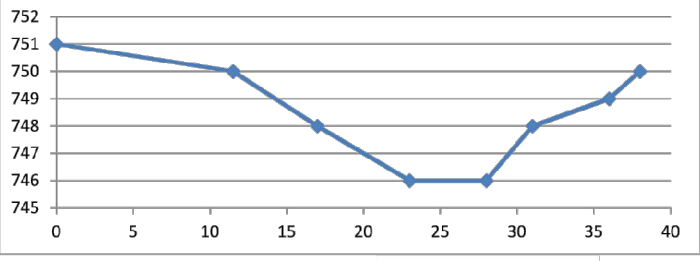


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APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION

Reach #: 1			78 cfs
8 Point XS			
Pt No	Distance	Elevation	
1	0	751	0.06
2	11.5	750	0.06
3	17	748	0.035
4	23	746	0.035
5	28	746	0.035
6	31	748	0.06
7	36	749	0.06
8	38	750	

Manning's N Values	
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Right:	0.06
Channel:	0.035

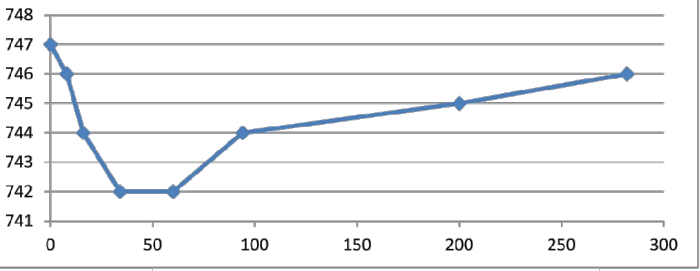
Slope Calc	
US Elev:	758
DS Elev:	748
Length:	3015
Slope (ft/ft):	0.00332



Reach #: 6			969 cfs
8 Point XS			
Pt No	Distance	Elevation	
1	0	747	0.06
2	8	746	0.06
3	16	744	0.035
4	34	742	0.035
5	60	742	0.035
6	94	744	0.06
7	200	745	0.06
8	282	746	

Manning's N Values	
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Right:	0.06
Channel:	0.035

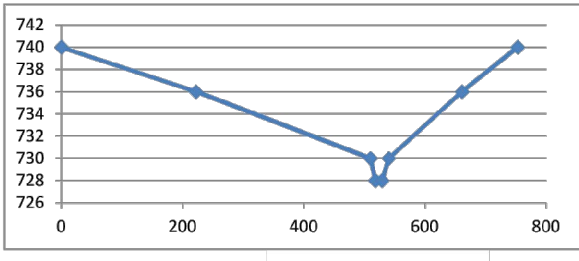
Slope Calc	
US Elev:	748
DS Elev:	734
Length:	5680
Slope (ft/ft):	0.00246



Reach #: 2			837 cfs
8 Point XS			
Pt No	Distance	Elevation	
1	0	740	0.06
2	222	736	0.06
3	510	730	0.035
4	518	728	0.035
5	529	728	0.035
6	540	730	0.06
7	661	736	0.06
8	753	740	

Manning's N Values	
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Right:	0.06
Channel:	0.035

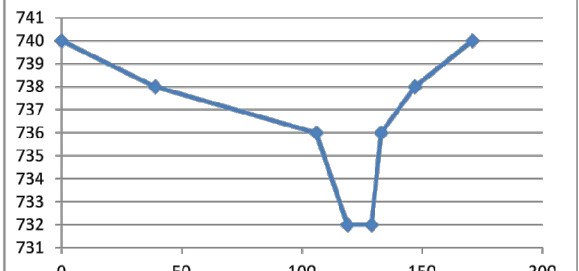
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DS Elev:	732
Length:	1120
Slope (ft/ft):	0.000892857



Reach #: 7			714 cfs
8 Point XS			
Pt No	Distance	Elevation	
1	-39	740	0.06
2	0	738	0.06
3	67	736	0.035
4	79	732	0.035
5	89	732	0.035
6	93	736	0.06
7	107	738	0.06
8	131	740	

Manning's N Values	
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Right:	0.06
Channel:	0.035

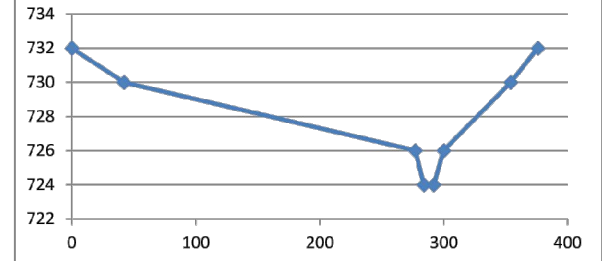
Slope Calc	
US Elev:	736
DS Elev:	734
Length:	1730
Slope (ft/ft):	0.00116



Reach #: 3			881 cfs
8 Point XS			
Pt No	Distance	Elevation	
1	0	732	0.04
2	42	730	0.04
3	277	726	0.035
4	284	724	0.035
5	292	724	0.035
6	300	726	0.04
7	354	730	0.04
8	376	732	

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

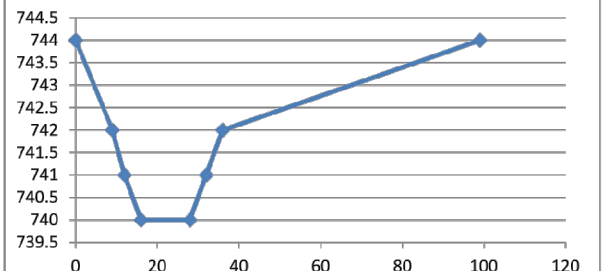
Slope Calc	
US Elev:	732
DS Elev:	718
Length:	2620
Slope (ft/ft):	0.00534



Reach #: 8			441 cfs
8 Point XS			
Pt No	Distance	Elevation	
1	0	744	0.04
2	9	742	0.04
3	12	741	0.035
4	16	740	0.035
5	28	740	0.035
6	32	741	0.04
7	36	742	0.04
8	99	744	

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	744
DS Elev:	736
Length:	3780
Slope (ft/ft):	0.00212



[1] capacity determined by normal depth using HY8 tailwater analysis

DATE	SOURCE

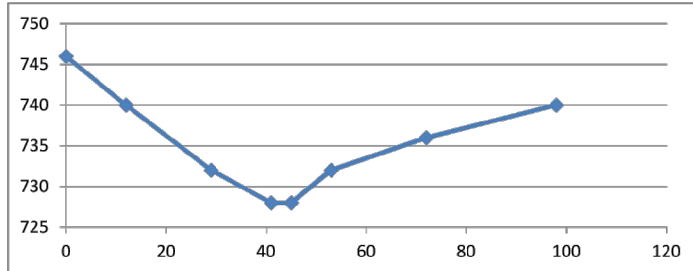


Reach #: 11 113 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	746
2	12	740
3	29	732
4	41	728
5	45	728
6	53	732
7	72	736
8	98	740

Manning's N Values	
Left:	0.06
Right:	0.06
Channel:	0.035

Slope Calc	
US Elev:	752
DS Elev:	736
Length:	182
Slope (ft/ft):	0.08791

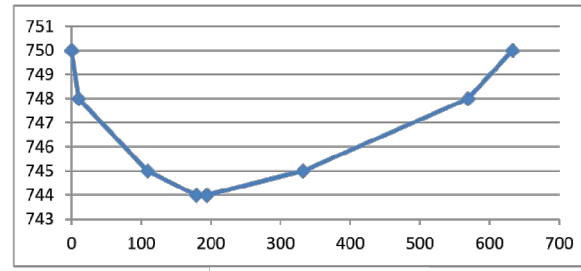


Reach #: 12 614 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	750
2	10	748
3	109	745
4	179	744
5	194	744
6	332	745
7	569	748
8	633	750

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	744
DS Elev:	743
Length:	2100
Slope (ft/ft):	0.00048

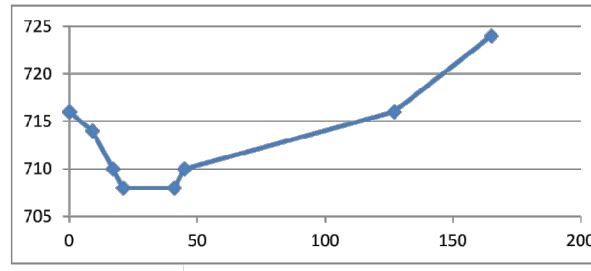


Reach #: 13 2667 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	716
2	9	714
3	17	710
4	21	708
5	41	708
6	45	710
7	127	716
8	165	724

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	712
DS Elev:	708
Length:	578
Slope (ft/ft):	0.00692

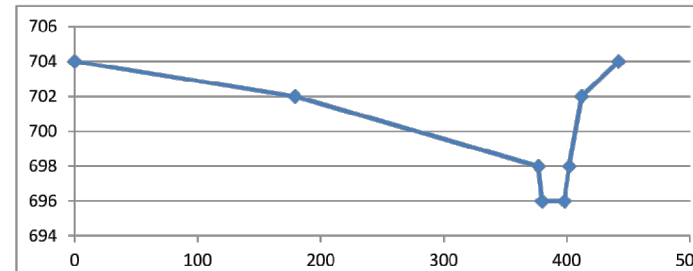


Reach #: 16 4440 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	704
2	179	702
3	377	698
4	380	696
5	398	696
6	402	698
7	412	702
8	442	704

Manning's N Values	
Left:	0.05
Right:	0.05
Channel:	0.035

Slope Calc	
US Elev:	696
DS Elev:	694
Length:	2650
Slope (ft/ft):	0.00075

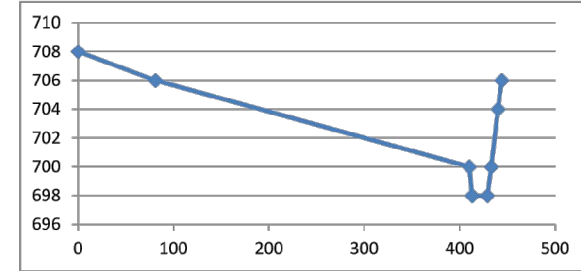


Reach #: 17 4046 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	708
2	81	706
3	410	700
4	413	698
5	429	698
6	433	700
7	440	704
8	444	706

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	700
DS Elev:	698
Length:	3750
Slope (ft/ft):	0.00053

