FLOOD CONTROL DISTRICT OF MARICOPA COUNTY, ARIZONA

LUKE WASH WATERSHED ZONE AE FLOODPLAIN DELINEATION STUDY

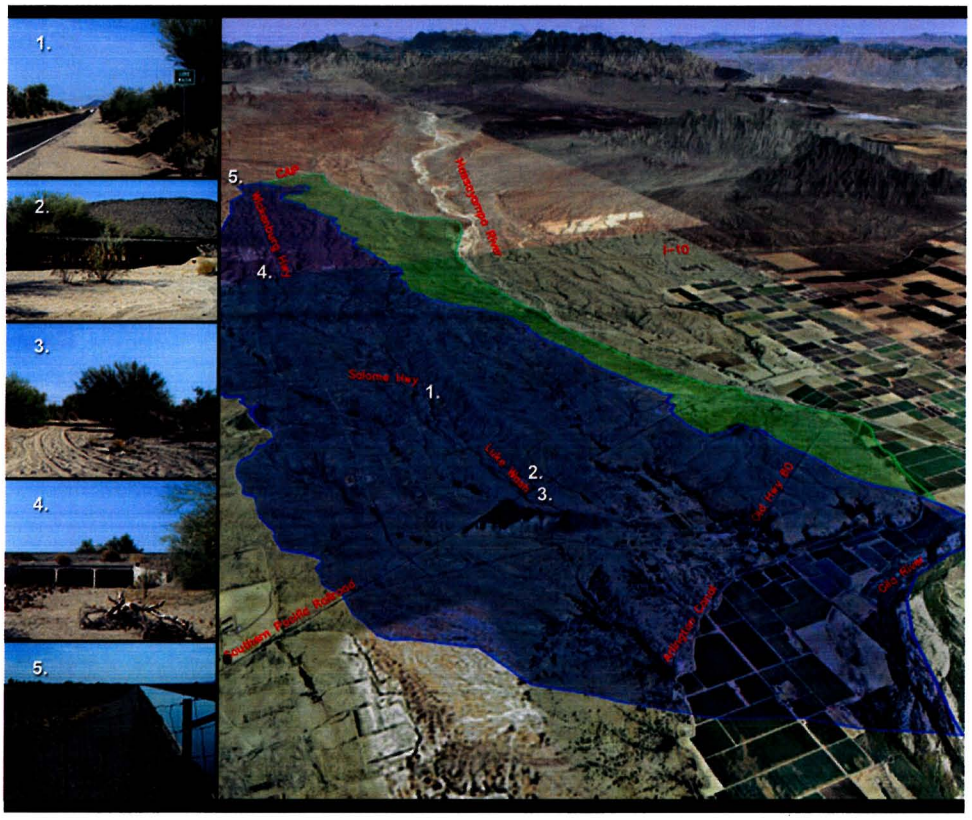
(FCD 2007C020)

TECHNICAL DATA NOTEBOOK

VOLUME 3 of 4

March 2009

WP #073087



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Flood Control District of Maricopa County

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JEFFREY R. MINCH
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ARIZONA, U.S.A.
EXPIRES: 9-30-09

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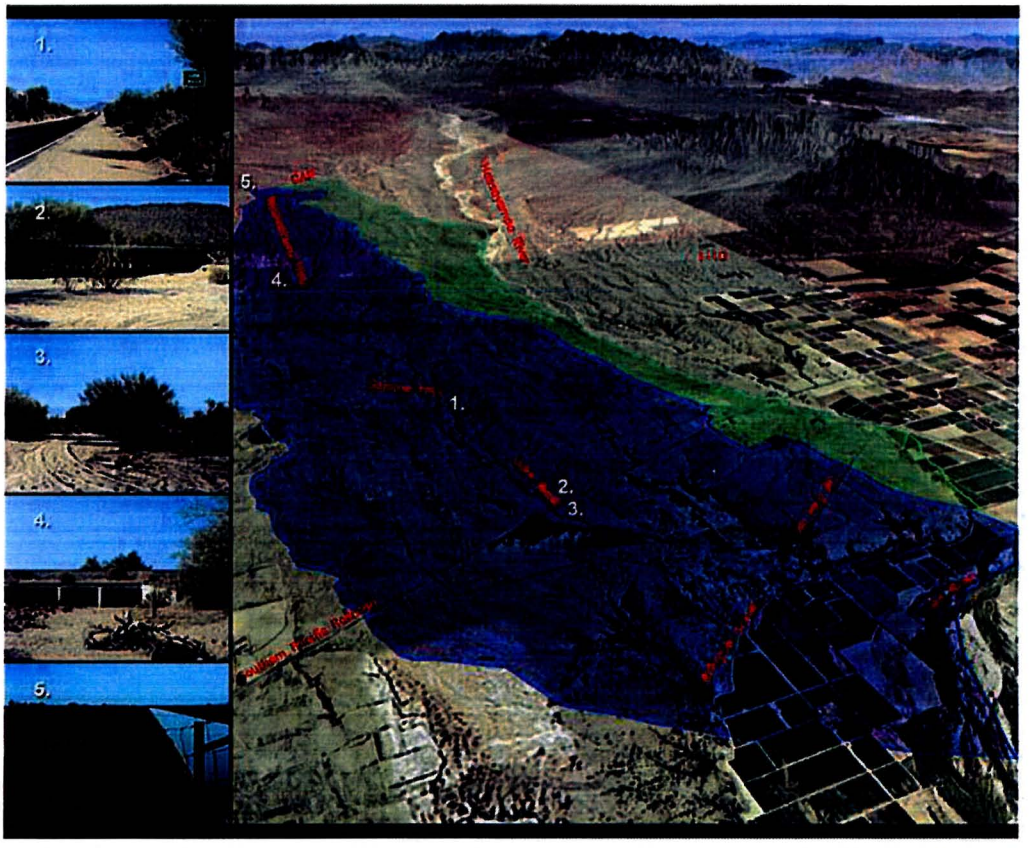

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The following models are not printed but included electronically in Exhibit E:

HEC-1 Models for the 100-Year, 24-Hour Storm without Dike Conditions (EC24NODK)

HEC-1 Models for the 100-Year, 6-Hour Storm with Dike Conditions (EC06DIKE)

HEC-1 Models for the 100-Year, 24-Hour Storm with I-10 Conditions (EC24I10)

HEC-1 Models for the 100-Year, 6-Hour Storm with I-10 Conditions (EC06I10)

HEC-1 Models for the 100-Year, 24-Hour Storm with UPRR Conditions (EC24UPRR)

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APPENDIX D

HYDROLOGIC ANALYSIS SUPPORTING DOCUMENTATION

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APPENDIX D1

Precipitation Data

Flood Control District of Maricopa County
Drainage Design Management System
RAINFALL DATA
Project Reference: LUKE WASH -EC24NODK

Duration	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Rainfall Method: NOAA14						
5 MIN	0.273	0.374	0.449	0.548	0.621	0.696
10 MIN	0.415	0.569	0.684	0.834	0.946	1.059
15 MIN	0.514	0.706	0.847	1.034	1.173	1.313
30 MIN	0.693	0.950	1.141	1.392	1.579	1.769
1 HOUR	0.857	1.176	1.412	1.723	1.954	2.189
2 HOUR	0.960	1.304	1.567	1.927	2.204	2.496
3 HOUR	1.011	1.358	1.632	2.017	2.330	2.661
6 HOUR	1.169	1.536	1.830	2.240	2.565	2.911
12 HOUR	1.280	1.667	1.972	2.393	2.723	3.071
24 HOUR	1.476	1.952	2.327	2.847	3.259	3.693

APPENDIX D2

Physical Parameter Calculations

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Appendix D2d	Soil Data – with Dike Conditions
Appendix D2e	Land Use Data – without Dike Conditions
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APPENDIX D2a

Sub-Basin Data – Without Dike Conditions

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
10a	0.838	1.47	35.5	DESERT/RANGE	0.61	31.50	-	4.09	0.05	0.30	0.25	5.60	0.22	
10b	0.855	2.06	29.1	DESERT/RANGE	1.04	45.60	-	3.97	0.05	0.30	0.25	4.55	0.35	12
12a	0.831	2.04	32.3	DESERT/RANGE	1.09	45.40	-	3.96	0.05	0.30	0.21	6.40	0.16	
12b	0.451	1.62	32.1	DESERT/RANGE	0.77	36.50	-	3.91	0.05	0.30	0.25	5.70	0.20	
14a	0.367	1.72	31.4	DESERT/RANGE	0.82	38.40	-	3.94	0.05	0.30	0.25	5.70	0.20	
14b	0.259	0.88	34.1	DESERT/RANGE	0.40	22.30	-	3.48	0.05	0.30	0.25	4.60	0.34	
14c	1.095	1.97	32.6	DESERT/RANGE	0.65	36.70	-	4.71	0.05	0.30	0.25	4.90	0.29	
14d	0.505	1.43	34.9	DESERT/RANGE	0.53	30.40	-	4.15	0.05	0.30	0.25	4.90	0.29	4
14e	1.101	1.81	34.2	DESERT/RANGE	0.92	40.20	-	3.97	0.05	0.30	0.25	4.65	0.32	1
15a	0.514	1.19	45.3	DESERT/RANGE	0.49	25.60	-	4.10	0.05	0.30	0.25	4.65	0.32	1
16a	0.218	0.93	47.2	DESERT/RANGE	0.46	23.10	-	3.55	0.05	0.29	0.25	4.60	0.34	3
20a	0.373	1.46	31.5	DESERT/RANGE	0.61	32.20	-	3.99	0.05	0.30	0.25	4.35	0.40	23
20b	1.142	2.28	25.5	DESERT/RANGE	1.02	48.20	-	4.15	0.05	0.30	0.25	4.90	0.29	3
20c	1.422	2.41	34.8	DESERT/RANGE	0.89	44.10	-	4.81	0.05	0.30	0.25	5.40	0.23	4
20d	0.623	1.26	41.2	DESERT/RANGE	0.49	26.60	-	4.17	0.05	0.30	0.25	5.00	0.28	1
20e	1.534	1.92	34.3	DESERT/RANGE	0.89	40.60	-	4.17	0.05	0.30	0.25	5.30	0.24	3
20f	1.346	1.95	37.0	DESERT/RANGE	0.89	40.20	-	4.26	0.05	0.30	0.25	4.90	0.29	1
20g	1.178	2.02	33.7	DESERT/RANGE	0.69	38.50	-	4.61	0.05	0.30	0.25	4.80	0.30	3
20h	1.250	2.14	32.8	DESERT/RANGE	0.86	42.10	-	4.47	0.05	0.30	0.25	4.70	0.31	2
20i	0.291	1.20	33.5	DESERT/RANGE	0.59	29.10	-	3.61	0.05	0.30	0.25	4.65	0.32	
20j	0.203	0.82	31.9	DESERT/RANGE	0.42	22.30	-	3.21	0.05	0.30	0.25	4.55	0.35	
20k	0.176	0.86	32.4	DESERT/RANGE	0.44	23.20	-	3.28	0.05	0.30	0.25	4.65	0.32	1
20l	0.129	0.76	29.1	DESERT/RANGE	0.42	22.10	-	3.01	0.05	0.30	0.25	4.65	0.32	
21a	0.882	1.97	30.4	DESERT/RANGE	0.88	41.80	-	4.16	0.05	0.30	0.25	4.70	0.31	1
21b	0.547	2.05	30.3	DESERT/RANGE	1.11	46.30	-	3.89	0.05	0.30	0.25	5.00	0.28	2
21c	0.234	1.47	29.9	DESERT/RANGE	0.77	35.60	-	3.64	0.05	0.30	0.25	4.80	0.30	
21d	0.494	2.04	34.2	DESERT/RANGE	1.09	44.90	-	4.01	0.05	0.30	0.25	5.80	0.19	
22a	0.451	1.56	32.1	DESERT/RANGE	0.82	36.80	-	3.73	0.05	0.30	0.25	5.00	0.28	1
22b	0.164	0.69	31.8	DESERT/RANGE	0.36	19.80	-	3.07	0.05	0.30	0.25	4.70	0.31	
22c	0.220	1.12	35.7	DESERT/RANGE	0.62	28.60	-	3.45	0.05	0.30	0.25	4.70	0.31	
22d	0.244	1.32	30.3	DESERT/RANGE	0.55	30.00	-	3.87	0.05	0.30	0.25	4.65	0.32	1
23a	0.353	1.10	34.7	DESERT/RANGE	0.49	30.70	-	3.14	0.05	0.32	0.25	4.65	0.35	5
24a	0.409	1.29	31.0	DESERT/RANGE	0.64	32.10	-	3.54	0.05	0.30	0.25	4.70	0.31	1
24b	0.335	1.80	31.2	DESERT/RANGE	0.74	37.50	-	4.21	0.05	0.30	0.25	5.10	0.26	
30a	0.036	0.35	28.2	DESERT/RANGE	0.19	18.10	-	1.72	0.07	0.36	0.25	4.25	0.53	17
30b	0.508	1.64	31.7	DESERT/RANGE	0.85	38.10	-	3.79	0.05	0.29	0.25	4.60	0.34	9
30c	0.243	1.14	28.1	DESERT/RANGE	0.53	28.40	-	3.53	0.05	0.30	0.25	4.40	0.38	9
30d	0.615	2.11	37.0	DESERT/RANGE	1.00	43.30	-	4.28	0.05	0.30	0.25	4.50	0.36	
30e	0.400	1.26	39.8	DESERT/RANGE	0.62	29.30	-	3.78	0.05	0.30	0.25	5.30	0.24	1
30f	1.771	3.46	27.2	DESERT/RANGE	1.20	59.40	11.88	5.12	0.05	0.30	0.25	4.55	0.35	1

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
30g	0.844	1.84	38.0	DESERT/RANGE	0.92	38.80	-	4.18	0.04	0.29	0.25	4.50	0.36	4
32a	0.289	1.24	37.1	DESERT/RANGE	0.61	29.30	-	3.72	0.05	0.30	0.25	4.55	0.35	1
32b	0.476	1.19	50.3	DESERT/RANGE	0.55	26.20	-	4.01	0.05	0.30	0.25	4.60	0.34	
33a	0.167	0.70	34.4	DESERT/RANGE	0.33	29.40	-	2.08	0.07	0.39	0.25	4.35	0.50	
34a	0.446	2.28	28.0	DESERT/RANGE	1.00	47.10	-	4.27	0.05	0.29	0.25	4.70	0.31	5
34b	0.631	2.36	28.8	DESERT/RANGE	1.26	51.80	-	4.01	0.05	0.30	0.25	4.55	0.35	3
35a	0.057	0.38	52.5	DESERT/RANGE	0.17	16.30	3.26	2.06	0.07	0.38	0.24	4.20	0.54	
36a	0.677	1.51	38.4	DESERT/RANGE	0.64	32.00	-	4.16	0.05	0.29	0.25	4.70	0.31	3
36b	1.059	1.73	38.1	DESERT/RANGE	0.79	36.60	-	4.17	0.05	0.30	0.25	4.65	0.32	2
36c	1.085	2.99	32.8	DESERT/RANGE	1.17	53.70	-	4.90	0.05	0.30	0.25	4.45	0.37	2
40a	0.268	1.15	29.7	DESERT/RANGE	0.67	30.80	-	3.28	0.05	0.30	0.25	4.55	0.35	2
40b	0.416	1.89	28.5	DESERT/RANGE	1.13	45.80	-	3.64	0.05	0.29	0.25	4.60	0.34	4
40c	0.501	1.06	39.5	DESERT/RANGE	0.53	25.90	-	3.61	0.05	0.30	0.25	4.60	0.34	1
40d	0.728	1.88	26.6	DESERT/RANGE	1.04	44.90	-	3.69	0.05	0.30	0.25	4.40	0.38	1
42a	0.360	1.23	37.5	DESERT/RANGE	0.56	27.60	-	3.91	0.04	0.29	0.25	4.60	0.34	3
42b	0.309	1.34	32.8	DESERT/RANGE	0.67	32.00	-	3.68	0.05	0.30	0.25	4.70	0.31	1
44a	0.833	3.04	31.0	DESERT/RANGE	1.41	58.60	11.72	4.56	0.05	0.29	0.25	4.90	0.29	3
44b	0.279	1.35	32.5	DESERT/RANGE	0.64	31.70	-	3.76	0.05	0.30	0.25	5.30	0.24	1
44c	0.338	1.57	33.1	DESERT/RANGE	0.73	35.10	-	3.94	0.05	0.30	0.25	5.60	0.22	
44d	0.821	2.97	35.7	DESERT/RANGE	1.24	53.90	-	4.85	0.05	0.30	0.25	5.80	0.19	
44e	0.463	2.25	36.5	DESERT/RANGE	1.07	45.60	-	4.33	0.05	0.30	0.25	5.40	0.23	
44f	0.267	1.67	38.3	DESERT/RANGE	0.86	37.20	-	3.96	0.05	0.30	0.25	5.40	0.23	
46a	0.807	1.95	31.7	DESERT/RANGE	1.07	44.50	-	3.87	0.05	0.30	0.25	4.10	0.46	
46b	0.401	1.67	35.8	DESERT/RANGE	0.83	37.20	-	3.96	0.05	0.30	0.25	4.70	0.31	
46c	0.226	1.51	35.7	DESERT/RANGE	0.84	36.00	-	3.70	0.05	0.30	0.25	5.00	0.28	
46d	0.431	1.81	38.7	DESERT/RANGE	0.86	38.30	-	4.16	0.05	0.30	0.25	4.70	0.31	
46e	0.220	0.97	37.1	DESERT/RANGE	0.51	25.00	-	3.42	0.05	0.30	0.25	5.10	0.26	
46f	0.576	2.12	34.9	DESERT/RANGE	1.00	43.90	-	4.25	0.05	0.30	0.25	5.20	0.25	
46g	0.451	2.49	32.1	DESERT/RANGE	1.28	52.10	-	4.21	0.05	0.30	0.25	5.10	0.26	
46h	0.384	1.48	40.5	DESERT/RANGE	0.76	33.50	-	3.88	0.05	0.30	0.25	5.30	0.24	
46i	0.270	1.12	46.6	DESERT/RANGE	0.60	26.20	-	3.75	0.04	0.29	0.24	4.90	0.29	
46j	0.294	1.24	41.9	DESERT/RANGE	0.72	29.20	-	3.74	0.04	0.28	0.23	5.00	0.27	
46k	0.442	1.08	37.0	DESERT/RANGE	0.45	24.30	-	3.92	0.04	0.29	0.24	5.20	0.25	
48a	0.283	1.44	30.5	DESERT/RANGE	0.74	35.50	-	3.58	0.05	0.30	0.25	4.25	0.42	1
48b	0.204	1.18	30.5	DESERT/RANGE	0.54	28.50	-	3.64	0.05	0.30	0.25	4.35	0.40	
50a	0.891	2.33	30.1	DESERT/RANGE	1.40	53.10	-	3.85	0.05	0.30	0.25	5.00	0.28	
50b	0.205	1.06	37.8	DESERT/RANGE	0.58	27.00	-	3.45	0.05	0.30	0.25	5.00	0.28	
50c	0.548	2.70	33.3	DESERT/RANGE	1.23	52.60	-	4.53	0.05	0.30	0.25	5.00	0.28	
50d	0.178	0.94	34.0	DESERT/RANGE	0.51	25.10	-	3.30	0.05	0.30	0.25	5.00	0.28	
50e	0.171	0.88	34.3	DESERT/RANGE	0.47	23.60	-	3.26	0.05	0.30	0.25	5.00	0.28	

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
50f	0.292	1.41	35.4	DESERT/RANGE	0.70	32.80	-	3.79	0.05	0.30	0.25	5.10	0.26	
50g	0.146	1.11	41.4	DESERT/RANGE	0.47	24.90	-	3.92	0.05	0.30	0.25	5.30	0.24	
52a	0.577	1.56	89.9	DESERT/RANGE	0.95	32.00	-	4.29	0.05	0.30	0.25	4.15	0.44	18
54a	0.360	1.35	44.5	DESERT/RANGE	0.66	30.10	-	3.94	0.05	0.30	0.25	4.80	0.30	6
54b	0.235	1.16	34.4	DESERT/RANGE	0.38	24.30	-	4.22	0.05	0.30	0.25	4.70	0.31	4
56a	0.297	1.29	37.2	DESERT/RANGE	0.64	30.30	-	3.75	0.05	0.30	0.25	4.65	0.32	
60a	0.771	1.70	35.3	DESERT/RANGE	0.92	39.00	-	3.83	0.05	0.29	0.25	4.90	0.29	4
60b	1.111	2.31	32.0	DESERT/RANGE	1.05	47.00	-	4.33	0.05	0.29	0.25	4.55	0.35	4
60c	1.044	2.20	35.5	DESERT/RANGE	0.90	42.60	-	4.54	0.05	0.30	0.25	4.35	0.40	1
62a	0.586	1.38	46.5	DESERT/RANGE	0.66	30.10	-	4.02	0.05	0.30	0.25	4.15	0.44	
62b	0.245	1.04	38.5	DESERT/RANGE	0.51	25.40	-	3.60	0.05	0.30	0.25	4.15	0.44	
64a	0.377	1.35	40.1	DESERT/RANGE	0.62	30.00	-	3.95	0.05	0.30	0.25	4.20	0.43	
64b	0.836	2.19	37.5	DESERT/RANGE	1.06	44.80	-	4.29	0.05	0.30	0.25	3.92	0.41	
64c	0.637	1.96	36.8	DESERT/RANGE	0.98	41.80	-	4.12	0.05	0.30	0.25	3.92	0.41	
64d	0.144	0.82	34.2	DESERT/RANGE	0.41	21.90	-	3.29	0.05	0.30	0.27	3.31	0.62	
70a	0.103	0.46	26.0	DESERT/RANGE	0.25	19.10	-	2.13	0.06	0.34	0.25	4.45	0.41	1
70b	0.333	0.84	123.2	MOUNTAIN	0.39	17.00	3.40	4.36	0.05	0.30	0.25	4.40	0.38	2
70c	0.742	2.29	33.2	DESERT/RANGE	1.02	48.00	-	4.20	0.05	0.30	0.25	4.60	0.34	2
70d	0.486	1.35	42.9	DESERT/RANGE	0.67	30.50	-	3.89	0.05	0.30	0.25	4.70	0.31	
70e	1.372	1.82	35.3	DESERT/RANGE	0.71	36.30	-	4.41	0.05	0.30	0.25	4.60	0.34	
70f	0.392	1.51	34.5	DESERT/RANGE	0.79	35.40	-	3.76	0.05	0.30	0.25	5.10	0.26	1
70g	1.633	3.51	33.0	DESERT/RANGE	1.87	69.70	13.94	4.43	0.05	0.29	0.25	4.55	0.35	4
70h	0.293	1.32	37.9	DESERT/RANGE	0.70	30.80	-	3.77	0.04	0.29	0.25	5.00	0.28	5
71a	0.262	0.95	84.6	MOUNTAIN	0.56	21.90	-	3.80	0.05	0.30	0.25	4.10	0.46	1
71b	0.290	1.26	166.3	MOUNTAIN	0.59	21.90	-	5.07	0.05	0.30	0.25	4.00	0.47	2
72a	0.443	1.36	118.0	MOUNTAIN	0.66	26.80	-	4.46	0.05	0.31	0.25	4.20	0.45	1
72b	1.187	1.92	44.8	MOUNTAIN	0.78	41.60	-	4.06	0.05	0.32	0.25	4.15	0.47	2
73a	0.368	1.61	26.1	DESERT/RANGE	0.77	40.30	-	3.51	0.05	0.31	0.25	4.35	0.41	
73b	0.606	1.62	28.4	DESERT/RANGE	0.70	36.00	-	3.96	0.05	0.30	0.25	4.60	0.34	
74a	0.309	1.19	38.6	DESERT/RANGE	0.50	26.60	-	3.94	0.05	0.30	0.25	4.60	0.34	
74b	0.665	1.81	36.5	DESERT/RANGE	0.90	39.40	-	4.04	0.05	0.30	0.25	4.45	0.37	1
75a	0.460	1.85	32.5	DESERT/RANGE	0.95	41.40	-	3.93	0.05	0.30	0.25	4.80	0.30	2
77a	0.245	1.17	39.4	DESERT/RANGE	0.59	27.40	-	3.75	0.04	0.29	0.25	4.40	0.38	3
77b	0.442	1.50	35.9	DESERT/RANGE	0.63	32.20	-	4.12	0.05	0.30	0.25	4.65	0.32	1
78a	0.151	0.85	35.5	DESERT/RANGE	0.46	24.00	-	3.10	0.05	0.30	0.25	5.30	0.24	2
78b	0.479	1.54	37.6	DESERT/RANGE	0.65	32.60	-	4.17	0.05	0.30	0.25	4.80	0.30	2
79a	0.515	1.28	89.2	DESERT/RANGE	0.60	26.10	-	4.31	0.05	0.30	0.25	4.00	0.47	
79b	0.362	1.06	213.4	MOUNTAIN	0.49	18.20	-	5.11	0.05	0.30	0.25	3.95	0.40	1
80a	0.337	1.19	45.5	DESERT/RANGE	0.55	27.30	-	3.83	0.05	0.30	0.25	4.45	0.37	2
80b	0.278	1.04	44.2	DESERT/RANGE	0.46	24.40	-	3.76	0.05	0.30	0.25	4.50	0.36	1

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
81a	0.078	0.52	61.1	DESERT/RANGE	0.29	13.90	2.78	3.33	0.04	0.28	0.25	4.30	0.41	8
81b	0.512	2.05	39.0	DESERT/RANGE	0.86	40.10	-	4.51	0.05	0.30	0.25	4.45	0.37	3
82a	0.588	1.49	49.8	DESERT/RANGE	0.71	31.50	-	4.16	0.05	0.30	0.25	4.45	0.37	
82b	0.265	1.04	44.3	DESERT/RANGE	0.49	24.40	-	3.75	0.05	0.30	0.25	4.20	0.43	
83a	0.242	1.38	42.0	DESERT/RANGE	0.71	31.60	-	3.84	0.05	0.30	0.25	4.25	0.42	
83b	0.432	1.57	39.6	DESERT/RANGE	0.80	35.10	-	3.93	0.05	0.30	0.25	4.15	0.44	
83c	0.278	0.98	53.0	DESERT/RANGE	0.47	22.70	-	3.80	0.05	0.30	0.25	3.92	0.41	
83d	0.230	1.16	44.8	DESERT/RANGE	0.59	27.30	-	3.75	0.05	0.30	0.26	3.55	0.52	
83e	0.837	1.54	41.7	DESERT/RANGE	0.67	32.20	-	4.19	0.05	0.30	0.27	3.38	0.59	
83f	0.132	0.62	61.6	DESERT/RANGE	0.36	16.70	3.34	3.25	0.05	0.30	0.27	3.35	0.60	
83g	0.619	1.60	41.3	DESERT/RANGE	0.75	34.20	-	4.11	0.05	0.30	0.27	3.35	0.60	
83h	0.289	1.64	37.7	DESERT/RANGE	0.81	36.20	-	3.99	0.05	0.30	0.25	3.92	0.41	
83i	0.404	1.41	41.1	DESERT/RANGE	0.63	30.60	-	4.06	0.05	0.30	0.26	3.48	0.55	
83j	0.163	1.15	41.9	DESERT/RANGE	0.59	27.50	-	3.67	0.05	0.30	0.26	3.48	0.55	
83k	0.315	1.30	109.4	DESERT/RANGE	0.66	25.00	-	4.56	0.05	0.30	0.25	4.10	0.46	8
83l	0.555	1.28	62.6	DESERT/RANGE	0.75	29.00	-	3.87	0.05	0.30	0.25	4.80	0.30	4
84a	0.223	0.71	36.5	DESERT/RANGE	0.38	19.90	-	3.15	0.05	0.30	0.25	4.30	0.41	
84b	0.347	1.32	42.6	DESERT/RANGE	0.61	29.20	-	3.96	0.05	0.30	0.25	4.15	0.44	
85a	0.315	1.21	44.7	DESERT/RANGE	0.64	28.50	-	3.72	0.05	0.30	0.25	4.15	0.44	
85b	0.237	0.98	42.9	DESERT/RANGE	0.41	22.40	-	3.84	0.05	0.30	0.25	4.10	0.46	
86a	0.479	1.55	41.4	DESERT/RANGE	0.71	33.10	-	4.11	0.05	0.30	0.27	3.38	0.59	
87a	0.273	1.41	39.8	DESERT/RANGE	0.71	32.20	-	3.85	0.05	0.30	0.25	3.88	0.42	
87b	0.161	1.09	36.9	DESERT/RANGE	0.56	27.00	-	3.53	0.05	0.30	0.27	3.33	0.61	
88a	0.276	1.52	40.8	DESERT/RANGE	0.66	32.10	-	4.17	0.05	0.30	0.25	4.00	0.47	
89a	0.215	1.01	47.7	DESERT/RANGE	0.47	23.40	-	3.79	0.05	0.30	0.27	3.29	0.63	
89b	0.283	1.16	74.0	DESERT/RANGE	0.57	24.50	-	4.18	0.05	0.30	0.25	4.00	0.47	2
91a	0.434	1.20	56.6	DESERT/RANGE	0.60	26.60	-	3.98	0.05	0.30	0.25	4.15	0.44	
91b	0.561	2.53	43.6	DESERT/RANGE	1.34	50.30	-	4.42	0.05	0.30	0.25	4.20	0.43	
92a	0.785	2.35	45.2	DESERT/RANGE	1.08	44.70	-	4.62	0.05	0.30	0.25	4.60	0.34	
92b	0.700	1.83	61.3	DESERT/RANGE	0.79	34.10	-	4.72	0.05	0.30	0.25	4.50	0.36	

APPENDIX D2b

Sub-Basin Data – With Dike Conditions

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
10a	0.838	1.47	35.5	DESERT/RANGE	0.61	31.50	-	4.09	0.05	0.30	0.25	5.60	0.22	
10b	0.855	2.06	29.1	DESERT/RANGE	1.04	45.60	-	3.97	0.05	0.30	0.25	4.55	0.35	12
12a	0.831	2.04	32.3	DESERT/RANGE	1.09	45.40	-	3.96	0.05	0.30	0.21	6.40	0.16	
12b	0.451	1.62	32.1	DESERT/RANGE	0.77	36.50	-	3.91	0.05	0.30	0.25	5.70	0.20	
14a	0.367	1.72	31.4	DESERT/RANGE	0.82	38.40	-	3.94	0.05	0.30	0.25	5.70	0.20	
14b	0.259	0.88	34.1	DESERT/RANGE	0.40	22.30	-	3.48	0.05	0.30	0.25	4.60	0.34	
14c	1.095	1.97	32.6	DESERT/RANGE	0.65	36.70	-	4.71	0.05	0.30	0.25	4.90	0.29	
14d	0.505	1.43	34.9	DESERT/RANGE	0.53	30.40	-	4.15	0.05	0.30	0.25	4.90	0.29	4
14e	1.101	1.81	34.2	DESERT/RANGE	0.92	40.20	-	3.97	0.05	0.30	0.25	4.65	0.32	1
15a	0.514	1.19	45.3	DESERT/RANGE	0.49	25.60	-	4.10	0.05	0.30	0.25	4.65	0.32	1
16a	0.218	0.93	47.2	DESERT/RANGE	0.46	23.10	-	3.55	0.05	0.29	0.25	4.60	0.34	3
20a	0.239	1.05	32.4	DESERT/RANGE	0.46	25.40	-	3.64	0.05	0.30	0.25	4.10	0.46	36
20b	1.275	2.28	25.5	DESERT/RANGE	0.84	44.80	-	4.47	0.05	0.30	0.25	4.90	0.29	2
20c	1.422	2.41	34.8	DESERT/RANGE	0.89	44.10	-	4.81	0.05	0.30	0.25	5.40	0.23	4
20d	0.623	1.26	41.2	DESERT/RANGE	0.49	26.60	-	4.17	0.05	0.30	0.25	5.00	0.28	1
20e	1.534	1.92	34.3	DESERT/RANGE	0.89	40.60	-	4.17	0.05	0.30	0.25	5.30	0.24	3
20f	1.346	1.95	37.0	DESERT/RANGE	0.89	40.20	-	4.26	0.05	0.30	0.25	4.90	0.29	1
20g	1.178	2.02	33.7	DESERT/RANGE	0.69	38.50	-	4.61	0.05	0.30	0.25	4.80	0.30	3
20h	1.250	2.14	32.8	DESERT/RANGE	0.86	42.10	-	4.47	0.05	0.30	0.25	4.70	0.31	2
20i	0.291	1.20	33.5	DESERT/RANGE	0.59	29.10	-	3.61	0.05	0.30	0.25	4.65	0.32	
20j	0.203	0.82	31.9	DESERT/RANGE	0.42	22.30	-	3.21	0.05	0.30	0.25	4.55	0.35	
20k	0.176	0.86	32.4	DESERT/RANGE	0.44	23.20	-	3.28	0.05	0.30	0.25	4.65	0.32	1
20l	0.129	0.76	29.1	DESERT/RANGE	0.42	22.10	-	3.01	0.05	0.30	0.25	4.65	0.32	
21a	0.882	1.97	30.4	DESERT/RANGE	0.88	41.80	-	4.16	0.05	0.30	0.25	4.70	0.31	1
21b	0.547	2.05	30.3	DESERT/RANGE	1.11	46.30	-	3.89	0.05	0.30	0.25	5.00	0.28	2
21c	0.234	1.47	29.9	DESERT/RANGE	0.77	35.60	-	3.64	0.05	0.30	0.25	4.80	0.30	
21d	0.494	2.04	34.2	DESERT/RANGE	1.09	44.90	-	4.01	0.05	0.30	0.25	5.80	0.19	
22a	0.451	1.56	32.1	DESERT/RANGE	0.82	36.80	-	3.73	0.05	0.30	0.25	5.00	0.28	1
22b	0.164	0.69	31.8	DESERT/RANGE	0.36	19.80	-	3.07	0.05	0.30	0.25	4.70	0.31	
22c	0.220	1.12	35.7	DESERT/RANGE	0.62	28.60	-	3.45	0.05	0.30	0.25	4.70	0.31	
22d	0.244	1.32	30.3	DESERT/RANGE	0.55	30.00	-	3.87	0.05	0.30	0.25	4.65	0.32	1
23a	0.353	1.10	34.7	DESERT/RANGE	0.49	30.70	-	3.14	0.05	0.32	0.25	4.65	0.35	5
24a	0.409	1.29	31.0	DESERT/RANGE	0.64	32.10	-	3.54	0.05	0.30	0.25	4.70	0.31	1
24b	0.335	1.80	31.2	DESERT/RANGE	0.74	37.50	-	4.21	0.05	0.30	0.25	5.10	0.26	
30a	0.036	0.35	28.2	DESERT/RANGE	0.19	18.10	-	1.72	0.07	0.36	0.25	4.25	0.53	17
30b	0.508	1.64	31.7	DESERT/RANGE	0.85	38.10	-	3.79	0.05	0.29	0.25	4.60	0.34	9
30c	0.243	1.14	28.1	DESERT/RANGE	0.53	28.40	-	3.53	0.05	0.30	0.25	4.40	0.38	9
30d	0.615	2.11	37.0	DESERT/RANGE	1.00	43.30	-	4.28	0.05	0.30	0.25	4.50	0.36	
30e	0.400	1.26	39.8	DESERT/RANGE	0.62	29.30	-	3.78	0.05	0.30	0.25	5.30	0.24	1
30f	1.771	3.46	27.2	DESERT/RANGE	1.20	59.40	11.88	5.12	0.05	0.30	0.25	4.55	0.35	1

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
30g	0.844	1.84	38.0	DESERT/RANGE	0.92	38.80	-	4.18	0.04	0.29	0.25	4.50	0.36	4
32a	0.289	1.24	37.1	DESERT/RANGE	0.61	29.30	-	3.72	0.05	0.30	0.25	4.55	0.35	1
32b	0.476	1.19	50.3	DESERT/RANGE	0.55	26.20	-	4.01	0.05	0.30	0.25	4.60	0.34	
33a	0.167	0.70	34.4	DESERT/RANGE	0.33	29.40	-	2.08	0.07	0.39	0.25	4.35	0.50	
34a	0.446	2.28	28.0	DESERT/RANGE	1.00	47.10	-	4.27	0.05	0.29	0.25	4.70	0.31	5
34b	0.631	2.36	28.8	DESERT/RANGE	1.26	51.80	-	4.01	0.05	0.30	0.25	4.55	0.35	3
35a	0.057	0.38	52.5	DESERT/RANGE	0.17	16.30	3.26	2.06	0.07	0.38	0.24	4.20	0.54	
36a	0.677	1.51	38.4	DESERT/RANGE	0.64	32.00	-	4.16	0.05	0.29	0.25	4.70	0.31	3
36b	1.059	1.73	38.1	DESERT/RANGE	0.79	36.60	-	4.17	0.05	0.30	0.25	4.65	0.32	2
36c	1.085	2.99	32.8	DESERT/RANGE	1.17	53.70	-	4.90	0.05	0.30	0.25	4.45	0.37	2
40a	0.268	1.15	29.7	DESERT/RANGE	0.67	30.80	-	3.28	0.05	0.30	0.25	4.55	0.35	2
40b	0.416	1.89	28.5	DESERT/RANGE	1.13	45.80	-	3.64	0.05	0.29	0.25	4.60	0.34	4
40c	0.501	1.06	39.5	DESERT/RANGE	0.53	25.90	-	3.61	0.05	0.30	0.25	4.60	0.34	1
40d	0.728	1.88	26.6	DESERT/RANGE	1.04	44.90	-	3.69	0.05	0.30	0.25	4.40	0.38	1
42a	0.360	1.23	37.5	DESERT/RANGE	0.56	27.60	-	3.91	0.04	0.29	0.25	4.60	0.34	3
42b	0.309	1.34	32.8	DESERT/RANGE	0.67	32.00	-	3.68	0.05	0.30	0.25	4.70	0.31	1
44a	0.833	3.04	31.0	DESERT/RANGE	1.41	58.60	11.72	4.56	0.05	0.29	0.25	4.90	0.29	3
44b	0.279	1.35	32.5	DESERT/RANGE	0.64	31.70	-	3.76	0.05	0.30	0.25	5.30	0.24	1
44c	0.338	1.57	33.1	DESERT/RANGE	0.73	35.10	-	3.94	0.05	0.30	0.25	5.60	0.22	
44d	0.821	2.97	35.7	DESERT/RANGE	1.24	53.90	-	4.85	0.05	0.30	0.25	5.80	0.19	
44e	0.463	2.25	36.5	DESERT/RANGE	1.07	45.60	-	4.33	0.05	0.30	0.25	5.40	0.23	
44f	0.267	1.67	38.3	DESERT/RANGE	0.86	37.20	-	3.96	0.05	0.30	0.25	5.40	0.23	
46a	0.807	1.95	31.7	DESERT/RANGE	1.07	44.50	-	3.87	0.05	0.30	0.25	4.10	0.46	
46b	0.401	1.67	35.8	DESERT/RANGE	0.83	37.20	-	3.96	0.05	0.30	0.25	4.70	0.31	
46c	0.226	1.51	35.7	DESERT/RANGE	0.84	36.00	-	3.70	0.05	0.30	0.25	5.00	0.28	
46d	0.431	1.81	38.7	DESERT/RANGE	0.86	38.30	-	4.16	0.05	0.30	0.25	4.70	0.31	
46e	0.220	0.97	37.1	DESERT/RANGE	0.51	25.00	-	3.42	0.05	0.30	0.25	5.10	0.26	
46f	0.576	2.12	34.9	DESERT/RANGE	1.00	43.90	-	4.25	0.05	0.30	0.25	5.20	0.25	
46g	0.451	2.49	32.1	DESERT/RANGE	1.28	52.10	-	4.21	0.05	0.30	0.25	5.10	0.26	
46h	0.384	1.48	40.5	DESERT/RANGE	0.76	33.50	-	3.88	0.05	0.30	0.25	5.30	0.24	
46i	0.270	1.12	46.6	DESERT/RANGE	0.60	26.20	-	3.75	0.04	0.29	0.24	4.90	0.29	
46j	0.294	1.24	41.9	DESERT/RANGE	0.72	29.20	-	3.74	0.04	0.28	0.23	5.00	0.27	
46k	0.442	1.08	37.0	DESERT/RANGE	0.45	24.30	-	3.92	0.04	0.29	0.24	5.20	0.25	
48a	0.283	1.44	30.5	DESERT/RANGE	0.74	35.50	-	3.58	0.05	0.30	0.25	4.25	0.42	1
48b	0.204	1.18	30.5	DESERT/RANGE	0.54	28.50	-	3.64	0.05	0.30	0.25	4.35	0.40	
50a	0.891	2.33	30.1	DESERT/RANGE	1.40	53.10	-	3.85	0.05	0.30	0.25	5.00	0.28	
50b	0.205	1.06	37.8	DESERT/RANGE	0.58	27.00	-	3.45	0.05	0.30	0.25	5.00	0.28	
50c	0.548	2.70	33.3	DESERT/RANGE	1.23	52.60	-	4.53	0.05	0.30	0.25	5.00	0.28	
50d	0.178	0.94	34.0	DESERT/RANGE	0.51	25.10	-	3.30	0.05	0.30	0.25	5.00	0.28	
50e	0.171	0.88	34.3	DESERT/RANGE	0.47	23.60	-	3.26	0.05	0.30	0.25	5.00	0.28	

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
50f	0.292	1.41	35.4	DESERT/RANGE	0.70	32.80	-	3.79	0.05	0.30	0.25	5.10	0.26	
50g	0.146	1.11	41.4	DESERT/RANGE	0.47	24.90	-	3.92	0.05	0.30	0.25	5.30	0.24	
52a	0.577	1.56	89.9	DESERT/RANGE	0.95	32.00	-	4.29	0.05	0.30	0.25	4.15	0.44	18
54a	0.360	1.35	44.5	DESERT/RANGE	0.66	30.10	-	3.94	0.05	0.30	0.25	4.80	0.30	6
54b	0.235	1.16	34.4	DESERT/RANGE	0.38	24.30	-	4.22	0.05	0.30	0.25	4.70	0.31	4
56a	0.297	1.29	37.2	DESERT/RANGE	0.64	30.30	-	3.75	0.05	0.30	0.25	4.65	0.32	
60a	0.771	1.70	35.3	DESERT/RANGE	0.92	39.00	-	3.83	0.05	0.29	0.25	4.90	0.29	4
60b	1.111	2.31	32.0	DESERT/RANGE	1.05	47.00	-	4.33	0.05	0.29	0.25	4.55	0.35	4
60c	1.044	2.20	35.5	DESERT/RANGE	0.90	42.60	-	4.54	0.05	0.30	0.25	4.35	0.40	1
62a	0.586	1.38	46.5	DESERT/RANGE	0.66	30.10	-	4.02	0.05	0.30	0.25	4.15	0.44	
62b	0.245	1.04	38.5	DESERT/RANGE	0.51	25.40	-	3.60	0.05	0.30	0.25	4.15	0.44	
64a	0.377	1.35	40.1	DESERT/RANGE	0.62	30.00	-	3.95	0.05	0.30	0.25	4.20	0.43	
64b	0.836	2.19	37.5	DESERT/RANGE	1.06	44.80	-	4.29	0.05	0.30	0.25	3.92	0.41	
64c	0.637	1.96	36.8	DESERT/RANGE	0.98	41.80	-	4.12	0.05	0.30	0.25	3.92	0.41	
64d	0.144	0.82	34.2	DESERT/RANGE	0.41	21.90	-	3.29	0.05	0.30	0.27	3.31	0.62	
70a	0.103	0.46	26.0	DESERT/RANGE	0.25	19.10	-	2.13	0.06	0.34	0.25	4.45	0.41	1
70b	0.333	0.84	123.2	MOUNTAIN	0.39	17.00	3.40	4.36	0.05	0.30	0.25	4.40	0.38	2
70c	0.742	2.29	33.2	DESERT/RANGE	1.02	48.00	-	4.20	0.05	0.30	0.25	4.60	0.34	2
70d	0.486	1.35	42.9	DESERT/RANGE	0.67	30.50	-	3.89	0.05	0.30	0.25	4.70	0.31	
70e	1.372	1.82	35.3	DESERT/RANGE	0.71	36.30	-	4.41	0.05	0.30	0.25	4.60	0.34	
70f	0.392	1.51	34.5	DESERT/RANGE	0.79	35.40	-	3.76	0.05	0.30	0.25	5.10	0.26	1
70g	1.633	3.51	33.0	DESERT/RANGE	1.87	69.70	13.94	4.43	0.05	0.29	0.25	4.55	0.35	4
70h	0.293	1.32	37.9	DESERT/RANGE	0.70	30.80	-	3.77	0.04	0.29	0.25	5.00	0.28	5
71a	0.262	0.95	84.6	MOUNTAIN	0.56	21.90	-	3.80	0.05	0.30	0.25	4.10	0.46	1
71b	0.290	1.26	166.3	MOUNTAIN	0.59	21.90	-	5.07	0.05	0.30	0.25	4.00	0.47	2
72a	0.443	1.36	118.0	MOUNTAIN	0.66	26.80	-	4.46	0.05	0.31	0.25	4.20	0.45	1
72b	1.047	1.67	46.7	MOUNTAIN	0.68	32.80	-	4.49	0.05	0.30	0.25	4.20	0.43	2
73a	0.508	1.61	26.1	DESERT/RANGE	0.79	51.80	-	2.73	0.06	0.36	0.25	4.30	0.48	
73b	0.606	1.62	28.4	DESERT/RANGE	0.70	36.00	-	3.96	0.05	0.30	0.25	4.60	0.34	
74a	0.309	1.19	38.6	DESERT/RANGE	0.50	26.60	-	3.94	0.05	0.30	0.25	4.60	0.34	
74b	0.665	1.81	36.5	DESERT/RANGE	0.90	39.40	-	4.04	0.05	0.30	0.25	4.45	0.37	1
75a	0.460	1.85	32.5	DESERT/RANGE	0.95	41.40	-	3.93	0.05	0.30	0.25	4.80	0.30	2
77a	0.245	1.17	39.4	DESERT/RANGE	0.59	27.40	-	3.75	0.04	0.29	0.25	4.40	0.38	3
77b	0.442	1.50	35.9	DESERT/RANGE	0.63	32.20	-	4.12	0.05	0.30	0.25	4.65	0.32	1
78a	0.151	0.85	35.5	DESERT/RANGE	0.46	24.00	-	3.10	0.05	0.30	0.25	5.30	0.24	2
78b	0.479	1.54	37.6	DESERT/RANGE	0.65	32.60	-	4.17	0.05	0.30	0.25	4.80	0.30	2
79a	0.515	1.28	89.2	DESERT/RANGE	0.60	26.10	-	4.31	0.05	0.30	0.25	4.00	0.47	
79b	0.362	1.06	213.4	MOUNTAIN	0.49	18.20	-	5.11	0.05	0.30	0.25	3.95	0.40	1
80a	0.337	1.19	45.5	DESERT/RANGE	0.55	27.30	-	3.83	0.05	0.30	0.25	4.45	0.37	2
80b	0.278	1.04	44.2	DESERT/RANGE	0.46	24.40	-	3.76	0.05	0.30	0.25	4.50	0.36	1

Area ID	Sub Basin Parameters									Rainfall Losses				
	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Lag Ratio	Velocity (f/s)	Kn	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
Major Basin ID: 01														
81a	0.078	0.52	61.1	DESERT/RANGE	0.29	13.90	2.78	3.33	0.04	0.28	0.25	4.30	0.41	8
81b	0.512	2.05	39.0	DESERT/RANGE	0.86	40.10	-	4.51	0.05	0.30	0.25	4.45	0.37	3
82a	0.588	1.49	49.8	DESERT/RANGE	0.71	31.50	-	4.16	0.05	0.30	0.25	4.45	0.37	
82b	0.265	1.04	44.3	DESERT/RANGE	0.49	24.40	-	3.75	0.05	0.30	0.25	4.20	0.43	
83a	0.242	1.38	42.0	DESERT/RANGE	0.71	31.60	-	3.84	0.05	0.30	0.25	4.25	0.42	
83b	0.432	1.57	39.6	DESERT/RANGE	0.80	35.10	-	3.93	0.05	0.30	0.25	4.15	0.44	
83c	0.278	0.98	53.0	DESERT/RANGE	0.47	22.70	-	3.80	0.05	0.30	0.25	3.92	0.41	
83d	0.230	1.16	44.8	DESERT/RANGE	0.59	27.30	-	3.75	0.05	0.30	0.26	3.55	0.52	
83e	0.837	1.54	41.7	DESERT/RANGE	0.67	32.20	-	4.19	0.05	0.30	0.27	3.38	0.59	
83f	0.132	0.62	61.6	DESERT/RANGE	0.36	16.70	3.34	3.25	0.05	0.30	0.27	3.35	0.60	
83g	0.619	1.60	41.3	DESERT/RANGE	0.75	34.20	-	4.11	0.05	0.30	0.27	3.35	0.60	
83h	0.289	1.64	37.7	DESERT/RANGE	0.81	36.20	-	3.99	0.05	0.30	0.25	3.92	0.41	
83i	0.404	1.41	41.1	DESERT/RANGE	0.63	30.60	-	4.06	0.05	0.30	0.26	3.48	0.55	
83j	0.163	1.15	41.9	DESERT/RANGE	0.59	27.50	-	3.67	0.05	0.30	0.26	3.48	0.55	
83k	0.315	1.30	109.4	DESERT/RANGE	0.66	25.00	-	4.56	0.05	0.30	0.25	4.10	0.46	8
83l	0.555	1.28	62.6	DESERT/RANGE	0.75	29.00	-	3.87	0.05	0.30	0.25	4.80	0.30	4
84a	0.223	0.71	36.5	DESERT/RANGE	0.38	19.90	-	3.15	0.05	0.30	0.25	4.30	0.41	
84b	0.347	1.32	42.6	DESERT/RANGE	0.61	29.20	-	3.96	0.05	0.30	0.25	4.15	0.44	
85a	0.315	1.21	44.7	DESERT/RANGE	0.64	28.50	-	3.72	0.05	0.30	0.25	4.15	0.44	
85b	0.237	0.98	42.9	DESERT/RANGE	0.41	22.40	-	3.84	0.05	0.30	0.25	4.10	0.46	
86a	0.479	1.55	41.4	DESERT/RANGE	0.71	33.10	-	4.11	0.05	0.30	0.27	3.38	0.59	
87a	0.273	1.41	39.8	DESERT/RANGE	0.71	32.20	-	3.85	0.05	0.30	0.25	3.88	0.42	
87b	0.161	1.09	36.9	DESERT/RANGE	0.56	27.00	-	3.53	0.05	0.30	0.27	3.33	0.61	
88a	0.276	1.52	40.8	DESERT/RANGE	0.66	32.10	-	4.17	0.05	0.30	0.25	4.00	0.47	
89a	0.215	1.01	47.7	DESERT/RANGE	0.47	23.40	-	3.79	0.05	0.30	0.27	3.29	0.63	
89b	0.283	1.16	74.0	DESERT/RANGE	0.57	24.50	-	4.18	0.05	0.30	0.25	4.00	0.47	2
91a	0.434	1.20	56.6	DESERT/RANGE	0.60	26.60	-	3.98	0.05	0.30	0.25	4.15	0.44	
91b	0.561	2.53	43.6	DESERT/RANGE	1.34	50.30	-	4.42	0.05	0.30	0.25	4.20	0.43	
92a	0.785	2.35	45.2	DESERT/RANGE	1.08	44.70	-	4.62	0.05	0.30	0.25	4.60	0.34	
92b	0.700	1.83	61.3	DESERT/RANGE	0.79	34.10	-	4.72	0.05	0.30	0.25	4.50	0.36	

APPENDIX D2c

Soil Data – Without Dike Conditions

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
10a	651	Ch	6512435	0.081	9.70	0.24	-	100
	651	Dn	6512647	0.051	6.10	1.20	-	100
	651	GM	6513244	0.194	23.20	0.29	-	100
	651	GYD	651326826	0.006	0.80	0.26	-	100
	651	GxB	651326722	0.137	16.30	0.24	-	100
	651	HAB	651342022	0.210	25.10	0.07	-	100
	651	HLC	651344224	0.158	18.90	0.14	-	100
10b	651	CO	6512448	0.066	7.70	0.29	20.00	100
	651	Cg	6512433	0.000	0.00	0.24	-	100
	651	Ck	6512441	0.129	15.10	0.30	-	100
	651	Cm	6512445	0.259	30.30	0.26	-	100
	651	Dn	6512647	0.059	6.90	1.20	-	100
	651	GM	6513244	0.023	2.60	0.29	-	100
	651	GYD	651326826	0.026	3.10	0.26	-	100
	651	Gh	6513235	0.025	2.90	0.24	-	100
	651	GxB	651326722	0.015	1.80	0.24	-	100
	651	HAB	651342022	0.066	7.70	0.07	-	100
	651	Lb	6514223	0.017	2.00	0.40	-	100
	651	PRB	651505422	0.027	3.10	0.28	-	100
	651	RS	6515456	0.143	16.70	0.40	65.00	100
12a	651	Ch	6512435	0.113	13.60	0.24	-	100
	651	Cm	6512445	0.029	3.40	0.26	-	100
	651	Dn	6512647	0.019	2.30	1.20	-	100
	651	GM	6513244	0.076	9.10	0.29	-	100
	651	HAB	651342022	0.132	15.80	0.07	-	100
	651	HAC	651342024	0.238	28.60	0.05	-	100
	651	HLC	651344224	0.058	6.90	0.14	-	100
	651	LcA	651422520	0.006	0.70	0.25	-	100
	651	Ld	6514227	0.077	9.20	0.25	-	100
	651	PRB	651505422	0.085	10.20	0.28	-	100
12b	651	AbA	651202320	0.005	1.00	0.38	-	100
	651	Cg	6512433	0.035	7.80	0.24	-	100
	651	Ch	6512435	0.174	38.60	0.24	-	100
	651	Cp	6512451	0.006	1.30	0.40	-	100
	651	Es	6512857	0.005	1.10	0.25	-	100
	651	HAB	651342022	0.054	11.90	0.07	-	100
	651	HAC	651342024	0.066	14.60	0.05	-	100
	651	LcA	651422520	0.032	7.10	0.25	-	100
	651	Ld	6514227	0.075	16.60	0.25	-	100
14a	651	Ac	6512025	0.045	12.20	0.39	-	100
	651	Ch	6512435	0.005	1.30	0.24	-	100
	651	Ck	6512441	0.021	5.70	0.30	-	100
	651	Cm	6512445	0.088	24.00	0.26	-	100
	651	Dn	6512647	0.013	3.60	1.20	-	100
	651	GM	6513244	0.052	14.30	0.29	-	100
	651	HAB	651342022	0.059	15.90	0.07	-	100
	651	HAC	651342024	0.085	23.00	0.05	-	100
14b	651	Ac	6512025	0.042	16.10	0.39	-	100
	651	Cg	6512433	0.000	0.00	0.24	-	100
	651	Ch	6512435	0.029	11.00	0.24	-	100
	651	Ck	6512441	0.046	17.90	0.30	-	100
	651	Cm	6512445	0.120	46.20	0.26	-	100
	651	LcA	651422520	0.007	2.80	0.25	-	100
	651	PRB	651505422	0.015	5.90	0.28	-	100
14c	651	Ac	6512025	0.035	3.20	0.39	-	100
	651	Cg	6512433	0.354	32.40	0.24	-	100
	651	Ch	6512435	0.135	12.30	0.24	-	100
	651	Ck	6512441	0.003	0.30	0.30	-	100
	651	Cm	6512445	0.053	4.80	0.26	-	100
	651	Cp	6512451	0.035	3.20	0.40	-	100
	651	Es	6512857	0.025	2.30	0.25	-	100
	651	GYD	651326826	0.054	4.90	0.26	-	100
	651	GgA	651323320	0.045	4.10	0.25	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
14c	651	HAB	651342022	0.054	4.90	0.07	-	100
	651	HLC	651344224	0.019	1.70	0.14	-	100
	651	Lb	6514223	0.019	1.70	0.40	-	100
	651	LcA	651422520	0.062	5.70	0.25	-	100
	651	Ld	6514227	0.169	15.40	0.25	-	100
	651	Pb	6515023	0.034	3.10	0.38	-	100
14d	651	Cg	6512433	0.360	71.20	0.24	-	100
	651	Cp	6512451	0.009	1.70	0.40	-	100
	651	Dn	6512647	0.003	0.60	1.20	-	100
	651	GYD	651326826	0.011	2.20	0.26	-	100
	651	GgA	651323320	0.034	6.60	0.25	-	100
	651	GxA	651326720	0.000	0.10	0.23	-	100
	651	HAB	651342022	0.000	0.00	0.07	-	100
	651	HAC	651342024	0.013	2.50	0.05	-	100
	651	Ld	6514227	0.071	14.10	0.25	-	100
	651	Pb	6515023	0.005	1.00	0.38	-	100
14e	651	Cg	6512433	0.635	57.70	0.24	-	100
	651	Cp	6512451	0.168	15.20	0.40	-	100
	651	GgA	651323320	0.015	1.40	0.25	-	100
	651	GxA	651326720	0.082	7.50	0.23	-	100
	651	HAC	651342024	0.007	0.60	0.05	-	100
	651	HLC	651344224	0.001	0.10	0.14	-	100
	651	Ld	6514227	0.049	4.50	0.25	-	100
	651	Pb	6515023	0.014	1.30	0.38	-	100
	651	RaA	651542120	0.015	1.40	0.39	-	100
	651	Vb	6516223	0.114	10.40	0.39	-	100
15a	651	AL	6512042	0.076	14.80	0.40	-	100
	651	AbA	651202320	0.002	0.50	0.38	-	100
	651	GYD	651326826	0.049	9.50	0.26	-	100
	651	Gh	6513235	0.025	4.90	0.24	-	100
	651	GxA	651326720	0.007	1.40	0.23	-	100
	651	GxB	651326722	0.217	42.10	0.24	-	100
	651	PRB	651505422	0.138	26.80	0.28	-	100
16a	651	AbA	651202320	0.025	11.60	0.38	-	100
	651	GYD	651326826	0.147	67.50	0.26	-	100
	651	GgA	651323320	0.005	2.30	0.25	-	100
	651	Gh	6513235	0.001	0.60	0.24	-	100
	651	Ma	6514421	0.008	3.80	0.40	-	100
	651	PRB	651505422	0.029	13.10	0.28	-	100
	651	Vk	6516241	0.002	1.10	0.26	-	100
20a	651	Ac	6512025	0.102	27.30	0.39	-	100
	651	GYD	651326826	0.124	33.30	0.26	-	100
	651	HAB	651342022	0.008	2.00	0.07	-	100
	651	HLC	651344224	0.006	1.70	0.14	-	100
	651	RS	6515456	0.133	35.70	0.40	65.00	100
20b	651	Ac	6512025	0.126	11.10	0.39	-	100
	651	Cg	6512433	0.050	4.40	0.24	-	100
	651	Ck	6512441	0.096	8.40	0.30	-	100
	651	Cm	6512445	0.018	1.60	0.26	-	100
	651	Cp	6512451	0.002	0.20	0.40	-	100
	651	GYD	651326826	0.491	43.00	0.26	-	100
	651	Gh	6513235	0.128	11.20	0.24	-	100
	651	HAB	651342022	0.100	8.80	0.07	-	100
	651	HAC	651342024	0.005	0.40	0.05	-	100
	651	HLC	651344224	0.075	6.60	0.14	-	100
	651	RaA	651542120	0.038	3.30	0.39	-	100
	651	Vb	6516223	0.013	1.10	0.39	-	100
20c	651	Ac	6512025	0.101	7.10	0.39	-	100
	651	CO	6512448	0.005	0.30	0.29	20.00	100
	651	Cg	6512433	0.122	8.60	0.24	-	100
	651	Ch	6512435	0.018	1.20	0.24	-	100
	651	Ck	6512441	0.127	8.90	0.30	-	100
	651	Dn	6512647	0.000	0.00	1.20	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
20c	651	GWD	651326426	0.017	1.20	0.35	-	100
	651	GYD	651326826	0.006	0.50	0.26	-	100
	651	Gh	6513235	0.099	6.90	0.24	-	100
	651	HAB	651342022	0.018	1.30	0.07	-	100
	651	HAC	651342024	0.297	20.90	0.05	-	100
	651	HLC	651344224	0.246	17.30	0.14	-	100
	651	RS	6515456	0.072	5.00	0.40	65.00	100
	651	RaA	651542120	0.026	1.80	0.39	-	100
	651	Vb	6516223	0.267	18.80	0.39	-	100
20d	651	Cg	6512433	0.007	1.20	0.24	-	100
	651	Ck	6512441	0.075	12.00	0.30	-	100
	651	Et	6512859	0.048	7.70	0.25	-	100
	651	GWD	651326426	0.136	21.90	0.35	-	100
	651	Gh	6513235	0.150	24.00	0.24	-	100
	651	HAB	651342022	0.071	11.30	0.07	-	100
	651	HLC	651344224	0.067	10.80	0.14	-	100
	651	Vb	6516223	0.068	11.00	0.39	-	100
20e	651	Ac	6512025	0.053	3.50	0.39	-	100
	651	CO	6512448	0.033	2.10	0.29	20.00	100
	651	Ck	6512441	0.047	3.10	0.30	-	100
	651	Cm	6512445	0.053	3.40	0.26	-	100
	651	Cp	6512451	0.012	0.80	0.40	-	100
	651	Et	6512859	0.100	6.50	0.25	-	100
	651	GWD	651326426	0.223	14.50	0.35	-	100
	651	Gh	6513235	0.261	17.00	0.24	-	100
	651	HAB	651342022	0.235	15.30	0.07	-	100
	651	HLC	651344224	0.299	19.50	0.14	-	100
	651	Ld	6514227	0.133	8.70	0.25	-	100
	651	PRB	651505422	0.002	0.10	0.28	-	100
	651	RS	6515456	0.018	1.10	0.40	65.00	100
	651	Vb	6516223	0.066	4.30	0.39	-	100
20f	651	AbA	651202320	0.060	4.50	0.38	-	100
	651	Ac	6512025	0.074	5.50	0.39	-	100
	651	AdA	651202720	0.009	0.70	0.40	-	100
	651	Cm	6512445	0.035	2.60	0.26	-	100
	651	Et	6512859	0.026	1.90	0.25	-	100
	651	GWD	651326426	0.174	12.90	0.35	-	100
	651	GgA	651323320	0.064	4.70	0.25	-	100
	651	Gh	6513235	0.180	13.30	0.24	-	100
	651	HAB	651342022	0.100	7.40	0.07	-	100
	651	HLC	651344224	0.051	3.80	0.14	-	100
	651	HrB	651345522	0.028	2.10	0.12	-	100
	651	Lb	6514223	0.015	1.10	0.40	-	100
	651	Ld	6514227	0.106	7.90	0.25	-	100
	651	RhB	651543522	0.342	25.40	0.23	-	100
	651	RpE	651545128	0.083	6.20	0.29	-	100
20g	651	AbA	651202320	0.073	6.20	0.38	-	100
	651	AbB	651202322	0.044	3.70	0.39	-	100
	651	Ac	6512025	0.008	0.70	0.39	-	100
	651	Cg	6512433	0.022	1.90	0.24	-	100
	651	Cm	6512445	0.006	0.50	0.26	-	100
	651	Et	6512859	0.005	0.40	0.25	-	100
	651	Ge	6513229	0.008	0.70	0.26	-	100
	651	GgA	651323320	0.134	11.40	0.25	-	100
	651	Gh	6513235	0.005	0.40	0.24	-	100
	651	HM	6513444	0.015	1.30	0.15	-	100
	651	HrB	651345522	0.139	11.80	0.12	-	100
	651	La	6514221	0.015	1.20	0.26	-	100
	651	Lb	6514223	0.030	2.50	0.40	-	100
	651	Ld	6514227	0.014	1.20	0.25	-	100
	651	Pb	6515023	0.020	1.70	0.38	-	100
	651	RbB	651542322	0.109	9.30	0.25	-	100
	651	RhB	651543522	0.349	29.60	0.23	-	100
	651	RpE	651545128	0.137	11.60	0.29	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
20g	651	Vb	6516223	0.047	3.90	0.39	-	100
20h	651	AbA	651202320	0.005	0.40	0.38	-	100
	651	AbB	651202322	0.004	0.30	0.39	-	100
	651	Cm	6512445	0.111	8.90	0.26	-	100
	651	Et	6512859	0.001	0.10	0.25	-	100
	651	GgA	651323320	0.169	13.50	0.25	-	100
	651	GxB	651326722	0.000	0.00	0.24	-	100
	651	HAB	651342022	0.021	1.70	0.07	-	100
	651	HM	6513444	0.010	0.80	0.15	-	100
	651	La	6514221	0.168	13.40	0.26	-	100
	651	Lb	6514223	0.001	0.10	0.40	-	100
	651	Ld	6514227	0.057	4.50	0.25	-	100
	651	Pb	6515023	0.146	11.70	0.38	-	100
	651	RbB	651542322	0.284	22.70	0.25	-	100
	651	RhB	651543522	0.272	21.80	0.23	-	100
	651	RpE	651545128	0.003	0.20	0.29	-	100
20i	651	AbA	651202320	0.038	13.00	0.38	-	100
	651	GgA	651323320	0.010	3.50	0.25	-	100
	651	GxA	651326720	0.025	8.50	0.23	-	100
	651	GxB	651326722	0.059	20.10	0.24	-	100
	651	HrB	651345522	0.000	0.00	0.12	-	100
	651	La	6514221	0.007	2.30	0.26	-	100
	651	LcA	651422520	0.003	0.90	0.25	-	100
	651	Ld	6514227	0.001	0.40	0.25	-	100
	651	PeB	651502922	0.043	14.70	0.38	-	100
	651	RbB	651542322	0.006	1.90	0.25	-	100
	651	RhB	651543522	0.086	29.50	0.23	-	100
	651	RpE	651545128	0.015	5.00	0.29	-	100
20j	651	AbA	651202320	0.008	3.80	0.38	-	100
	651	GgA	651323320	0.041	20.10	0.25	-	100
	651	LcA	651422520	0.002	1.00	0.25	-	100
	651	PeA	651502920	0.063	30.80	0.37	-	100
	651	RbA	651542320	0.066	32.50	0.26	-	100
	651	RbB	651542322	0.024	11.70	0.25	-	100
20k	651	GgA	651323320	0.027	15.30	0.25	-	100
	651	LcA	651422520	0.004	2.40	0.25	-	100
	651	PeA	651502920	0.025	14.00	0.37	-	100
	651	RbA	651542320	0.120	68.30	0.26	-	100
20l	651	AbA	651202320	0.007	5.60	0.38	-	100
	651	AfA	651203120	0.019	14.60	0.38	-	100
	651	GxA	651326720	0.002	1.20	0.23	-	100
	651	GxB	651326722	0.011	8.60	0.24	-	100
	651	LcA	651422520	0.000	0.30	0.25	-	100
	651	PeA	651502920	0.007	5.30	0.37	-	100
	651	RbA	651542320	0.026	19.90	0.26	-	100
	651	RbB	651542322	0.002	1.90	0.25	-	100
	651	RhB	651543522	0.055	42.60	0.23	-	100
21a	651	AfA	651203120	0.014	1.50	0.38	-	100
	651	GYD	651326826	0.014	1.50	0.26	-	100
	651	GxA	651326720	0.136	15.40	0.23	-	100
	651	GxB	651326722	0.018	2.10	0.24	-	100
	651	HLC	651344224	0.023	2.60	0.14	-	100
	651	HM	6513444	0.019	2.20	0.15	-	100
	651	LcA	651422520	0.250	28.40	0.25	-	100
	651	Pb	6515023	0.002	0.20	0.38	-	100
	651	PeA	651502920	0.120	13.60	0.37	-	100
	651	RbA	651542320	0.261	29.60	0.26	-	100
	651	RbB	651542322	0.024	2.70	0.25	-	100
	651	RhB	651543522	0.002	0.20	0.23	-	100
21b	651	AL	6512042	0.059	10.70	0.40	-	100
	651	GYD	651326826	0.201	36.60	0.26	-	100
	651	HLC	651344224	0.142	26.00	0.14	-	100
	651	LcA	651422520	0.106	19.30	0.25	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
21b	651	PeA	651502920	0.026	4.70	0.37	-	100
	651	RbA	651542320	0.015	2.70	0.26	-	100
21c	651	AL	6512042	0.078	33.10	0.40	-	100
	651	GYD	651326826	0.092	39.20	0.26	-	100
	651	HLC	651344224	0.062	26.60	0.14	-	100
	651	LcA	651422520	0.003	1.20	0.25	-	100
21d	645	20	64520	0.002	0.50	0.19	-	100
	651	AL	6512042	0.015	3.10	0.40	-	100
	651	GYD	651326826	0.067	13.50	0.26	-	100
	651	HLC	651344224	0.410	83.00	0.14	-	100
22a	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	GgA	651323320	0.095	21.00	0.25	-	100
	651	GxA	651326720	0.039	8.60	0.23	-	100
	651	GxB	651326722	0.048	10.70	0.24	-	100
	651	HrB	651345522	0.033	7.30	0.12	-	100
	651	La	6514221	0.008	1.80	0.26	-	100
	651	LcA	651422520	0.023	5.20	0.25	-	100
	651	Pb	6515023	0.006	1.30	0.38	-	100
	651	RbA	651542320	0.010	2.30	0.26	-	100
	651	RbB	651542322	0.048	10.50	0.25	-	100
	651	RhB	651543522	0.119	26.30	0.23	-	100
	651	RpE	651545128	0.023	5.10	0.29	-	100
22b	651	Ae	6512029	0.020	12.10	0.39	-	100
	651	GxB	651326722	0.074	45.30	0.24	-	100
	651	LcA	651422520	0.039	23.70	0.25	-	100
	651	Pb	6515023	0.007	4.10	0.38	-	100
	651	PeA	651502920	0.004	2.40	0.37	-	100
	651	RhB	651543522	0.020	12.40	0.23	-	100
22c	651	GxA	651326720	0.085	38.80	0.23	-	100
	651	GxB	651326722	0.021	9.40	0.24	-	100
	651	LcA	651422520	0.048	21.80	0.25	-	100
	651	PeA	651502920	0.036	16.10	0.37	-	100
	651	RbA	651542320	0.012	5.40	0.26	-	100
	651	RhB	651543522	0.019	8.60	0.23	-	100
22d	651	Ae	6512029	0.032	13.00	0.39	-	100
	651	GxA	651326720	0.051	20.70	0.23	-	100
	651	GxB	651326722	0.029	11.80	0.24	-	100
	651	LcA	651422520	0.021	8.70	0.25	-	100
	651	PeA	651502920	0.031	12.80	0.37	-	100
	651	RbA	651542320	0.054	22.10	0.26	-	100
	651	RhB	651543522	0.027	10.90	0.23	-	100
23a	651	AbA	651202320	0.001	0.30	0.38	-	100
	651	Ac	6512025	0.030	8.60	0.39	-	100
	651	Ao	6512049	0.002	0.50	0.04	-	100
	651	GYD	651326826	0.140	39.50	0.26	-	100
	651	Ge	6513229	0.005	1.40	0.26	-	100
	651	GgA	651323320	0.017	4.70	0.25	-	100
	651	Gh	6513235	0.018	5.10	0.24	-	100
	651	PRB	651505422	0.140	39.50	0.28	-	100
	651	Vk	6516241	0.002	0.50	0.26	-	100
24a	651	GYD	651326826	0.099	24.30	0.26	-	100
	651	GxA	651326720	0.001	0.20	0.23	-	100
	651	GxB	651326722	0.092	22.60	0.24	-	100
	651	HrB	651345522	0.001	0.20	0.12	-	100
	651	LcA	651422520	0.167	40.70	0.25	-	100
	651	PeA	651502920	0.027	6.60	0.37	-	100
	651	RbA	651542320	0.022	5.40	0.26	-	100
24b	651	AL	6512042	0.074	22.20	0.40	-	100
	651	GYD	651326826	0.047	14.00	0.26	-	100
	651	GxA	651326720	0.050	14.90	0.23	-	100
	651	GxB	651326722	0.005	1.40	0.24	-	100
	651	HLC	651344224	0.115	34.30	0.14	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
24b	651	HrB	651345522	0.004	1.30	0.12	-	100
	651	LcA	651422520	0.007	2.00	0.25	-	100
	651	RbA	651542320	0.001	0.40	0.26	-	100
	651	RhB	651543522	0.032	9.60	0.23	-	100
30a	651	AbA	651202320	0.018	50.80	0.38	-	100
	651	Ac	6512025	0.009	24.00	0.39	-	100
	651	GgA	651323320	0.009	24.30	0.25	-	100
	651	PRB	651505422	0.000	0.80	0.28	-	100
30b	651	AbA	651202320	0.074	14.50	0.38	-	100
	651	Ac	6512025	0.006	1.30	0.39	-	100
	651	CO	6512448	0.000	0.00	0.29	20.00	100
	651	Cm	6512445	0.003	0.60	0.26	-	100
	651	GYD	651326826	0.098	19.30	0.26	-	100
	651	GgA	651323320	0.099	19.50	0.25	-	100
	651	Gh	6513235	0.098	19.20	0.24	-	100
	651	Lb	6514223	0.000	0.00	0.40	-	100
	651	PRB	651505422	0.106	20.90	0.28	-	100
	651	RS	6515456	0.024	4.70	0.40	65.00	100
30c	651	AGB	651203222	0.034	14.00	0.40	-	100
	651	Ac	6512025	0.055	22.60	0.39	-	100
	651	GYD	651326826	0.052	21.40	0.26	-	100
	651	GgA	651323320	0.027	11.20	0.25	-	100
	651	Gh	6513235	0.001	0.20	0.24	-	100
	651	HLC	651344224	0.010	4.20	0.14	-	100
	651	PRB	651505422	0.031	12.60	0.28	-	100
	651	RS	6515456	0.033	13.70	0.40	65.00	100
30d	651	AGB	651203222	0.061	9.90	0.40	-	100
	651	Ac	6512025	0.147	23.90	0.39	-	100
	651	GYD	651326826	0.384	62.50	0.26	-	100
	651	Gb	6513223	0.001	0.10	0.04	-	100
	651	HLC	651344224	0.006	1.00	0.14	-	100
	651	PRB	651505422	0.016	2.60	0.28	-	100
30e	651	AGB	651203222	0.034	8.60	0.40	-	100
	651	AM	6512044	0.005	1.30	0.39	-	100
	651	Ac	6512025	0.016	4.00	0.39	-	100
	651	Ck	6512441	0.042	10.50	0.30	-	100
	651	GYD	651326826	0.168	42.00	0.26	-	100
	651	Gb	6513223	0.065	16.30	0.04	-	100
	651	Gh	6513235	0.041	10.20	0.24	-	100
	651	HLC	651344224	0.028	7.00	0.14	-	100
	651	PRB	651505422	0.000	0.10	0.28	-	100
30f	651	AGB	651203222	0.139	7.80	0.40	-	100
	651	Ac	6512025	0.247	14.00	0.39	-	100
	651	Ck	6512441	0.480	27.10	0.30	-	100
	651	Cm	6512445	0.055	3.10	0.26	-	100
	651	GWD	651326426	0.145	8.20	0.35	-	100
	651	GYD	651326826	0.427	24.10	0.26	-	100
	651	Gh	6513235	0.032	1.80	0.24	-	100
	651	HAB	651342022	0.020	1.10	0.07	-	100
	651	HLC	651344224	0.082	4.60	0.14	-	100
	651	PRB	651505422	0.131	7.40	0.28	-	100
	651	Va	6516221	0.000	0.00	0.39	-	100
	651	Vb	6516223	0.013	0.80	0.39	-	100
30g	651	AGB	651203222	0.154	18.20	0.40	-	100
	651	Ac	6512025	0.109	12.90	0.39	-	100
	651	Ck	6512441	0.073	8.60	0.30	-	100
	651	GYD	651326826	0.407	48.20	0.26	-	100
	651	PRB	651505422	0.102	12.10	0.28	-	100
32a	651	Ac	6512025	0.069	23.90	0.39	-	100
	651	GYD	651326826	0.173	59.80	0.26	-	100
	651	GgA	651323320	0.013	4.50	0.25	-	100
	651	PRB	651505422	0.034	11.80	0.28	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
32b	651	Ac	6512025	0.086	18.10	0.39	-	100
	651	GWD	651326426	0.016	3.30	0.35	-	100
	651	GYD	651326826	0.352	73.90	0.26	-	100
	651	HLC	651344224	0.022	4.70	0.14	-	100
33a	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	CA2	65124202	0.024	14.50	0.38	-	100
	651	GgA	651323320	0.005	3.20	0.25	-	100
	651	PRB	651505422	0.074	44.50	0.28	-	100
	651	PT	6515058	0.063	37.80	0.40	-	100
34a	651	AGB	651203222	0.000	0.10	0.40	-	100
	651	Ac	6512025	0.163	36.40	0.39	-	100
	651	Ck	6512441	0.039	8.60	0.30	-	100
	651	Cm	6512445	0.021	4.70	0.26	-	100
	651	GWD	651326426	0.067	15.10	0.35	-	100
	651	GYD	651326826	0.022	4.80	0.26	-	100
	651	HAB	651342022	0.062	13.80	0.07	-	100
	651	HLC	651344224	0.044	9.80	0.14	-	100
	651	Va	6516221	0.030	6.70	0.39	-	100
34b	651	Ac	6512025	0.092	14.50	0.39	-	100
	651	Ck	6512441	0.071	11.20	0.30	-	100
	651	Cm	6512445	0.058	9.20	0.26	-	100
	651	GWD	651326426	0.043	6.90	0.35	-	100
	651	HAB	651342022	0.020	3.20	0.07	-	100
	651	HLC	651344224	0.013	2.00	0.14	-	100
	651	HM	6513444	0.056	8.90	0.15	-	100
	651	Lb	6514223	0.095	15.10	0.40	-	100
	651	RpE	651545128	0.157	24.90	0.29	-	100
	651	Va	6516221	0.026	4.10	0.39	-	100
35a	651	CA2	65124202	0.007	12.40	0.38	-	100
	651	GgA	651323320	0.000	0.70	0.25	-	100
	651	Gh	6513235	0.000	0.20	0.24	-	100
	651	PRB	651505422	0.016	28.40	0.28	-	100
	651	PT	6515058	0.033	58.30	0.40	-	100
36a	651	AGB	651203222	0.054	8.00	0.40	-	100
	651	Ac	6512025	0.043	6.40	0.39	-	100
	651	Ck	6512441	0.147	21.70	0.30	-	100
	651	Cm	6512445	0.000	0.00	0.26	-	100
	651	GYD	651326826	0.289	42.60	0.26	-	100
	651	HLC	651344224	0.103	15.20	0.14	-	100
	651	PRB	651505422	0.041	6.10	0.28	-	100
36b	651	AGB	651203222	0.040	3.80	0.40	-	100
	651	AL	6512042	0.230	21.70	0.40	-	100
	651	AbA	651202320	0.041	3.90	0.38	-	100
	651	Ac	6512025	0.017	1.60	0.39	-	100
	651	GYD	651326826	0.458	43.20	0.26	-	100
	651	HLC	651344224	0.178	16.80	0.14	-	100
	651	PRB	651505422	0.040	3.80	0.28	-	100
	651	Pb	6515023	0.046	4.30	0.38	-	100
	651	PeA	651502920	0.009	0.90	0.37	-	100
36c	645	1	6451	0.004	0.40	0.41	-	100
	645	102	645102	0.099	9.20	0.40	-	100
	645	71	64571	0.006	0.50	0.36	-	100
	651	AL	6512042	0.308	28.40	0.40	-	100
	651	AdA	651202720	0.020	1.90	0.40	-	100
	651	GYD	651326826	0.379	34.90	0.26	-	100
	651	HLC	651344224	0.046	4.30	0.14	-	100
	651	PRB	651505422	0.118	10.80	0.28	-	100
	651	Pb	6515023	0.042	3.90	0.38	-	100
	651	RbB	651542322	0.062	5.70	0.25	-	100
40a	651	AGB	651203222	0.061	22.60	0.40	-	100
	651	Ac	6512025	0.094	35.00	0.39	-	100
	651	Ck	6512441	0.046	17.00	0.30	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
40a	651	GYD	651326826	0.031	11.70	0.26	-	100
	651	HAB	651342022	0.030	11.30	0.07	-	100
	651	HLC	651344224	0.006	2.30	0.14	-	100
40b	651	AGB	651203222	0.058	13.80	0.40	-	100
	651	Ac	6512025	0.034	8.20	0.39	-	100
	651	Ae	6512029	0.073	17.60	0.39	-	100
	651	GYD	651326826	0.089	21.30	0.26	-	100
	651	HM	6513444	0.074	17.70	0.15	-	100
	651	Lb	6514223	0.011	2.70	0.40	-	100
	651	RbB	651542322	0.054	13.00	0.25	-	100
	651	RpE	651545128	0.024	5.60	0.29	-	100
40c	651	Ae	6512029	0.110	21.90	0.39	-	100
	651	GYD	651326826	0.118	23.50	0.26	-	100
	651	GxB	651326722	0.135	27.00	0.24	-	100
	651	Pb	6515023	0.011	2.30	0.38	-	100
	651	RbB	651542322	0.082	16.30	0.25	-	100
	651	RhB	651543522	0.045	9.10	0.23	-	100
40d	645	1	6451	0.004	0.50	0.41	-	100
	645	102	645102	0.052	7.10	0.40	-	100
	645	6	6456	0.041	5.60	0.62	-	100
	645	71	64571	0.066	9.00	0.36	-	100
	651	AGB	651203222	0.006	0.90	0.40	-	100
	651	Ae	6512029	0.177	24.20	0.39	-	100
	651	GYD	651326826	0.166	22.80	0.26	-	100
	651	GxB	651326722	0.061	8.30	0.24	-	100
	651	LcA	651422520	0.024	3.20	0.25	-	100
	651	PRB	651505422	0.112	15.30	0.28	-	100
	651	RaA	651542120	0.004	0.50	0.39	-	100
	651	RhB	651543522	0.019	2.60	0.23	-	100
42a	651	Ae	6512029	0.062	17.30	0.39	-	100
	651	La	6514221	0.080	22.20	0.26	-	100
	651	Ld	6514227	0.000	0.10	0.25	-	100
	651	Pb	6515023	0.033	9.20	0.38	-	100
	651	RbB	651542322	0.089	24.70	0.25	-	100
	651	RhB	651543522	0.095	26.40	0.23	-	100
42b	651	Ae	6512029	0.024	7.60	0.39	-	100
	651	GxB	651326722	0.106	34.40	0.24	-	100
	651	La	6514221	0.021	6.80	0.26	-	100
	651	LcA	651422520	0.032	10.30	0.25	-	100
	651	Pb	6515023	0.010	3.20	0.38	-	100
	651	PeA	651502920	0.021	6.90	0.37	-	100
	651	RbA	651542320	0.022	7.00	0.26	-	100
	651	RhB	651543522	0.074	23.80	0.23	-	100
44a	651	AL	6512042	0.037	4.50	0.40	-	100
	651	GxA	651326720	0.008	0.90	0.23	-	100
	651	GxB	651326722	0.189	22.70	0.24	-	100
	651	HLC	651344224	0.159	19.10	0.14	-	100
	651	LcA	651422520	0.127	15.20	0.25	-	100
	651	Pb	6515023	0.029	3.50	0.38	-	100
	651	PeA	651502920	0.058	6.90	0.37	-	100
	651	RbA	651542320	0.079	9.50	0.26	-	100
	651	RbB	651542322	0.123	14.80	0.25	-	100
	651	RhB	651543522	0.025	2.90	0.23	-	100
44b	645	20	64520	0.009	3.10	0.19	-	100
	645	56	64556	0.000	0.00	0.27	-	100
	645	71	64571	0.026	9.50	0.36	-	100
	651	GYD	651326826	0.038	13.70	0.26	-	100
	651	GxB	651326722	0.022	7.80	0.24	-	100
	651	HLC	651344224	0.119	42.60	0.14	-	100
	651	LcA	651422520	0.058	20.90	0.25	-	100
	651	RbB	651542322	0.007	2.30	0.25	-	100
44c	645	20	64520	0.005	1.50	0.19	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
44c	651	GYD	651326826	0.091	26.90	0.26	-	100
	651	HLC	651344224	0.183	54.00	0.14	-	100
	651	LcA	651422520	0.059	17.60	0.25	-	100
44d	645	117	645117	0.013	1.60	0.23	-	100
	645	20	64520	0.255	31.10	0.19	-	100
	651	GYD	651326826	0.027	3.30	0.26	-	100
	651	HLC	651344224	0.502	61.10	0.14	-	100
	651	LcA	651422520	0.024	2.90	0.25	-	100
44e	645	117	645117	0.016	3.40	0.23	-	100
	645	20	64520	0.416	89.70	0.19	-	100
	651	HLC	651344224	0.032	6.90	0.14	-	100
44f	645	117	645117	0.004	1.30	0.23	-	100
	645	20	64520	0.250	93.60	0.19	-	100
	651	HLC	651344224	0.014	5.00	0.14	-	100
46a	645	102	645102	0.210	26.00	0.40	-	100
	645	117	645117	0.001	0.10	0.23	-	100
	645	6	6456	0.038	4.70	0.62	-	100
	645	71	64571	0.559	69.20	0.36	-	100
46b	645	102	645102	0.023	5.80	0.40	-	100
	645	117	645117	0.287	71.70	0.23	-	100
	645	71	64571	0.090	22.50	0.36	-	100
46c	645	117	645117	0.226	100.00	0.23	-	100
46d	645	117	645117	0.318	73.80	0.23	-	100
	645	69	64569	0.012	2.90	0.63	-	100
	645	71	64571	0.101	23.30	0.36	-	100
46e	645	117	645117	0.182	82.50	0.23	-	100
	645	20	64520	0.039	17.50	0.19	-	100
46f	645	117	645117	0.220	38.20	0.23	-	100
	645	20	64520	0.356	61.80	0.19	-	100
46g	645	100	645100	0.001	0.20	0.40	20.00	100
	645	117	645117	0.371	82.20	0.23	-	100
	645	20	64520	0.079	17.60	0.19	-	100
46h	645	117	645117	0.086	22.40	0.23	-	100
	645	20	64520	0.298	77.60	0.19	-	100
46i	645	117	645117	0.019	6.90	0.23	-	100
	645	123	645123	0.093	34.50	0.37	-	100
	645	20	64520	0.158	58.60	0.19	-	100
46j	645	117	645117	0.142	48.20	0.23	-	100
	645	123	645123	0.050	17.00	0.37	-	100
	645	20	64520	0.102	34.80	0.19	-	100
46k	645	117	645117	0.167	37.70	0.23	-	100
	645	123	645123	0.030	6.70	0.37	-	100
	645	20	64520	0.245	55.60	0.19	-	100
48a	645	102	645102	0.023	8.00	0.40	-	100
	645	56	64556	0.025	8.80	0.27	-	100
	645	71	64571	0.207	73.20	0.36	-	100
	651	GxB	651326722	0.002	0.60	0.24	-	100
	651	LcA	651422520	0.007	2.40	0.25	-	100
	651	PeA	651502920	0.009	3.00	0.37	-	100
	651	RbB	651542322	0.011	4.00	0.25	-	100
48b	645	102	645102	0.048	23.40	0.40	-	100
	645	117	645117	0.002	1.10	0.23	-	100
	645	20	64520	0.019	9.40	0.19	-	100
	645	56	64556	0.023	11.40	0.27	-	100
	645	71	64571	0.104	51.20	0.36	-	100
	651	GxB	651326722	0.007	3.60	0.24	-	100
50a	645	102	645102	0.014	1.50	0.40	-	100
	645	117	645117	0.698	78.40	0.23	-	100
	645	20	64520	0.096	10.80	0.19	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
50a	645	71	64571	0.036	4.00	0.36	-	100
	651	GYD	651326826	0.007	0.80	0.26	-	100
	651	HLC	651344224	0.040	4.50	0.14	-	100
50b	645	117	645117	0.205	100.00	0.23	-	100
50c	645	117	645117	0.546	99.70	0.23	-	100
	645	20	64520	0.001	0.30	0.19	-	100
50d	645	117	645117	0.154	86.20	0.23	-	100
	645	20	64520	0.025	13.80	0.19	-	100
50e	645	117	645117	0.156	91.70	0.23	-	100
	645	20	64520	0.014	8.30	0.19	-	100
50f	645	117	645117	0.201	68.90	0.23	-	100
	645	20	64520	0.091	31.10	0.19	-	100
50g	645	117	645117	0.018	12.50	0.23	-	100
	645	20	64520	0.128	87.50	0.19	-	100
52a	645	100	645100	0.506	87.70	0.40	20.00	100
	645	117	645117	0.060	10.40	0.23	-	100
	645	20	64520	0.011	1.90	0.19	-	100
54a	645	100	645100	0.113	31.40	0.40	20.00	100
	645	117	645117	0.076	21.10	0.23	-	100
	645	20	64520	0.171	47.60	0.19	-	100
54b	645	100	645100	0.050	21.10	0.40	20.00	100
	645	117	645117	0.147	62.50	0.23	-	100
	645	123	645123	0.013	5.50	0.37	-	100
	645	20	64520	0.026	10.90	0.19	-	100
56a	645	117	645117	0.033	11.00	0.23	-	100
	645	20	64520	0.138	46.30	0.19	-	100
	645	69	64569	0.027	9.00	0.63	-	100
	645	71	64571	0.100	33.70	0.36	-	100
60a	651	AGB	651203222	0.039	5.10	0.40	-	100
	651	AL	6512042	0.026	3.40	0.40	-	100
	651	Ac	6512025	0.061	7.90	0.39	-	100
	651	Cm	6512445	0.100	12.90	0.26	-	100
	651	GYD	651326826	0.357	46.30	0.26	-	100
	651	HAB	651342022	0.093	12.10	0.07	-	100
	651	HLC	651344224	0.025	3.20	0.14	-	100
	651	LcA	651422520	0.016	2.10	0.25	-	100
	651	RbA	651542320	0.010	1.30	0.26	-	100
	651	TB	6515822	0.025	3.20	0.40	-	100
	651	Va	6516221	0.020	2.60	0.39	-	100
60b	645	102	645102	0.005	0.50	0.40	-	100
	651	AL	6512042	0.131	11.80	0.40	-	100
	651	GYD	651326826	0.605	54.40	0.26	-	100
	651	Lb	6514223	0.061	5.50	0.40	-	100
	651	PRB	651505422	0.259	23.30	0.28	-	100
	651	RbA	651542320	0.001	0.00	0.26	-	100
	651	TB	6515822	0.051	4.60	0.40	-	100
60c	645	1	6451	0.017	1.60	0.41	-	100
	645	102	645102	0.146	14.00	0.40	-	100
	645	71	64571	0.093	8.90	0.36	-	100
	651	AL	6512042	0.122	11.60	0.40	-	100
	651	GYD	651326826	0.272	26.10	0.26	-	100
	651	PRB	651505422	0.248	23.70	0.28	-	100
	651	TB	6515822	0.052	5.00	0.40	-	100
	651	Tc	6515825	0.095	9.10	0.40	-	100
62a	645	1	6451	0.007	1.20	0.41	-	100
	645	102	645102	0.157	26.80	0.40	-	100
	645	71	64571	0.422	72.00	0.36	-	100
62b	645	102	645102	0.060	24.70	0.40	-	100
	645	71	64571	0.185	75.30	0.36	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
64a	645	102	645102	0.020	5.30	0.40	-	100
	645	71	64571	0.358	94.70	0.36	-	100
64b	645	102	645102	0.084	10.10	0.40	-	100
	645	69	64569	0.184	22.00	0.63	-	100
	645	71	64571	0.568	67.90	0.36	-	100
64c	645	102	645102	0.017	2.70	0.40	-	100
	645	56	64556	0.109	17.10	0.27	-	100
	645	69	64569	0.200	31.50	0.63	-	100
	645	71	64571	0.311	48.70	0.36	-	100
64d	645	69	64569	0.141	98.00	0.63	-	100
	645	71	64571	0.003	2.00	0.36	-	100
70a	651	AbA	651202320	0.013	12.20	0.38	-	100
	651	CA2	65124202	0.018	17.80	0.38	-	100
	651	GgA	651323320	0.022	21.30	0.25	-	100
	651	PRB	651505422	0.037	35.50	0.28	-	100
	651	PT	6515058	0.014	13.20	0.40	-	100
70b	651	AbA	651202320	0.035	10.60	0.38	-	100
	651	CA2	65124202	0.030	9.00	0.38	-	100
	651	CO	6512448	0.036	10.90	0.29	20.00	100
	651	GgA	651323320	0.076	22.90	0.25	-	100
	651	Gh	6513235	0.045	13.70	0.24	-	100
	651	PRB	651505422	0.001	0.40	0.28	-	100
	651	PT	6515058	0.108	32.60	0.40	-	100
70c	651	AGB	651203222	0.018	2.40	0.40	-	100
	651	AbA	651202320	0.139	18.80	0.38	-	100
	651	Ac	6512025	0.000	0.10	0.39	-	100
	651	CA2	65124202	0.028	3.80	0.38	-	100
	651	CO	6512448	0.015	2.00	0.29	20.00	100
	651	GYD	651326826	0.258	34.80	0.26	-	100
	651	GgA	651323320	0.173	23.40	0.25	-	100
	651	Gh	6513235	0.014	1.90	0.24	-	100
	651	HLC	651344224	0.008	1.10	0.14	-	100
	651	PRB	651505422	0.089	11.90	0.28	-	100
70d	651	AGB	651203222	0.001	0.10	0.40	-	100
	651	AM	6512044	0.014	2.80	0.39	-	100
	651	CV	6512462	0.000	0.00	0.39	-	100
	651	GYD	651326826	0.315	64.80	0.26	-	100
	651	GgA	651323320	0.102	20.90	0.25	-	100
	651	LcA	651422520	0.013	2.80	0.25	-	100
	651	PRB	651505422	0.041	8.50	0.28	-	100
70e	651	AM	6512044	0.262	19.10	0.39	-	100
	651	Ac	6512025	0.011	0.80	0.39	-	100
	651	Ch	6512435	0.002	0.10	0.24	-	100
	651	Cm	6512445	0.040	2.90	0.26	-	100
	651	GYD	651326826	0.413	30.10	0.26	-	100
	651	GgA	651323320	0.160	11.60	0.25	-	100
	651	Gh	6513235	0.167	12.20	0.24	-	100
	651	HLC	651344224	0.038	2.80	0.14	-	100
	651	LcA	651422520	0.063	4.60	0.25	-	100
	651	PRB	651505422	0.159	11.60	0.28	-	100
	651	PeA	651502920	0.057	4.10	0.37	-	100
	651	PsB	651505722	0.001	0.10	0.26	-	100
70f	651	Ch	6512435	0.029	7.30	0.24	-	100
	651	GYD	651326826	0.006	1.50	0.26	-	100
	651	Gh	6513235	0.126	32.10	0.24	-	100
	651	GxA	651326720	0.011	2.90	0.23	-	100
	651	GxB	651326722	0.029	7.40	0.24	-	100
	651	HAB	651342022	0.009	2.20	0.07	-	100
	651	HLC	651344224	0.070	17.90	0.14	-	100
	651	Ld	6514227	0.100	25.50	0.25	-	100
	651	RbA	651542320	0.011	2.90	0.26	-	100
	651	Vb	6516223	0.001	0.30	0.39	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
70g	651	AL	6512042	0.007	0.40	0.40	-	100
	651	AbA	651202320	0.085	5.20	0.38	-	100
	651	Ac	6512025	0.333	20.40	0.39	-	100
	651	Cg	6512433	0.015	0.90	0.24	-	100
	651	Ch	6512435	0.042	2.60	0.24	-	100
	651	Cm	6512445	0.074	4.50	0.26	-	100
	651	Cp	6512451	0.016	1.00	0.40	-	100
	651	GWD	651326426	0.021	1.30	0.35	-	100
	651	GYD	651326826	0.349	21.40	0.26	-	100
	651	Gh	6513235	0.030	1.80	0.24	-	100
	651	GxA	651326720	0.022	1.40	0.23	-	100
	651	GxB	651326722	0.013	0.80	0.24	-	100
	651	HAB	651342022	0.057	3.50	0.07	-	100
	651	HAC	651342024	0.007	0.40	0.05	-	100
	651	HLC	651344224	0.006	0.40	0.14	-	100
	651	Lb	6514223	0.031	1.90	0.40	-	100
	651	LcA	651422520	0.029	1.80	0.25	-	100
	651	Ld	6514227	0.026	1.60	0.25	-	100
	651	PRB	651505422	0.175	10.70	0.28	-	100
	651	PT	6515058	0.005	0.30	0.40	-	100
	651	Pb	6515023	0.014	0.90	0.38	-	100
	651	PeA	651502920	0.132	8.10	0.37	-	100
	651	RaA	651542120	0.042	2.50	0.39	-	100
	651	RhB	651543522	0.080	4.90	0.23	-	100
	651	Va	6516221	0.008	0.50	0.39	-	100
	651	Vb	6516223	0.015	0.90	0.39	-	100
70h	651	AbA	651202320	0.045	15.50	0.38	-	100
	651	Ch	6512435	0.023	7.90	0.24	-	100
	651	Cp	6512451	0.007	2.50	0.40	-	100
	651	Gh	6513235	0.019	6.60	0.24	-	100
	651	GxA	651326720	0.015	5.00	0.23	-	100
	651	GxB	651326722	0.070	23.90	0.24	-	100
	651	HAB	651342022	0.015	5.10	0.07	-	100
	651	HAC	651342024	0.015	5.00	0.05	-	100
	651	HLC	651344224	0.009	3.00	0.14	-	100
	651	LcA	651422520	0.010	3.60	0.25	-	100
	651	Ld	6514227	0.018	6.00	0.25	-	100
	651	RbA	651542320	0.011	3.60	0.26	-	100
	651	RhB	651543522	0.028	9.50	0.23	-	100
	651	Vb	6516223	0.009	2.90	0.39	-	100
71a	651	CA2	65124202	0.009	3.50	0.38	-	100
	651	CO	6512448	0.016	6.00	0.29	20.00	100
	651	GgA	651323320	0.005	2.00	0.25	-	100
	651	PRB	651505422	0.024	9.00	0.28	-	100
	651	PT	6515058	0.208	79.60	0.40	-	100
71b	651	CO	6512448	0.018	6.10	0.29	20.00	100
	651	PT	6515058	0.268	92.60	0.40	-	100
	651	RS	6515456	0.004	1.30	0.40	65.00	100
72a	651	CA2	65124202	0.039	8.90	0.38	-	100
	651	CO	6512448	0.030	6.80	0.29	20.00	100
	651	GgA	651323320	0.061	13.70	0.25	-	100
	651	PRB	651505422	0.035	7.90	0.28	-	100
	651	PT	6515058	0.278	62.80	0.40	-	100
72b	651	CA2	65124202	0.033	2.70	0.38	-	100
	651	CO	6512448	0.076	6.40	0.29	20.00	100
	651	CV	6512462	0.136	11.50	0.39	-	100
	651	GM	6513244	0.010	0.80	0.29	-	100
	651	GYD	651326826	0.017	1.40	0.26	-	100
	651	GgA	651323320	0.036	3.00	0.25	-	100
	651	PRB	651505422	0.156	13.20	0.28	-	100
	651	PT	6515058	0.715	60.30	0.40	-	100
	651	RS	6515456	0.008	0.60	0.40	65.00	100
73a	651	CV	6512462	0.187	50.70	0.39	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
73a	651	GYD	651326826	0.057	15.50	0.26	-	100
	651	GgA	651323320	0.010	2.80	0.25	-	100
	651	LcA	651422520	0.003	0.70	0.25	-	100
	651	PRB	651505422	0.112	30.30	0.28	-	100
73b	651	CV	6512462	0.053	8.80	0.39	-	100
	651	LcA	651422520	0.355	58.60	0.25	-	100
	651	PRB	651505422	0.150	24.70	0.28	-	100
	651	PeA	651502920	0.048	7.90	0.37	-	100
	651	PsB	651505722	0.000	0.00	0.26	-	100
74a	651	AM	6512044	0.005	1.50	0.39	-	100
	651	Ac	6512025	0.050	16.10	0.39	-	100
	651	Ch	6512435	0.053	17.10	0.24	-	100
	651	Cm	6512445	0.003	0.80	0.26	-	100
	651	GWD	651326426	0.003	0.90	0.35	-	100
	651	GYD	651326826	0.041	13.40	0.26	-	100
	651	Gh	6513235	0.053	17.10	0.24	-	100
	651	HAB	651342022	0.016	5.20	0.07	-	100
	651	PRB	651505422	0.020	6.50	0.28	-	100
	651	PeA	651502920	0.001	0.20	0.37	-	100
	651	Vb	6516223	0.065	21.10	0.39	-	100
74b	651	Ac	6512025	0.233	34.90	0.39	-	100
	651	GWD	651326426	0.005	0.80	0.35	-	100
	651	GYD	651326826	0.276	41.40	0.26	-	100
	651	PRB	651505422	0.087	13.10	0.28	-	100
	651	RhB	651543522	0.014	2.10	0.23	-	100
	651	Vb	6516223	0.051	7.70	0.39	-	100
75a	651	GYD	651326826	0.041	8.90	0.26	-	100
	651	GgA	651323320	0.010	2.10	0.25	-	100
	651	Gh	6513235	0.100	21.70	0.24	-	100
	651	GxB	651326722	0.000	0.10	0.24	-	100
	651	HLC	651344224	0.028	6.20	0.14	-	100
	651	LcA	651422520	0.011	2.40	0.25	-	100
	651	Ld	6514227	0.011	2.30	0.25	-	100
	651	PRB	651505422	0.140	30.40	0.28	-	100
	651	PeA	651502920	0.003	0.60	0.37	-	100
	651	PsB	651505722	0.023	5.10	0.26	-	100
	651	RbA	651542320	0.093	20.20	0.26	-	100
77a	651	AbA	651202320	0.071	28.80	0.38	-	100
	651	Cp	6512451	0.079	32.40	0.40	-	100
	651	GxA	651326720	0.006	2.40	0.23	-	100
	651	GxB	651326722	0.043	17.60	0.24	-	100
	651	HAB	651342022	0.009	3.60	0.07	-	100
	651	LcA	651422520	0.011	4.40	0.25	-	100
	651	RaA	651542120	0.018	7.20	0.39	-	100
	651	RbA	651542320	0.000	0.00	0.26	-	100
	651	RhB	651543522	0.008	3.10	0.23	-	100
	651	RpE	651545128	0.001	0.20	0.29	-	100
	651	Va	6516221	0.000	0.10	0.39	-	100
77b	651	AbA	651202320	0.031	6.90	0.38	-	100
	651	Ch	6512435	0.175	39.50	0.24	-	100
	651	Cp	6512451	0.021	4.70	0.40	-	100
	651	GxB	651326722	0.034	7.70	0.24	-	100
	651	HAB	651342022	0.004	1.00	0.07	-	100
	651	HAC	651342024	0.008	1.70	0.05	-	100
	651	Ld	6514227	0.014	3.30	0.25	-	100
	651	PT	6515058	0.001	0.10	0.40	-	100
	651	Pb	6515023	0.064	14.50	0.38	-	100
	651	RbA	651542320	0.010	2.10	0.26	-	100
	651	RhB	651543522	0.060	13.50	0.23	-	100
	651	RpE	651545128	0.000	0.00	0.29	-	100
	651	Va	6516221	0.022	5.00	0.39	-	100
78a	651	AbA	651202320	0.013	8.80	0.38	-	100
	651	Ch	6512435	0.011	6.90	0.24	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
78a	651	Gh	6513235	0.048	31.80	0.24	-	100
	651	HAB	651342022	0.024	15.60	0.07	-	100
	651	HAC	651342024	0.005	3.20	0.05	-	100
	651	LcA	651422520	0.000	0.20	0.25	-	100
	651	Ld	6514227	0.012	8.10	0.25	-	100
	651	RhB	651543522	0.038	25.40	0.23	-	100
78b	651	Ch	6512435	0.088	18.30	0.24	-	100
	651	Et	6512859	0.075	15.70	0.25	-	100
	651	Gh	6513235	0.029	6.10	0.24	-	100
	651	GxB	651326722	0.050	10.30	0.24	-	100
	651	HAB	651342022	0.026	5.40	0.07	-	100
	651	HAC	651342024	0.004	0.90	0.05	-	100
	651	Ld	6514227	0.073	15.30	0.25	-	100
	651	PT	6515058	0.010	2.00	0.40	-	100
	651	Pb	6515023	0.092	19.10	0.38	-	100
	651	PeA	651502920	0.005	1.00	0.37	-	100
	651	RhB	651543522	0.028	5.80	0.23	-	100
79a	651	CA2	65124202	0.077	15.00	0.38	-	100
	651	GgA	651323320	0.000	0.10	0.25	-	100
	651	Gh	6513235	0.027	5.30	0.24	-	100
	651	PT	6515058	0.410	79.70	0.40	-	100
79b	651	CO	6512448	0.014	3.80	0.29	20.00	100
	651	PT	6515058	0.348	96.20	0.40	-	100
80a	651	AbA	651202320	0.040	11.70	0.38	-	100
	651	AfB	651203122	0.020	5.90	0.40	-	100
	651	GgA	651323320	0.004	1.10	0.25	-	100
	651	GxB	651326722	0.018	5.30	0.24	-	100
	651	Pb	6515023	0.030	9.00	0.38	-	100
	651	PeA	651502920	0.002	0.40	0.37	-	100
	651	RpE	651545128	0.224	66.50	0.29	-	100
80b	651	AbA	651202320	0.019	6.90	0.38	-	100
	651	GxB	651326722	0.104	37.30	0.24	-	100
	651	Pb	6515023	0.082	29.40	0.38	-	100
	651	PeA	651502920	0.000	0.10	0.37	-	100
	651	RpE	651545128	0.073	26.20	0.29	-	100
81a	651	AbA	651202320	0.016	19.80	0.38	-	100
	651	AfB	651203122	0.028	35.50	0.40	-	100
	651	GxB	651326722	0.003	4.10	0.24	-	100
	651	Ma	6514421	0.002	1.90	0.40	-	100
	651	RpE	651545128	0.030	38.60	0.29	-	100
81b	651	AbA	651202320	0.044	8.60	0.38	-	100
	651	GxB	651326722	0.070	13.70	0.24	-	100
	651	Lb	6514223	0.063	12.30	0.40	-	100
	651	PRB	651505422	0.073	14.20	0.28	-	100
	651	Pb	6515023	0.089	17.40	0.38	-	100
	651	RhB	651543522	0.016	3.10	0.23	-	100
	651	RpE	651545128	0.157	30.70	0.29	-	100
82a	651	AL	6512042	0.025	4.20	0.40	-	100
	651	GxB	651326722	0.007	1.20	0.24	-	100
	651	Lb	6514223	0.028	4.80	0.40	-	100
	651	Ma	6514421	0.063	10.80	0.40	-	100
	651	PRB	651505422	0.108	18.30	0.28	-	100
	651	RpE	651545128	0.357	60.70	0.29	-	100
82b	645	102	645102	0.103	39.00	0.40	-	100
	645	71	64571	0.099	37.50	0.36	-	100
	651	PRB	651505422	0.010	3.70	0.28	-	100
	651	RpE	651545128	0.053	19.90	0.29	-	100
83a	645	102	645102	0.098	40.20	0.40	-	100
	645	2	6452	0.017	6.90	0.41	-	100
	645	4	6454	0.011	4.50	0.58	-	100
	645	71	64571	0.065	26.90	0.36	-	100
	651	AGB	651203222	0.012	5.00	0.40	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
83a	651	AL	6512042	0.020	8.20	0.40	-	100
	651	AM	6512044	0.003	1.00	0.39	-	100
	651	HAB	651342022	0.018	7.20	0.07	-	100
83b	645	1	6451	0.001	0.10	0.41	-	100
	645	102	645102	0.076	17.50	0.40	-	100
	645	71	64571	0.356	82.40	0.36	-	100
83c	645	1	6451	0.033	12.00	0.41	-	100
	645	102	645102	0.046	16.50	0.40	-	100
	645	69	64569	0.049	17.70	0.63	-	100
	645	71	64571	0.149	53.80	0.36	-	100
83d	645	1	6451	0.077	33.40	0.41	-	100
	645	102	645102	0.025	10.70	0.40	-	100
	645	69	64569	0.129	55.90	0.63	-	100
83e	645	1	6451	0.135	16.10	0.41	-	100
	645	123	645123	0.006	0.70	0.37	-	100
	645	69	64569	0.696	83.20	0.63	-	100
83f	645	1	6451	0.001	0.60	0.41	-	100
	645	123	645123	0.010	7.90	0.37	-	100
	645	69	64569	0.121	91.50	0.63	-	100
83g	645	1	6451	0.067	10.90	0.41	-	100
	645	69	64569	0.551	89.00	0.63	-	100
	645	71	64571	0.001	0.10	0.36	-	100
83h	645	1	6451	0.001	0.50	0.41	-	100
	645	20	64520	0.103	35.60	0.19	-	100
	645	69	64569	0.183	63.50	0.63	-	100
	645	71	64571	0.001	0.40	0.36	-	100
83i	645	1	6451	0.044	10.90	0.41	-	100
	645	117	645117	0.013	3.30	0.23	-	100
	645	20	64520	0.022	5.40	0.19	-	100
	645	69	64569	0.325	80.50	0.63	-	100
83j	645	1	6451	0.033	20.30	0.41	-	100
	645	117	645117	0.007	4.40	0.23	-	100
	645	69	64569	0.123	75.30	0.63	-	100
83k	645	100	645100	0.129	41.00	0.40	20.00	100
	645	117	645117	0.000	0.00	0.23	-	100
	645	20	64520	0.041	12.90	0.19	-	100
	645	69	64569	0.046	14.50	0.63	-	100
	645	71	64571	0.099	31.60	0.36	-	100
83l	645	100	645100	0.113	20.40	0.40	20.00	100
	645	117	645117	0.210	37.90	0.23	-	100
	645	20	64520	0.199	35.90	0.19	-	100
	645	69	64569	0.000	0.00	0.63	-	100
	645	71	64571	0.032	5.80	0.36	-	100
84a	645	2	6452	0.011	5.00	0.41	-	100
	645	4	6454	0.000	0.00	0.58	-	100
	645	71	64571	0.092	41.40	0.36	-	100
	651	AGB	651203222	0.000	0.10	0.40	-	100
	651	AL	6512042	0.028	12.50	0.40	-	100
	651	RpE	651545128	0.091	40.90	0.29	-	100
84b	645	102	645102	0.097	27.90	0.40	-	100
	645	71	64571	0.250	72.10	0.36	-	100
85a	645	102	645102	0.068	21.70	0.40	-	100
	645	71	64571	0.246	78.30	0.36	-	100
85b	645	102	645102	0.090	38.00	0.40	-	100
	645	71	64571	0.147	62.00	0.36	-	100
86a	645	1	6451	0.079	16.40	0.41	-	100
	645	102	645102	0.004	0.70	0.40	-	100
	645	69	64569	0.396	82.60	0.63	-	100
	645	71	64571	0.001	0.30	0.36	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
87a	645	102	645102	0.103	37.70	0.40	-	100
	645	69	64569	0.061	22.20	0.63	-	100
	645	71	64571	0.110	40.20	0.36	-	100
87b	645	102	645102	0.007	4.60	0.40	-	100
	645	123	645123	0.006	3.90	0.37	-	100
	645	69	64569	0.147	91.50	0.63	-	100
88a	645	1	6451	0.002	0.70	0.41	-	100
	645	117	645117	0.077	27.80	0.23	-	100
	645	20	64520	0.044	16.10	0.19	-	100
	645	69	64569	0.153	55.40	0.63	-	100
89a	645	1	6451	0.003	1.30	0.41	-	100
	645	69	64569	0.212	98.70	0.63	-	100
89b	645	100	645100	0.021	7.50	0.40	20.00	100
	645	20	64520	0.090	32.00	0.19	-	100
	645	69	64569	0.141	50.00	0.63	-	100
	645	71	64571	0.030	10.50	0.36	-	100
91a	645	1	6451	0.107	24.70	0.41	-	100
	645	125	645125	0.010	2.20	0.43	-	100
	645	20	64520	0.003	0.80	0.19	-	100
	645	71	64571	0.314	72.30	0.36	-	100
91b	645	102	645102	0.237	42.30	0.40	-	100
	645	123	645123	0.059	10.40	0.37	-	100
	645	20	64520	0.119	21.20	0.19	-	100
	645	69	64569	0.087	15.60	0.63	-	100
	645	71	64571	0.059	10.60	0.36	-	100
92a	645	1	6451	0.278	35.40	0.41	-	100
	645	102	645102	0.025	3.20	0.40	-	100
	645	123	645123	0.099	12.60	0.37	-	100
	645	125	645125	0.005	0.60	0.43	-	100
	645	20	64520	0.378	48.20	0.19	-	100
92b	645	1	6451	0.005	0.70	0.41	-	100
	645	102	645102	0.009	1.30	0.40	-	100
	645	11	64511	0.011	1.50	0.94	-	100
	645	123	645123	0.147	21.00	0.37	-	100
	645	2	6452	0.106	15.20	0.41	-	100
	645	20	64520	0.149	21.20	0.19	-	100
	645	56	64556	0.222	31.70	0.27	-	100
	645	71	64571	0.052	7.40	0.36	-	100