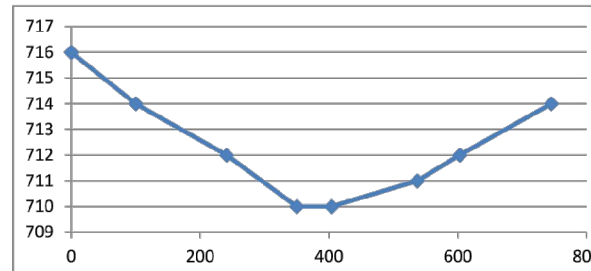


Reach #: 18 206 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	716
2	100	714
3	241	712
4	350	710
5	404	710
6	537	711
7	603	712
8	745	714

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	716
DS Elev:	700
Length:	1800
Slope (ft/ft):	0.00889



[1] capacity determined by normal depth using HY8 tailwater analysis

JUN 22, 2013 10:31 AM SCH00027

DATE	SOURCE



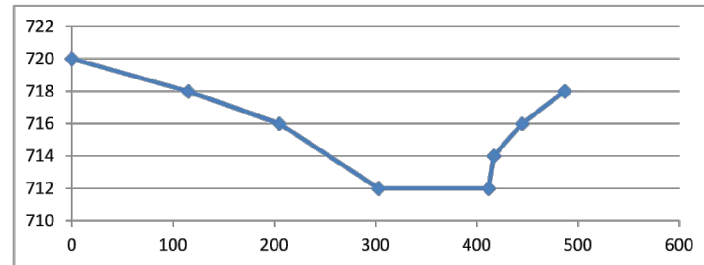
Reach #:	21	243 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	720
2	115	718
3	205	716
4	303	712
5	412	712
6	417	714
7	445	716
8	487	718

0.04
0.04
0.035
0.035
0.035
0.04
0.04

13,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	716
DS Elev:	700
Length:	1750
Slope (ft/ft):	0.00914



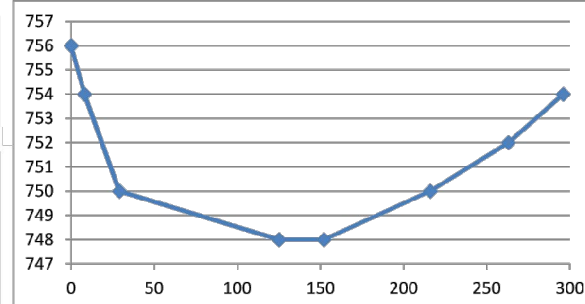
Reach #:	22	314 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	756
2	8	754
3	29	750
4	125	748
5	152	748
6	216	750
7	263	752
8	296	754

0.04
0.04
0.035
0.035
0.035
0.04
0.04

8,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	754
DS Elev:	748
Length:	1626
Slope (ft/ft):	0.00369



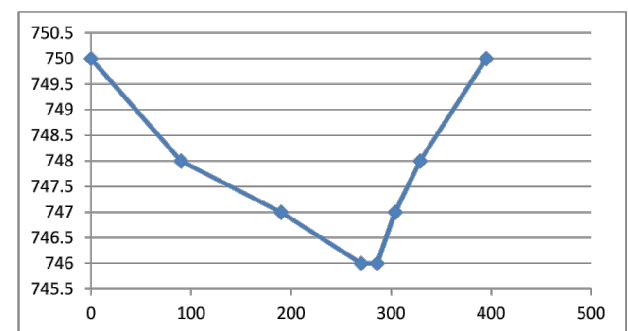
Reach #:	23	78 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	750
2	90	748
3	190	747
4	270	746
5	286	746
6	304	747
7	329	748
8	395	750

0.04
0.04
0.035
0.035
0.035
0.04
0.04

4,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	758
DS Elev:	744
Length:	3168
Slope (ft/ft):	0.00442



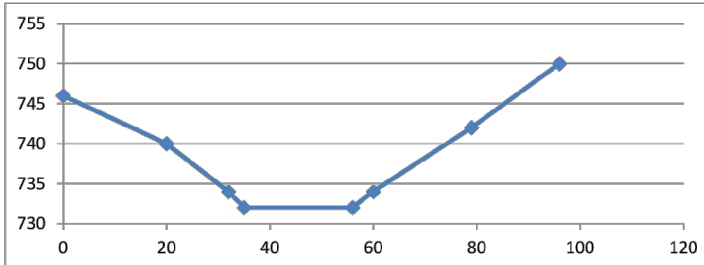
Reach #:	26	1219 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	746
2	20	740
3	32	734
4	35	732
5	56	732
6	60	734
7	79	742
8	96	750

0.06
0.06
0.035
0.035
0.035
0.06
0.06

6,200 cfs capacity

Manning's N Values	
Left:	0.06
Right:	0.06
Channel:	0.035

Slope Calc	
US Elev:	732
DS Elev:	726
Length:	2030
Slope (ft/ft):	0.00296



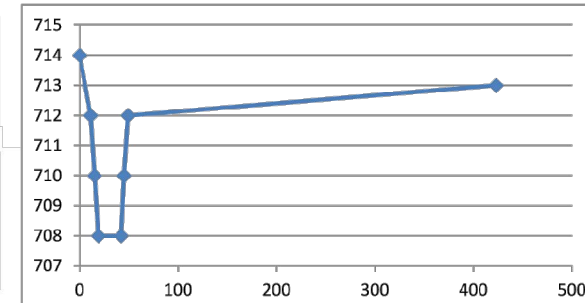
Reach #:	27	2773 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	714
2	11	712
3	15	710
4	19	708
5	42	708
6	45	710
7	49	712
8	423	713

0.04
0.04
0.035
0.035
0.035
0.04
0.04

14,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	708
DS Elev:	704
Length:	1005
Slope (ft/ft):	0.00398



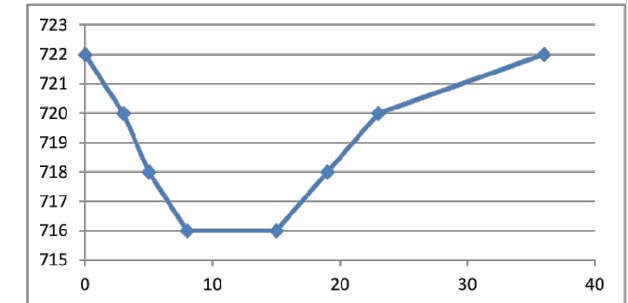
Reach #:	28	273 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	722
2	3	720
3	5	718
4	8	716
5	15	716
6	19	718
7	23	720
8	36	722

0.045
0.045
0.035
0.035
0.035
0.045
0.045

1,000 cfs capacity

Manning's N Values	
Left:	0.045
Right:	0.045
Channel:	0.035

Slope Calc	
US Elev:	732
DS Elev:	704
Length:	3420
Slope (ft/ft):	0.00819



(1) capacity determined by normal depth using HY8 tailwater analysis

JUN 22, 2013 10:32 AM SCH00027

DATE	SOURCE



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APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION

JUN 22, 2013 10:28 AM SCH000827

DATE	SOURCE



Illinois Department of Transportation
Division of Aeronautics



SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION

Reach #: 4 2372 cfs

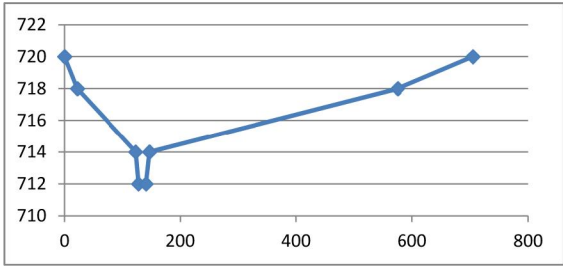
8 Point XS		
Pt No	Distance	Elevation
1	0	720
2	22	718
3	123	714
4	128	712
5	141	712
6	147	714
7	575	718
8	705	720

0.06
0.06
0.035
0.035
0.035
0.06
0.06

5,000 cfs capacity

Manning's N Values	
Left:	0.06
Right:	0.06
Channel:	0.035

Slope Calc	
US Elev:	718
DS Elev:	712
Length:	4010
Slope (ft/ft):	0.00150



Reach #: 5 273 cfs

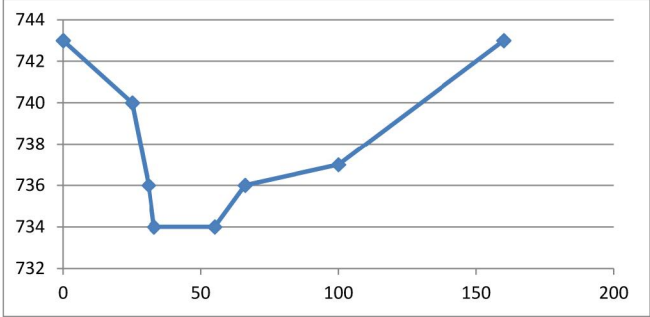
8 Point XS		
Pt No	Distance	Elevation
1	0	743
2	25	740
3	31	736
4	33	734
5	55	734
6	66	736
7	100	737
8	160	743

0.04
0.04
0.035
0.035
0.035
0.04
0.04

9,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	754
DS Elev:	734
Length:	2244
Slope (ft/ft):	0.00891



Reach #: 9 600 cfs

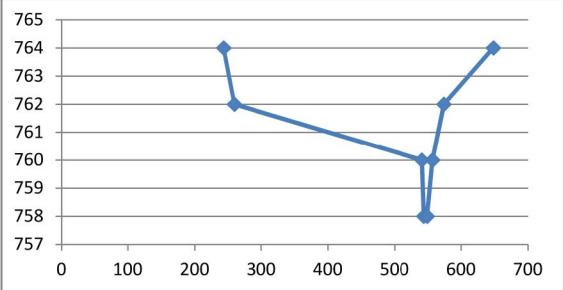
8 Point XS		
Pt No	Distance	Elevation
1	243	764
2	259	762
3	541	760
4	544	758
5	549	758
6	557	760
7	574	762
8	648	764

0.04
0.04
0.035
0.035
0.035
0.04
0.04

3,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	762
DS Elev:	750
Length:	5900
Slope (ft/ft):	0.00203



Reach #: 10 476 cfs

8 Point XS		
Pt No	Distance	Elevation
1	0	772
2	16	768.7
3	16.1	768
4	23.1	764
5	26.1	764
6	31.1	766
7	36.1	768
8	47.1	772

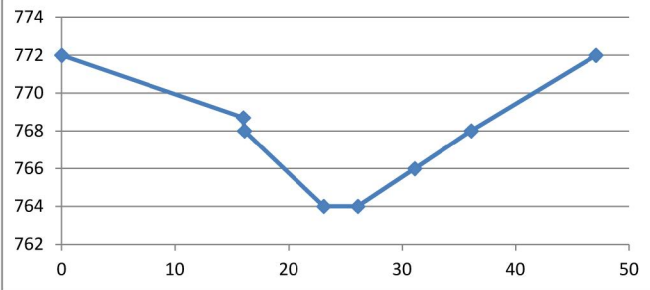
0.045
0.045 <<< Top of Rail
0.035
0.035
0.035
0.06
0.06

900 cfs capacity

Note: Overtops RR @ LOB w/ 240 cfs

Manning's N Values	
Left:	0.045
Right:	0.06
Channel:	0.035

Slope Calc	
US Elev:	766
DS Elev:	762
Length:	2000
Slope (ft/ft):	0.00200



(1) capacity determined by normal depth using HY8 tailwater analysis

JUN 22, 2013 10:34 AM SCHIE00827

DATE	SOURCE



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SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION

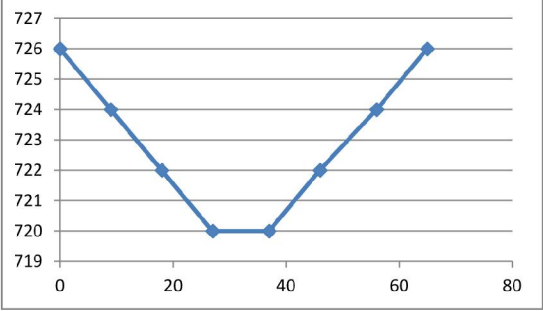
Reach #:	14	64 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	726
2	9	724
3	18	722
4	27	720
5	37	720
6	46	722
7	56	724
8	65	726

0.045
0.045
0.035
0.035
0.035
0.045
0.045

4,800 cfs capacity

Manning's N Values	
Left:	0.045
Right:	0.045
Channel:	0.035

Slope Calc	
US Elev:	731
DS Elev:	710
Length:	465
Slope (ft/ft):	0.045161



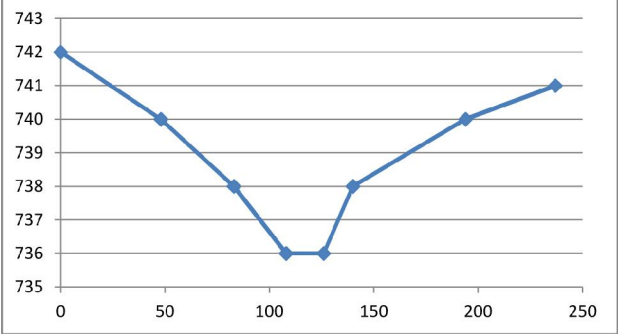
Reach #:	15	1229 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	742
2	48	740
3	83	738
4	108	736
5	126	736
6	140	738
7	194	740
8	237	741

0.04
0.04
0.035
0.035
0.035
0.04
0.04

4,000 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	744
DS Elev:	724
Length:	1680
Slope (ft/ft):	0.011905



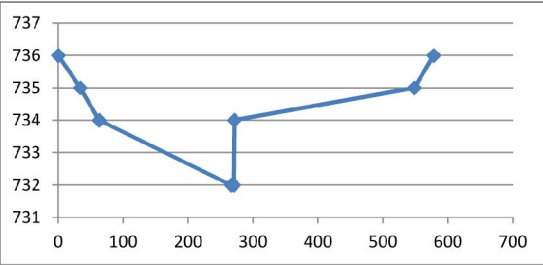
Reach #:	19	63 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	736
2	34	735
3	63	734
4	266	732
5	270	732
6	271	734
7	548	735
8	578	736

0.045
0.045
0.035
0.035
0.035
0.045
0.045

5,500 cfs capacity

Manning's N Values	
Left:	0.045
Right:	0.045
Channel:	0.035

Slope Calc	
US Elev:	738
DS Elev:	730
Length:	1400
Slope (ft/ft):	0.005714



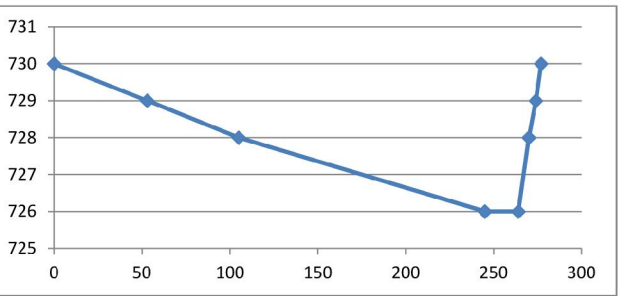
Reach #:	20	162 cfs
8 Point XS		
Pt No	Distance	Elevation
1	0	730
2	53	729
3	105	728
4	245	726
5	264	726
6	270	728
7	274	729
8	277	730

0.04
0.04
0.035
0.035
0.035
0.04
0.04

3,500 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	730
DS Elev:	720
Length:	1800
Slope (ft/ft):	0.005556



(1) capacity determined by normal depth using HY8 tailwater analysis

JUN 22, 2013 10:36 AM SCHIE00827

DATE	SOURCE



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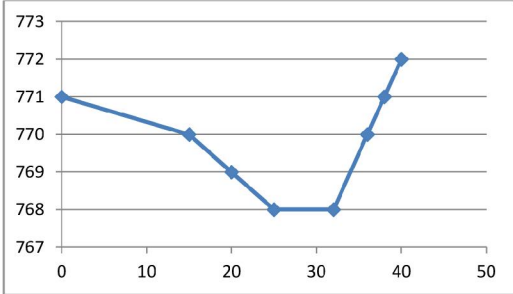
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX C-1 (CONT.)
ROCK CREEK SUPPORTING HYDROLOGIC INFORMATION

Reach #: 24 292 cfs		
8 Point XS		
Pt No	Distance	Elevation
1	0	771
2	15	770
3	20	769
4	25	768
5	32	768
6	36	770
7	38	771
8	40	772

0.06
0.06
0.035
0.035
0.035
0.06
0.06
150 cfs capacity

Manning's N Values	
Left:	0.06
Right:	0.06
Channel:	0.035

Slope Calc	
US Elev:	768
DS Elev:	766
Length:	1056
Slope (ft/ft):	0.001894

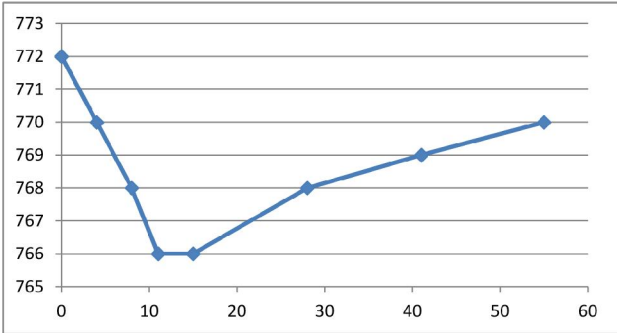


Reach #: 25 28 cfs		
8 Point XS		
Pt No	Distance	Elevation
1	0	772
2	4	770
3	8	768
4	11	766
5	15	766
6	28	768
7	41	769
8	55	770

0.04
0.04
0.035
0.035
0.035
0.04
0.04
680 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	770
DS Elev:	734
Length:	3520
Slope (ft/ft):	0.010227

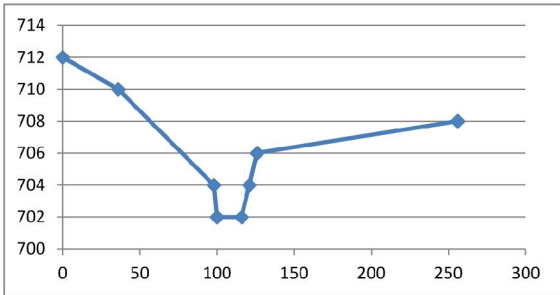


Reach #: 29 401 cfs		
8 Point XS		
Pt No	Distance	Elevation
1	0	712
2	36	710
3	98	704
4	100	702
5	116	702
6	121	704
7	126	706
8	256	708

0.04
0.04
0.035
0.035
0.035
0.04
0.04
850 cfs capacity

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

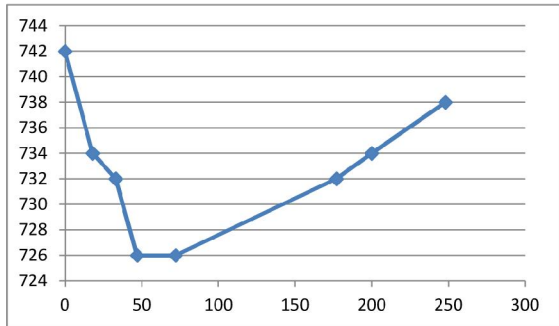
Slope Calc	
US Elev:	704
DS Elev:	702
Length:	2966
Slope (ft/ft):	0.000674



Reach #: Monee		
8 Point XS		
Pt No	Distance	Elevation
1	0	742
2	18	734
3	33	732
4	47	726
5	72	726
6	177	732
7	200	734
8	248	738

Manning's N Values	
Left:	0.04
Right:	0.04
Channel:	0.035

Slope Calc	
US Elev:	734
DS Elev:	712
Length:	2010
Slope (ft/ft):	0.010945



(1) capacity determined by normal depth using HY8 tailwater analysis

Landuse	Hydrologic Soil Classification							
	A	A/D	B	B/D	C	C/D	D	W
COMMERCIAL	89	91	92	93	94	96	95	99
GRASSLAND	68	73	79	84	86	87	89	99
HEAVY RESIDENTIAL	77	81	85	82	90	91	92	99
INDUSTRIAL	81	83	88	90	91	91	93	99
INSTITUTIONAL	54		70		80		85	
LIGHT RESIDENTIAL	51	60	68	72	79	81	84	99
MEDIUM RESIDENTIAL	57	64	72	76	81	83	86	99
OPEN SPACE	39	43	61	68	74	77	80	99
STRAIGHT ROW - POOR	67	72	78	82	79	87	89	99
STREETS	98		98		98		98	
WATER	99	99	99	99	99	99	99	99
WETLAND / BRUSH	35	45	56	60	70	73	77	99
WOODS	30	40	55	60	70	73	77	99