APPENDIX D2d

Soil Data – With Dike Conditions

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
10a	651	Ch	6512435	0.081	9.70	0.24	-	100
	651	Dn	6512647	0.051	6.10	1.20	-	100
	651	GM	6513244	0.194	23.20	0.29	-	100
	651	GYD	651326826	0.006	0.80	0.26	-	100
	651	GxB	651326722	0.137	16.30	0.24	-	100
	651	HAB	651342022	0.210	25.10	0.07	-	100
	651	HLC	651344224	0.158	18.90	0.14	-	100
10b	651	CO	6512448	0.066	7.70	0.29	20.00	100
	651	Cg	6512433	0.000	0.00	0.24	-	100
	651	Ck	6512441	0.129	15.10	0.30	-	100
	651	Cm	6512445	0.259	30.30	0.26	-	100
	651	Dn	6512647	0.059	6.90	1.20	-	100
	651	GM	6513244	0.023	2.60	0.29	-	100
	651	GYD	651326826	0.026	3.10	0.26	-	100
	651	Gh	6513235	0.025	2.90	0.24	-	100
	651	GxB	651326722	0.015	1.80	0.24	-	100
	651	HAB	651342022	0.066	7.70	0.07	-	100
	651	Lb	6514223	0.017	2.00	0.40	-	100
	651	PRB	651505422	0.027	3.10	0.28	-	100
	651	RS	6515456	0.143	16.70	0.40	65.00	100
12a	651	Ch	6512435	0.113	13.60	0.24	-	100
	651	Cm	6512445	0.029	3.40	0.26	-	100
	651	Dn	6512647	0.019	2.30	1.20	-	100
	651	GM	6513244	0.076	9.10	0.29	-	100
	651	HAB	651342022	0.132	15.80	0.07	-	100
	651	HAC	651342024	0.238	28.60	0.05	-	100
	651	HLC	651344224	0.058	6.90	0.14	-	100
	651	LcA	651422520	0.006	0.70	0.25	-	100
	651	Ld	6514227	0.077	9.20	0.25	-	100
	651	PRB	651505422	0.085	10.20	0.28	-	100
12b	651	AbA	651202320	0.005	1.00	0.38	-	100
	651	Cg	6512433	0.035	7.80	0.24	-	100
	651	Ch	6512435	0.174	38.60	0.24	-	100
	651	Cp	6512451	0.006	1.30	0.40	-	100
	651	Es	6512857	0.005	1.10	0.25	-	100
	651	HAB	651342022	0.054	11.90	0.07	-	100
	651	HAC	651342024	0.066	14.60	0.05	-	100
	651	LcA	651422520	0.032	7.10	0.25	-	100
	651	Ld	6514227	0.075	16.60	0.25	-	100
14a	651	Ac	6512025	0.045	12.20	0.39	-	100
	651	Ch	6512435	0.005	1.30	0.24	-	100
	651	Ck	6512441	0.021	5.70	0.30	-	100
	651	Cm	6512445	0.088	24.00	0.26	-	100
	651	Dn	6512647	0.013	3.60	1.20	-	100
	651	GM	6513244	0.052	14.30	0.29	-	100
	651	HAB	651342022	0.059	15.90	0.07	-	100
	651	HAC	651342024	0.085	23.00	0.05	-	100
14b	651	Ac	6512025	0.042	16.10	0.39	-	100
	651	Cg	6512433	0.000	0.00	0.24	-	100
	651	Ch	6512435	0.029	11.00	0.24	-	100
	651	Ck	6512441	0.046	17.90	0.30	-	100
	651	Cm	6512445	0.120	46.20	0.26	-	100
	651	LcA	651422520	0.007	2.80	0.25	-	100
	651	PRB	651505422	0.015	5.90	0.28	-	100
14c	651	Ac	6512025	0.035	3.20	0.39	-	100
	651	Cg	6512433	0.354	32.40	0.24	-	100
	651	Ch	6512435	0.135	12.30	0.24	-	100
	651	Ck	6512441	0.003	0.30	0.30	-	100
	651	Cm	6512445	0.053	4.80	0.26	-	100
	651	Cp	6512451	0.035	3.20	0.40	-	100
	651	Es	6512857	0.025	2.30	0.25	-	100
	651	GYD	651326826	0.054	4.90	0.26	-	100
	651	GgA	651323320	0.045	4.10	0.25	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
14c	651	HAB	651342022	0.054	4.90	0.07	-	100
	651	HLC	651344224	0.019	1.70	0.14	-	100
	651	Lb	6514223	0.019	1.70	0.40	-	100
	651	LcA	651422520	0.062	5.70	0.25	-	100
	651	Ld	6514227	0.169	15.40	0.25	-	100
	651	Pb	6515023	0.034	3.10	0.38	-	100
14d	651	Cg	6512433	0.360	71.20	0.24	-	100
	651	Cp	6512451	0.009	1.70	0.40	-	100
	651	Dn	6512647	0.003	0.60	1.20	-	100
	651	GYD	651326826	0.011	2.20	0.26	-	100
	651	GgA	651323320	0.034	6.60	0.25	-	100
	651	GxA	651326720	0.000	0.10	0.23	-	100
	651	HAB	651342022	0.000	0.00	0.07	-	100
	651	HAC	651342024	0.013	2.50	0.05	-	100
	651	Ld	6514227	0.071	14.10	0.25	-	100
	651	Pb	6515023	0.005	1.00	0.38	-	100
14e	651	Cg	6512433	0.635	57.70	0.24	-	100
	651	Cp	6512451	0.168	15.20	0.40	-	100
	651	GgA	651323320	0.015	1.40	0.25	-	100
	651	GxA	651326720	0.082	7.50	0.23	-	100
	651	HAC	651342024	0.007	0.60	0.05	-	100
	651	HLC	651344224	0.001	0.10	0.14	-	100
	651	Ld	6514227	0.049	4.50	0.25	-	100
	651	Pb	6515023	0.014	1.30	0.38	-	100
	651	RaA	651542120	0.015	1.40	0.39	-	100
	651	Vb	6516223	0.114	10.40	0.39	-	100
15a	651	AL	6512042	0.076	14.80	0.40	-	100
	651	AbA	651202320	0.002	0.50	0.38	-	100
	651	GYD	651326826	0.049	9.50	0.26	-	100
	651	Gh	6513235	0.025	4.90	0.24	-	100
	651	GxA	651326720	0.007	1.40	0.23	-	100
	651	GxB	651326722	0.217	42.10	0.24	-	100
	651	PRB	651505422	0.138	26.80	0.28	-	100
16a	651	AbA	651202320	0.025	11.60	0.38	-	100
	651	GYD	651326826	0.147	67.50	0.26	-	100
	651	GgA	651323320	0.005	2.30	0.25	-	100
	651	Gh	6513235	0.001	0.60	0.24	-	100
	651	Ma	6514421	0.008	3.80	0.40	-	100
	651	PRB	651505422	0.029	13.10	0.28	-	100
	651	Vk	6516241	0.002	1.10	0.26	-	100
20a	651	Ac	6512025	0.087	36.20	0.39	-	100
	651	GYD	651326826	0.014	5.70	0.26	-	100
	651	HLC	651344224	0.006	2.60	0.14	-	100
	651	RS	6515456	0.133	55.50	0.40	65.00	100
20b	651	Ac	6512025	0.141	11.10	0.39	-	100
	651	Cg	6512433	0.050	3.90	0.24	-	100
	651	Ck	6512441	0.096	7.50	0.30	-	100
	651	Cm	6512445	0.018	1.40	0.26	-	100
	651	Cp	6512451	0.002	0.20	0.40	-	100
	651	GYD	651326826	0.601	47.20	0.26	-	100
	651	Gh	6513235	0.128	10.00	0.24	-	100
	651	HAB	651342022	0.108	8.40	0.07	-	100
	651	HAC	651342024	0.005	0.40	0.05	-	100
	651	HLC	651344224	0.075	5.90	0.14	-	100
	651	RaA	651542120	0.038	3.00	0.39	-	100
	651	Vb	6516223	0.013	1.00	0.39	-	100
20c	651	Ac	6512025	0.101	7.10	0.39	-	100
	651	CO	6512448	0.005	0.30	0.29	20.00	100
	651	Cg	6512433	0.122	8.60	0.24	-	100
	651	Ch	6512435	0.018	1.20	0.24	-	100
	651	Ck	6512441	0.127	8.90	0.30	-	100
	651	Dn	6512647	0.000	0.00	1.20	-	100
	651	GWD	651326426	0.017	1.20	0.35	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
20c	651	GYD	651326826	0.006	0.50	0.26	-	100
	651	Gh	6513235	0.099	6.90	0.24	-	100
	651	HAB	651342022	0.018	1.30	0.07	-	100
	651	HAC	651342024	0.297	20.90	0.05	-	100
	651	HLC	651344224	0.246	17.30	0.14	-	100
	651	RS	6515456	0.072	5.00	0.40	65.00	100
	651	RaA	651542120	0.026	1.80	0.39	-	100
	651	Vb	6516223	0.267	18.80	0.39	-	100
20d	651	Cg	6512433	0.007	1.20	0.24	-	100
	651	Ck	6512441	0.075	12.00	0.30	-	100
	651	Et	6512859	0.048	7.70	0.25	-	100
	651	GWD	651326426	0.136	21.90	0.35	-	100
	651	Gh	6513235	0.150	24.00	0.24	-	100
	651	HAB	651342022	0.071	11.30	0.07	-	100
	651	HLC	651344224	0.067	10.80	0.14	-	100
	651	Vb	6516223	0.068	11.00	0.39	-	100
20e	651	Ac	6512025	0.053	3.50	0.39	-	100
	651	CO	6512448	0.033	2.10	0.29	20.00	100
	651	Ck	6512441	0.047	3.10	0.30	-	100
	651	Cm	6512445	0.053	3.40	0.26	-	100
	651	Cp	6512451	0.012	0.80	0.40	-	100
	651	Et	6512859	0.100	6.50	0.25	-	100
	651	GWD	651326426	0.223	14.50	0.35	-	100
	651	Gh	6513235	0.261	17.00	0.24	-	100
	651	HAB	651342022	0.235	15.30	0.07	-	100
	651	HLC	651344224	0.299	19.50	0.14	-	100
	651	Ld	6514227	0.133	8.70	0.25	-	100
	651	PRB	651505422	0.002	0.10	0.28	-	100
	651	RS	6515456	0.018	1.10	0.40	65.00	100
	651	Vb	6516223	0.066	4.30	0.39	-	100
20f	651	AbA	651202320	0.060	4.50	0.38	-	100
	651	Ac	6512025	0.074	5.50	0.39	-	100
	651	AdA	651202720	0.009	0.70	0.40	-	100
	651	Cm	6512445	0.035	2.60	0.26	-	100
	651	Et	6512859	0.026	1.90	0.25	-	100
	651	GWD	651326426	0.174	12.90	0.35	-	100
	651	GgA	651323320	0.064	4.70	0.25	-	100
	651	Gh	6513235	0.180	13.30	0.24	-	100
	651	HAB	651342022	0.100	7.40	0.07	-	100
	651	HLC	651344224	0.051	3.80	0.14	-	100
	651	HrB	651345522	0.028	2.10	0.12	-	100
	651	Lb	6514223	0.015	1.10	0.40	-	100
	651	Ld	6514227	0.106	7.90	0.25	-	100
	651	RhB	651543522	0.342	25.40	0.23	-	100
	651	RpE	651545128	0.083	6.20	0.29	-	100
20g	651	AbA	651202320	0.073	6.20	0.38	-	100
	651	AbB	651202322	0.044	3.70	0.39	-	100
	651	Ac	6512025	0.008	0.70	0.39	-	100
	651	Cg	6512433	0.022	1.90	0.24	-	100
	651	Cm	6512445	0.006	0.50	0.26	-	100
	651	Et	6512859	0.005	0.40	0.25	-	100
	651	Ge	6513229	0.008	0.70	0.26	-	100
	651	GgA	651323320	0.134	11.40	0.25	-	100
	651	Gh	6513235	0.005	0.40	0.24	-	100
	651	HM	6513444	0.015	1.30	0.15	-	100
	651	HrB	651345522	0.139	11.80	0.12	-	100
	651	La	6514221	0.015	1.20	0.26	-	100
	651	Lb	6514223	0.030	2.50	0.40	-	100
	651	Ld	6514227	0.014	1.20	0.25	-	100
	651	Pb	6515023	0.020	1.70	0.38	-	100
	651	RbB	651542322	0.109	9.30	0.25	-	100
	651	RhB	651543522	0.349	29.60	0.23	-	100
	651	RpE	651545128	0.137	11.60	0.29	-	100
	651	Vb	6516223	0.047	3.90	0.39	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
20h	651	AbA	651202320	0.005	0.40	0.38	-	100
	651	AbB	651202322	0.004	0.30	0.39	-	100
	651	Cm	6512445	0.111	8.90	0.26	-	100
	651	Et	6512859	0.001	0.10	0.25	-	100
	651	GgA	651323320	0.169	13.50	0.25	-	100
	651	GxB	651326722	0.000	0.00	0.24	-	100
	651	HAB	651342022	0.021	1.70	0.07	-	100
	651	HM	6513444	0.010	0.80	0.15	-	100
	651	La	6514221	0.168	13.40	0.26	-	100
	651	Lb	6514223	0.001	0.10	0.40	-	100
	651	Ld	6514227	0.057	4.50	0.25	-	100
	651	Pb	6515023	0.146	11.70	0.38	-	100
	651	RbB	651542322	0.284	22.70	0.25	-	100
	651	RhB	651543522	0.272	21.80	0.23	-	100
	651	RpE	651545128	0.003	0.20	0.29	-	100
20i	651	AbA	651202320	0.038	13.00	0.38	-	100
	651	GgA	651323320	0.010	3.50	0.25	-	100
	651	GxA	651326720	0.025	8.50	0.23	-	100
	651	GxB	651326722	0.059	20.10	0.24	-	100
	651	HrB	651345522	0.000	0.00	0.12	-	100
	651	La	6514221	0.007	2.30	0.26	-	100
	651	LcA	651422520	0.003	0.90	0.25	-	100
	651	Ld	6514227	0.001	0.40	0.25	-	100
	651	PeB	651502922	0.043	14.70	0.38	-	100
	651	RbB	651542322	0.006	1.90	0.25	-	100
	651	RhB	651543522	0.086	29.50	0.23	-	100
	651	RpE	651545128	0.015	5.00	0.29	-	100
20j	651	AbA	651202320	0.008	3.80	0.38	-	100
	651	GgA	651323320	0.041	20.10	0.25	-	100
	651	LcA	651422520	0.002	1.00	0.25	-	100
	651	PeA	651502920	0.063	30.80	0.37	-	100
	651	RbA	651542320	0.066	32.50	0.26	-	100
	651	RbB	651542322	0.024	11.70	0.25	-	100
20k	651	GgA	651323320	0.027	15.30	0.25	-	100
	651	LcA	651422520	0.004	2.40	0.25	-	100
	651	PeA	651502920	0.025	14.00	0.37	-	100
	651	RbA	651542320	0.120	68.30	0.26	-	100
20l	651	AbA	651202320	0.007	5.60	0.38	-	100
	651	AfA	651203120	0.019	14.60	0.38	-	100
	651	GxA	651326720	0.002	1.20	0.23	-	100
	651	GxB	651326722	0.011	8.60	0.24	-	100
	651	LcA	651422520	0.000	0.30	0.25	-	100
	651	PeA	651502920	0.007	5.30	0.37	-	100
	651	RbA	651542320	0.026	19.90	0.26	-	100
	651	RbB	651542322	0.002	1.90	0.25	-	100
	651	RhB	651543522	0.055	42.60	0.23	-	100
21a	651	AfA	651203120	0.014	1.50	0.38	-	100
	651	GYD	651326826	0.014	1.50	0.26	-	100
	651	GxA	651326720	0.136	15.40	0.23	-	100
	651	GxB	651326722	0.018	2.10	0.24	-	100
	651	HLC	651344224	0.023	2.60	0.14	-	100
	651	HM	6513444	0.019	2.20	0.15	-	100
	651	LcA	651422520	0.250	28.40	0.25	-	100
	651	Pb	6515023	0.002	0.20	0.38	-	100
	651	PeA	651502920	0.120	13.60	0.37	-	100
	651	RbA	651542320	0.261	29.60	0.26	-	100
	651	RbB	651542322	0.024	2.70	0.25	-	100
	651	RhB	651543522	0.002	0.20	0.23	-	100
21b	651	AL	6512042	0.059	10.70	0.40	-	100
	651	GYD	651326826	0.201	36.60	0.26	-	100
	651	HLC	651344224	0.142	26.00	0.14	-	100
	651	LcA	651422520	0.106	19.30	0.25	-	100
	651	PeA	651502920	0.026	4.70	0.37	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
21b	651	RbA	651542320	0.015	2.70	0.26	-	100
21c	651	AL	6512042	0.078	33.10	0.40	-	100
	651	GYD	651326826	0.092	39.20	0.26	-	100
	651	HLC	651344224	0.062	26.60	0.14	-	100
	651	LcA	651422520	0.003	1.20	0.25	-	100
21d	645	20	64520	0.002	0.50	0.19	-	100
	651	AL	6512042	0.015	3.10	0.40	-	100
	651	GYD	651326826	0.067	13.50	0.26	-	100
	651	HLC	651344224	0.410	83.00	0.14	-	100
22a	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	GgA	651323320	0.095	21.00	0.25	-	100
	651	GxA	651326720	0.039	8.60	0.23	-	100
	651	GxB	651326722	0.048	10.70	0.24	-	100
	651	HrB	651345522	0.033	7.30	0.12	-	100
	651	La	6514221	0.008	1.80	0.26	-	100
	651	LcA	651422520	0.023	5.20	0.25	-	100
	651	Pb	6515023	0.006	1.30	0.38	-	100
	651	RbA	651542320	0.010	2.30	0.26	-	100
	651	RbB	651542322	0.048	10.50	0.25	-	100
	651	RhB	651543522	0.119	26.30	0.23	-	100
	651	RpE	651545128	0.023	5.10	0.29	-	100
22b	651	Ae	6512029	0.020	12.10	0.39	-	100
	651	GxB	651326722	0.074	45.30	0.24	-	100
	651	LcA	651422520	0.039	23.70	0.25	-	100
	651	Pb	6515023	0.007	4.10	0.38	-	100
	651	PeA	651502920	0.004	2.40	0.37	-	100
	651	RhB	651543522	0.020	12.40	0.23	-	100
22c	651	GxA	651326720	0.085	38.80	0.23	-	100
	651	GxB	651326722	0.021	9.40	0.24	-	100
	651	LcA	651422520	0.048	21.80	0.25	-	100
	651	PeA	651502920	0.036	16.10	0.37	-	100
	651	RbA	651542320	0.012	5.40	0.26	-	100
	651	RhB	651543522	0.019	8.60	0.23	-	100
22d	651	Ae	6512029	0.032	13.00	0.39	-	100
	651	GxA	651326720	0.051	20.70	0.23	-	100
	651	GxB	651326722	0.029	11.80	0.24	-	100
	651	LcA	651422520	0.021	8.70	0.25	-	100
	651	PeA	651502920	0.031	12.80	0.37	-	100
	651	RbA	651542320	0.054	22.10	0.26	-	100
	651	RhB	651543522	0.027	10.90	0.23	-	100
23a	651	AbA	651202320	0.001	0.30	0.38	-	100
	651	Ac	6512025	0.030	8.60	0.39	-	100
	651	Ao	6512049	0.002	0.50	0.04	-	100
	651	GYD	651326826	0.140	39.50	0.26	-	100
	651	Ge	6513229	0.005	1.40	0.26	-	100
	651	GgA	651323320	0.017	4.70	0.25	-	100
	651	Gh	6513235	0.018	5.10	0.24	-	100
	651	PRB	651505422	0.140	39.50	0.28	-	100
	651	Vk	6516241	0.002	0.50	0.26	-	100
24a	651	GYD	651326826	0.099	24.30	0.26	-	100
	651	GxA	651326720	0.001	0.20	0.23	-	100
	651	GxB	651326722	0.092	22.60	0.24	-	100
	651	HrB	651345522	0.001	0.20	0.12	-	100
	651	LcA	651422520	0.167	40.70	0.25	-	100
	651	PeA	651502920	0.027	6.60	0.37	-	100
	651	RbA	651542320	0.022	5.40	0.26	-	100
24b	651	AL	6512042	0.074	22.20	0.40	-	100
	651	GYD	651326826	0.047	14.00	0.26	-	100
	651	GxA	651326720	0.050	14.90	0.23	-	100
	651	GxB	651326722	0.005	1.40	0.24	-	100
	651	HLC	651344224	0.115	34.30	0.14	-	100
	651	HrB	651345522	0.004	1.30	0.12	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
24b	651	LcA	651422520	0.007	2.00	0.25	-	100
	651	RbA	651542320	0.001	0.40	0.26	-	100
	651	RhB	651543522	0.032	9.60	0.23	-	100
30a	651	AbA	651202320	0.018	50.80	0.38	-	100
	651	Ac	6512025	0.009	24.00	0.39	-	100
	651	GgA	651323320	0.009	24.30	0.25	-	100
	651	PRB	651505422	0.000	0.80	0.28	-	100
30b	651	AbA	651202320	0.074	14.50	0.38	-	100
	651	Ac	6512025	0.006	1.30	0.39	-	100
	651	CO	6512448	0.000	0.00	0.29	20.00	100
	651	Cm	6512445	0.003	0.60	0.26	-	100
	651	GYD	651326826	0.098	19.30	0.26	-	100
	651	GgA	651323320	0.099	19.50	0.25	-	100
	651	Gh	6513235	0.098	19.20	0.24	-	100
	651	Lb	6514223	0.000	0.00	0.40	-	100
	651	PRB	651505422	0.106	20.90	0.28	-	100
	651	RS	6515456	0.024	4.70	0.40	65.00	100
30c	651	AGB	651203222	0.034	14.00	0.40	-	100
	651	Ac	6512025	0.055	22.60	0.39	-	100
	651	GYD	651326826	0.052	21.40	0.26	-	100
	651	GgA	651323320	0.027	11.20	0.25	-	100
	651	Gh	6513235	0.001	0.20	0.24	-	100
	651	HLC	651344224	0.010	4.20	0.14	-	100
	651	PRB	651505422	0.031	12.60	0.28	-	100
	651	RS	6515456	0.033	13.70	0.40	65.00	100
30d	651	AGB	651203222	0.061	9.90	0.40	-	100
	651	Ac	6512025	0.147	23.90	0.39	-	100
	651	GYD	651326826	0.384	62.50	0.26	-	100
	651	Gb	6513223	0.001	0.10	0.04	-	100
	651	HLC	651344224	0.006	1.00	0.14	-	100
	651	PRB	651505422	0.016	2.60	0.28	-	100
30e	651	AGB	651203222	0.034	8.60	0.40	-	100
	651	AM	6512044	0.005	1.30	0.39	-	100
	651	Ac	6512025	0.016	4.00	0.39	-	100
	651	Ck	6512441	0.042	10.50	0.30	-	100
	651	GYD	651326826	0.168	42.00	0.26	-	100
	651	Gb	6513223	0.065	16.30	0.04	-	100
	651	Gh	6513235	0.041	10.20	0.24	-	100
	651	HLC	651344224	0.028	7.00	0.14	-	100
	651	PRB	651505422	0.000	0.10	0.28	-	100
30f	651	AGB	651203222	0.139	7.80	0.40	-	100
	651	Ac	6512025	0.247	14.00	0.39	-	100
	651	Ck	6512441	0.480	27.10	0.30	-	100
	651	Cm	6512445	0.055	3.10	0.26	-	100
	651	GWD	651326426	0.145	8.20	0.35	-	100
	651	GYD	651326826	0.427	24.10	0.26	-	100
	651	Gh	6513235	0.032	1.80	0.24	-	100
	651	HAB	651342022	0.020	1.10	0.07	-	100
	651	HLC	651344224	0.082	4.60	0.14	-	100
	651	PRB	651505422	0.131	7.40	0.28	-	100
	651	Va	6516221	0.000	0.00	0.39	-	100
	651	Vb	6516223	0.013	0.80	0.39	-	100
30g	651	AGB	651203222	0.154	18.20	0.40	-	100
	651	Ac	6512025	0.109	12.90	0.39	-	100
	651	Ck	6512441	0.073	8.60	0.30	-	100
	651	GYD	651326826	0.407	48.20	0.26	-	100
	651	PRB	651505422	0.102	12.10	0.28	-	100
32a	651	Ac	6512025	0.069	23.90	0.39	-	100
	651	GYD	651326826	0.173	59.80	0.26	-	100
	651	GgA	651323320	0.013	4.50	0.25	-	100
	651	PRB	651505422	0.034	11.80	0.28	-	100
32b	651	Ac	6512025	0.086	18.10	0.39	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
32b	651	GWD	651326426	0.016	3.30	0.35	-	100
	651	GYD	651326826	0.352	73.90	0.26	-	100
	651	HLC	651344224	0.022	4.70	0.14	-	100
33a	651	AbA	651202320	0.000	0.00	0.38	-	100
	651	CA2	65124202	0.024	14.50	0.38	-	100
	651	GgA	651323320	0.005	3.20	0.25	-	100
	651	PRB	651505422	0.074	44.50	0.28	-	100
	651	PT	6515058	0.063	37.80	0.40	-	100
34a	651	AGB	651203222	0.000	0.10	0.40	-	100
	651	Ac	6512025	0.163	36.40	0.39	-	100
	651	Ck	6512441	0.039	8.60	0.30	-	100
	651	Cm	6512445	0.021	4.70	0.26	-	100
	651	GWD	651326426	0.067	15.10	0.35	-	100
	651	GYD	651326826	0.022	4.80	0.26	-	100
	651	HAB	651342022	0.062	13.80	0.07	-	100
	651	HLC	651344224	0.044	9.80	0.14	-	100
	651	Va	6516221	0.030	6.70	0.39	-	100
34b	651	Ac	6512025	0.092	14.50	0.39	-	100
	651	Ck	6512441	0.071	11.20	0.30	-	100
	651	Cm	6512445	0.058	9.20	0.26	-	100
	651	GWD	651326426	0.043	6.90	0.35	-	100
	651	HAB	651342022	0.020	3.20	0.07	-	100
	651	HLC	651344224	0.013	2.00	0.14	-	100
	651	HM	6513444	0.056	8.90	0.15	-	100
	651	Lb	6514223	0.095	15.10	0.40	-	100
	651	RpE	651545128	0.157	24.90	0.29	-	100
	651	Va	6516221	0.026	4.10	0.39	-	100
35a	651	CA2	65124202	0.007	12.40	0.38	-	100
	651	GgA	651323320	0.000	0.70	0.25	-	100
	651	Gh	6513235	0.000	0.20	0.24	-	100
	651	PRB	651505422	0.016	28.40	0.28	-	100
	651	PT	6515058	0.033	58.30	0.40	-	100
36a	651	AGB	651203222	0.054	8.00	0.40	-	100
	651	Ac	6512025	0.043	6.40	0.39	-	100
	651	Ck	6512441	0.147	21.70	0.30	-	100
	651	Cm	6512445	0.000	0.00	0.26	-	100
	651	GYD	651326826	0.289	42.60	0.26	-	100
	651	HLC	651344224	0.103	15.20	0.14	-	100
	651	PRB	651505422	0.041	6.10	0.28	-	100
36b	651	AGB	651203222	0.040	3.80	0.40	-	100
	651	AL	6512042	0.230	21.70	0.40	-	100
	651	AbA	651202320	0.041	3.90	0.38	-	100
	651	Ac	6512025	0.017	1.60	0.39	-	100
	651	GYD	651326826	0.458	43.20	0.26	-	100
	651	HLC	651344224	0.178	16.80	0.14	-	100
	651	PRB	651505422	0.040	3.80	0.28	-	100
	651	Pb	6515023	0.046	4.30	0.38	-	100
	651	PeA	651502920	0.009	0.90	0.37	-	100
36c	645	1	6451	0.004	0.40	0.41	-	100
	645	102	645102	0.099	9.20	0.40	-	100
	645	71	64571	0.006	0.50	0.36	-	100
	651	AL	6512042	0.308	28.40	0.40	-	100
	651	AdA	651202720	0.020	1.90	0.40	-	100
	651	GYD	651326826	0.379	34.90	0.26	-	100
	651	HLC	651344224	0.046	4.30	0.14	-	100
	651	PRB	651505422	0.118	10.80	0.28	-	100
	651	Pb	6515023	0.042	3.90	0.38	-	100
	651	RbB	651542322	0.062	5.70	0.25	-	100
40a	651	AGB	651203222	0.061	22.60	0.40	-	100
	651	Ac	6512025	0.094	35.00	0.39	-	100
	651	Ck	6512441	0.046	17.00	0.30	-	100
	651	GYD	651326826	0.031	11.70	0.26	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
40a	651	HAB	651342022	0.030	11.30	0.07	-	100
	651	HLC	651344224	0.006	2.30	0.14	-	100
40b	651	AGB	651203222	0.058	13.80	0.40	-	100
	651	Ac	6512025	0.034	8.20	0.39	-	100
	651	Ae	6512029	0.073	17.60	0.39	-	100
	651	GYD	651326826	0.089	21.30	0.26	-	100
	651	HM	6513444	0.074	17.70	0.15	-	100
	651	Lb	6514223	0.011	2.70	0.40	-	100
	651	RbB	651542322	0.054	13.00	0.25	-	100
	651	RpE	651545128	0.024	5.60	0.29	-	100
40c	651	Ae	6512029	0.110	21.90	0.39	-	100
	651	GYD	651326826	0.118	23.50	0.26	-	100
	651	GxB	651326722	0.135	27.00	0.24	-	100
	651	Pb	6515023	0.011	2.30	0.38	-	100
	651	RbB	651542322	0.082	16.30	0.25	-	100
	651	RhB	651543522	0.045	9.10	0.23	-	100
40d	645	1	6451	0.004	0.50	0.41	-	100
	645	102	645102	0.052	7.10	0.40	-	100
	645	6	6456	0.041	5.60	0.62	-	100
	645	71	64571	0.066	9.00	0.36	-	100
	651	AGB	651203222	0.006	0.90	0.40	-	100
	651	Ae	6512029	0.177	24.20	0.39	-	100
	651	GYD	651326826	0.166	22.80	0.26	-	100
	651	GxB	651326722	0.061	8.30	0.24	-	100
	651	LcA	651422520	0.024	3.20	0.25	-	100
	651	PRB	651505422	0.112	15.30	0.28	-	100
	651	RaA	651542120	0.004	0.50	0.39	-	100
	651	RhB	651543522	0.019	2.60	0.23	-	100
42a	651	Ae	6512029	0.062	17.30	0.39	-	100
	651	La	6514221	0.080	22.20	0.26	-	100
	651	Ld	6514227	0.000	0.10	0.25	-	100
	651	Pb	6515023	0.033	9.20	0.38	-	100
	651	RbB	651542322	0.089	24.70	0.25	-	100
	651	RhB	651543522	0.095	26.40	0.23	-	100
42b	651	Ae	6512029	0.024	7.60	0.39	-	100
	651	GxB	651326722	0.106	34.40	0.24	-	100
	651	La	6514221	0.021	6.80	0.26	-	100
	651	LcA	651422520	0.032	10.30	0.25	-	100
	651	Pb	6515023	0.010	3.20	0.38	-	100
	651	PeA	651502920	0.021	6.90	0.37	-	100
	651	RbA	651542320	0.022	7.00	0.26	-	100
	651	RhB	651543522	0.074	23.80	0.23	-	100
44a	651	AL	6512042	0.037	4.50	0.40	-	100
	651	GxA	651326720	0.008	0.90	0.23	-	100
	651	GxB	651326722	0.189	22.70	0.24	-	100
	651	HLC	651344224	0.159	19.10	0.14	-	100
	651	LcA	651422520	0.127	15.20	0.25	-	100
	651	Pb	6515023	0.029	3.50	0.38	-	100
	651	PeA	651502920	0.058	6.90	0.37	-	100
	651	RbA	651542320	0.079	9.50	0.26	-	100
	651	RbB	651542322	0.123	14.80	0.25	-	100
	651	RhB	651543522	0.025	2.90	0.23	-	100
44b	645	20	64520	0.009	3.10	0.19	-	100
	645	56	64556	0.000	0.00	0.27	-	100
	645	71	64571	0.026	9.50	0.36	-	100
	651	GYD	651326826	0.038	13.70	0.26	-	100
	651	GxB	651326722	0.022	7.80	0.24	-	100
	651	HLC	651344224	0.119	42.60	0.14	-	100
	651	LcA	651422520	0.058	20.90	0.25	-	100
	651	RbB	651542322	0.007	2.30	0.25	-	100
44c	645	20	64520	0.005	1.50	0.19	-	100
	651	GYD	651326826	0.091	26.90	0.26	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
44c	651	HLC	651344224	0.183	54.00	0.14	-	100
	651	LcA	651422520	0.059	17.60	0.25	-	100
44d	645	117	645117	0.013	1.60	0.23	-	100
	645	20	64520	0.255	31.10	0.19	-	100
	651	GYD	651326826	0.027	3.30	0.26	-	100
	651	HLC	651344224	0.502	61.10	0.14	-	100
	651	LcA	651422520	0.024	2.90	0.25	-	100
44e	645	117	645117	0.016	3.40	0.23	-	100
	645	20	64520	0.416	89.70	0.19	-	100
	651	HLC	651344224	0.032	6.90	0.14	-	100
44f	645	117	645117	0.004	1.30	0.23	-	100
	645	20	64520	0.250	93.60	0.19	-	100
	651	HLC	651344224	0.014	5.00	0.14	-	100
46a	645	102	645102	0.210	26.00	0.40	-	100
	645	117	645117	0.001	0.10	0.23	-	100
	645	6	6456	0.038	4.70	0.62	-	100
	645	71	64571	0.559	69.20	0.36	-	100
46b	645	102	645102	0.023	5.80	0.40	-	100
	645	117	645117	0.287	71.70	0.23	-	100
	645	71	64571	0.090	22.50	0.36	-	100
46c	645	117	645117	0.226	100.00	0.23	-	100
46d	645	117	645117	0.318	73.80	0.23	-	100
	645	69	64569	0.012	2.90	0.63	-	100
	645	71	64571	0.101	23.30	0.36	-	100
46e	645	117	645117	0.182	82.50	0.23	-	100
	645	20	64520	0.039	17.50	0.19	-	100
46f	645	117	645117	0.220	38.20	0.23	-	100
	645	20	64520	0.356	61.80	0.19	-	100
46g	645	100	645100	0.001	0.20	0.40	20.00	100
	645	117	645117	0.371	82.20	0.23	-	100
	645	20	64520	0.079	17.60	0.19	-	100
46h	645	117	645117	0.086	22.40	0.23	-	100
	645	20	64520	0.298	77.60	0.19	-	100
46i	645	117	645117	0.019	6.90	0.23	-	100
	645	123	645123	0.093	34.50	0.37	-	100
	645	20	64520	0.158	58.60	0.19	-	100
46j	645	117	645117	0.142	48.20	0.23	-	100
	645	123	645123	0.050	17.00	0.37	-	100
	645	20	64520	0.102	34.80	0.19	-	100
46k	645	117	645117	0.167	37.70	0.23	-	100
	645	123	645123	0.030	6.70	0.37	-	100
	645	20	64520	0.245	55.60	0.19	-	100
48a	645	102	645102	0.023	8.00	0.40	-	100
	645	56	64556	0.025	8.80	0.27	-	100
	645	71	64571	0.207	73.20	0.36	-	100
	651	GxB	651326722	0.002	0.60	0.24	-	100
	651	LcA	651422520	0.007	2.40	0.25	-	100
	651	PeA	651502920	0.009	3.00	0.37	-	100
	651	RbB	651542322	0.011	4.00	0.25	-	100
48b	645	102	645102	0.048	23.40	0.40	-	100
	645	117	645117	0.002	1.10	0.23	-	100
	645	20	64520	0.019	9.40	0.19	-	100
	645	56	64556	0.023	11.40	0.27	-	100
	645	71	64571	0.104	51.20	0.36	-	100
	651	GxB	651326722	0.007	3.60	0.24	-	100
50a	645	102	645102	0.014	1.50	0.40	-	100
	645	117	645117	0.698	78.40	0.23	-	100
	645	20	64520	0.096	10.80	0.19	-	100
	645	71	64571	0.036	4.00	0.36	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
50a	651	GYD	651326826	0.007	0.80	0.26	-	100
	651	HLC	651344224	0.040	4.50	0.14	-	100
50b	645	117	645117	0.205	100.00	0.23	-	100
50c	645	117	645117	0.546	99.70	0.23	-	100
	645	20	64520	0.001	0.30	0.19	-	100
50d	645	117	645117	0.154	86.20	0.23	-	100
	645	20	64520	0.025	13.80	0.19	-	100
50e	645	117	645117	0.156	91.70	0.23	-	100
	645	20	64520	0.014	8.30	0.19	-	100
50f	645	117	645117	0.201	68.90	0.23	-	100
	645	20	64520	0.091	31.10	0.19	-	100
50g	645	117	645117	0.018	12.50	0.23	-	100
	645	20	64520	0.128	87.50	0.19	-	100
52a	645	100	645100	0.506	87.70	0.40	20.00	100
	645	117	645117	0.060	10.40	0.23	-	100
	645	20	64520	0.011	1.90	0.19	-	100
54a	645	100	645100	0.113	31.40	0.40	20.00	100
	645	117	645117	0.076	21.10	0.23	-	100
	645	20	64520	0.171	47.60	0.19	-	100
54b	645	100	645100	0.050	21.10	0.40	20.00	100
	645	117	645117	0.147	62.50	0.23	-	100
	645	123	645123	0.013	5.50	0.37	-	100
	645	20	64520	0.026	10.90	0.19	-	100
56a	645	117	645117	0.033	11.00	0.23	-	100
	645	20	64520	0.138	46.30	0.19	-	100
	645	69	64569	0.027	9.00	0.63	-	100
	645	71	64571	0.100	33.70	0.36	-	100
60a	651	AGB	651203222	0.039	5.10	0.40	-	100
	651	AL	6512042	0.026	3.40	0.40	-	100
	651	Ac	6512025	0.061	7.90	0.39	-	100
	651	Cm	6512445	0.100	12.90	0.26	-	100
	651	GYD	651326826	0.357	46.30	0.26	-	100
	651	HAB	651342022	0.093	12.10	0.07	-	100
	651	HLC	651344224	0.025	3.20	0.14	-	100
	651	LcA	651422520	0.016	2.10	0.25	-	100
	651	RbA	651542320	0.010	1.30	0.26	-	100
	651	TB	6515822	0.025	3.20	0.40	-	100
	651	Va	6516221	0.020	2.60	0.39	-	100
60b	645	102	645102	0.005	0.50	0.40	-	100
	651	AL	6512042	0.131	11.80	0.40	-	100
	651	GYD	651326826	0.605	54.40	0.26	-	100
	651	Lb	6514223	0.061	5.50	0.40	-	100
	651	PRB	651505422	0.259	23.30	0.28	-	100
	651	RbA	651542320	0.001	0.00	0.26	-	100
	651	TB	6515822	0.051	4.60	0.40	-	100
60c	645	1	6451	0.017	1.60	0.41	-	100
	645	102	645102	0.146	14.00	0.40	-	100
	645	71	64571	0.093	8.90	0.36	-	100
	651	AL	6512042	0.122	11.60	0.40	-	100
	651	GYD	651326826	0.272	26.10	0.26	-	100
	651	PRB	651505422	0.248	23.70	0.28	-	100
	651	TB	6515822	0.052	5.00	0.40	-	100
	651	Tc	6515825	0.095	9.10	0.40	-	100
62a	645	1	6451	0.007	1.20	0.41	-	100
	645	102	645102	0.157	26.80	0.40	-	100
	645	71	64571	0.422	72.00	0.36	-	100
62b	645	102	645102	0.060	24.70	0.40	-	100
	645	71	64571	0.185	75.30	0.36	-	100
64a	645	102	645102	0.020	5.30	0.40	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
64a	645	71	64571	0.358	94.70	0.36	-	100
64b	645	102	645102	0.084	10.10	0.40	-	100
	645	69	64569	0.184	22.00	0.63	-	100
	645	71	64571	0.568	67.90	0.36	-	100
64c	645	102	645102	0.017	2.70	0.40	-	100
	645	56	64556	0.109	17.10	0.27	-	100
	645	69	64569	0.200	31.50	0.63	-	100
	645	71	64571	0.311	48.70	0.36	-	100
64d	645	69	64569	0.141	98.00	0.63	-	100
	645	71	64571	0.003	2.00	0.36	-	100
70a	651	AbA	651202320	0.013	12.20	0.38	-	100
	651	CA2	65124202	0.018	17.80	0.38	-	100
	651	GgA	651323320	0.022	21.30	0.25	-	100
	651	PRB	651505422	0.037	35.50	0.28	-	100
	651	PT	6515058	0.014	13.20	0.40	-	100
70b	651	AbA	651202320	0.035	10.60	0.38	-	100
	651	CA2	65124202	0.030	9.00	0.38	-	100
	651	CO	6512448	0.036	10.90	0.29	20.00	100
	651	GgA	651323320	0.076	22.90	0.25	-	100
	651	Gh	6513235	0.045	13.70	0.24	-	100
	651	PRB	651505422	0.001	0.40	0.28	-	100
	651	PT	6515058	0.108	32.60	0.40	-	100
70c	651	AGB	651203222	0.018	2.40	0.40	-	100
	651	AbA	651202320	0.139	18.80	0.38	-	100
	651	Ac	6512025	0.000	0.10	0.39	-	100
	651	CA2	65124202	0.028	3.80	0.38	-	100
	651	CO	6512448	0.015	2.00	0.29	20.00	100
	651	GYD	651326826	0.258	34.80	0.26	-	100
	651	GgA	651323320	0.173	23.40	0.25	-	100
	651	Gh	6513235	0.014	1.90	0.24	-	100
	651	HLC	651344224	0.008	1.10	0.14	-	100
	651	PRB	651505422	0.089	11.90	0.28	-	100
70d	651	AGB	651203222	0.001	0.10	0.40	-	100
	651	AM	6512044	0.014	2.80	0.39	-	100
	651	CV	6512462	0.000	0.00	0.39	-	100
	651	GYD	651326826	0.315	64.80	0.26	-	100
	651	GgA	651323320	0.102	20.90	0.25	-	100
	651	LcA	651422520	0.013	2.80	0.25	-	100
	651	PRB	651505422	0.041	8.50	0.28	-	100
70e	651	AM	6512044	0.262	19.10	0.39	-	100
	651	Ac	6512025	0.011	0.80	0.39	-	100
	651	Ch	6512435	0.002	0.10	0.24	-	100
	651	Cm	6512445	0.040	2.90	0.26	-	100
	651	GYD	651326826	0.413	30.10	0.26	-	100
	651	GgA	651323320	0.160	11.60	0.25	-	100
	651	Gh	6513235	0.167	12.20	0.24	-	100
	651	HLC	651344224	0.038	2.80	0.14	-	100
	651	LcA	651422520	0.063	4.60	0.25	-	100
	651	PRB	651505422	0.159	11.60	0.28	-	100
	651	PeA	651502920	0.057	4.10	0.37	-	100
	651	PsB	651505722	0.001	0.10	0.26	-	100
70f	651	Ch	6512435	0.029	7.30	0.24	-	100
	651	GYD	651326826	0.006	1.50	0.26	-	100
	651	Gh	6513235	0.126	32.10	0.24	-	100
	651	GxA	651326720	0.011	2.90	0.23	-	100
	651	GxB	651326722	0.029	7.40	0.24	-	100
	651	HAB	651342022	0.009	2.20	0.07	-	100
	651	HLC	651344224	0.070	17.90	0.14	-	100
	651	Ld	6514227	0.100	25.50	0.25	-	100
	651	RbA	651542320	0.011	2.90	0.26	-	100
	651	Vb	6516223	0.001	0.30	0.39	-	100
70g	651	AL	6512042	0.007	0.40	0.40	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
70g	651	AbA	651202320	0.085	5.20	0.38	-	100
	651	Ac	6512025	0.333	20.40	0.39	-	100
	651	Cg	6512433	0.015	0.90	0.24	-	100
	651	Ch	6512435	0.042	2.60	0.24	-	100
	651	Cm	6512445	0.074	4.50	0.26	-	100
	651	Cp	6512451	0.016	1.00	0.40	-	100
	651	GWD	651326426	0.021	1.30	0.35	-	100
	651	GYD	651326826	0.349	21.40	0.26	-	100
	651	Gh	6513235	0.030	1.80	0.24	-	100
	651	GxA	651326720	0.022	1.40	0.23	-	100
	651	GxB	651326722	0.013	0.80	0.24	-	100
	651	HAB	651342022	0.057	3.50	0.07	-	100
	651	HAC	651342024	0.007	0.40	0.05	-	100
	651	HLC	651344224	0.006	0.40	0.14	-	100
	651	Lb	6514223	0.031	1.90	0.40	-	100
	651	LcA	651422520	0.029	1.80	0.25	-	100
	651	Ld	6514227	0.026	1.60	0.25	-	100
	651	PRB	651505422	0.175	10.70	0.28	-	100
	651	PT	6515058	0.005	0.30	0.40	-	100
	651	Pb	6515023	0.014	0.90	0.38	-	100
	651	PeA	651502920	0.132	8.10	0.37	-	100
	651	RaA	651542120	0.042	2.50	0.39	-	100
	651	RhB	651543522	0.080	4.90	0.23	-	100
	651	Va	6516221	0.008	0.50	0.39	-	100
	651	Vb	6516223	0.015	0.90	0.39	-	100
70h	651	AbA	651202320	0.045	15.50	0.38	-	100
	651	Ch	6512435	0.023	7.90	0.24	-	100
	651	Cp	6512451	0.007	2.50	0.40	-	100
	651	Gh	6513235	0.019	6.60	0.24	-	100
	651	GxA	651326720	0.015	5.00	0.23	-	100
	651	GxB	651326722	0.070	23.90	0.24	-	100
	651	HAB	651342022	0.015	5.10	0.07	-	100
	651	HAC	651342024	0.015	5.00	0.05	-	100
	651	HLC	651344224	0.009	3.00	0.14	-	100
	651	LcA	651422520	0.010	3.60	0.25	-	100
	651	Ld	6514227	0.018	6.00	0.25	-	100
	651	RbA	651542320	0.011	3.60	0.26	-	100
	651	RhB	651543522	0.028	9.50	0.23	-	100
	651	Vb	6516223	0.009	2.90	0.39	-	100
71a	651	CA2	65124202	0.009	3.50	0.38	-	100
	651	CO	6512448	0.016	6.00	0.29	20.00	100
	651	GgA	651323320	0.005	2.00	0.25	-	100
	651	PRB	651505422	0.024	9.00	0.28	-	100
	651	PT	6515058	0.208	79.60	0.40	-	100
71b	651	CO	6512448	0.018	6.10	0.29	20.00	100
	651	PT	6515058	0.268	92.60	0.40	-	100
	651	RS	6515456	0.004	1.30	0.40	65.00	100
72a	651	CA2	65124202	0.039	8.90	0.38	-	100
	651	CO	6512448	0.030	6.80	0.29	20.00	100
	651	GgA	651323320	0.061	13.70	0.25	-	100
	651	PRB	651505422	0.035	7.90	0.28	-	100
	651	PT	6515058	0.278	62.80	0.40	-	100
72b	651	CA2	65124202	0.033	3.10	0.38	-	100
	651	CO	6512448	0.076	7.30	0.29	20.00	100
	651	CV	6512462	0.009	0.90	0.39	-	100
	651	GM	6513244	0.010	0.90	0.29	-	100
	651	GYD	651326826	0.017	1.60	0.26	-	100
	651	GgA	651323320	0.036	3.40	0.25	-	100
	651	PRB	651505422	0.148	14.10	0.28	-	100
	651	PT	6515058	0.711	67.90	0.40	-	100
	651	RS	6515456	0.008	0.70	0.40	65.00	100
73a	651	CV	6512462	0.314	61.80	0.39	-	100
	651	GYD	651326826	0.057	11.20	0.26	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
73a	651	GgA	651323320	0.010	2.00	0.25	-	100
	651	LcA	651422520	0.003	0.50	0.25	-	100
	651	PRB	651505422	0.120	23.60	0.28	-	100
	651	PT	6515058	0.004	0.90	0.40	-	100
73b	651	CV	6512462	0.053	8.80	0.39	-	100
	651	LcA	651422520	0.355	58.60	0.25	-	100
	651	PRB	651505422	0.150	24.70	0.28	-	100
	651	PeA	651502920	0.048	7.90	0.37	-	100
	651	PsB	651505722	0.000	0.00	0.26	-	100
74a	651	AM	6512044	0.005	1.50	0.39	-	100
	651	Ac	6512025	0.050	16.10	0.39	-	100
	651	Ch	6512435	0.053	17.10	0.24	-	100
	651	Cm	6512445	0.003	0.80	0.26	-	100
	651	GWD	651326426	0.003	0.90	0.35	-	100
	651	GYD	651326826	0.041	13.40	0.26	-	100
	651	Gh	6513235	0.053	17.10	0.24	-	100
	651	HAB	651342022	0.016	5.20	0.07	-	100
	651	PRB	651505422	0.020	6.50	0.28	-	100
	651	PeA	651502920	0.001	0.20	0.37	-	100
	651	Vb	6516223	0.065	21.10	0.39	-	100
74b	651	Ac	6512025	0.233	34.90	0.39	-	100
	651	GWD	651326426	0.005	0.80	0.35	-	100
	651	GYD	651326826	0.276	41.40	0.26	-	100
	651	PRB	651505422	0.087	13.10	0.28	-	100
	651	RhB	651543522	0.014	2.10	0.23	-	100
	651	Vb	6516223	0.051	7.70	0.39	-	100
75a	651	GYD	651326826	0.041	8.90	0.26	-	100
	651	GgA	651323320	0.010	2.10	0.25	-	100
	651	Gh	6513235	0.100	21.70	0.24	-	100
	651	GxB	651326722	0.000	0.10	0.24	-	100
	651	HLC	651344224	0.028	6.20	0.14	-	100
	651	LcA	651422520	0.011	2.40	0.25	-	100
	651	Ld	6514227	0.011	2.30	0.25	-	100
	651	PRB	651505422	0.140	30.40	0.28	-	100
	651	PeA	651502920	0.003	0.60	0.37	-	100
	651	PsB	651505722	0.023	5.10	0.26	-	100
	651	RbA	651542320	0.093	20.20	0.26	-	100
77a	651	AbA	651202320	0.071	28.80	0.38	-	100
	651	Cp	6512451	0.079	32.40	0.40	-	100
	651	GxA	651326720	0.006	2.40	0.23	-	100
	651	GxB	651326722	0.043	17.60	0.24	-	100
	651	HAB	651342022	0.009	3.60	0.07	-	100
	651	LcA	651422520	0.011	4.40	0.25	-	100
	651	RaA	651542120	0.018	7.20	0.39	-	100
	651	RbA	651542320	0.000	0.00	0.26	-	100
	651	RhB	651543522	0.008	3.10	0.23	-	100
	651	RpE	651545128	0.001	0.20	0.29	-	100
	651	Va	6516221	0.000	0.10	0.39	-	100
77b	651	AbA	651202320	0.031	6.90	0.38	-	100
	651	Ch	6512435	0.175	39.50	0.24	-	100
	651	Cp	6512451	0.021	4.70	0.40	-	100
	651	GxB	651326722	0.034	7.70	0.24	-	100
	651	HAB	651342022	0.004	1.00	0.07	-	100
	651	HAC	651342024	0.008	1.70	0.05	-	100
	651	Ld	6514227	0.014	3.30	0.25	-	100
	651	PT	6515058	0.001	0.10	0.40	-	100
	651	Pb	6515023	0.064	14.50	0.38	-	100
	651	RbA	651542320	0.010	2.10	0.26	-	100
	651	RhB	651543522	0.060	13.50	0.23	-	100
	651	RpE	651545128	0.000	0.00	0.29	-	100
	651	Va	6516221	0.022	5.00	0.39	-	100
78a	651	AbA	651202320	0.013	8.80	0.38	-	100
	651	Ch	6512435	0.011	6.90	0.24	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
78a	651	Gh	6513235	0.048	31.80	0.24	-	100
	651	HAB	651342022	0.024	15.60	0.07	-	100
	651	HAC	651342024	0.005	3.20	0.05	-	100
	651	LcA	651422520	0.000	0.20	0.25	-	100
	651	Ld	6514227	0.012	8.10	0.25	-	100
	651	RhB	651543522	0.038	25.40	0.23	-	100
78b	651	Ch	6512435	0.088	18.30	0.24	-	100
	651	Et	6512859	0.075	15.70	0.25	-	100
	651	Gh	6513235	0.029	6.10	0.24	-	100
	651	GxB	651326722	0.050	10.30	0.24	-	100
	651	HAB	651342022	0.026	5.40	0.07	-	100
	651	HAC	651342024	0.004	0.90	0.05	-	100
	651	Ld	6514227	0.073	15.30	0.25	-	100
	651	PT	6515058	0.010	2.00	0.40	-	100
	651	Pb	6515023	0.092	19.10	0.38	-	100
	651	PeA	651502920	0.005	1.00	0.37	-	100
	651	RhB	651543522	0.028	5.80	0.23	-	100
79a	651	CA2	65124202	0.077	15.00	0.38	-	100
	651	GgA	651323320	0.000	0.10	0.25	-	100
	651	Gh	6513235	0.027	5.30	0.24	-	100
	651	PT	6515058	0.410	79.70	0.40	-	100
79b	651	CO	6512448	0.014	3.80	0.29	20.00	100
	651	PT	6515058	0.348	96.20	0.40	-	100
80a	651	AbA	651202320	0.040	11.70	0.38	-	100
	651	AfB	651203122	0.020	5.90	0.40	-	100
	651	GgA	651323320	0.004	1.10	0.25	-	100
	651	GxB	651326722	0.018	5.30	0.24	-	100
	651	Pb	6515023	0.030	9.00	0.38	-	100
	651	PeA	651502920	0.002	0.40	0.37	-	100
	651	RpE	651545128	0.224	66.50	0.29	-	100
80b	651	AbA	651202320	0.019	6.90	0.38	-	100
	651	GxB	651326722	0.104	37.30	0.24	-	100
	651	Pb	6515023	0.082	29.40	0.38	-	100
	651	PeA	651502920	0.000	0.10	0.37	-	100
	651	RpE	651545128	0.073	26.20	0.29	-	100
81a	651	AbA	651202320	0.016	19.80	0.38	-	100
	651	AfB	651203122	0.028	35.50	0.40	-	100
	651	GxB	651326722	0.003	4.10	0.24	-	100
	651	Ma	6514421	0.002	1.90	0.40	-	100
	651	RpE	651545128	0.030	38.60	0.29	-	100
81b	651	AbA	651202320	0.044	8.60	0.38	-	100
	651	GxB	651326722	0.070	13.70	0.24	-	100
	651	Lb	6514223	0.063	12.30	0.40	-	100
	651	PRB	651505422	0.073	14.20	0.28	-	100
	651	Pb	6515023	0.089	17.40	0.38	-	100
	651	RhB	651543522	0.016	3.10	0.23	-	100
	651	RpE	651545128	0.157	30.70	0.29	-	100
82a	651	AL	6512042	0.025	4.20	0.40	-	100
	651	GxB	651326722	0.007	1.20	0.24	-	100
	651	Lb	6514223	0.028	4.80	0.40	-	100
	651	Ma	6514421	0.063	10.80	0.40	-	100
	651	PRB	651505422	0.108	18.30	0.28	-	100
	651	RpE	651545128	0.357	60.70	0.29	-	100
82b	645	102	645102	0.103	39.00	0.40	-	100
	645	71	64571	0.099	37.50	0.36	-	100
	651	PRB	651505422	0.010	3.70	0.28	-	100
	651	RpE	651545128	0.053	19.90	0.29	-	100
83a	645	102	645102	0.098	40.20	0.40	-	100
	645	2	6452	0.017	6.90	0.41	-	100
	645	4	6454	0.011	4.50	0.58	-	100
	645	71	64571	0.065	26.90	0.36	-	100
	651	AGB	651203222	0.012	5.00	0.40	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
83a	651	AL	6512042	0.020	8.20	0.40	-	100
	651	AM	6512044	0.003	1.00	0.39	-	100
	651	HAB	651342022	0.018	7.20	0.07	-	100
83b	645	1	6451	0.001	0.10	0.41	-	100
	645	102	645102	0.076	17.50	0.40	-	100
	645	71	64571	0.356	82.40	0.36	-	100
83c	645	1	6451	0.033	12.00	0.41	-	100
	645	102	645102	0.046	16.50	0.40	-	100
	645	69	64569	0.049	17.70	0.63	-	100
	645	71	64571	0.149	53.80	0.36	-	100
83d	645	1	6451	0.077	33.40	0.41	-	100
	645	102	645102	0.025	10.70	0.40	-	100
	645	69	64569	0.129	55.90	0.63	-	100
83e	645	1	6451	0.135	16.10	0.41	-	100
	645	123	645123	0.006	0.70	0.37	-	100
	645	69	64569	0.696	83.20	0.63	-	100
83f	645	1	6451	0.001	0.60	0.41	-	100
	645	123	645123	0.010	7.90	0.37	-	100
	645	69	64569	0.121	91.50	0.63	-	100
83g	645	1	6451	0.067	10.90	0.41	-	100
	645	69	64569	0.551	89.00	0.63	-	100
	645	71	64571	0.001	0.10	0.36	-	100
83h	645	1	6451	0.001	0.50	0.41	-	100
	645	20	64520	0.103	35.60	0.19	-	100
	645	69	64569	0.183	63.50	0.63	-	100
	645	71	64571	0.001	0.40	0.36	-	100
83i	645	1	6451	0.044	10.90	0.41	-	100
	645	117	645117	0.013	3.30	0.23	-	100
	645	20	64520	0.022	5.40	0.19	-	100
	645	69	64569	0.325	80.50	0.63	-	100
83j	645	1	6451	0.033	20.30	0.41	-	100
	645	117	645117	0.007	4.40	0.23	-	100
	645	69	64569	0.123	75.30	0.63	-	100
83k	645	100	645100	0.129	41.00	0.40	20.00	100
	645	117	645117	0.000	0.00	0.23	-	100
	645	20	64520	0.041	12.90	0.19	-	100
	645	69	64569	0.046	14.50	0.63	-	100
	645	71	64571	0.099	31.60	0.36	-	100
83l	645	100	645100	0.113	20.40	0.40	20.00	100
	645	117	645117	0.210	37.90	0.23	-	100
	645	20	64520	0.199	35.90	0.19	-	100
	645	69	64569	0.000	0.00	0.63	-	100
	645	71	64571	0.032	5.80	0.36	-	100
84a	645	2	6452	0.011	5.00	0.41	-	100
	645	4	6454	0.000	0.00	0.58	-	100
	645	71	64571	0.092	41.40	0.36	-	100
	651	AGB	651203222	0.000	0.10	0.40	-	100
	651	AL	6512042	0.028	12.50	0.40	-	100
	651	RpE	651545128	0.091	40.90	0.29	-	100
84b	645	102	645102	0.097	27.90	0.40	-	100
	645	71	64571	0.250	72.10	0.36	-	100
85a	645	102	645102	0.068	21.70	0.40	-	100
	645	71	64571	0.246	78.30	0.36	-	100
85b	645	102	645102	0.090	38.00	0.40	-	100
	645	71	64571	0.147	62.00	0.36	-	100
86a	645	1	6451	0.079	16.40	0.41	-	100
	645	102	645102	0.004	0.70	0.40	-	100
	645	69	64569	0.396	82.60	0.63	-	100
	645	71	64571	0.001	0.30	0.36	-	100