Summary of Curve Number Designations



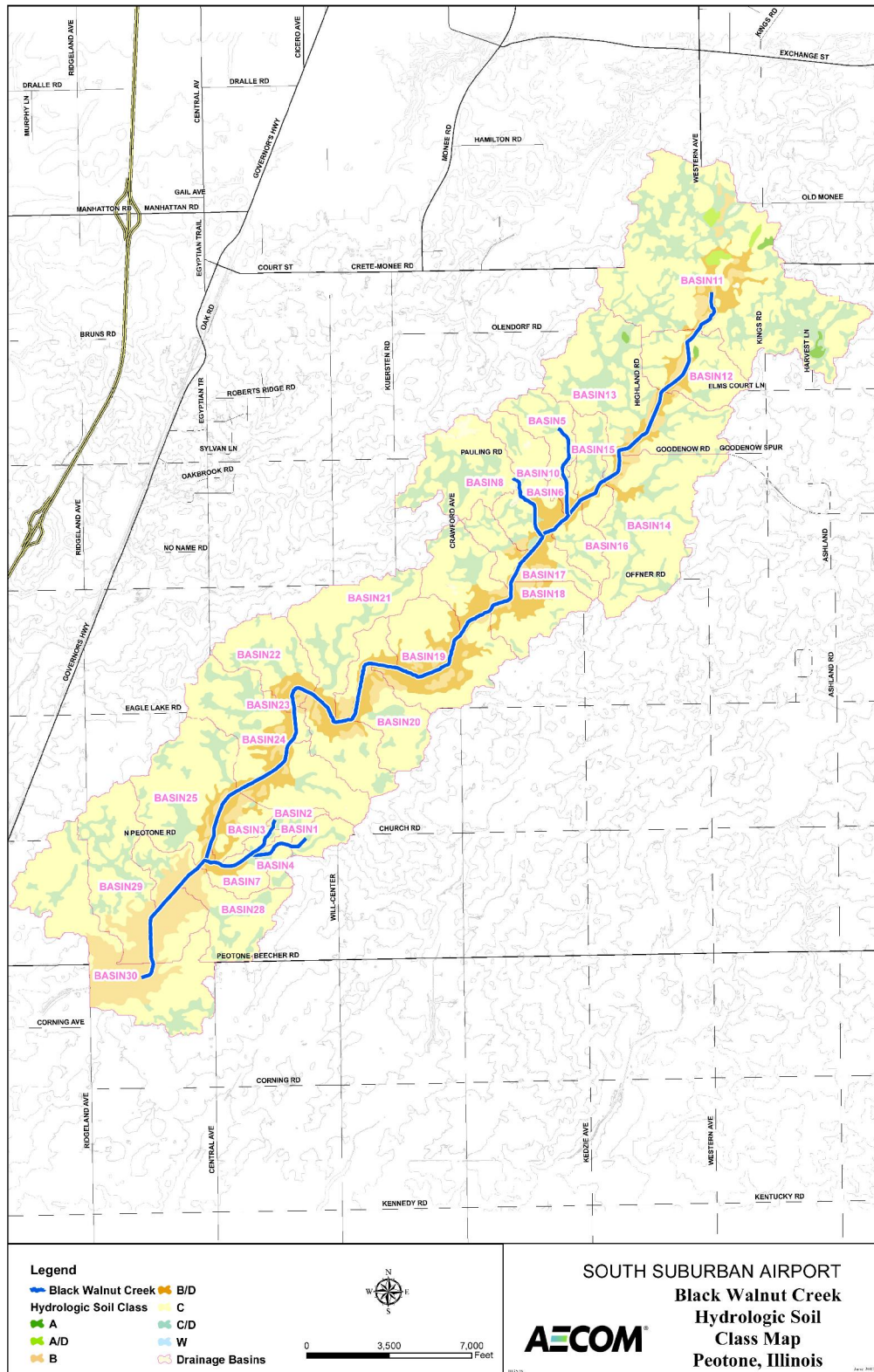
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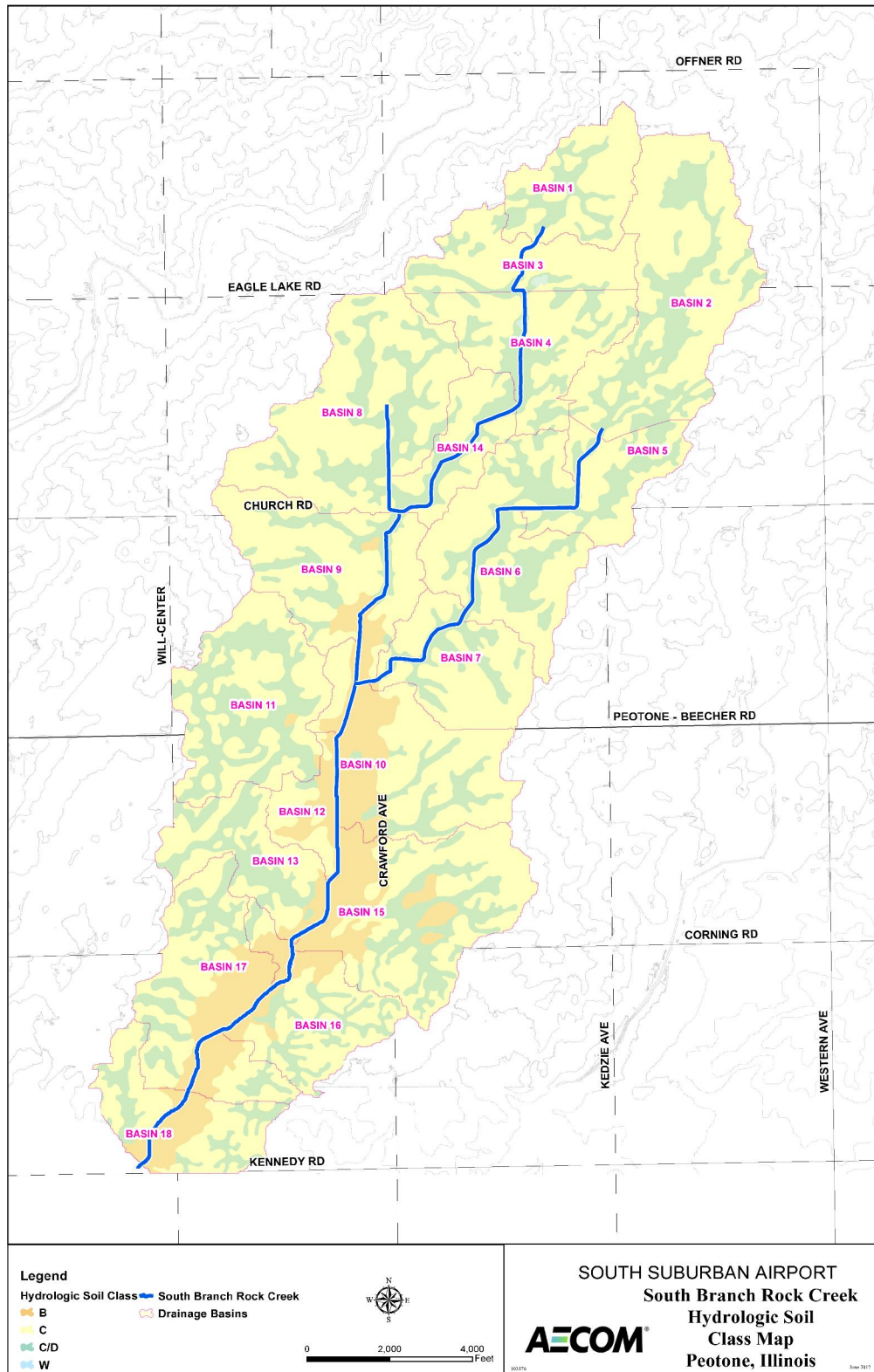