Area ID	Book Number	Map Unit	Soil ID	Area (sq mi)	Area (%)	XKSAT	Rock Percent (%)	Effective Rock (%)
Major Basin ID: 01								
87a	645	102	645102	0.103	37.70	0.40	-	100
	645	69	64569	0.061	22.20	0.63	-	100
	645	71	64571	0.110	40.20	0.36	-	100
87b	645	102	645102	0.007	4.60	0.40	-	100
	645	123	645123	0.006	3.90	0.37	-	100
	645	69	64569	0.147	91.50	0.63	-	100
88a	645	1	6451	0.002	0.70	0.41	-	100
	645	117	645117	0.077	27.80	0.23	-	100
	645	20	64520	0.044	16.10	0.19	-	100
	645	69	64569	0.153	55.40	0.63	-	100
89a	645	1	6451	0.003	1.30	0.41	-	100
	645	69	64569	0.212	98.70	0.63	-	100
89b	645	100	645100	0.021	7.50	0.40	20.00	100
	645	20	64520	0.090	32.00	0.19	-	100
	645	69	64569	0.141	50.00	0.63	-	100
	645	71	64571	0.030	10.50	0.36	-	100
91a	645	1	6451	0.107	24.70	0.41	-	100
	645	125	645125	0.010	2.20	0.43	-	100
	645	20	64520	0.003	0.80	0.19	-	100
	645	71	64571	0.314	72.30	0.36	-	100
91b	645	102	645102	0.237	42.30	0.40	-	100
	645	123	645123	0.059	10.40	0.37	-	100
	645	20	64520	0.119	21.20	0.19	-	100
	645	69	64569	0.087	15.60	0.63	-	100
	645	71	64571	0.059	10.60	0.36	-	100
92a	645	1	6451	0.278	35.40	0.41	-	100
	645	102	645102	0.025	3.20	0.40	-	100
	645	123	645123	0.099	12.60	0.37	-	100
	645	125	645125	0.005	0.60	0.43	-	100
	645	20	64520	0.378	48.20	0.19	-	100
92b	645	1	6451	0.005	0.70	0.41	-	100
	645	102	645102	0.009	1.30	0.40	-	100
	645	11	64511	0.011	1.50	0.94	-	100
	645	123	645123	0.147	21.00	0.37	-	100
	645	2	6452	0.106	15.20	0.41	-	100
	645	20	64520	0.149	21.20	0.19	-	100
	645	56	64556	0.222	31.70	0.27	-	100
	645	71	64571	0.052	7.40	0.36	-	100

APPENDIX D2e

Land Use Data – Without Dike Conditions

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
10a	740	0.001	0.1	0.00	0	0.0	WET	0.02
	900	0.837	99.9	0.30	0	25.0	NORMAL	0.05
		0.838	**100.0**					
10b	900	0.855	100.0	0.30	0	25.0	NORMAL	0.05
		0.855	**100.0**					
12a	900	0.832	100.0	0.30	0	25.0	NORMAL	0.05
		0.832	**100.0**					
12b	900	0.451	100.0	0.30	0	25.0	NORMAL	0.05
		0.451	**100.0**					
14a	900	0.367	100.0	0.30	0	25.0	NORMAL	0.05
		0.367	**100.0**					
14b	900	0.259	100.0	0.30	0	25.0	NORMAL	0.05
		0.259	**100.0**					
14c	900	1.095	100.0	0.30	0	25.0	NORMAL	0.05
		1.095	**100.0**					
14d	150			0.25	15	30.0	NORMAL	0.04
	520	0.050	9.9	0.30	45	45.0	NORMAL	0.06
	900	0.456	90.1	0.30	0	25.0	NORMAL	0.05
		0.505	**100.0**					
14e	120	0.012	1.1	0.30	5	25.0	NORMAL	0.05
	520	0.013	1.2	0.30	45	45.0	NORMAL	0.06
	900	1.077	97.7	0.30	0	25.0	NORMAL	0.05
		1.101	**100.0**					
15a	120	0.035	6.8	0.30	5	25.0	NORMAL	0.05
	150	0.012	2.3	0.25	15	30.0	NORMAL	0.04
	530	0.004	0.7	0.20	80	45.0	NORMAL	0.04
	740	0.001	0.3	0.00	0	0.0	WET	0.02
	900	0.463	90.0	0.30	0	25.0	NORMAL	0.05
		0.514	**100.1**					
16a	120	0.063	28.9	0.30	5	25.0	NORMAL	0.05
	150	0.022	10.0	0.25	15	30.0	NORMAL	0.04
	530			0.20	80	45.0	NORMAL	0.04
	740	0.001	0.3	0.00	0	0.0	WET	0.02
	900	0.132	60.8	0.30	0	25.0	NORMAL	0.05
		0.218	**100.0**					
20a	120	0.003	0.7	0.30	5	25.0	NORMAL	0.05
	900	0.370	99.3	0.30	0	25.0	NORMAL	0.05
		0.373	**100.0**					
20b	120	0.034	3.0	0.30	5	25.0	NORMAL	0.05
	150	0.050	4.4	0.25	15	30.0	NORMAL	0.04
	520	0.000		0.30	45	45.0	NORMAL	0.06
	560	0.025	2.2	0.20	80	45.0	NORMAL	0.04
	900	0.000		0.30	0	25.0	NORMAL	0.05
	900	1.032	90.3	0.30	0	25.0	NORMAL	0.05
		1.142	**99.9**					
20c	120	0.023	1.6	0.30	5	25.0	NORMAL	0.05
	150	0.031	2.1	0.25	15	30.0	NORMAL	0.04
	900	0.009	0.6	0.30	0	25.0	NORMAL	0.05
	900	1.361	95.7	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		1.422	**100.0**					
20d	120	0.062	9.9	0.30	5	25.0	NORMAL	0.05
	150	0.006	1.0	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.553	88.8	0.30	0	25.0	NORMAL	0.05
		0.623	**100.0**					
20e	120	0.008	0.5	0.30	5	25.0	NORMAL	0.05
	150	0.014	0.9	0.25	15	30.0	NORMAL	0.04
	560	0.041	2.6	0.20	80	45.0	NORMAL	0.04
	900	1.471	95.9	0.30	0	25.0	NORMAL	0.05
		1.534	**99.9**					
20f	120	0.053	3.9	0.30	5	25.0	NORMAL	0.05
	150	0.030	2.3	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.1	0.30	0	25.0	NORMAL	0.05
	900	1.261	93.7	0.30	0	25.0	NORMAL	0.05
		1.346	**100.0**					
20g	120	0.380	32.3	0.30	5	25.0	NORMAL	0.05
	140	0.001	0.1	0.25	5	25.0	NORMAL	0.05
	150	0.078	6.6	0.25	15	30.0	NORMAL	0.04
	900	0.029	2.5	0.30	0	25.0	NORMAL	0.05
	900	0.690	58.6	0.30	0	25.0	NORMAL	0.05
		1.178	**100.1**					
20h	120	0.201	16.1	0.30	5	25.0	NORMAL	0.05
	140	0.001	0.1	0.25	5	25.0	NORMAL	0.05
	150	0.117	9.3	0.25	15	30.0	NORMAL	0.04
	900	0.023	1.8	0.30	0	25.0	NORMAL	0.05
	900	0.909	72.7	0.30	0	25.0	NORMAL	0.05
		1.250	**100.0**					
20i	900	0.291	100.0	0.30	0	25.0	NORMAL	0.05
		0.291	**100.0**					
20j	900	0.203	100.0	0.30	0	25.0	NORMAL	0.05
		0.203	**100.0**					
20k	120	0.002	1.2	0.30	5	25.0	NORMAL	0.05
	150	0.015	8.2	0.25	15	30.0	NORMAL	0.04
	900	0.160	90.5	0.30	0	25.0	NORMAL	0.05
		0.176	**99.9**					
20l	900	0.130	100.0	0.30	0	25.0	NORMAL	0.05
		0.130	**100.0**					
21a	120	0.043	4.9	0.30	5	25.0	NORMAL	0.05
	150	0.038	4.3	0.25	15	30.0	NORMAL	0.04
	900	0.801	90.8	0.30	0	25.0	NORMAL	0.05
		0.882	**100.0**					
21b	120	0.070	12.7	0.30	5	25.0	NORMAL	0.05
	150	0.038	7.0	0.25	15	30.0	NORMAL	0.04
	900	0.440	80.3	0.30	0	25.0	NORMAL	0.05
		0.548	**100.0**					
21c	900	0.234	100.0	0.30	0	25.0	NORMAL	0.05
		0.234	**100.0**					
21d	900	0.494	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.494	**100.0**					
22a	120	0.001	0.1	0.30	5	25.0	NORMAL	0.05
	150	0.023	5.2	0.25	15	30.0	NORMAL	0.04
	900	0.059	13.1	0.30	0	25.0	NORMAL	0.05
	900	0.368	81.6	0.30	0	25.0	NORMAL	0.05
		0.451	**100.0**					
22b	900	0.164	100.0	0.30	0	25.0	NORMAL	0.05
		0.164	**100.0**					
22c	900	0.220	100.0	0.30	0	25.0	NORMAL	0.05
		0.220	**100.0**					
22d	120	0.014	5.7	0.30	5	25.0	NORMAL	0.05
	150	0.012	4.8	0.25	15	30.0	NORMAL	0.04
	900	0.218	89.5	0.30	0	25.0	NORMAL	0.05
		0.244	**100.0**					
23a	120	0.140	39.7	0.30	5	25.0	NORMAL	0.05
	140	0.002	0.5	0.25	5	25.0	NORMAL	0.05
	150	0.065	18.4	0.25	15	30.0	NORMAL	0.04
	560	0.000		0.20	80	45.0	NORMAL	0.04
	740	0.002	0.6	0.00	0	0.0	WET	0.02
	750	0.048	13.7	0.50	0	95.0	NORMAL	0.10
	900	0.003	0.8	0.30	0	25.0	NORMAL	0.05
	900	0.093	26.3	0.30	0	25.0	NORMAL	0.05
		0.354	**100.0**					
24a	120	0.093	22.7	0.30	5	25.0	NORMAL	0.05
	150	0.010	2.4	0.25	15	30.0	NORMAL	0.04
	900	0.306	74.9	0.30	0	25.0	NORMAL	0.05
		0.409	**100.0**					
24b	120	0.000	0.1	0.30	5	25.0	NORMAL	0.05
	900	0.335	99.9	0.30	0	25.0	NORMAL	0.05
		0.335	**100.0**					
30a	120	0.011	30.2	0.30	5	25.0	NORMAL	0.05
	220	0.007	20.2	0.20	75	45.0	NORMAL	0.04
	750	0.014	38.0	0.50	0	95.0	NORMAL	0.10
	900*	0.004	11.6	0.30	0	25.0	NORMAL	0.05
		0.036	**100.0**					
30b	120	0.115	22.6	0.30	5	25.0	NORMAL	0.05
	150	0.061	11.9	0.25	15	30.0	NORMAL	0.04
	220	0.021	4.1	0.20	75	45.0	NORMAL	0.04
	900	0.312	61.4	0.30	0	25.0	NORMAL	0.05
		0.508	**100.0**					
30c	120	0.014	5.6	0.30	5	25.0	NORMAL	0.05
	900	0.229	94.4	0.30	0	25.0	NORMAL	0.05
		0.243	**100.0**					
30d	150	0.015	2.5	0.25	15	30.0	NORMAL	0.04
	900	0.599	97.5	0.30	0	25.0	NORMAL	0.05
		0.615	**100.0**					
30e	120	0.013	3.1	0.30	5	25.0	NORMAL	0.05
	150	0.026	6.4	0.25	15	30.0	NORMAL	0.04
	900	0.362	90.4	0.30	0	25.0	NORMAL	0.05
		0.400	**99.9**					

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
30f	120	0.028	1.6	0.30	5	25.0	NORMAL	0.05
	150	0.051	2.9	0.25	15	30.0	NORMAL	0.04
	560	0.019	1.1	0.20	80	45.0	NORMAL	0.04
	900	0.027	1.5	0.30	0	25.0	NORMAL	0.05
	900	1.646	92.9	0.30	0	25.0	NORMAL	0.05
		1.772	**100.0**					
30g	120	0.033	3.9	0.30	5	25.0	NORMAL	0.05
	150	0.081	9.6	0.25	15	30.0	NORMAL	0.04
	560	0.025	2.9	0.20	80	45.0	NORMAL	0.04
	900	0.004	0.4	0.30	0	25.0	NORMAL	0.05
	900	0.703	83.2	0.30	0	25.0	NORMAL	0.05
		0.844	**100.0**					
32a	120	0.014	5.0	0.30	5	25.0	NORMAL	0.05
	150	0.007	2.3	0.25	15	30.0	NORMAL	0.04
	220	0.001	0.2	0.20	75	45.0	NORMAL	0.04
	900	0.268	92.6	0.30	0	25.0	NORMAL	0.05
		0.289	**100.1**					
32b	150	0.002	0.5	0.25	15	30.0	NORMAL	0.04
	900	0.473	99.5	0.30	0	25.0	NORMAL	0.05
		0.476	**100.0**					
33a	120	0.000	0.1	0.30	5	25.0	NORMAL	0.05
	740	0.001	0.7	0.00	0	0.0	WET	0.02
	750	0.077	46.1	0.50	0	95.0	NORMAL	0.10
	900	0.089	53.2	0.30	0	25.0	NORMAL	0.05
		0.167	**100.1**					
34a	120	0.033	7.5	0.30	5	25.0	NORMAL	0.05
	150	0.026	5.9	0.25	15	30.0	NORMAL	0.04
	530	0.005	1.0	0.20	80	45.0	NORMAL	0.04
	560	0.016	3.7	0.20	80	45.0	NORMAL	0.04
	900	0.023	5.2	0.30	0	25.0	NORMAL	0.05
	900	0.343	76.7	0.30	0	25.0	NORMAL	0.05
		0.446	**100.0**					
34b	120	0.058	9.1	0.30	5	25.0	NORMAL	0.05
	150	0.040	6.3	0.25	15	30.0	NORMAL	0.04
	530	0.010	1.6	0.20	80	45.0	NORMAL	0.04
	900	0.003	0.5	0.30	0	25.0	NORMAL	0.05
	900	0.521	82.5	0.30	0	25.0	NORMAL	0.05
		0.631	**100.0**					
35a	740	0.002	2.6	0.00	0	0.0	WET	0.02
	750	0.025	43.3	0.50	0	95.0	NORMAL	0.10
	900	0.031	54.1	0.30	0	25.0	NORMAL	0.05
		0.057	**100.0**					
36a	120	0.121	17.9	0.30	5	25.0	NORMAL	0.05
	150	0.086	12.7	0.25	15	30.0	NORMAL	0.04
	900	0.006	0.9	0.30	0	25.0	NORMAL	0.05
	900	0.464	68.5	0.30	0	25.0	NORMAL	0.05
		0.677	**100.0**					
36b	120	0.123	11.6	0.30	5	25.0	NORMAL	0.05
	150	0.084	7.9	0.25	15	30.0	NORMAL	0.04
	900	0.851	80.4	0.30	0	25.0	NORMAL	0.05
		1.059	**99.9**					
36c	120	0.058	5.3	0.30	5	25.0	NORMAL	0.05
	150	0.013	1.2	0.25	15	30.0	NORMAL	0.04

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
36c	220	0.025	2.3	0.20	75	45.0	NORMAL	0.04
	900	0.990	91.2	0.30	0	25.0	NORMAL	0.05
		1.086	**100.0**					
40a	120	0.036	13.6	0.30	5	25.0	NORMAL	0.05
	150	0.021	7.9	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.8	0.30	0	25.0	NORMAL	0.05
	900	0.208	77.8	0.30	0	25.0	NORMAL	0.05
		0.268	**100.1**					
40b	120	0.083	19.9	0.30	5	25.0	NORMAL	0.05
	150	0.063	15.1	0.25	15	30.0	NORMAL	0.04
	560	0.002	0.6	0.20	80	45.0	NORMAL	0.04
	900	0.268	64.4	0.30	0	25.0	NORMAL	0.05
		0.416	**100.0**					
40c	110	0.019	3.9	0.30	5	25.0	NORMAL	0.05
	120	0.044	8.7	0.30	5	25.0	NORMAL	0.05
	150	0.018	3.6	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.418	83.5	0.30	0	25.0	NORMAL	0.05
		0.501	**100.0**					
40d	120	0.006	0.9	0.30	5	25.0	NORMAL	0.05
	150	0.027	3.7	0.25	15	30.0	NORMAL	0.04
	900	0.696	95.5	0.30	0	25.0	NORMAL	0.05
		0.729	**100.1**					
42a	120	0.017	4.7	0.30	5	25.0	NORMAL	0.05
	150	0.055	15.1	0.25	15	30.0	NORMAL	0.04
	560	0.000	0.1	0.20	80	45.0	NORMAL	0.04
	900			0.30	0	25.0	NORMAL	0.05
	900	0.289	80.0	0.30	0	25.0	NORMAL	0.05
		0.361	**99.9**					
42b	120	0.005	1.7	0.30	5	25.0	NORMAL	0.05
	150	0.015	5.0	0.25	15	30.0	NORMAL	0.04
	560	0.001	0.2	0.20	80	45.0	NORMAL	0.04
	900	0.003	1.0	0.30	0	25.0	NORMAL	0.05
	900	0.285	92.2	0.30	0	25.0	NORMAL	0.05
		0.309	**100.1**					
44a	120	0.165	19.8	0.30	5	25.0	NORMAL	0.05
	150	0.100	12.0	0.25	15	30.0	NORMAL	0.04
	900	0.568	68.2	0.30	0	25.0	NORMAL	0.05
		0.833	**100.0**					
44b	120	0.025	8.8	0.30	5	25.0	NORMAL	0.05
	150	0.012	4.4	0.25	15	30.0	NORMAL	0.04
	900	0.242	86.8	0.30	0	25.0	NORMAL	0.05
		0.279	**100.0**					
44c	900	0.338	100.0	0.30	0	25.0	NORMAL	0.05
		0.338	**100.0**					
44d	900	0.821	100.0	0.30	0	25.0	NORMAL	0.05
		0.821	**100.0**					
44e	900	0.463	100.0	0.30	0	25.0	NORMAL	0.05
		0.463	**100.0**					
44f	900	0.267	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.267	**100.0**					
46a	120	0.019	2.3	0.30	5	25.0	NORMAL	0.05
	150	0.006	0.7	0.25	15	30.0	NORMAL	0.04
	900	0.783	97.0	0.30	0	25.0	NORMAL	0.05
		0.808	**100.0**					
46b	900	0.401	100.0	0.30	0	25.0	NORMAL	0.05
		0.401	**100.0**					
46c	900	0.226	100.0	0.30	0	25.0	NORMAL	0.05
		0.226	**100.0**					
46d	900	0.431	100.0	0.30	0	25.0	NORMAL	0.05
		0.431	**100.0**					
46e	900	0.220	100.0	0.30	0	25.0	NORMAL	0.05
		0.220	**100.0**					
46f	900	0.576	100.0	0.30	0	25.0	NORMAL	0.05
		0.576	**100.0**					
46g	900	0.451	100.0	0.30	0	25.0	NORMAL	0.05
		0.451	**100.0**					
46h	900	0.384	100.0	0.30	0	25.0	NORMAL	0.05
		0.384	**100.0**					
46i	740	0.012	4.4	0.00	0	0.0	WET	0.02
	900	0.258	95.6	0.30	0	25.0	NORMAL	0.05
		0.270	**100.0**					
46j	740	0.019	6.5	0.00	0	0.0	WET	0.02
	900	0.275	93.5	0.30	0	25.0	NORMAL	0.05
		0.294	**100.0**					
46k	740	0.011	2.4	0.00	0	0.0	WET	0.02
	900	0.431	97.6	0.30	0	25.0	NORMAL	0.05
		0.442	**100.0**					
48a	120	0.058	20.3	0.30	5	25.0	NORMAL	0.05
	150	0.001	0.2	0.25	15	30.0	NORMAL	0.04
	900	0.225	79.5	0.30	0	25.0	NORMAL	0.05
		0.283	**100.0**					
48b	120	0.008	3.7	0.30	5	25.0	NORMAL	0.05
	150	0.004	2.0	0.25	15	30.0	NORMAL	0.04
	900	0.192	94.3	0.30	0	25.0	NORMAL	0.05
		0.204	**100.0**					
50a	900	0.891	100.0	0.30	0	25.0	NORMAL	0.05
		0.891	**100.0**					
50b	900	0.205	100.0	0.30	0	25.0	NORMAL	0.05
		0.205	**100.0**					
50c	900	0.548	100.0	0.30	0	25.0	NORMAL	0.05
		0.548	**100.0**					
50d	900	0.178	100.0	0.30	0	25.0	NORMAL	0.05
		0.178	**100.0**					
50e	900	0.171	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.171	**100.0**					
50f	900	0.292	100.0	0.30	0	25.0	NORMAL	0.05
		0.292	**100.0**					
50g	900	0.146	100.0	0.30	0	25.0	NORMAL	0.05
		0.146	**100.0**					
52a	900	0.577	100.0	0.30	0	25.0	NORMAL	0.05
		0.577	**100.0**					
54a	900	0.360	100.0	0.30	0	25.0	NORMAL	0.05
		0.360	**100.0**					
54b	740	0.002	0.6	0.00	0	0.0	WET	0.02
	900	0.234	99.4	0.30	0	25.0	NORMAL	0.05
		0.236	**100.0**					
56a	900	0.298	100.0	0.30	0	25.0	NORMAL	0.05
		0.298	**100.0**					
60a	110	0.054	7.0	0.30	5	25.0	NORMAL	0.05
	120	0.071	9.2	0.30	5	25.0	NORMAL	0.05
	150	0.142	18.4	0.25	15	30.0	NORMAL	0.04
	900	0.003	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.502	65.1	0.30	0	25.0	NORMAL	0.05
		0.771	**100.0**					
60b	110	0.010	0.9	0.30	5	25.0	NORMAL	0.05
	120	0.189	17.0	0.30	5	25.0	NORMAL	0.05
	150	0.201	18.0	0.25	15	30.0	NORMAL	0.04
	560	0.001	0.1	0.20	80	45.0	NORMAL	0.04
	900	0.031	2.8	0.30	0	25.0	NORMAL	0.05
	900	0.679	61.1	0.30	0	25.0	NORMAL	0.05
		1.111	**99.9**					
60c	120	0.004	0.4	0.30	5	25.0	NORMAL	0.05
	150	0.038	3.6	0.25	15	30.0	NORMAL	0.04
	900	0.004	0.4	0.30	0	25.0	NORMAL	0.05
	900	0.998	95.6	0.30	0	25.0	NORMAL	0.05
		1.044	**100.0**					
62a	900	0.586	100.0	0.30	0	25.0	NORMAL	0.05
		0.586	**100.0**					
62b	900	0.245	100.0	0.30	0	25.0	NORMAL	0.05
		0.245	**100.0**					
64a	900	0.377	100.0	0.30	0	25.0	NORMAL	0.05
		0.377	**100.0**					
64b	900	0.836	100.0	0.30	0	25.0	NORMAL	0.05
		0.836	**100.0**					
64c	900	0.637	100.0	0.30	0	25.0	NORMAL	0.05
		0.637	**100.0**					
64d	900	0.144	100.0	0.30	0	25.0	NORMAL	0.05
		0.144	**100.0**					
70a	120	0.013	13.0	0.30	5	25.0	NORMAL	0.05
	220	0.001	0.8	0.20	75	45.0	NORMAL	0.04
	750	0.019	18.1	0.50	0	95.0	NORMAL	0.10

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
70a	900	0.070	68.1	0.30	0	25.0	NORMAL	0.05
		0.103	**100.0**					
70b	120	0.014	4.2	0.30	5	25.0	NORMAL	0.05
	150	0.002	0.5	0.25	15	30.0	NORMAL	0.04
	900	0.317	95.3	0.30	0	25.0	NORMAL	0.05
		0.333	**100.0**					
70c	120	0.040	5.3	0.30	5	25.0	NORMAL	0.05
	150	0.037	5.0	0.25	15	30.0	NORMAL	0.04
	190	0.002	0.2	0.25	55	50.0	NORMAL	0.03
	220	0.000		0.20	75	45.0	NORMAL	0.04
	750	0.028	3.7	0.50	0	95.0	NORMAL	0.10
	900	0.635	85.6	0.30	0	25.0	NORMAL	0.05
		0.742	**99.8**					
70d	150	0.006	1.2	0.25	15	30.0	NORMAL	0.04
	900	0.481	98.8	0.30	0	25.0	NORMAL	0.05
		0.486	**100.0**					
70e	120	0.051	3.7	0.30	5	25.0	NORMAL	0.05
	150	0.004	0.3	0.25	15	30.0	NORMAL	0.04
	560	0.002	0.1	0.20	80	45.0	NORMAL	0.04
	900	1.316	95.9	0.30	0	25.0	NORMAL	0.05
		1.372	**100.0**					
70f	120	0.004	1.0	0.30	5	25.0	NORMAL	0.05
	150	0.017	4.4	0.25	15	30.0	NORMAL	0.04
	900	0.000	0.1	0.30	0	25.0	NORMAL	0.05
	900	0.371	94.5	0.30	0	25.0	NORMAL	0.05
		0.392	**100.0**					
70g	120	0.440	27.0	0.30	5	25.0	NORMAL	0.05
	150	0.210	12.8	0.25	15	30.0	NORMAL	0.04
	560	0.018	1.1	0.20	80	45.0	NORMAL	0.04
	900	0.006	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.959	58.7	0.30	0	25.0	NORMAL	0.05
		1.633	**99.9**					
70h	120	0.046	15.6	0.30	5	25.0	NORMAL	0.05
	150	0.083	28.3	0.25	15	30.0	NORMAL	0.04
	900	0.010	3.4	0.30	0	25.0	NORMAL	0.05
	900	0.154	52.7	0.30	0	25.0	NORMAL	0.05
		0.293	**100.0**					
71a	900	0.262	100.0	0.30	0	25.0	NORMAL	0.05
		0.262	**100.0**					
71b	900	0.290	100.0	0.30	0	25.0	NORMAL	0.05
		0.290	**100.0**					
72a	750	0.025	5.7	0.50	0	95.0	NORMAL	0.10
	900	0.418	94.3	0.30	0	25.0	NORMAL	0.05
		0.443	**100.0**					
72b	750	0.125	10.5	0.50	0	95.0	NORMAL	0.10
	900	1.062	89.5	0.30	0	25.0	NORMAL	0.05
		1.187	**100.0**					
73a	120			0.30	5	25.0	NORMAL	0.05
	150	0.004	1.1	0.25	15	30.0	NORMAL	0.04
	750	0.022	5.9	0.50	0	95.0	NORMAL	0.10
	900	0.342	93.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.368	**100.0**					
73b	900	0.606	100.0	0.30	0	25.0	NORMAL	0.05
		0.606	**100.0**					
74a	120	0.019	6.3	0.30	5	25.0	NORMAL	0.05
	900	0.289	93.7	0.30	0	25.0	NORMAL	0.05
		0.309	**100.0**					
74b	120	0.038	5.7	0.30	5	25.0	NORMAL	0.05
	150	0.028	4.1	0.25	15	30.0	NORMAL	0.04
	560			0.20	80	45.0	NORMAL	0.04
	900	0.600	90.2	0.30	0	25.0	NORMAL	0.05
		0.666	**100.0**					
75a	120	0.025	5.5	0.30	5	25.0	NORMAL	0.05
	150	0.043	9.3	0.25	15	30.0	NORMAL	0.04
	560	0.001	0.2	0.20	80	45.0	NORMAL	0.04
	900	0.003	0.6	0.30	0	25.0	NORMAL	0.05
	900	0.388	84.4	0.30	0	25.0	NORMAL	0.05
		0.460	**100.0**					
77a	110	0.002	0.9	0.30	5	25.0	NORMAL	0.05
	120	0.001	0.3	0.30	5	25.0	NORMAL	0.05
	150	0.047	19.3	0.25	15	30.0	NORMAL	0.04
	900	0.017	7.1	0.30	0	25.0	NORMAL	0.05
	900	0.177	72.3	0.30	0	25.0	NORMAL	0.05
		0.245	**99.9**					
77b	110			0.30	5	25.0	NORMAL	0.05
	120	0.018	4.0	0.30	5	25.0	NORMAL	0.05
	150	0.021	4.8	0.25	15	30.0	NORMAL	0.04
	900	0.403	91.2	0.30	0	25.0	NORMAL	0.05
		0.442	**100.0**					
78a	110	0.029	19.2	0.30	5	25.0	NORMAL	0.05
	120	0.033	21.6	0.30	5	25.0	NORMAL	0.05
	900	0.007	4.6	0.30	0	25.0	NORMAL	0.05
	900	0.083	54.6	0.30	0	25.0	NORMAL	0.05
		0.151	**100.0**					
78b	120	0.048	10.0	0.30	5	25.0	NORMAL	0.05
	150	0.037	7.7	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.4	0.30	0	25.0	NORMAL	0.05
	900	0.393	82.0	0.30	0	25.0	NORMAL	0.05
		0.479	**100.1**					
79a	120	0.029	5.7	0.30	5	25.0	NORMAL	0.05
	740	0.001	0.2	0.00	0	0.0	WET	0.02
	750	0.012	2.3	0.50	0	95.0	NORMAL	0.10
	900	0.473	91.8	0.30	0	25.0	NORMAL	0.05
		0.515	**100.0**					
79b	900	0.362	100.0	0.30	0	25.0	NORMAL	0.05
		0.362	**100.0**					
80a	120	0.063	18.6	0.30	5	25.0	NORMAL	0.05
	150	0.016	4.9	0.25	15	30.0	NORMAL	0.04
	900	0.258	76.5	0.30	0	25.0	NORMAL	0.05
		0.337	**100.0**					
80b	120	0.075	27.0	0.30	5	25.0	NORMAL	0.05
	900	0.203	73.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.278	**100.0**					
81a	120	0.006	7.3	0.30	5	25.0	NORMAL	0.05
	150	0.039	50.1	0.25	15	30.0	NORMAL	0.04
	900	0.033	42.7	0.30	0	25.0	NORMAL	0.05
		0.078	**100.1**					
81b	220	0.020	4.0	0.20	75	45.0	NORMAL	0.04
	900	0.492	96.0	0.30	0	25.0	NORMAL	0.05
		0.512	**100.0**					
82a	220	0.001	0.1	0.20	75	45.0	NORMAL	0.04
	900	0.587	99.9	0.30	0	25.0	NORMAL	0.05
		0.588	**100.0**					
82b	900	0.265	100.0	0.30	0	25.0	NORMAL	0.05
		0.265	**100.0**					
83a	900	0.243	100.0	0.30	0	25.0	NORMAL	0.05
		0.243	**100.0**					
83b	120	0.002	0.5	0.30	5	25.0	NORMAL	0.05
	900	0.430	99.5	0.30	0	25.0	NORMAL	0.05
		0.432	**100.0**					
83c	900	0.278	100.0	0.30	0	25.0	NORMAL	0.05
		0.278	**100.0**					
83d	900	0.230	100.0	0.30	0	25.0	NORMAL	0.05
		0.230	**100.0**					
83e	900	0.837	100.0	0.30	0	25.0	NORMAL	0.05
		0.837	**100.0**					
83f	900	0.132	100.0	0.30	0	25.0	NORMAL	0.05
		0.132	**100.0**					
83g	900	0.619	100.0	0.30	0	25.0	NORMAL	0.05
		0.619	**100.0**					
83h	900	0.289	100.0	0.30	0	25.0	NORMAL	0.05
		0.289	**100.0**					
83i	900	0.404	100.0	0.30	0	25.0	NORMAL	0.05
		0.404	**100.0**					
83j	900	0.163	100.0	0.30	0	25.0	NORMAL	0.05
		0.163	**100.0**					
83k	900	0.315	100.0	0.30	0	25.0	NORMAL	0.05
		0.315	**100.0**					
83l	900	0.555	100.0	0.30	0	25.0	NORMAL	0.05
		0.555	**100.0**					
84a	900	0.223	100.0	0.30	0	25.0	NORMAL	0.05
		0.223	**100.0**					
84b	900	0.347	100.0	0.30	0	25.0	NORMAL	0.05
		0.347	**100.0**					
85a	900	0.315	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.315	**100.0**					
85b	120	0.005	2.2	0.30	5	25.0	NORMAL	0.05
	900	0.231	97.8	0.30	0	25.0	NORMAL	0.05
		0.237	**100.0**					
86a	900	0.479	100.0	0.30	0	25.0	NORMAL	0.05
		0.479	**100.0**					
87a	900	0.273	100.0	0.30	0	25.0	NORMAL	0.05
		0.273	**100.0**					
87b	900	0.161	100.0	0.30	0	25.0	NORMAL	0.05
		0.161	**100.0**					
88a	900	0.276	100.0	0.30	0	25.0	NORMAL	0.05
		0.276	**100.0**					
89a	900	0.215	100.0	0.30	0	25.0	NORMAL	0.05
		0.215	**100.0**					
89b	900	0.283	100.0	0.30	0	25.0	NORMAL	0.05
		0.283	**100.0**					
91a	900	0.434	100.0	0.30	0	25.0	NORMAL	0.05
		0.434	**100.0**					
91b	900	0.561	100.0	0.30	0	25.0	NORMAL	0.05
		0.561	**100.0**					
92a	900	0.785	100.0	0.30	0	25.0	NORMAL	0.05
		0.785	**100.0**					
92b	900	0.700	100.0	0.30	0	25.0	NORMAL	0.05
		0.700	**100.0**					

APPENDIX D2f

Land Use Data – With Dike Conditions

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
10a	740	0.001	0.1	0.00	0	0.0	WET	0.02
	900	0.837	99.9	0.30	0	25.0	NORMAL	0.05
		0.838	**100.0**					
10b	900	0.855	100.0	0.30	0	25.0	NORMAL	0.05
		0.855	**100.0**					
12a	900	0.832	100.0	0.30	0	25.0	NORMAL	0.05
		0.832	**100.0**					
12b	900	0.451	100.0	0.30	0	25.0	NORMAL	0.05
		0.451	**100.0**					
14a	900	0.367	100.0	0.30	0	25.0	NORMAL	0.05
		0.367	**100.0**					
14b	900	0.259	100.0	0.30	0	25.0	NORMAL	0.05
		0.259	**100.0**					
14c	900	1.095	100.0	0.30	0	25.0	NORMAL	0.05
		1.095	**100.0**					
14d	150			0.25	15	30.0	NORMAL	0.04
	520	0.050	9.9	0.30	45	45.0	NORMAL	0.06
	900	0.456	90.1	0.30	0	25.0	NORMAL	0.05
		0.505	**100.0**					
14e	120	0.012	1.1	0.30	5	25.0	NORMAL	0.05
	520	0.013	1.2	0.30	45	45.0	NORMAL	0.06
	900	1.077	97.7	0.30	0	25.0	NORMAL	0.05
		1.101	**100.0**					
15a	120	0.035	6.8	0.30	5	25.0	NORMAL	0.05
	150	0.012	2.3	0.25	15	30.0	NORMAL	0.04
	530	0.004	0.7	0.20	80	45.0	NORMAL	0.04
	740	0.001	0.3	0.00	0	0.0	WET	0.02
	900	0.463	90.0	0.30	0	25.0	NORMAL	0.05
		0.514	**100.1**					
16a	120	0.063	28.9	0.30	5	25.0	NORMAL	0.05
	150	0.022	10.0	0.25	15	30.0	NORMAL	0.04
	530			0.20	80	45.0	NORMAL	0.04
	740	0.001	0.3	0.00	0	0.0	WET	0.02
	900	0.132	60.8	0.30	0	25.0	NORMAL	0.05
		0.218	**100.0**					
20a	120	0.003	1.1	0.30	5	25.0	NORMAL	0.05
	900	0.237	98.9	0.30	0	25.0	NORMAL	0.05
		0.240	**100.0**					
20b	120	0.034	2.7	0.30	5	25.0	NORMAL	0.05
	150	0.050	3.9	0.25	15	30.0	NORMAL	0.04
	520	0.000		0.30	45	45.0	NORMAL	0.06
	560	0.025	2.0	0.20	80	45.0	NORMAL	0.04
	900	0.000		0.30	0	25.0	NORMAL	0.05
	900	1.165	91.4	0.30	0	25.0	NORMAL	0.05
		1.275	**100.0**					
20c	120	0.023	1.6	0.30	5	25.0	NORMAL	0.05
	150	0.031	2.1	0.25	15	30.0	NORMAL	0.04
	900	0.009	0.6	0.30	0	25.0	NORMAL	0.05
	900	1.361	95.7	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		1.422	**100.0**					
20d	120	0.062	9.9	0.30	5	25.0	NORMAL	0.05
	150	0.006	1.0	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.553	88.8	0.30	0	25.0	NORMAL	0.05
		0.623	**100.0**					
20e	120	0.008	0.5	0.30	5	25.0	NORMAL	0.05
	150	0.014	0.9	0.25	15	30.0	NORMAL	0.04
	560	0.041	2.6	0.20	80	45.0	NORMAL	0.04
	900	1.471	95.9	0.30	0	25.0	NORMAL	0.05
		1.534	**99.9**					
20f	120	0.053	3.9	0.30	5	25.0	NORMAL	0.05
	150	0.030	2.3	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.1	0.30	0	25.0	NORMAL	0.05
	900	1.261	93.7	0.30	0	25.0	NORMAL	0.05
		1.346	**100.0**					
20g	120	0.380	32.3	0.30	5	25.0	NORMAL	0.05
	140	0.001	0.1	0.25	5	25.0	NORMAL	0.05
	150	0.078	6.6	0.25	15	30.0	NORMAL	0.04
	900	0.029	2.5	0.30	0	25.0	NORMAL	0.05
	900	0.690	58.6	0.30	0	25.0	NORMAL	0.05
		1.178	**100.1**					
20h	120	0.201	16.1	0.30	5	25.0	NORMAL	0.05
	140	0.001	0.1	0.25	5	25.0	NORMAL	0.05
	150	0.117	9.3	0.25	15	30.0	NORMAL	0.04
	900	0.023	1.8	0.30	0	25.0	NORMAL	0.05
	900	0.909	72.7	0.30	0	25.0	NORMAL	0.05
		1.250	**100.0**					
20i	900	0.291	100.0	0.30	0	25.0	NORMAL	0.05
		0.291	**100.0**					
20j	900	0.203	100.0	0.30	0	25.0	NORMAL	0.05
		0.203	**100.0**					
20k	120	0.002	1.2	0.30	5	25.0	NORMAL	0.05
	150	0.015	8.2	0.25	15	30.0	NORMAL	0.04
	900	0.160	90.5	0.30	0	25.0	NORMAL	0.05
		0.176	**99.9**					
20l	900	0.130	100.0	0.30	0	25.0	NORMAL	0.05
		0.130	**100.0**					
21a	120	0.043	4.9	0.30	5	25.0	NORMAL	0.05
	150	0.038	4.3	0.25	15	30.0	NORMAL	0.04
	900	0.801	90.8	0.30	0	25.0	NORMAL	0.05
		0.882	**100.0**					
21b	120	0.070	12.7	0.30	5	25.0	NORMAL	0.05
	150	0.038	7.0	0.25	15	30.0	NORMAL	0.04
	900	0.440	80.3	0.30	0	25.0	NORMAL	0.05
		0.548	**100.0**					
21c	900	0.234	100.0	0.30	0	25.0	NORMAL	0.05
		0.234	**100.0**					
21d	900	0.494	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.494	**100.0**					
22a	120	0.001	0.1	0.30	5	25.0	NORMAL	0.05
	150	0.023	5.2	0.25	15	30.0	NORMAL	0.04
	900	0.059	13.1	0.30	0	25.0	NORMAL	0.05
	900	0.368	81.6	0.30	0	25.0	NORMAL	0.05
		0.451	**100.0**					
22b	900	0.164	100.0	0.30	0	25.0	NORMAL	0.05
		0.164	**100.0**					
22c	900	0.220	100.0	0.30	0	25.0	NORMAL	0.05
		0.220	**100.0**					
22d	120	0.014	5.7	0.30	5	25.0	NORMAL	0.05
	150	0.012	4.8	0.25	15	30.0	NORMAL	0.04
	900	0.218	89.5	0.30	0	25.0	NORMAL	0.05
		0.244	**100.0**					
23a	120	0.140	39.7	0.30	5	25.0	NORMAL	0.05
	140	0.002	0.5	0.25	5	25.0	NORMAL	0.05
	150	0.065	18.4	0.25	15	30.0	NORMAL	0.04
	560	0.000		0.20	80	45.0	NORMAL	0.04
	740	0.002	0.6	0.00	0	0.0	WET	0.02
	750	0.048	13.7	0.50	0	95.0	NORMAL	0.10
	900	0.003	0.8	0.30	0	25.0	NORMAL	0.05
	900	0.093	26.3	0.30	0	25.0	NORMAL	0.05
		0.354	**100.0**					
24a	120	0.093	22.7	0.30	5	25.0	NORMAL	0.05
	150	0.010	2.4	0.25	15	30.0	NORMAL	0.04
	900	0.306	74.9	0.30	0	25.0	NORMAL	0.05
		0.409	**100.0**					
24b	120	0.000	0.1	0.30	5	25.0	NORMAL	0.05
	900	0.335	99.9	0.30	0	25.0	NORMAL	0.05
		0.335	**100.0**					
30a	120	0.011	30.2	0.30	5	25.0	NORMAL	0.05
	220	0.007	20.2	0.20	75	45.0	NORMAL	0.04
	750	0.014	38.0	0.50	0	95.0	NORMAL	0.10
	900	0.004	11.6	0.30	0	25.0	NORMAL	0.05
		0.036	**100.0**					
30b	120	0.115	22.6	0.30	5	25.0	NORMAL	0.05
	150	0.061	11.9	0.25	15	30.0	NORMAL	0.04
	220	0.021	4.1	0.20	75	45.0	NORMAL	0.04
	900	0.312	61.4	0.30	0	25.0	NORMAL	0.05
		0.508	**100.0**					
30c	120	0.014	5.6	0.30	5	25.0	NORMAL	0.05
	900	0.229	94.4	0.30	0	25.0	NORMAL	0.05
		0.243	**100.0**					
30d	150	0.015	2.5	0.25	15	30.0	NORMAL	0.04
	900	0.599	97.5	0.30	0	25.0	NORMAL	0.05
		0.615	**100.0**					
30e	120	0.013	3.1	0.30	5	25.0	NORMAL	0.05
	150	0.026	6.4	0.25	15	30.0	NORMAL	0.04
	900	0.362	90.4	0.30	0	25.0	NORMAL	0.05
		0.400	**99.9**					

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
30f	120	0.028	1.6	0.30	5	25.0	NORMAL	0.05
	150	0.051	2.9	0.25	15	30.0	NORMAL	0.04
	560	0.019	1.1	0.20	80	45.0	NORMAL	0.04
	900	0.027	1.5	0.30	0	25.0	NORMAL	0.05
	900	1.646	92.9	0.30	0	25.0	NORMAL	0.05
		1.772	**100.0**					
30g	120	0.033	3.9	0.30	5	25.0	NORMAL	0.05
	150	0.081	9.6	0.25	15	30.0	NORMAL	0.04
	560	0.025	2.9	0.20	80	45.0	NORMAL	0.04
	900	0.004	0.4	0.30	0	25.0	NORMAL	0.05
	900	0.703	83.2	0.30	0	25.0	NORMAL	0.05
		0.844	**100.0**					
32a	120	0.014	5.0	0.30	5	25.0	NORMAL	0.05
	150	0.007	2.3	0.25	15	30.0	NORMAL	0.04
	220	0.001	0.2	0.20	75	45.0	NORMAL	0.04
	900	0.268	92.6	0.30	0	25.0	NORMAL	0.05
		0.289	**100.1**					
32b	150	0.002	0.5	0.25	15	30.0	NORMAL	0.04
	900	0.473	99.5	0.30	0	25.0	NORMAL	0.05
		0.476	**100.0**					
33a	120	0.000	0.1	0.30	5	25.0	NORMAL	0.05
	740	0.001	0.7	0.00	0	0.0	WET	0.02
	750	0.077	46.1	0.50	0	95.0	NORMAL	0.10
	900	0.089	53.2	0.30	0	25.0	NORMAL	0.05
		0.167	**100.1**					
34a	120	0.033	7.5	0.30	5	25.0	NORMAL	0.05
	150	0.026	5.9	0.25	15	30.0	NORMAL	0.04
	530	0.005	1.0	0.20	80	45.0	NORMAL	0.04
	560	0.016	3.7	0.20	80	45.0	NORMAL	0.04
	900	0.023	5.2	0.30	0	25.0	NORMAL	0.05
	900	0.343	76.7	0.30	0	25.0	NORMAL	0.05
		0.446	**100.0**					
34b	120	0.058	9.1	0.30	5	25.0	NORMAL	0.05
	150	0.040	6.3	0.25	15	30.0	NORMAL	0.04
	530	0.010	1.6	0.20	80	45.0	NORMAL	0.04
	900	0.003	0.5	0.30	0	25.0	NORMAL	0.05
	900	0.521	82.5	0.30	0	25.0	NORMAL	0.05
		0.631	**100.0**					
35a	740	0.002	2.6	0.00	0	0.0	WET	0.02
	750	0.025	43.3	0.50	0	95.0	NORMAL	0.10
	900	0.031	54.1	0.30	0	25.0	NORMAL	0.05
		0.057	**100.0**					
36a	120	0.121	17.9	0.30	5	25.0	NORMAL	0.05
	150	0.086	12.7	0.25	15	30.0	NORMAL	0.04
	900	0.006	0.9	0.30	0	25.0	NORMAL	0.05
	900	0.464	68.5	0.30	0	25.0	NORMAL	0.05
		0.677	**100.0**					
36b	120	0.123	11.6	0.30	5	25.0	NORMAL	0.05
	150	0.084	7.9	0.25	15	30.0	NORMAL	0.04
	900	0.851	80.4	0.30	0	25.0	NORMAL	0.05
		1.059	**99.9**					
36c	120	0.058	5.3	0.30	5	25.0	NORMAL	0.05
	150	0.013	1.2	0.25	15	30.0	NORMAL	0.04

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
36c	220	0.025	2.3	0.20	75	45.0	NORMAL	0.04
	900	0.990	91.2	0.30	0	25.0	NORMAL	0.05
		1.086	**100.0**					
40a	120	0.036	13.6	0.30	5	25.0	NORMAL	0.05
	150	0.021	7.9	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.8	0.30	0	25.0	NORMAL	0.05
	900	0.208	77.8	0.30	0	25.0	NORMAL	0.05
		0.268	**100.1**					
40b	120	0.083	19.9	0.30	5	25.0	NORMAL	0.05
	150	0.063	15.1	0.25	15	30.0	NORMAL	0.04
	560	0.002	0.6	0.20	80	45.0	NORMAL	0.04
	900	0.268	64.4	0.30	0	25.0	NORMAL	0.05
		0.416	**100.0**					
40c	110	0.019	3.9	0.30	5	25.0	NORMAL	0.05
	120	0.044	8.7	0.30	5	25.0	NORMAL	0.05
	150	0.018	3.6	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.418	83.5	0.30	0	25.0	NORMAL	0.05
		0.501	**100.0**					
40d	120	0.006	0.9	0.30	5	25.0	NORMAL	0.05
	150	0.027	3.7	0.25	15	30.0	NORMAL	0.04
	900	0.696	95.5	0.30	0	25.0	NORMAL	0.05
		0.729	**100.1**					
42a	120	0.017	4.7	0.30	5	25.0	NORMAL	0.05
	150	0.055	15.1	0.25	15	30.0	NORMAL	0.04
	560	0.000	0.1	0.20	80	45.0	NORMAL	0.04
	900			0.30	0	25.0	NORMAL	0.05
	900	0.289	80.0	0.30	0	25.0	NORMAL	0.05
		0.361	**99.9**					
42b	120	0.005	1.7	0.30	5	25.0	NORMAL	0.05
	150	0.015	5.0	0.25	15	30.0	NORMAL	0.04
	560	0.001	0.2	0.20	80	45.0	NORMAL	0.04
	900	0.003	1.0	0.30	0	25.0	NORMAL	0.05
	900	0.285	92.2	0.30	0	25.0	NORMAL	0.05
		0.309	**100.1**					
44a	120	0.165	19.8	0.30	5	25.0	NORMAL	0.05
	150	0.100	12.0	0.25	15	30.0	NORMAL	0.04
	900	0.568	68.2	0.30	0	25.0	NORMAL	0.05
		0.833	**100.0**					
44b	120	0.025	8.8	0.30	5	25.0	NORMAL	0.05
	150	0.012	4.4	0.25	15	30.0	NORMAL	0.04
	900	0.242	86.8	0.30	0	25.0	NORMAL	0.05
		0.279	**100.0**					
44c	900	0.338	100.0	0.30	0	25.0	NORMAL	0.05
		0.338	**100.0**					
44d	900	0.821	100.0	0.30	0	25.0	NORMAL	0.05
		0.821	**100.0**					
44e	900	0.463	100.0	0.30	0	25.0	NORMAL	0.05
		0.463	**100.0**					
44f	900	0.267	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.267	**100.0**					
46a	120	0.019	2.3	0.30	5	25.0	NORMAL	0.05
	150	0.006	0.7	0.25	15	30.0	NORMAL	0.04
	900	0.783	97.0	0.30	0	25.0	NORMAL	0.05
		0.808	**100.0**					
46b	900	0.401	100.0	0.30	0	25.0	NORMAL	0.05
		0.401	**100.0**					
46c	900	0.226	100.0	0.30	0	25.0	NORMAL	0.05
		0.226	**100.0**					
46d	900	0.431	100.0	0.30	0	25.0	NORMAL	0.05
		0.431	**100.0**					
46e	900	0.220	100.0	0.30	0	25.0	NORMAL	0.05
		0.220	**100.0**					
46f	900	0.576	100.0	0.30	0	25.0	NORMAL	0.05
		0.576	**100.0**					
46g	900	0.451	100.0	0.30	0	25.0	NORMAL	0.05
		0.451	**100.0**					
46h	900	0.384	100.0	0.30	0	25.0	NORMAL	0.05
		0.384	**100.0**					
46i	740	0.012	4.4	0.00	0	0.0	WET	0.02
	900	0.258	95.6	0.30	0	25.0	NORMAL	0.05
		0.270	**100.0**					
46j	740	0.019	6.5	0.00	0	0.0	WET	0.02
	900	0.275	93.5	0.30	0	25.0	NORMAL	0.05
		0.294	**100.0**					
46k	740	0.011	2.4	0.00	0	0.0	WET	0.02
	900	0.431	97.6	0.30	0	25.0	NORMAL	0.05
		0.442	**100.0**					
48a	120	0.058	20.3	0.30	5	25.0	NORMAL	0.05
	150	0.001	0.2	0.25	15	30.0	NORMAL	0.04
	900	0.225	79.5	0.30	0	25.0	NORMAL	0.05
		0.283	**100.0**					
48b	120	0.008	3.7	0.30	5	25.0	NORMAL	0.05
	150	0.004	2.0	0.25	15	30.0	NORMAL	0.04
	900	0.192	94.3	0.30	0	25.0	NORMAL	0.05
		0.204	**100.0**					
50a	900	0.891	100.0	0.30	0	25.0	NORMAL	0.05
		0.891	**100.0**					
50b	900	0.205	100.0	0.30	0	25.0	NORMAL	0.05
		0.205	**100.0**					
50c	900	0.548	100.0	0.30	0	25.0	NORMAL	0.05
		0.548	**100.0**					
50d	900	0.178	100.0	0.30	0	25.0	NORMAL	0.05
		0.178	**100.0**					
50e	900	0.171	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.171	**100.0**					
50f	900	0.292	100.0	0.30	0	25.0	NORMAL	0.05
		0.292	**100.0**					
50g	900	0.146	100.0	0.30	0	25.0	NORMAL	0.05
		0.146	**100.0**					
52a	900	0.577	100.0	0.30	0	25.0	NORMAL	0.05
		0.577	**100.0**					
54a	900	0.360	100.0	0.30	0	25.0	NORMAL	0.05
		0.360	**100.0**					
54b	740	0.002	0.6	0.00	0	0.0	WET	0.02
	900	0.234	99.4	0.30	0	25.0	NORMAL	0.05
		0.236	**100.0**					
56a	900	0.298	100.0	0.30	0	25.0	NORMAL	0.05
		0.298	**100.0**					
60a	110	0.054	7.0	0.30	5	25.0	NORMAL	0.05
	120	0.071	9.2	0.30	5	25.0	NORMAL	0.05
	150	0.142	18.4	0.25	15	30.0	NORMAL	0.04
	900	0.003	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.502	65.1	0.30	0	25.0	NORMAL	0.05
		0.771	**100.0**					
60b	110	0.010	0.9	0.30	5	25.0	NORMAL	0.05
	120	0.189	17.0	0.30	5	25.0	NORMAL	0.05
	150	0.201	18.0	0.25	15	30.0	NORMAL	0.04
	560	0.001	0.1	0.20	80	45.0	NORMAL	0.04
	900	0.031	2.8	0.30	0	25.0	NORMAL	0.05
	900	0.679	61.1	0.30	0	25.0	NORMAL	0.05
		1.111	**99.9**					
60c	120	0.004	0.4	0.30	5	25.0	NORMAL	0.05
	150	0.038	3.6	0.25	15	30.0	NORMAL	0.04
	900	0.004	0.4	0.30	0	25.0	NORMAL	0.05
	900	0.998	95.6	0.30	0	25.0	NORMAL	0.05
		1.044	**100.0**					
62a	900	0.586	100.0	0.30	0	25.0	NORMAL	0.05
		0.586	**100.0**					
62b	900	0.245	100.0	0.30	0	25.0	NORMAL	0.05
		0.245	**100.0**					
64a	900	0.377	100.0	0.30	0	25.0	NORMAL	0.05
		0.377	**100.0**					
64b	900	0.836	100.0	0.30	0	25.0	NORMAL	0.05
		0.836	**100.0**					
64c	900	0.637	100.0	0.30	0	25.0	NORMAL	0.05
		0.637	**100.0**					
64d	900	0.144	100.0	0.30	0	25.0	NORMAL	0.05
		0.144	**100.0**					
70a	120	0.013	13.0	0.30	5	25.0	NORMAL	0.05
	220	0.001	0.8	0.20	75	45.0	NORMAL	0.04
	750	0.019	18.1	0.50	0	95.0	NORMAL	0.10

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
70a	900	0.070	68.1	0.30	0	25.0	NORMAL	0.05
		0.103	**100.0**					
70b	120	0.014	4.2	0.30	5	25.0	NORMAL	0.05
	150	0.002	0.5	0.25	15	30.0	NORMAL	0.04
	900	0.317	95.3	0.30	0	25.0	NORMAL	0.05
		0.333	**100.0**					
70c	120	0.040	5.3	0.30	5	25.0	NORMAL	0.05
	150	0.037	5.0	0.25	15	30.0	NORMAL	0.04
	190	0.002	0.2	0.25	55	50.0	NORMAL	0.03
	220	0.000		0.20	75	45.0	NORMAL	0.04
	750	0.028	3.7	0.50	0	95.0	NORMAL	0.10
	900	0.635	85.6	0.30	0	25.0	NORMAL	0.05
		0.742	**99.8**					
70d	150	0.006	1.2	0.25	15	30.0	NORMAL	0.04
	900	0.481	98.8	0.30	0	25.0	NORMAL	0.05
		0.486	**100.0**					
70e	120	0.051	3.7	0.30	5	25.0	NORMAL	0.05
	150	0.004	0.3	0.25	15	30.0	NORMAL	0.04
	560	0.002	0.1	0.20	80	45.0	NORMAL	0.04
	900	1.316	95.9	0.30	0	25.0	NORMAL	0.05
		1.372	**100.0**					
70f	120	0.004	1.0	0.30	5	25.0	NORMAL	0.05
	150	0.017	4.4	0.25	15	30.0	NORMAL	0.04
	900	0.000	0.1	0.30	0	25.0	NORMAL	0.05
	900	0.371	94.5	0.30	0	25.0	NORMAL	0.05
		0.392	**100.0**					
70g	120	0.440	27.0	0.30	5	25.0	NORMAL	0.05
	150	0.210	12.8	0.25	15	30.0	NORMAL	0.04
	560	0.018	1.1	0.20	80	45.0	NORMAL	0.04
	900	0.006	0.3	0.30	0	25.0	NORMAL	0.05
	900	0.959	58.7	0.30	0	25.0	NORMAL	0.05
		1.633	**99.9**					
70h	120	0.046	15.6	0.30	5	25.0	NORMAL	0.05
	150	0.083	28.3	0.25	15	30.0	NORMAL	0.04
	900	0.010	3.4	0.30	0	25.0	NORMAL	0.05
	900	0.154	52.7	0.30	0	25.0	NORMAL	0.05
		0.293	**100.0**					
71a	900	0.262	100.0	0.30	0	25.0	NORMAL	0.05
		0.262	**100.0**					
71b	900	0.290	100.0	0.30	0	25.0	NORMAL	0.05
		0.290	**100.0**					
72a	750	0.025	5.7	0.50	0	95.0	NORMAL	0.10
	900	0.418	94.3	0.30	0	25.0	NORMAL	0.05
		0.443	**100.0**					
72b	900	1.047	100.0	0.30	0	25.0	NORMAL	0.05
		1.047	**100.0**					
73a	120			0.30	5	25.0	NORMAL	0.05
	150	0.004	0.8	0.25	15	30.0	NORMAL	0.04
	750	0.146	28.8	0.50	0	95.0	NORMAL	0.10
	900	0.358	70.4	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.508	**100.0**					
73b	900	0.606	100.0	0.30	0	25.0	NORMAL	0.05
		0.606	**100.0**					
74a	120	0.019	6.3	0.30	5	25.0	NORMAL	0.05
	900	0.289	93.7	0.30	0	25.0	NORMAL	0.05
		0.309	**100.0**					
74b	120	0.038	5.7	0.30	5	25.0	NORMAL	0.05
	150	0.028	4.1	0.25	15	30.0	NORMAL	0.04
	560			0.20	80	45.0	NORMAL	0.04
	900	0.600	90.2	0.30	0	25.0	NORMAL	0.05
		0.666	**100.0**					
75a	120	0.025	5.5	0.30	5	25.0	NORMAL	0.05
	150	0.043	9.3	0.25	15	30.0	NORMAL	0.04
	560	0.001	0.2	0.20	80	45.0	NORMAL	0.04
	900	0.003	0.6	0.30	0	25.0	NORMAL	0.05
	900	0.388	84.4	0.30	0	25.0	NORMAL	0.05
		0.460	**100.0**					
77a	110	0.002	0.9	0.30	5	25.0	NORMAL	0.05
	120	0.001	0.3	0.30	5	25.0	NORMAL	0.05
	150	0.047	19.3	0.25	15	30.0	NORMAL	0.04
	900	0.017	7.1	0.30	0	25.0	NORMAL	0.05
	900	0.177	72.3	0.30	0	25.0	NORMAL	0.05
		0.245	**99.9**					
77b	110			0.30	5	25.0	NORMAL	0.05
	120	0.018	4.0	0.30	5	25.0	NORMAL	0.05
	150	0.021	4.8	0.25	15	30.0	NORMAL	0.04
	900	0.403	91.2	0.30	0	25.0	NORMAL	0.05
		0.442	**100.0**					
78a	110	0.029	19.2	0.30	5	25.0	NORMAL	0.05
	120	0.033	21.6	0.30	5	25.0	NORMAL	0.05
	900	0.007	4.6	0.30	0	25.0	NORMAL	0.05
	900	0.083	54.6	0.30	0	25.0	NORMAL	0.05
		0.151	**100.0**					
78b	120	0.048	10.0	0.30	5	25.0	NORMAL	0.05
	150	0.037	7.7	0.25	15	30.0	NORMAL	0.04
	900	0.002	0.4	0.30	0	25.0	NORMAL	0.05
	900	0.393	82.0	0.30	0	25.0	NORMAL	0.05
		0.479	**100.1**					
79a	120	0.029	5.7	0.30	5	25.0	NORMAL	0.05
	740	0.001	0.2	0.00	0	0.0	WET	0.02
	750	0.012	2.3	0.50	0	95.0	NORMAL	0.10
	900	0.473	91.8	0.30	0	25.0	NORMAL	0.05
		0.515	**100.0**					
79b	900	0.362	100.0	0.30	0	25.0	NORMAL	0.05
		0.362	**100.0**					
80a	120	0.063	18.6	0.30	5	25.0	NORMAL	0.05
	150	0.016	4.9	0.25	15	30.0	NORMAL	0.04
	900	0.258	76.5	0.30	0	25.0	NORMAL	0.05
		0.337	**100.0**					
80b	120	0.075	27.0	0.30	5	25.0	NORMAL	0.05
	900	0.203	73.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.278	**100.0**					
81a	120	0.006	7.3	0.30	5	25.0	NORMAL	0.05
	150	0.039	50.1	0.25	15	30.0	NORMAL	0.04
	900	0.033	42.7	0.30	0	25.0	NORMAL	0.05
		0.078	**100.1**					
81b	220	0.020	4.0	0.20	75	45.0	NORMAL	0.04
	900	0.492	96.0	0.30	0	25.0	NORMAL	0.05
		0.512	**100.0**					
82a	220	0.001	0.1	0.20	75	45.0	NORMAL	0.04
	900	0.587	99.9	0.30	0	25.0	NORMAL	0.05
		0.588	**100.0**					
82b	900	0.265	100.0	0.30	0	25.0	NORMAL	0.05
		0.265	**100.0**					
83a	900	0.243	100.0	0.30	0	25.0	NORMAL	0.05
		0.243	**100.0**					
83b	120	0.002	0.5	0.30	5	25.0	NORMAL	0.05
	900	0.430	99.5	0.30	0	25.0	NORMAL	0.05
		0.432	**100.0**					
83c	900	0.278	100.0	0.30	0	25.0	NORMAL	0.05
		0.278	**100.0**					
83d	900	0.230	100.0	0.30	0	25.0	NORMAL	0.05
		0.230	**100.0**					
83e	900	0.837	100.0	0.30	0	25.0	NORMAL	0.05
		0.837	**100.0**					
83f	900	0.132	100.0	0.30	0	25.0	NORMAL	0.05
		0.132	**100.0**					
83g	900	0.619	100.0	0.30	0	25.0	NORMAL	0.05
		0.619	**100.0**					
83h	900	0.289	100.0	0.30	0	25.0	NORMAL	0.05
		0.289	**100.0**					
83i	900	0.404	100.0	0.30	0	25.0	NORMAL	0.05
		0.404	**100.0**					
83j	900	0.163	100.0	0.30	0	25.0	NORMAL	0.05
		0.163	**100.0**					
83k	900	0.315	100.0	0.30	0	25.0	NORMAL	0.05
		0.315	**100.0**					
83l	900	0.555	100.0	0.30	0	25.0	NORMAL	0.05
		0.555	**100.0**					
84a	900	0.223	100.0	0.30	0	25.0	NORMAL	0.05
		0.223	**100.0**					
84b	900	0.347	100.0	0.30	0	25.0	NORMAL	0.05
		0.347	**100.0**					
85a	900	0.315	100.0	0.30	0	25.0	NORMAL	0.05

Sub Basin	Land Use Code	Area (sq mi)	Area (%)	Initial Loss (IA)	Percent Impervious (RTIMP)	Vegetable Cover (%)	DTHETA	Kn
Major Basin ID: 01								
		0.315	**100.0**					
85b	120	0.005	2.2	0.30	5	25.0	NORMAL	0.05
	900	0.231	97.8	0.30	0	25.0	NORMAL	0.05
		0.237	**100.0**					
86a	900	0.479	100.0	0.30	0	25.0	NORMAL	0.05
		0.479	**100.0**					
87a	900	0.273	100.0	0.30	0	25.0	NORMAL	0.05
		0.273	**100.0**					
87b	900	0.161	100.0	0.30	0	25.0	NORMAL	0.05
		0.161	**100.0**					
88a	900	0.276	100.0	0.30	0	25.0	NORMAL	0.05
		0.276	**100.0**					
89a	900	0.215	100.0	0.30	0	25.0	NORMAL	0.05
		0.215	**100.0**					
89b	900	0.283	100.0	0.30	0	25.0	NORMAL	0.05
		0.283	**100.0**					
91a	900	0.434	100.0	0.30	0	25.0	NORMAL	0.05
		0.434	**100.0**					
91b	900	0.561	100.0	0.30	0	25.0	NORMAL	0.05
		0.561	**100.0**					
92a	900	0.785	100.0	0.30	0	25.0	NORMAL	0.05
		0.785	**100.0**					
92b	900	0.700	100.0	0.30	0	25.0	NORMAL	0.05
		0.700	**100.0**					

APPENDIX D3

Hydrograph Routing Data – Without Dike Conditions

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
NORMAL DEPTH															
Major Basin 01															
R-JACK	0.060	0.050	0.060	6,600.00	0.0067	-	X:	-	63.50	254.00	317.50	362.50	426.00	616.50	680.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R10b	0.065	0.085	0.065	4,228.00	0.0043	-	X:	-	62.50	250.00	312.50	427.50	490.00	677.50	740.00
							Y:	5.00	3.50	2.00	-	-	2.00	3.50	5.00
R12b	0.050	0.040	0.050	6,106.00	0.0059	-	X:	-	115.00	460.00	575.00	601.00	716.00	1,061.00	1,176.00
							Y:	5.00	3.50	2.00	-	-	2.00	3.50	5.00
R14b	0.050	0.040	0.050	6,585.00	0.0055	-	X:	-	67.60	270.40	338.00	378.00	445.60	648.40	716.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R14c	0.050	0.040	0.050	2,902.00	0.0055	-	X:	-	125.00	500.00	625.00	645.00	770.00	1,145.00	1,270.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R14d	0.050	0.040	0.050	3,603.00	0.0056	-	X:	-	103.00	412.00	515.00	690.00	793.00	1,102.00	1,205.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R14e	0.050	0.040	0.050	2,626.00	0.0053	-	X:	-	130.50	522.00	652.50	727.50	858.00	1,249.50	1,380.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R20a	0.060	0.045	0.060	2,904.00	0.0048	-	X:	-	71.50	286.00	357.50	397.50	469.00	683.50	755.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R20b	0.060	0.070	0.060	3,435.00	0.0029	-	X:	-	93.50	374.00	467.50	587.50	681.00	961.50	1,055.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R20c	0.060	0.070	0.060	7,396.00	0.0043	-	X:	-	108.80	435.20	544.00	706.00	814.80	1,141.20	1,250.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R20d	0.050	0.050	0.050	5,373.00	0.0045	-	X:	-	111.50	446.00	557.50	652.50	764.00	1,098.50	1,210.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R20e	0.050	0.050	0.050	4,439.00	0.0036	-	X:	-	122.30	489.20	611.50	803.50	925.80	1,292.70	1,415.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R20f	0.050	0.050	0.050	5,953.00	0.0050	-	X:	-	102.00	408.00	510.00	720.00	822.00	1,128.00	1,230.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R20g	0.050	0.050	0.050	7,229.00	0.0044	-	X:	-	92.50	370.00	462.50	517.50	610.00	887.50	980.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R20h	0.050	0.050	0.050	5,408.00	0.0052	-	X:	-	87.70	350.80	438.50	561.50	649.20	912.30	1,000.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R20i	0.050	0.050	0.050	5,350.00	0.0052	-	X:	-	122.00	488.00	610.00	660.00	782.00	1,148.00	1,270.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
R20k	0.050	0.050	0.050	4,495.00	0.0062	-	X:	-	38.50	154.00	192.50	212.50	251.00	366.50	405.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R20l	0.050	0.065	0.050	5,532.00	0.0054	-	X:	-	25.00	100.00	125.00	195.00	220.00	295.00	320.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R21a	0.050	0.065	0.050	4,133.00	0.0053	-	X:	-	34.70	138.80	173.50	226.50	261.20	365.30	400.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R21b	0.050	0.065	0.050	6,096.00	0.0053	-	X:	-	81.00	324.00	405.00	459.00	540.00	783.00	864.00
							Y:	7.00	4.90	2.80	-	-	2.80	4.90	7.00
R21c	0.050	0.065	0.050	6,436.00	0.0059	-	X:	-	52.30	209.20	261.50	283.50	335.80	492.70	545.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R21d	0.050	0.065	0.050	5,510.00	0.0058	-	X:	-	29.00	116.00	145.00	230.00	259.00	346.00	375.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R22b	0.055	0.060	0.055	5,706.00	0.0056	-	X:	-	62.50	250.00	312.50	402.50	465.00	652.50	715.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R22d	0.055	0.060	0.055	3,362.00	0.0060	-	X:	-	62.00	248.00	310.00	325.00	387.00	573.00	635.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R24b	0.050	0.050	0.050	6,238.00	0.0058	-	X:	-	45.70	182.80	228.50	246.50	292.20	429.30	475.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R30c	0.075	0.070	0.075	6,381.00	0.0047	-	X:	-	158.50	634.00	792.50	822.50	981.00	1,456.50	1,615.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R30d	0.060	0.045	0.060	3,027.00	0.0053	-	X:	-	105.00	420.00	525.00	555.00	660.00	975.00	1,080.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R30e	0.060	0.045	0.060	4,256.00	0.0047	-	X:	-	138.50	554.00	692.50	762.50	901.00	1,316.50	1,455.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R30f	0.060	0.045	0.060	4,599.00	0.0044	-	X:	-	162.50	650.00	812.50	842.50	1,005.00	1,492.50	1,655.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R30g	0.060	0.045	0.060	6,597.00	0.0049	-	X:	-	170.00	680.00	850.00	880.00	1,050.00	1,560.00	1,730.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R32b	0.050	0.045	0.050	5,658.00	0.0053	-	X:	-	39.00	156.00	195.00	205.00	244.00	361.00	400.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R34b	0.050	0.050	0.050	7,227.00	0.0053	-	X:	-	91.00	364.00	455.00	485.00	576.00	849.00	940.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R36a	0.060	0.045	0.060	6,970.00	0.0046	-	X:	-	54.00	216.00	270.00	310.00	364.00	526.00	580.00
							Y:	5.00	3.50	2.00	-	-	2.00	3.50	5.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
R36b	0.050	0.045	0.050	5,446.00	0.0051	-	X:	-	71.00	284.00	355.00	380.00	451.00	664.00	735.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R36c	0.050	0.045	0.050	5,419.00	0.0063	-	X:	-	79.30	317.20	396.50	446.50	525.80	763.70	843.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R40b	0.060	0.045	0.060	4,432.00	0.0050	-	X:	-	112.50	450.00	562.50	632.50	745.00	1,082.50	1,195.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R40c	0.060	0.045	0.060	7,542.00	0.0048	-	X:	-	181.00	724.00	905.00	960.00	1,141.00	1,684.00	1,865.00
							Y:	7.00	4.90	2.80	-	-	2.80	4.90	7.00
R40d	0.060	0.045	0.060	4,406.00	0.0041	-	X:	-	134.00	536.00	670.00	710.00	844.00	1,246.00	1,380.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R42b	0.055	0.060	0.055	4,141.00	0.0058	-	X:	-	103.50	414.00	517.50	537.50	641.00	951.50	1,055.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R44a	0.055	0.060	0.055	1,962.00	0.0041	-	X:	-	31.00	124.00	155.00	205.00	236.00	329.00	360.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R44a-d	0.060	0.050	0.060	7,483.00	0.0054	-	X:	-	35.00	140.00	175.00	225.00	260.00	365.00	400.00
							Y:	5.00	3.50	2.00	-	-	2.00	3.50	5.00
R44b	0.055	0.060	0.055	8,676.00	0.0052	-	X:	-	61.00	244.00	305.00	350.00	411.00	594.00	655.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R44c	0.055	0.060	0.055	5,610.00	0.0055	-	X:	-	37.00	148.00	185.00	225.00	262.00	373.00	410.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R44d	0.055	0.060	0.055	5,423.00	0.0054	-	X:	-	24.50	98.00	122.50	147.50	172.00	245.50	270.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R44e	0.055	0.060	0.055	9,594.00	0.0067	-	X:	-	51.00	204.00	255.00	275.00	326.00	479.00	530.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R46a	0.060	0.050	0.060	2,368.00	0.0051	-	X:	-	51.50	206.00	257.50	287.50	339.00	493.50	545.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R46b	0.060	0.050	0.060	9,206.00	0.0039	-	X:	-	74.50	298.00	372.50	402.50	477.00	700.50	775.00
							Y:	9.00	6.30	3.60	-	-	3.60	6.30	9.00
R46c	0.060	0.050	0.060	5,471.00	0.0059	-	X:	-	50.00	200.00	250.00	275.00	325.00	475.00	525.00
							Y:	13.00	9.10	5.20	-	-	5.20	9.10	13.00
R46e	0.060	0.050	0.060	7,330.00	0.0055	-	X:	-	62.50	250.00	312.50	337.50	400.00	587.50	650.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R46f	0.060	0.050	0.060	4,690.00	0.0064	-	X:	-	72.00	288.00	360.00	395.00	467.00	683.00	755.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
R46h	0.060	0.050	0.060	11,103.00	0.0052	-	X:	-	61.50	246.00	307.50	342.50	404.00	588.50	650.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R46i	0.060	0.050	0.060	6,015.00	0.0060	-	X:	-	26.30	105.20	131.50	153.50	179.80	258.70	285.00
							Y:	12.00	8.40	4.80	-	-	4.80	8.40	12.00
R46kE	0.060	0.050	0.060	6,227.00	0.0090	-	X:	-	33.50	134.00	167.50	182.50	216.00	316.50	350.00
							Y:	12.00	8.40	4.80	-	-	4.80	8.40	12.00
R46kW	0.060	0.050	0.060	5,990.00	0.0090	-	X:	-	12.00	48.00	60.00	80.00	92.00	128.00	140.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R48a	0.055	0.060	0.055	1,972.00	0.0051	-	X:	-	41.50	166.00	207.50	267.50	309.00	433.50	475.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R48b	0.055	0.060	0.055	6,543.00	0.0055	-	X:	-	67.00	268.00	335.00	400.00	467.00	668.00	735.00
							Y:	5.00	3.50	2.00	-	-	2.00	3.50	5.00
R50b	0.060	0.050	0.060	9,252.00	0.0056	-	X:	-	63.00	252.00	315.00	335.00	398.00	587.00	650.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R50d	0.050	0.050	0.050	1,710.00	0.0047	-	X:	-	28.00	112.00	140.00	160.00	188.00	272.00	300.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R50e	0.050	0.050	0.050	4,259.00	0.0075	-	X:	-	55.00	220.00	275.00	305.00	360.00	525.00	580.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R50f	0.050	0.050	0.050	4,264.00	0.0066	-	X:	-	58.00	232.00	290.00	385.00	443.00	617.00	675.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R50g	0.050	0.050	0.050	6,582.00	0.0067	-	X:	-	38.50	154.00	192.50	222.50	261.00	376.50	415.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R54a	0.060	0.050	0.060	1,801.00	0.0067	-	X:	-	27.50	110.00	137.50	162.50	190.00	272.50	300.00
							Y:	5.00	3.50	2.00	-	-	2.00	3.50	5.00
R54b	0.060	0.050	0.060	4,379.00	0.0089	-	X:	-	8.00	32.00	40.00	60.00	68.00	92.00	100.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R60b	0.060	0.050	0.060	6,955.00	0.0046	-	X:	-	137.50	550.00	687.50	747.50	885.00	1,297.50	1,435.00
							Y:	7.00	4.90	2.80	-	-	2.80	4.90	7.00
R60c	0.060	0.050	0.060	5,841.00	0.0051	-	X:	-	69.50	278.00	347.50	397.50	467.00	675.50	745.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R62a	0.060	0.050	0.060	5,737.00	0.0038	-	X:	-	30.50	122.00	152.50	182.50	213.00	304.50	335.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R62b	0.060	0.050	0.060	5,554.00	0.0076	-	X:	-	40.40	161.60	202.00	218.00	258.40	379.60	420.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
R64b	0.060	0.050	0.060	5,503.00	0.0051	-	X:	-	21.00	84.00	105.00	125.00	146.00	209.00	230.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R64c	0.060	0.050	0.060	5,389.00	0.0063	-	X:	-	50.00	200.00	250.00	275.00	325.00	475.00	525.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R64d	0.060	0.050	0.060	9,783.00	0.0065	-	X:	-	38.00	152.00	190.00	230.00	268.00	382.00	420.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R70b	0.055	0.055	0.055	2,206.00	0.0027	-	X:	-	55.00	220.00	275.00	315.00	370.00	535.00	590.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R70c	0.055	0.055	0.055	2,956.00	0.0041	-	X:	-	81.50	326.00	407.50	497.50	579.00	823.50	905.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R70d	0.055	0.055	0.055	8,370.00	0.0053	-	X:	-	173.00	692.00	865.00	1,030.00	1,203.00	1,722.00	1,895.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R70e	0.050	0.045	0.050	2,256.00	0.0044	-	X:	-	118.50	474.00	592.50	722.50	841.00	1,196.50	1,315.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R70f	0.060	0.055	0.060	1,071.00	0.0056	-	X:	-	128.00	512.00	640.00	715.00	843.00	1,227.00	1,355.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R70g	0.060	0.055	0.060	2,950.00	0.0041	-	X:	-	120.00	480.00	600.00	640.00	760.00	1,120.00	1,240.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R71b	0.050	0.075	0.050	4,928.00	0.0162	-	X:	-	39.50	158.00	197.50	217.50	257.00	375.50	415.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R72b	0.050	0.075	0.050	3,300.00	0.0049	-	X:	-	70.00	280.00	350.00	530.00	600.00	810.00	880.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R73a	0.050	0.045	0.050	2,646.00	0.0083	-	X:	-	109.50	438.00	547.50	622.50	732.00	1,060.50	1,170.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R73b	0.045	0.055	0.045	4,440.00	0.0050	-	X:	-	53.00	212.00	265.00	335.00	388.00	547.00	600.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R74a	0.050	0.045	0.050	4,623.00	0.0043	-	X:	-	168.50	674.00	842.50	1,032.50	1,201.00	1,706.50	1,875.00
							Y:	3.00	2.10	1.20	-	-	1.20	2.10	3.00
R74b	0.050	0.045	0.050	3,352.00	0.0054	-	X:	-	147.00	588.00	735.00	805.00	952.00	1,393.00	1,540.00
							Y:	2.00	1.40	0.80	-	-	0.80	1.40	2.00
R77a	0.060	0.055	0.060	3,568.00	0.0056	-	X:	-	133.40	533.60	667.00	733.00	866.40	1,266.60	1,400.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R77b	0.055	0.060	0.055	4,056.00	0.0069	-	X:	-	80.50	322.00	402.50	442.50	523.00	764.50	845.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
R78b	0.055	0.060	0.055	3,996.00	0.0065	-	X:	-	85.00	340.00	425.00	455.00	540.00	795.00	880.00
							Y:	4.00	2.80	1.60	-	-	1.60	2.80	4.00
R79b	0.075	0.075	0.075	4,398.00	0.0175	-	X:	-	15.00	60.00	75.00	100.00	115.00	160.00	175.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R80b	0.065	0.050	0.065	4,668.00	0.0069	-	X:	-	27.00	108.00	135.00	165.00	192.00	273.00	300.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R81b	0.065	0.050	0.065	2,533.00	0.0079	-	X:	-	37.00	148.00	185.00	245.00	282.00	393.00	430.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R82b	0.055	0.045	0.055	5,300.00	0.0083	-	X:	-	27.50	110.00	137.50	187.50	215.00	297.50	325.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R82b1	0.055	0.045	0.055	2,500.00	0.0083	-	X:	-	27.50	110.00	137.50	187.50	215.00	297.50	325.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R83b	0.060	0.050	0.060	6,084.00	0.0063	-	X:	-	51.00	204.00	255.00	320.00	371.00	524.00	575.00
							Y:	12.00	8.40	4.80	-	-	4.80	8.40	12.00
R83c	0.060	0.050	0.060	5,898.00	0.0054	-	X:	-	46.00	184.00	230.00	270.00	316.00	454.00	500.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R83d	0.060	0.050	0.060	3,074.00	0.0052	-	X:	-	54.50	218.00	272.50	297.50	352.00	515.50	570.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R83e	0.060	0.050	0.060	4,439.00	0.0059	-	X:	-	47.50	190.00	237.50	262.50	310.00	452.50	500.00
							Y:	7.00	4.90	2.80	-	-	2.80	4.90	7.00
R83g	0.060	0.050	0.060	6,004.00	0.0053	-	X:	-	66.00	264.00	330.00	400.00	466.00	664.00	730.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R83i	0.060	0.050	0.060	4,018.00	0.0045	-	X:	-	64.00	256.00	320.00	360.00	424.00	616.00	680.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R83j	0.060	0.050	0.060	1,430.00	0.0056	-	X:	-	31.00	124.00	155.00	195.00	226.00	319.00	350.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R83k	0.060	0.050	0.060	4,228.00	0.0062	-	X:	-	46.00	184.00	230.00	250.00	296.00	434.00	480.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R84a	0.055	0.045	0.055	3,000.00	0.0083	-	X:	-	27.50	110.00	137.50	187.50	215.00	297.50	325.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R84b	0.055	0.060	0.055	4,440.00	0.0079	-	X:	-	38.50	154.00	192.50	232.50	271.00	386.50	425.00
							Y:	12.00	8.40	4.80	-	-	4.80	8.40	12.00
R85b	0.055	0.060	0.055	4,836.00	0.0083	-	X:	-	56.00	224.00	280.00	345.00	401.00	569.00	625.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00

Route ID	LOB N	Chan N	ROB N	Length (ft)	Slope (ft/ft)	Max Elev (ft)		1.	2.	3.	4.	5.	6.	7.	8.
R87b	0.050	0.060	0.050	6,497.00	0.0077	-	X:	-	45.50	182.00	227.50	257.50	303.00	439.50	485.00
							Y:	6.00	4.20	2.40	-	-	2.40	4.20	6.00
R88a	0.060	0.050	0.060	2,567.00	0.0047	-	X:	-	27.50	110.00	137.50	167.50	195.00	277.50	305.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R89b	0.050	0.060	0.050	3,054.00	0.0075	-	X:	-	33.00	132.00	165.00	190.00	223.00	322.00	355.00
							Y:	8.00	5.60	3.20	-	-	3.20	5.60	8.00
R91b	0.050	0.060	0.050	4,978.00	0.0084	-	X:	-	40.00	160.00	200.00	230.00	270.00	390.00	430.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00
R92b	0.060	0.050	0.060	7,166.00	0.0067	-	X:	-	63.50	254.00	317.50	362.50	426.00	616.50	680.00
							Y:	10.00	7.00	4.00	-	-	4.00	7.00	10.00

APPENDIX D4

Reservoir Routing Data – With Dike Conditions

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RESERVOIR ROUTING
METHODOLOGY & RESULTS

1.0 Introduction

The Luke Wash Watershed is located in western Maricopa County. Two transportation facilities, Interstate 10 (I-10) and the Union Pacific Railroad (UPRR), traverse the study watershed. These two facilities potentially impact the 100-year peak flows within the project area. The HEC-1 hydrologic models with dike conditions have incorporated the impact of these two facilities using storage routing operations. Three parameters are needed for storage routing operations: elevation (SE), volume (SV), and discharge (SQ). The methods used to estimate these parameters are discussed in the following sections.