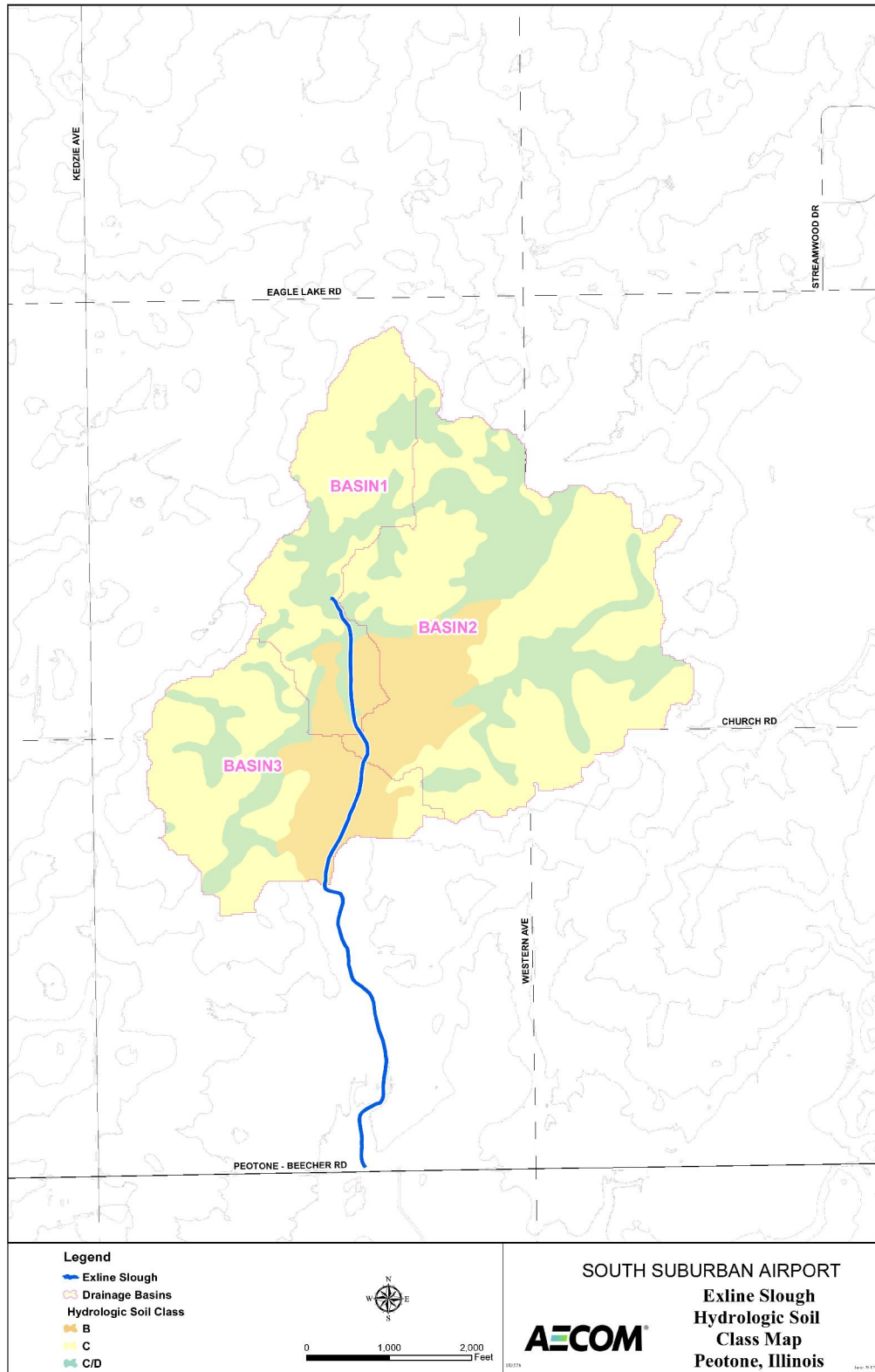
SSA MASTER PLAN - FLOODPLAINS REPORT

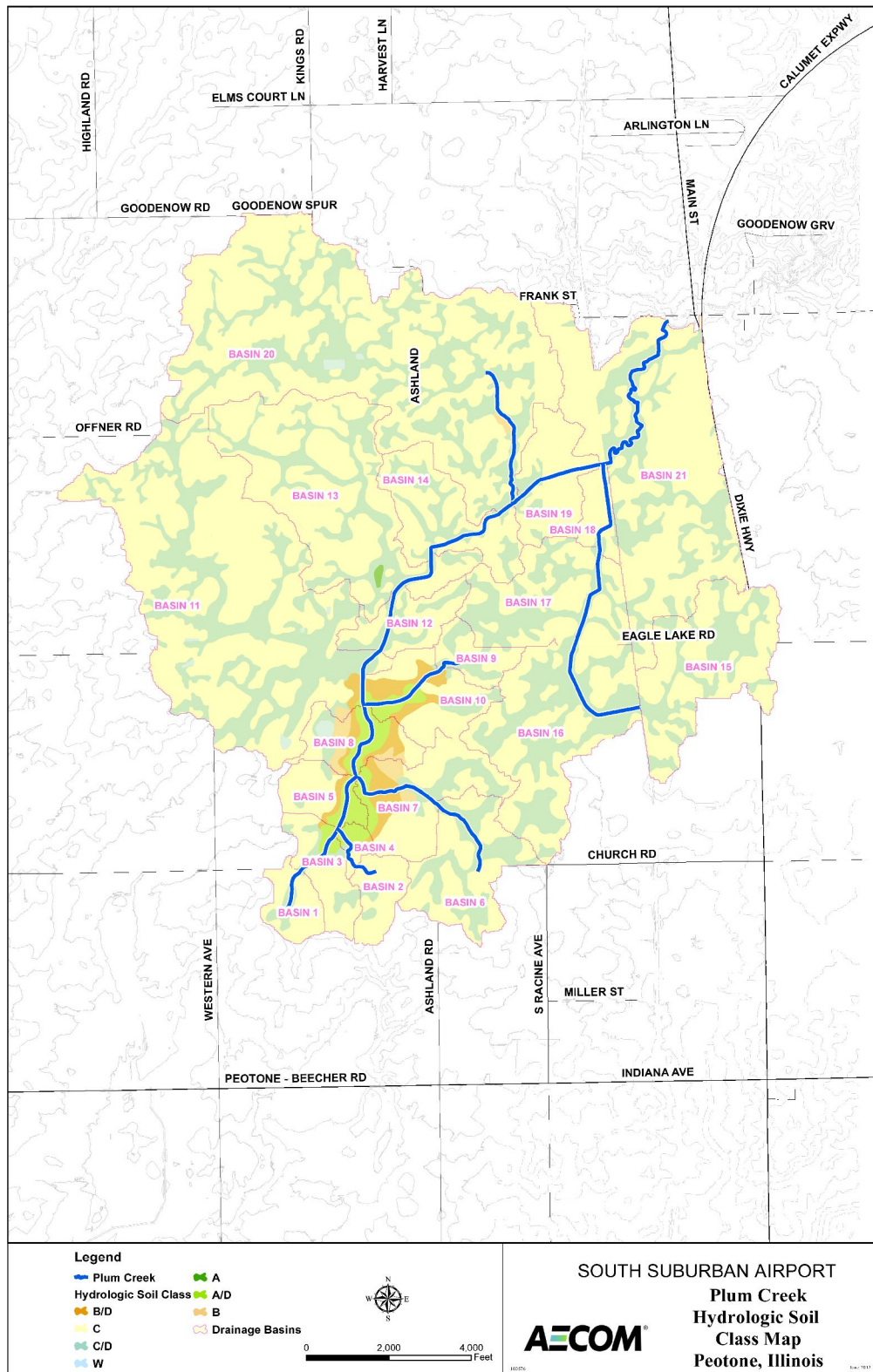
APPENDIX C-2

BLACK WALNUT CREEK/ SOUTH BRANCH ROCK CREEK/
EXLINE SLOUGH/ PLUM CREEK

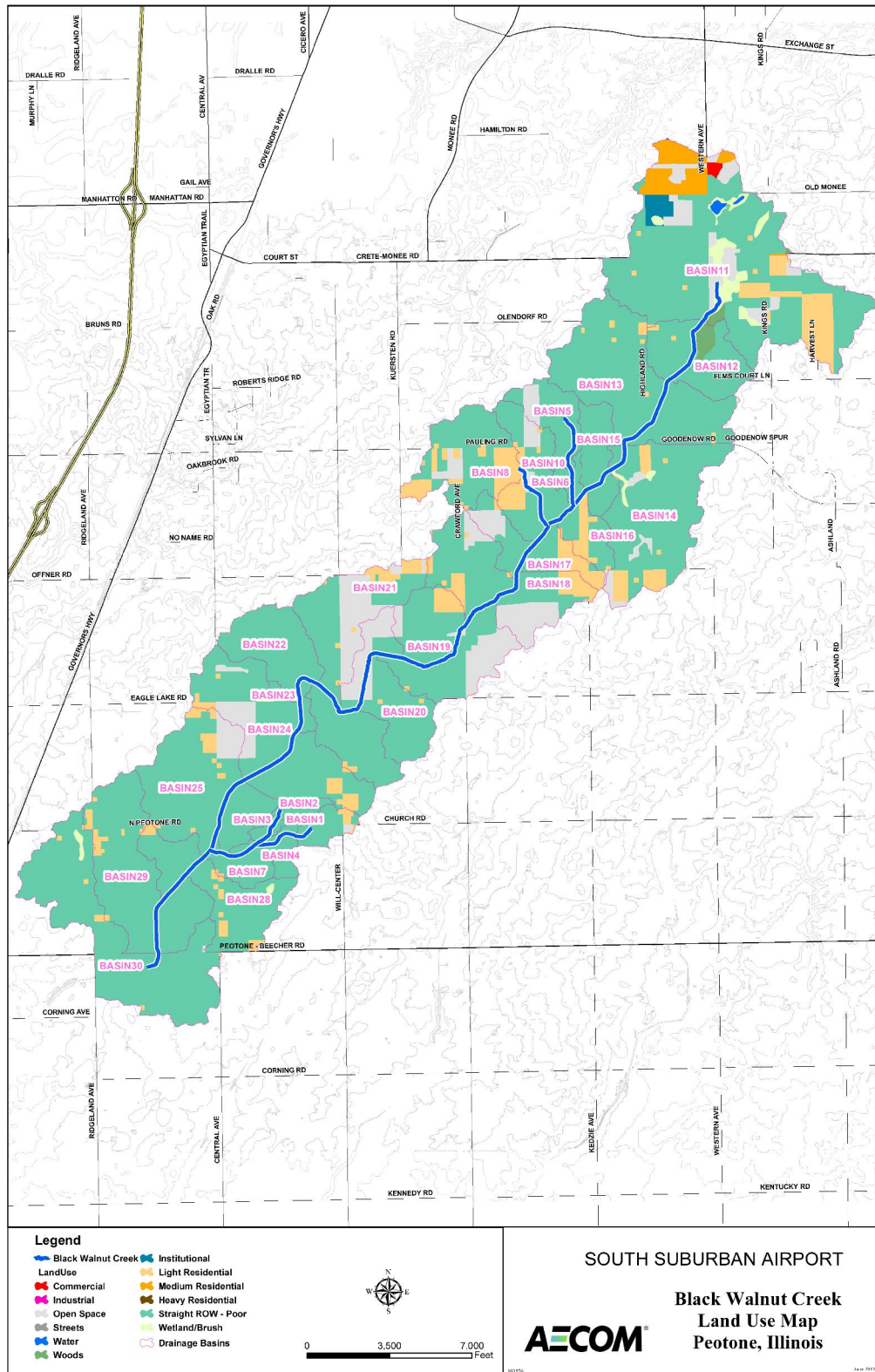


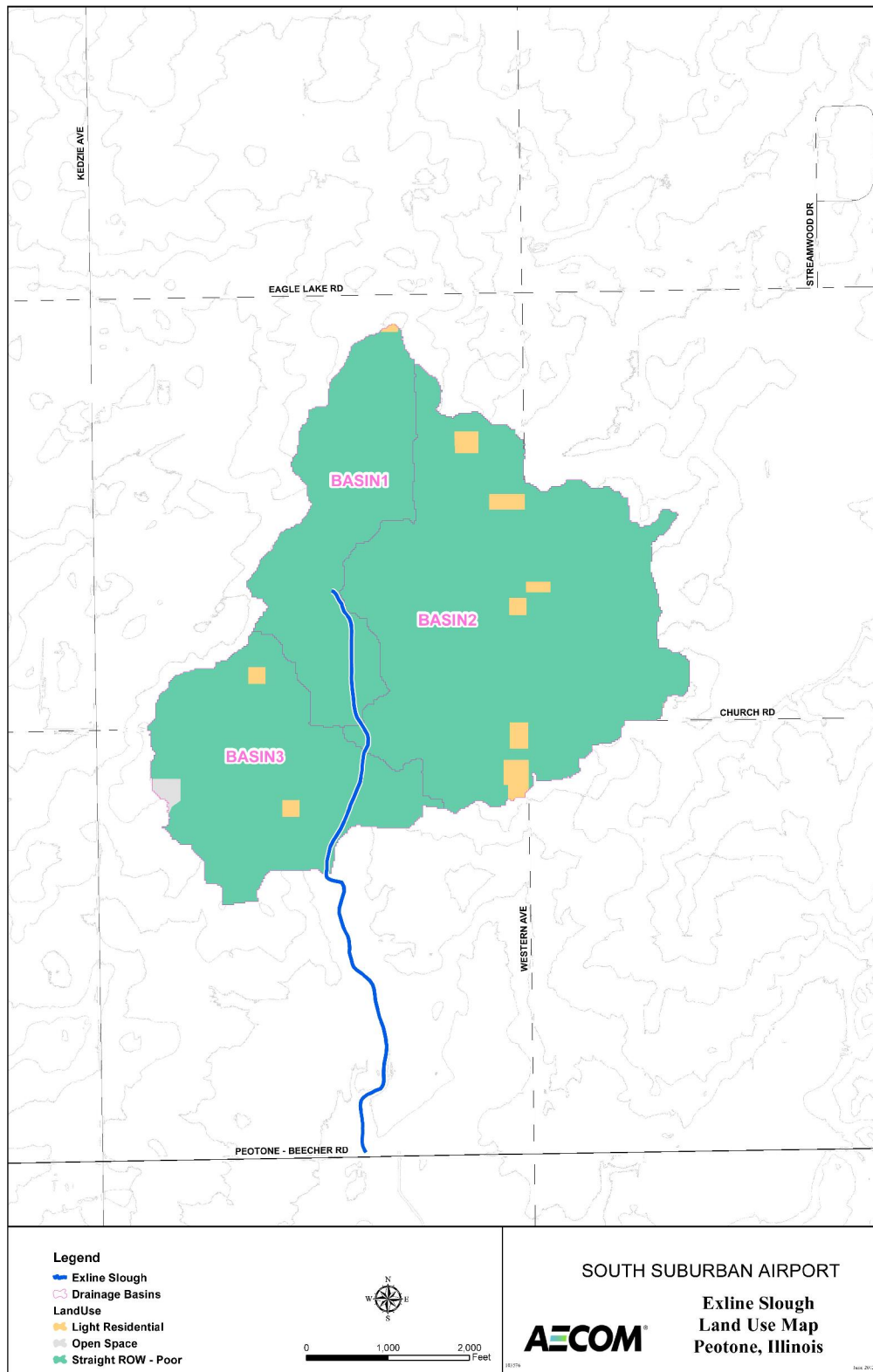


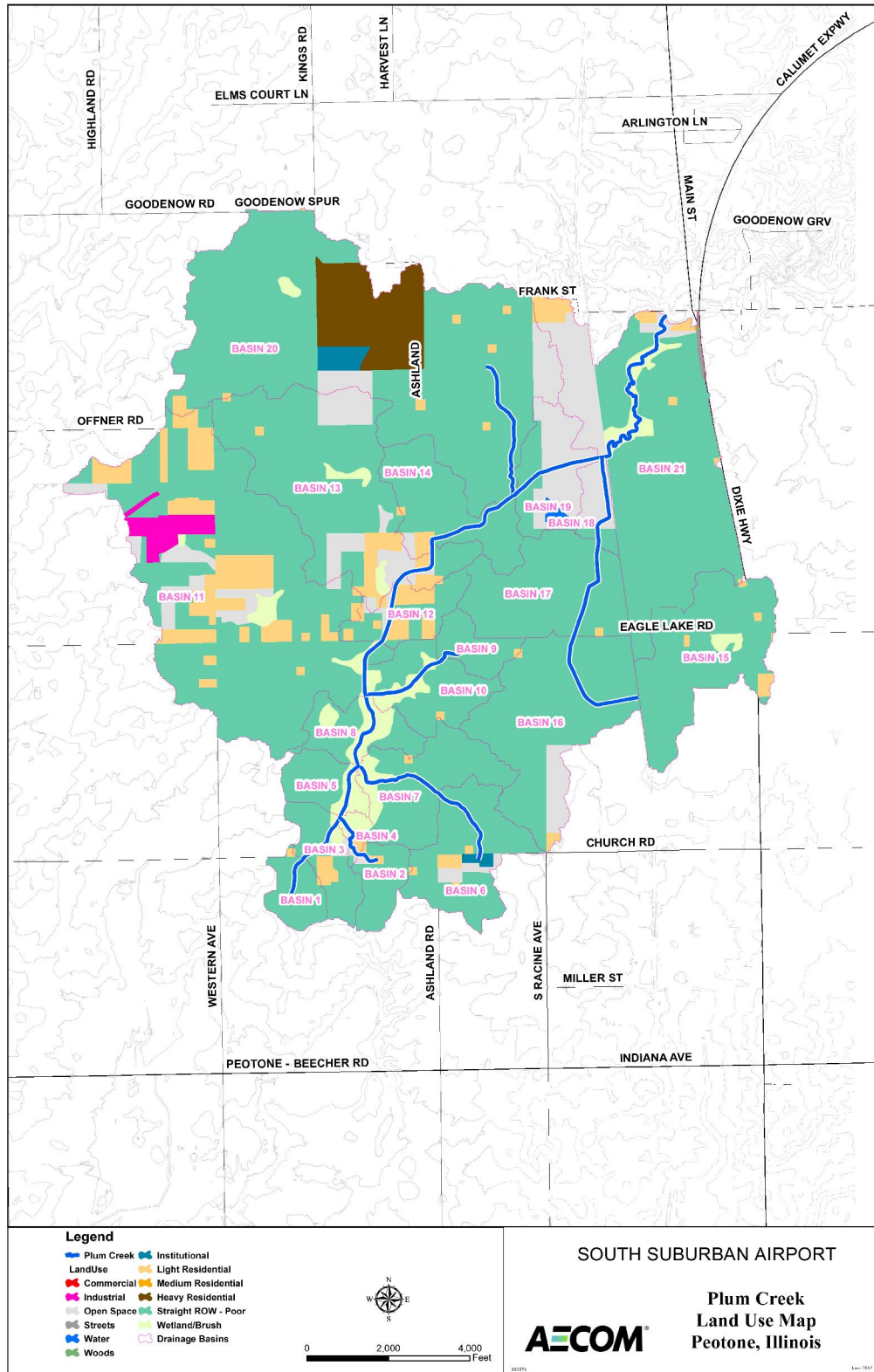




SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX C-2 (CONT.)
BLACK WALNUT CREEK/ SOUTH BRANCH ROCK CREEK/
EXLINE SLOUGH/ PLUM CREEK







Formula: $(Tc+R) = 35.2L^{0.39}S^{-0.78}$

$R/(Tc+R) = 0.6$

Basin ID	10-85 slope (ft/mi)	Stream Length (mi)	(Tc+R)	Tc (hr)	R (hr)	R*1.25 (hr)
1	55.97	0.580	1.23280	0.49312	0.73968	0.92460
2	38.02	0.572	1.65777	0.66311	0.99466	1.24333
3	79.73	0.606	0.95185	0.38074	0.57111	0.71389
4	45.94	0.549	1.40799	0.56320	0.84479	1.05599
5	44.88	1.214	1.95327	0.78131	1.17196	1.46495
6	51.22	0.504	1.25117	0.50047	0.75070	0.93838
7	36.43	0.729	1.88380	0.75352	1.13028	1.41285
8	36.43	1.481	2.48370	0.99348	1.49022	1.86278
10	50.16	1.255	1.81462	0.72585	1.08877	1.36097