There are 23 existing cross-drainage structures along I-10 within the study area with a pipe diameter 30-inches and larger. Of these structures, 13 were modeled. The other structures were not modeled because of the following reasons:

a. Some of the structures have small (local) contributing watersheds which have no significant impact on the HEC-1 storage routing operations (such as structures 33, 34 and 40).
b. Some of the structures are within subbasins that have no routing operations. These no routing subbasins are the most upstream subbasin for a particular watershed and encompass the north and south sides of I-10 (such as basins 22c, 42b, and 36c).
c. Some of the structures are within washes that will not be studied hydraulically. There is no need to determine or model the flow at these locations (such as structures 14, 22, 24, 34, 40, 42, 44, 46, and 48).

The UPRR facility includes 6 bridge structures within the study area and 5 were modeled. Bridge 6 was not modeled due to reason 'c' above. The modeled structures are summarized in Table 1 and the plan locations are identified on Exhibit 1 – Crossing Structures Locations for With Dike Conditions.

2.0 Detention Area & Volume Estimation

The detention ponding areas were calculated using AutoCAD and the 2-foot topographic mapping provided by the Flood Control District of Maricopa County (FCDMC) with interpolated 1-foot contours. The ponding areas were measured at 1-foot increments from the structure invert to plus or minus 2 feet above the subbasin boundary elevation. The storage volumes were calculated externally with Excel spreadsheets using the average end area method. See Table 2 for a summary of these calculations.

3.0 Crossing Structure Elevation Discharge Rating Curve Development

The discharge rating curves were determined using "Dodson Hydrocalc Hydraulics," software version 1.2a and "HEC-RAS River Analysis System," version 3.1.3. The structure dimensions used are from the WOOD/PATEL survey report or as-built construction drawings and are included as part of this document.

The discharge rating curves of structures 10, 12, and 50 along I-10 were determined with Dodson Hydrocalc Hydraulics. Several steps were performed:

a. Rating curves for tailwater conditions were determined using Bentley software FlowMaster, service pack 3. A representative cross section downstream of each structure was coded using the project 2-foot topography as provided by the FCDMC. The Manning's "n" values for each cross section were determined by using the aerial photo to find a representative "n" values from the Field Reconnaissance Report. The rating curve as developed by FlowMaster is based on normal

depth versus flow. Please see section Dodson Hydrocalc Hydraulics & FlowMaster Printouts for the tailwater rating curve and cross section geometry.

b. The developed tailwater rating curves were used for the tailwater conditions in Dodson Hydrocalc Hydraulics. The culvert's "n" value and entrance loss coefficient as used in Dodson Hydrocalc Hydraulics were established from the FCDMC "Drainage Design Manual, Hydraulics."

HEC-RAS was used to develop the discharge rating curves for the remaining structures using multiple profiles with different flows. The entrance loss coefficients and Manning's "n" values are based from the FCDMC "Drainage Design Manual, Hydraulics." The invert and geometry of each structure is based from the WOOD/PATEL Survey Report and ADOT as-built construction drawings. The deck elevation and geometry of each structure and the up and downstream cross sections are based on the 2-ft topography as provided by the FCDMC. Table 1 summarizes the HEC-RAS model used in developing the rating curve for each structure.

Sedimentation build-up was assumed to be insignificant in the discharge rating curve development for several reasons: no significant evidence of sediment build-up was observed in the field visits and photos of each structure from the WOOD/PATEL Survey Report; if sedimentation has occurred, the sedimentation build up if significant will be reflected in the generated topography and therefore be modeled; and last, sedimentation build-up is not typically analyzed in Flood Insurance Studies.

The elevation-discharge rating values are summarized in Table 2. The Dodson and HEC-RAS output per structure is included as supporting documentation.

4.0 Composite Elevation Storage Discharge Rating Curves

For multiple structures within one subbasin, a composite rating curve was developed. For structures that are hydraulically connected, the storage rating curve volumes were combined in such a way as to share the same ponding volume when the individual structure's ponding area merged/combined with the other(s).

In cases where structures within the same subbasin are not connected hydraulically, the combined volume was determined differently. The volumes were added together separately per the contour interval. If the ponding depth of one structure reaches heights where flow would split to other subbasins, then the volume at this depth was not counted toward the total volume. These values are also summarized in Table 2. The composite rating curves were then entered into the HEC-1 models as SE, SV, and SQ cards (elevation, volume, and discharge).

5.0 Evaluation of Split Flows from Ponding Areas

Once storage routing rating curves were coded within HEC-1 models, the HEC-1 models were executed to determine if any split flow occurs from the ponding areas based on HEC-1 and HEC-RAS modeling results. Three cases were determined as such: between subbasins 46a and 48a along I-10, between subbasins 64a and 62a along I-10 and between subbasins 30d and 20b along UPRR. In all cases, the floodplain delineations show that the flows were combined upstream of the road or bridge, then routed through the structure(s) using one storage routing routine per case.

TABLE D4.1

Crossing Structures along I-10 and UPRR

TABLE D4.1
Crossing Structures along I-10 and UPRR

Location	Subbasin Name	Storage Basin Name	Crossing Structure		HEC-RAS Model Name
			ID	Type	
I-10	20k	S20k	10	2-42" CMP	N/A
			12	2-36" CMP	
I-10	21a	S21a	14	2-10'x5' CBC	T1SR5WS17.prj
I-10	22d	S22d	18	3-36" CMP	T1N-R6W-S11.prj
			20	42" CMP	
I-10	44a	S44a	26	2-10'x8' CBC	T2NR6WS36.prj
I-10	48a	S46a	28	48"CMP	PhillipsWash.prj
I-10	46a		30	2-10'x3'	
			32	3-10'x5'	
I-10	64a	S64a	36	10'x5' CBC	DickeyWash.prj
I-10	62a		38	72" CMP	
I-10	82b	S82b	50	2-48" CMP	N/A
I-10	83a	S83a	52	4-10'x4'	T2N-R5W-S33E.prj
UPRR	14c	S14c	UPR1	4-14'x5'	T1SR5WS29.prj
UPRR	20b	S20b	UPR2	3-13'x8'	LUKE WASH.prj
UPRR	30d		UPR3	5-14'x3'	
UPRR	32b	S32b	UPR4	5-13.5'x8'	MINOR-TRIB.prj
UPRR	70d	S70d	UPR5	6-14'x15'	EAST_MAIN_TRIB.prj

Note: Crossing structures summarized above are only the structures in the study area that have been modeled with HEC-RAS or Dodson Hydrocalc Hydraulics.

TABLE D4.2

Elevation-Volume-Discharge Rating Curves

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	2-42" CMP
Culvert ID:	10
Subbasin	20k
Storage Bsn	S20k

SE (ft)	SA ft²	SA (acre)	Volume Inc. (acre-ft)	SV Volume Cum. (acre-ft)	Q /barrel (cfs)	# barrels	SQ* Total Q (cfs)
1100	3567	0.1	0.0	0.0	0	2	0
1101	22851	0.5	0.3	0.3	5	2	10
1102	72883	1.7	1.1	1.4	16	2	32
1103	156505	3.6	2.6	4.0	31	2	62
1104	263456	6.0	4.8	8.9	45	2	90
1105	383157	8.8	7.4	16.3	59	2	118
1106	504829	11.6	10.2	26.5	68	2	136

** Calculations done in Dodson*

Type:	2-36" CMP
Culvert ID:	12
Subbasin	20k
Storage Bsn	S20k

SE (ft)	SA ft²	SA (acre)	Volume Inc. (acre-ft)	SV Volume Cum. (acre-ft)	Q /barrel (cfs)	# barrels	SQ* Total Q (cfs)
1098	85875	2.0	0.0	0.0	0	2	0
1099	184989	4.2	3.1	3.1	5	2	10
1100	276645	6.4	5.3	8.4	17	2	34
1101				8.4			34
1102				8.4			34
1103				8.4			34
1104				8.4			34
1105				8.4			34
1106				8.4			34

Combined Rating Curve		
SE (ft)	SV (acre-ft)	SQ (cfs)
1098	0.0	0
1099	3.1	10
1100	8.4	34
1101	8.7	44
1102	9.8	66
1103	12.4	96
1104	17.3	124
1105	24.7	152
1106	34.9	170

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	2-10x5' CBC
Culvert ID:	14
Subbasin	21a
Storage Bsn	S21a

				SV	
SE	SA	SA	Volume Inc.	Volume Cum.	SQ*
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)
1093	2251	0.1	0.0	0.0	0.0
1094	7128	0.2	0.1	0.1	144.0
1095	34175	0.8	0.5	0.6	283.0
1096	139972	3.2	2.0	2.6	466.0
1097	278598	6.4	4.8	7.4	621.0
1098	451391	10.4	8.4	15.8	775.0
1099	697889	16.0	13.2	29.0	930.0
1100	975822	22.4	19.2	48.2	1084.0

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	3-36" CMP
Culvert ID:	18
Subbasin	22d
Storage Bsn	S22d

SE (ft)	SA ft^2	SA (acre)	Volume Inc. (acre-ft)	SV Volume Cum. (acre-ft)
1093	703	0.0	0.0	0.0
1094	3561	0.1	0.05	0.0
1095	28546	0.7	0.4	0.4
1096	87472	2.0	1.3	1.7
1097	198673	4.6	3.3	5.0
1098	314168	7.2	5.9	10.9
1099	441770	10.1	8.7	19.6

Type:	42" CMP
Culvert ID:	20
Subbasin	22d
Storage Bsn	S22d

SE (ft)	SA ft^2	SA (acre)	Volume Inc. (acre-ft)	SV Volume Cum. (acre-ft)
1093	58	0.0	0.0	0.0
1094	580	0.0	0.0	0.01
1095	5701	0.1	0.1	0.1
1096	31405	0.7	0.4	0.5
1097	198673	4.6	2.6	3.1
1098	314168	7.2	5.9	9.0
1099	441770	10.1	8.7	17.7

Combined Rating Curve		
SE (ft)	SV (acre-ft)	SQ* (cfs)
1093	0.0	0
1094	0.1	47
1095	0.5	90
1096	2.3	127
1097	5.0	158
1098	10.9	189
1099	19.6	221

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	2-10'X8' CBC
Culvert ID:	26
Subbasin	44a
Storage Bsn	S44a

				SV	SQ*
SE	SA	SA	Volume Inc.	Volume Cum.	Total Q
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)
1086	6837	0.2	0.0	0.0	0
1087	22326	0.5	0.3	0.3	87
1088	95395	2.2	1.4	1.7	217
1089	162391	3.7	3.0	4.6	347
1090	282033	6.5	5.1	9.7	516
1091	341085	7.8	7.2	16.9	720
1092	460461	10.6	9.2	26.1	923
1093	546808	12.6	11.6	37.7	1127
1094	699129	16.0	14.3	52.0	1302

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	48" CMP
Culvert ID:	28
Subbasin	48a
Storage Bsn	S46a

SE	SA	SA	Volume Inc.	SV olume Cun
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)
1087	5922	0.1	0.0	0.0
1088	22285	0.5	0.3	0.3
1089	65354	1.5	1.0	1.3
1090	124999	2.9	2.2	3.5
1091	785614	18.0	10.5	14.0
1092	1039197	23.9	20.9	34.9
1093	1318629	30.3	27.1	62.0
1094	1735177	39.8	35.1	97.0

Type:	2-10'X3' CBC
Culvert ID:	30
Subbasin	46a
Storage Bsn	S46a

SE	SA	SA	Volume Inc.	SV Volume Cum.
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)
1087	2384	0.1	0	0
1088	10327	0.2	0.1	0.1
1089	51299	1.2	0.7	0.9
1090	133074	3.1	2.1	3.0
1091	785614	18.0	10.5	13.5
1092	1039197	23.9	20.9	34.5
1093	1318629	30.3	27.1	61.5
1094	1735177	39.8	35.1	96.6

Type:	3-10'X5' CBC
Culvert ID:	32
Subbasin	46a
Storage Bsn	S46a

SE	SA	SA	Volume Inc.	SV Volume Cum.
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)
1087	1783	0.0	0	0
1088	12176	0.3	0.2	0.2
1089	33118	0.8	0.5	0.7
1090	112782	2.6	1.7	2.4
1091	785614	18.0	10.3	12.7
1092	1039197	23.9	20.9	33.6
1093	1318629	30.3	27.1	60.7
1094	1735177	39.8	35.1	95.7

Combined Rating Curve

SE	SV	SQ*
(ft)	(acre-ft)	(cfs)
1087	0.0	0
1088	0.6	258
1089	2.9	586
1090	8.8	990
1091	14.0	1402
1092	34.9	1823
1093	62.0	2061
1094	97.0	2314

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	10'X5' CBC
Culvert ID:	36
Subbasin	64a
Storage Bsn	S64a

SE (ft)	SA ft^2	SA (acre)	Volume Inc. (acre-ft)	SV Volume Cum. (acre-ft)
1072	395	0.0	0.0	0.0
1073	708	0.0	0.0	0.0
1074	9198	0.2	0.1	0.1
1075	25249	0.6	0.4	0.5
1076	44175	1.0	0.8	1.3
1077	73991	1.7	1.4	2.7
1078	177120	4.1	2.9	5.6
1079	420365	9.7	6.9	12.4
1080	688159	15.8	12.7	25.1
1081	926507	21.3	18.5	43.7

Type:	72" CMP
Culvert ID:	38
Subbasin	62a
Storage Bsn	S64a

SE (ft)	SA ft^2	SA (acre)	Volume Inc. (acre-ft)	SV Volume Cum. (acre-ft)
1072	252	0.0	0.0	0.0
1073	1602	0.0	0.0	0.0
1074	6380	0.1	0.1	0.1
1075	22503	0.5	0.3	0.4
1076	51443	1.2	0.8	1.3
1077	108514	2.5	1.8	3.1
1078	177620	4.1	3.3	6.4
1079	420365	9.7	6.9	13.3
1080	688159	15.8	12.7	26.0
1081	926507	21.3	18.5	44.5

Combined Rating Curve

SE (ft)	SV (acre-ft)	SQ* (cfs)
1072	0.0	0
1073	0.03	66
1074	0.2	171
1075	1.0	312
1076	2.6	454
1077	5.8	595
1078	12.0	698
1079	13.3	792
1080	26.0	887
1081	44.5	982

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	2-48" CMP
Culvert ID:	50
Subbasin	82b
Storage Bsn	S82b

				SV	Q	#	SQ*
SE	SA	SA	Volume Inc.	Volume Cum.	/barrel	barrels	Total Q
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)		(cfs)
1070	6470	0.1	0.0	0.0	0	2	0
1071	10682	0.2	0.2	0.2	6	2	12
1072	28646	0.7	0.5	0.6	20	2	40
1073	45769	1.1	0.9	1.5	42	2	84
1074	92793	2.1	1.6	3.1	66	2	132
1075	121962	2.8	2.5	5.6	86	2	172
1076	184808	4.2	3.5	9.1	93	2	186
1077	228456	5.2	4.7	13.8	98	2	196
1078	351650	8.1	6.7	20.5	102	2	204
1079	431068	9.9	9.0	29.5	106	2	212
1080	597473	13.7	11.8	41.3	113	2	226

** Calculations done in Dodson*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	4-10'x4' CBC
Culvert ID:	52
Subbasin	83a
Storage Bsn	S83a

				SV	
SE	SA	SA	Volume Inc.	Volume Cum.	SQ*
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)
1037	330	0.0	0.0	0.0	0
1038	1206	0.03	0.0	0.02	177
1039	4599	0.1	0.1	0.1	473
1040	18840	0.4	0.3	0.4	769
1041	37320	0.9	0.6	1.0	1060
1042	69953	1.6	1.2	2.2	1261
1043	116410	2.7	2.1	4.4	1462
1044	142900	3.3	3.0	7.3	1663
1045	170699	3.9	3.6	10.9	1863
1046	222830	5.1	4.5	15.5	2071

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	4-14x5
Bridge ID:	1
Subbasin	14c
Storage Bsn	S14c

				SV	
SE	SA	SA	Volume Inc.	Volume Cum.	SQ*
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)
861	31414	0.7	0.0	0.0	0
862	86035	2.0	1.3	1.3	208
863	222806	5.1	3.5	4.9	716
864	501717	11.5	8.3	13.2	1223
865	713099	16.4	13.9	27.2	1731
866	1222338	28.1	22.2	49.4	2595
867	1519747	34.9	31.5	80.8	3168
868	2216266	50.9	42.9	123.7	3447
869	2616257	60.1	55.5	179.2	3727

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	3-13x8
Bridge ID:	2
Subbasin	20b
Storage Bsn	S20b

				SV					SV
SE	SA	SA	Volume Inc.	Volume Cum.	SE	SA	SA	Volume Inc	Volume Cum.
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)
854	22096	0.5	0.0	0.0					
855	47740	1.1	0.8	0.8					
856	166497	3.8	2.5	3.3					
857	310775	7.1	5.5	8.7	857	5468	0.1	0.0	0.0
858	550302	12.6	9.9	18.6	858	16533	0.4	0.3	0.3
859	840430	19.3	16.0	34.6	859	840430	19.3	9.8	10.1
860	1182068	27.1	23.2	57.8	860	1182068	27.1	23.2	33.3
861	1842202	42.3	34.7	92.5	861	1842202	42.3	34.7	68.0
862	2488840	57.1	49.7	142.2	862	2488840	57.1	49.7	117.7

Type:	5-14x3
Bridge ID:	3
Subbasin	30d
Storage Bsn	S20b

Combined Rating Curve		
SE	SV	SQ*
(ft)	(acre-ft)	(cfs)
854	0.0	0
855	0.8	100
856	3.3	403
857	8.7	770
858	18.6	1325
859	34.6	2286
860	57.8	3248
861	92.5	4210
862	142.2	5170

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

Type:	5-13.5x8
Bridge ID:	4
Subbasin	32b
Storage Bsn	S32b

				SV	
SE	SA	SA	Volume Inc.	Volume Cum.	SQ*
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)
860	13406	0.3	0.0	0.0	0
861	71874	1.7	1.0	1.0	258
862	139645	3.2	2.4	3.4	536
863	258850	5.9	4.6	8.0	853
864	398262	9.1	7.5	15.5	1400

** Flow determined from HEC-RAS*

TABLE D4.2
LUKE WASH WATERSHED FDS
Elevation, Volume, Discharge and Rating Curve

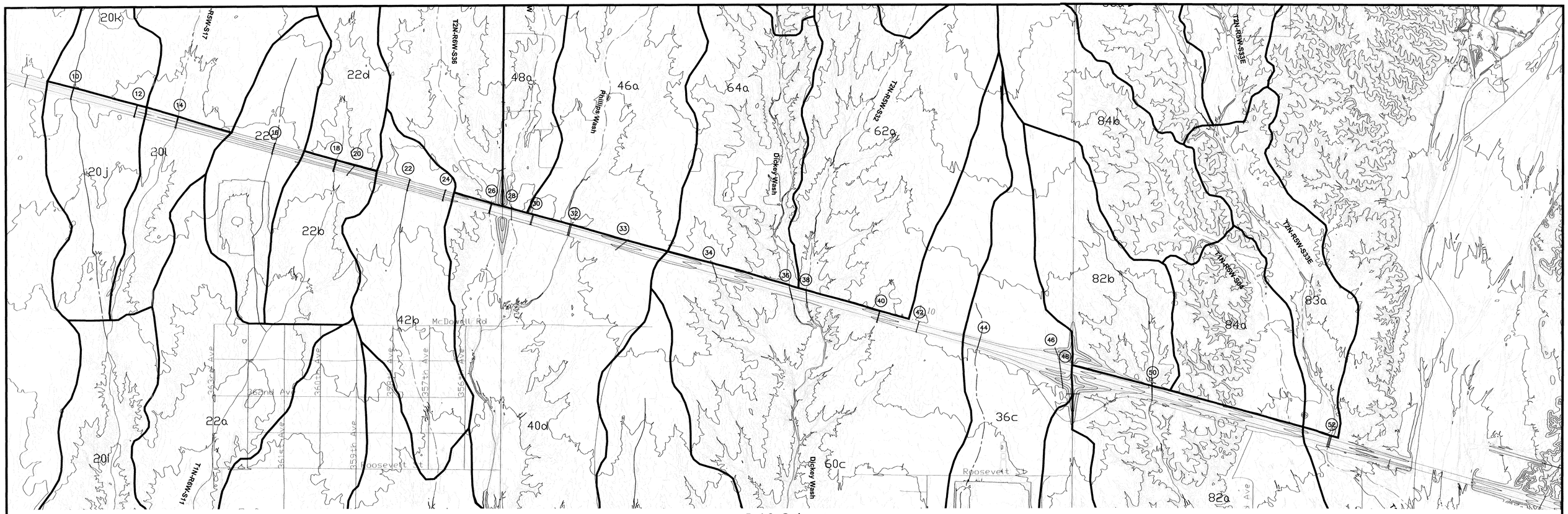
Type:	6-14x15
Bridge ID:	5
Subbasin	70d
Storage Bsn	S70d

				SV	
SE	SA	SA	Volume Inc.	Volume Cum.	SQ*
(ft)	ft^2	(acre)	(acre-ft)	(acre-ft)	(cfs)
854	2858	0.1	0.0	0.0	0
855	5565	0.1	0.1	0.1	130
856	11501	0.3	0.2	0.3	412
857	15251	0.4	0.3	0.6	695
858	19440	0.4	0.4	1.0	978
859	27181	0.6	0.5	1.5	1370
860	38119	0.9	0.7	2.3	1776
861	50769	1.2	1.0	3.3	2185

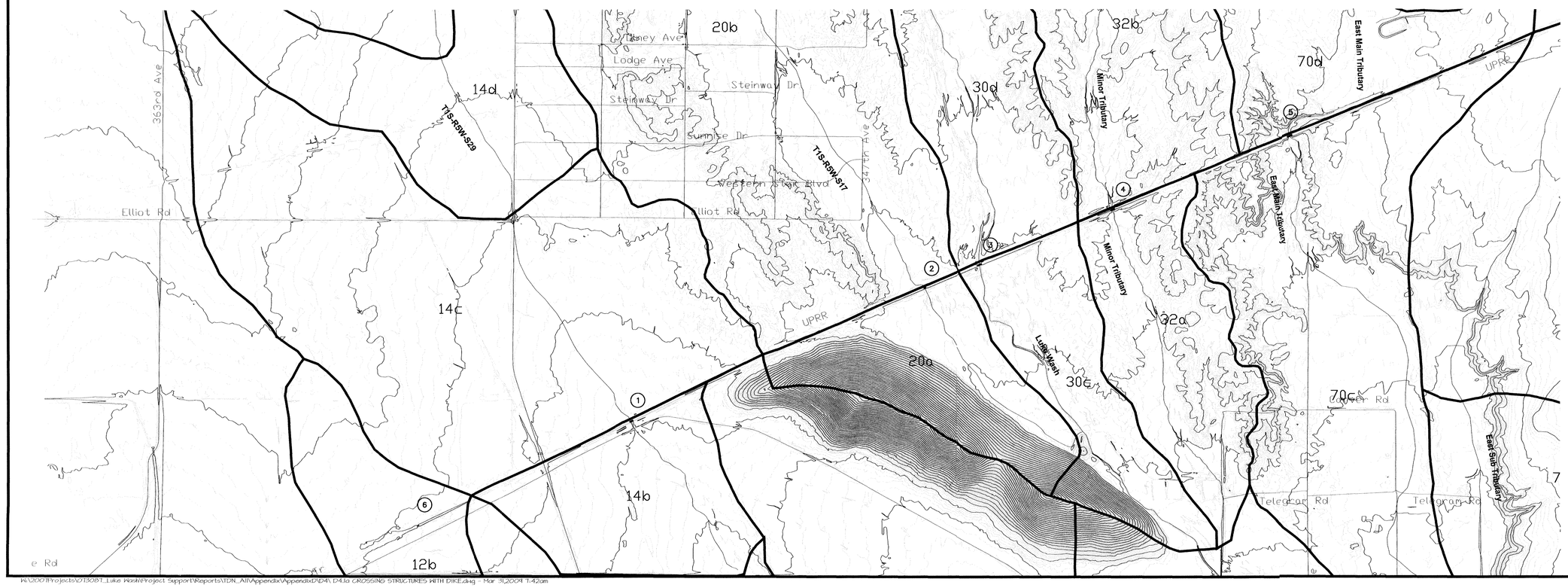
** Flow determined from HEC-RAS*

EXHIBIT D4.1

Detention Locations



I-10 Culverts



UPRR Bridges

800' 0' 800' 1600'
SCALE: 1"= 800' FEET
CONTOUR INTERVAL = 2 FEET

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

LUKE WASH WATERSHED FDS

CROSSING STRUCTURE LOCATIONS
FOR WITH DIKE CONDITIONS

FCD 2007C020
JULY 2008

EXHIBIT
D4.1a

WOOD/PATEL

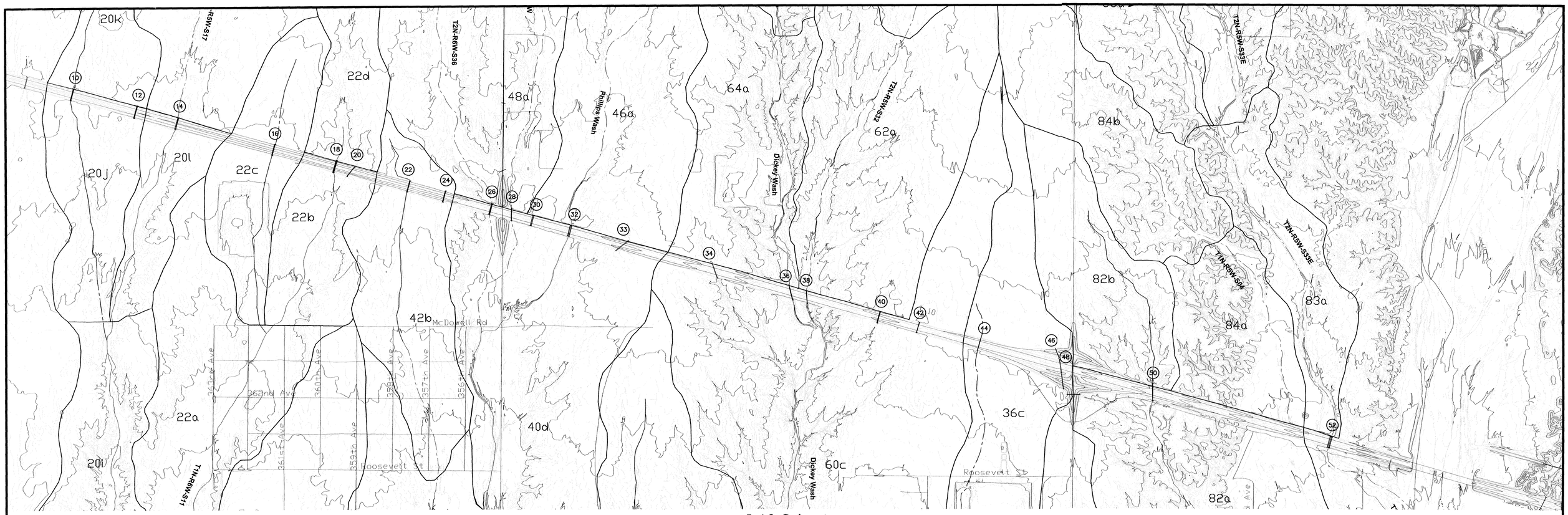
LAND DEVELOPMENT • WATER RESOURCES
TRANSPORTATION / TRAFFIC
WATER / WASTEWATER • SURVEYING
CONSTRUCTION MANAGEMENT

(602) 335-8500

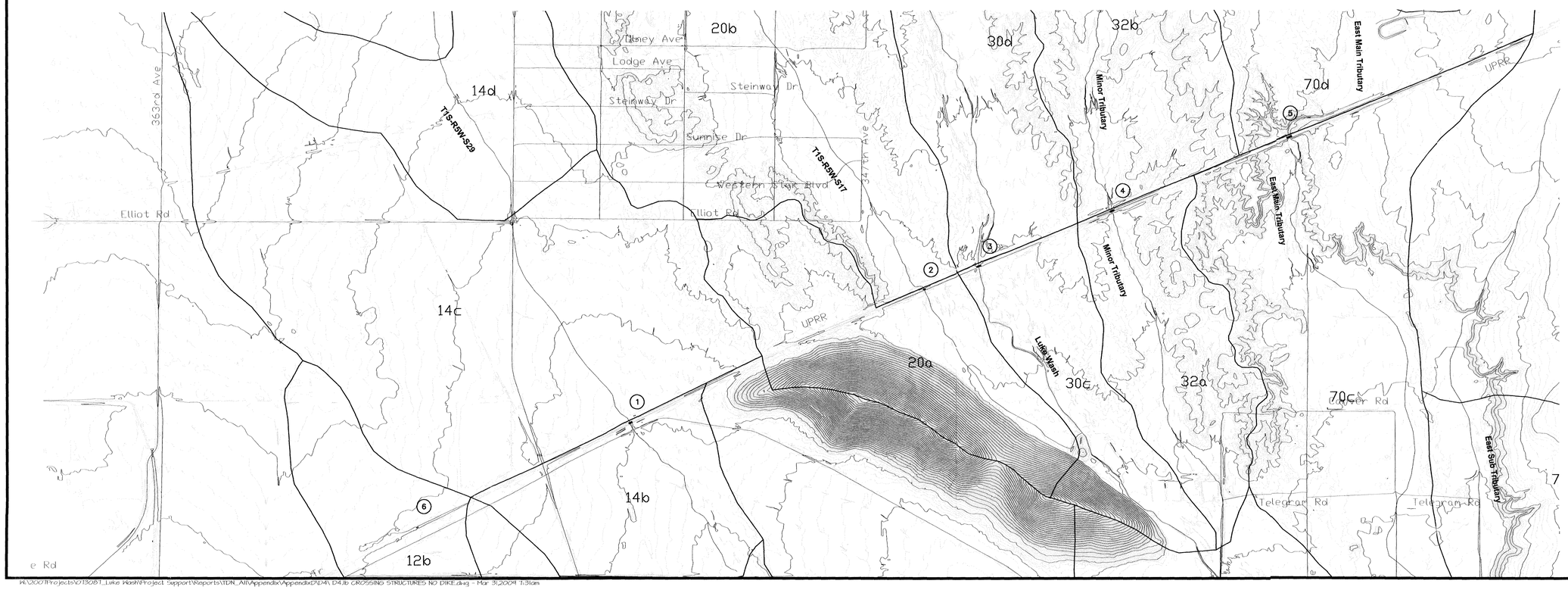
PHOENIX • MESA • TUCSON • GOODYEAR

WP# 073087 SHEET 1 OF 1

W:\2007Projects\073087_Luke Wash\Project Support\Reports\FDN_AII\Appendix\Appendix D\D4\ D4.1a CROSSING STRUCTURES WITH DIKE.dwg - Mar 31,2009 7:42am



I-10 Culverts



UPRR Bridges

800' 0' 800' 1600'
SCALE: 1"= 800' FEET
CONTOUR INTERVAL = 2 FEET

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

LUKE WASH WATERSHED FDS

CROSSING STRUCTURE LOCATIONS
FOR NO DIKE CONDITIONS

FCD 2007C020
JULY 2008

EXHIBIT
D4.1b

WOOD/PATEL

LAND DEVELOPMENT • WATER RESOURCES
TRANSPORTATION / TRAFFIC
WATER / WASTEWATER • SURVEYING
CONSTRUCTION MANAGEMENT

(602) 335-8500

PHOENIX • MESA • TUCSON • GOODYEAR

WP# 073087 SHEET 1 OF 1

W:\2007Projects\073087_Luke Wash\Project Support\Reports\TDN_All\Appendix\Appendix D\D4\ D4.1b CROSSING STRUCTURES NO DIKE.dwg - Mar 31,2009 7:31am

EXHIBIT D4.2

Structure Survey Sketches

I-10 and UPRR

I D 10

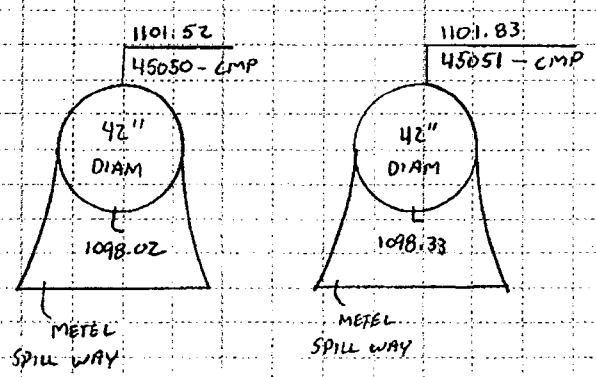
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: CMP 2 - 42" Date: 1-29-2008

File Name: LUKE WASH

Description Name: I-10 STA. 5266 +50 Party Chief: JEFF LALLIER

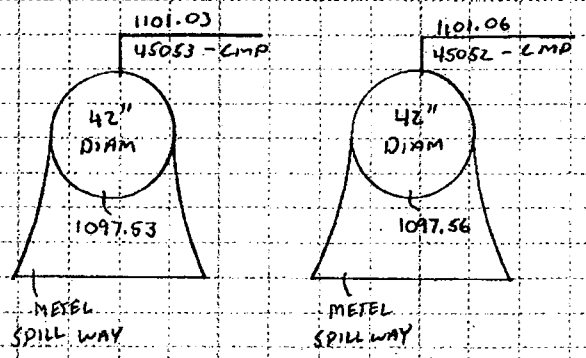
[X] Photo Taken (UPSTREAM) NORTH



SPILL WAYS ARE 6' FROM INVERT TO END OF SPILL WAY

General Condition of Structure GOOD

[X] Photo Taken (DOWNSTREAM) SOUTH



SPILL WAYS ARE 6' FROM INVERT TO END OF SPILL WAY

General Condition of Structure GOOD

E2-1

ID 12.

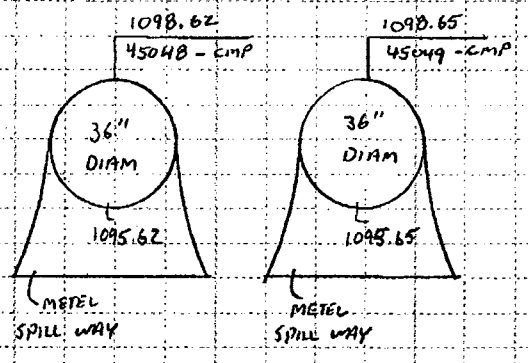
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: CMP 2-36" Date: 1-24-2008

File Name: LUKE WASH

Description Name: I-10 STA. 5278+50 Party Chief: JEFF LALLIER

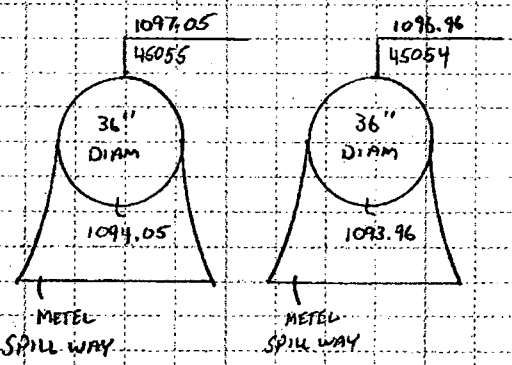
[X] Photo Taken (UPSTREAM) NORTH



SPILL WAYS ARE 5' FROM INVERT TO END OF SPILL WAYS

General Condition of Structure GOOD

[X] Photo Taken (DOWNSTREAM) SOUTH



SPILL WAYS ARE 5' FROM INVERT TO END OF SPILL WAY

General Condition of Structure GOOD

E2-2

ID 14

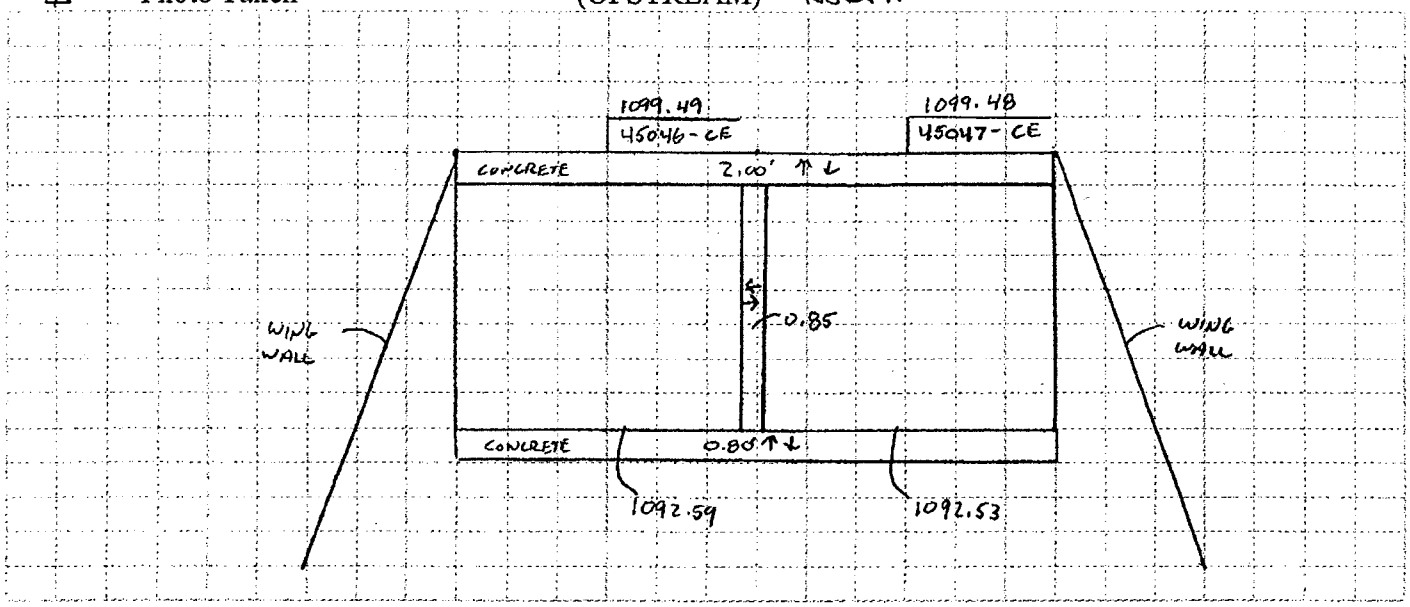
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: BOX CULVERT 2- 10'x5' Date: 1-29-2008

File Name: LUKE WASH 5286+25

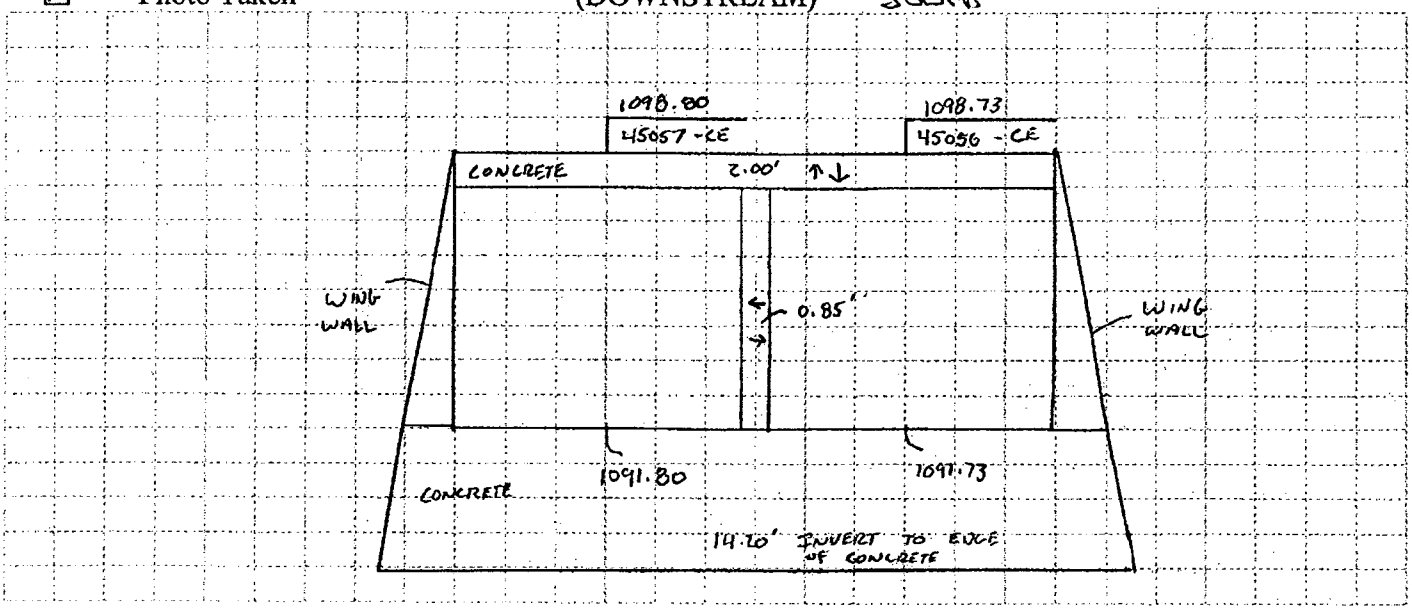
Description Name: I-10 STA. 5286+25 Party Chief: JEFF LALLIER

[X] Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

[X] Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

B2-3

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ID 18

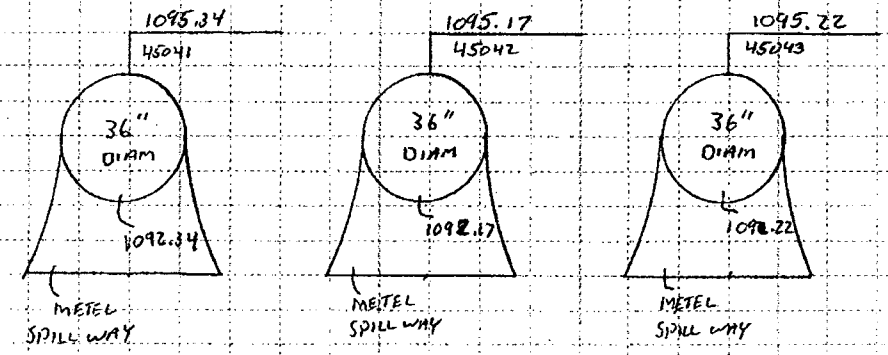
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: CMP 3- 36" Date: 1-29-2008

File Name: LUKE WASH

Description Name: I-10 STA. 5316+10 Party Chief: JEFF LALLIER

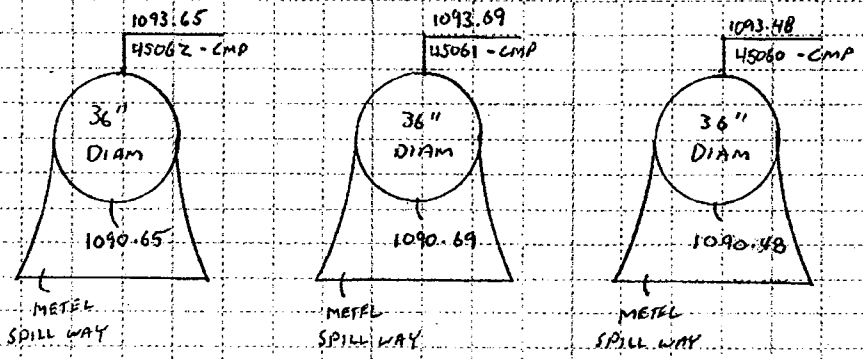
[X] Photo Taken (UPSTREAM) NORTH



ALL SPILL WAYS ARE 5' FROM INVERT TO END SPILL WAY

General Condition of Structure GOOD

[X] Photo Taken (DOWNSTREAM) SOUTH



ALL SPILL WAYS ARE 5' FROM INVERT TO END SPILL WAY

General Condition of Structure GOOD

E2-4

ID 20

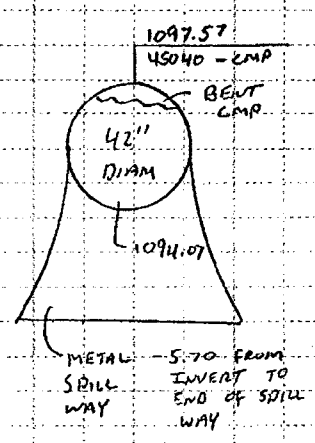
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: CMP 42" Date: 1-29-2008

File Name: LUKE WASH

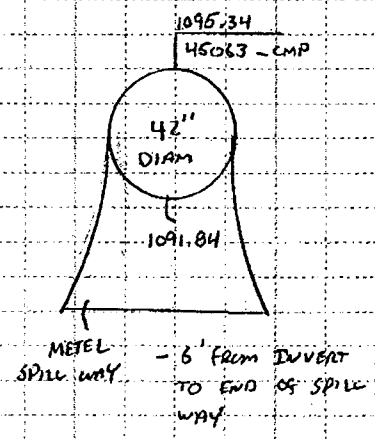
Description Name: I-10 STA. 5319+20 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure TOP OF CMP BENT

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure E2-5

ID 26

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

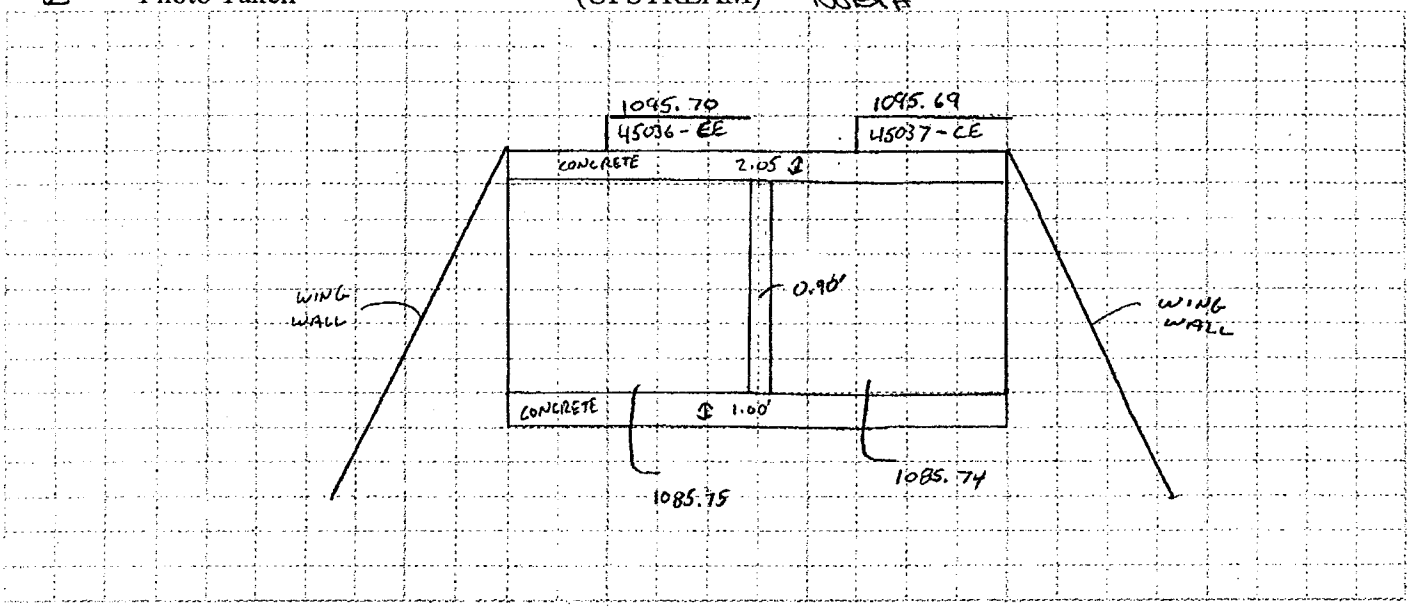
Wood/Patel Project #073087

Type of Structure: Box culvert 2- 10'x8' Date: 1-29-2008

File Name: Luke Wash 5345-52

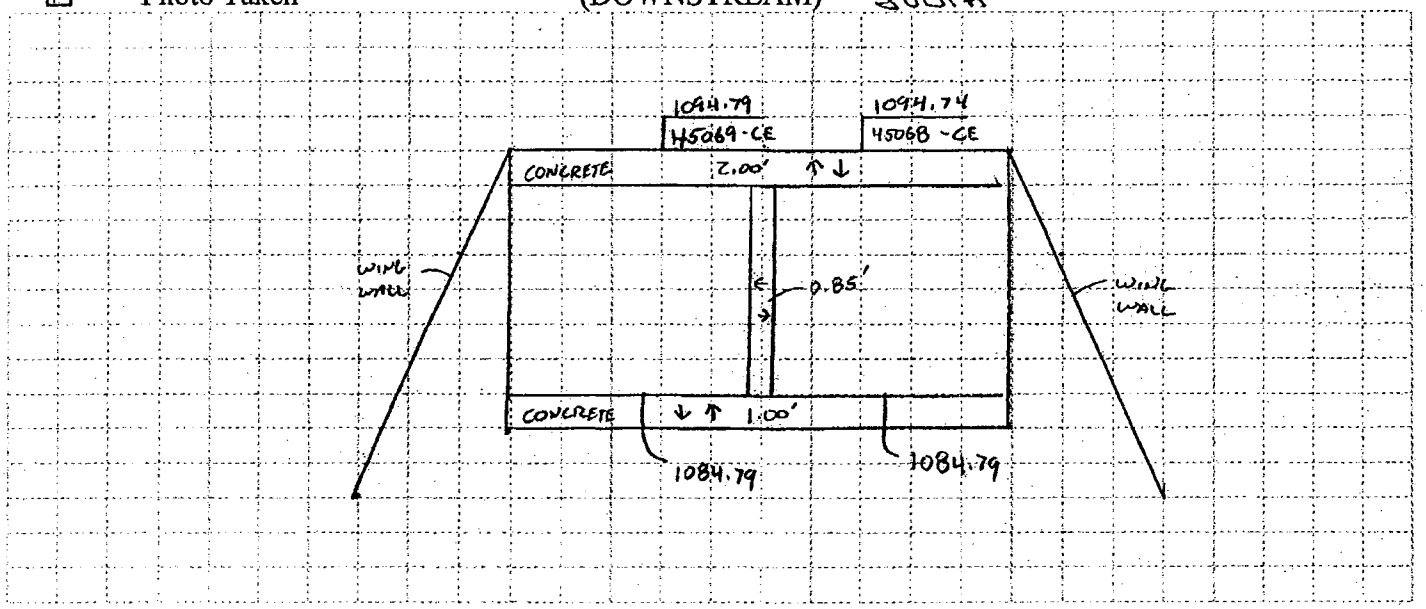
Description Name: I-10 STA. 5345+52 Party Chief: Jeff Lallier

☒ Photo Taken (UPSTREAM) North



General Condition of Structure Good

☒ Photo Taken (DOWNSTREAM) South



General Condition of Structure Good

E2-6

ID 28

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

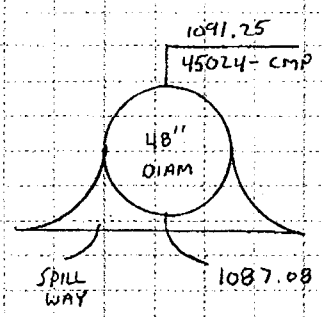
Wood/Patel Project #073087

Type of Structure: 48" CMP Date: 1-22-2008

File Name: LUKE WASH

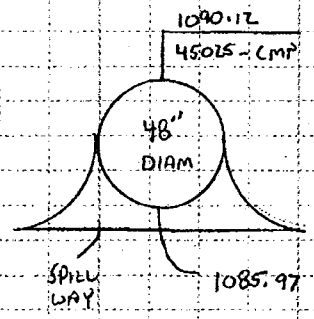
Description Name: I-10 STA. 5349+50 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-7

ID 30

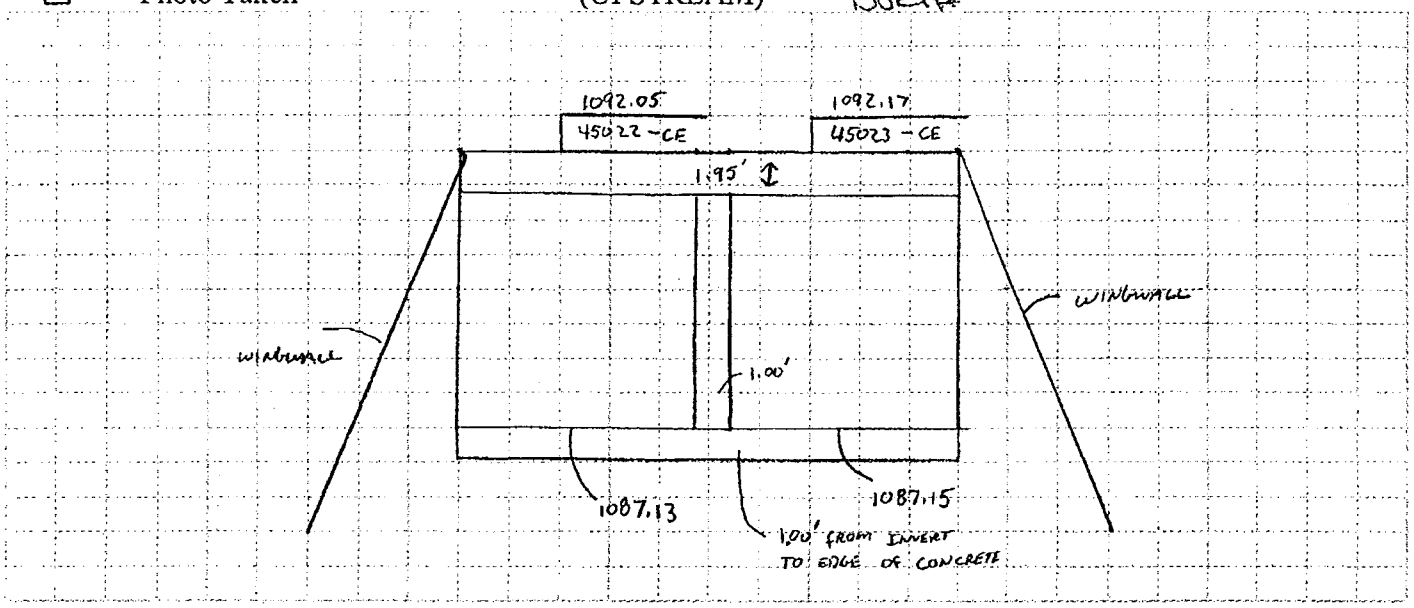
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: BOX CULVERT 2-10'x3' Date: 1-22-2008

File Name: LUKE WASH

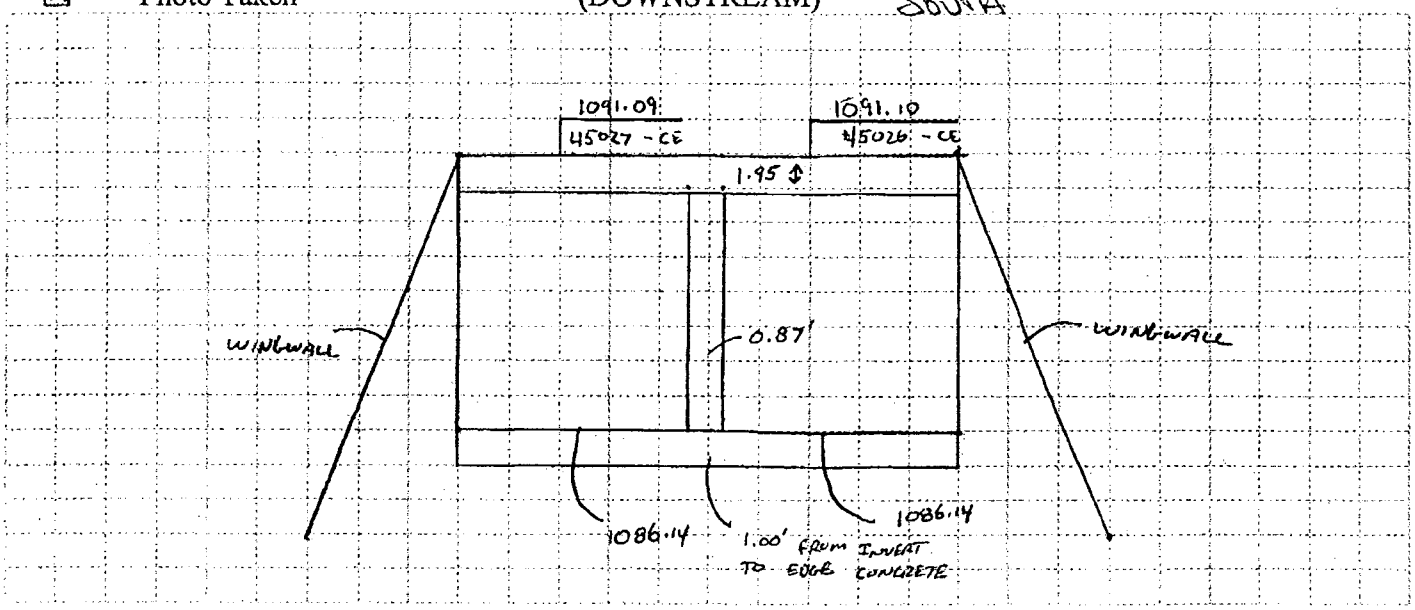
Description Name: I-10 STA. 5353+40 Party Chief: JEFF LALLIER

[X] Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

[X] Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-8

ID 32

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

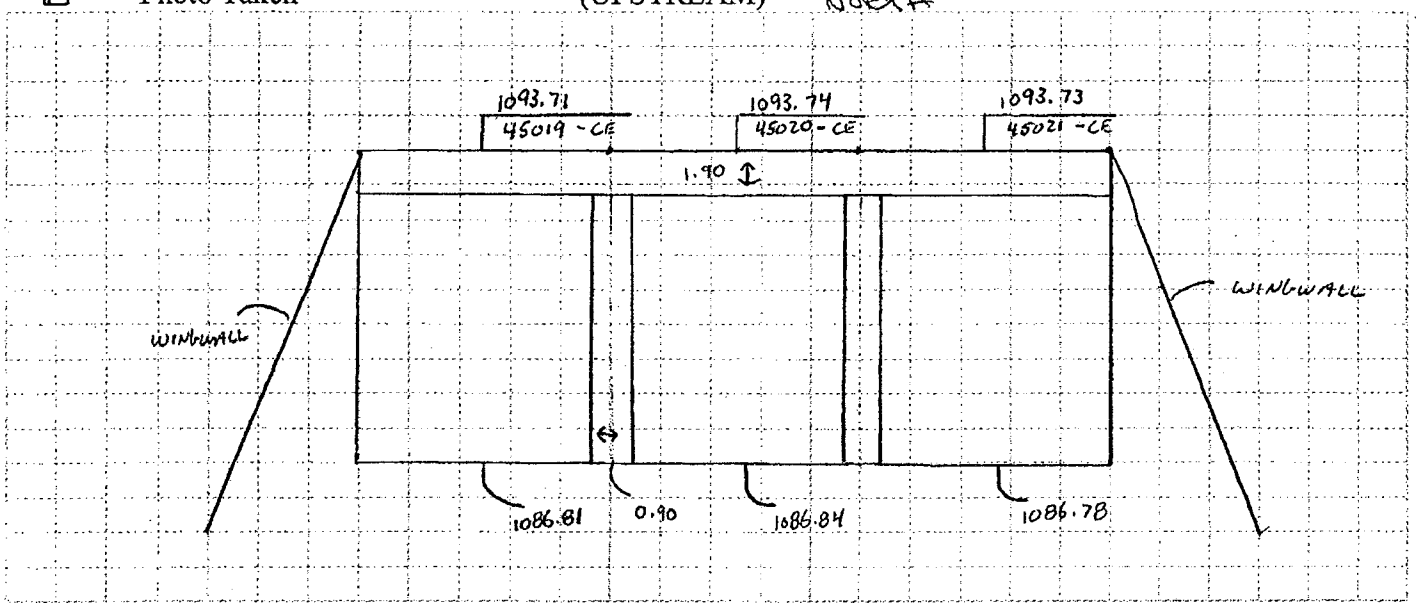
Wood/Patel Project #073087

Type of Structure: BOX CULVERT 3 - 10'x5 Date: 1-22-2008

File Name: LUKE WASH

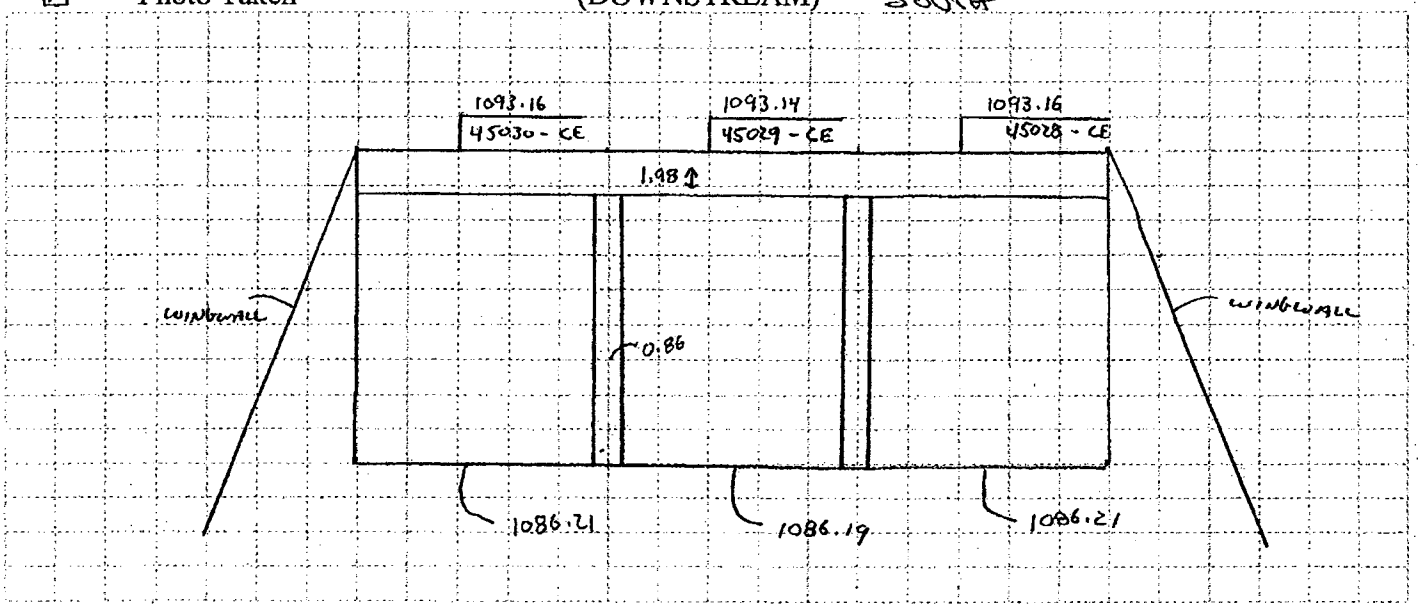
Description Name: I-10 STA. 5360+50 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-9

ID 36

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

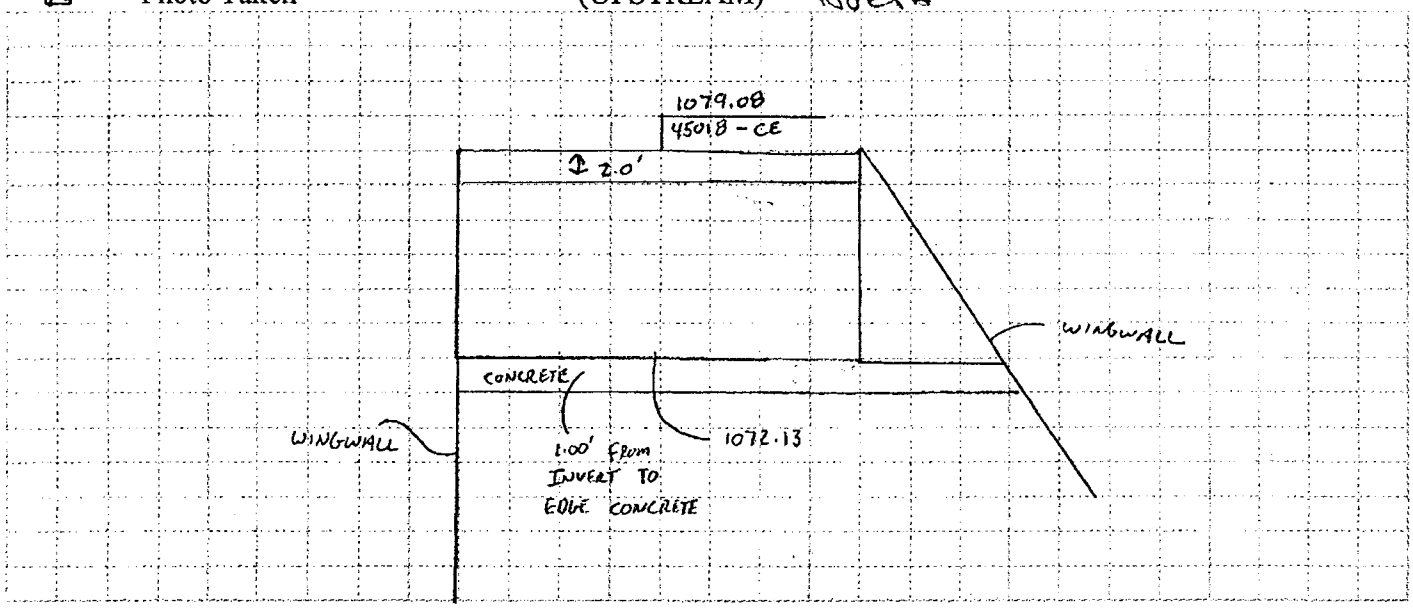
Wood/Patel Project #073087

Type of Structure: BOX CULVERT 10' x 5' Date: 1-22-2008

File Name: LUKE WASH

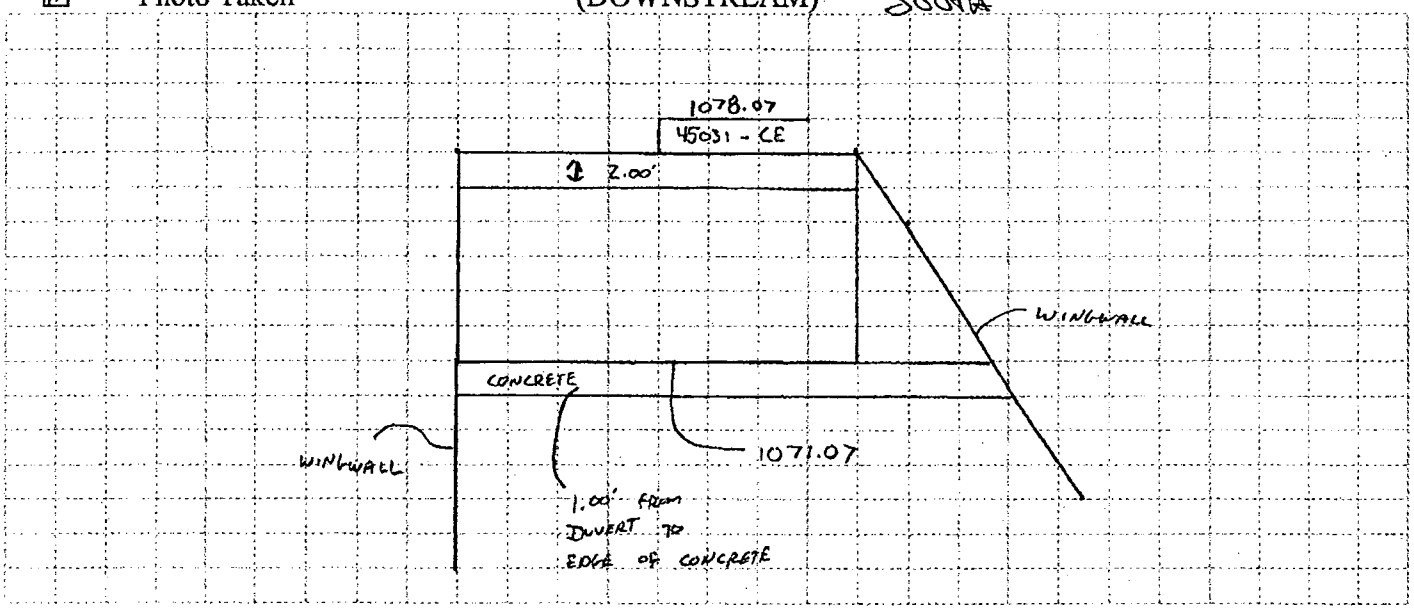
Description Name: I-10 STA. 5402+36 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-12

ID 38

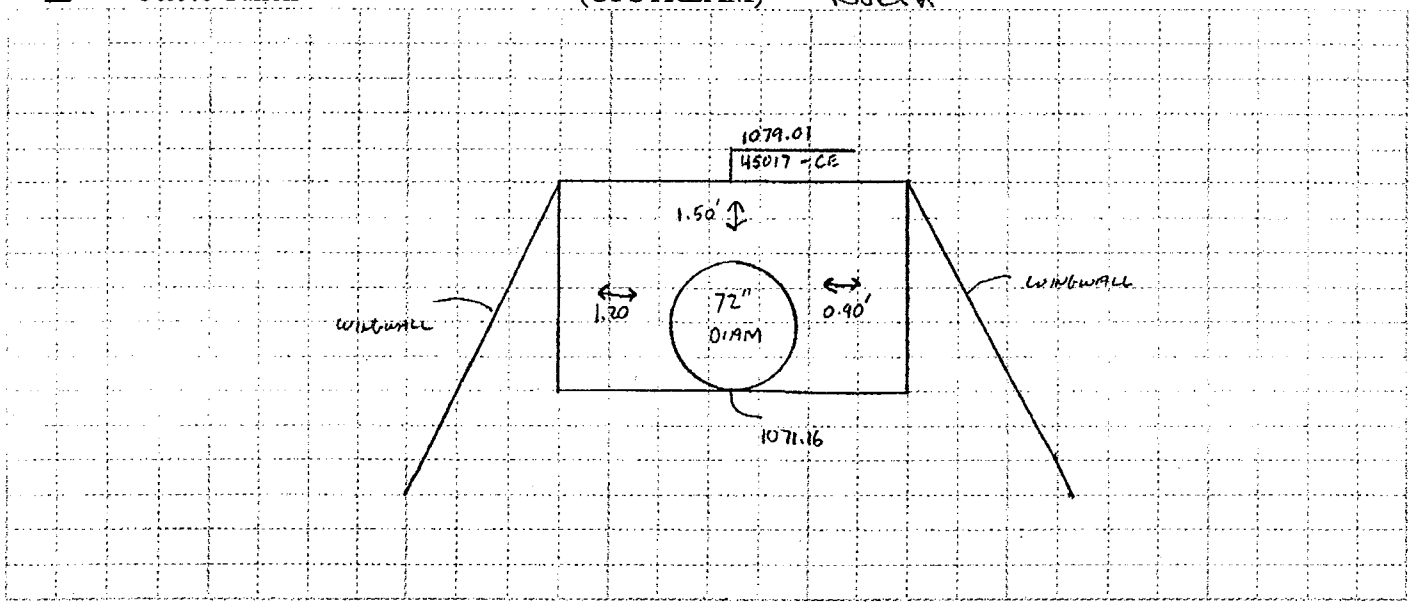
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: 72" CMP Date: 1-22-2008

File Name: LUKE WASH

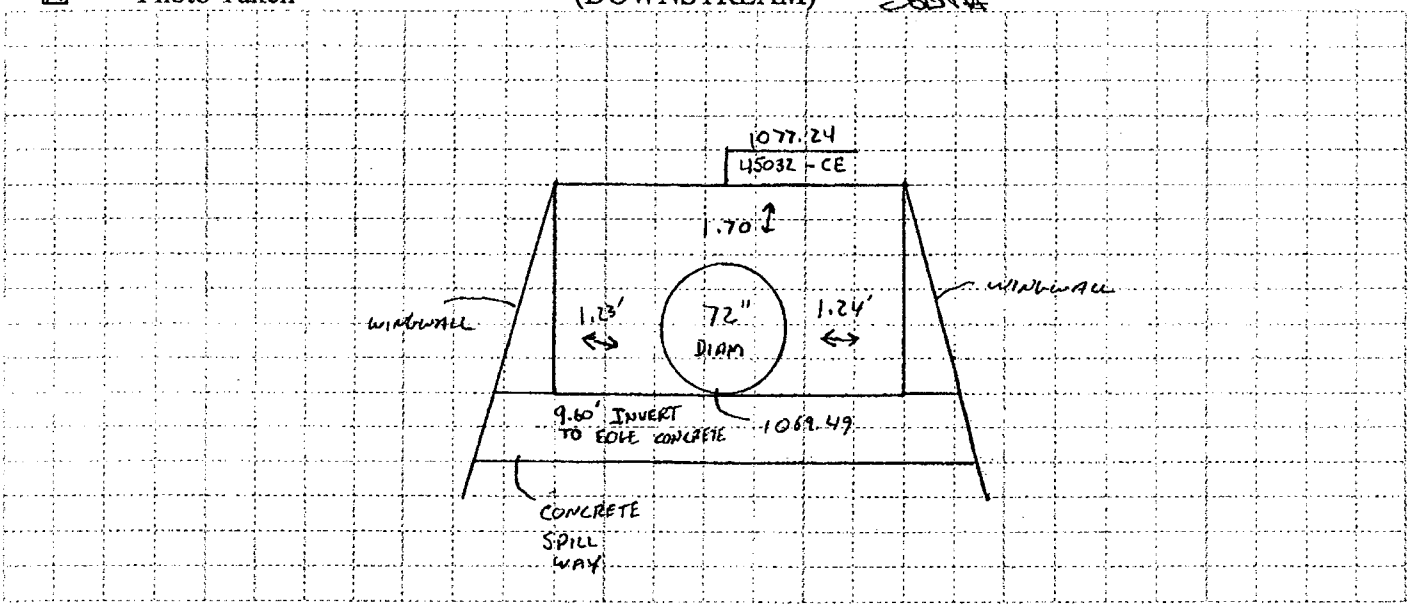
Description Name: I-10 STA. 5405+30 Party Chief: JEFF LALLIER

[X] Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

[X] Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-13

ID 50

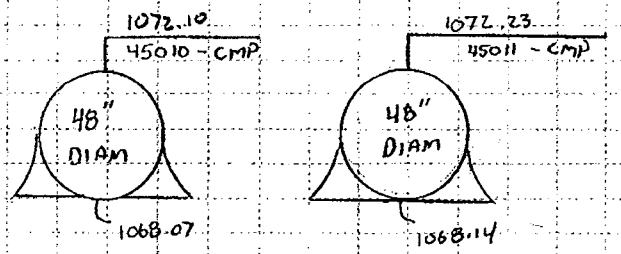
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: 48" CMP Date: 1-21-2008

File Name: LUKE WASH

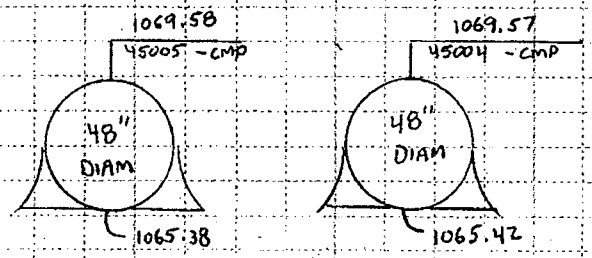
Description Name: I-10 STA. 5470 + 80 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-15

Y:\Survey\FCDMC Form2.doc

ID 52

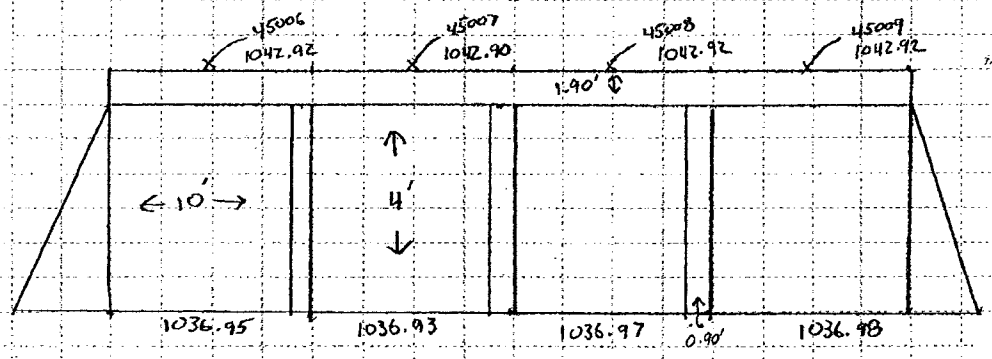
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: BOX CULVERT Date: 1-21-2008

File Name: LUKE WASH

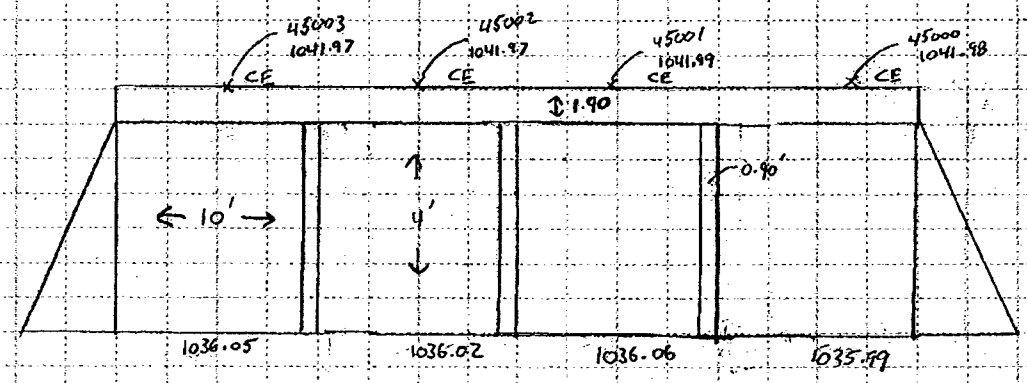
Description Name: T-10 STA. 5504 +40 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure GOOD

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure GOOD

E2-16

Y:\Survey\FCDMC Form2.doc

UPR 1

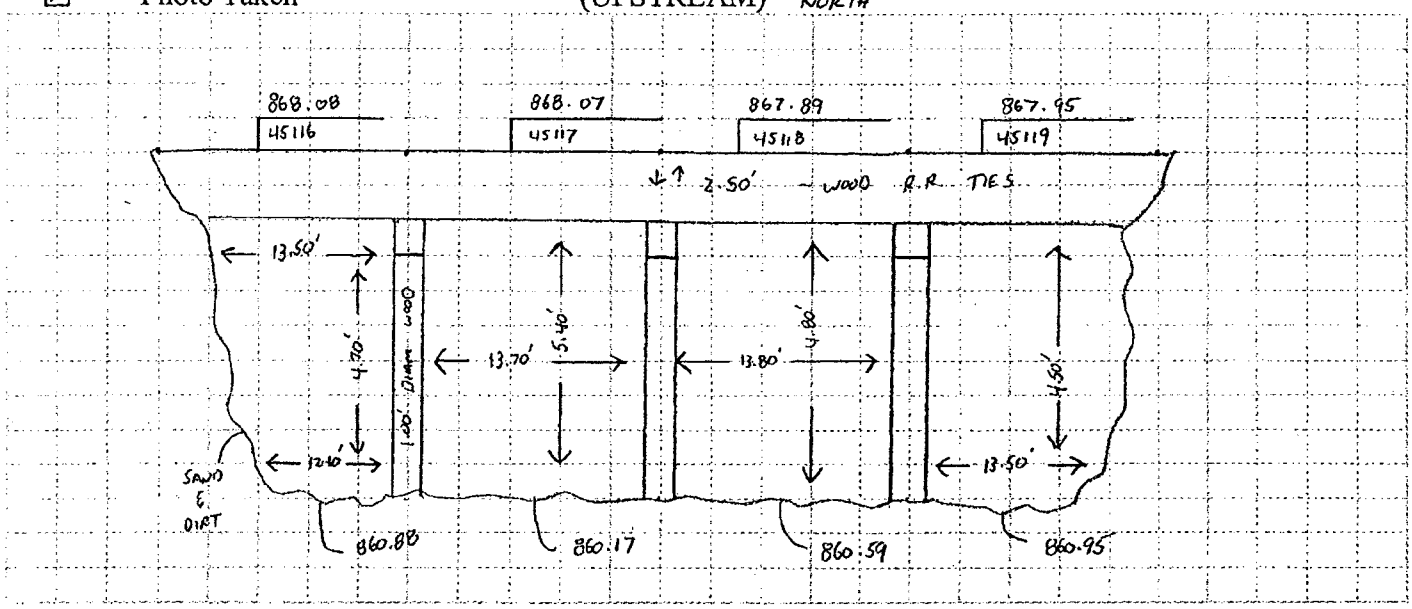
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: WOOD BRIDGE Date: 2-4-2008

File Name: LUKE WASH

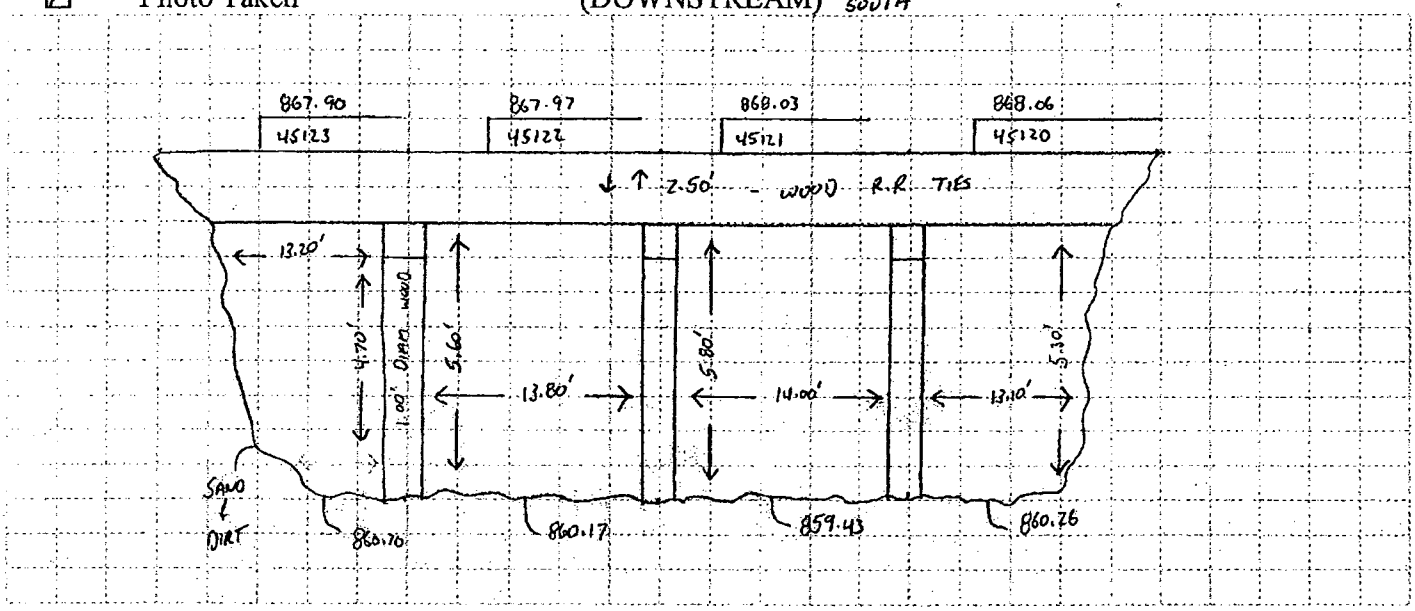
Description Name: UPR BRIDGE # 1 Party Chief: JEFF LALLER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure OK

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure OK

EZ-17

Y:\Survey\FCDMC Form2.doc

UPR 2

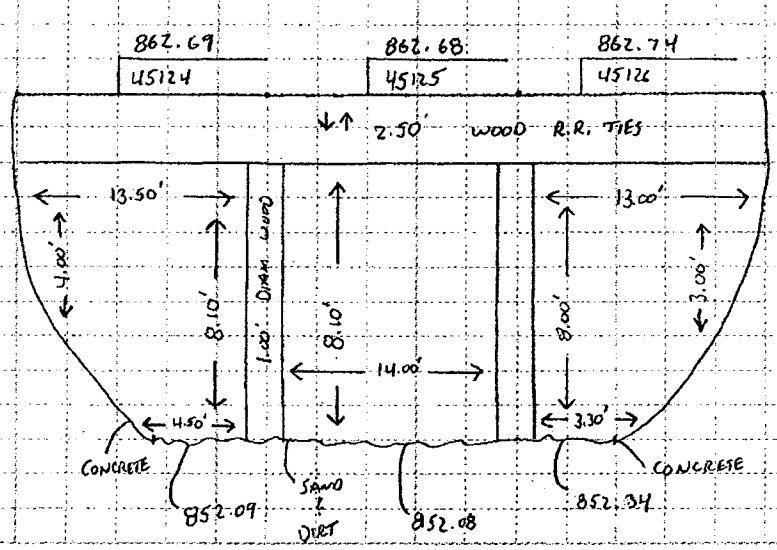
FCDMC Contract 2007C020
Task - Luke Wash Watershed Zone AE Floodplain Delineation Study
Structure Detail Worksheet
Wood/Patel Project #073087