11	26.40	2.284	3.78099	1.51240	2.26859	2.83574
12	53.86	0.956	1.54353	0.61741	0.92612	1.15765
13	26.40	1.873	3.49907	1.39963	2.09944	2.62430
14	34.85	1.522	2.59865	1.03946	1.55919	1.94899
15	58.08	1.070	1.52049	0.60820	0.91229	1.14037
16	69.17	0.934	1.25865	0.50346	0.75519	0.94399
17	64.94	1.073	1.39529	0.55812	0.83718	1.04647
18	42.77	1.531	2.22003	0.88801	1.33202	1.66502
19	31.15	1.426	2.76514	1.10605	1.65908	2.07385
20	45.94	1.431	2.04546	0.81818	1.22728	1.53410
21	28.51	1.985	3.37064	1.34826	2.02238	2.52798
22	61.25	1.152	1.50153	0.60061	0.90092	1.12615
23	35.90	0.594	1.75959	0.70384	1.05575	1.31969
24	29.04	1.995	3.32983	1.33193	1.99790	2.49737
25	32.74	1.666	2.82648	1.13059	1.69589	2.11986
28	32.21	1.792	2.94556	1.17822	1.76734	2.20917
29	26.40	2.175	3.70919	1.48368	2.22552	2.78189
30	26.40	2.190	3.71939	1.48776	2.23164	2.78955

Black Walnut Creek Hydrologic Parameter Summary



Illinois Department
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SSA MASTER PLAN - FLOODPLAINS REPORT

APPENDIX C-2 (CONT.)