Type of Structure: WOOD BRIDGE Date: 2-4-2008

File Name: LUKE WASH

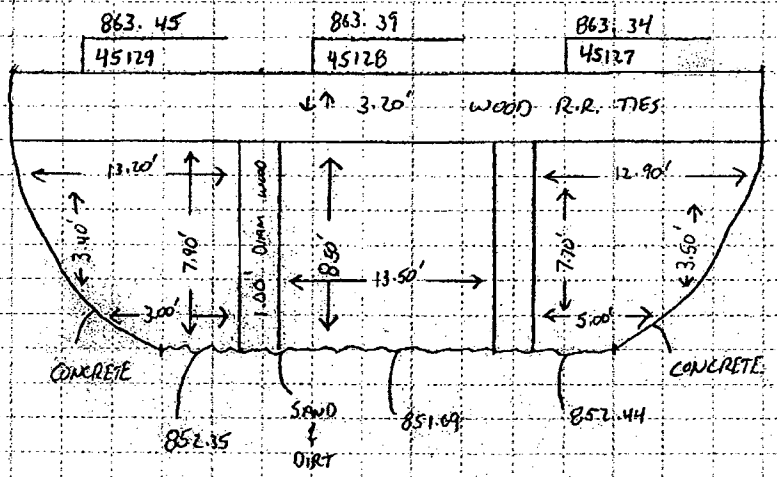
Description Name: UPR BRIDGE # 2 Party Chief: JEFF LALLIER

[X] Photo Taken (UPSTREAM) NORTH



General Condition of Structure OK

[X] Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure OK

E2-18

Y:\Survey\FCDMC Form2.doc

UPR 3

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

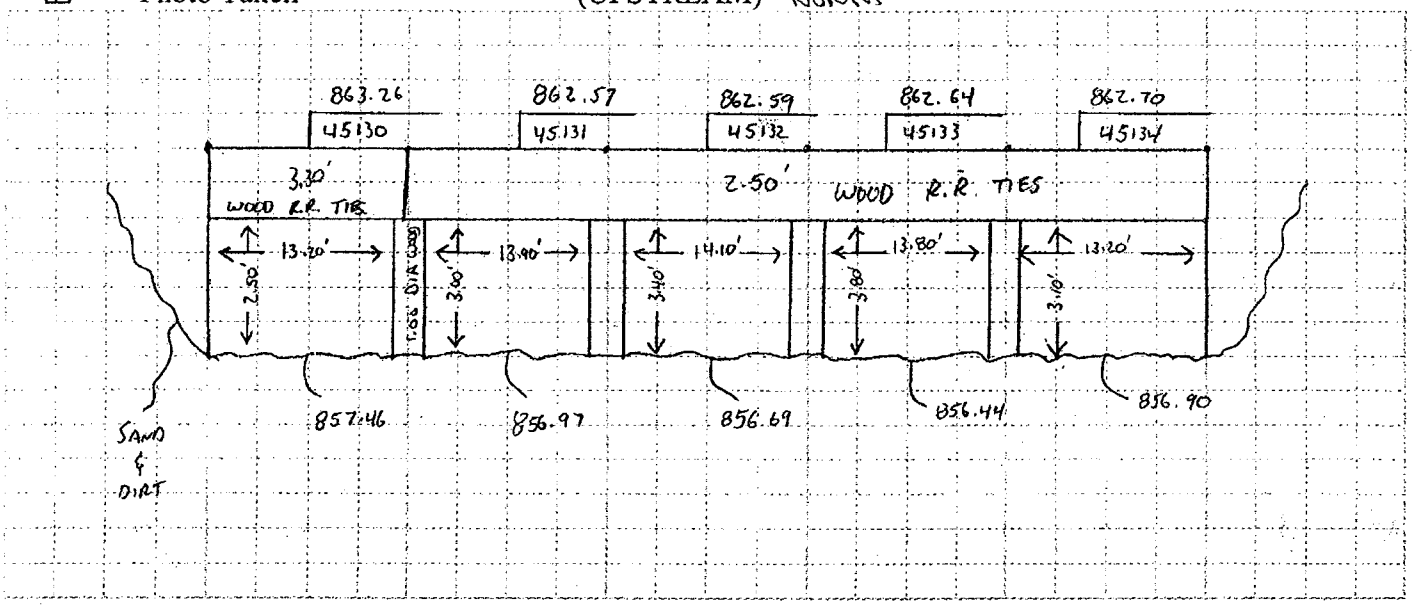
Wood/Patel Project #073087

Type of Structure: WOOD BRIDGE Date: 2-4-2008

File Name: LUKE WASH

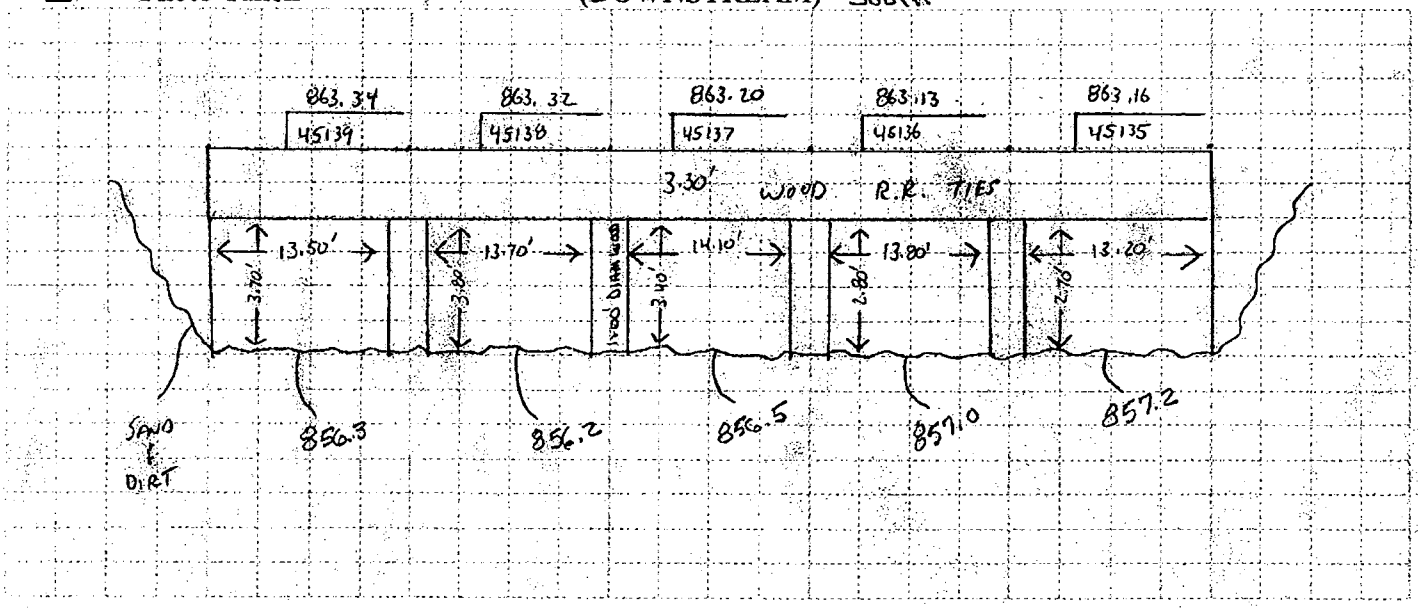
Description Name: UPR # 3 Party Chief: JEFF LALLIER

[X] Photo Taken (UPSTREAM) NORTH



General Condition of Structure OK

[X] Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure OK

E2-19

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UPR 4

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

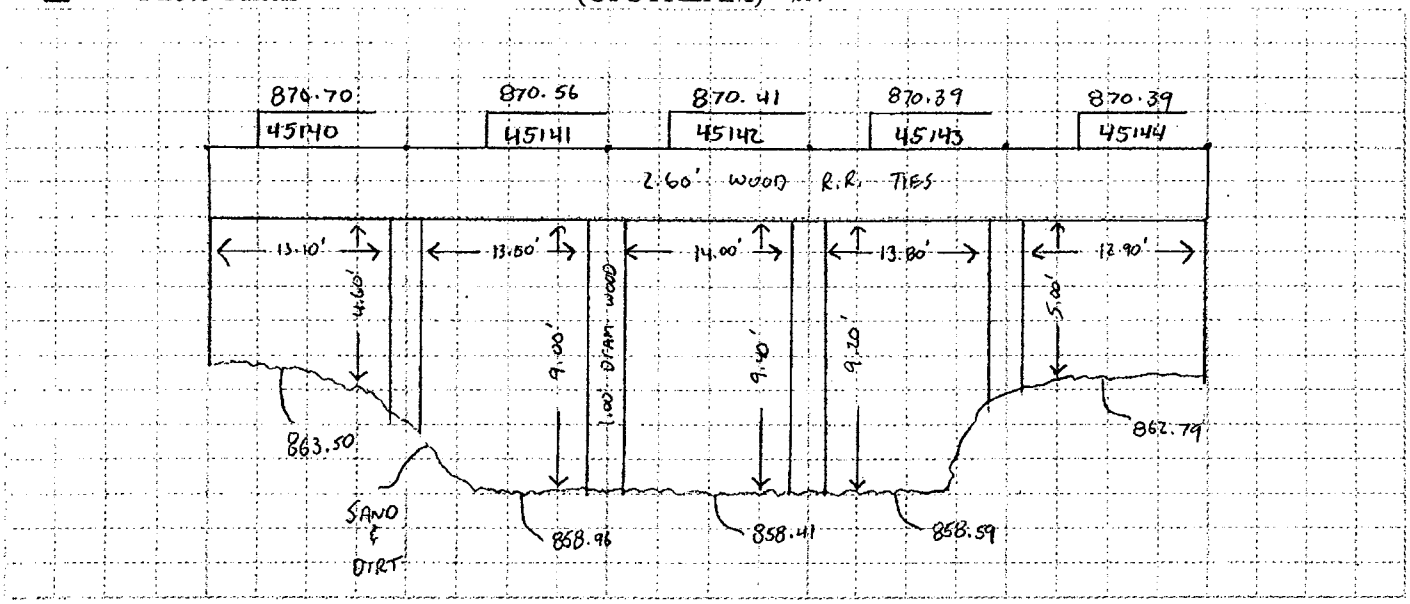
Wood/Patel Project #073087

Type of Structure: WOOD BRIDGE Date: 2-4-2008

File Name: LUKE WASH

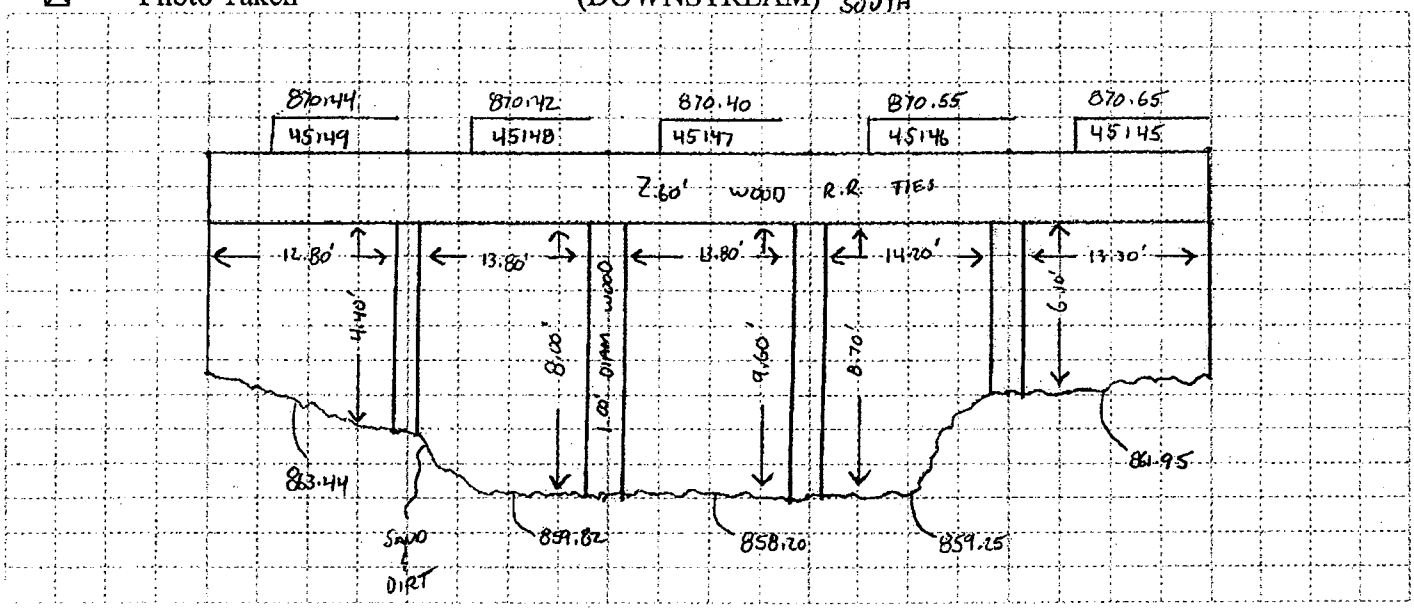
Description Name: UPR # 4 Party Chief: JEFF LALLIER

☒ Photo Taken (UPSTREAM) NORTH



General Condition of Structure OK

☒ Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure OK

E2-20

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UPR 5

FCDMC Contract 2007C020

Task - Luke Wash Watershed Zone AE Floodplain Delineation Study

Structure Detail Worksheet

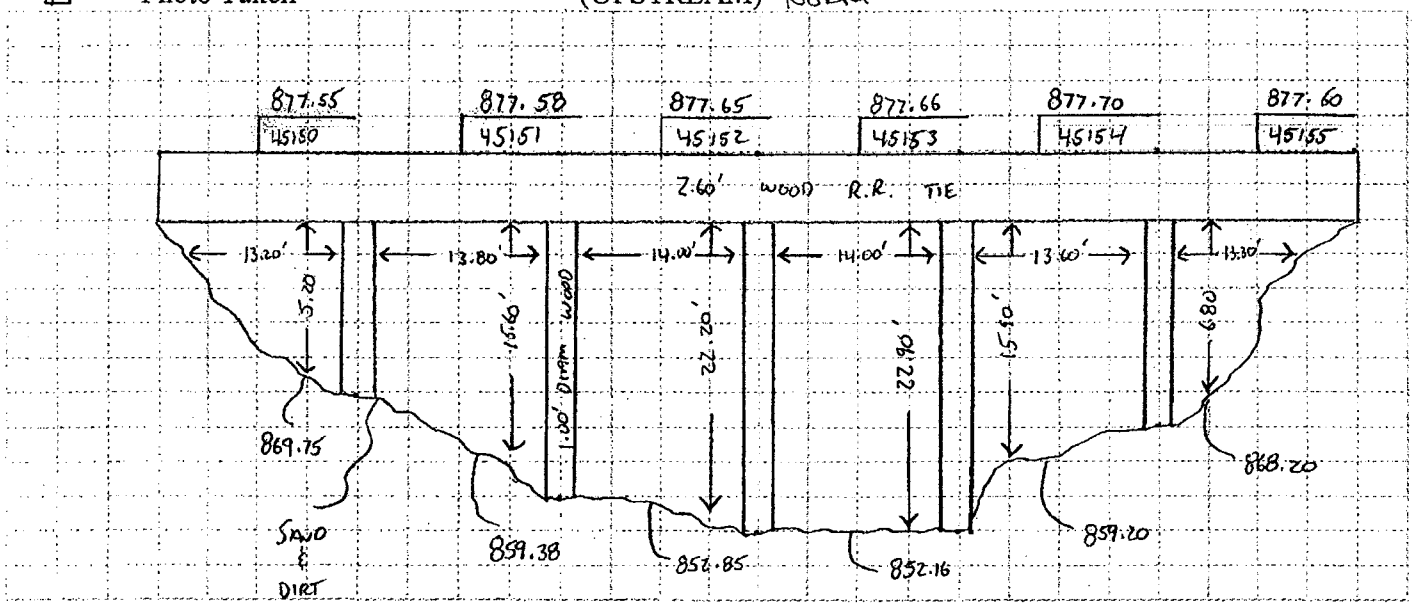
Wood/Patel Project #073087

Type of Structure: WOOD BRIDGE Date: 2-4-2008

File Name: LUKE WASH

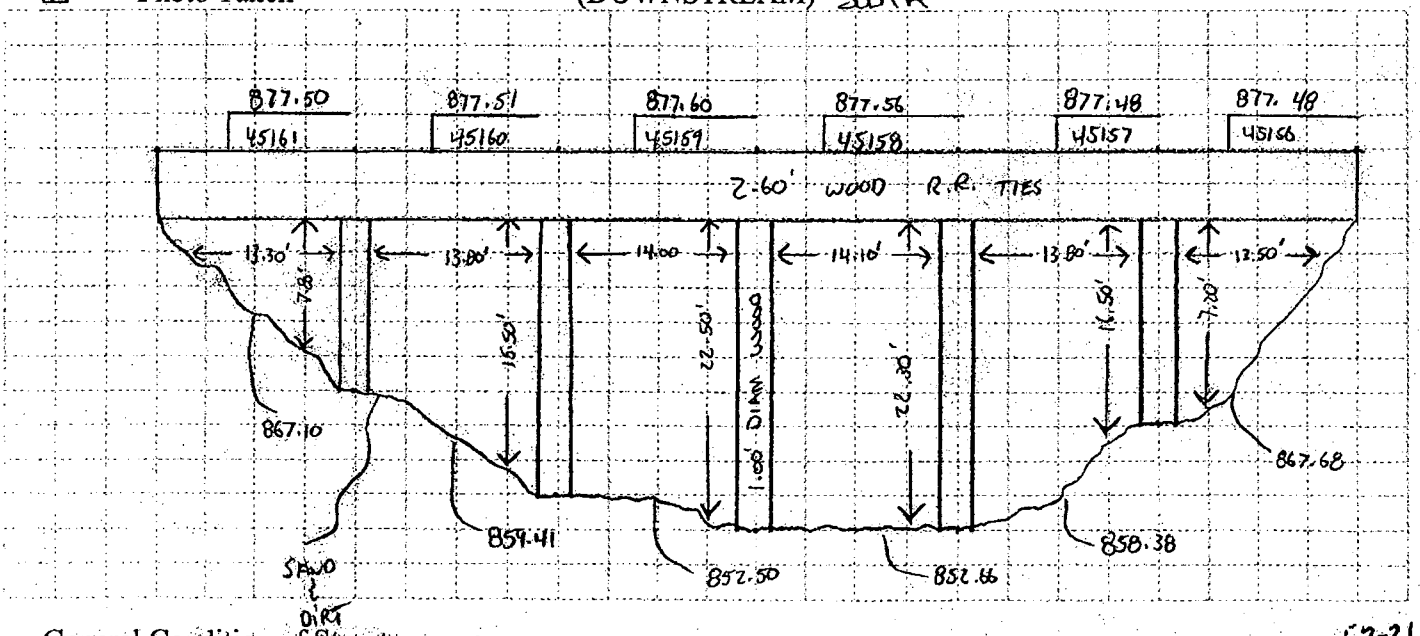
Description Name: UPR BRIDGE # 5 Party Chief: JEFF LALLIER

[X] Photo Taken (UPSTREAM) NORTH



General Condition of Structure OK

[X] Photo Taken (DOWNSTREAM) SOUTH



General Condition of Structure OK

E2-21

APPENDIX D4.1

Dodson Hydrocalc Hydraulics & Flowmaster Printouts

Culvert 10

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

July 10, 2008

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft)	3.5
FHWA Chart Number	2
FHWA Scale Number (Type of Culvert Entrance)	2
Manning's Roughness Coefficient (n-value)	0.024
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	213.0
Invert Elevation at Downstream end of Culvert (ft)	1,097.55
Invert Elevation at Upstream end of Culvert (ft)	1,098.18
Culvert Slope (ft/ft)	0.003
Starting Flow Rate (cfs)	5.0
Incremental Flow Rate (cfs)	10.0
Ending Flow Rate (cfs)	105.0
Starting Tailwater Depth (ft)	1.0
Incremental Tailwater Depth (ft)	0.2
Ending Tailwater Depth (ft)	3.0

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
5.0	1.0	0.93	1.09	0.97	0.67	1.0	2.2
15.0	1.2	1.67	1.95	1.76	1.18	1.2	5.14
25.0	1.4	2.25	2.62	2.46	1.54	1.54	6.14
35.0	1.6	2.75	3.24	3.5	1.83	1.83	6.86
45.0	1.8	3.22	3.96	3.5	2.09	2.09	7.5
55.0	2.0	3.68	4.61	3.5	2.32	2.32	8.12
65.0	2.2	4.36	5.71	3.5	2.53	2.53	8.74
75.0	2.4	5.45	6.96	3.5	2.71	2.71	9.38
85.0	2.6	6.25	8.37	3.5	2.87	2.87	10.06
95.0	2.8	7.15	9.88	3.5	3.01	3.01	10.79
105.0	3.0	8.15	11.55	3.5	3.12	3.12	11.59

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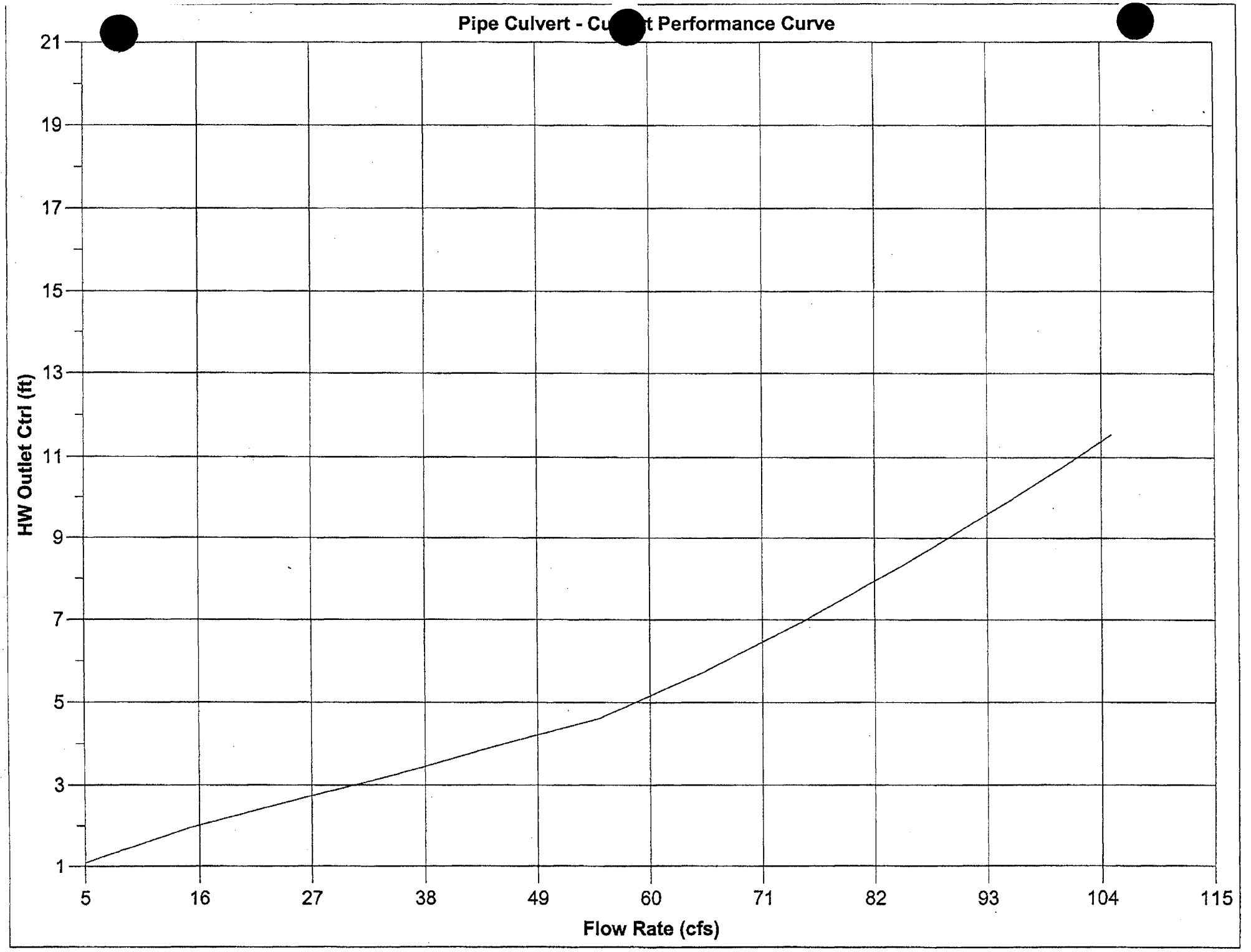

Pipe Culvert - Cu t Performance Curve
HW Outlet Ctrl (ft)
21
19
17
15
13
11
9
7
5
3
1
5
16
27
38
49
60
71
82
93
104
115
Flow Rate (cfs)

Worksheet for TailwaterSection_Culvert 10

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00600	ft/ft
Discharge	70.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+32	3.00
1+00	2.00
1+64	1.00
1+95	0.50
2+26	0.00
2+31	0.00
2+80	0.50
3+28	1.00
4+16	2.00
4+70	3.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+32, 3.00)	(1+95, 0.50)	0.050
(1+95, 0.50)	(2+80, 0.50)	0.065
(2+80, 0.50)	(4+70, 3.00)	0.500

Results

Normal Depth	1.63	ft
Elevation Range	0.00 to 3.00 ft	
Flow Area	217.87	ft²
Wetted Perimeter	259.57	ft
Top Width	259.54	ft
Normal Depth	1.63	ft

Worksheet for TailwaterSection_Culvert 10

Results

Critical Depth	0.51	ft
Critical Slope	2.28565	ft/ft
Velocity	0.32	ft/s
Velocity Head	0.00	ft
Specific Energy	1.63	ft
Froude Number	0.06	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.63	ft
Critical Depth	0.51	ft
Channel Slope	0.00600	ft/ft
Critical Slope	2.28565	ft/ft

Cross Section for TailwaterSection_Culvert 10

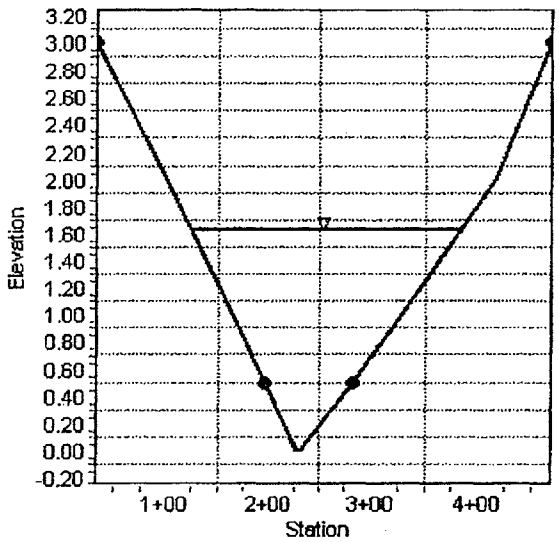
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

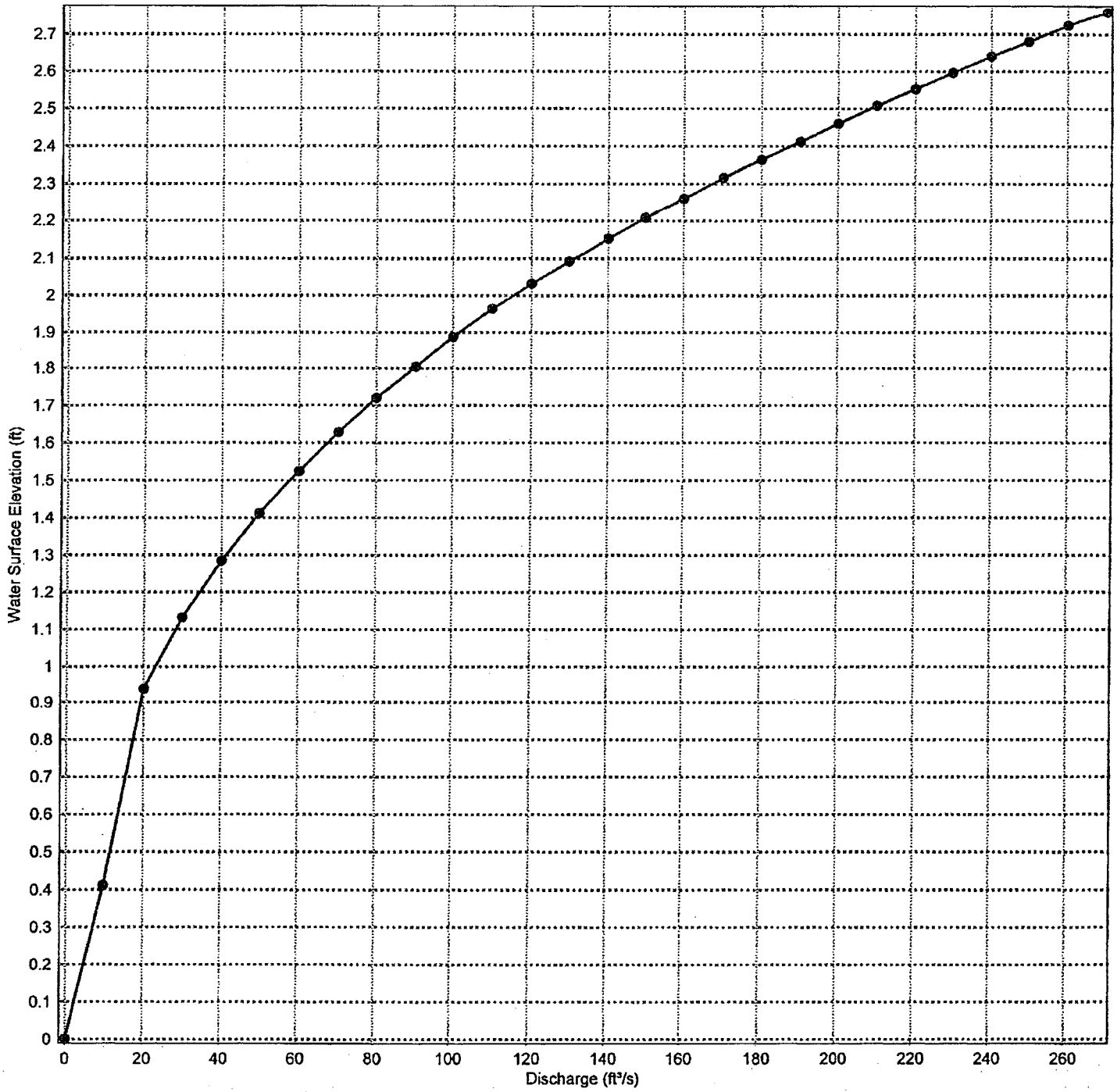
Input Data

Channel Slope	0.00600	ft/ft
Normal Depth	1.63	ft
Discharge	70.00	ft^3/s

Cross Section Image



Worksheet: TailwaterSection_Culvert 10
Water Surface Elevation (ft) vs Discharge (ft³/s)



Culvert 12

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

July 10, 2008

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft)	3.0
FHWA Chart Number	2
FHWA Scale Number (Type of Culvert Entrance)	2
Manning's Roughness Coefficient (n-value)	0.024
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	235.0
Invert Elevation at Downstream end of Culvert (ft)	1,093.76
Invert Elevation at Upstream end of Culvert (ft)	1,095.64
Culvert Slope (ft/ft)	0.008
Starting Flow Rate (cfs)	5.0
Incremental Flow Rate (cfs)	5.0
Ending Flow Rate (cfs)	45.0
Starting Tailwater Depth (ft)	0.4
Incremental Tailwater Depth (ft)	0.1
Ending Tailwater Depth (ft)	1.2

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
5.0	0.4	0.98	1.05	0.8	0.7	0.7	3.99
10.0	0.5	1.43	1.52	1.15	1.0	1.0	4.85
15.0	0.6	1.8	1.91	1.44	1.24	1.24	5.47
20.0	0.7	2.13	2.25	1.71	1.44	1.44	5.99
25.0	0.8	2.44	2.58	1.98	1.61	1.61	6.45
30.0	0.9	2.74	2.91	2.29	1.77	1.77	6.89
35.0	1.0	3.03	3.3	3.0	1.92	1.92	7.31
40.0	1.1	3.31	3.6	3.0	2.06	2.06	7.73
45.0	1.2	3.89	4.58	3.0	2.19	2.19	8.16

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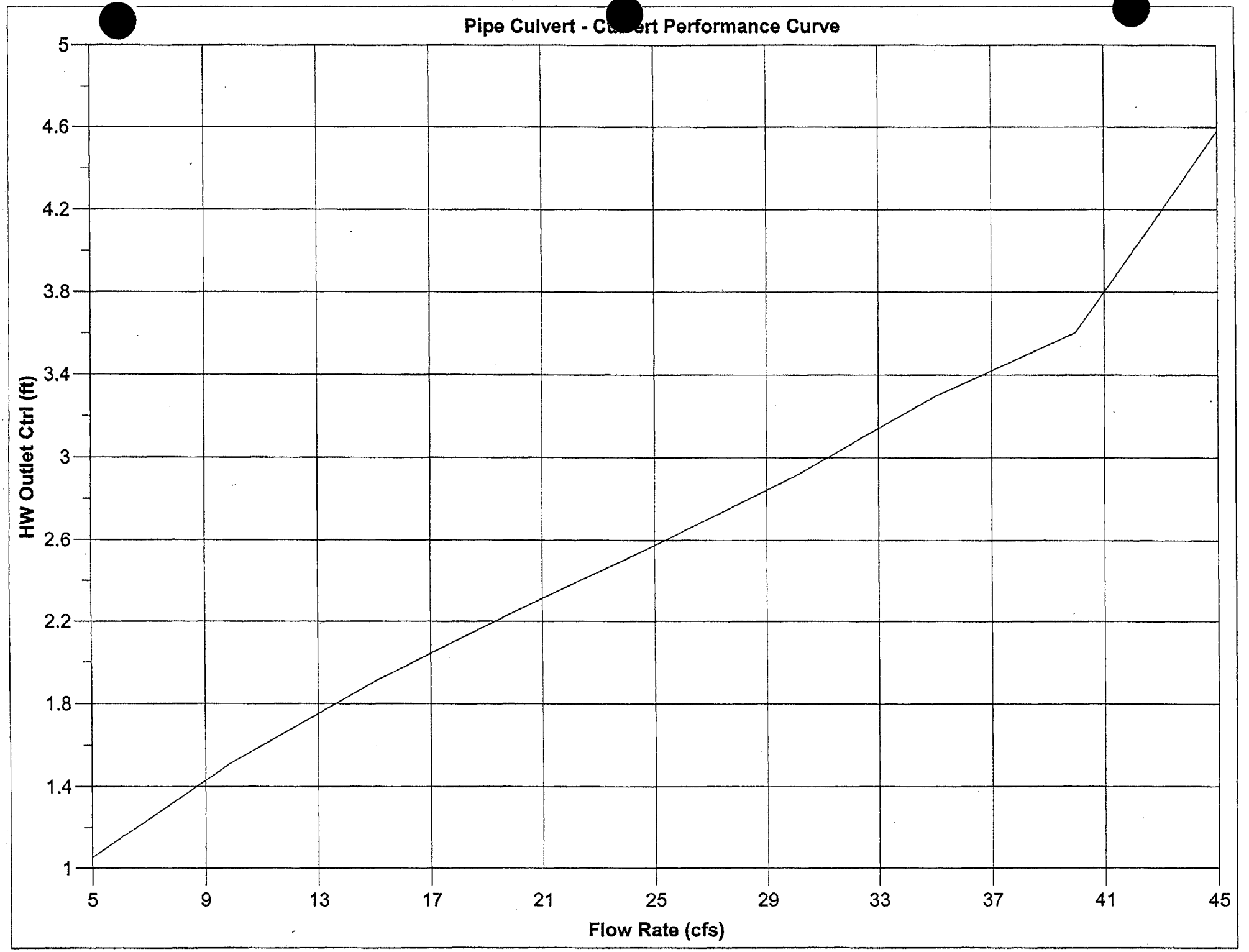

Pipe Culvert - Culvert Performance Curve
HW Outlet Ctrl (ft)
5
4.6
4.2
3.8
3.4
3
2.6
2.2
1.8
1.4
1
5
9
13
17
21
25
29
33
37
41
45
Flow Rate (cfs)

Worksheet for TailwaterSection_Culvert 12

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00500	ft/ft
Discharge	36.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
1+00	2.00
1+71	1.00
2+08	0.50
2+45	0.00
2+55	0.00
2+81	0.50
3+07	1.00
3+58	2.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(1+00, 2.00)	(2+08, 0.50)	0.050
(2+08, 0.50)	(2+81, 0.50)	0.065
(2+81, 0.50)	(3+58, 2.00)	0.050

Results

Normal Depth	0.71	ft
Elevation Range	0.00 to 2.00 ft	
Flow Area	39.20	ft²
Wetted Perimeter	99.91	ft
Top Width	99.89	ft
Normal Depth	0.71	ft
Critical Depth	0.39	ft
Critical Slope	0.08988	ft/ft

Worksheet for TailwaterSection_Culvert 12

Results

Velocity	0.92	ft/s
Velocity Head	0.01	ft
Specific Energy	0.73	ft
Froude Number	0.26	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.71	ft
Critical Depth	0.39	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.08988	ft/ft

Cross Section for TailwaterSection_Culvert 12

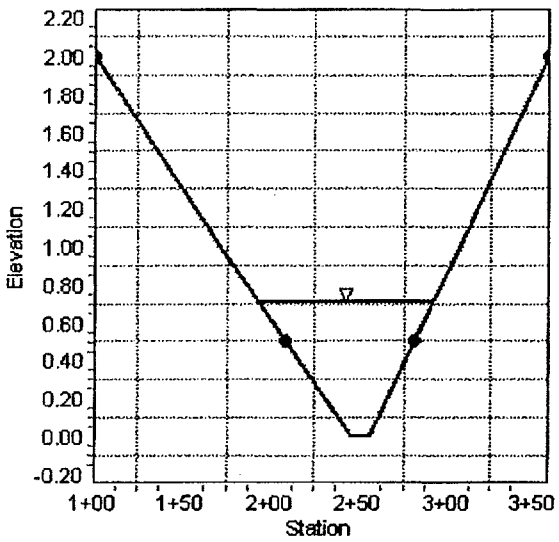
Project Description

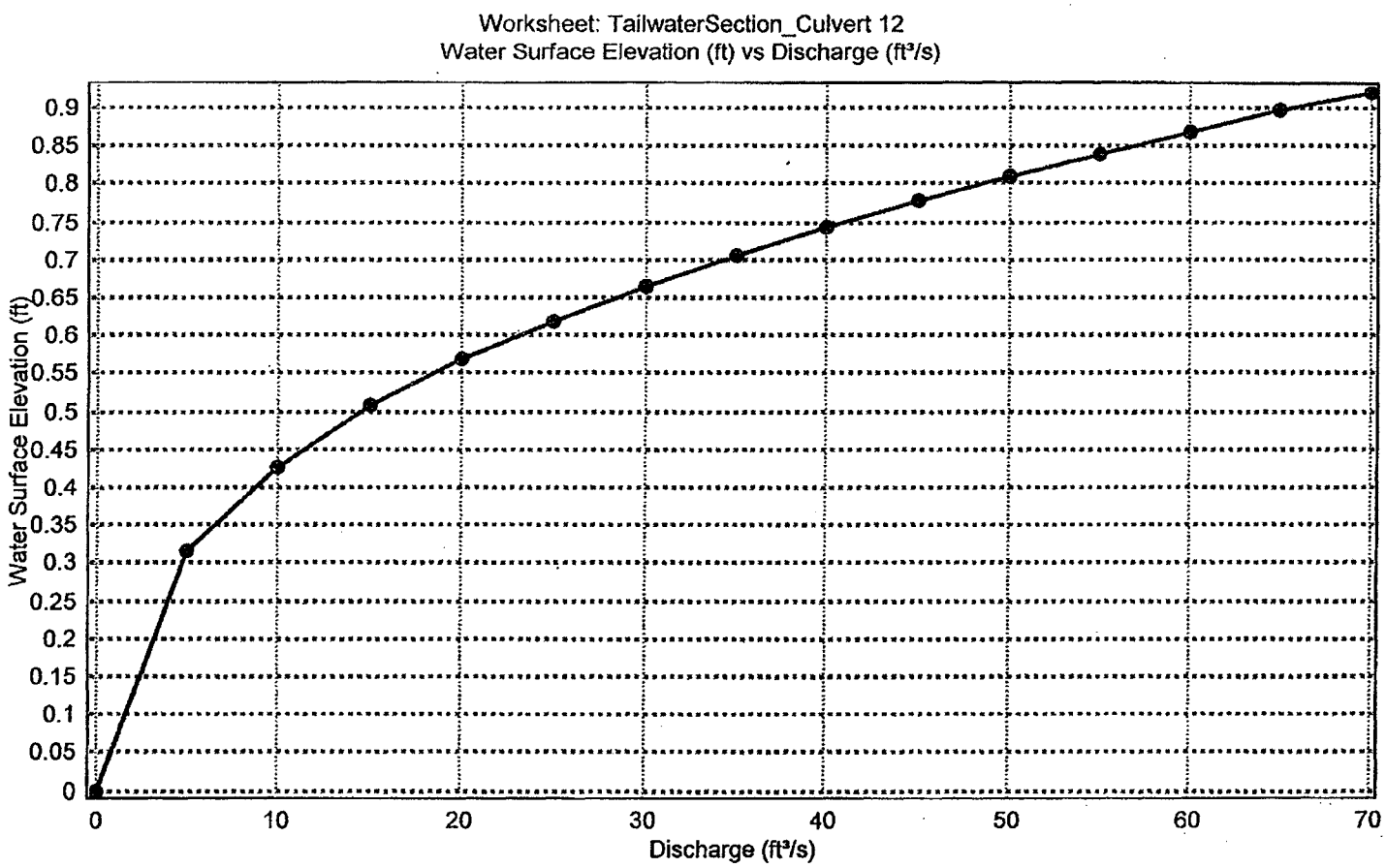
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.71	ft
Discharge	36.00	ft^3/s

Cross Section Image




Worksheet: TailwaterSection_Culvert 12
Water Surface Elevation (ft) vs Discharge (ft³/s)
Water Surface Elevation (ft)
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0
10
20
30
40
50
60
70
Discharge (ft³/s)

Culvert 50

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

July 10, 2008

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft)	4.0
FHWA Chart Number	2
FHWA Scale Number (Type of Culvert Entrance)	2
Manning's Roughness Coefficient (n-value)	0.024
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	311.0
Invert Elevation at Downstream end of Culvert (ft)	1,065.4
Invert Elevation at Upstream end of Culvert (ft)	1,068.11
Culvert Slope (ft/ft)	0.0087
Starting Flow Rate (cfs)	5.0
Incremental Flow Rate (cfs)	10.0
Ending Flow Rate (cfs)	125.0
Starting Tailwater Depth (ft)	2.1
Incremental Tailwater Depth (ft)	0.2
Ending Tailwater Depth (ft)	4.5

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
5.0	2.1	0.9	0.97	0.71	0.65	2.1	0.75
15.0	2.3	1.61	1.72	1.23	1.13	2.3	2.01
25.0	2.5	2.13	2.26	1.62	1.48	2.5	3.03
35.0	2.7	2.59	2.72	1.96	1.76	2.7	3.88
45.0	2.9	3.0	3.14	2.28	2.01	2.9	4.61
55.0	3.1	3.4	3.54	2.6	2.23	3.1	5.26
65.0	3.3	3.78	3.95	2.95	2.43	3.3	5.86
75.0	3.5	4.15	4.43	3.41	2.62	3.5	6.43
85.0	3.7	4.52	4.92	4.0	2.79	3.7	7.0
95.0	3.9	5.48	6.26	4.0	2.95	3.9	7.61
105.0	4.1	6.26	8.68	4.0	3.1	4.0	8.36
115.0	4.3	6.9	10.34	4.0	3.24	4.0	9.15
125.0	4.5	7.61	12.12	4.0	3.36	4.0	9.95

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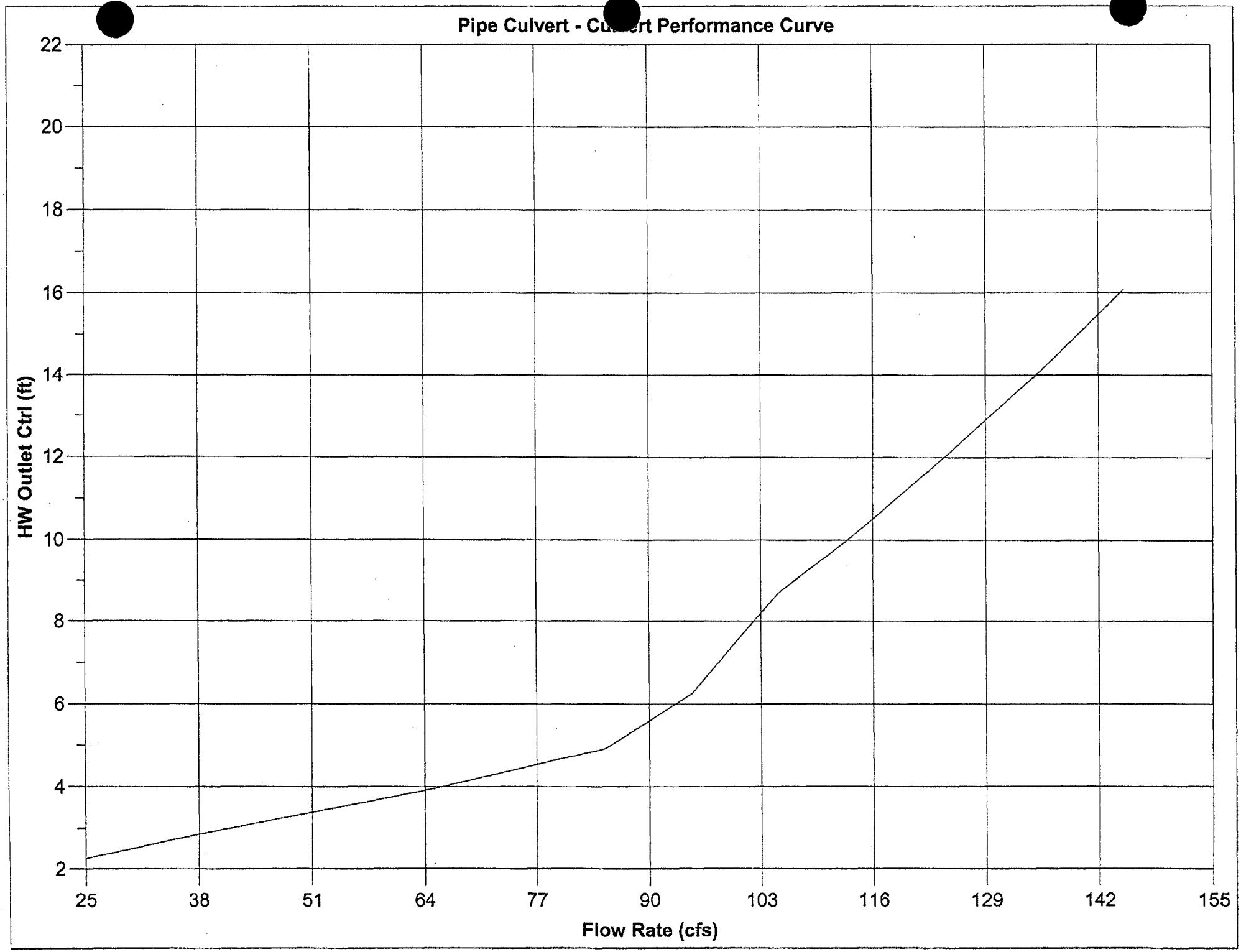

Pipe Culvert - Culvert Performance Curve
HW Outlet Ctrl (ft)
22
20
18
16
14
12
10
8
6
4
2
25
38
51
64
77
90
103
116
129
142
155
Flow Rate (cfs)

Worksheet for TailwaterSection_Culvert 50

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00500	ft/ft
Discharge	190.00	ft^3/s

Section Definitions

Station (ft)	Elevation (ft)
0+97	5.00
1+00	4.00
1+05	1.00
1+06	0.00
1+08	0.00
1+10	1.00
1+13	2.00
1+72	4.00
1+84	5.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+97, 5.00)	(1+05, 1.00)	0.055
(1+05, 1.00)	(1+10, 1.00)	0.045
(1+10, 1.00)	(1+84, 5.00)	0.055

Results

Normal Depth	3.91	ft
Elevation Range	0.00 to 5.00 ft	
Flow Area	86.14	ft^2
Wetted Perimeter	70.84	ft
Top Width	69.19	ft
Normal Depth	3.91	ft
Critical Depth	2.99	ft

Worksheet for TailwaterSection_Culvert 50

Results

Critical Slope		0.04682	ft/ft
Velocity		2.21	ft/s
Velocity Head		0.08	ft
Specific Energy		3.99	ft
Froude Number		0.35	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.91	ft
Critical Depth	2.99	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.04682	ft/ft

Cross Section for TailwaterSection_Culvert 50

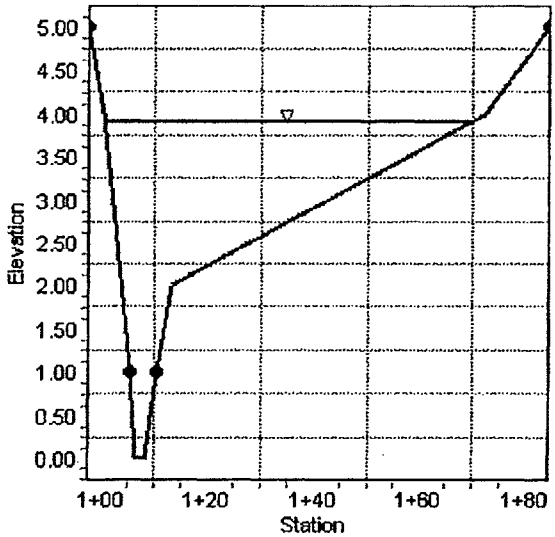
Project Description

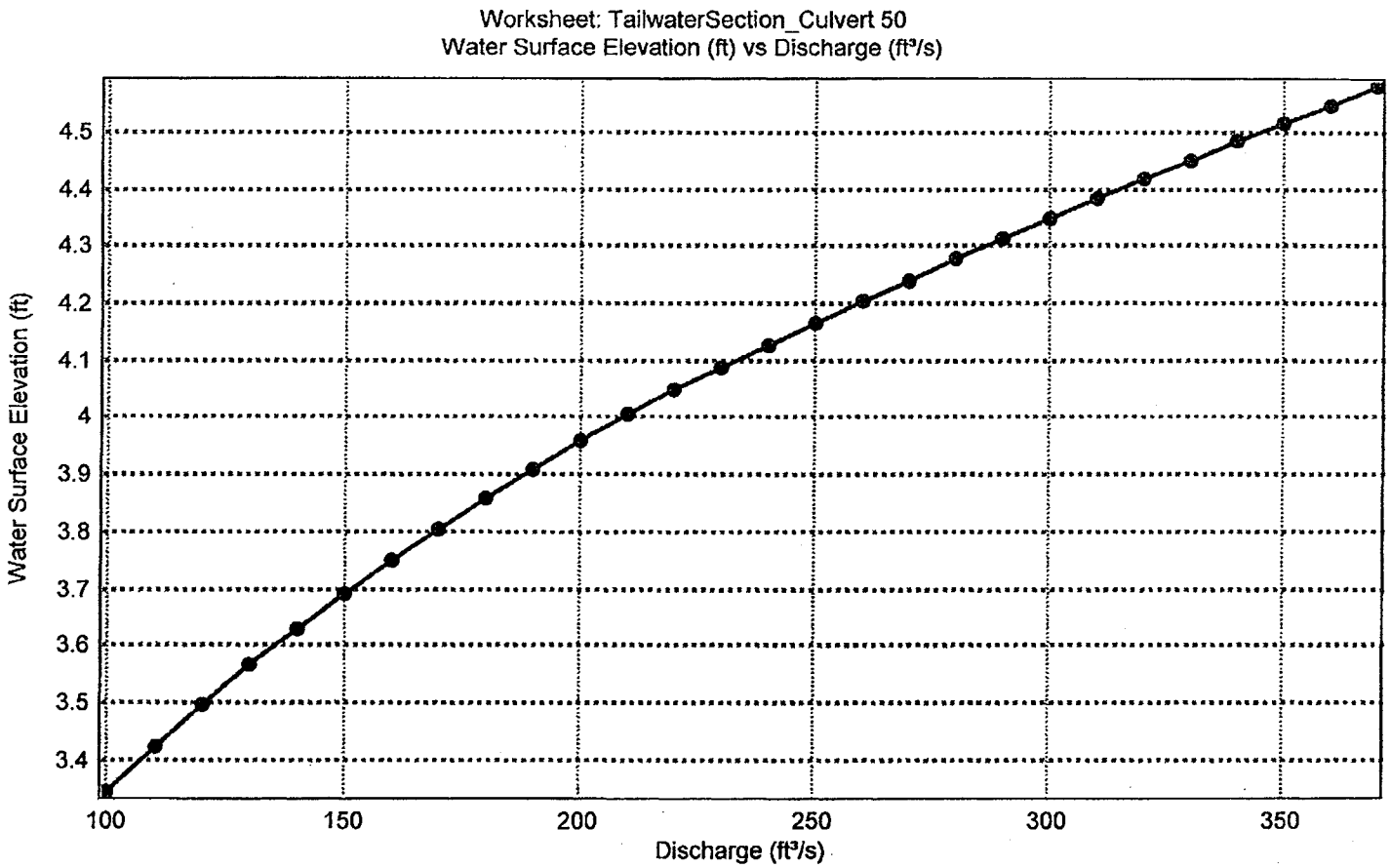
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	3.91	ft
Discharge	190.00	ft^3/s

Cross Section Image

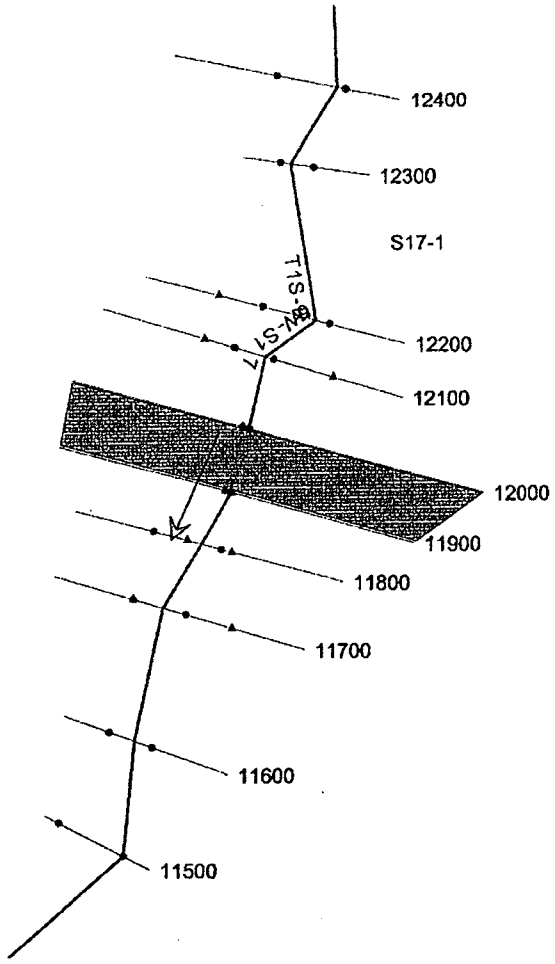



Worksheet: TailwaterSection_Culvert 50
Water Surface Elevation (ft) vs Discharge (ft³/s)
Water Surface Elevation (ft)
4.5
4.4
4.3
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
100
150
200
250
300
350
Discharge (ft³/s)

APPENDIX D4.2

HEC-RAS Printouts

HEC-RAS Model for Structure (14)



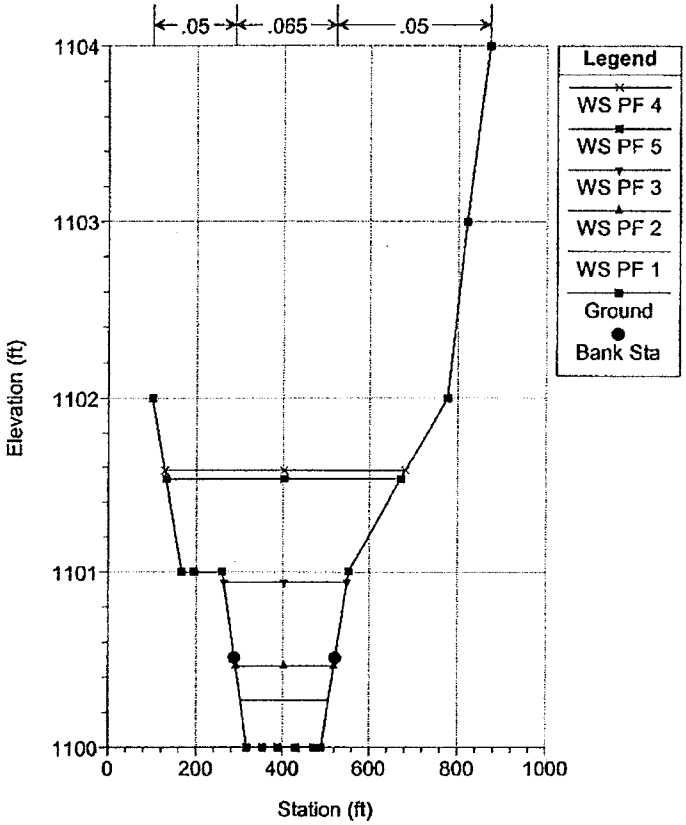
HEC-RAS Plan: FDS River: T1S-R5W-S17 Reach: S17-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
S17-1	12400	PF 1	50.00	1100.00	1100.27	1100.14	1100.28	0.011812	0.98	51.01	205.82	0.35
S17-1	12400	PF 2	100.00	1100.00	1100.46	1100.22	1100.48	0.007332	1.07	93.11	229.07	0.30
S17-1	12400	PF 3	300.00	1100.00	1100.94	1100.43	1100.97	0.004654	1.42	216.01	286.31	0.27
S17-1	12400	PF 4	700.00	1100.00	1101.58		1101.61	0.002705	1.57	505.88	554.11	0.22
S17-1	12400	PF 5	1000.00	1100.00	1101.53		1101.61	0.006385	2.36	479.37	540.05	0.34
S17-1	12300	PF 1	50.00	1098.00	1098.71	1098.33	1098.72	0.003061	0.82	62.75	147.60	0.20
S17-1	12300	PF 2	100.00	1098.00	1098.89		1098.91	0.004165	1.17	91.43	177.13	0.25
S17-1	12300	PF 3	300.00	1098.00	1099.24		1099.30	0.007363	2.03	163.23	232.93	0.35
S17-1	12300	PF 4	700.00	1098.00	1099.20	1099.20	1099.55	0.046980	5.00	154.23	226.81	0.87
S17-1	12300	PF 5	1000.00	1098.00	1100.46		1100.52	0.002489	1.97	550.40	357.73	0.23
S17-1	12200	PF 1	50.00	1096.00	1096.28	1096.13	1096.29	0.008589	0.86	58.19	225.25	0.30
S17-1	12200	PF 2	100.00	1096.00	1096.47	1096.20	1096.49	0.005569	0.96	104.31	247.59	0.26
S17-1	12200	PF 3	300.00	1096.00	1097.01	1096.40	1097.04	0.002975	1.21	254.77	309.20	0.22
S17-1	12200	PF 4	700.00	1096.00	1098.34	1096.69	1098.35	0.000627	0.99	782.24	664.87	0.12
S17-1	12200	PF 5	1000.00	1096.00	1100.42	1096.86	1100.42	0.000053	0.45	2503.78	899.70	0.04
S17-1	12100	PF 1	50.00	1094.50	1095.41	1094.91	1095.43	0.003364	0.93	53.92	92.17	0.21
S17-1	12100	PF 2	100.00	1094.50	1095.77	1095.09	1095.79	0.003210	1.09	91.37	117.60	0.22
S17-1	12100	PF 3	300.00	1094.50	1096.63	1095.53	1096.66	0.001727	1.26	266.43	367.19	0.18
S17-1	12100	PF 4	700.00	1094.50	1098.28	1096.10	1098.29	0.000261	0.80	953.11	789.80	0.08
S17-1	12100	PF 5	1000.00	1094.50	1100.41	1096.39	1100.41	0.000023	0.34	3266.63	990.03	0.03
S17-1	12000	PF 1	50.00	1092.56	1093.27	1093.12	1093.45	0.033498	3.34	14.97	22.01	0.70
S17-1	12000	PF 2	100.00	1092.56	1093.73	1093.45	1093.99	0.025968	4.08	24.50	22.65	0.67
S17-1	12000	PF 3	300.00	1092.56	1095.10	1094.40	1095.59	0.017510	5.63	53.30	24.73	0.62
S17-1	12000	PF 4	700.00	1092.56	1097.20	1095.81	1098.00	0.012787	7.19	97.38	32.95	0.59
S17-1	12000	PF 5	1000.00	1092.56	1099.61	1096.88	1100.32	0.006451	6.75	148.10	1147.16	0.45
S17-1	11950		Culvert									
S17-1	11900	PF 1	50.00	1091.76	1092.73		1092.82	0.012774	2.46	20.36	21.70	0.44
S17-1	11900	PF 2	100.00	1091.76	1093.14		1093.33	0.015882	3.44	29.05	22.06	0.52
S17-1	11900	PF 3	300.00	1091.76	1093.94	1093.60	1094.61	0.031268	6.55	45.83	22.96	0.78
S17-1	11900	PF 4	700.00	1091.76	1095.00	1095.00	1096.64	0.045472	10.28	68.10	24.97	1.01
S17-1	11900	PF 5	1000.00	1091.76	1095.88	1095.88	1097.95	0.041945	11.57	86.42	27.37	1.01
S17-1	11800	PF 1	50.00	1091.00	1091.67	1091.25	1091.68	0.003131	0.87	57.40	177.85	0.20
S17-1	11800	PF 2	100.00	1091.00	1091.95	1091.39	1091.97	0.003561	1.14	88.02	224.91	0.23
S17-1	11800	PF 3	300.00	1091.00	1092.57	1091.76	1092.63	0.004217	1.83	166.92	287.99	0.28
S17-1	11800	PF 4	700.00	1091.00	1093.31	1092.25	1093.41	0.004884	2.62	276.35	389.21	0.32
S17-1	11800	PF 5	1000.00	1091.00	1093.68	1092.54	1093.82	0.005487	3.09	332.88	460.07	0.35
S17-1	11700	PF 1	50.00	1090.00	1090.85	1090.43	1090.85	0.003337	0.75	66.26	153.40	0.20
S17-1	11700	PF 2	100.00	1090.00	1091.09	1090.58	1091.10	0.003275	0.93	108.03	190.16	0.21
S17-1	11700	PF 3	300.00	1090.00	1091.62	1090.92	1091.65	0.003391	1.44	211.03	246.80	0.24
S17-1	11700	PF 4	700.00	1090.00	1092.24	1091.27	1092.30	0.003843	2.05	371.98	623.70	0.27
S17-1	11700	PF 5	1000.00	1090.00	1092.52	1091.49	1092.59	0.004103	2.34	467.78	652.68	0.29
S17-1	11600	PF 1	50.00	1088.00	1088.79		1088.80	0.006250	1.00	49.89	120.82	0.27
S17-1	11600	PF 2	100.00	1088.00	1089.02		1089.04	0.006511	1.22	81.93	158.45	0.29
S17-1	11600	PF 3	300.00	1088.00	1089.46		1089.51	0.006784	1.86	174.22	261.58	0.33
S17-1	11600	PF 4	700.00	1088.00	1089.96		1090.04	0.006501	2.39	334.81	380.65	0.35
S17-1	11600	PF 5	1000.00	1088.00	1090.23		1090.31	0.006109	2.59	441.04	414.81	0.35
S17-1	11500	PF 1	50.00	1086.30	1086.79	1086.51	1086.80	0.004608	0.76	66.12	194.36	0.23
S17-1	11500	PF 2	100.00	1086.30	1086.99	1086.62	1087.00	0.004603	0.91	109.52	242.45	0.24
S17-1	11500	PF 3	300.00	1086.30	1087.40	1086.88	1087.43	0.004604	1.40	216.39	271.18	0.27
S17-1	11500	PF 4	700.00	1086.30	1087.94	1087.17	1088.00	0.004604	1.94	371.45	305.68	0.29
S17-1	11500	PF 5	1000.00	1086.30	1088.25	1087.35	1088.32	0.004603	2.21	468.15	324.63	0.30

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

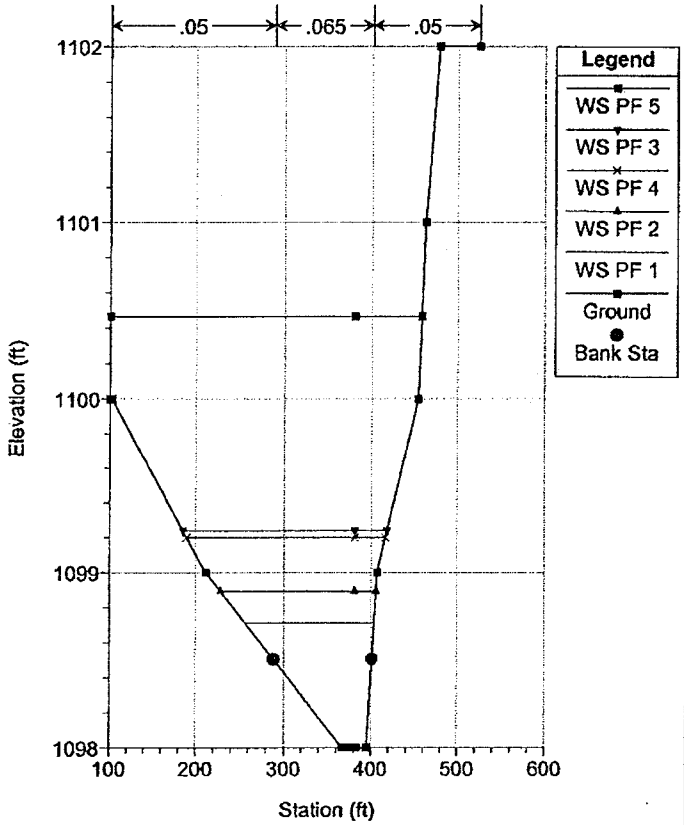
River = T1S-R5W-S17 Reach = S17-1 RS = 12400



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

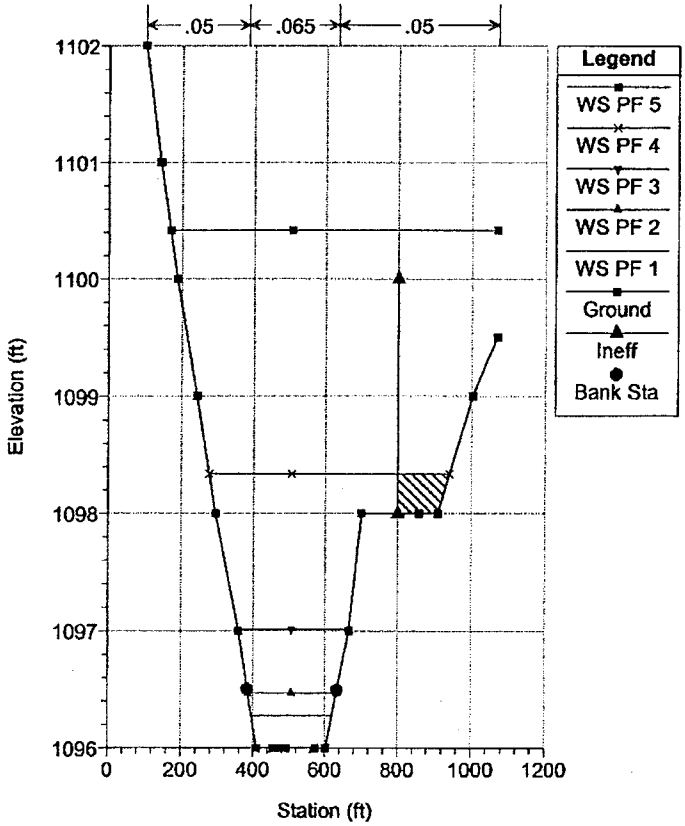
River = T1S-R5W-S17 Reach = S17-1 RS = 12300



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

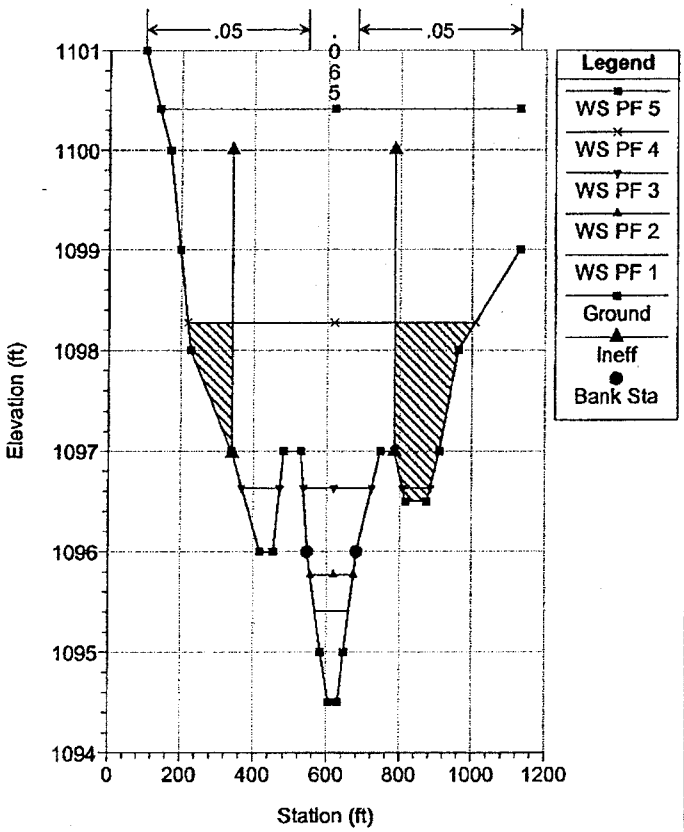
River = T1S-R5W-S17 Reach = S17-1 RS = 12200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

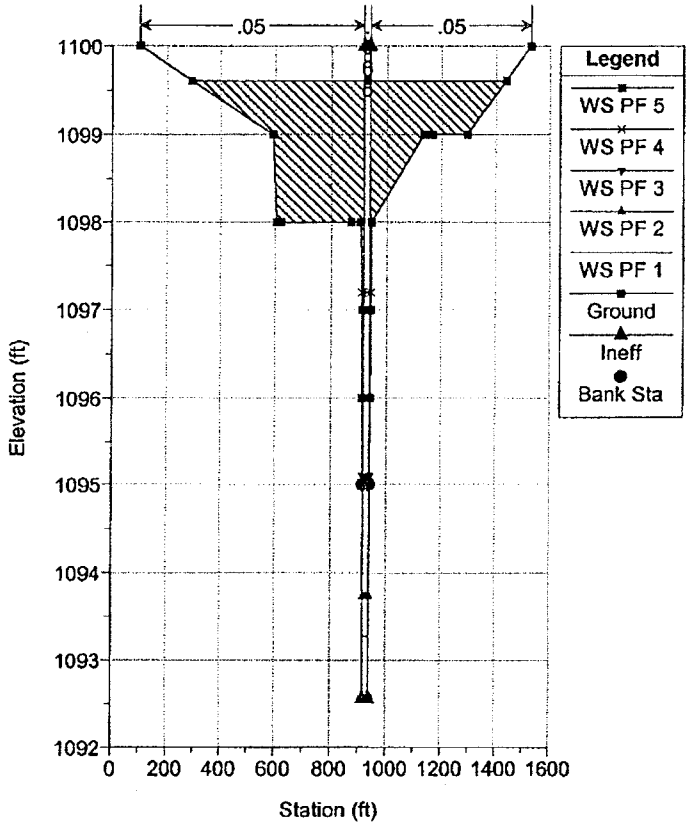
River = T1S-R5W-S17 Reach = S17-1 RS = 12100



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

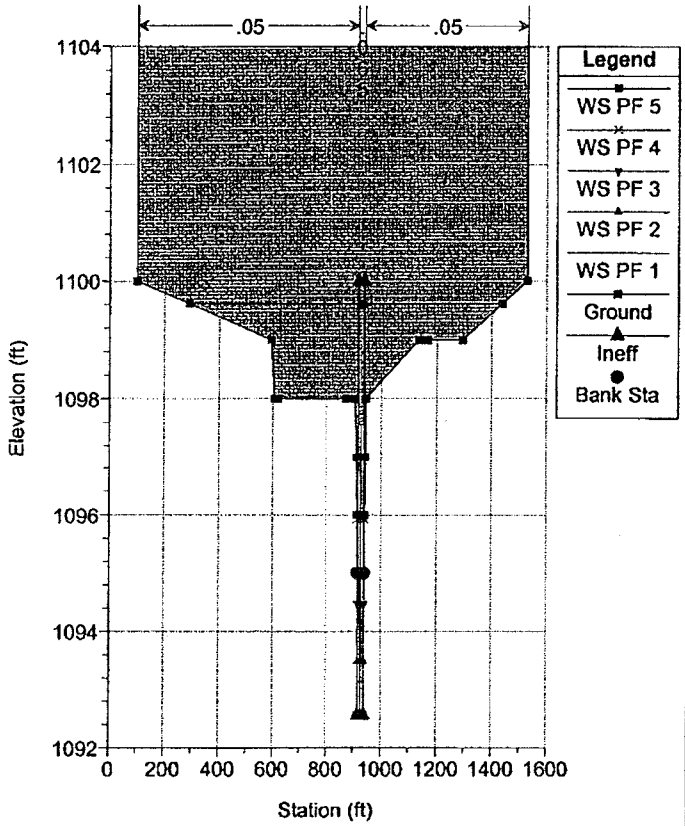
River = T1S-R5W-S17 Reach = S17-1 RS = 12000



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

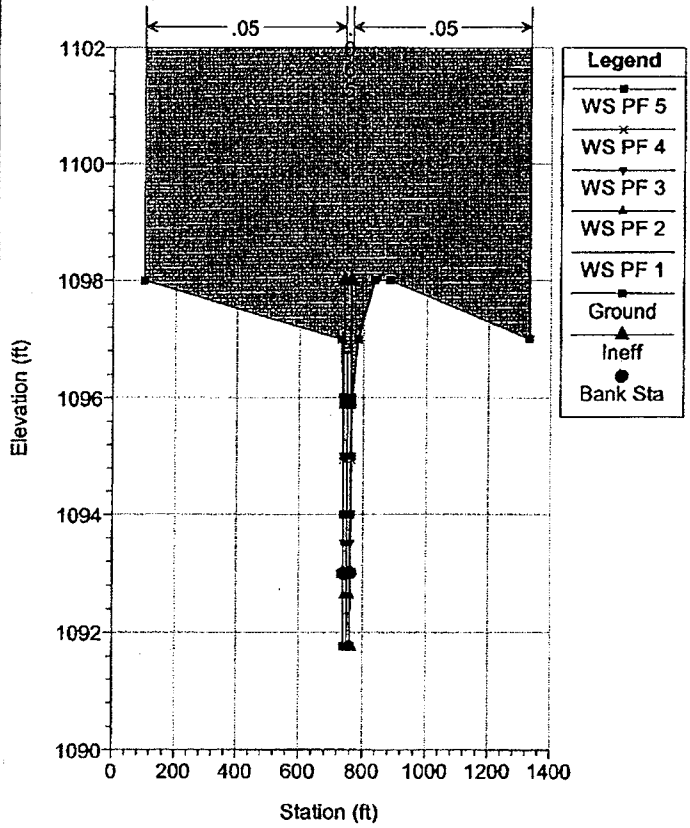
River = T1S-R5W-S17 Reach = S17-1 RS = 11950 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

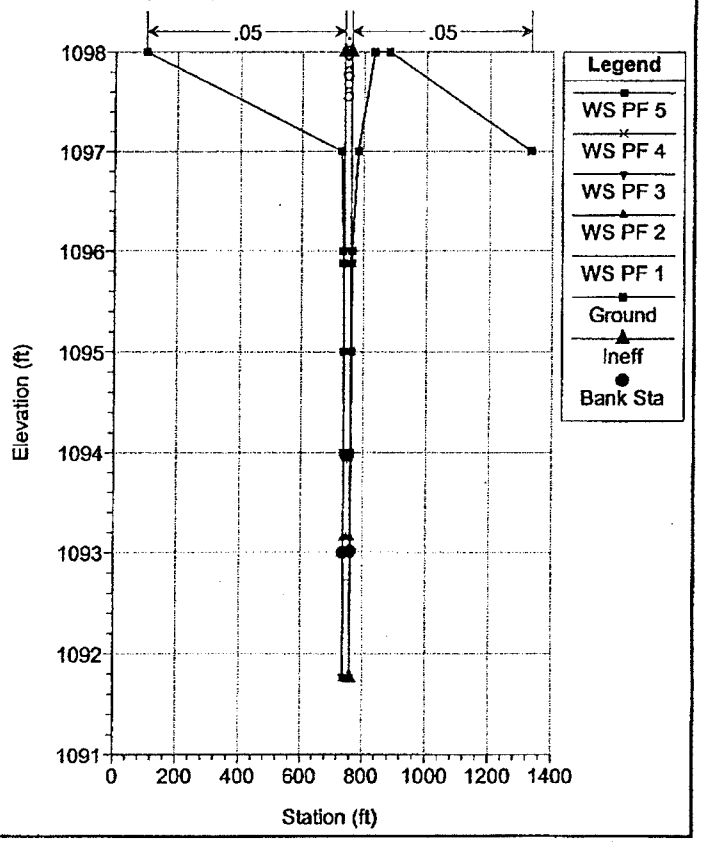
River = T1S-R5W-S17 Reach = S17-1 RS = 11950 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

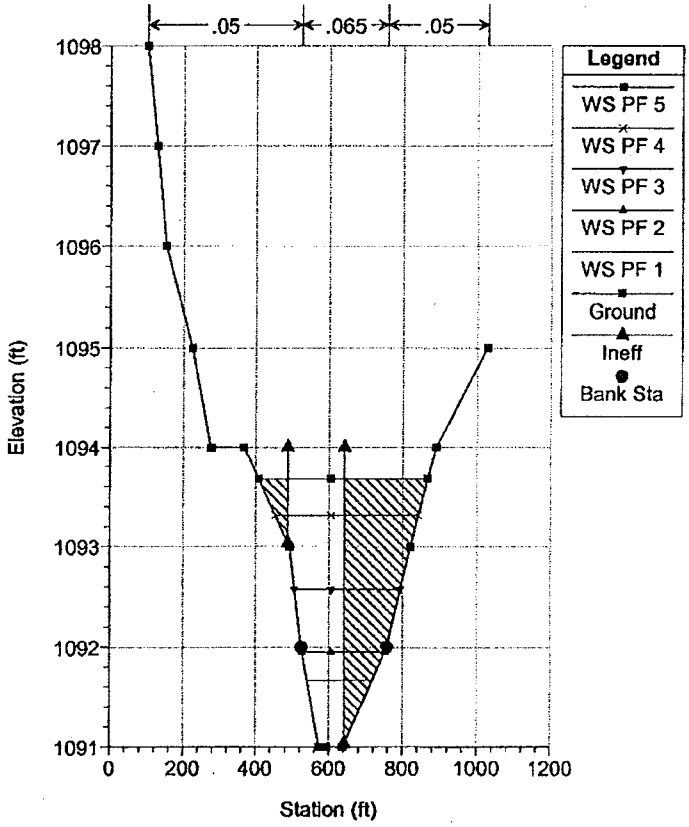
River = T1S-R5W-S17 Reach = S17-1 RS = 11900



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

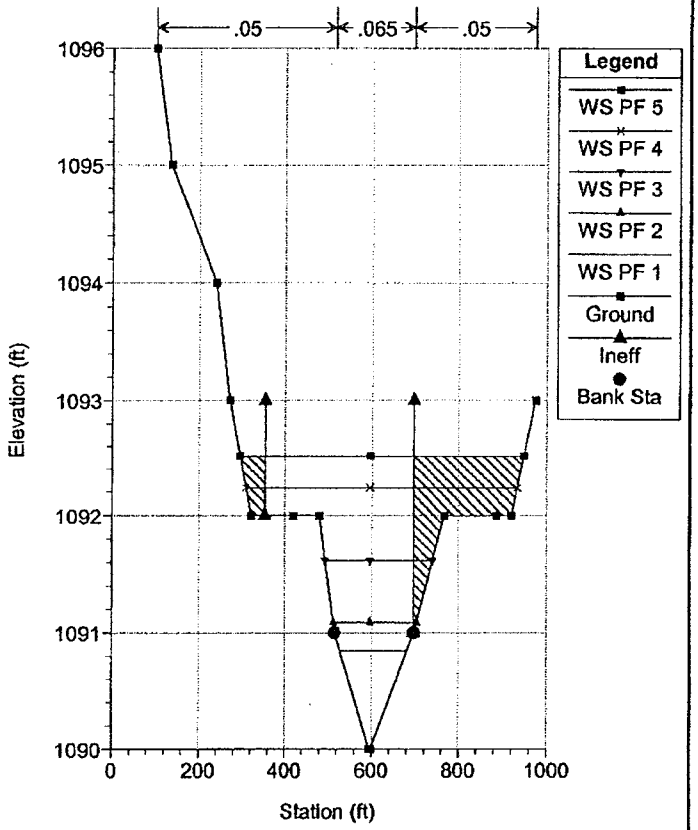
River = T1S-R5W-S17 Reach = S17-1 RS = 11800



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

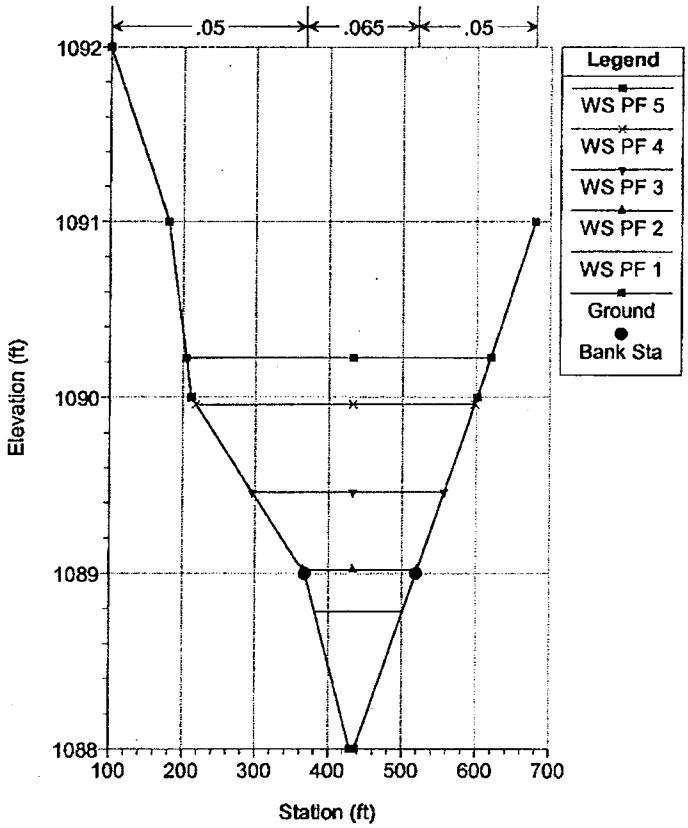
River = T1S-R5W-S17 Reach = S17-1 RS = 11700



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

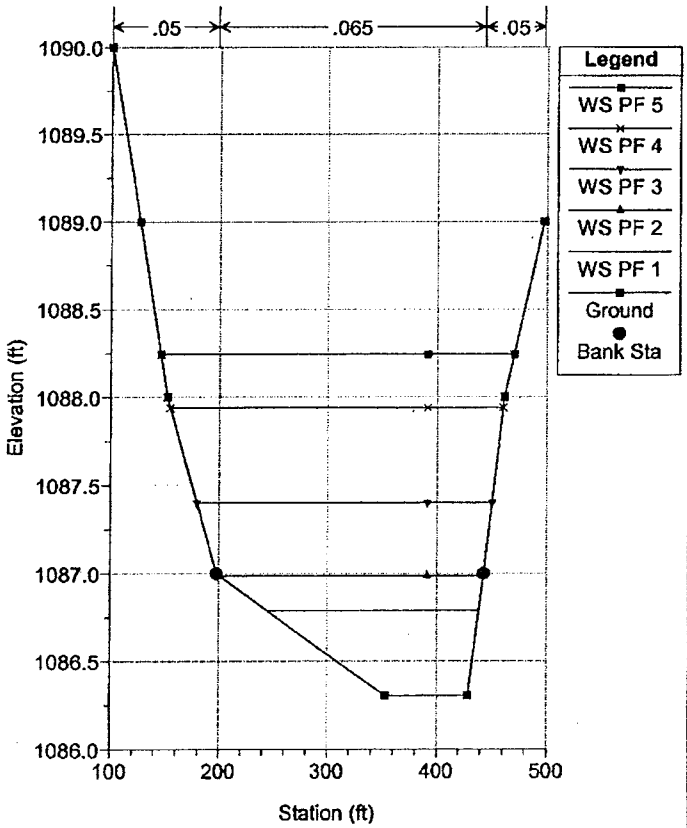
River = T1S-R5W-S17 Reach = S17-1 RS = 11600



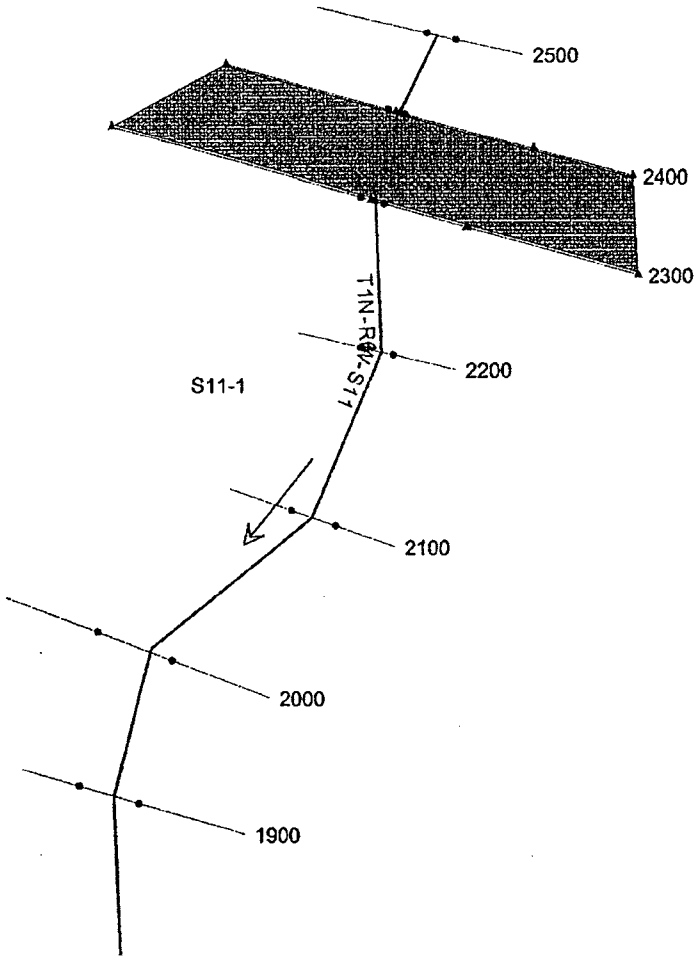
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = T1S-R5W-S17 Reach = S17-1 RS = 11500



for structures (18) & (20)



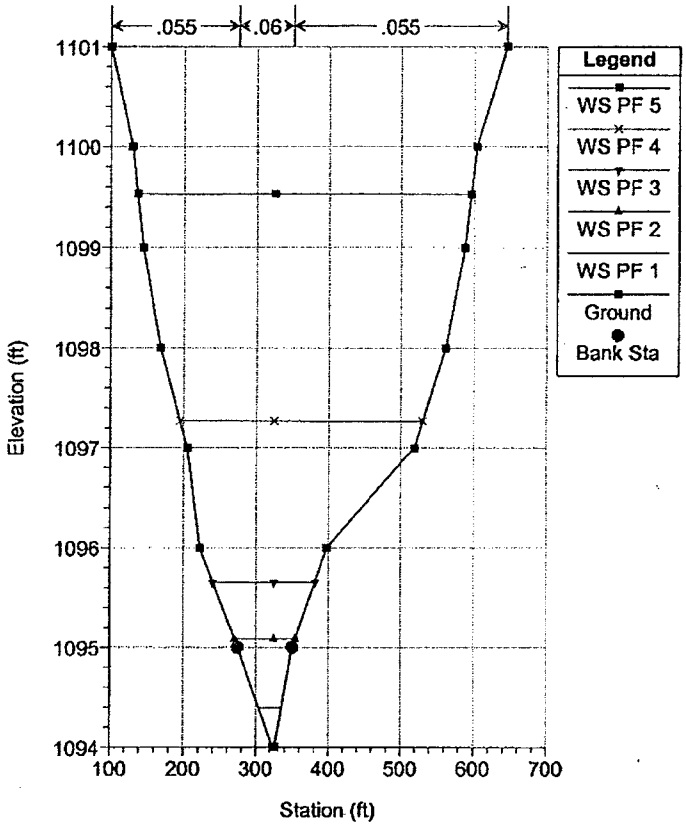
HEC-RAS Plan: FDS River: T1N-R6W-S11 Reach: S11-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
S11-1	2500	PF 1	10.00	1094.00	1094.39	1094.31	1094.43	0.029852	1.51	6.61	31.42	0.58
S11-1	2500	PF 2	50.00	1094.00	1095.09		1095.11	0.003726	1.08	46.62	85.34	0.24
S11-1	2500	PF 3	100.00	1094.00	1095.70		1095.71	0.001162	0.96	116.78	145.22	0.15
S11-1	2500	PF 4	175.00	1094.00	1097.70		1097.70	0.000043	0.35	647.60	369.26	0.03
S11-1	2500	PF 5	250.00	1094.00	1100.05		1100.05	0.000008	0.19	1664.16	477.17	0.01
S11-1	2400	PF 1	10.00	1092.24	1093.08	1092.54	1093.10	0.002432	1.09	9.21	19.42	0.21
S11-1	2400	PF 2	50.00	1092.24	1094.18	1093.10	1094.27	0.003653	2.33	21.78	36.76	0.29
S11-1	2400	PF 3	100.00	1092.24	1095.17	1093.60	1095.30	0.003287	2.91	36.07	143.42	0.30
S11-1	2400	PF 4	175.00	1092.24	1097.57	1094.32	1097.66	0.001139	2.55	70.81	684.61	0.19
S11-1	2400	PF 5	250.00	1092.24	1099.95	1094.82	1100.04	0.000624	2.41	105.41	1079.92	0.15
S11-1	2350		Culvert									
S11-1	2300	PF 1	10.00	1090.61	1091.37	1090.90	1091.39	0.003355	1.20	8.37	23.48	0.24
S11-1	2300	PF 2	50.00	1090.61	1092.29		1092.39	0.005469	2.59	20.30	47.87	0.35
S11-1	2300	PF 3	100.00	1090.61	1092.89		1093.08	0.006999	3.59	29.31	67.39	0.42
S11-1	2300	PF 4	175.00	1090.61	1093.45		1093.79	0.009619	4.86	37.60	372.28	0.51
S11-1	2300	PF 5	250.00	1090.61	1093.81	1093.03	1094.35	0.012546	6.03	43.13	442.79	0.59
S11-1	2200	PF 1	10.00	1089.00	1089.28	1089.14	1089.29	0.009569	0.92	10.87	46.43	0.34
S11-1	2200	PF 2	50.00	1089.00	1089.70		1089.73	0.008362	1.43	34.92	69.41	0.36
S11-1	2200	PF 3	100.00	1089.00	1089.99		1090.04	0.008219	1.73	57.91	85.81	0.37
S11-1	2200	PF 4	175.00	1089.00	1090.20	1089.78	1090.26	0.007899	2.02	103.01	228.56	0.38
S11-1	2200	PF 5	250.00	1089.00	1090.35		1090.41	0.007526	2.19	138.20	238.63	0.38
S11-1	2100	PF 1	10.00	1086.00	1086.38	1086.20	1086.39	0.004255	0.55	18.24	92.21	0.22
S11-1	2100	PF 2	50.00	1086.00	1086.66		1086.67	0.005115	0.98	52.69	156.67	0.27
S11-1	2100	PF 3	100.00	1086.00	1086.84		1086.86	0.005517	1.29	84.07	197.89	0.30
S11-1	2100	PF 4	175.00	1086.00	1087.02		1087.05	0.005861	1.60	124.10	238.93	0.32
S11-1	2100	PF 5	250.00	1086.00	1087.15		1087.20	0.006202	1.82	157.15	258.78	0.34
S11-1	2000	PF 1	10.00	1083.50	1083.60	1083.54	1083.60	0.007815	0.47	21.93	239.71	0.26
S11-1	2000	PF 2	50.00	1083.50	1083.76	1083.61	1083.77	0.006792	0.82	64.26	295.39	0.29
S11-1	2000	PF 3	100.00	1083.50	1083.88	1083.69	1083.90	0.006406	1.04	103.89	339.34	0.30
S11-1	2000	PF 4	175.00	1083.50	1084.03	1083.76	1084.05	0.006069	1.26	157.93	444.43	0.31
S11-1	2000	PF 5	250.00	1083.50	1084.13	1083.83	1084.16	0.005757	1.38	205.29	462.99	0.31
S11-1	1900	PF 1	10.00	1081.00	1081.25	1081.10	1081.26	0.005103	0.56	17.86	100.30	0.23
S11-1	1900	PF 2	50.00	1081.00	1081.54	1081.28	1081.55	0.005100	0.89	56.60	168.32	0.26
S11-1	1900	PF 3	100.00	1081.00	1081.72	1081.40	1081.74	0.005109	1.16	89.68	209.61	0.28
S11-1	1900	PF 4	175.00	1081.00	1081.91	1081.52	1081.94	0.005107	1.42	133.47	254.16	0.30
S11-1	1900	PF 5	250.00	1081.00	1082.06	1081.62	1082.09	0.005102	1.61	181.93	422.39	0.30

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

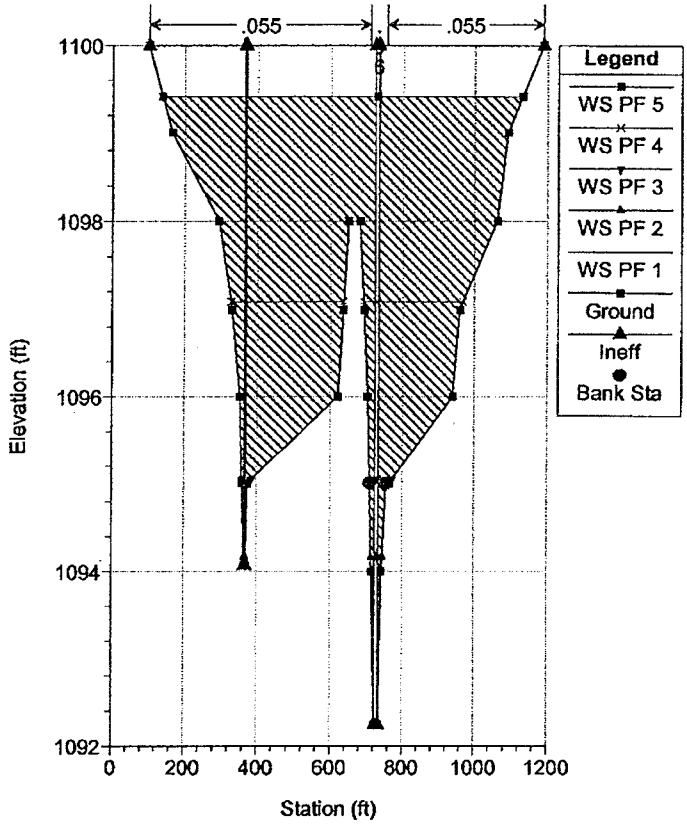
River = T1N-R6W-S11 Reach = S11-1 RS = 2500



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

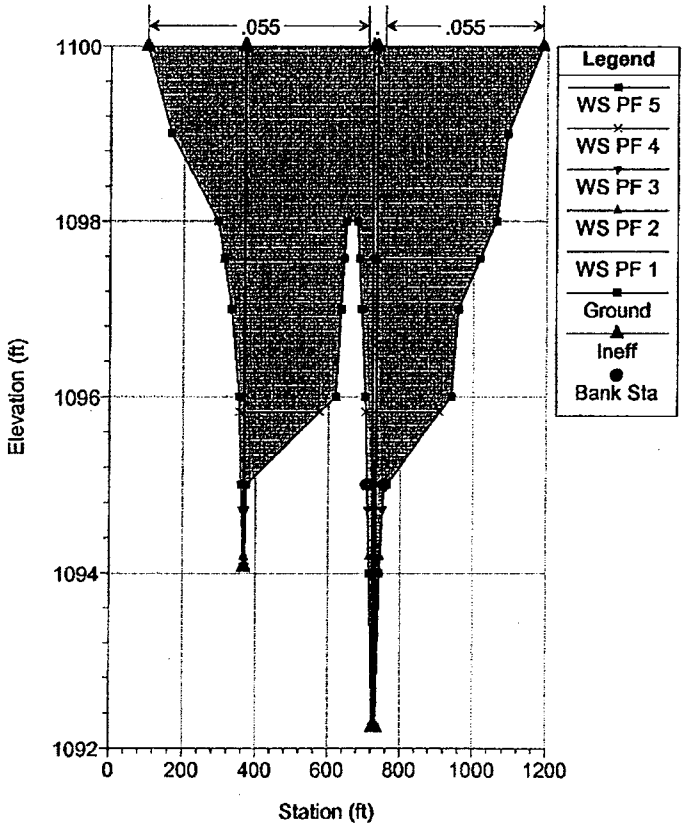
River = T1N-R6W-S11 Reach = S11-1 RS = 2400



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

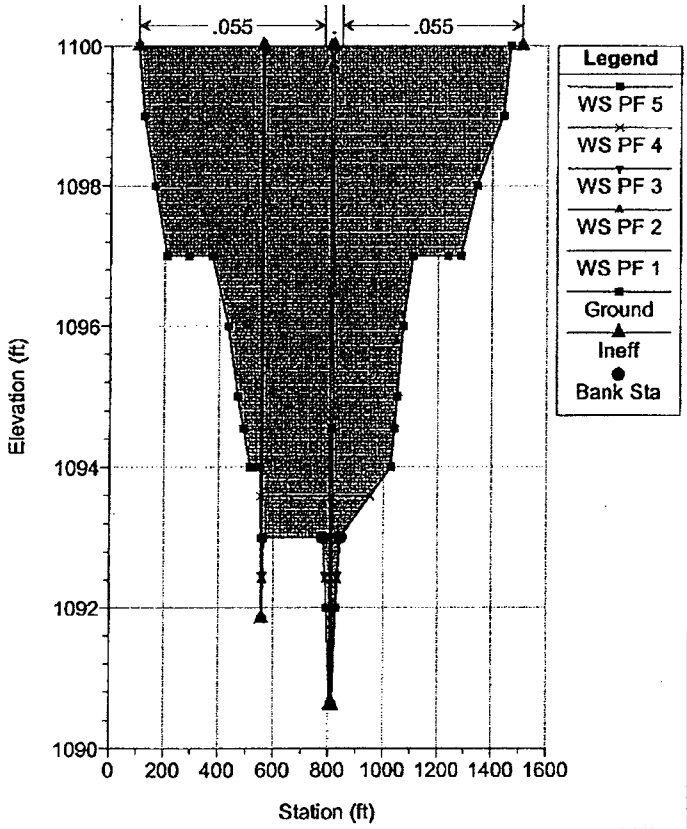
River = T1N-R6W-S11 Reach = S11-1 RS = 2350 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

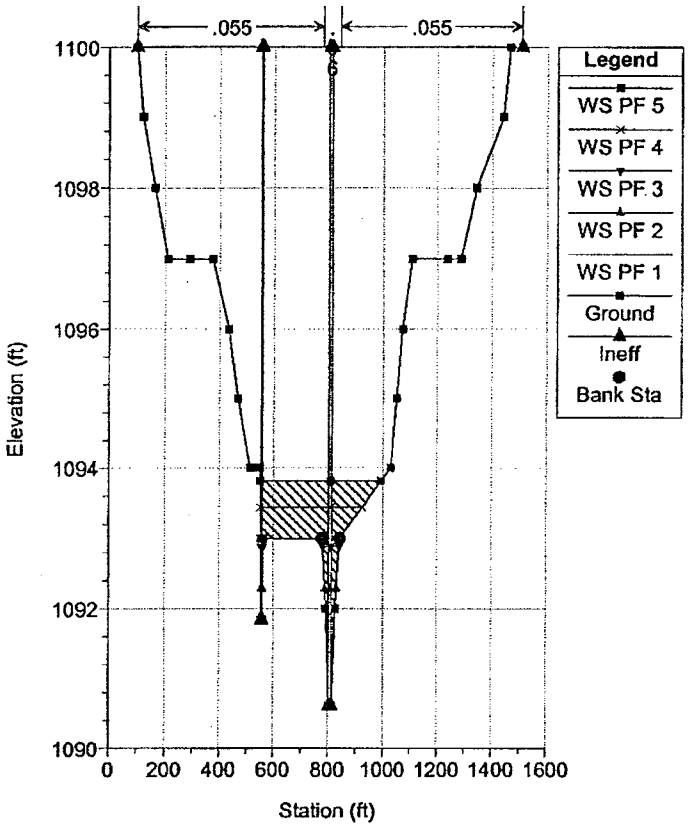
River = T1N-R6W-S11 Reach = S11-1 RS = 2350 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

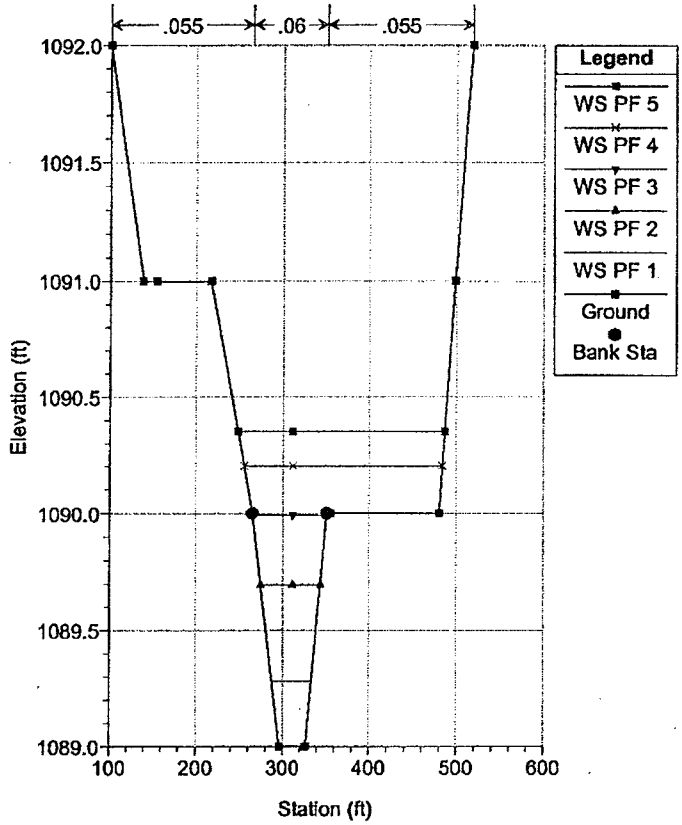
River = T1N-R6W-S11 Reach = S11-1 RS = 2300



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

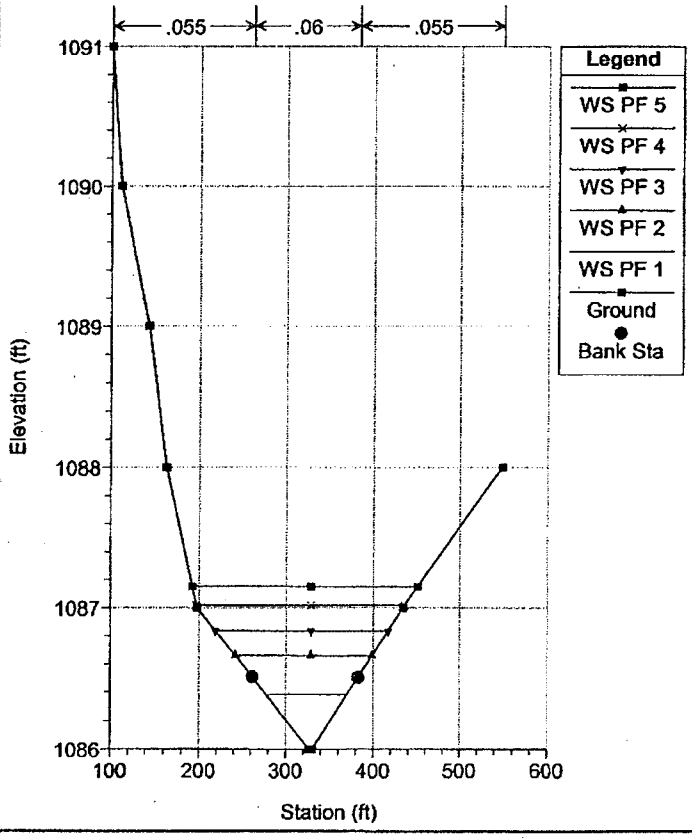
River = T1N-R6W-S11 Reach = S11-1 RS = 2200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

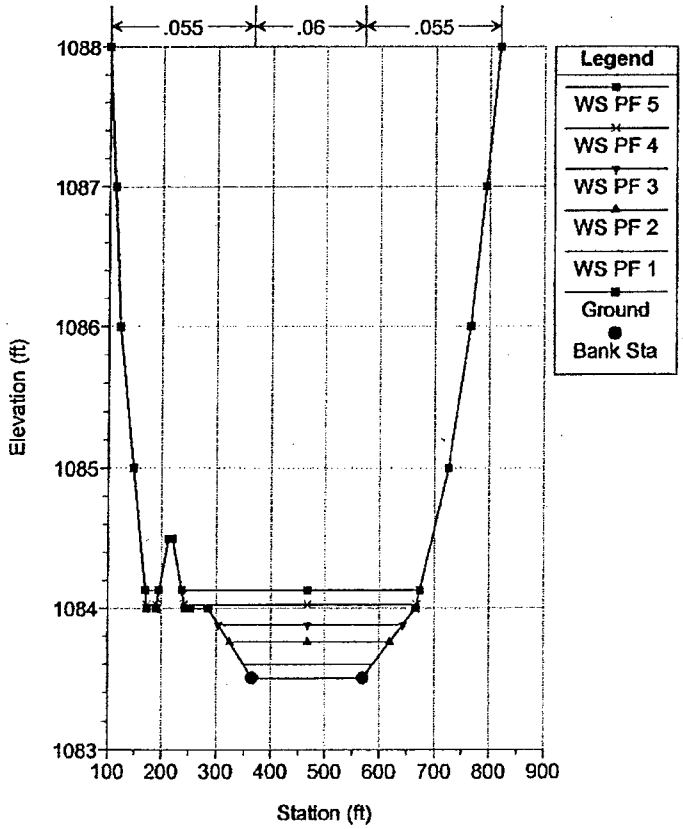
River = T1N-R6W-S11 Reach = S11-1 RS = 2100



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

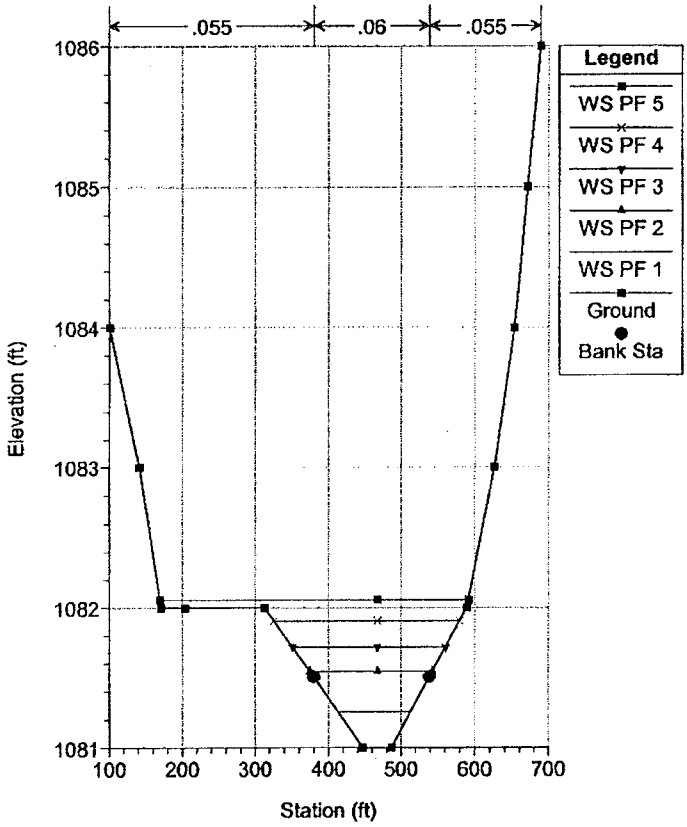
River = T1N-R6W-S11 Reach = S11-1 RS = 2000



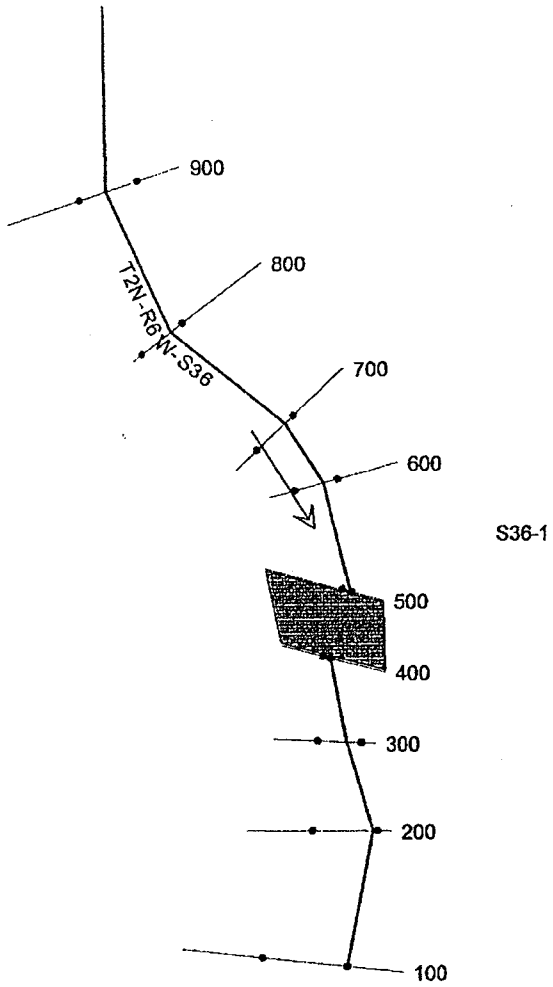
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = T1N-R6W-S11 Reach = S11-1 RS = 1900

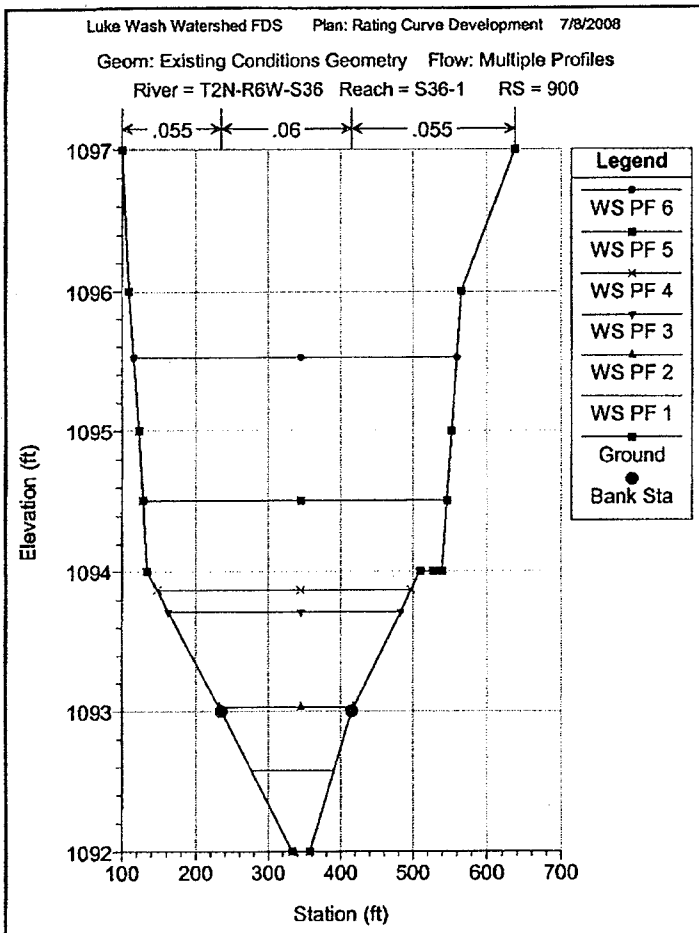


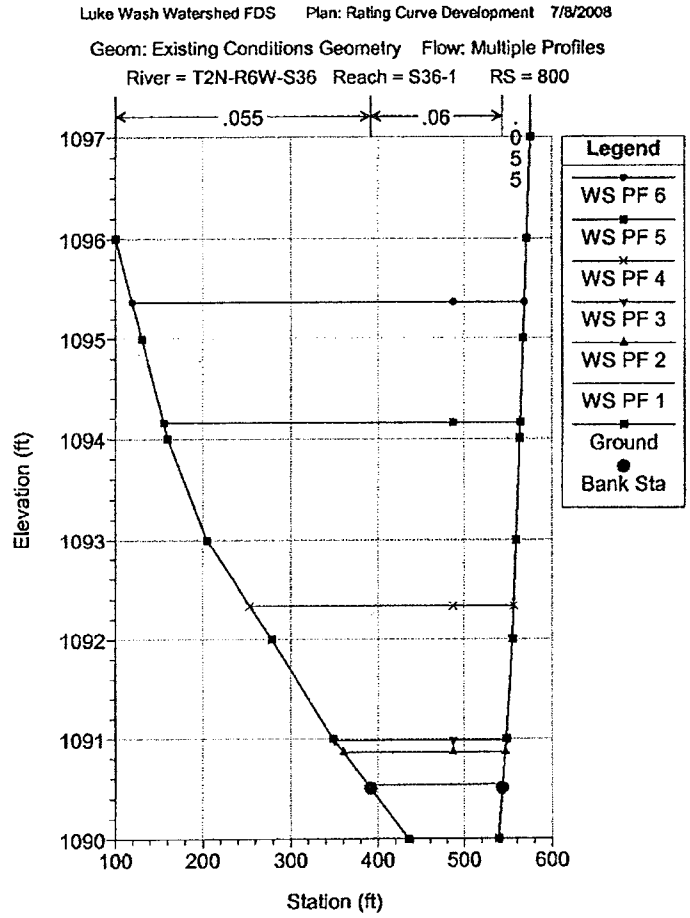
for Structure (26)

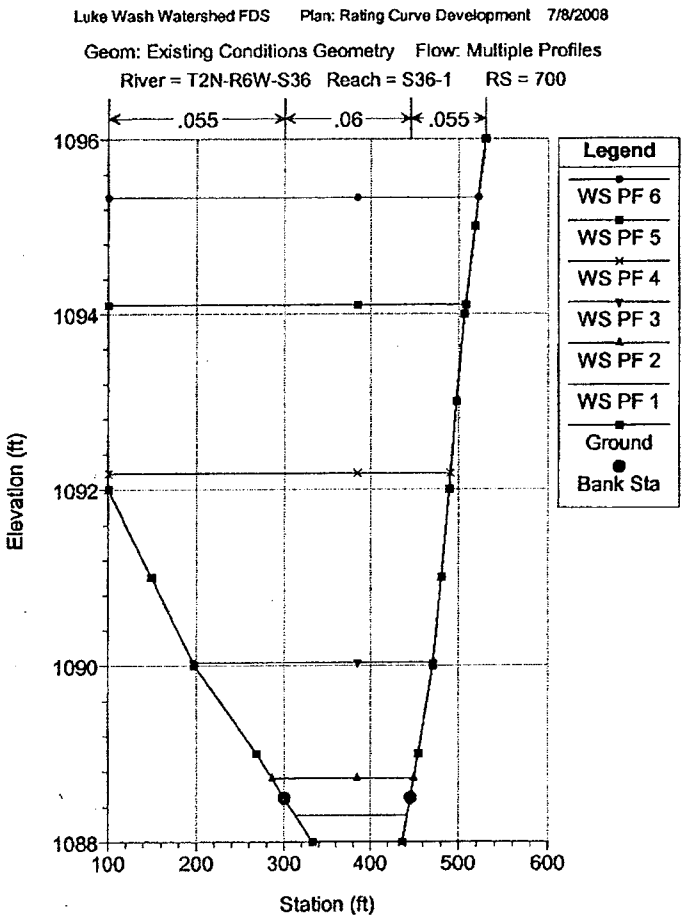


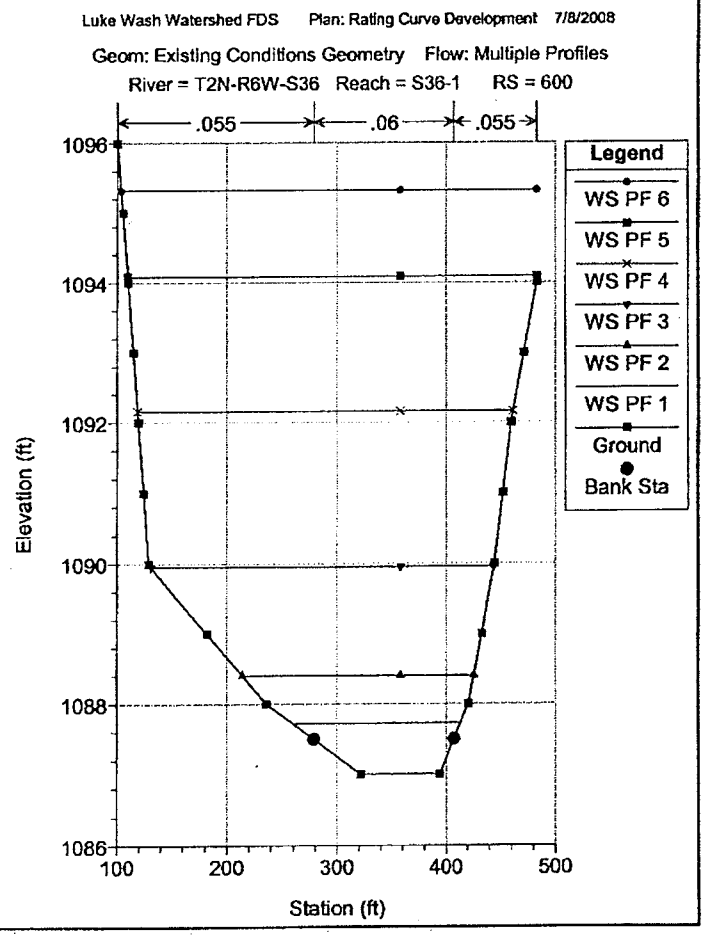
HEC-RAS Plan: FDS River: T2N-R6W-S36 Reach: S36-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
S36-1	900	PF 1	50.00	1092.00	1092.58	1092.35	1092.60	0.010387	1.25	39.94	114.30	0.37
S36-1	900	PF 2	150.00	1092.00	1093.03		1093.06	0.006272	1.39	107.90	186.40	0.32
S36-1	900	PF 3	400.00	1092.00	1093.73	1092.96	1093.76	0.002794	1.55	284.95	322.70	0.24
S36-1	900	PF 4	800.00	1092.00	1093.82		1093.93	0.008579	2.85	314.69	340.28	0.43
S36-1	900	PF 5	1200.00	1092.00	1094.65		1094.71	0.002552	2.13	649.49	421.30	0.25
S36-1	900	PF 6	1500.00	1092.00	1095.75		1095.78	0.000737	1.49	1126.26	449.81	0.14
S36-1	800	PF 1	50.00	1090.00	1090.54		1090.55	0.002339	0.71	70.14	156.03	0.19
S36-1	800	PF 2	150.00	1090.00	1090.86		1090.88	0.003457	1.23	125.11	186.42	0.25
S36-1	800	PF 3	400.00	1090.00	1090.95		1091.08	0.016668	2.92	142.46	195.03	0.55
S36-1	800	PF 4	800.00	1090.00	1092.47		1092.51	0.001493	1.71	529.88	313.33	0.20
S36-1	800	PF 5	1200.00	1090.00	1094.37		1094.39	0.000298	1.13	1237.02	415.69	0.10
S36-1	800	PF 6	1500.00	1090.00	1095.62		1095.63	0.000159	0.98	1782.16	458.05	0.07
S36-1	700	PF 1	50.00	1088.00	1088.31	1088.20	1088.34	0.017436	1.39	35.96	129.71	0.47
S36-1	700	PF 2	150.00	1088.00	1088.72		1088.76	0.007263	1.58	96.27	163.41	0.35
S36-1	700	PF 3	400.00	1088.00	1090.11		1090.13	0.000776	1.11	405.50	280.18	0.14
S36-1	700	PF 4	800.00	1088.00	1092.35		1092.36	0.000146	0.79	1174.86	392.43	0.07
S36-1	700	PF 5	1200.00	1088.00	1094.33		1094.33	0.000065	0.68	1968.52	410.54	0.05
S36-1	700	PF 6	1500.00	1088.00	1095.59		1095.60	0.000049	0.66	2496.24	425.07	0.04
S36-1	600	PF 1	50.00	1087.00	1087.72		1087.73	0.001250	0.63	81.14	153.18	0.14
S36-1	600	PF 2	150.00	1087.00	1088.42		1088.43	0.000672	0.77	212.85	213.06	0.12
S36-1	600	PF 3	400.00	1087.00	1090.04		1090.05	0.000202	0.72	642.82	316.44	0.07
S36-1	600	PF 4	800.00	1087.00	1092.33		1092.33	0.000072	0.63	1398.92	345.84	0.05
S36-1	600	PF 5	1200.00	1087.00	1094.32		1094.32	0.000045	0.62	2118.46	374.67	0.04
S36-1	600	PF 6	1500.00	1087.00	1095.58		1095.59	0.000037	0.63	2596.55	380.93	0.04
S36-1	500	PF 1	50.00	1085.75	1086.65	1086.31	1086.76	0.013371	2.66	18.80	23.25	0.50
S36-1	500	PF 2	150.00	1085.75	1087.63	1086.91	1087.86	0.010065	3.79	39.57	25.74	0.49
S36-1	500	PF 3	400.00	1085.75	1089.37	1087.99	1089.80	0.008094	5.28	76.10	28.27	0.49
S36-1	500	PF 4	800.00	1085.75	1091.50	1089.30	1092.18	0.006939	6.62	120.79	30.22	0.49
S36-1	500	PF 5	1200.00	1085.75	1093.29	1090.40	1094.18	0.006344	7.58	158.28	304.23	0.49
S36-1	500	PF 6	1500.00	1085.75	1095.37	1091.14	1095.53	0.001877	4.09	662.14	356.60	0.26
S36-1	450		Culvert									
S36-1	400	PF 1	50.00	1084.79	1085.78		1085.87	0.009449	2.40	20.86	22.07	0.42
S36-1	400	PF 2	150.00	1084.79	1086.43	1085.95	1086.72	0.016043	4.36	34.41	22.69	0.60
S36-1	400	PF 3	400.00	1084.79	1087.08	1087.02	1088.16	0.037138	8.30	48.18	23.36	0.97
S36-1	400	PF 4	800.00	1084.79	1088.34	1088.34	1090.13	0.034609	10.73	74.59	24.49	1.00
S36-1	400	PF 5	1200.00	1084.79	1089.45	1089.45	1091.79	0.031459	12.26	97.90	25.27	1.00
S36-1	400	PF 6	1500.00	1084.79	1090.18	1090.18	1092.91	0.030230	13.24	113.27	27.61	1.00
S36-1	300	PF 1	50.00	1083.00	1083.63		1083.66	0.007849	1.25	39.86	92.20	0.34
S36-1	300	PF 2	150.00	1083.00	1084.09		1084.13	0.006688	1.64	91.91	132.41	0.34
S36-1	300	PF 3	400.00	1083.00	1084.69		1084.77	0.005930	2.30	183.08	173.25	0.35
S36-1	300	PF 4	800.00	1083.00	1085.31		1085.43	0.005570	2.88	302.98	206.57	0.36
S36-1	300	PF 5	1200.00	1083.00	1085.77		1085.93	0.005489	3.30	402.50	224.30	0.37
S36-1	300	PF 6	1500.00	1083.00	1086.06		1086.24	0.005515	3.56	468.42	234.43	0.38
S36-1	200	PF 1	50.00	1082.00	1082.52		1082.53	0.002419	0.72	69.41	152.64	0.19
S36-1	200	PF 2	150.00	1082.00	1082.92		1082.93	0.002958	1.11	135.49	181.78	0.23
S36-1	200	PF 3	400.00	1082.00	1083.43		1083.48	0.003590	1.71	238.74	219.09	0.27
S36-1	200	PF 4	800.00	1082.00	1083.94		1084.02	0.004245	2.34	359.68	255.86	0.31
S36-1	200	PF 5	1200.00	1082.00	1084.31		1084.43	0.004686	2.79	457.47	269.79	0.34
S36-1	200	PF 6	1500.00	1082.00	1084.54		1084.68	0.004951	3.08	521.38	277.00	0.35
S36-1	100	PF 1	50.00	1081.00	1081.28	1081.12	1081.29	0.003904	0.67	77.51	302.13	0.22
S36-1	100	PF 2	150.00	1081.00	1081.53	1081.22	1081.54	0.003903	1.01	157.17	350.11	0.25
S36-1	100	PF 3	400.00	1081.00	1081.90	1081.41	1081.93	0.003904	1.44	302.01	423.64	0.27
S36-1	100	PF 4	800.00	1081.00	1082.29	1081.64	1082.34	0.003903	1.83	477.01	465.58	0.28
S36-1	100	PF 5	1200.00	1081.00	1082.59	1081.81	1082.65	0.003900	2.11	621.51	489.01	0.29
S36-1	100	PF 6	1500.00	1081.00	1082.79	1081.93	1082.86	0.003902	2.28	719.29	504.25	0.30


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T2N-R6W-S36 Reach = S36-1 RS = 900
.055
.06
.055
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T2N-R6W-S36 Reach = S36-1 RS = 800
.055
.06
.055
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

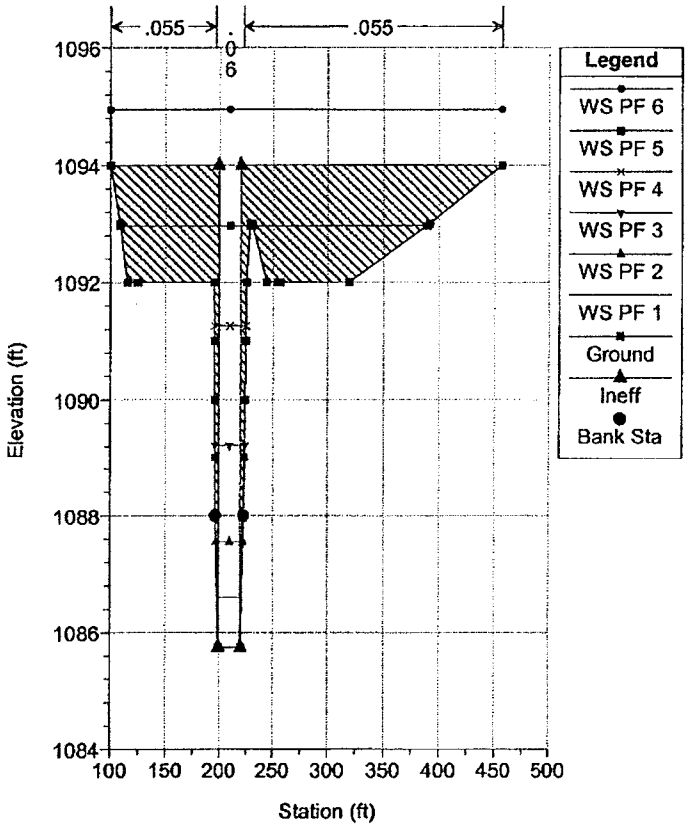

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T2N-R6W-S36 Reach = S36-1 RS = 700
.055
.06
.055
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T2N-R6W-S36 Reach = S36-1 RS = 600
.055
.06
.055
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

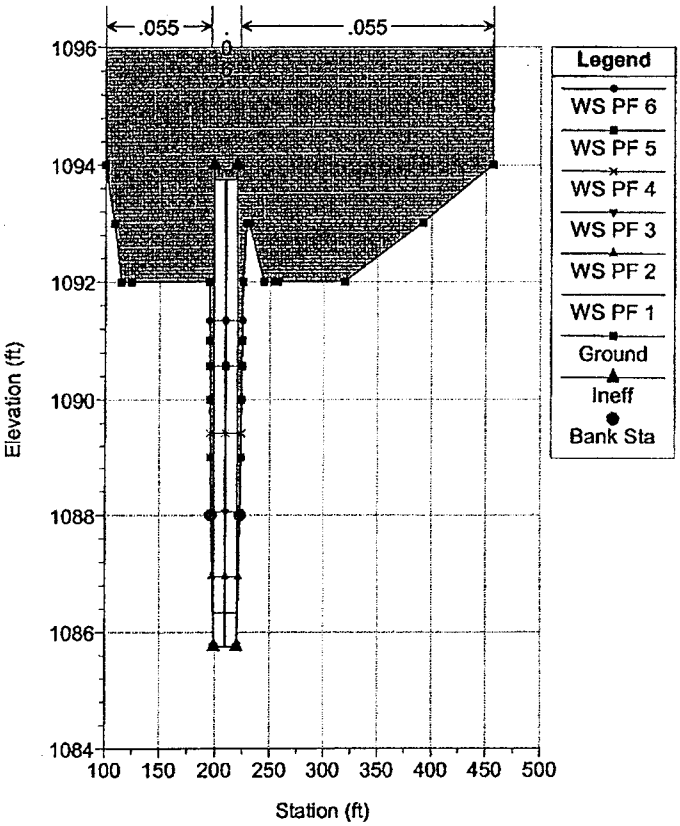
River = T2N-R6W-S36 Reach = S36-1 RS = 500



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

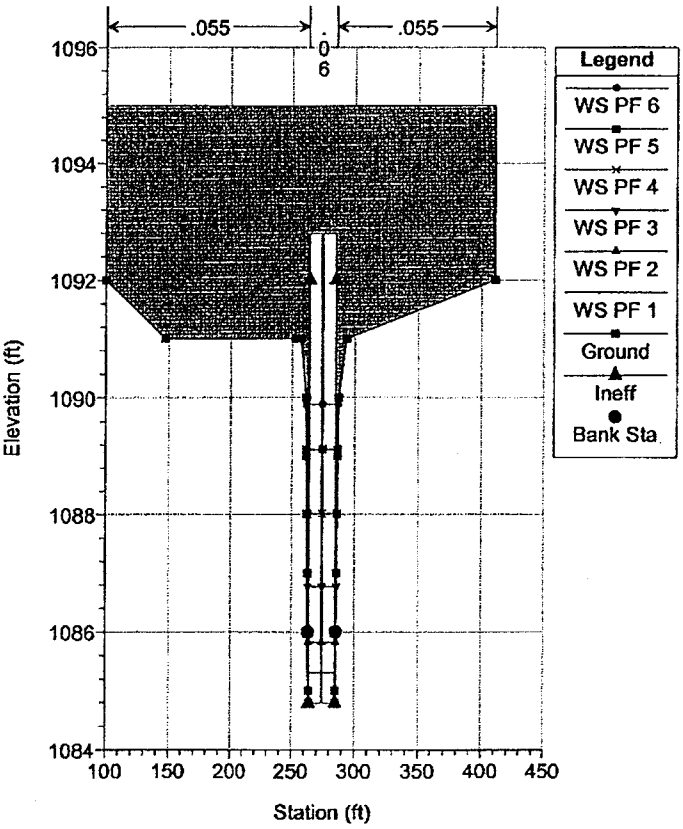
River = T2N-R6W-S36 Reach = S36-1 RS = 450 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

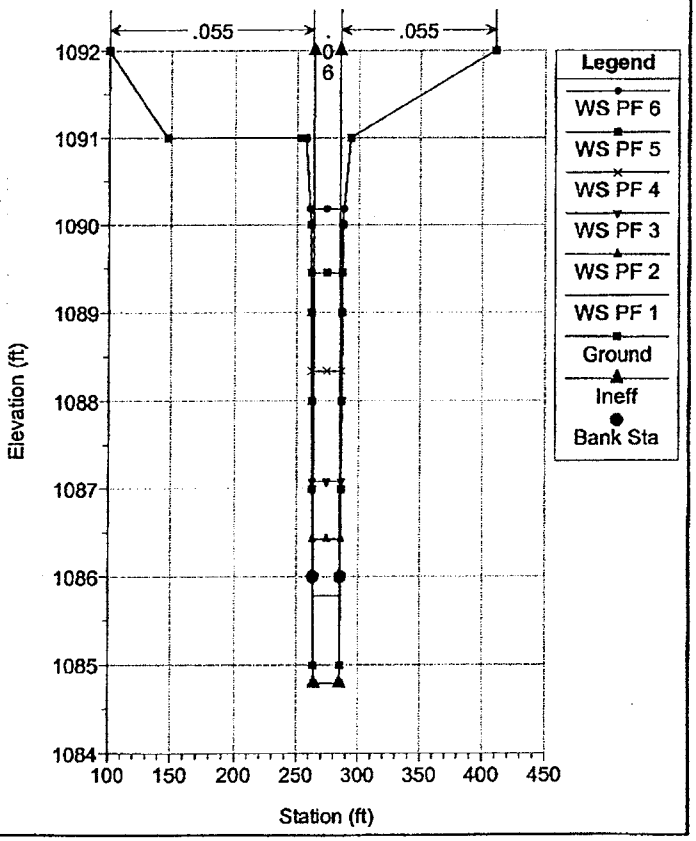
River = T2N-R6W-S36 Reach = S36-1 RS = 450 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

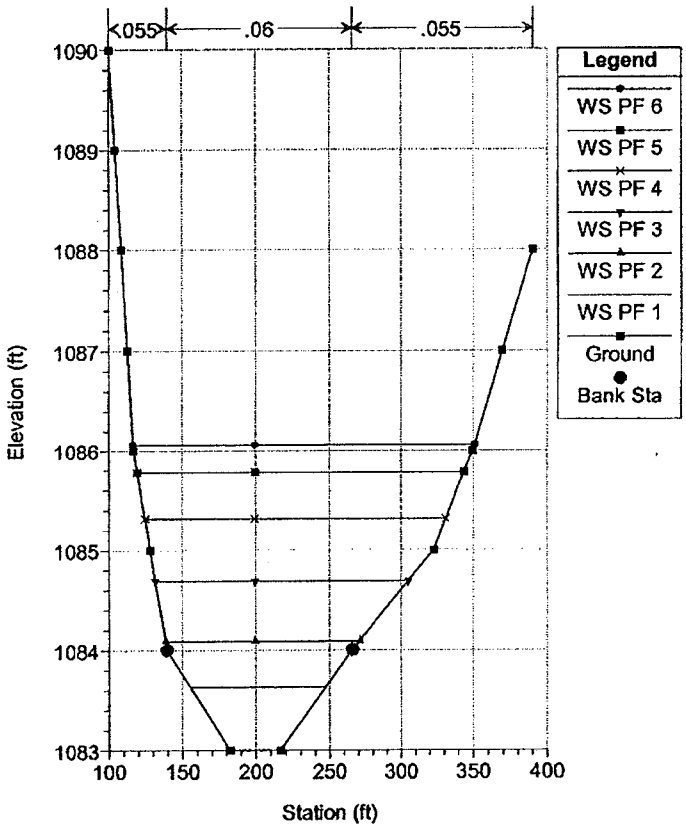
River = T2N-R6W-S36 Reach = S36-1 RS = 400



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

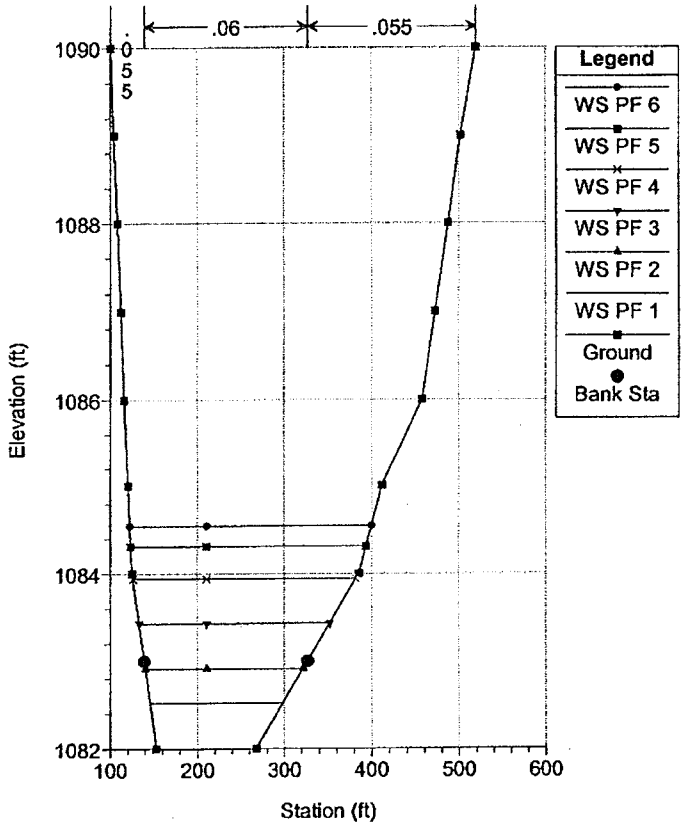
River = T2N-R6W-S36 Reach = S36-1 RS = 300



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

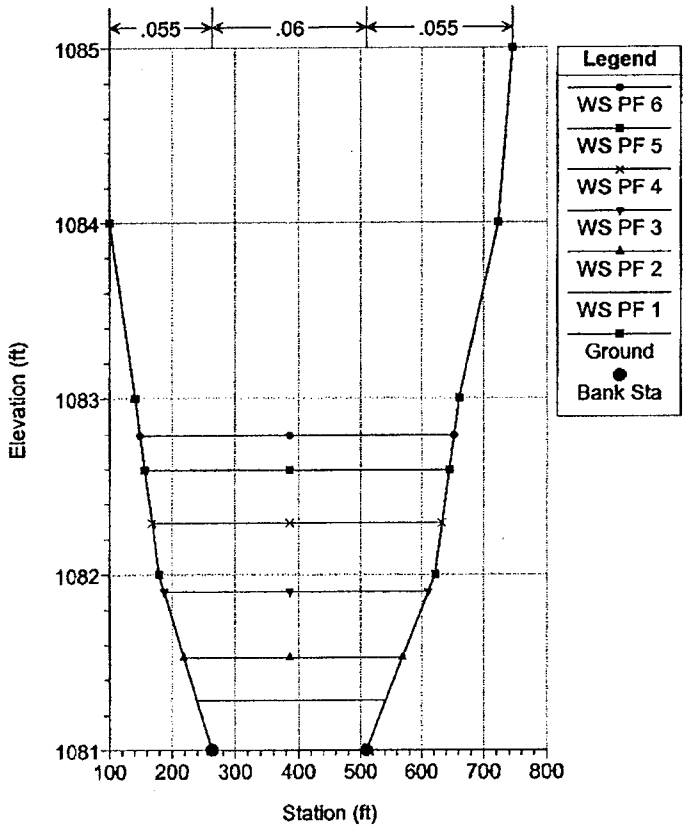
River = T2N-R6W-S36 Reach = S36-1 RS = 200



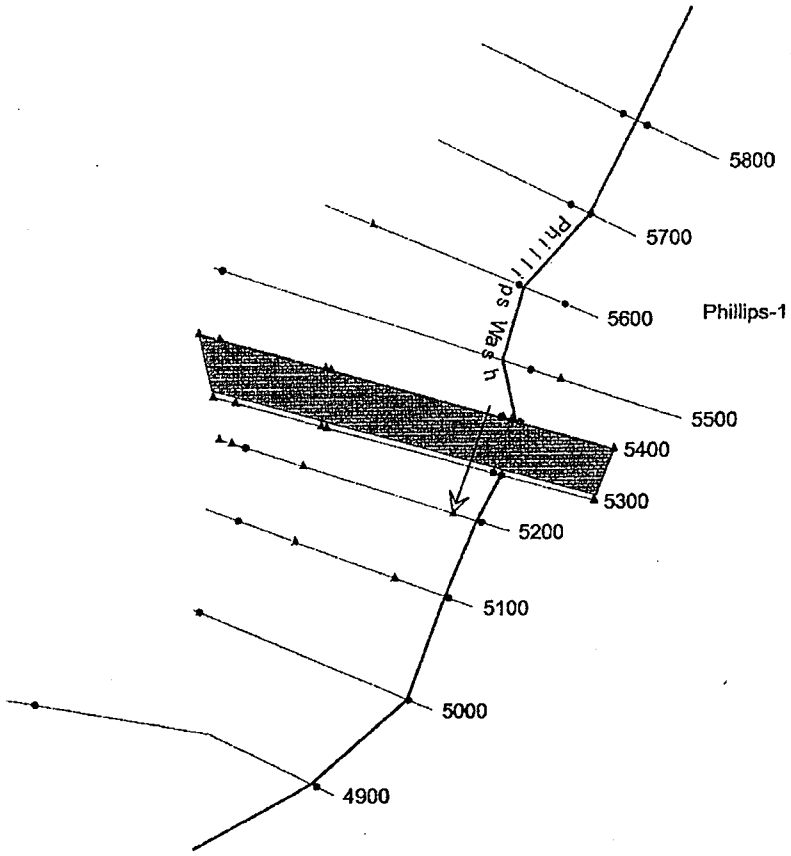
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = T2N-R6W-S36 Reach = S36-1 RS = 100

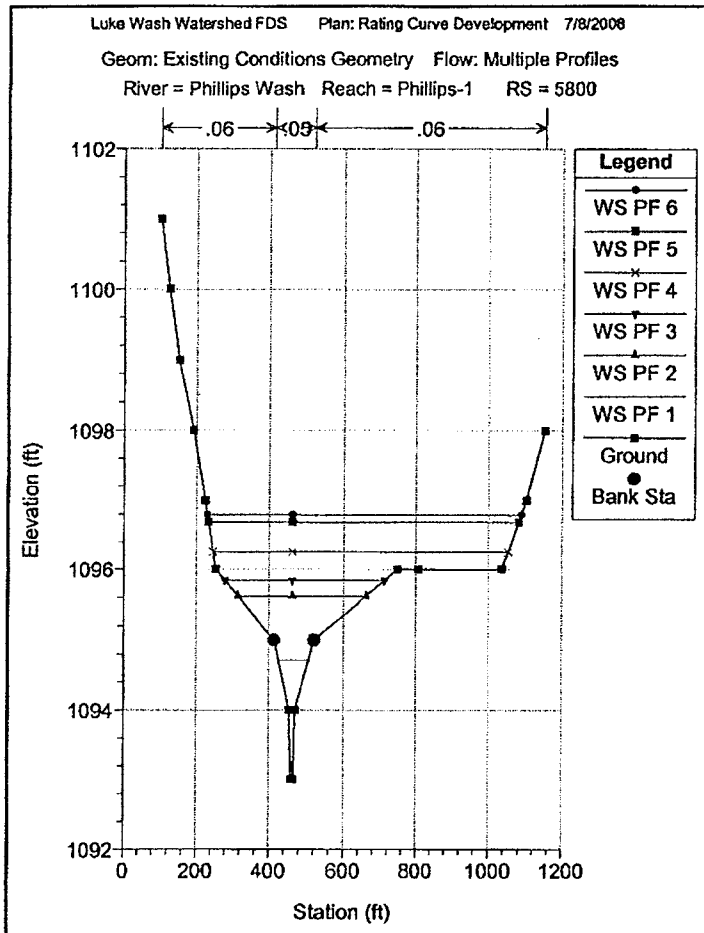


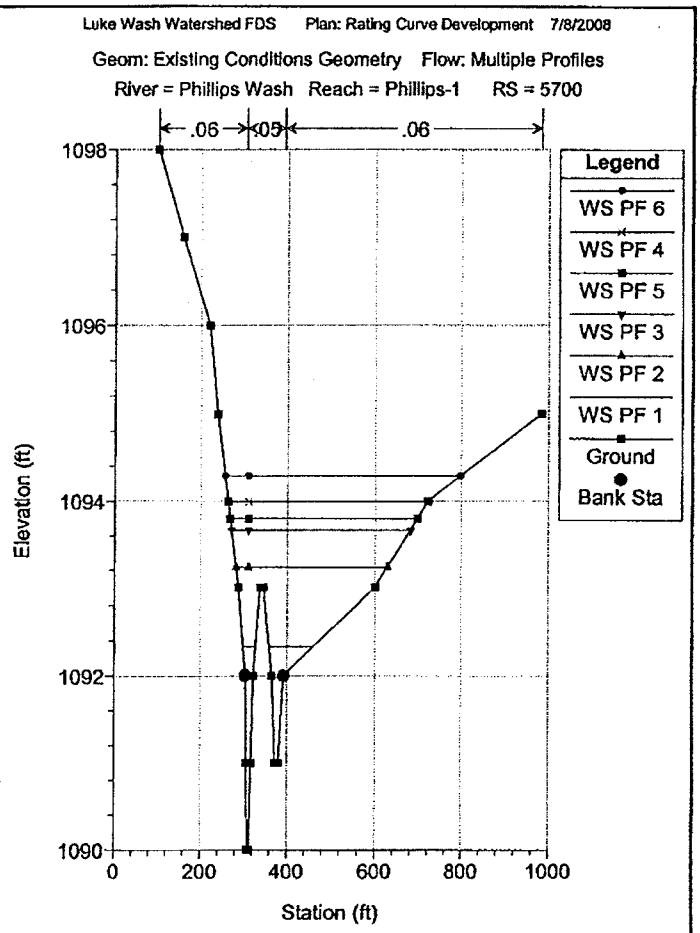
for Structures (28) (30) & (32)

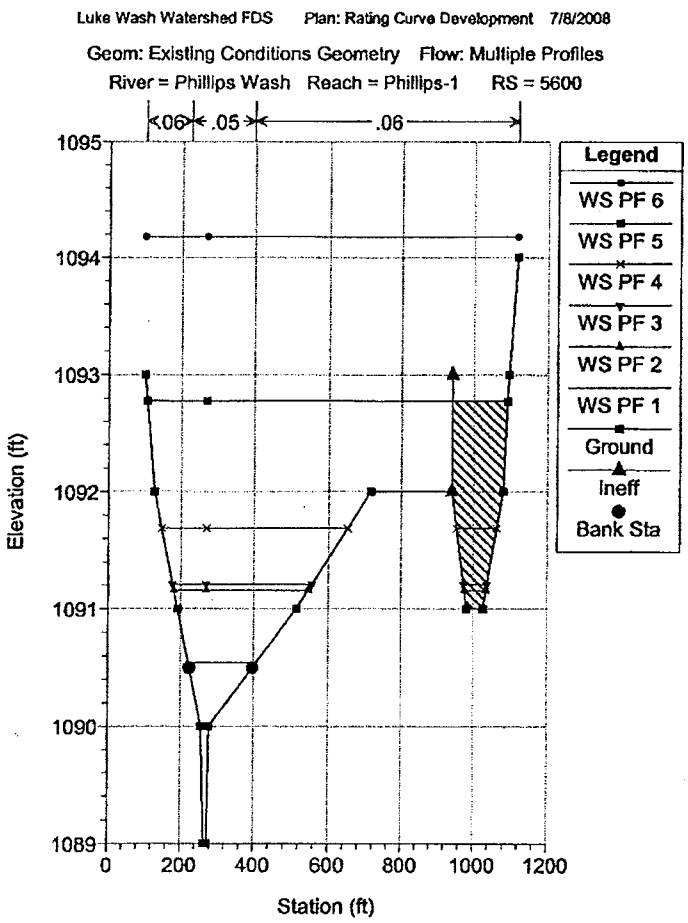


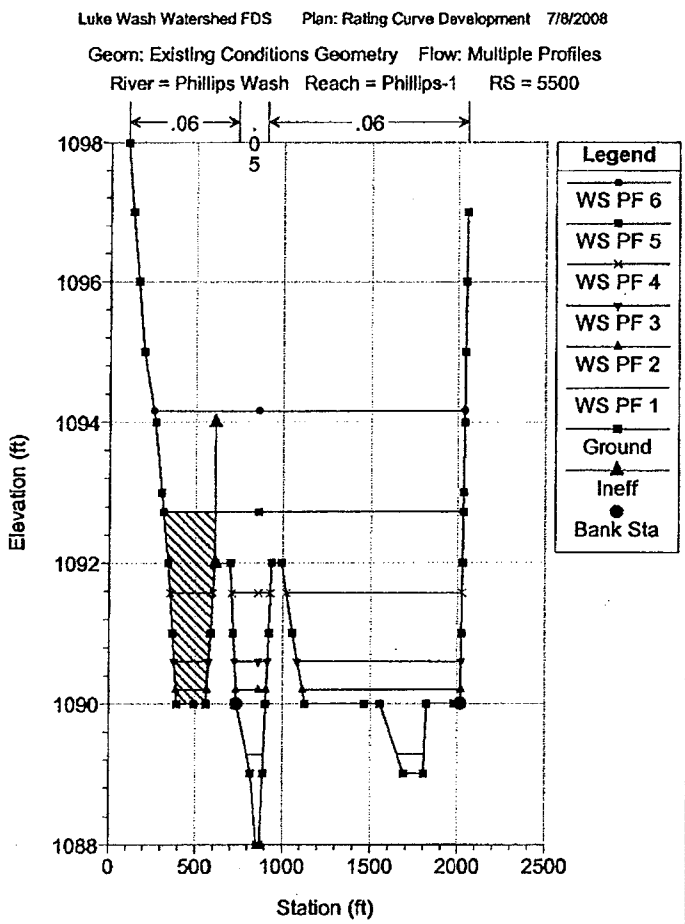
HEC-RAS Plan: FDS River: Phillips Wash Reach: Phillips-1

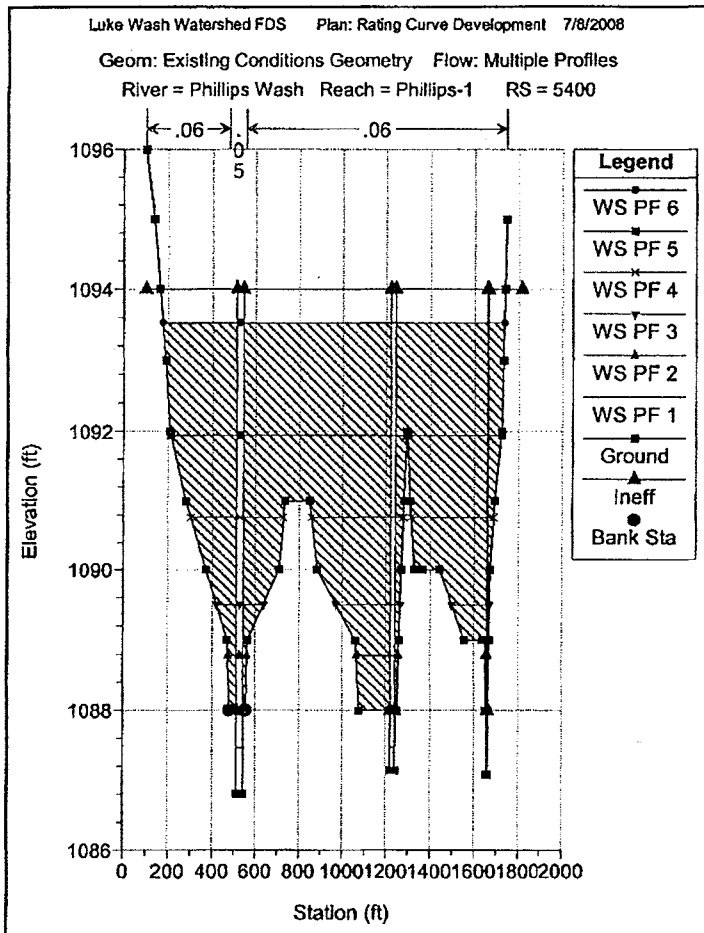
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Phillips-1	5800	PF 1	100.00	1093.00	1094.72	1094.41	1094.79	0.011434	2.17	45.99	81.06	0.51
Phillips-1	5800	PF 2	500.00	1093.00	1095.62	1095.25	1095.75	0.007604	3.08	212.80	347.16	0.48
Phillips-1	5800	PF 3	800.00	1093.00	1095.84	1095.59	1096.02	0.009323	3.79	299.91	433.99	0.54
Phillips-1	5800	PF 4	1300.00	1093.00	1096.26	1095.89	1096.41	0.008833	3.81	578.85	807.77	0.48
Phillips-1	5800	PF 5	1800.00	1093.00	1096.69		1096.78	0.003725	3.22	937.20	849.33	0.37
Phillips-1	5800	PF 6	2200.00	1093.00	1096.79		1096.90	0.004350	3.58	1023.85	859.08	0.40
Phillips-1	5700	PF 1	100.00	1090.00	1092.34		1092.38	0.003332	1.68	68.75	132.34	0.30
Phillips-1	5700	PF 2	500.00	1090.00	1093.23	1092.71	1093.29	0.004302	2.41	290.59	346.89	0.36
Phillips-1	5700	PF 3	800.00	1090.00	1093.67	1093.00	1093.73	0.003291	2.53	454.87	410.43	0.33
Phillips-1	5700	PF 4	1300.00	1090.00	1093.99	1093.23	1094.09	0.004173	3.18	597.49	458.51	0.38
Phillips-1	5700	PF 5	1800.00	1090.00	1093.80		1094.06	0.012112	5.09	512.04	430.35	0.64
Phillips-1	5700	PF 6	2200.00	1090.00	1094.29		1094.48	0.007118	4.52	744.57	541.89	0.51
Phillips-1	5600	PF 1	100.00	1089.00	1090.55	1090.27	1090.58	0.007033	1.39	72.35	187.01	0.38
Phillips-1	5600	PF 2	500.00	1089.00	1091.16	1090.79	1091.24	0.006602	2.46	242.32	424.14	0.43
Phillips-1	5600	PF 3	800.00	1089.00	1091.21	1091.02	1091.40	0.013867	3.68	261.82	442.93	0.62
Phillips-1	5600	PF 4	1300.00	1089.00	1091.69	1091.29	1091.85	0.008134	3.60	473.29	614.35	0.51
Phillips-1	5600	PF 5	1800.00	1089.00	1092.78	1091.52	1092.82	0.001313	2.06	1282.00	984.84	0.22
Phillips-1	5600	PF 6	2200.00	1089.00	1094.18	1091.67	1094.19	0.000200	1.07	2894.82	1017.63	0.09
Phillips-1	5500	PF 1	100.00	1088.00	1089.28	1088.71	1089.29	0.002752	0.96	104.63	254.03	0.26
Phillips-1	5500	PF 2	500.00	1088.00	1090.20	1089.37	1090.21	0.001915	0.89	564.48	1260.40	0.22
Phillips-1	5500	PF 3	800.00	1088.00	1090.60	1089.56	1090.61	0.000930	0.79	1009.35	1325.45	0.15
Phillips-1	5500	PF 4	1300.00	1088.00	1091.57	1089.79	1091.58	0.000243	0.61	2159.46	1476.49	0.08
Phillips-1	5500	PF 5	1800.00	1088.00	1092.73	1090.12	1092.73	0.000091	0.49	3728.51	1718.71	0.05
Phillips-1	5500	PF 6	2200.00	1088.00	1094.17	1090.18	1094.17	0.000025	0.34	6882.88	1784.76	0.03
Phillips-1	5400	PF 1	100.00	1086.81	1087.47	1087.44	1087.68	0.031504	3.90	29.67	57.00	0.84
Phillips-1	5400	PF 2	500.00	1086.81	1088.78	1088.33	1089.16	0.014797	5.41	104.15	302.92	0.68
Phillips-1	5400	PF 3	800.00	1086.81	1089.51	1088.83	1090.00	0.012552	6.15	145.61	681.98	0.66
Phillips-1	5400	PF 4	1300.00	1086.81	1090.76	1089.53	1091.35	0.008796	6.64	217.39	1220.69	0.59
Phillips-1	5400	PF 5	1800.00	1086.81	1091.95	1090.15	1092.60	0.006884	7.00	284.77	1504.41	0.54
Phillips-1	5400	PF 6	2200.00	1086.81	1093.53	1090.60	1094.09	0.004134	6.49	375.18	1559.96	0.44
Phillips-1	5350		Culvert									
Phillips-1	5300	PF 1	100.00	1086.20	1086.83	1086.56	1086.92	0.012483	2.43	41.71	63.53	0.54
Phillips-1	5300	PF 2	500.00	1086.20	1087.69	1087.43	1088.16	0.022682	5.84	91.79	66.16	0.84
Phillips-1	5300	PF 3	800.00	1086.20	1087.92	1087.92	1088.84	0.036782	8.20	105.32	66.87	1.10
Phillips-1	5300	PF 4	1300.00	1086.20	1088.63	1088.63	1089.89	0.032334	9.66	146.33	282.23	1.09
Phillips-1	5300	PF 5	1800.00	1086.20	1089.24	1089.24	1090.83	0.030950	10.98	181.73	483.79	1.11
Phillips-1	5300	PF 6	2200.00	1086.20	1089.70	1089.70	1091.50	0.029169	11.71	208.55	566.58	1.10
Phillips-1	5200	PF 1	100.00	1084.00	1085.64		1085.66	0.003965	1.16	86.52	173.12	0.28
Phillips-1	5200	PF 2	500.00	1084.00	1086.48		1086.52	0.003979	1.55	336.43	526.33	0.29
Phillips-1	5200	PF 3	800.00	1084.00	1086.77		1086.82	0.003845	1.79	465.45	603.17	0.30
Phillips-1	5200	PF 4	1300.00	1084.00	1087.14		1087.21	0.003942	2.15	631.00	690.81	0.31
Phillips-1	5200	PF 5	1800.00	1084.00	1087.44		1087.53	0.004034	2.44	772.95	751.97	0.32
Phillips-1	5200	PF 6	2200.00	1084.00	1087.65		1087.76	0.004110	2.64	875.29	794.71	0.33
Phillips-1	5100	PF 1	100.00	1083.00	1084.56	1084.16	1084.57	0.002796	0.97	108.52	223.12	0.23
Phillips-1	5100	PF 2	500.00	1083.00	1085.43	1084.63	1085.46	0.002707	1.29	399.43	487.80	0.24
Phillips-1	5100	PF 3	800.00	1083.00	1085.75		1085.78	0.002750	1.44	572.28	616.64	0.25
Phillips-1	5100	PF 4	1300.00	1083.00	1086.13		1086.17	0.002645	1.66	810.85	845.94	0.25
Phillips-1	5100	PF 5	1800.00	1083.00	1086.39		1086.44	0.002815	1.91	979.53	884.36	0.27
Phillips-1	5100	PF 6	2200.00	1083.00	1086.57		1086.63	0.002925	2.08	1099.65	911.48	0.28
Phillips-1	5000	PF 1	100.00	1081.00	1082.56	1082.28	1082.60	0.008244	1.75	57.22	116.83	0.44
Phillips-1	5000	PF 2	500.00	1081.00	1083.38	1082.90	1083.45	0.009487	2.02	248.37	397.26	0.45
Phillips-1	5000	PF 3	800.00	1081.00	1083.64	1083.21	1083.71	0.009849	2.24	358.91	481.85	0.45
Phillips-1	5000	PF 4	1300.00	1081.00	1084.02	1083.47	1084.10	0.010709	2.29	570.08	780.93	0.47
Phillips-1	5000	PF 5	1800.00	1081.00	1084.20	1083.63	1084.30	0.010489	2.53	715.32	806.64	0.47
Phillips-1	5000	PF 6	2200.00	1081.00	1084.33		1084.44	0.010398	2.70	820.36	823.61	0.47
Phillips-1	4900	PF 1	100.00	1079.00	1079.48	1079.22	1079.50	0.004605	0.87	115.55	320.91	0.25
Phillips-1	4900	PF 2	500.00	1079.00	1080.13	1079.55	1080.15	0.004604	1.18	423.10	752.98	0.28
Phillips-1	4900	PF 3	800.00	1079.00	1080.33	1079.71	1080.36	0.004602	1.39	576.79	807.17	0.29
Phillips-1	4900	PF 4	1300.00	1079.00	1080.59	1079.92	1080.63	0.004601	1.64	797.89	879.28	0.30
Phillips-1	4900	PF 5	1800.00	1079.00	1080.81	1080.12	1080.86	0.004603	1.83	994.75	938.83	0.31
Phillips-1	4900	PF 6	2200.00	1079.00	1080.96	1080.21	1081.02	0.004602	1.95	1141.44	980.86	0.31

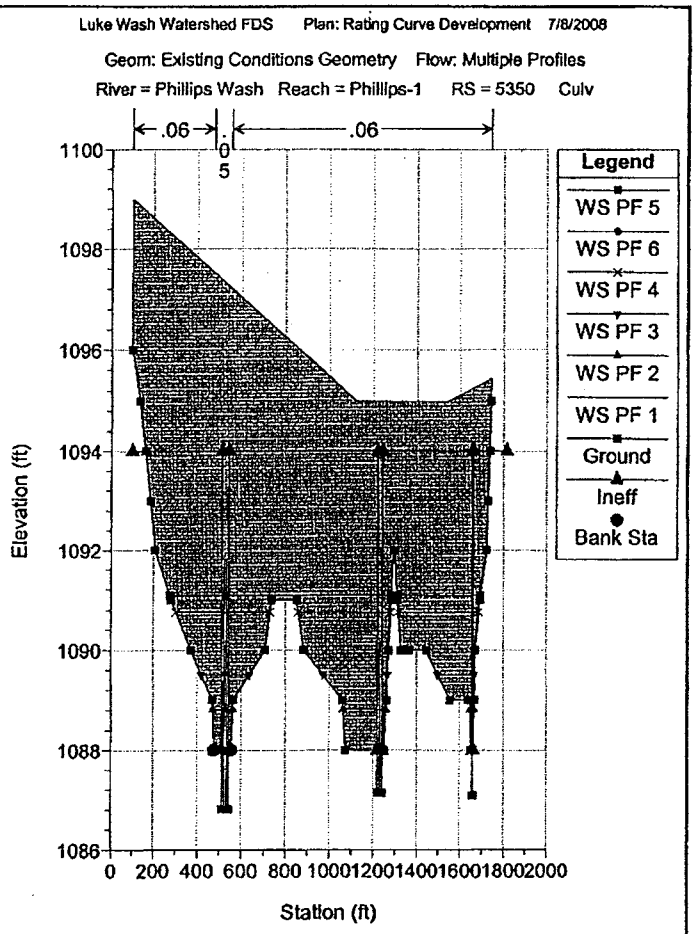

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5800
.06
.05
.06
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

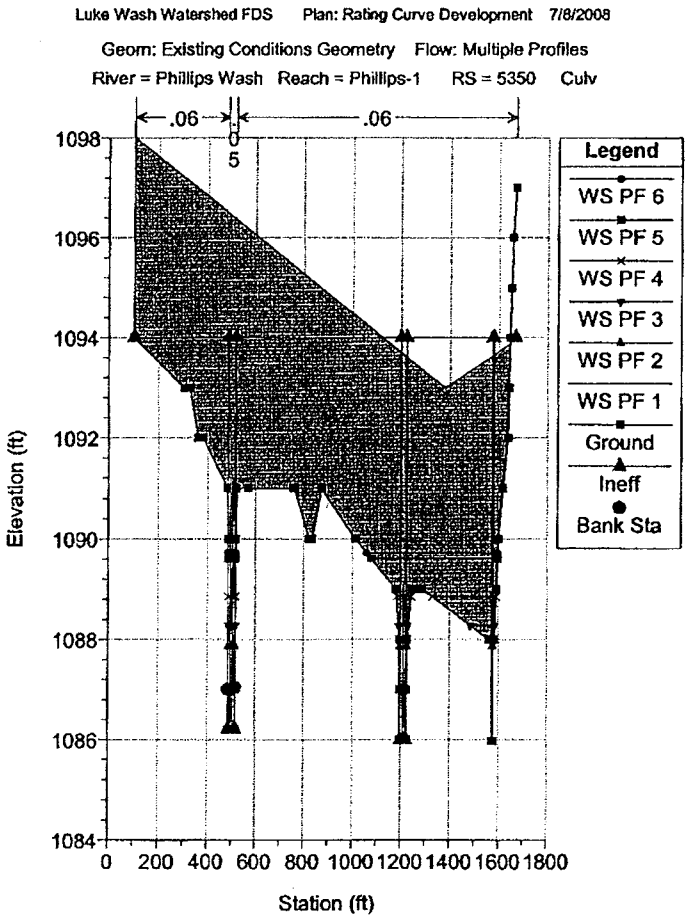

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5700
.06
.05
.06
Legend
WS PF 6
WS PF 4
WS PF 5
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

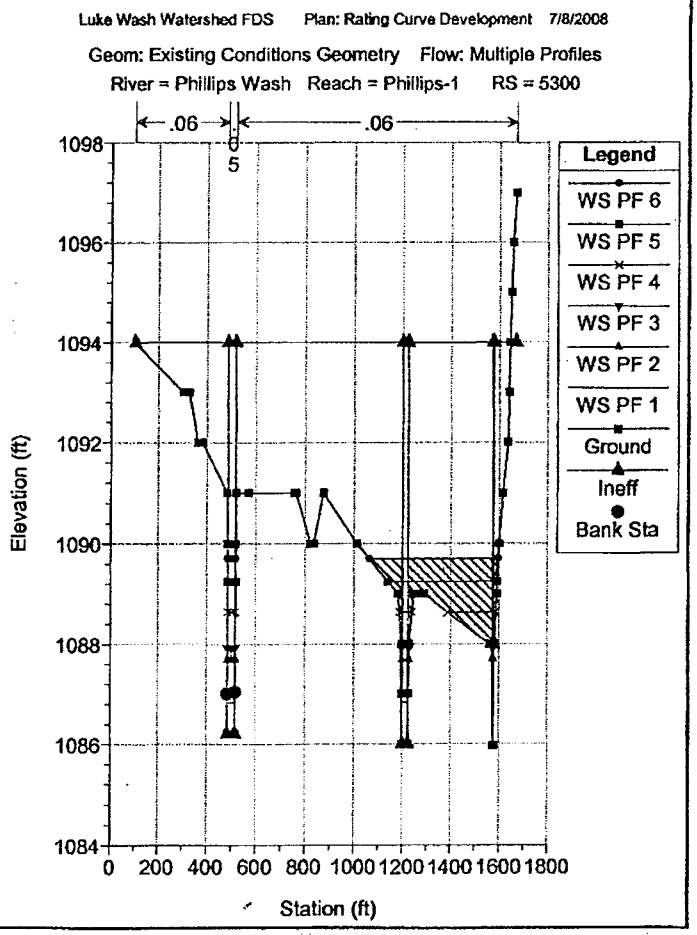

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5600
.06
.05
.06
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5500
.06
.05
.06
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5400
.06
.06
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5350 Culv
.06
.06
Legend
WS PF 5
WS PF 6
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

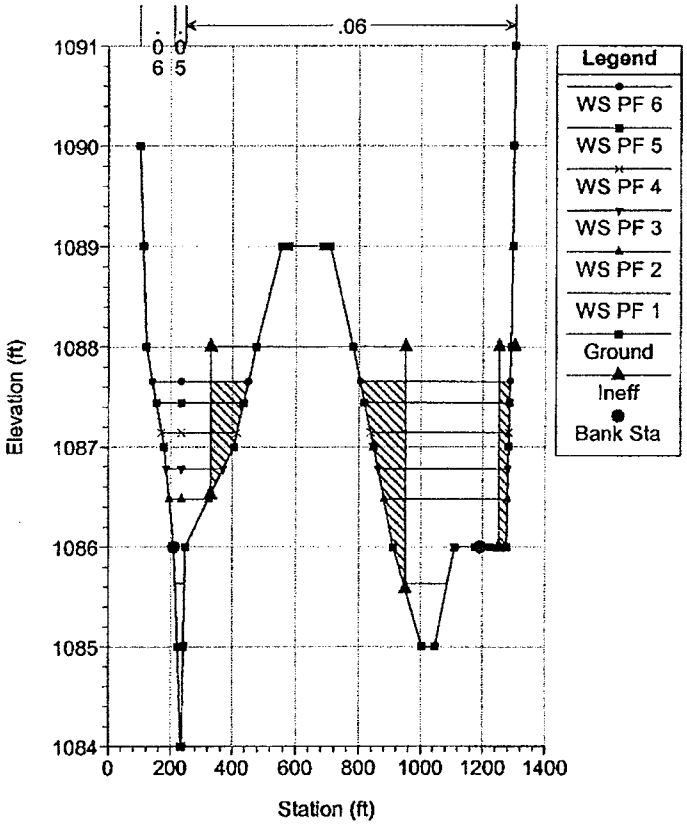

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5350 Culv
.06
.06
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Phillips Wash Reach = Phillips-1 RS = 5300
.06
.06
Legend
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

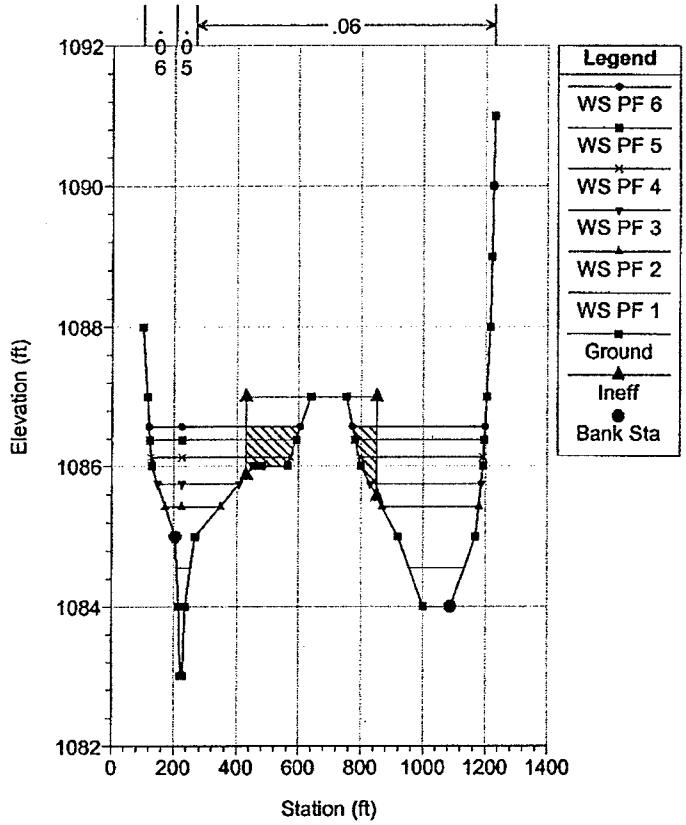
River = Phillips Wash Reach = Phillips-1 RS = 5200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