BLACK WALNUT CREEK/ SOUTH BRANCH ROCK CREEK/
EXLINE SLOUGH/ PLUM CREEK

Formula: $(TC+R) = 35.2L^{0.39}S^{-0.78}$

$R/(TC+R) = 0.6$

Basin ID	10-85 slope (ft/mi)	Stream Length (mi)	(Tc+R)	Tc (hr)	R (hr)	R*1.25 (hr)
1	41.13	0.996	1.93571	0.77428	1.16143	1.45178
2	30.29	1.651	2.99201	1.19680	1.79521	2.24401
3	26.70	0.757	2.43558	0.97423	1.46135	1.82669
4	26.40	1.162	2.90487	1.16195	1.74292	2.17865
5	26.40	1.694	3.36450	1.34580	2.01870	2.52337
6	26.40	1.545	3.24644	1.29858	1.94786	2.43483
7	26.40	1.139	2.88200	1.15280	1.72920	2.16150
8	26.40	1.334	3.06542	1.22617	1.83925	2.29906
9	36.65	1.767	2.64804	1.05922	1.58882	1.98603
10	26.40	1.299	3.03409	1.21364	1.82045	2.27557
11	26.40	1.446	3.16307	1.26523	1.89784	2.37230
12	26.40	0.845	2.56566	1.02627	1.53940	1.92425
13	26.40	1.242	2.98086	1.19234	1.78852	2.23564
14	26.40	1.044	2.78633	1.11453	1.67180	2.08975
15	27.85	1.554	3.12099	1.24840	1.87260	2.34075
16	26.40	1.331	3.06323	1.22529	1.83794	2.29742
17	26.40	1.694	3.36516	1.34606	2.01910	2.52387
18	26.40	1.102	2.84504	1.13802	1.70702	2.13378

South Branch Rock Creek Clark Unit Hydrograph Parameters

Formula: $(TC+R) = 35.2L^{0.39}S^{-0.78}$

$R/(TC+R) = 0.6$

Basin ID	10-85 slope (ft/mi)	Stream Length (mi)	(Tc+R)	Tc (hr)	R (hr)	R*1.25 (hr)
Basin 1	44.64	1.195	1.949	0.77971	1.16957	1.46196
Basin 2	38.93	1.370	2.288	0.91524	1.37286	1.71607
Basin 3	28.58	1.680	3.15287	1.26115	1.89172	2.36465

Exline Slough Unit Hydrograph Parameters



SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX C-2 (CONT.)
BLACK WALNUT CREEK/ SOUTH BRANCH ROCK CREEK/
EXLINE SLOUGH/ PLUM CREEK

Formula: $(Tc+R) = 35.2L^{0.39}S^{-0.78}$

$R/(Tc+R) = 0.6$

Basin ID	10-85 slope (ft/mi)	Stream Length (mi)	(Tc+R)	Tc (hr)	R (hr)	R*1.3 (hr)
1	62.89	0.510	1.07052	0.42821	0.64231	0.83501
2	50.91	0.548	1.29851	0.51940	0.77910	1.01284
3	58.61	0.716	1.29101	0.51641	0.77461	1.00699
4	96.10	0.250	0.58258	0.23303	0.34955	0.45441
5	58.08	0.376	1.01135	0.40454	0.60681	0.78885
6	39.10	0.945	1.97283	0.78913	1.18370	1.53881
7	23.15	0.926	2.94565	1.17826	1.76739	2.29760
8	17.64	0.826	3.48256	1.39302	2.08953	2.71639
9	29.77	0.503	1.90840	0.76336	1.14504	1.48855
10	28.56	0.906	2.47951	0.99180	1.48770	1.93402
11	22.31	3.213	4.92524	1.97010	2.95515	4.43272
12	24.30	0.665	2.49164	0.99665	1.49498	1.94348
13	36.21	1.951	2.77893	1.11157	1.66736	2.50104
14	32.63	1.072	2.38633	0.95453	1.43180	1.86133
15	10.32	1.489	6.65644	2.66258	3.99386	5.99080
16	24.41	1.328	3.25230	1.30092	1.95138	2.53679
17	10.13	1.275	6.35927	2.54371	3.81556	4.96023
18	26.02	0.530	2.16315	0.86526	1.29789	1.68725
19	31.45	0.889	2.28297	0.91319	1.36978	1.78071
20	21.00	2.745	4.85530	1.94212	2.91318	4.36977
21	18.10	2.385	5.16079	2.06431	3.09647	4.02541

Plum Creek Clark Unit Hydrograph Parameters



**Illinois Department
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APPENDIX C-2 (CONT.)

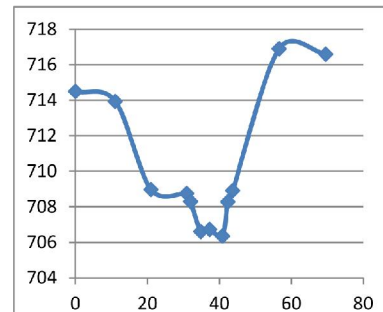
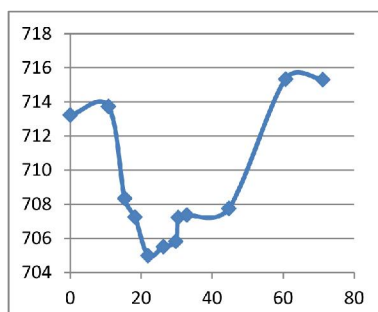
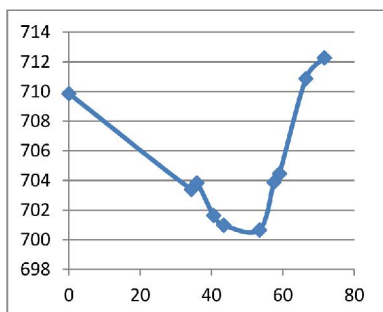
**BLACK WALNUT CREEK/ SOUTH BRANCH ROCK CREEK/
EXLINE SLOUGH/ PLUM CREEK**

Black Walnut Creek Survey Cross Sections

Downstream Structure BW6		
Point No	Distance (ft)	Elev (ft)
1572	0.00	709.86
1573	34.31	703.39
1574	35.86	703.84
1575	40.56	701.63
1576	43.40	700.98
1577	53.43	700.65
1579	57.46	703.88
1580	59.04	704.46
1581	66.41	710.87
1582	71.60	712.28

Downstream Structure BW7		
Point No	Distance (ft)	Elev (ft)
1614	0.00	713.23
1615	10.75	713.73
1616	15.36	708.34
1617	18.22	707.25
1618	21.91	704.98
1619	26.24	705.51
1620	29.74	705.82
1621	30.43	707.23
1622	32.86	707.37
1624	44.68	707.76
1625	60.68	715.34
1626	71.16	715.31

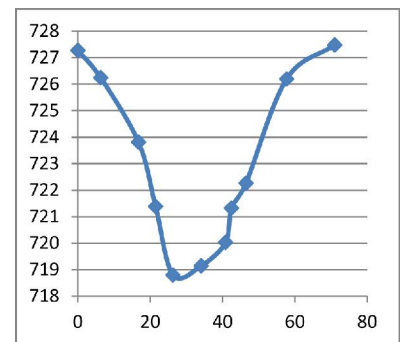
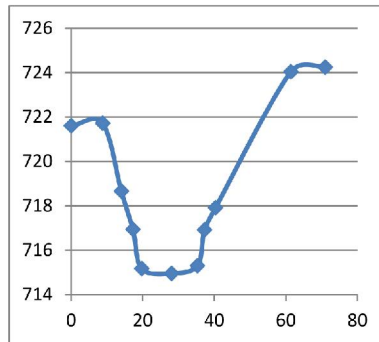
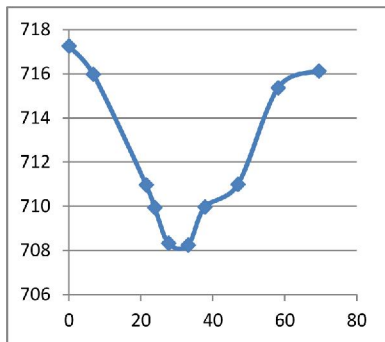
Downstream Structure BW8		
Point No	Distance (ft)	Elev (ft)
1783	0.00	714.50
1784	11.04	713.93
1785	20.98	708.97
1786	30.92	708.75
1787	32.00	708.30
1788	34.82	706.61
1789	37.29	706.73
1790	40.85	706.35
1791	42.32	708.28
1793	43.67	708.91
1794	56.59	716.90
1795	69.55	716.59



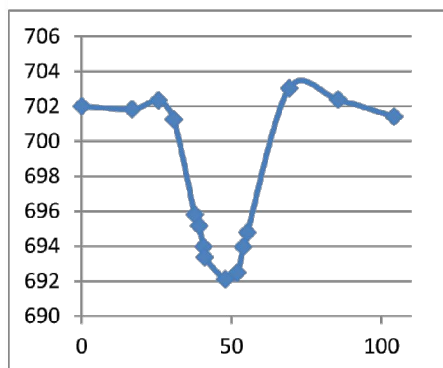
Downstream Structure BW9		
Point No	Distance (ft)	Elev (ft)
1656	0.00	717.25
1657	6.76	715.98
1658	21.47	710.97
1659	23.87	709.94
1661	27.70	708.33
1663	33.11	708.24
1666	37.78	709.97
1667	46.98	710.99
1668	58.15	715.36
1669	69.46	716.13

Downstream Structure BW10		
Point No	Distance (ft)	Elev (ft)
1748	0.00	721.61
1749	8.80	721.72
1750	14.02	718.66
1751	17.25	716.93
1752	19.71	715.17
1753	28.06	714.96
1754	35.25	715.30
1755	37.26	716.92
1757	40.34	717.91
1758	61.39	724.04
1759	70.94	724.25

Downstream Structure BW11		
Point No	Distance (ft)	Elev (ft)
1697	0.00	727.28
1698	6.28	726.24
1699	16.75	723.81
1700	21.46	721.39
1701	26.25	718.80
1702	34.08	719.14
1703	40.80	720.03
1705	42.42	721.32
1706	46.48	722.26
1707	57.68	726.20
1708	70.99	727.48

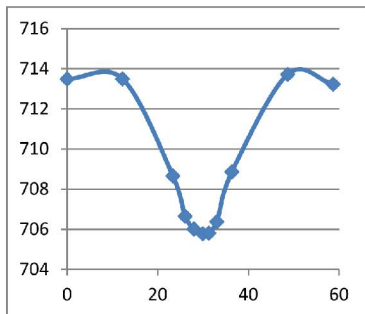


Downstream Structure BW5		
Point No	Distance (ft)	Elev (ft)
2825	0.00	702.01
2826	16.76	701.84
2827	25.60	702.35
2828	30.71	701.25
2829	37.73	695.81
2830	39.14	695.17
2831	40.61	693.97
2832	41.03	693.37
2833	47.89	692.11
2834	51.89	692.48
2835	53.82	693.96
2836	55.25	694.79
2837	69.25	703.04
2838	85.54	702.38
2839	104.20	701.41