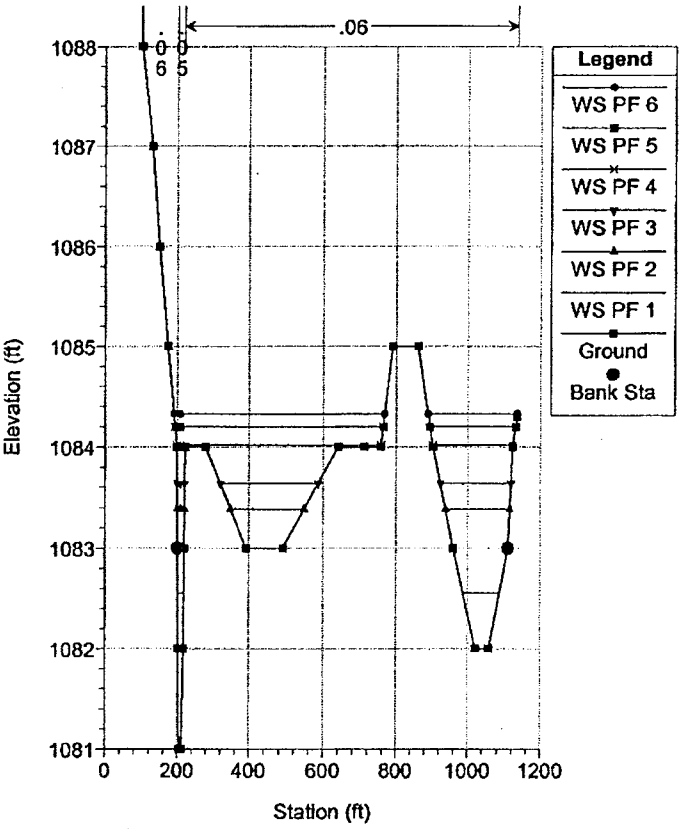
River = Phillips Wash Reach = Phillips-1 RS = 5100



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

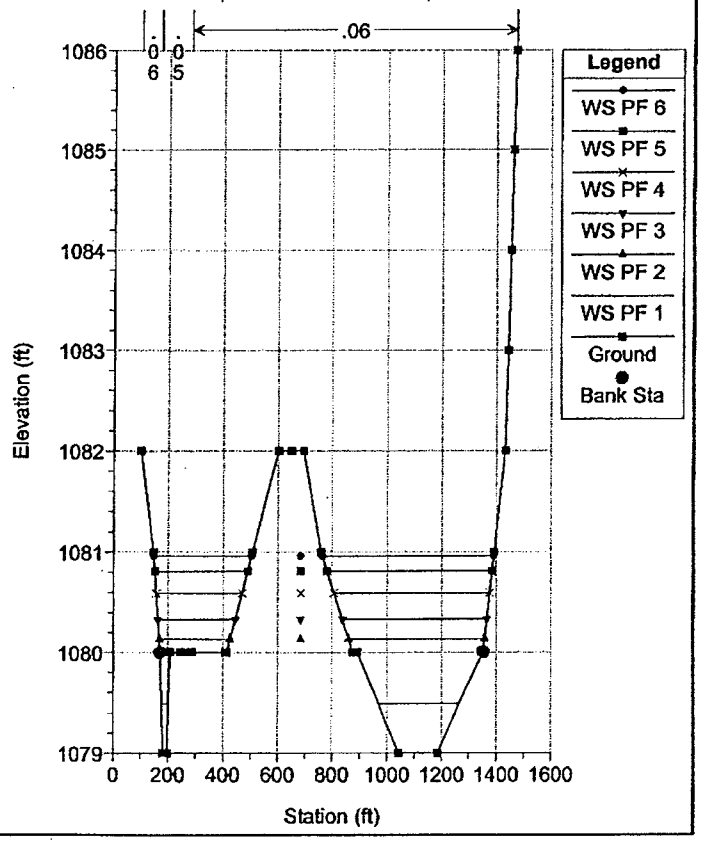
River = Phillips Wash Reach = Phillips-1 RS = 5000



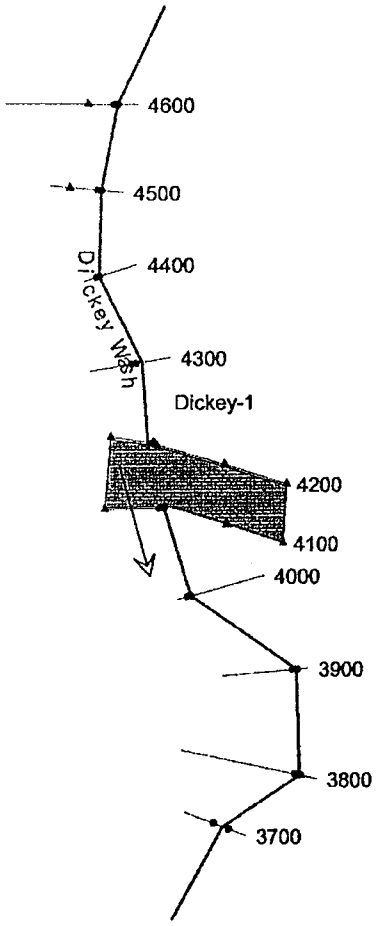
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = Phillips Wash Reach = Phillips-1 RS = 4900



for Structures (36) & (38)



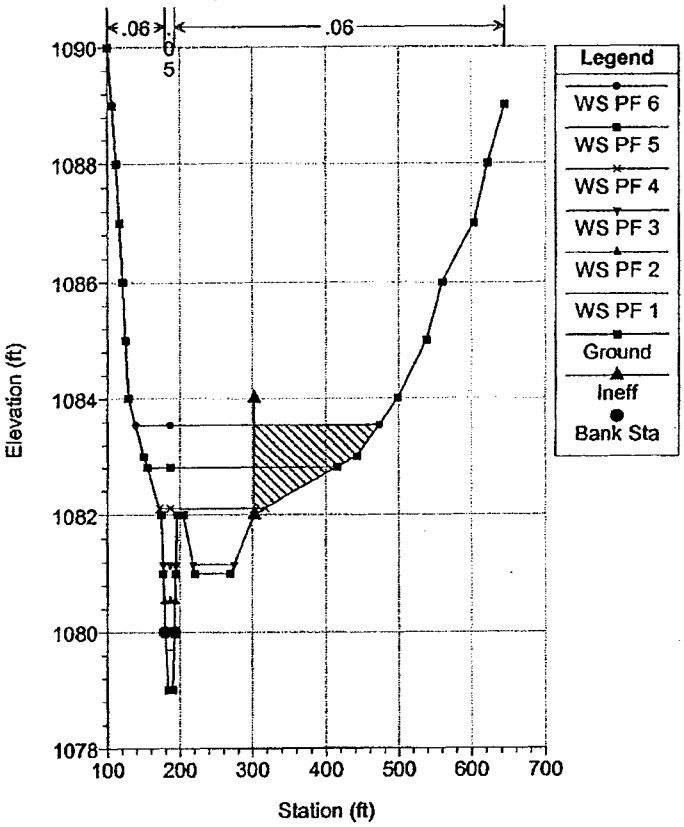
HEC-RAS Plan: FDS River: Dickey Wash Reach: Dickey-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dickey-1	4600	PF 1	10.00	1079.00	1079.70	1079.41	1079.75	0.008074	1.74	5.74	10.68	0.42
Dickey-1	4600	PF 2	50.00	1079.00	1080.53	1080.06	1080.68	0.008154	3.08	16.70	15.15	0.48
Dickey-1	4600	PF 3	100.00	1079.00	1081.16	1080.54	1081.36	0.007211	3.79	35.17	74.00	0.49
Dickey-1	4600	PF 4	300.00	1079.00	1082.11	1081.72	1082.27	0.005208	4.23	131.33	146.33	0.44
Dickey-1	4600	PF 5	600.00	1079.00	1082.81	1082.28	1082.97	0.004695	4.65	227.95	259.91	0.44
Dickey-1	4600	PF 6	1000.00	1079.00	1083.54	1082.66	1083.72	0.004092	4.93	342.51	333.99	0.42
Dickey-1	4500	PF 1	10.00	1077.00	1077.87	1077.42	1077.89	0.003308	1.21	8.27	13.70	0.27
Dickey-1	4500	PF 2	50.00	1077.00	1078.87		1078.94	0.002928	2.13	24.38	17.97	0.30
Dickey-1	4500	PF 3	100.00	1077.00	1079.55		1079.66	0.003061	2.77	41.99	31.22	0.33
Dickey-1	4500	PF 4	300.00	1077.00	1080.76		1080.89	0.002793	3.54	153.03	158.51	0.34
Dickey-1	4500	PF 5	600.00	1077.00	1081.55		1081.68	0.002703	4.00	268.05	184.09	0.34
Dickey-1	4500	PF 6	1000.00	1077.00	1082.59		1082.71	0.001938	3.92	432.37	208.48	0.30
Dickey-1	4400	PF 1	10.00	1076.00	1076.65	1076.27	1076.67	0.002777	1.08	9.25	15.88	0.25
Dickey-1	4400	PF 2	50.00	1076.00	1077.37	1076.75	1077.45	0.004768	2.31	21.96	19.76	0.37
Dickey-1	4400	PF 3	100.00	1076.00	1077.91		1078.06	0.005358	3.13	33.52	22.78	0.42
Dickey-1	4400	PF 4	300.00	1076.00	1078.96		1079.24	0.006534	4.72	98.24	106.89	0.50
Dickey-1	4400	PF 5	600.00	1076.00	1079.56		1079.92	0.008226	6.01	169.03	130.73	0.57
Dickey-1	4400	PF 6	1000.00	1076.00	1082.15		1082.21	0.000830	2.79	584.25	181.96	0.20
Dickey-1	4300	PF 1	10.00	1074.00	1074.34	1074.22	1074.38	0.013380	1.62	6.18	19.03	0.50
Dickey-1	4300	PF 2	50.00	1074.00	1075.13	1074.62	1075.20	0.005551	2.20	22.73	23.16	0.39
Dickey-1	4300	PF 3	100.00	1074.00	1075.70		1075.81	0.004894	2.79	36.78	26.22	0.39
Dickey-1	4300	PF 4	300.00	1074.00	1077.12		1077.27	0.003257	3.49	128.10	115.25	0.36
Dickey-1	4300	PF 5	600.00	1074.00	1078.64		1078.72	0.001300	2.90	361.63	199.39	0.24
Dickey-1	4300	PF 6	1000.00	1074.00	1082.07		1082.08	0.000145	1.41	1233.81	311.24	0.09
Dickey-1	4200	PF 1	10.00	1072.00	1072.18	1071.60	1072.21	0.003503	0.55	7.85	24.95	0.23
Dickey-1	4200	PF 2	50.00	1072.00	1072.85	1072.42	1072.97	0.007320	2.28	18.67	32.35	0.44
Dickey-1	4200	PF 3	100.00	1072.00	1073.42	1072.81	1073.62	0.008151	3.38	27.70	37.44	0.50
Dickey-1	4200	PF 4	300.00	1072.00	1075.01	1073.91	1075.50	0.008454	5.69	53.13	50.60	0.58
Dickey-1	4200	PF 5	600.00	1072.00	1076.97	1075.21	1077.75	0.007173	7.33	84.51	129.08	0.58
Dickey-1	4200	PF 6	1000.00	1072.00	1081.20	1076.64	1081.88	0.002786	6.89	152.23	749.96	0.40
Dickey-1	4150		Culvert									
Dickey-1	4100	PF 1	10.00	1071.07	1070.33	1069.93	1070.39	0.008195		5.02	21.65	0.00
Dickey-1	4100	PF 2	50.00	1071.07	1071.51	1070.79	1071.68	0.008217	1.55	16.43	41.34	0.41
Dickey-1	4100	PF 3	100.00	1071.07	1072.21	1071.66	1072.43	0.007499	2.80	27.68	49.97	0.46
Dickey-1	4100	PF 4	300.00	1071.07	1073.17	1072.78	1073.94	0.016570	6.28	43.12	55.31	0.76
Dickey-1	4100	PF 5	600.00	1071.07	1074.03	1074.03	1075.77	0.026785	10.03	56.87	63.38	1.03
Dickey-1	4100	PF 6	1000.00	1071.07	1075.43	1075.43	1077.90	0.024805	12.49	79.21	349.48	1.05
Dickey-1	4000	PF 1	10.00	1069.00	1068.93		1068.95	0.002087		10.35	12.58	0.00
Dickey-1	4000	PF 2	50.00	1069.00	1069.83		1069.86	0.002910	1.23	32.63	29.69	0.26
Dickey-1	4000	PF 3	100.00	1069.00	1070.49		1070.53	0.003292	1.99	63.35	73.57	0.31
Dickey-1	4000	PF 4	300.00	1069.00	1071.50		1071.55	0.002794	2.70	195.26	201.02	0.31
Dickey-1	4000	PF 5	600.00	1069.00	1072.25		1072.30	0.002372	3.00	389.79	306.76	0.30
Dickey-1	4000	PF 6	1000.00	1069.00	1072.72		1072.79	0.002456	3.37	537.40	312.57	0.32
Dickey-1	3900	PF 1	10.00	1066.00	1066.40	1066.25	1066.45	0.012499	1.71	5.86	15.77	0.49
Dickey-1	3900	PF 2	50.00	1066.00	1067.19		1067.28	0.006975	2.51	20.01	20.30	0.43
Dickey-1	3900	PF 3	100.00	1066.00	1067.79		1067.94	0.005815	3.11	33.34	23.74	0.43
Dickey-1	3900	PF 4	300.00	1066.00	1068.56		1068.86	0.008728	4.93	97.43	128.46	0.58
Dickey-1	3900	PF 5	600.00	1066.00	1068.90		1069.44	0.015590	7.19	145.45	156.60	0.76
Dickey-1	3900	PF 6	1000.00	1066.00	1069.40	1069.40	1069.95	0.015010	7.89	234.40	198.39	0.77
Dickey-1	3800	PF 1	10.00	1064.00	1064.61		1064.62	0.001977	0.88	11.36	20.70	0.21
Dickey-1	3800	PF 2	50.00	1064.00	1065.36		1065.41	0.002749	1.76	28.72	25.52	0.28
Dickey-1	3800	PF 3	100.00	1064.00	1065.85		1065.94	0.003471	2.48	41.89	28.53	0.33
Dickey-1	3800	PF 4	300.00	1064.00	1066.49	1065.89	1066.58	0.003409	3.04	203.24	326.40	0.35
Dickey-1	3800	PF 5	600.00	1064.00	1067.03		1067.09	0.002617	3.05	382.21	342.75	0.32
Dickey-1	3800	PF 6	1000.00	1064.00	1067.63		1067.69	0.002030	3.05	592.87	360.61	0.29
Dickey-1	3700	PF 1	10.00	1063.00	1063.37	1063.18	1063.38	0.005009	0.91	10.98	38.52	0.30
Dickey-1	3700	PF 2	50.00	1063.00	1063.84	1063.46	1063.87	0.005004	1.45	34.55	60.45	0.34
Dickey-1	3700	PF 3	100.00	1063.00	1064.15	1063.68	1064.20	0.005002	1.82	55.06	71.32	0.38
Dickey-1	3700	PF 4	300.00	1063.00	1064.88	1064.19	1064.99	0.005001	2.80	113.18	88.68	0.40
Dickey-1	3700	PF 5	600.00	1063.00	1065.60	1064.70	1065.79	0.005009	3.62	183.28	104.92	0.42
Dickey-1	3700	PF 6	1000.00	1063.00	1066.33	1065.23	1066.59	0.005004	4.36	273.96	147.40	0.44

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

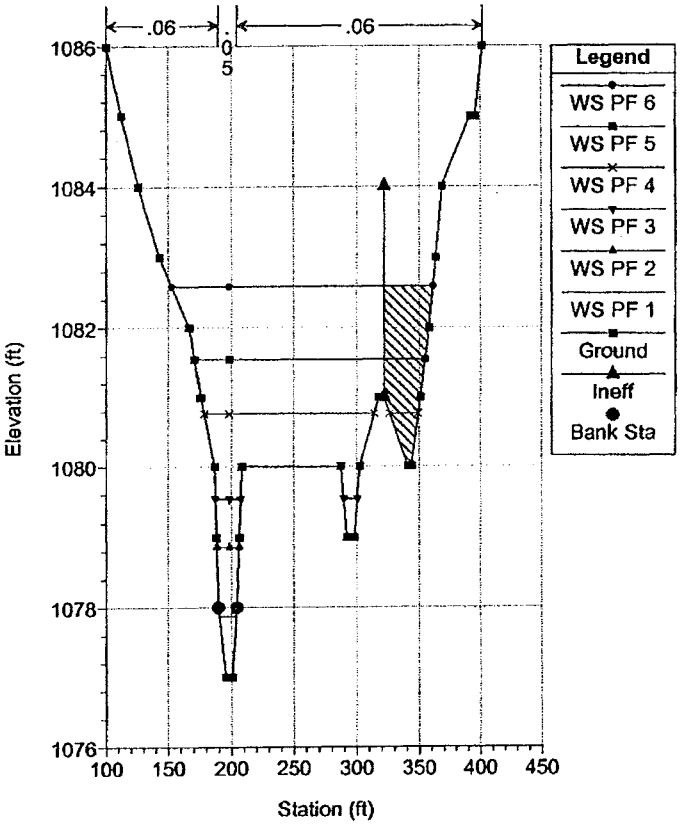
River = Dickey Wash Reach = Dickey-1 RS = 4600



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

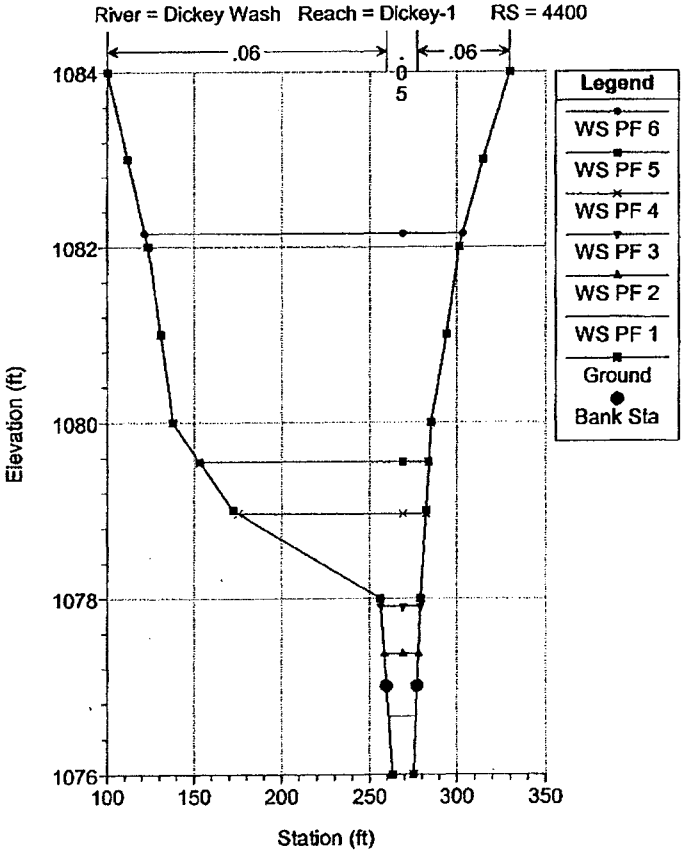
River = Dickey Wash Reach = Dickey-1 RS = 4500



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

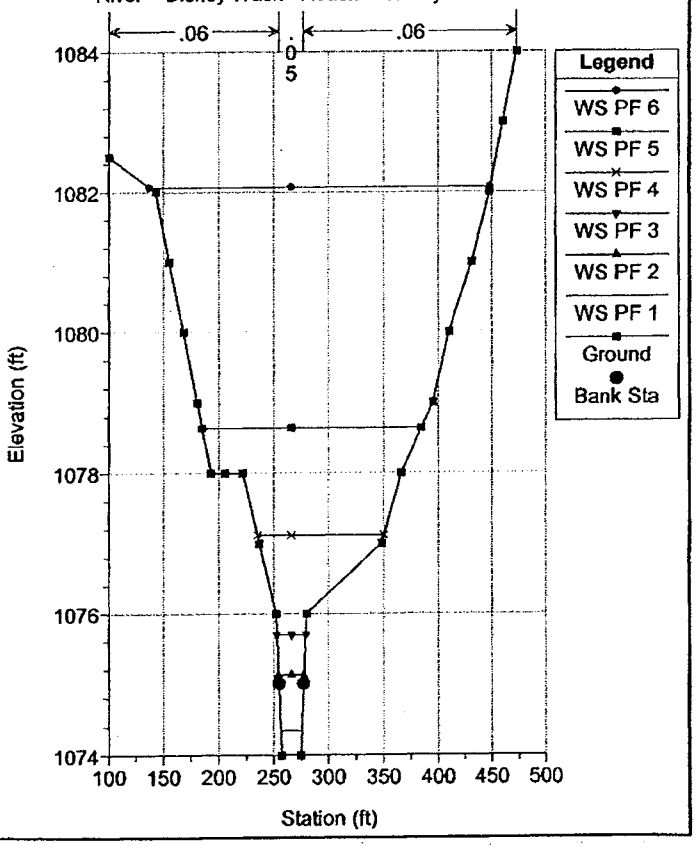
River = Dickey Wash Reach = Dickey-1 RS = 4400



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

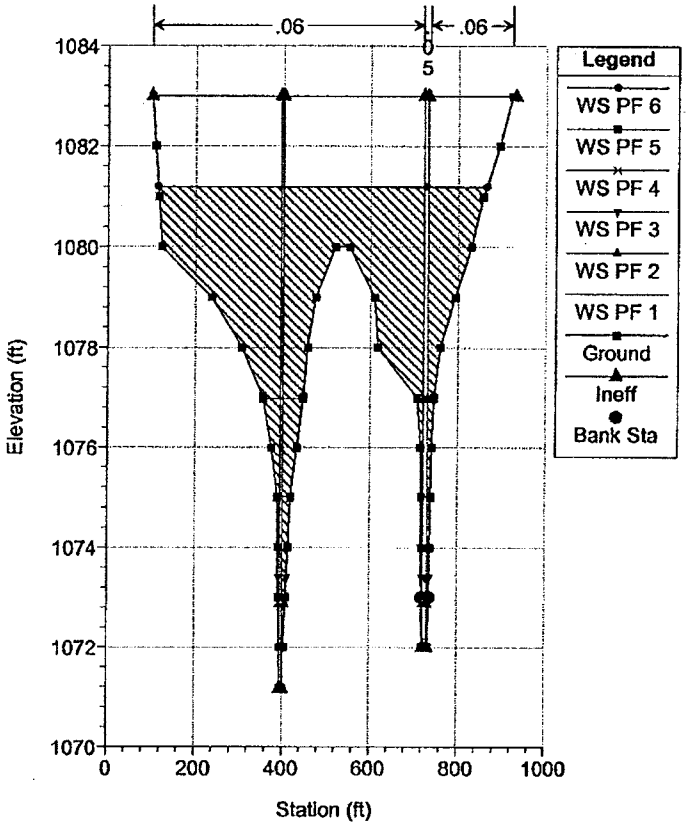
River = Dickey Wash Reach = Dickey-1 RS = 4300



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

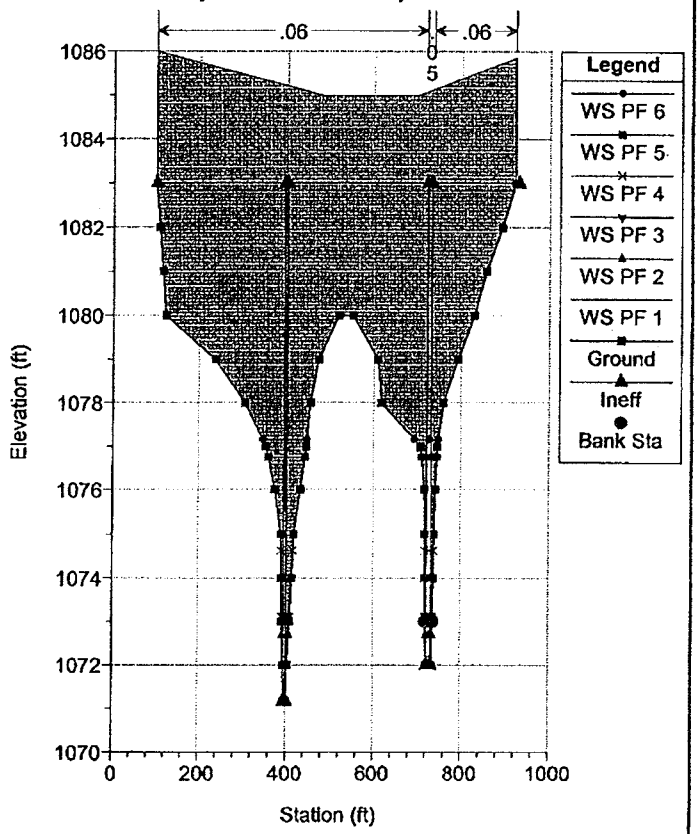
River = Dickey Wash Reach = Dickey-1 RS = 4200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

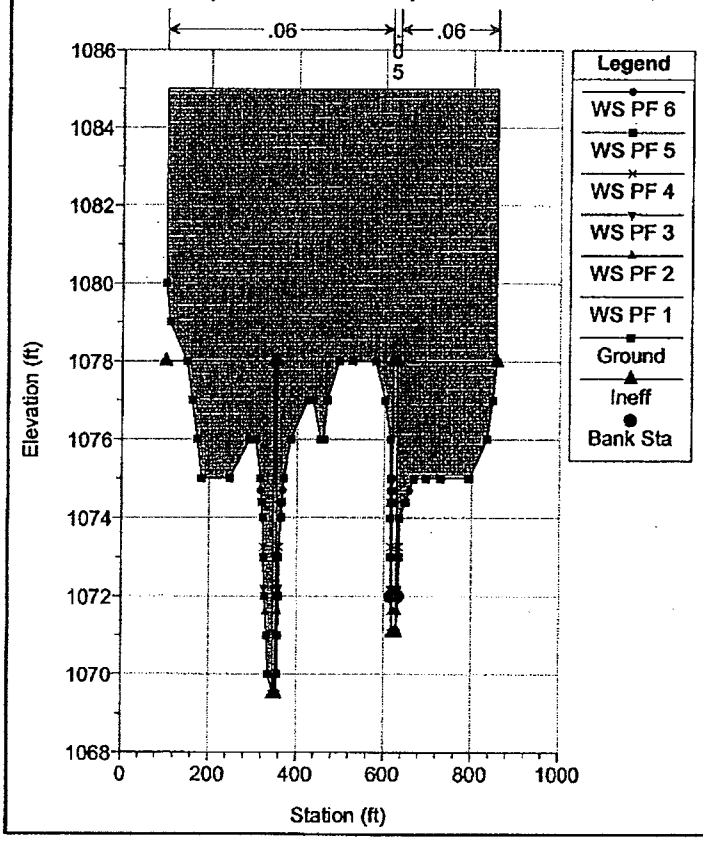
River = Dickey Wash Reach = Dickey-1 RS = 4150 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

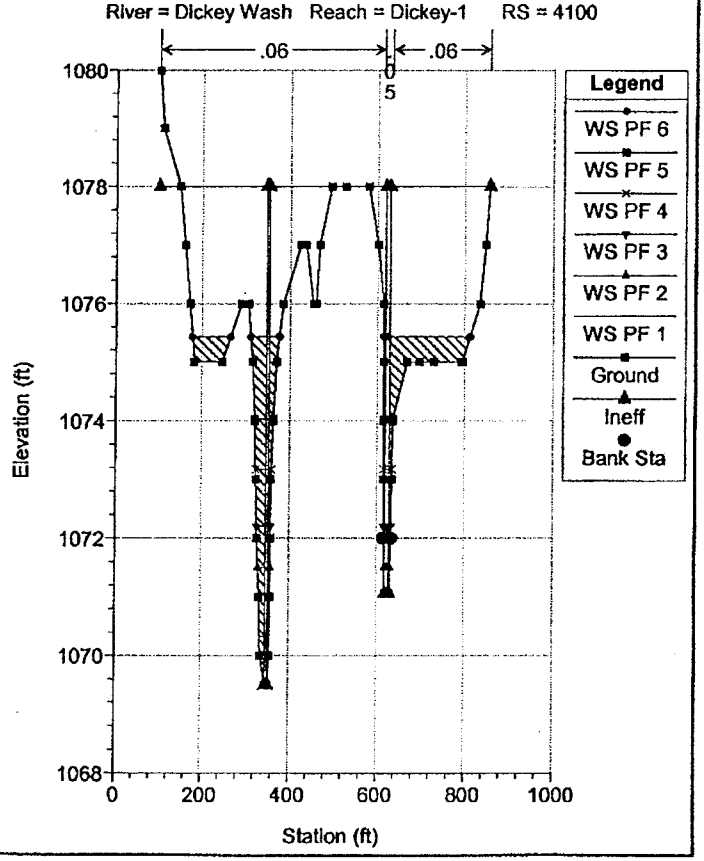
River = Dickey Wash Reach = Dickey-1 RS = 4150 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

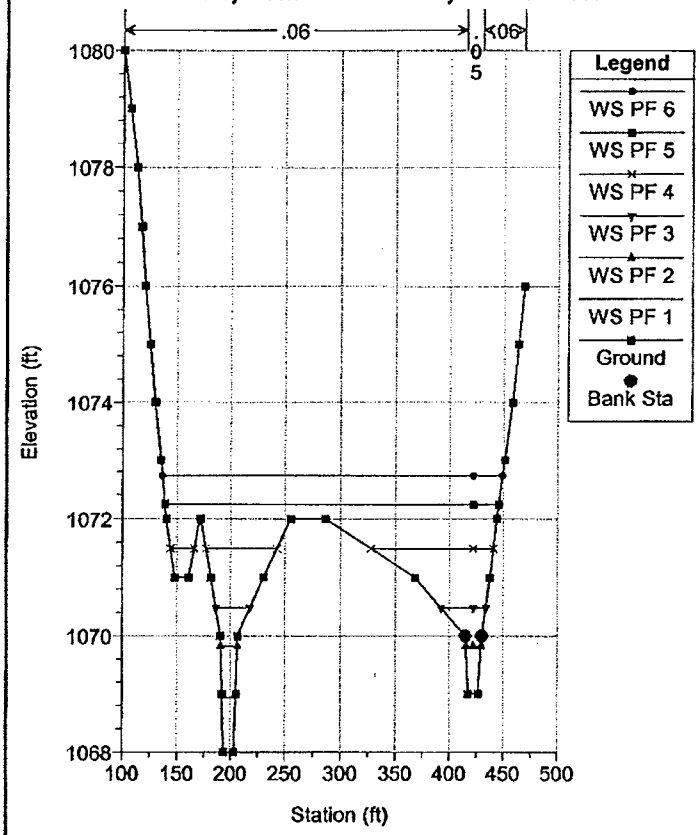
River = Dickey Wash Reach = Dickey-1 RS = 4100



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

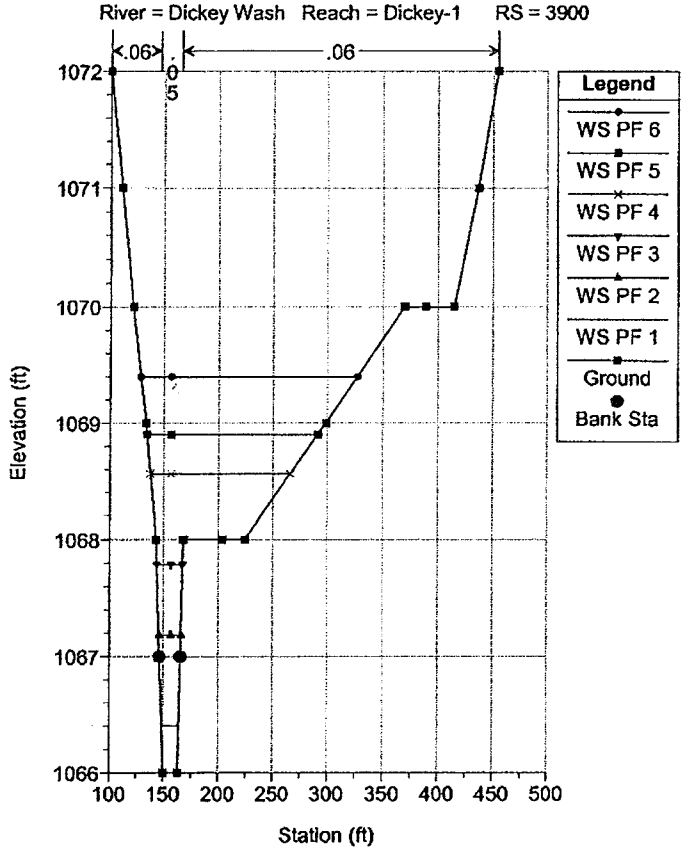
River = Dickey Wash Reach = Dickey-1 RS = 4000



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

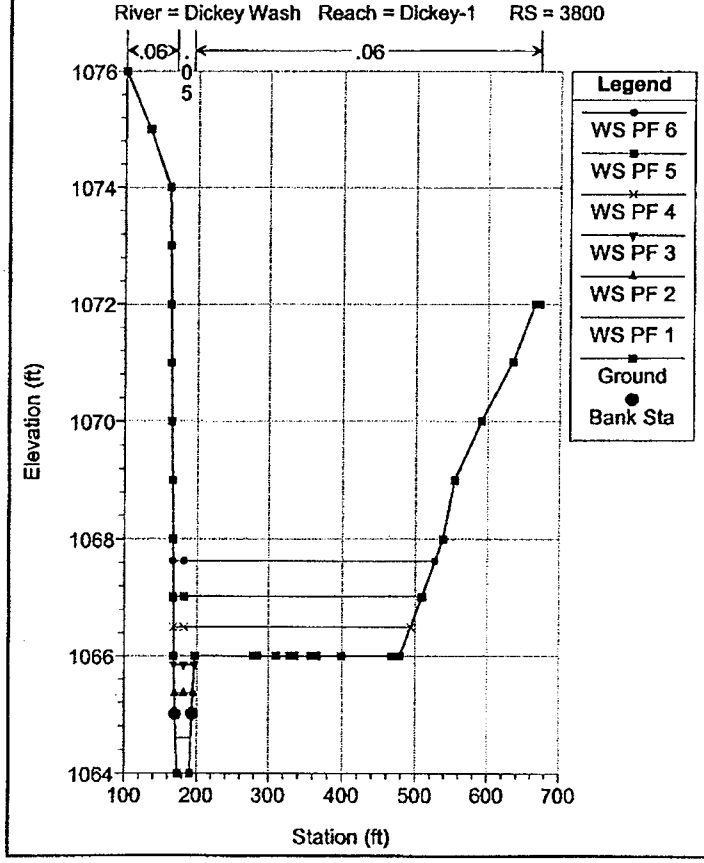
River = Dickey Wash Reach = Dickey-1 RS = 3900



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

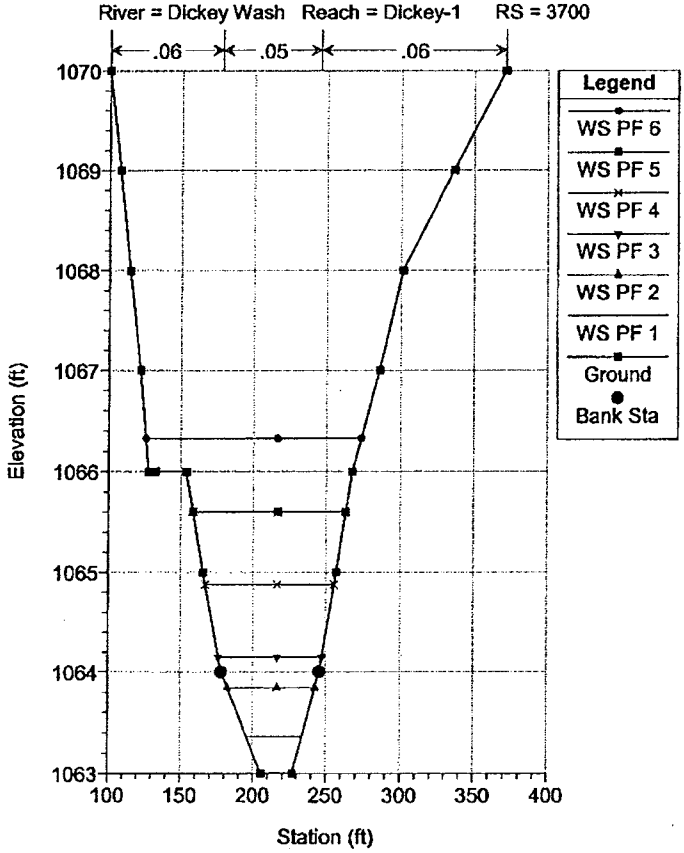
River = Dickey Wash Reach = Dickey-1 RS = 3800



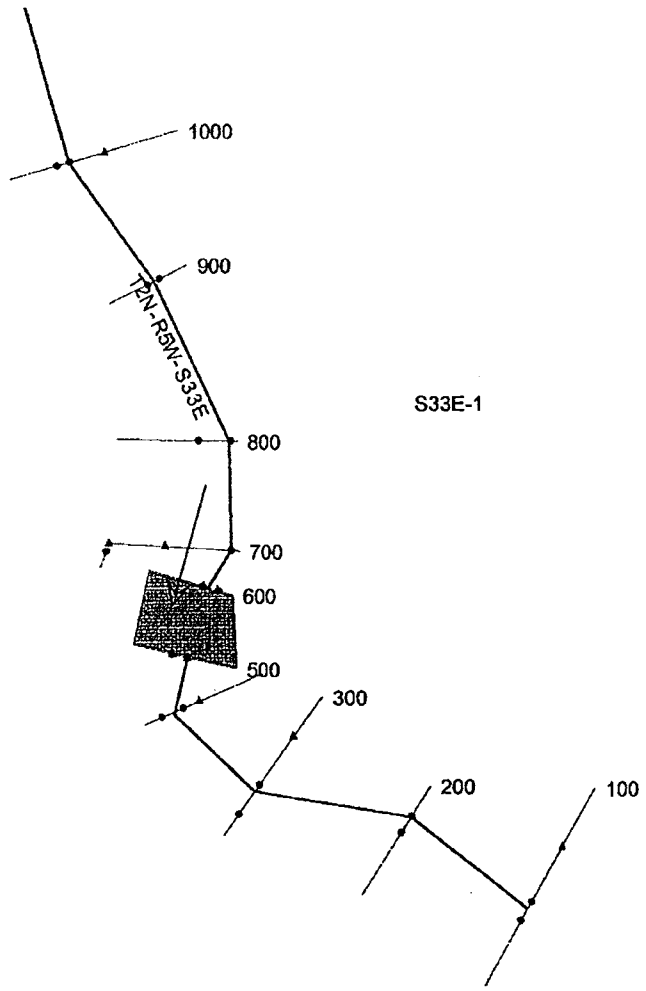
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Flows

River = Dickey Wash Reach = Dickey-1 RS = 3700



for Structure (52)



HEC-RAS Plan: FDS River: T2N-R5W-S33E Reach: S33E-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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
S33E-1	1000	PF 1	100.00	1046.00	1047.68	1046.71	1047.73	0.001966	1.78	57.34	40.03	0.25
S33E-1	1000	PF 2	600.00	1046.00	1049.71	1048.22	1049.94	0.003419	4.07	181.16	112.91	0.38
S33E-1	1000	PF 3	1000.00	1046.00	1050.62	1049.13	1050.93	0.003757	4.95	268.74	180.41	0.41
S33E-1	1000	PF 4	1500.00	1046.00	1051.51	1049.91	1051.88	0.003794	5.61	390.13	255.74	0.43
S33E-1	1000	PF 5	1800.00	1046.00	1051.99	1050.26	1052.35	0.003507	5.71	464.59	274.00	0.41
S33E-1	1000	PF 6	2200.00	1046.00	1052.44	1050.77	1052.66	0.002369	4.93	812.54	355.80	0.34
S33E-1	1000	PF 7	3000.00	1046.00	1053.19	1051.72	1053.40	0.002167	5.08	1117.85	445.93	0.34
S33E-1	900	PF 1	100.00	1045.00	1046.11	1045.81	1046.21	0.008639	2.61	43.98	65.68	0.48
S33E-1	900	PF 2	600.00	1045.00	1047.69		1047.95	0.006870	4.54	158.72	79.82	0.51
S33E-1	900	PF 3	1000.00	1045.00	1048.61	1047.45	1048.94	0.006045	5.24	237.26	92.31	0.50
S33E-1	900	PF 4	1500.00	1045.00	1049.29	1048.01	1049.76	0.006861	6.31	303.89	102.73	0.55
S33E-1	900	PF 5	1800.00	1045.00	1049.21	1048.35	1049.92	0.010708	7.77	295.15	101.47	0.68
S33E-1	900	PF 6	2200.00	1045.00	1048.77	1048.77	1050.20	0.024703	10.93	252.20	94.82	1.02
S33E-1	900	PF 7	3000.00	1045.00	1049.52	1049.52	1051.13	0.022312	11.79	327.63	106.06	1.00
S33E-1	800	PF 1	100.00	1042.00	1042.95	1042.56	1043.00	0.006278	1.77	56.59	86.90	0.39
S33E-1	800	PF 2	600.00	1042.00	1043.82		1044.08	0.011803	4.22	156.38	143.48	0.61
S33E-1	800	PF 3	1000.00	1042.00	1044.06	1044.06	1044.58	0.019345	5.98	197.47	224.52	0.80
S33E-1	800	PF 4	1500.00	1042.00	1044.41	1044.41	1045.03	0.019327	6.76	278.31	232.98	0.82
S33E-1	800	PF 5	1800.00	1042.00	1044.98		1045.37	0.009708	5.62	413.73	246.52	0.61
S33E-1	800	PF 6	2200.00	1042.00	1046.72		1046.84	0.001719	3.30	879.01	289.44	0.28
S33E-1	800	PF 7	3000.00	1042.00	1047.84		1047.95	0.001261	3.29	1218.87	317.89	0.25
S33E-1	700	PF 1	100.00	1039.00	1039.76		1039.87	0.020049	2.88	37.32	73.40	0.66
S33E-1	700	PF 2	600.00	1039.00	1040.87		1041.01	0.008677	3.00	201.51	279.92	0.52
S33E-1	700	PF 3	1000.00	1039.00	1041.78		1041.88	0.003389	2.58	392.40	338.49	0.33
S33E-1	700	PF 4	1500.00	1039.00	1043.54		1043.59	0.000885	1.93	795.41	394.86	0.18
S33E-1	700	PF 5	1800.00	1039.00	1044.82		1044.85	0.000520	1.49	1235.43	406.17	0.15
S33E-1	700	PF 6	2200.00	1039.00	1046.66		1046.68	0.000189	1.13	2005.47	426.29	0.09
S33E-1	700	PF 7	3000.00	1039.00	1047.79		1047.81	0.000182	1.25	2489.43	433.27	0.09
S33E-1	600	PF 1	100.00	1036.96	1037.70	1037.51	1037.85	0.017119	3.17	31.59	46.58	0.65
S33E-1	600	PF 2	600.00	1036.96	1039.57	1038.78	1040.01	0.009042	5.35	112.09	51.01	0.58
S33E-1	600	PF 3	1000.00	1036.96	1040.71	1039.52	1041.31	0.007496	6.21	161.11	69.37	0.57
S33E-1	600	PF 4	1500.00	1036.96	1043.23	1040.32	1043.45	0.001684	4.10	542.11	258.10	0.29
S33E-1	600	PF 5	1800.00	1036.96	1044.68	1040.74	1044.78	0.000709	3.06	915.30	258.10	0.19
S33E-1	600	PF 6	2200.00	1036.96	1046.60	1041.29	1046.65	0.000315	2.36	1410.24	258.10	0.13
S33E-1	600	PF 7	3000.00	1036.96	1047.71	1042.28	1047.78	0.000336	2.63	1698.80	258.10	0.14
S33E-1	550		Culvert									
S33E-1	500	PF 1	100.00	1036.03	1037.14	1036.58	1037.21	0.004325	2.10	47.73	44.16	0.35
S33E-1	500	PF 2	600.00	1036.03	1038.56	1037.85	1039.03	0.010063	5.53	108.56	45.32	0.61
S33E-1	500	PF 3	1000.00	1036.03	1039.15	1038.59	1040.01	0.013781	7.45	134.21	45.56	0.74
S33E-1	500	PF 4	1500.00	1036.03	1039.70	1039.39	1041.10	0.018064	9.50	157.83	45.72	0.87
S33E-1	500	PF 5	1800.00	1036.03	1039.96	1039.83	1041.72	0.020650	10.64	169.14	45.80	0.95
S33E-1	500	PF 6	2200.00	1036.03	1041.38	1041.38	1042.20	0.007809	7.87	426.72	297.05	0.60
S33E-1	500	PF 7	3000.00	1036.03	1041.85	1041.85	1042.72	0.008367	8.61	565.78	297.05	0.63
S33E-1	400	PF 1	100.00	1035.30	1036.34	1036.09	1036.38	0.006501	1.87	61.33	159.65	0.40
S33E-1	400	PF 2	600.00	1035.30	1037.37	1036.79	1037.55	0.007661	3.74	181.17	218.26	0.50
S33E-1	400	PF 3	1000.00	1035.30	1037.89		1038.17	0.006208	4.62	243.07	255.52	0.54
S33E-1	400	PF 4	1500.00	1035.30	1038.36		1038.78	0.009430	5.61	298.91	278.37	0.60
S33E-1	400	PF 5	1800.00	1035.30	1038.58		1039.09	0.010265	6.18	325.77	281.00	0.63
S33E-1	400	PF 6	2200.00	1035.30	1038.93		1039.52	0.010379	6.69	367.32	285.05	0.65
S33E-1	400	PF 7	3000.00	1035.30	1039.49	1038.61	1040.34	0.013630	8.52	518.10	292.07	0.77
S33E-1	300	PF 1	100.00	1033.00	1033.77	1033.48	1033.83	0.009369	2.01	49.84	85.52	0.46
S33E-1	300	PF 2	600.00	1033.00	1034.77	1034.35	1034.97	0.009021	3.70	187.59	188.27	0.53
S33E-1	300	PF 3	1000.00	1033.00	1035.19	1034.78	1035.48	0.009561	4.48	282.48	264.87	0.57
S33E-1	300	PF 4	1500.00	1033.00	1035.55	1034.93	1035.88	0.009856	5.11	377.53	279.07	0.60
S33E-1	300	PF 5	1800.00	1033.00	1035.76	1035.39	1036.11	0.009622	5.35	432.39	287.24	0.60
S33E-1	300	PF 6	2200.00	1033.00	1036.08		1036.49	0.009771	5.84	525.11	361.13	0.61
S33E-1	300	PF 7	3000.00	1033.00	1036.49		1036.93	0.009241	6.23	679.48	385.87	0.61
S33E-1	200	PF 1	100.00	1028.00	1028.91		1029.02	0.012831	2.70	37.04	51.44	0.56
S33E-1	200	PF 2	600.00	1028.00	1030.06		1030.38	0.012239	4.93	170.00	214.11	0.64
S33E-1	200	PF 3	1000.00	1028.00	1030.47	1030.31	1030.82	0.011902	5.56	258.83	221.10	0.65
S33E-1	200	PF 4	1500.00	1028.00	1030.88		1031.28	0.011418	6.09	351.87	228.18	0.66
S33E-1	200	PF 5	1800.00	1028.00	1031.08		1031.52	0.011728	6.47	396.52	236.78	0.67
S33E-1	200	PF 6	2200.00	1028.00	1031.31		1031.80	0.012083	6.92	453.76	256.53	0.69
S33E-1	200	PF 7	3000.00	1028.00	1031.71		1032.30	0.012657	7.67	561.74	290.16	0.72
S33E-1	100	PF 1	100.00	1024.00	1024.87	1024.53	1024.94	0.007708	2.11	50.85	75.49	0.44
S33E-1	100	PF 2	600.00	1024.00	1026.14	1025.50	1026.35	0.007710	4.08	200.97	263.68	0.51

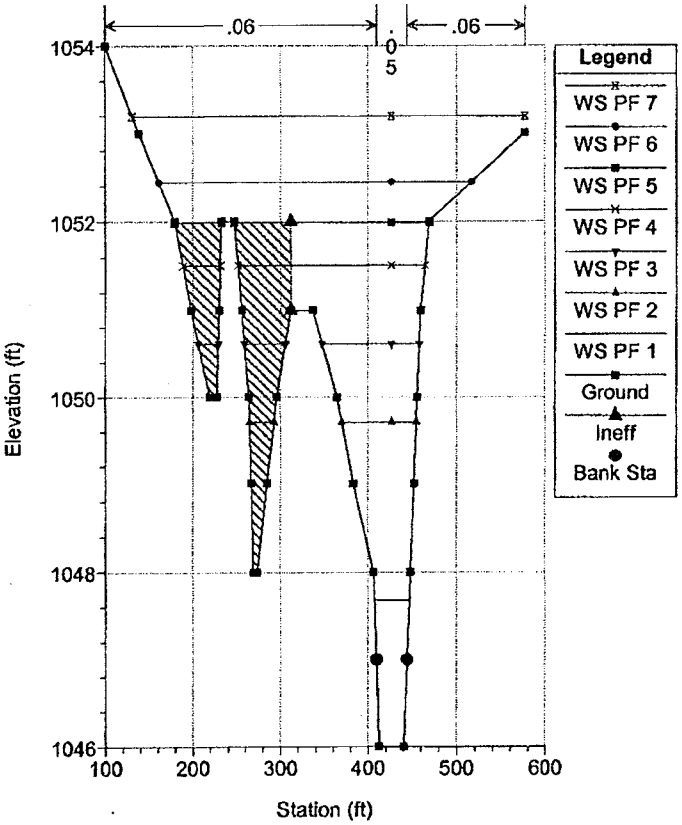
HEC-RAS Plan: FDS River: T2N-R5W-S33E Reach: S33E-1 (Continued)

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
S33E-1	100	PF 3	1000.00	1024.00	1026.61	1025.92	1026.86	0.007702	4.70	315.96	346.67	0.53
S33E-1	100	PF 4	1500.00	1024.00	1027.10	1025.93	1027.38	0.007713	5.32	479.68	435.26	0.55
S33E-1	100	PF 5	1800.00	1024.00	1027.27	1026.78	1027.56	0.007702	5.52	555.17	443.22	0.55
S33E-1	100	PF 6	2200.00	1024.00	1027.47	1026.97	1027.78	0.007707	5.76	647.21	452.75	0.56
S33E-1	100	PF 7	3000.00	1024.00	1027.83	1026.96	1028.16	0.007700	6.17	813.71	469.48	0.57

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

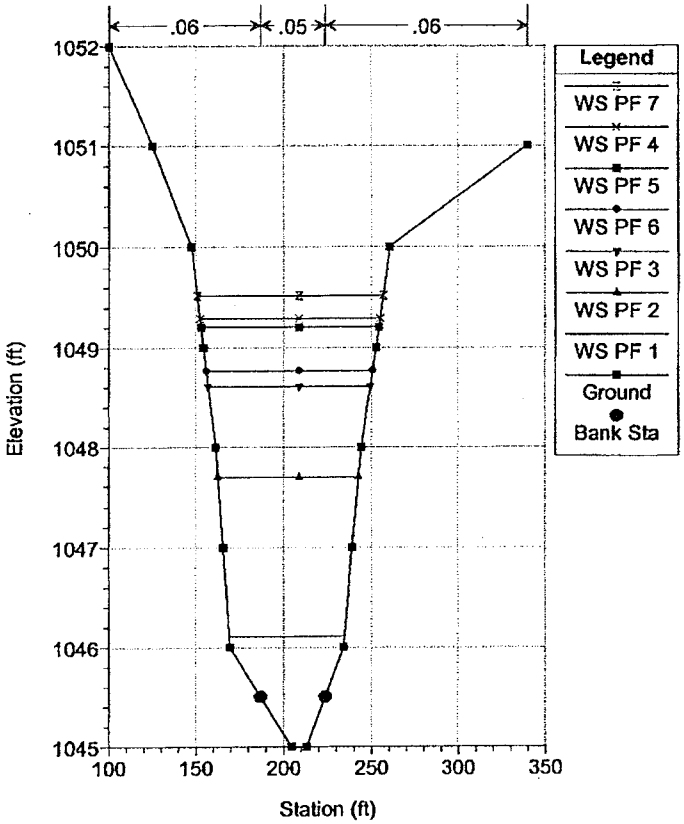
River = T2N-R5W-S33E Reach = S33E-1 RS = 1000



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

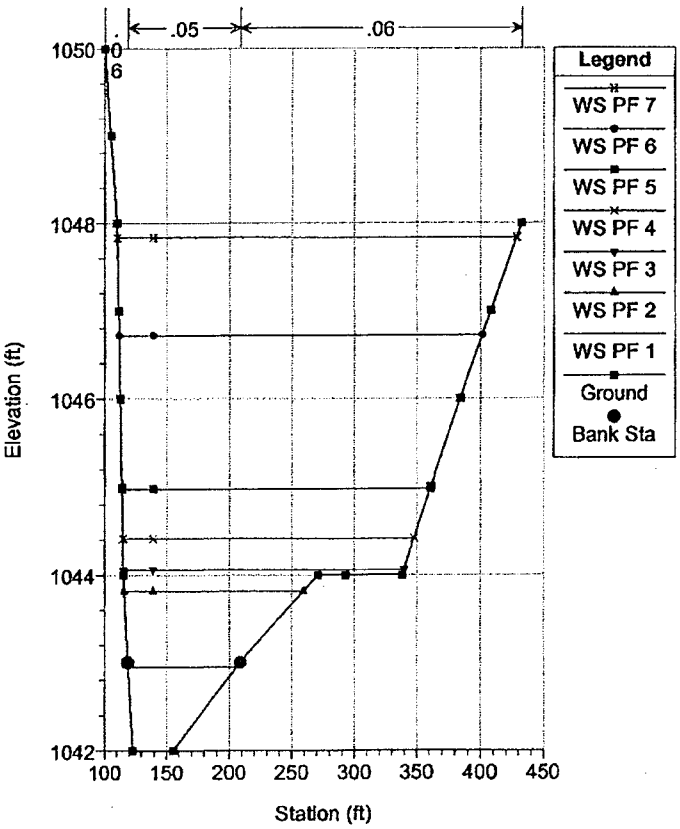
River = T2N-R5W-S33E Reach = S33E-1 RS = 900



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

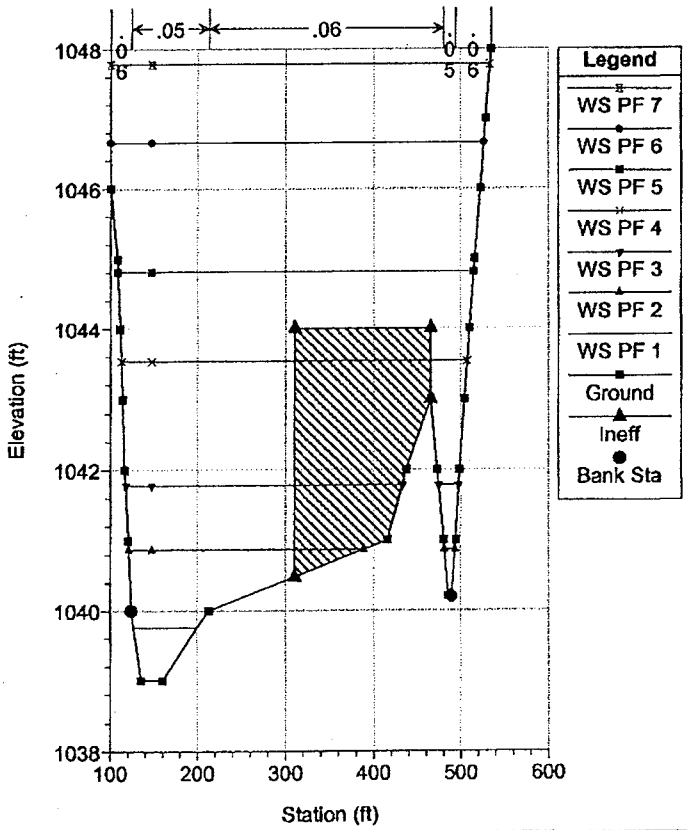
River = T2N-R5W-S33E Reach = S33E-1 RS = 800



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

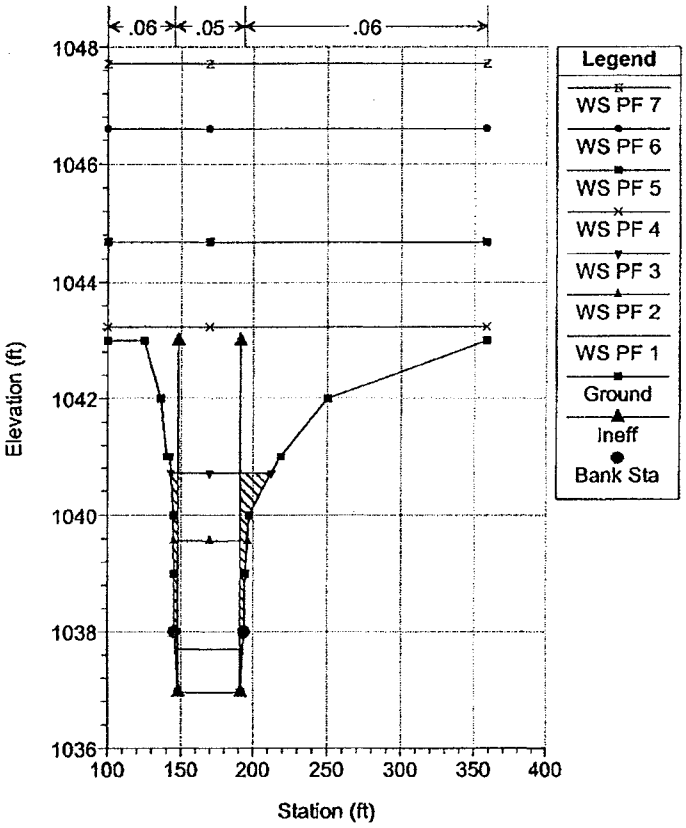
River = T2N-R5W-S33E Reach = S33E-1 RS = 700



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

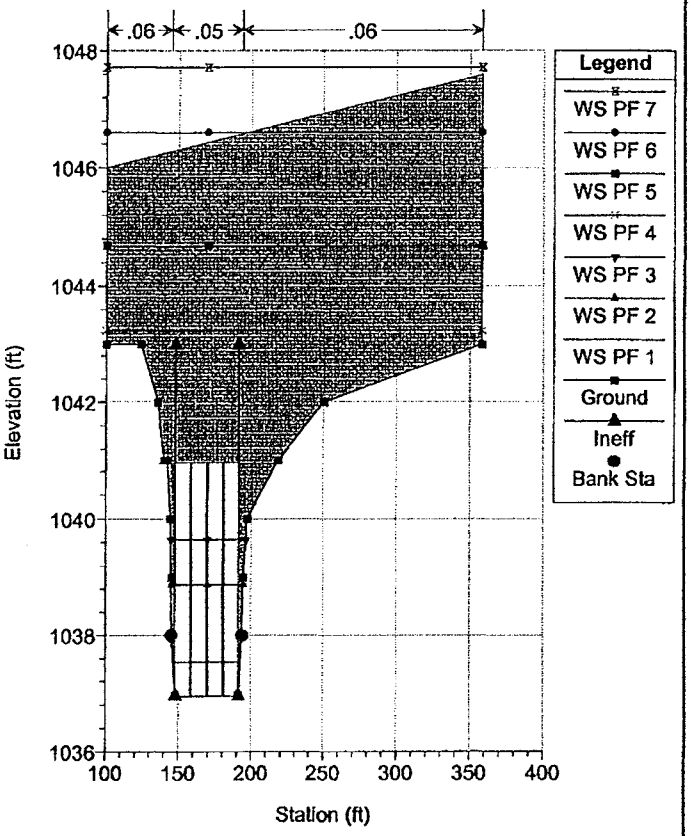
River = T2N-R5W-S33E Reach = S33E-1 RS = 600



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

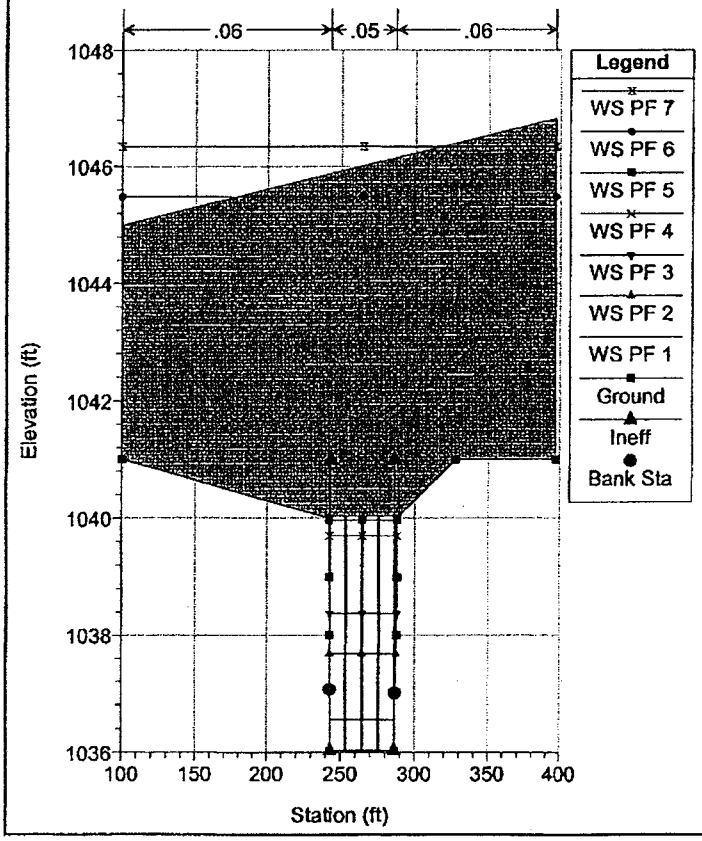
River = T2N-R5W-S33E Reach = S33E-1 RS = 550 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

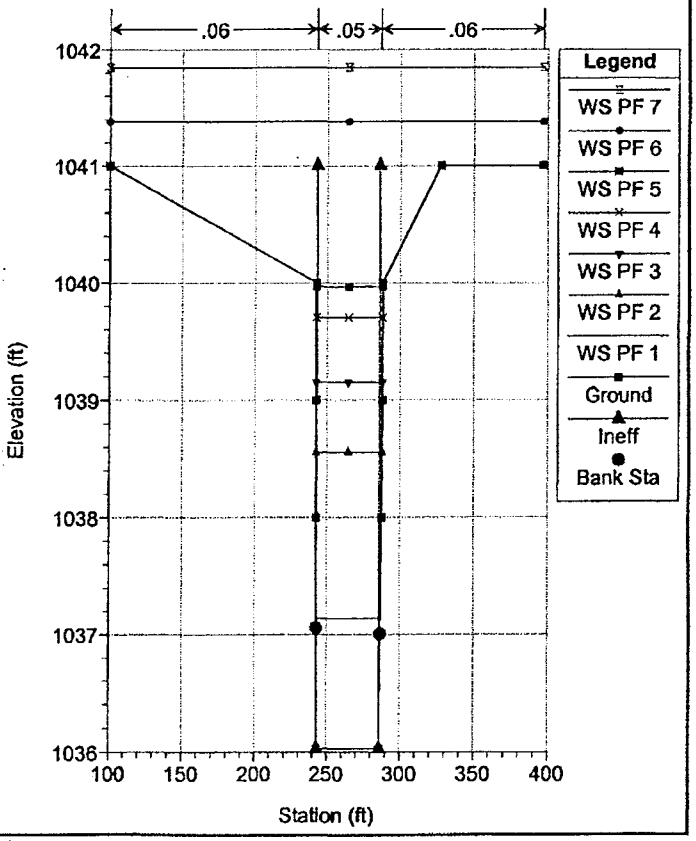
River = T2N-R5W-S33E Reach = S33E-1 RS = 550 Culv



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

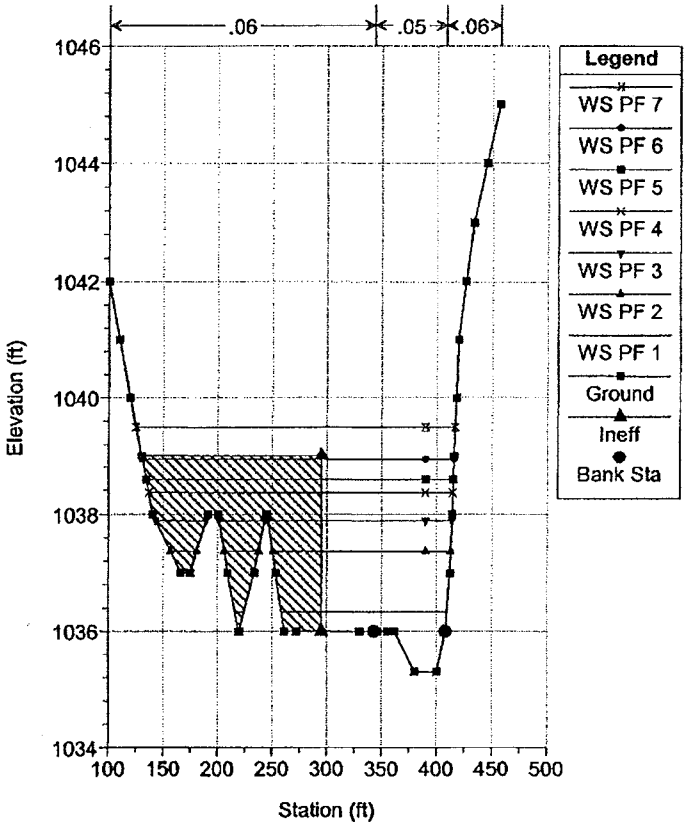
River = T2N-R5W-S33E Reach = S33E-1 RS = 500



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

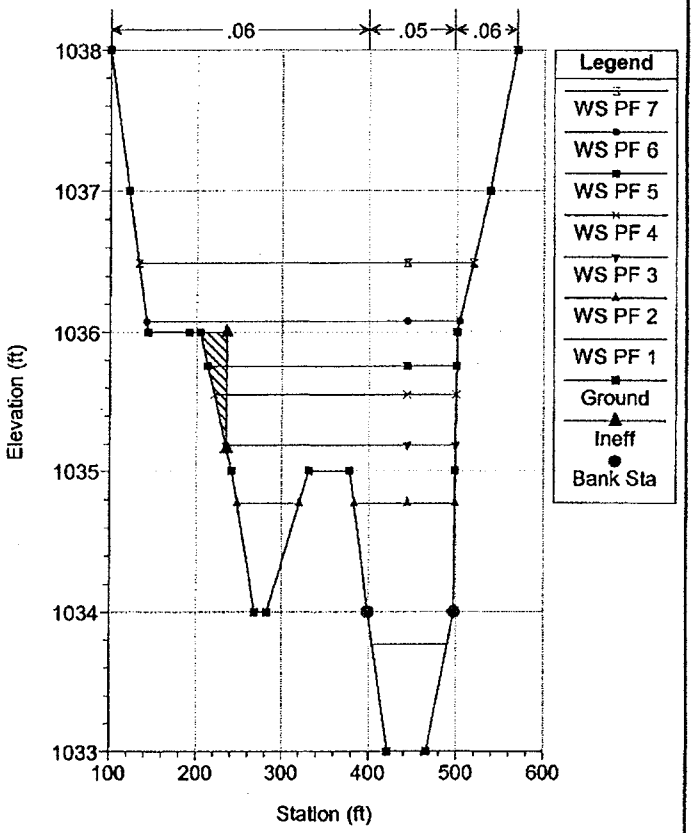
River = T2N-R5W-S33E Reach = S33E-1 RS = 400



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

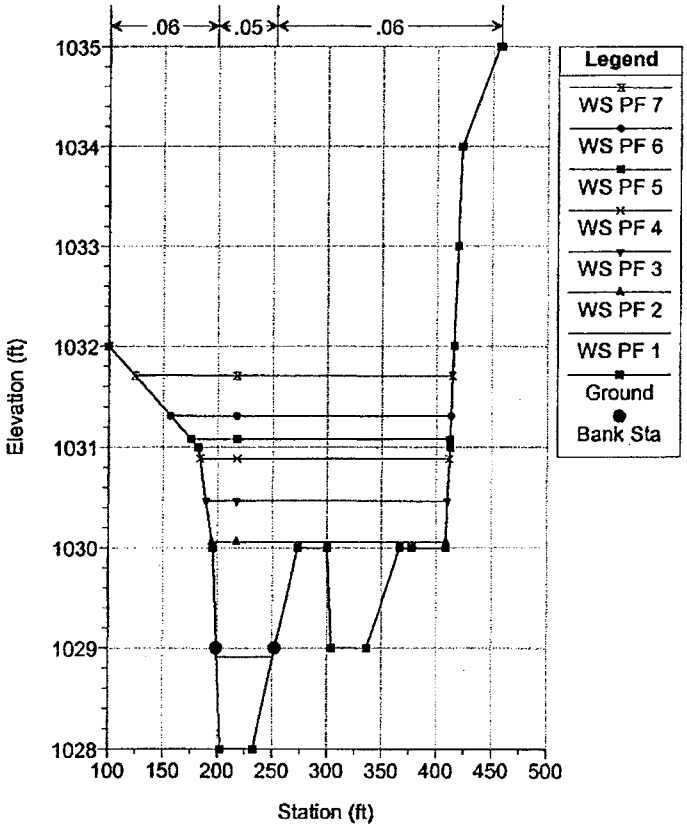
River = T2N-R5W-S33E Reach = S33E-1 RS = 300



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

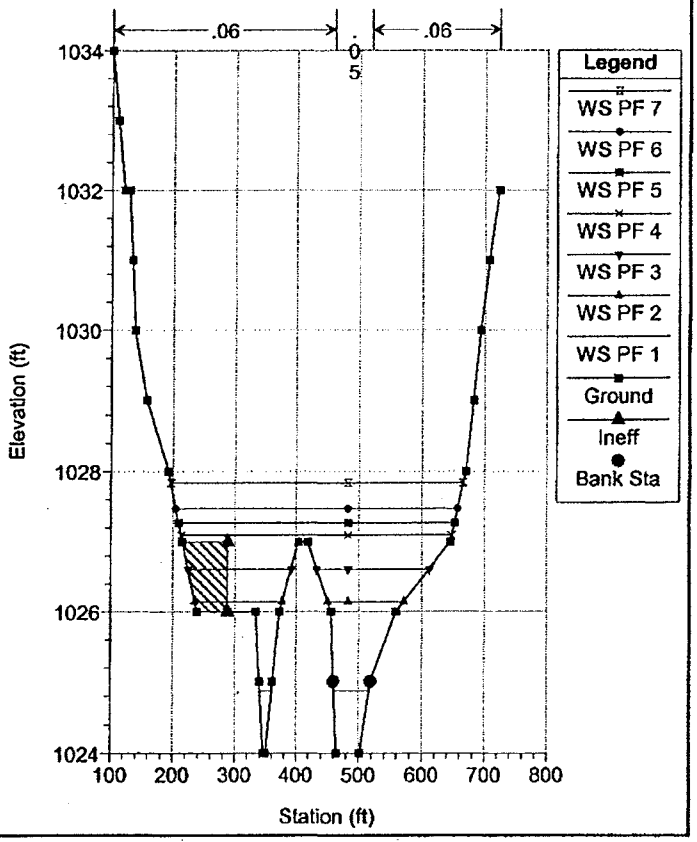
River = T2N-R5W-S33E Reach = S33E-1 RS = 200



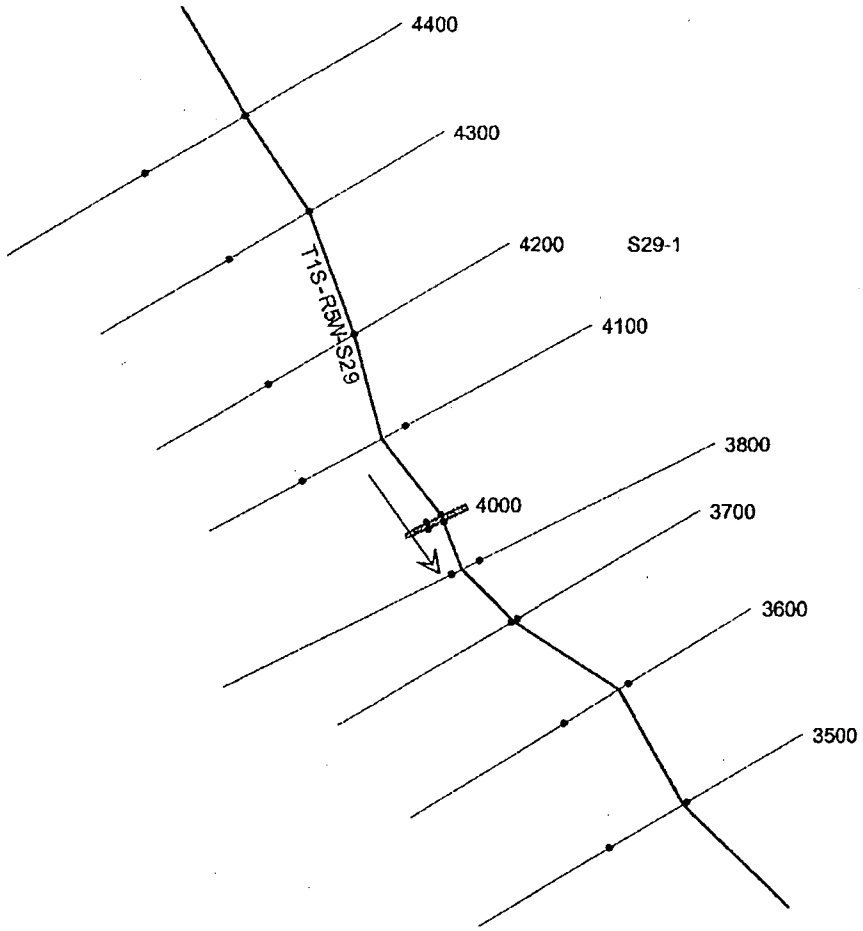
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = T2N-R5W-S33E Reach = S33E-1 RS = 100

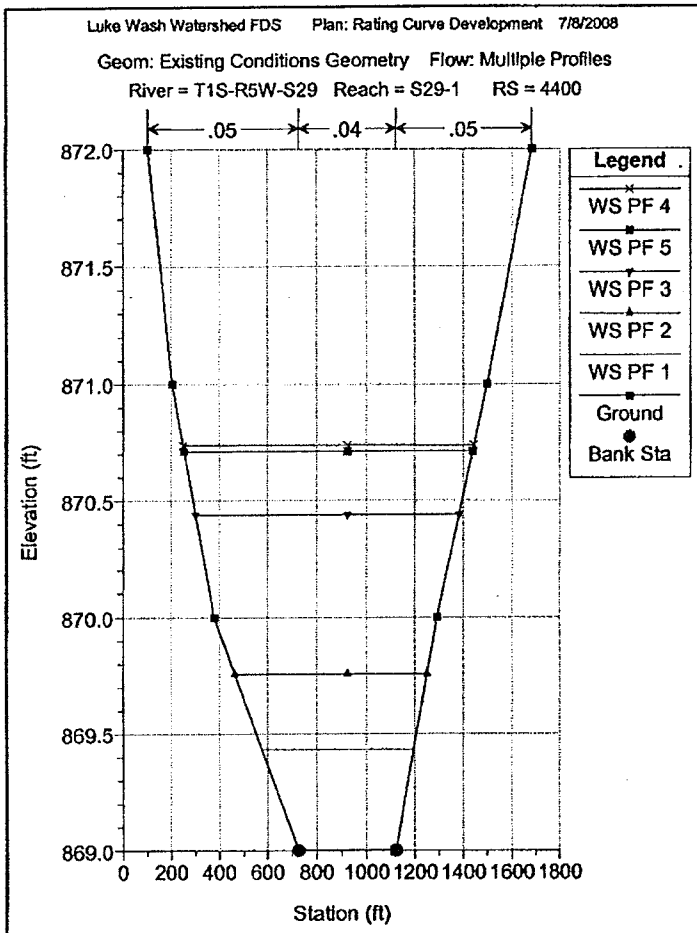


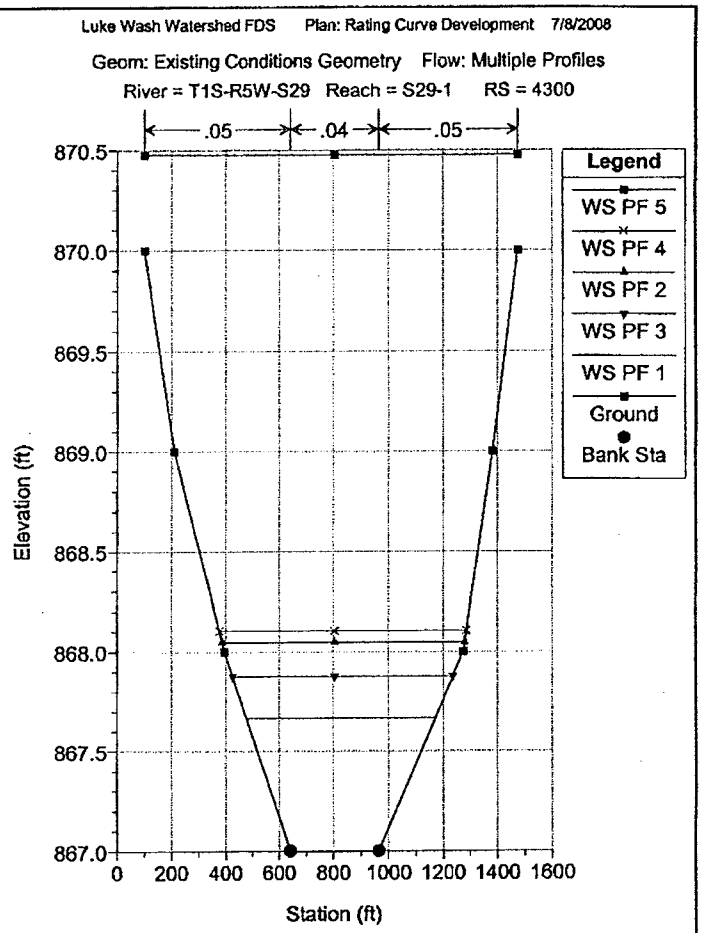
for Structure UPR1

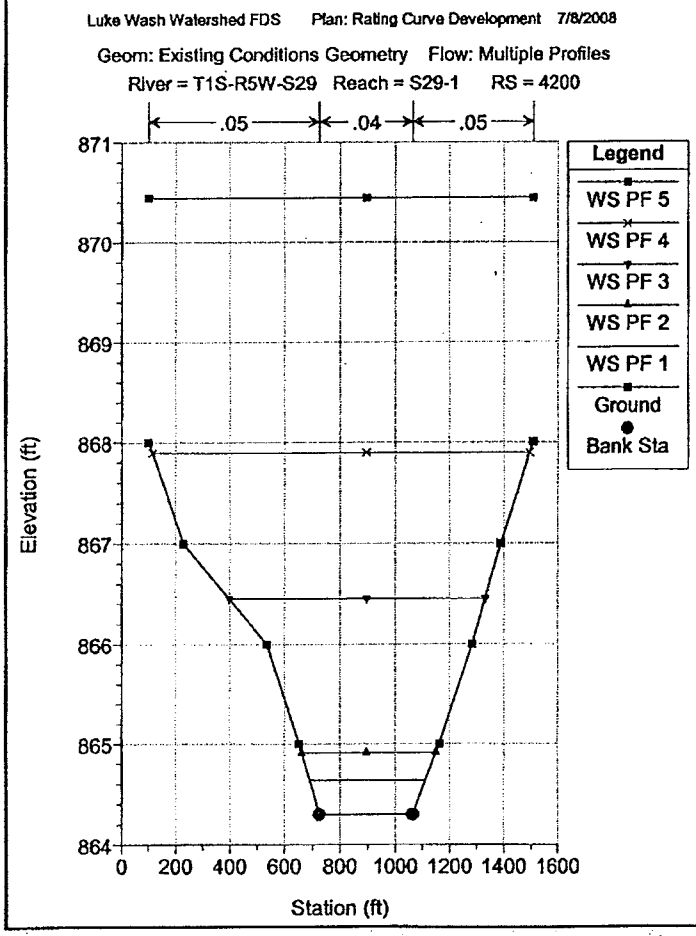


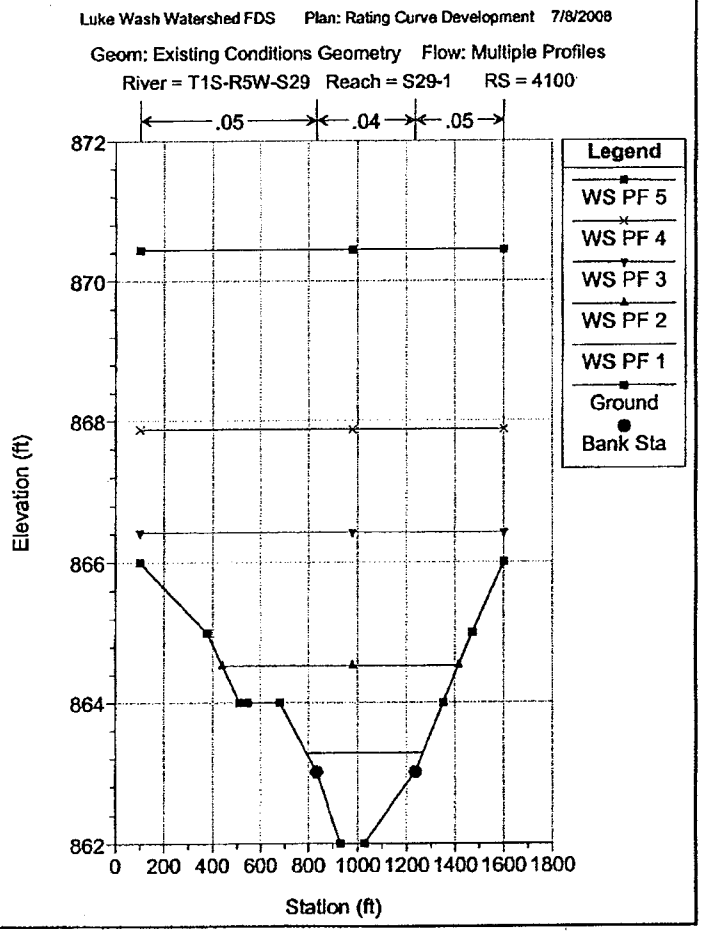
HEC-RAS Plan: FDS River: T1S-R5W-S29 Reach: S29-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
S29-1	4400	PF 1	400.00	869.00	869.43	869.30	869.49	0.009349	2.05	218.89	618.76	0.55
S29-1	4400	PF 2	1000.00	869.00	869.76	869.53	869.85	0.007502	2.67	447.91	787.88	0.54
S29-1	4400	PF 3	2000.00	869.00	870.44		870.51	0.002499	2.37	1093.36	1081.67	0.35
S29-1	4400	PF 4	3000.00	869.00	870.74		870.83	0.002663	2.77	1433.04	1195.47	0.37
S29-1	4400	PF 5	4000.00	869.00	870.71		870.88	0.005027	3.77	1402.09	1185.55	0.51
S29-1	4300	PF 1	400.00	867.00	867.67	867.34	867.69	0.002577	1.44	339.38	694.92	0.31
S29-1	4300	PF 2	1000.00	867.00	868.05		868.10	0.002777	2.02	644.46	894.56	0.35
S29-1	4300	PF 3	2000.00	867.00	867.87	867.87	868.20	0.022730	5.12	496.12	810.84	0.97
S29-1	4300	PF 4	3000.00	867.00	868.10	868.10	868.48	0.020163	5.63	695.20	910.89	0.94
S29-1	4300	PF 5	4000.00	867.00	870.47		870.50	0.000324	1.53	3553.93	1374.48	0.15
S29-1	4200	PF 1	400.00	864.30	864.64	864.64	864.80	0.033737	3.30	127.99	421.17	1.00
S29-1	4200	PF 2	1000.00	864.30	864.91	864.91	865.18	0.028493	4.35	252.24	487.20	0.98
S29-1	4200	PF 3	2000.00	864.30	866.45		866.50	0.001036	1.99	1304.98	933.89	0.24
S29-1	4200	PF 4	3000.00	864.30	867.90		867.92	0.000267	1.42	3020.08	1381.34	0.13
S29-1	4200	PF 5	4000.00	864.30	870.44		870.45	0.000043	0.82	6601.76	1406.75	0.06
S29-1	4100	PF 1	400.00	862.00	863.28		863.30	0.001002	1.10	372.87	477.15	0.20
S29-1	4100	PF 2	1000.00	862.00	864.53		864.54	0.000251	0.98	1268.47	975.92	0.12
S29-1	4100	PF 3	2000.00	862.00	866.42		866.42	0.000066	0.77	3682.58	1501.44	0.07
S29-1	4100	PF 4	3000.00	862.00	867.88		867.89	0.000036	0.70	5877.73	1501.44	0.05
S29-1	4100	PF 5	4000.00	862.00	870.44		870.44	0.000013	0.54	9719.03	1501.44	0.03
S29-1	4000	PF 1	400.00	860.65	862.25	861.81	862.55	0.008159	4.45	89.88	58.55	0.62
S29-1	4000	PF 2	1000.00	860.65	863.78	862.78	864.28	0.005380	5.67	176.88	57.00	0.57
S29-1	4000	PF 3	2000.00	860.65	865.41	864.03	866.27	0.005287	7.44	270.66	58.68	0.60
S29-1	4000	PF 4	3000.00	860.65	866.40	865.08	867.71	0.006334	9.23	330.81	66.39	0.68
S29-1	4000	PF 5	4000.00	860.65	869.98	866.03	870.39	0.001303	5.78	1004.15	234.27	0.33
S29-1	3950		Bridge									
S29-1	3900	PF 1	400.00	860.14	861.64		861.97	0.009496	4.66	85.99	57.85	0.67
S29-1	3900	PF 2	1000.00	860.14	862.24	862.24	863.30	0.018951	8.26	121.32	58.14	1.00
S29-1	3900	PF 3	2000.00	860.14	863.48	863.48	865.16	0.016221	10.40	193.43	58.71	1.00
S29-1	3900	PF 4	3000.00	860.14	864.52	864.52	866.71	0.014752	11.89	254.86	59.76	1.00
S29-1	3900	PF 5	4000.00	860.14	865.41	865.41	868.09	0.014106	13.15	308.67	61.14	1.01
S29-1	3800	PF 1	400.00	858.00	860.36	860.23	860.44	0.006992	2.74	222.35	544.17	0.53
S29-1	3800	PF 2	1000.00	858.00	860.78	860.49	860.87	0.005630	3.23	483.58	705.68	0.51
S29-1	3800	PF 3	2000.00	858.00	861.23		861.35	0.005126	3.78	839.89	871.34	0.51
S29-1	3800	PF 4	3000.00	858.00	861.59		861.72	0.004706	4.11	1172.98	996.02	0.50
S29-1	3800	PF 5	4000.00	858.00	861.84		862.00	0.004862	4.52	1436.61	1084.59	0.52
S29-1	3700	PF 1	400.00	856.00	858.89	858.71	859.01	0.004504	3.85	230.35	433.52	0.49
S29-1	3700	PF 2	1000.00	856.00	859.37	859.12	859.50	0.004933	4.67	482.12	600.29	0.53
S29-1	3700	PF 3	2000.00	856.00	859.86	859.47	860.01	0.005209	5.42	812.06	752.29	0.56
S29-1	3700	PF 4	3000.00	856.00	860.25	859.74	860.41	0.005479	6.04	1184.66	1086.26	0.59
S29-1	3700	PF 5	4000.00	856.00	860.51	859.91	860.68	0.005357	6.28	1476.26	1172.66	0.59
S29-1	3600	PF 1	400.00	855.50	856.51		856.57	0.007153	2.05	226.96	494.93	0.50
S29-1	3600	PF 2	1000.00	855.50	856.88		856.98	0.006938	2.87	422.78	579.38	0.53
S29-1	3600	PF 3	2000.00	855.50	857.31		857.46	0.006750	3.67	695.17	701.61	0.56
S29-1	3600	PF 4	3000.00	855.50	857.63	857.14	857.83	0.006597	4.20	940.83	802.16	0.58
S29-1	3600	PF 5	4000.00	855.50	857.90		858.13	0.006528	4.63	1167.40	884.82	0.59
S29-1	3500	PF 1	400.00	853.50	854.35	854.05	854.38	0.003002	1.59	295.29	590.12	0.34
S29-1	3500	PF 2	1000.00	853.50	854.77	854.32	854.83	0.003000	2.18	585.91	706.90	0.36
S29-1	3500	PF 3	2000.00	853.50	855.24	854.62	855.33	0.003002	2.76	930.59	836.26	0.39
S29-1	3500	PF 4	3000.00	853.50	855.60	854.85	855.71	0.003001	3.17	1250.24	937.93	0.40
S29-1	3500	PF 5	4000.00	853.50	855.90	855.05	856.03	0.003003	3.49	1544.13	1021.02	0.41