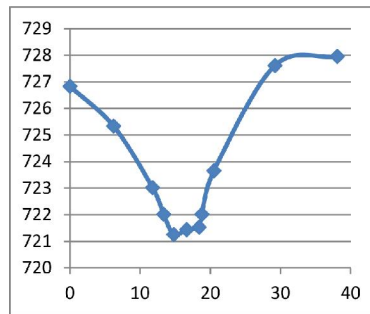


South Branch Rock Creek Survey Cross Sections

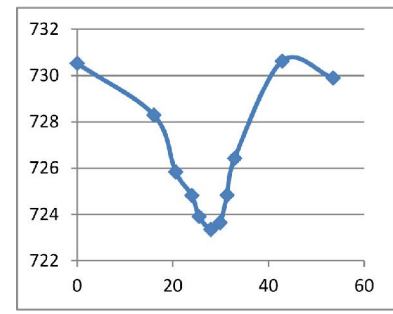
Downstream Structure SBR3		
Point No	Distance (ft)	Elev (ft)
1824	0.00	713.49
1825	12.22	713.50
1826	23.34	708.66
1827	26.03	706.65
1828	28.00	706.01
1829	29.95	705.78
1830	31.27	705.81
1832	33.03	706.38
1833	36.36	708.86
1834	48.67	713.72
1835	58.70	713.23



Downstream Structure SBR4		
Point No	Distance (ft)	Elev (ft)
1871	0.00	726.83
1872	6.22	725.33
1873	11.77	723.02
1874	13.37	722.02
1875	14.79	721.26
1876	16.65	721.44
1877	18.42	721.53
1881	18.81	722.02
1878	20.52	723.65
1879	29.22	727.61
1880	38.10	727.96



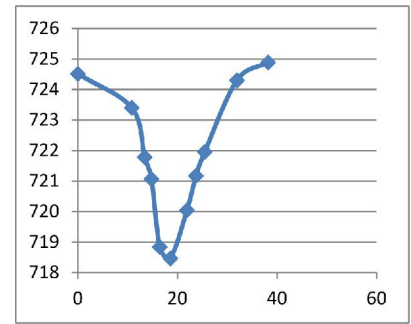
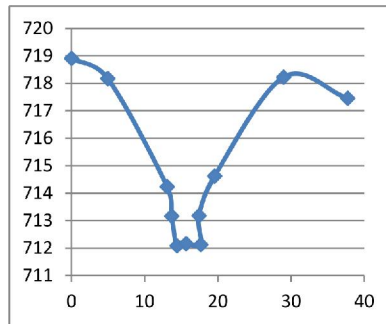
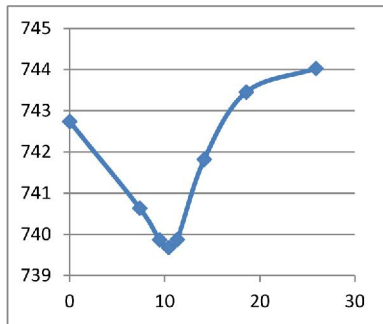
Downstream Structure SBR5		
Point No	Distance (ft)	Elev (ft)
1890	0.00	730.53
1891	16.04	728.29
1892	20.60	725.84
1893	23.96	724.82
1894	25.49	723.91
1895	27.95	723.35
1896	29.87	723.65
1897	31.33	724.84
1899	32.93	726.42
1900	42.87	730.62
1901	53.51	729.89



Downstream Structure SBR6		
Point No	Distance (ft)	Elev (ft)
1926	0.00	742.74
1927	7.39	740.64
1928	9.47	739.87
1929	10.42	739.68
1930	11.32	739.88
1932	14.16	741.82
1933	18.58	743.45
1934	25.91	744.03

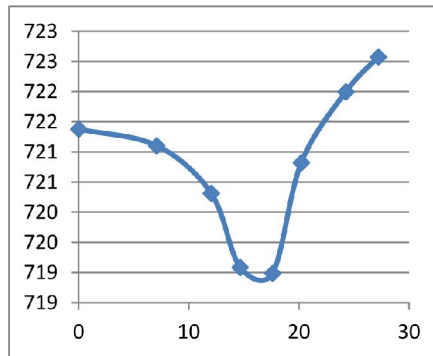
Downstream Structure SBR7		
Point No	Distance (ft)	Elev (ft)
1854	0.00	718.91
1855	4.97	718.17
1856	13.09	714.24
1857	13.69	713.17
1858	14.43	712.09
1859	15.67	712.17
1860	17.68	712.13
1861	17.43	713.18
1863	19.56	714.62
1864	28.98	718.22
1865	37.75	717.45

Downstream Structure SBR8		
Point No	Distance (ft)	Elev (ft)
1909	0.00	724.51
1910	10.84	723.40
1911	13.44	721.78
1912	14.78	721.06
1913	16.46	718.84
1914	18.59	718.46
1915	21.93	720.04
1916	23.71	721.17
1918	25.49	721.95
1919	31.96	724.30
1920	38.21	724.89



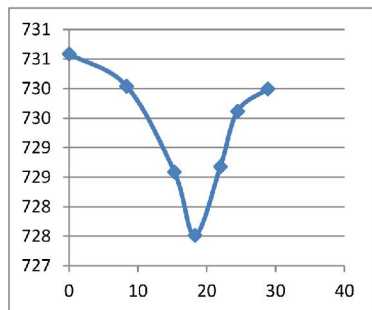
Exline Slough Survey Cross Sections

Downstream Structure Ex1		
Point No	Distance (ft)	Elev (ft)
2109	0.00	721.38
2108	7.08	721.10
2107	12.03	720.31
2106	14.65	719.09
2105	17.61	718.99
2104	20.22	720.82
2103	24.26	722.00
2102	27.21	722.58

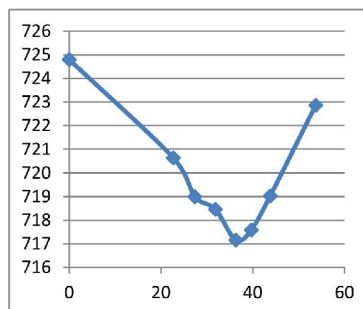


Plum Creek Survey Cross Sections

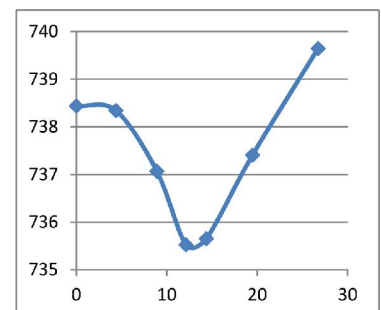
Downstream Structure P1		
Point No	Distance (ft)	Elev (ft)
2087	0.00	730.59
2088	8.35	730.04
2089	15.29	728.59
2090	18.28	727.52
2091	21.98	728.68
2092	24.47	729.62
2093	28.87	730.00



Downstream Structure P3		
Point No	Distance (ft)	Elev (ft)
2016	0.00	724.80
2017	22.68	720.64
2018	27.36	719.00
2019	31.84	718.46
2020	36.31	717.16
2021	39.70	717.58
2023	43.82	719.03
2024	53.72	722.87



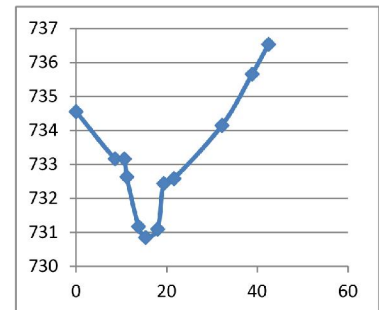
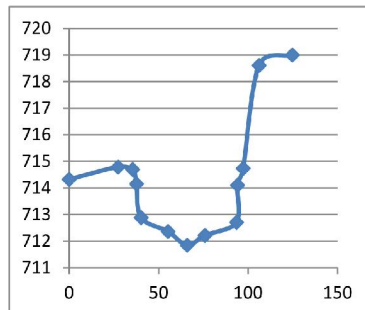
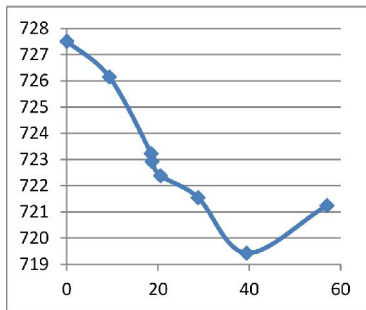
Downstream Structure P8		
Point No	Distance (ft)	Elev (ft)
2068	0.00	738.44
2069	4.37	738.34
2070	8.89	737.07
2071	12.11	735.52
2072	14.37	735.65
2073	19.47	737.41
2074	26.72	739.64



Downstream Structure P2		
Point No	Distance (ft)	Elev (ft)
1964	0.00	727.51
1965	9.30	726.15
1966	18.46	723.23
1967	18.65	722.92
1968	20.51	722.38
1969	28.74	721.55
1970	39.38	719.43
1973	56.99	721.24
1975	59.46	722.36
1976	64.32	725.55
1972	66.58	726.33
1971	76.70	726.35

Downstream Structure P4		
Point No	Distance (ft)	Elev (ft)
3204	0	714.323
3205	27.333006	714.787
3206	35.502385	714.694
3207	37.616855	714.153
3208	40.22953	712.887
3209	55.272043	712.362
3210	65.972855	711.846
3211	75.938275	712.216
3212	93.498206	712.709
3213	94.117253	714.106
3214	97.241935	714.734
3215	106.14556	718.609
3216	124.71429	718.999

Downstream Structure P9		
Point No	Distance (ft)	Elev (ft)
2052	0.00	734.55
2053	8.61	733.16
2054	10.67	733.16
2055	11.21	732.63
2056	13.78	731.17
2057	15.34	730.85
2058	18.00	731.09
2059	19.34	732.43
2061	21.60	732.58
2062	32.18	734.14
2063	38.86	735.65
2064	42.48	736.53



Downstream Structure P11		
Point No	Distance (ft)	Elev (ft)
1983	0.00	731.72
1984	9.57	731.13
1985	16.74	726.89
1986	19.87	725.54
1987	21.66	724.76
1989	23.97	725.57
1990	27.44	728.24
1991	36.28	731.33
1992	47.96	731.50

Downstream Structure P12		
Point No	Distance (ft)	Elev (ft)
2036	0.00	724.90
2037	2.14	724.90
2038	6.62	724.01
2039	7.61	723.12
2040	9.02	723.12
2042	10.00	723.40
2043	14.18	724.06
2044	18.03	724.89
2045	24.75	724.42