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1S-R5W-S29 Reach = S29-1 RS = 4400
.05
.04
.05
Legend
WS PF 4
WS PF 5
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1S-R5W-S29 Reach = S29-1 RS = 4300
.05
.04
.05
Legend
WS PF 5
WS PF 4
WS PF 2
WS PF 3
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

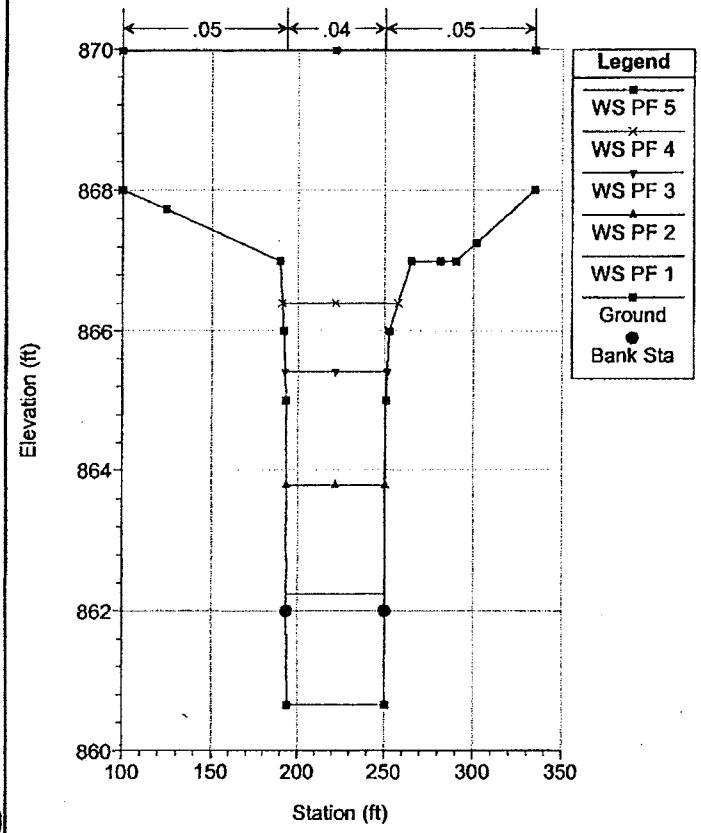

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1S-R5W-S29 Reach = S29-1 RS = 4200
.05
.04
.05
Legend
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1S-R5W-S29 Reach = S29-1 RS = 4100
.05
.04
.05
Legend
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

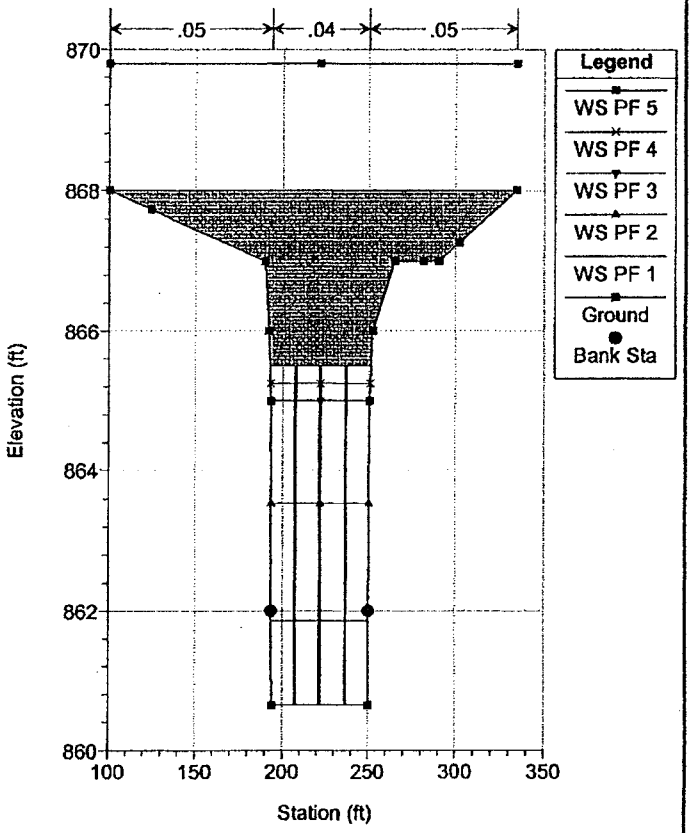
River = T1S-R5W-S29 Reach = S29-1 RS = 4000



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

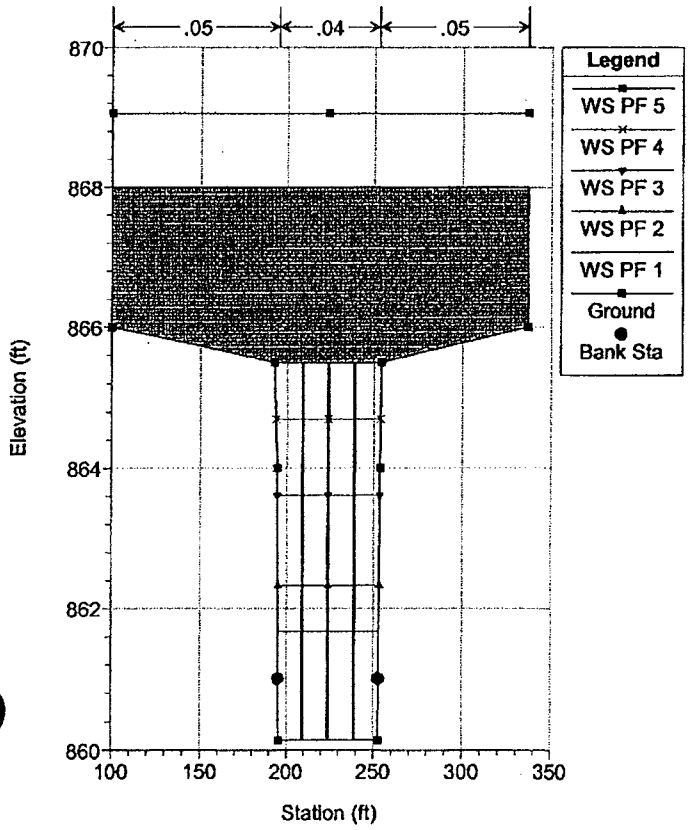
River = T1S-R5W-S29 Reach = S29-1 RS = 3950 BR



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

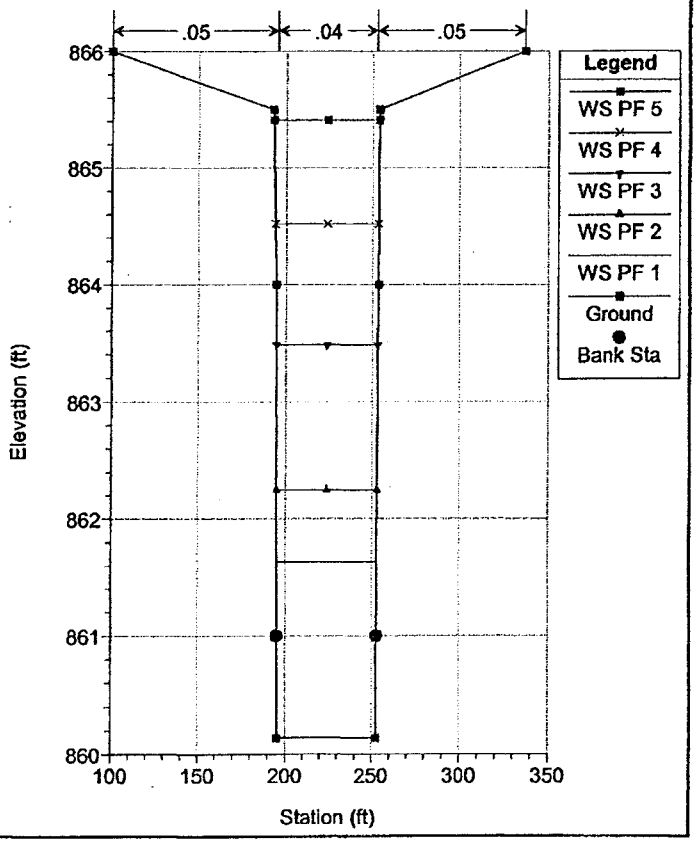
River = T1S-R5W-S29 Reach = S29-1 RS = 3950 BR



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

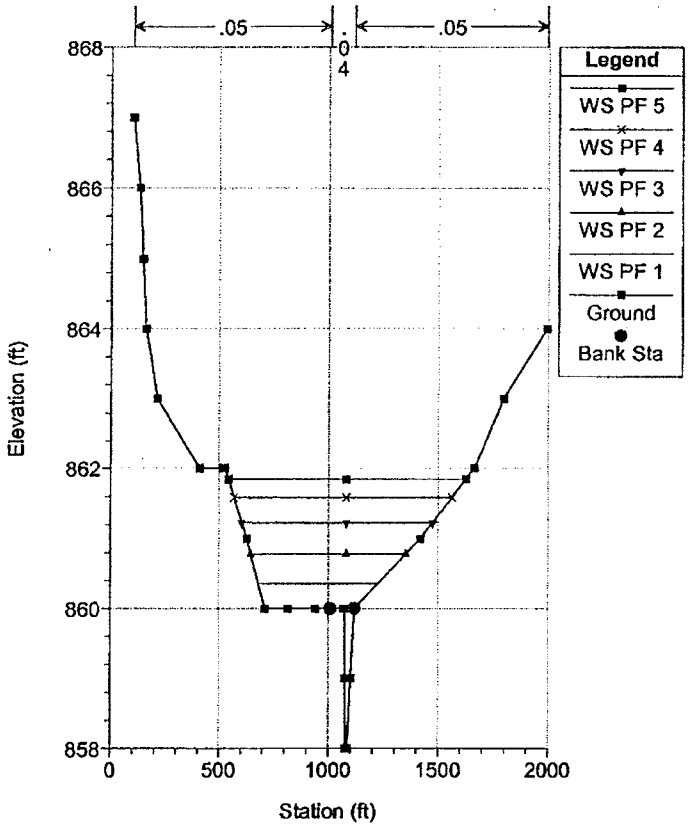
River = T1S-R5W-S29 Reach = S29-1 RS = 3900



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

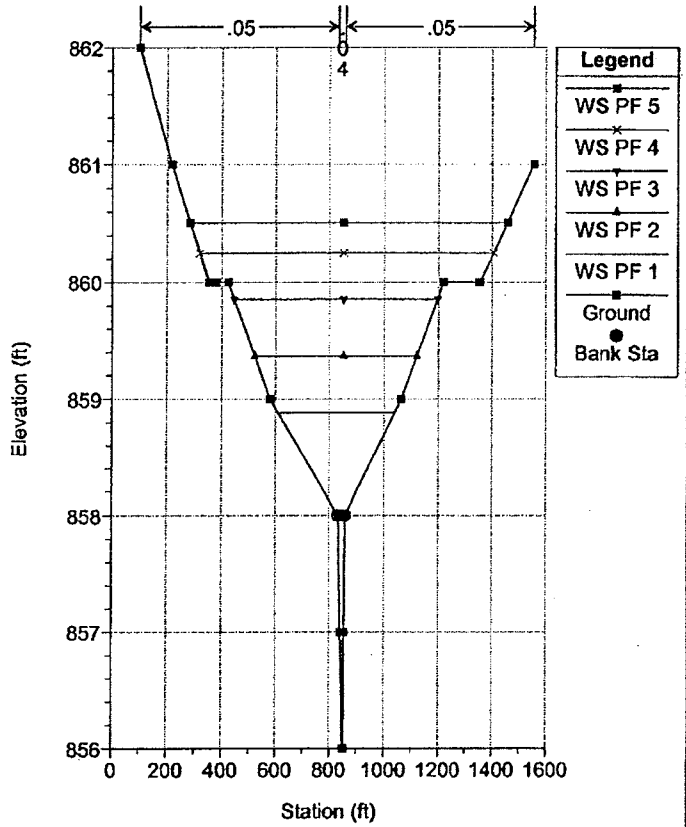
River = T1S-R5W-S29 Reach = S29-1 RS = 3800



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

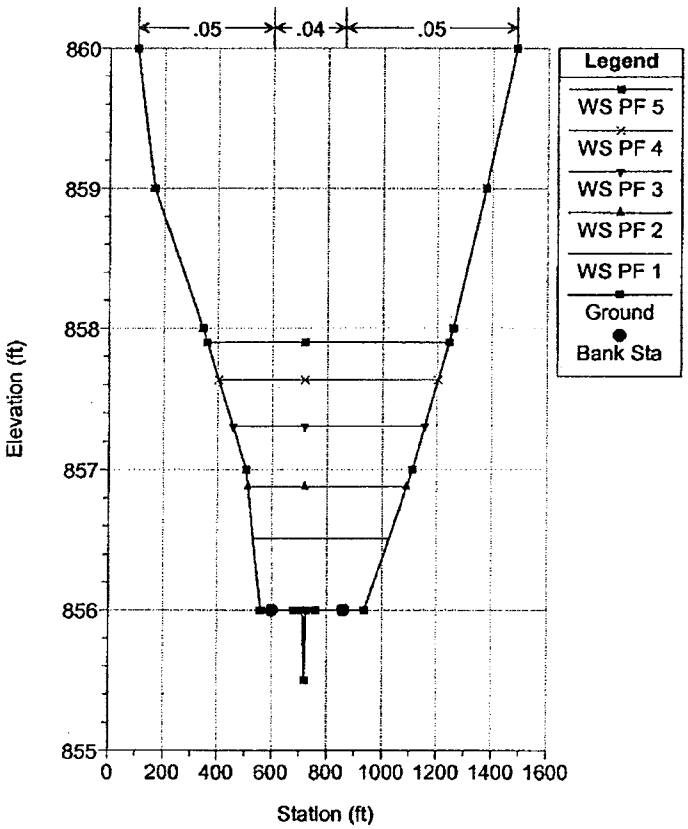
River = T1S-R5W-S29 Reach = S29-1 RS = 3700



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

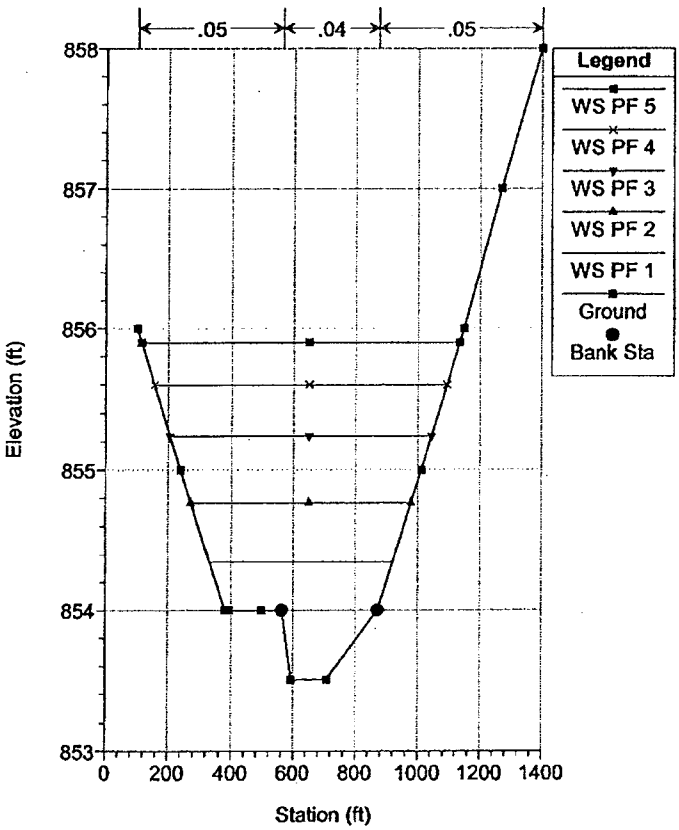
River = T1S-R5W-S29 Reach = S29-1 RS = 3600



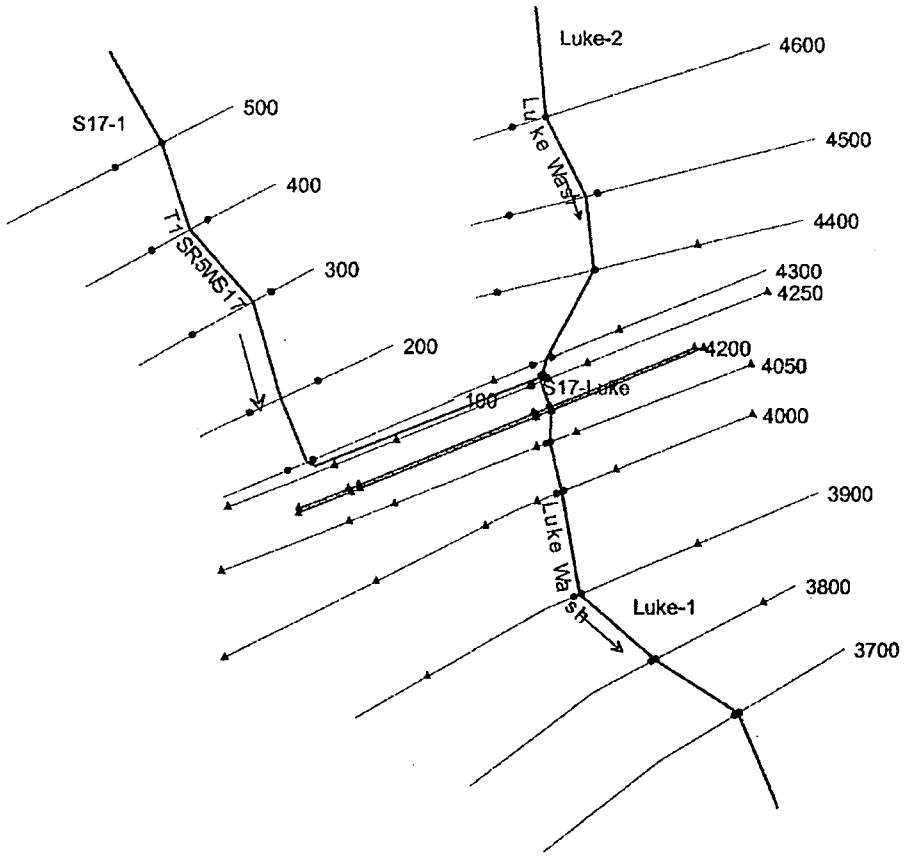
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = T1S-R5W-S29 Reach = S29-1 RS = 3500



for Structure UPR2 & UPR3



HEC-RAS Plan: FDS

River	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
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
T1SR5WS17	S17-1	500	PF 1	30.00	861.00	861.33	861.07	861.33	0.001102	0.33	93.86	335.27	0.10
T1SR5WS17	S17-1	500	PF 2	75.00	861.00	861.52	861.14	861.52	0.001261	0.49	184.32	392.82	0.12
T1SR5WS17	S17-1	500	PF 3	150.00	861.00	861.66		861.67	0.002041	0.73	222.99	434.65	0.16
T1SR5WS17	S17-1	500	PF 4	300.00	861.00	861.94		861.95	0.002096	0.93	358.07	517.46	0.17
T1SR5WS17	S17-1	500	PF 5	600.00	861.00	862.37		862.39	0.001790	1.11	591.44	571.55	0.17
T1SR5WS17	S17-1	500	PF 6	900.00	861.00	862.69		862.72	0.001710	1.25	781.81	603.87	0.17
T1SR5WS17	S17-1	500	PF 7	1200.00	861.00	862.87		862.90	0.002038	1.46	891.40	621.71	0.19
T1SR5WS17	S17-1	500	PF 8	1500.00	861.00	863.24		863.27	0.001579	1.45	1130.08	669.03	0.17
T1SR5WS17	S17-1	400	PF 1	30.00	860.00	860.32	860.16	860.33	0.008882	0.70	42.82	206.61	0.27
T1SR5WS17	S17-1	400	PF 2	75.00	860.00	860.53	860.27	860.54	0.006095	0.79	94.98	301.17	0.24
T1SR5WS17	S17-1	400	PF 3	150.00	860.00	860.89		860.90	0.001739	0.69	234.18	467.60	0.15
T1SR5WS17	S17-1	400	PF 4	300.00	860.00	861.20	860.52	861.21	0.001562	0.84	397.10	560.93	0.15
T1SR5WS17	S17-1	400	PF 5	600.00	860.00	861.35		861.38	0.003573	1.39	481.30	592.13	0.23
T1SR5WS17	S17-1	400	PF 6	900.00	860.00	861.38		861.42	0.007720	2.06	488.08	594.57	0.34
T1SR5WS17	S17-1	400	PF 7	1200.00	860.00	862.03		862.08	0.002074	1.45	938.46	733.61	0.19
T1SR5WS17	S17-1	400	PF 8	1500.00	860.00	862.85		862.86	0.000679	1.06	1556.96	794.23	0.11
T1SR5WS17	S17-1	300	PF 1	30.00	858.50	858.90		858.90	0.001756	0.35	84.54	335.51	0.12
T1SR5WS17	S17-1	300	PF 2	75.00	858.50	859.06		859.07	0.002236	0.51	146.07	411.51	0.15
T1SR5WS17	S17-1	300	PF 3	150.00	858.50	858.94	858.82	858.97	0.030697	1.55	96.48	356.99	0.53
T1SR5WS17	S17-1	300	PF 4	300.00	858.50	858.95	858.95	859.09	0.111261	3.00	100.07	363.19	1.01
T1SR5WS17	S17-1	300	PF 5	600.00	858.50	859.70		859.73	0.004230	1.39	457.31	562.40	0.24
T1SR5WS17	S17-1	300	PF 6	900.00	858.50	860.80		860.81	0.000560	0.83	1175.40	710.69	0.10
T1SR5WS17	S17-1	300	PF 7	1200.00	858.50	861.84		861.85	0.000211	0.66	1963.71	806.87	0.07
T1SR5WS17	S17-1	300	PF 8	1500.00	858.50	862.75		862.76	0.000120	0.59	2718.70	845.17	0.05
T1SR5WS17	S17-1	200	PF 1	30.00	856.00	856.28	856.28	856.35	0.134520	2.16	13.89	95.09	1.00
T1SR5WS17	S17-1	200	PF 2	75.00	856.00	856.53		856.57	0.031743	1.58	47.45	175.65	0.54
T1SR5WS17	S17-1	200	PF 3	150.00	856.00	857.20		857.21	0.001456	0.64	238.04	391.36	0.13
T1SR5WS17	S17-1	200	PF 4	300.00	856.00	858.33		858.33	0.000149	0.39	866.34	674.42	0.05
T1SR5WS17	S17-1	200	PF 5	600.00	856.00	859.63		859.63	0.000065	0.37	1832.32	813.23	0.04
T1SR5WS17	S17-1	200	PF 6	900.00	856.00	860.77		860.77	0.000040	0.35	2812.66	897.11	0.03
T1SR5WS17	S17-1	200	PF 7	1200.00	856.00	861.82		861.82	0.000028	0.34	3778.49	931.55	0.03
T1SR5WS17	S17-1	200	PF 8	1500.00	856.00	862.74		862.74	0.000023	0.34	4635.98	936.40	0.02
T1SR5WS17	S17-1	100	PF 1	30.00	854.00	856.18		856.18	0.000009	0.09	422.58	474.98	0.01
T1SR5WS17	S17-1	100	PF 2	75.00	854.00	856.53		856.53	0.000022	0.16	600.10	547.82	0.02
T1SR5WS17	S17-1	100	PF 3	150.00	854.00	857.18		857.18	0.000021	0.19	1001.23	672.79	0.02
T1SR5WS17	S17-1	100	PF 4	300.00	854.00	858.32		858.32	0.000015	0.20	1854.63	824.88	0.02
T1SR5WS17	S17-1	100	PF 5	600.00	854.00	859.62		859.62	0.000014	0.24	3024.30	965.89	0.02
T1SR5WS17	S17-1	100	PF 6	900.00	854.00	860.76		860.76	0.000012	0.25	4175.43	1041.82	0.02
T1SR5WS17	S17-1	100	PF 7	1200.00	854.00	861.81		861.82	0.000010	0.26	5299.90	1090.92	0.02
T1SR5WS17	S17-1	100	PF 8	1500.00	854.00	862.73		862.73	0.000009	0.28	6307.32	1099.56	0.02
Luke Wash	Luke-2	4600	PF 1	70.00	864.00	864.42		864.43	0.002419	0.91	90.65	278.46	0.25
Luke Wash	Luke-2	4600	PF 2	175.00	864.00	864.69		864.71	0.002313	1.24	177.87	358.65	0.26
Luke Wash	Luke-2	4600	PF 3	350.00	864.00	864.95		864.98	0.002687	1.66	281.32	435.00	0.30
Luke Wash	Luke-2	4600	PF 4	700.00	864.00	865.23		865.28	0.003492	2.24	474.31	807.04	0.36
Luke Wash	Luke-2	4600	PF 5	1400.00	864.00	865.55		865.65	0.005258	3.20	765.61	1132.86	0.46
Luke Wash	Luke-2	4600	PF 6	2100.00	864.00	865.74		865.86	0.005956	3.69	991.09	1169.64	0.49
Luke Wash	Luke-2	4600	PF 7	2800.00	864.00	865.87		866.03	0.007094	4.23	1145.76	1194.21	0.54
Luke Wash	Luke-2	4600	PF 8	3500.00	864.00	866.04		866.20	0.006974	4.44	1348.81	1220.56	0.55
Luke Wash	Luke-2	4500	PF 1	70.00	862.00	862.32	862.24	862.37	0.017352	1.80	38.88	145.96	0.61
Luke Wash	Luke-2	4500	PF 2	175.00	862.00	862.50	862.41	862.61	0.020755	2.55	68.51	174.11	0.72
Luke Wash	Luke-2	4500	PF 3	350.00	862.00	862.82	862.62	862.93	0.012977	2.65	131.93	222.70	0.61
Luke Wash	Luke-2	4500	PF 4	700.00	862.00	863.23	863.09	863.29	0.007509	2.16	427.26	1144.54	0.47
Luke Wash	Luke-2	4500	PF 5	1400.00	862.00	863.58		863.64	0.004641	2.26	843.51	1236.68	0.40
Luke Wash	Luke-2	4500	PF 6	2100.00	862.00	863.84		863.91	0.003924	2.43	1181.77	1306.76	0.38
Luke Wash	Luke-2	4500	PF 7	2800.00	862.00	864.12		864.19	0.003063	2.45	1557.16	1355.65	0.35
Luke Wash	Luke-2	4500	PF 8	3500.00	862.00	864.30		864.37	0.003065	2.63	1798.41	1366.55	0.35
Luke Wash	Luke-2	4400	PF 1	70.00	860.00	860.67		860.69	0.002286	1.00	70.17	139.42	0.25
Luke Wash	Luke-2	4400	PF 2	175.00	860.00	861.19		861.20	0.001668	1.12	156.84	207.90	0.23
Luke Wash	Luke-2	4400	PF 3	350.00	860.00	861.65		861.67	0.001672	1.28	272.61	293.35	0.23
Luke Wash	Luke-2	4400	PF 4	700.00	860.00	862.21		862.24	0.001597	1.38	581.28	1266.81	0.24
Luke Wash	Luke-2	4400	PF 5	1400.00	860.00	862.58		862.63	0.001894	1.83	931.35	1321.41	0.27
Luke Wash	Luke-2	4400	PF 6	2100.00	860.00	862.89		862.95	0.001958	2.12	1223.77	1366.14	0.28
Luke Wash	Luke-2	4400	PF 7	2800.00	860.00	862.86		862.96	0.003745	2.90	1193.39	1361.53	0.39
Luke Wash	Luke-2	4400	PF 8	3500.00	860.00	863.14		863.25	0.003155	2.95	1471.71	1398.65	0.37
Luke Wash	Luke-2	4300	PF 1	70.00	858.00	858.61	858.40	858.68	0.009978	2.16	33.96	109.61	0.52
Luke Wash	Luke-2	4300	PF 2	175.00	858.00	858.71	858.71	859.01	0.036390	4.51	40.75	118.76	1.02
Luke Wash	Luke-2	4300	PF 3	350.00	858.00	859.08	859.08	859.50	0.032370	5.40	68.49	150.51	1.02
Luke Wash	Luke-2	4300	PF 4	700.00	858.00	859.61	859.61	860.20	0.029183	6.38	116.48	187.16	1.02
Luke Wash	Luke-2	4300	PF 5	1400.00	858.00	860.47	860.47	860.84	0.012411	5.66	405.49	1254.15	0.72
Luke Wash	Luke-2	4300	PF 6	2100.00	858.00	860.75	860.75	861.15	0.012770	6.28	557.54	1292.30	0.75
Luke Wash	Luke-2	4300	PF 7	2800.00	858.00	861.85		861.91	0.001803	3.10	1879.45	1415.93	0.30
Luke Wash	Luke-2	4300	PF 8	3500.00	858.00	862.74		862.76	0.000598	2.09	3150.94	1445.39	0.18
Luke Wash	Luke-1	4250	PF 1	100.00	857.50	856.06	858.08	856.16	0.090378		38.87	501.38	0.00
Luke Wash	Luke-1	4250	PF 2	250.00	857.50	856.44		856.50	0.017073		130.77	623.61	0.00

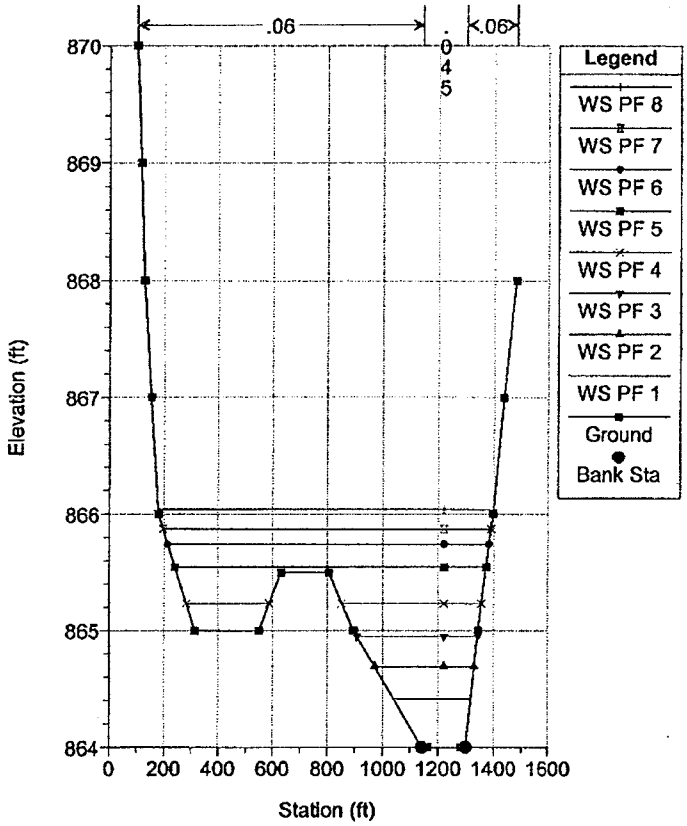
HEC-RAS Plan: FDS (Continued)

River	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
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(fps)	(sq ft)	(ft)	
Luke Wash	Luke-1	4250	PF 3	500.00	857.50	857.12		857.16	0.003151		332.26	815.71	0.00
Luke Wash	Luke-1	4250	PF 4	1000.00	857.50	858.27		858.30	0.001168	0.71	698.04	1042.52	0.18
Luke Wash	Luke-1	4250	PF 5	2000.00	857.50	859.58		859.61	0.000902	1.32	1206.40	1650.26	0.19
Luke Wash	Luke-1	4250	PF 6	3000.00	857.50	860.70		860.75	0.000697	1.68	1769.17	2388.19	0.18
Luke Wash	Luke-1	4250	PF 7	4000.00	857.50	861.78		861.80	0.000787	2.24	3850.64	2499.80	0.20
Luke Wash	Luke-1	4250	PF 8	5000.00	857.50	862.71		862.73	0.000285	1.56	6211.43	2542.52	0.13
Luke Wash	Luke-1	4200	PF 1	100.00	856.89	855.08	852.98	855.10	0.000869		80.39	32.26	0.00
Luke Wash	Luke-1	4200	PF 2	250.00	856.89	855.67	853.69	855.76	0.002868		99.82	34.25	0.00
Luke Wash	Luke-1	4200	PF 3	500.00	856.89	856.35	854.50	856.60	0.006043		123.88	36.09	0.00
Luke Wash	Luke-1	4200	PF 4	1000.00	856.89	857.57	855.73	857.96	0.007596	2.19	218.36	110.84	0.47
Luke Wash	Luke-1	4200	PF 5	2000.00	856.89	858.77	857.95	859.30	0.008735	4.60	352.62	113.26	0.59
Luke Wash	Luke-1	4200	PF 6	3000.00	856.89	859.86	858.63	860.48	0.007808	5.92	477.99	114.71	0.61
Luke Wash	Luke-1	4200	PF 7	4000.00	856.89	860.78	859.17	861.51	0.007463	6.92	584.63	119.12	0.62
Luke Wash	Luke-1	4200	PF 8	5000.00	856.89	861.75	859.66	862.55	0.006723	7.62	703.87	127.60	0.61
Luke Wash	Luke-1	4150		Bridge									
Luke Wash	Luke-1	4100	PF 1	100.00	856.64	855.05		855.07	0.000807		81.41	33.31	0.00
Luke Wash	Luke-1	4100	PF 2	250.00	856.64	855.55		855.65	0.002895		98.72	35.50	0.00
Luke Wash	Luke-1	4100	PF 3	500.00	856.64	856.05		856.33	0.007140		116.84	37.53	0.00
Luke Wash	Luke-1	4100	PF 4	1000.00	856.64	858.56	855.69	857.40	0.017964		136.15	38.40	0.00
Luke Wash	Luke-1	4100	PF 5	2000.00	856.64	857.75	857.75	858.79	0.019235	4.80	262.78	112.37	0.80
Luke Wash	Luke-1	4100	PF 6	3000.00	856.64	858.40	858.40	859.74	0.021861	6.96	336.89	113.03	0.92
Luke Wash	Luke-1	4100	PF 7	4000.00	856.64	858.95	858.95	860.57	0.023624	8.65	398.65	113.57	1.00
Luke Wash	Luke-1	4100	PF 8	5000.00	856.64	859.45	859.45	861.35	0.024567	10.06	455.32	113.89	1.08
Luke Wash	Luke-1	4050	PF 1	100.00	856.00	854.93		854.94	0.001644		135.50	494.25	0.00
Luke Wash	Luke-1	4050	PF 2	250.00	856.00	855.33		855.35	0.001991		221.66	614.06	0.00
Luke Wash	Luke-1	4050	PF 3	500.00	856.00	855.76		855.80	0.002512		313.35	721.87	0.00
Luke Wash	Luke-1	4050	PF 4	1000.00	856.00	856.32		858.40	0.003404	0.77	435.73	917.34	0.27
Luke Wash	Luke-1	4050	PF 5	2000.00	856.00	857.03		857.20	0.004851	1.79	600.15	1089.53	0.38
Luke Wash	Luke-1	4050	PF 6	3000.00	856.00	857.58		857.81	0.005875	2.87	739.06	1219.47	0.46
Luke Wash	Luke-1	4050	PF 7	4000.00	856.00	857.97		858.31	0.006781	3.74	858.60	1320.72	0.52
Luke Wash	Luke-1	4050	PF 8	5000.00	856.00	858.36		858.76	0.008069	4.71	1011.81	2431.74	0.58
Luke Wash	Luke-1	4000	PF 1	100.00	855.00	854.44		854.44	0.001448		193.58	688.62	0.00
Luke Wash	Luke-1	4000	PF 2	250.00	855.00	854.67		854.68	0.002143		307.08	748.22	0.00
Luke Wash	Luke-1	4000	PF 3	500.00	855.00	854.93		854.94	0.002705		444.60	815.35	0.00
Luke Wash	Luke-1	4000	PF 4	1000.00	855.00	855.29		855.33	0.003127	0.76	649.61	949.81	0.26
Luke Wash	Luke-1	4000	PF 5	2000.00	855.00	855.97		856.03	0.002660	1.44	1040.65	1174.84	0.29
Luke Wash	Luke-1	4000	PF 6	3000.00	855.00	856.35		856.43	0.003044	1.99	1353.92	2120.17	0.33
Luke Wash	Luke-1	4000	PF 7	4000.00	855.00	856.65		856.75	0.003363	2.44	1610.30	2195.42	0.36
Luke Wash	Luke-1	4000	PF 8	5000.00	855.00	856.91		857.03	0.003596	2.82	1840.23	2261.39	0.38
Luke Wash	Luke-1	3900	PF 1	100.00	853.00	852.18	852.18	852.27	0.094524		42.70	311.69	0.00
Luke Wash	Luke-1	3900	PF 2	250.00	853.00	852.54	852.33	852.59	0.013658		143.20	416.34	0.00
Luke Wash	Luke-1	3900	PF 3	500.00	853.00	852.97		853.02	0.006774		289.71	541.54	0.00
Luke Wash	Luke-1	3900	PF 4	1000.00	853.00	853.61		853.68	0.003969	1.28	584.68	729.48	0.32
Luke Wash	Luke-1	3900	PF 5	2000.00	853.00	854.20		854.27	0.005603	2.36	1035.87	1908.91	0.43
Luke Wash	Luke-1	3900	PF 6	3000.00	853.00	854.49		854.57	0.005288	2.74	1421.26	1931.10	0.44
Luke Wash	Luke-1	3900	PF 7	4000.00	853.00	854.74		854.83	0.004991	3.01	1758.41	1950.50	0.44
Luke Wash	Luke-1	3900	PF 8	5000.00	853.00	854.96		855.06	0.004816	3.25	2056.16	1967.64	0.44
Luke Wash	Luke-1	3800	PF 1	100.00	850.00	850.90		850.90	0.000693	0.72	199.37	309.78	0.15
Luke Wash	Luke-1	3800	PF 2	250.00	850.00	851.28		851.29	0.001012	1.13	330.26	368.40	0.19
Luke Wash	Luke-1	3800	PF 3	500.00	850.00	851.68		851.70	0.001335	1.58	486.72	422.78	0.23
Luke Wash	Luke-1	3800	PF 4	1000.00	850.00	852.26		852.28	0.001924	2.36	1011.46	1503.90	0.29
Luke Wash	Luke-1	3800	PF 5	2000.00	850.00	852.67		852.70	0.001897	2.64	1630.09	1551.51	0.29
Luke Wash	Luke-1	3800	PF 6	3000.00	850.00	853.00		853.03	0.001891	2.86	2116.45	1588.77	0.30
Luke Wash	Luke-1	3800	PF 7	4000.00	850.00	853.27		853.31	0.001908	3.05	2527.83	1612.43	0.30
Luke Wash	Luke-1	3800	PF 8	5000.00	850.00	853.53		853.58	0.001874	3.19	2920.55	1634.88	0.31
Luke Wash	Luke-1	3700	PF 1	100.00	849.00	850.18	850.13	850.22	0.004601	2.12	125.44	639.85	0.39
Luke Wash	Luke-1	3700	PF 2	250.00	849.00	850.37	850.25	850.40	0.004602	2.40	257.47	735.53	0.40
Luke Wash	Luke-1	3700	PF 3	500.00	849.00	850.59	850.35	850.62	0.004609	2.70	424.88	841.52	0.41
Luke Wash	Luke-1	3700	PF 4	1000.00	849.00	850.88	850.51	850.93	0.004602	3.09	697.96	990.39	0.43
Luke Wash	Luke-1	3700	PF 5	2000.00	849.00	851.29	850.75	851.34	0.004604	3.58	1124.41	1111.67	0.44
Luke Wash	Luke-1	3700	PF 6	3000.00	849.00	851.59	850.92	851.67	0.004605	3.93	1478.09	1180.13	0.45
Luke Wash	Luke-1	3700	PF 7	4000.00	849.00	851.86	851.09	851.94	0.004606	4.22	1796.29	1238.49	0.46
Luke Wash	Luke-1	3700	PF 8	5000.00	849.00	852.14	851.21	852.23	0.004606	4.52	2169.15	1401.11	0.47

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

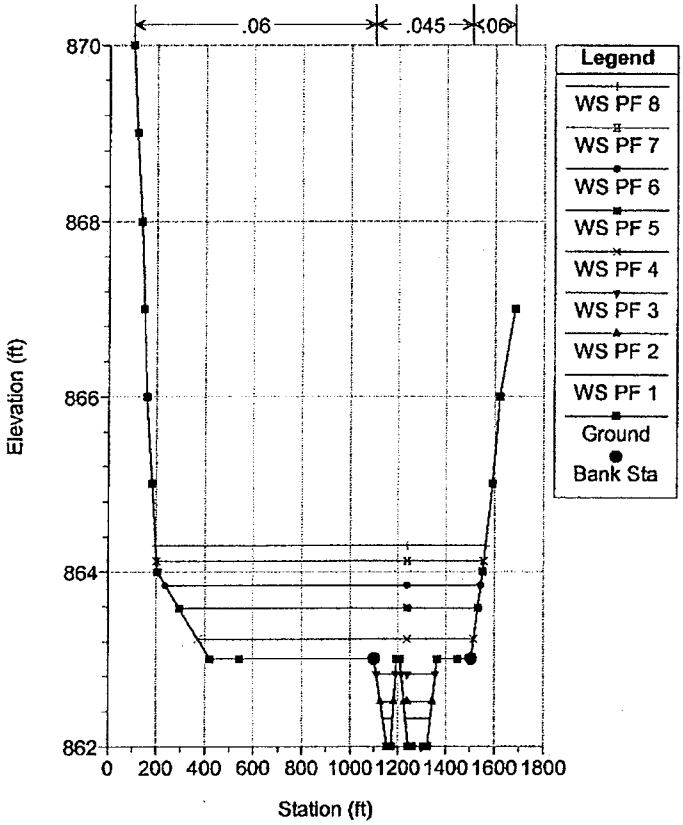
River = Luke Wash Reach = Luke-2 RS = 4600



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

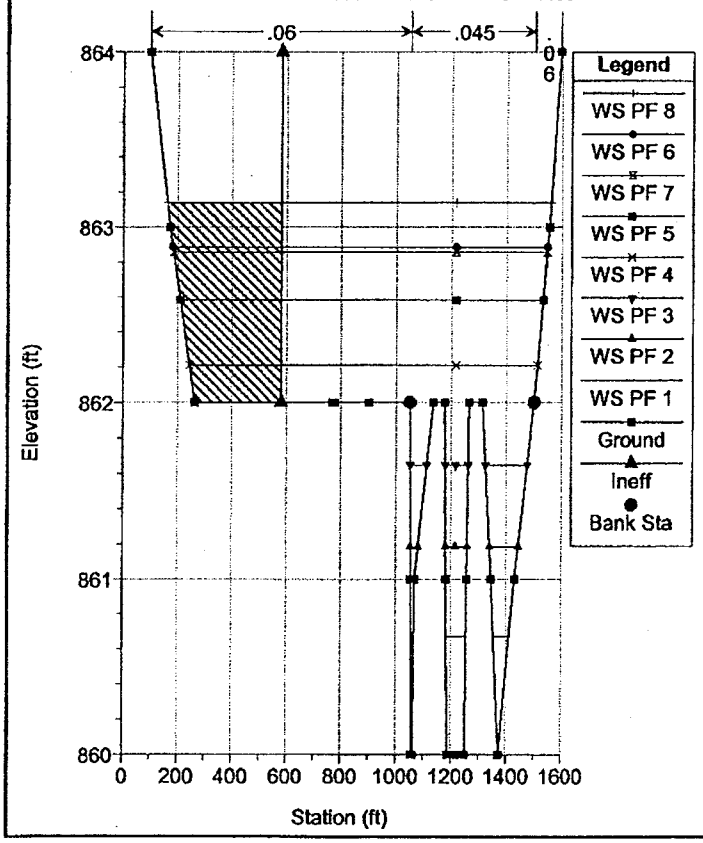
River = Luke Wash Reach = Luke-2 RS = 4500



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

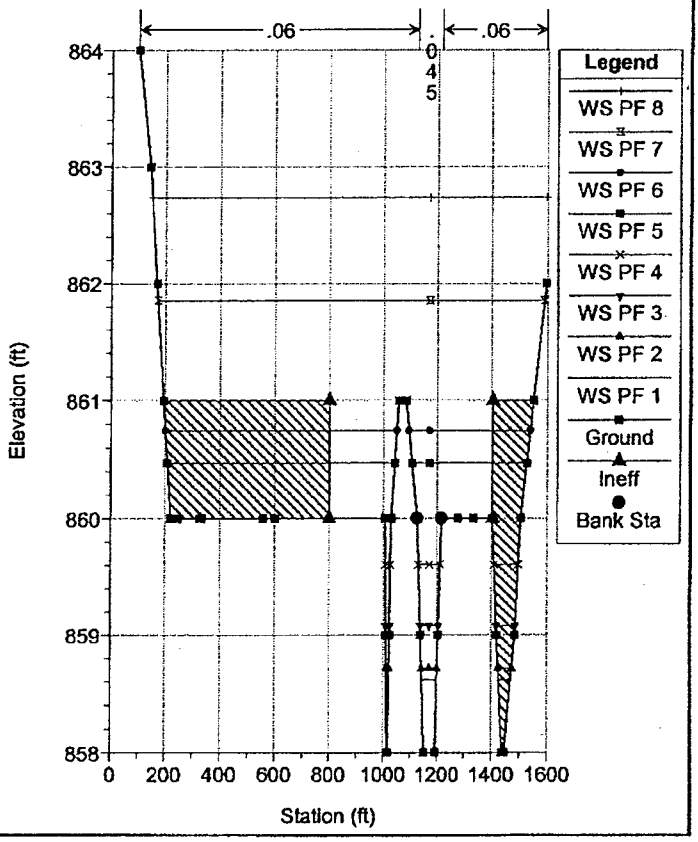
River = Luke Wash Reach = Luke-2 RS = 4400



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

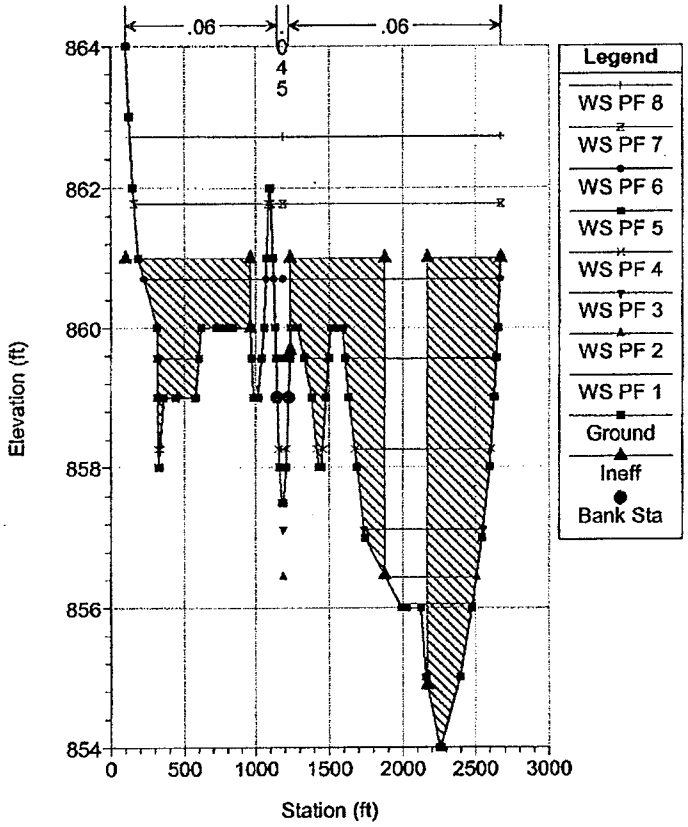
River = Luke Wash Reach = Luke-2 RS = 4300



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

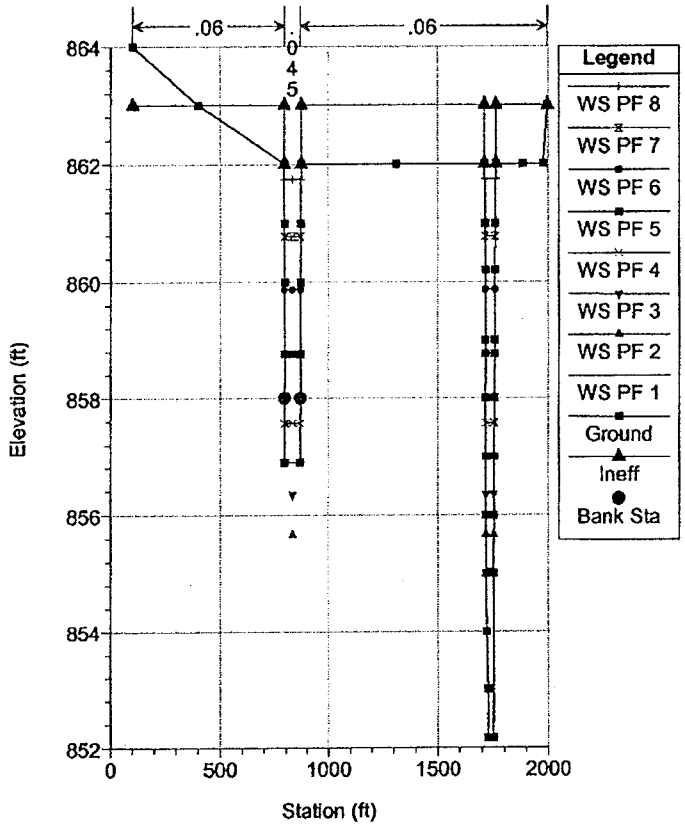
River = Luke Wash Reach = Luke-1 RS = 4250



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

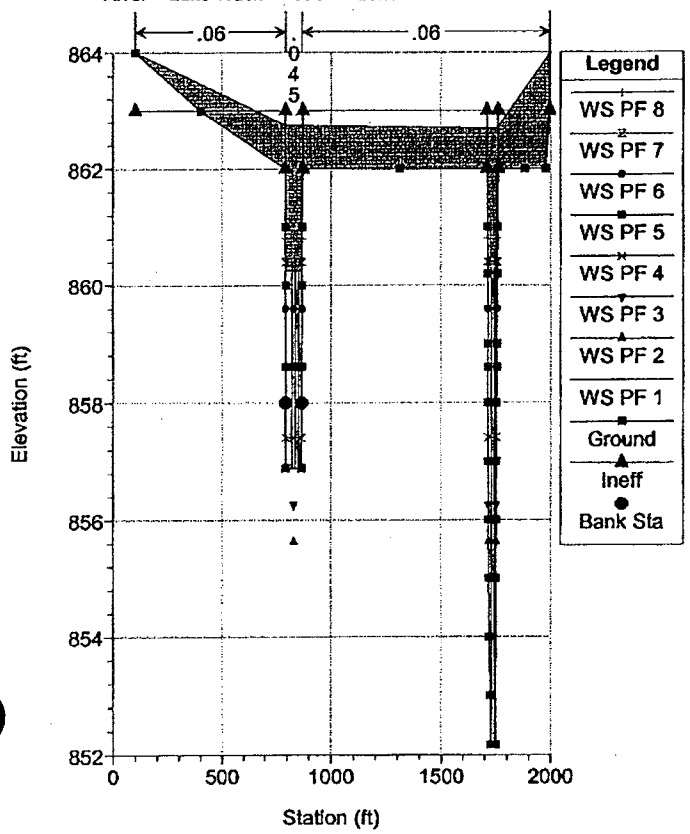
River = Luke Wash Reach = Luke-1 RS = 4200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

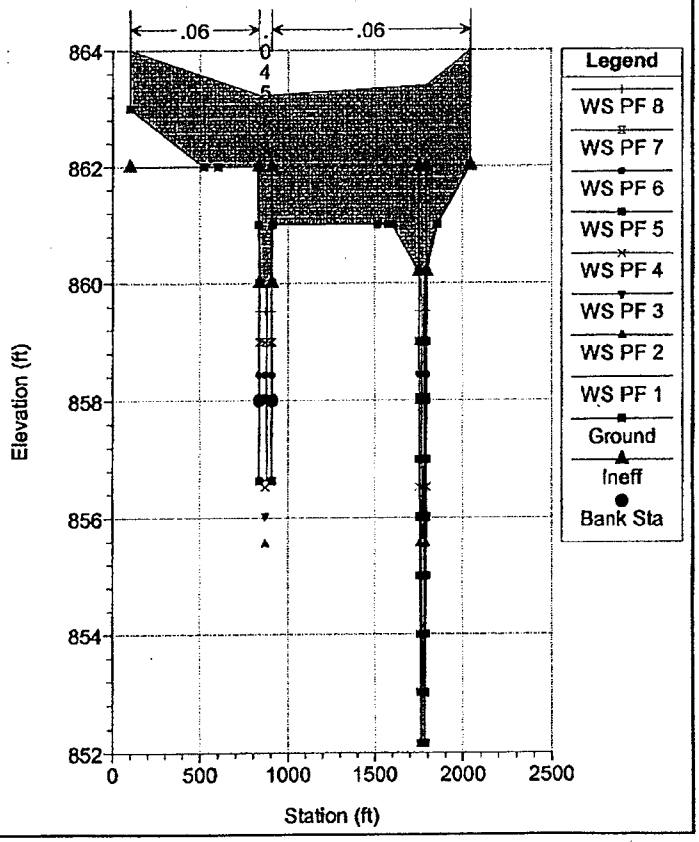
River = Luke Wash Reach = Luke-1 RS = 4150 BR

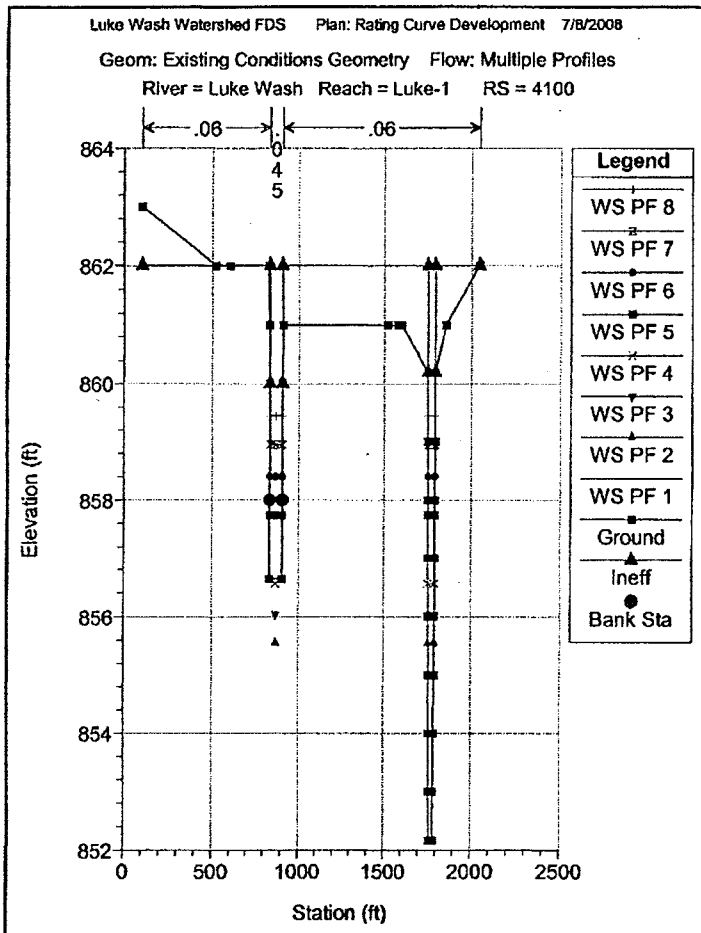


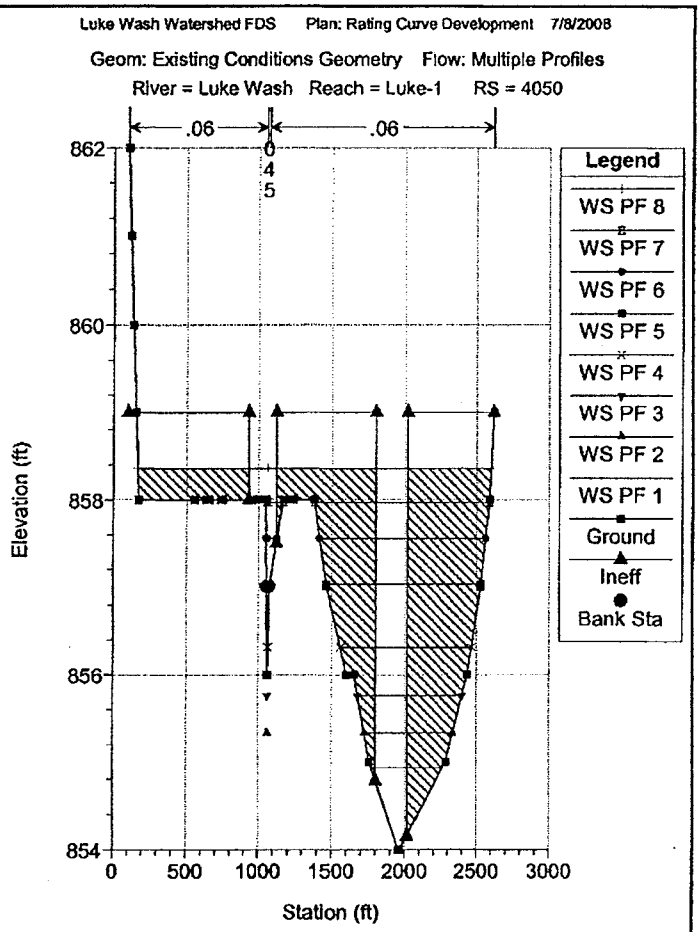
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

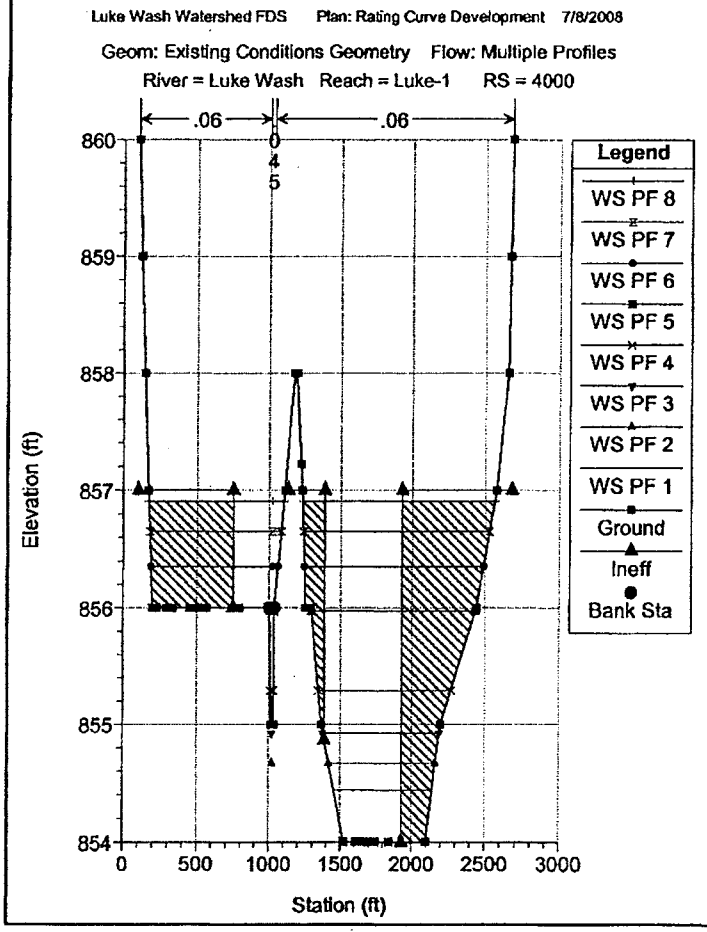
Geom: Existing Conditions Geometry Flow: Multiple Profiles

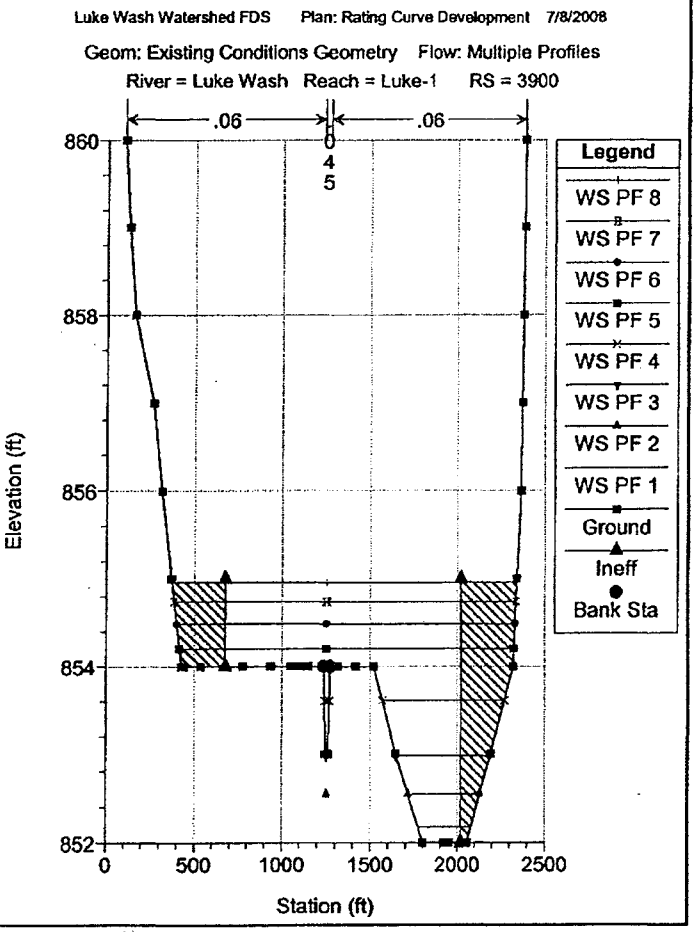
River = Luke Wash Reach = Luke-1 RS = 4150 BR




Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Luke Wash Reach = Luke-1 RS = 4100
.06
.06
0
4
5
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Luke Wash Reach = Luke-1 RS = 4050
.06
.06
0
4
5
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

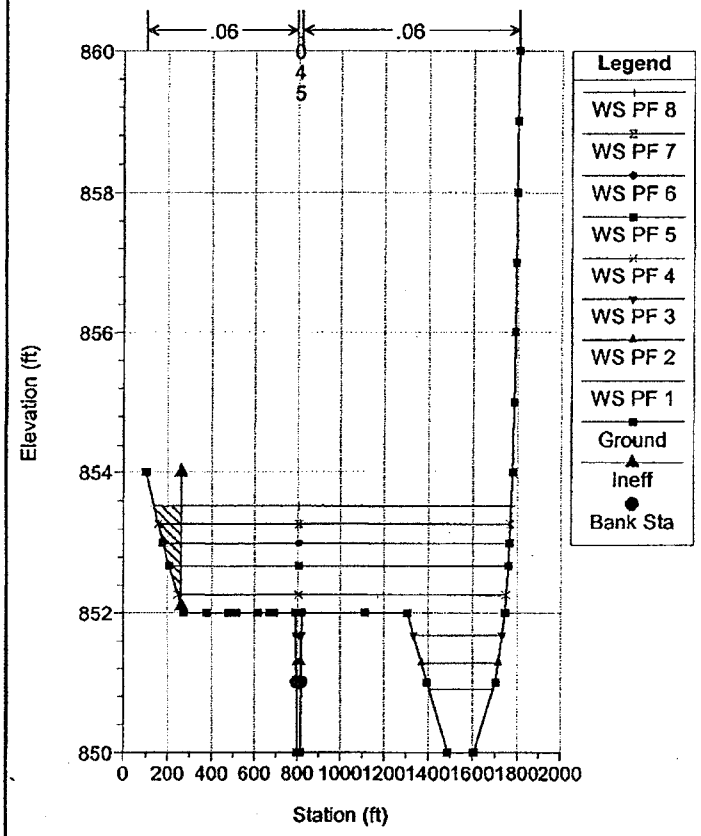

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Luke Wash Reach = Luke-1 RS = 4000
.06
.06
0
4
5
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Luke Wash Reach = Luke-1 RS = 3900
.06
.06
0
4
5
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

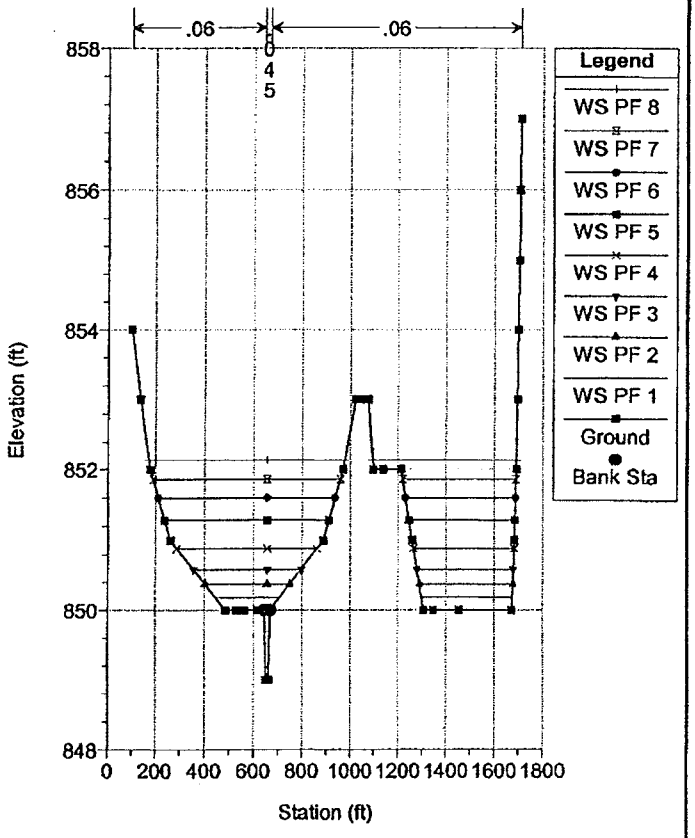
River = Luke Wash Reach = Luke-1 RS = 3800



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

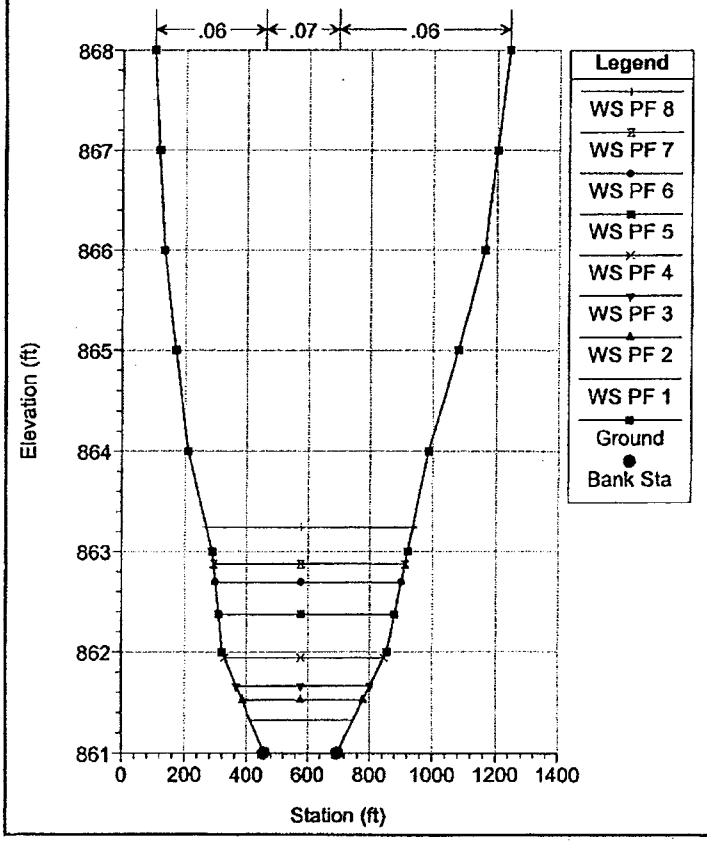
River = Luke Wash Reach = Luke-1 RS = 3700



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

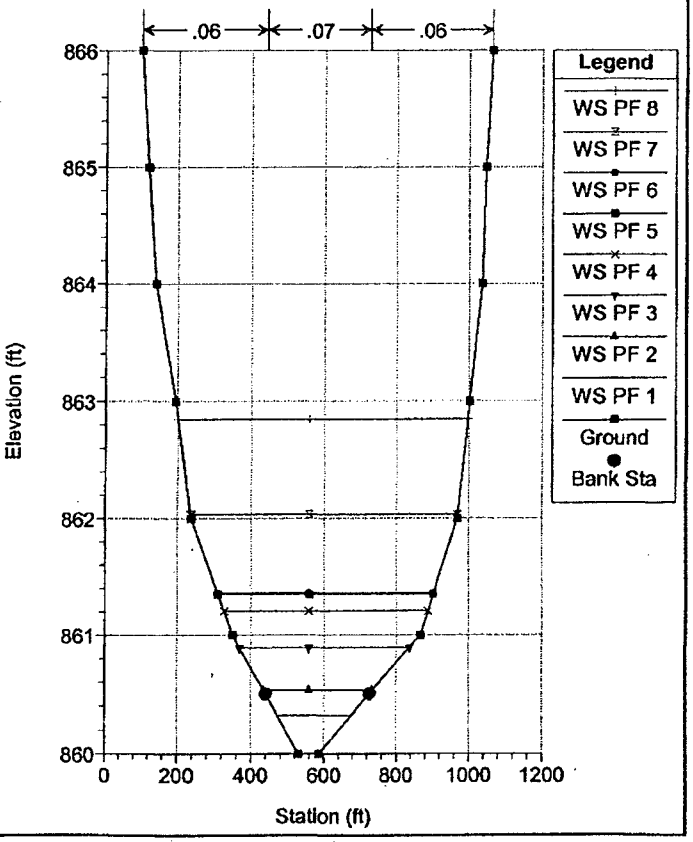
River = T1SR5WS17 Reach = S17-1 RS = 500

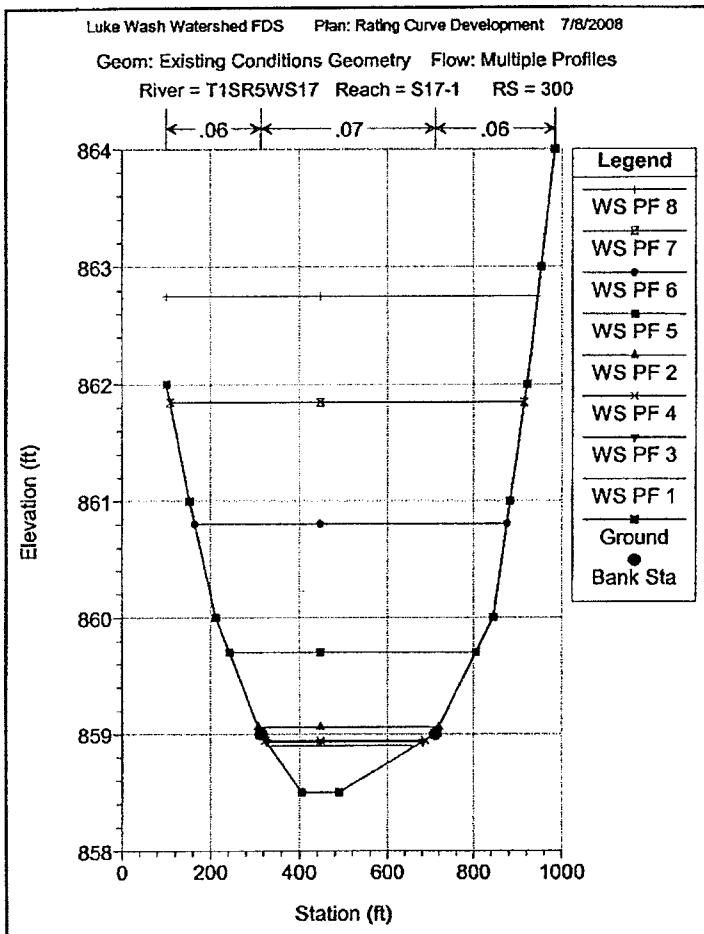


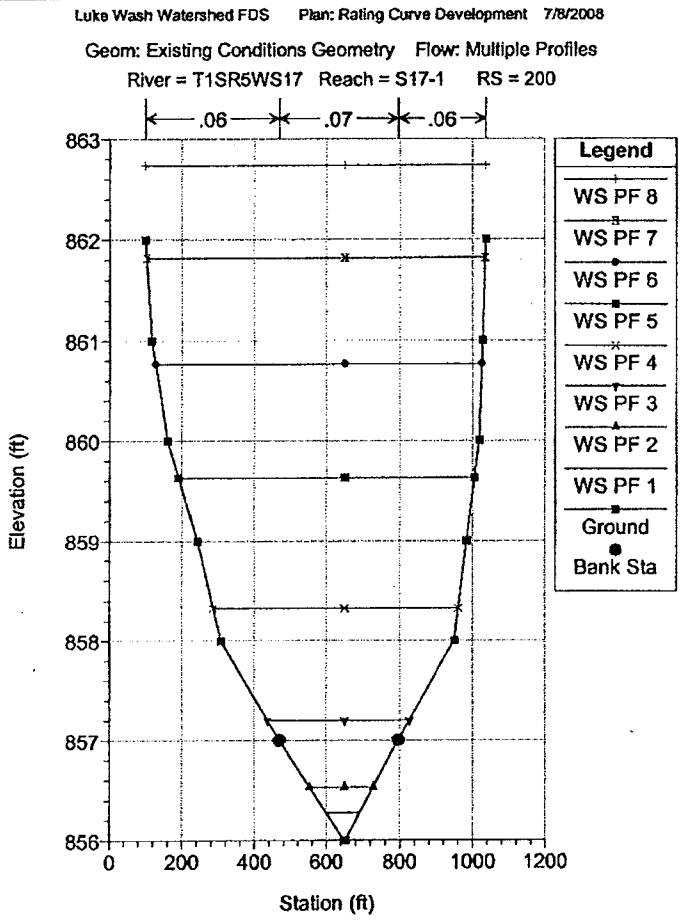
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

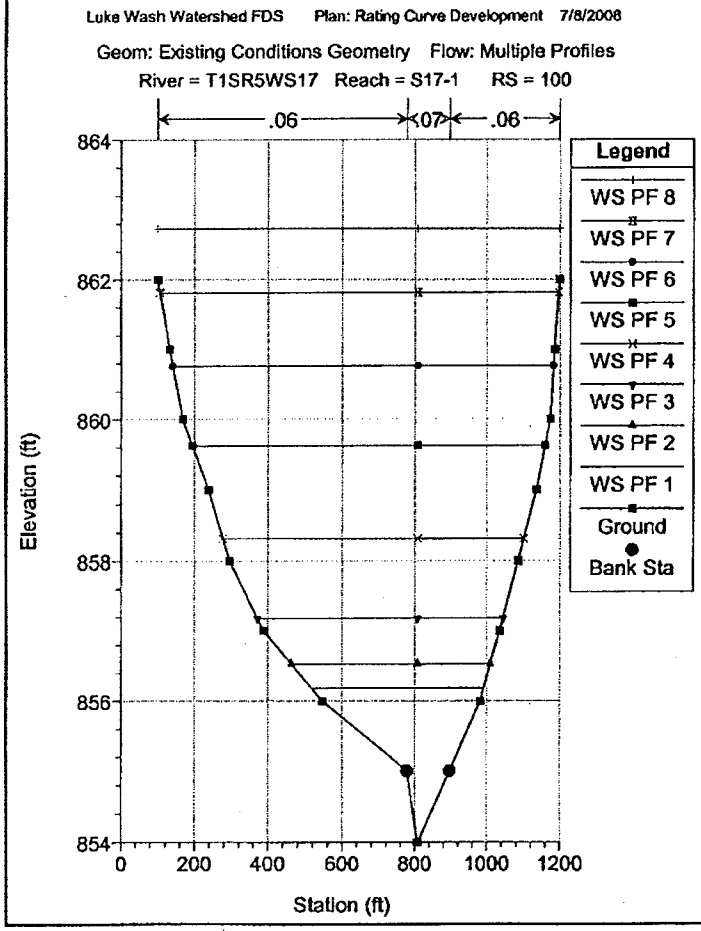
Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = T1SR5WS17 Reach = S17-1 RS = 400

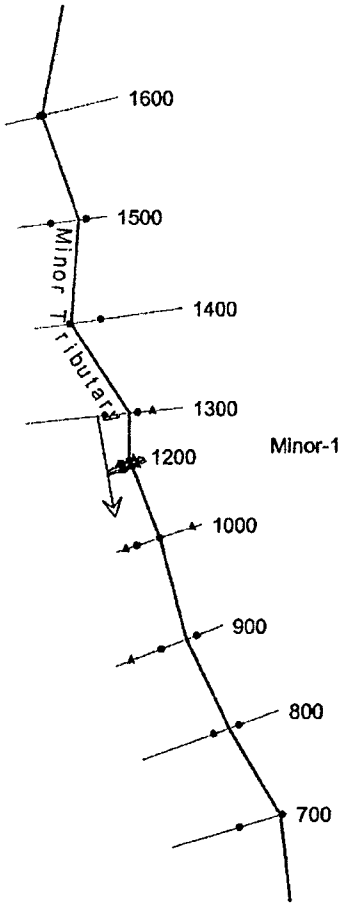



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1SR5WS17 Reach = S17-1 RS = 300
.06
.07
.06
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 2
WS PF 4
WS PF 3
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1SR5WS17 Reach = S17-1 RS = 200
.06
.07
.06
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

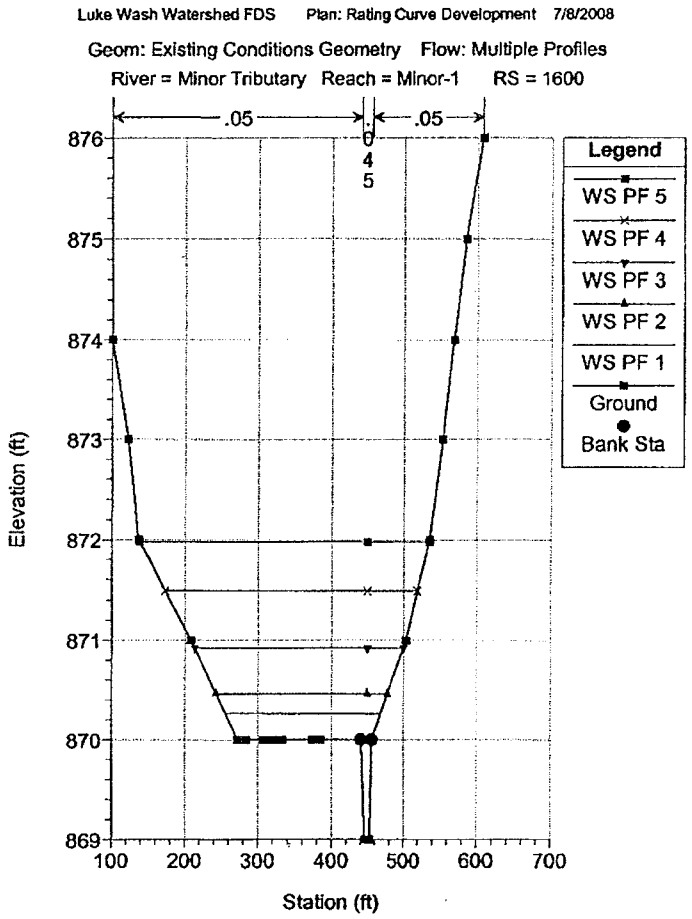

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = T1SR5WS17 Reach = S17-1 RS = 100
.06
.07
.06
Legend
WS PF 8
WS PF 7
WS PF 6
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

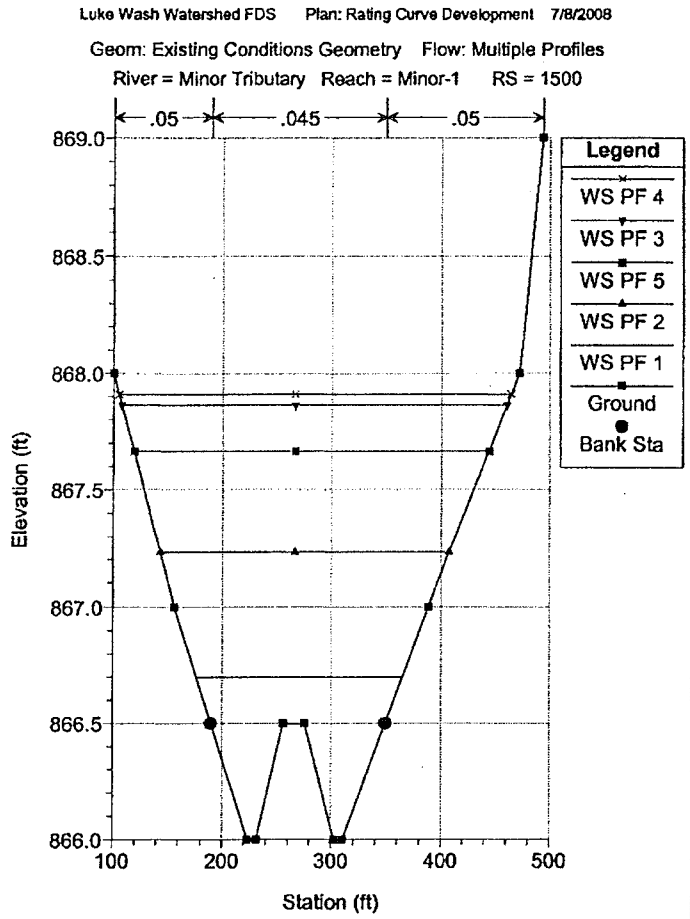
for Structure UPRH

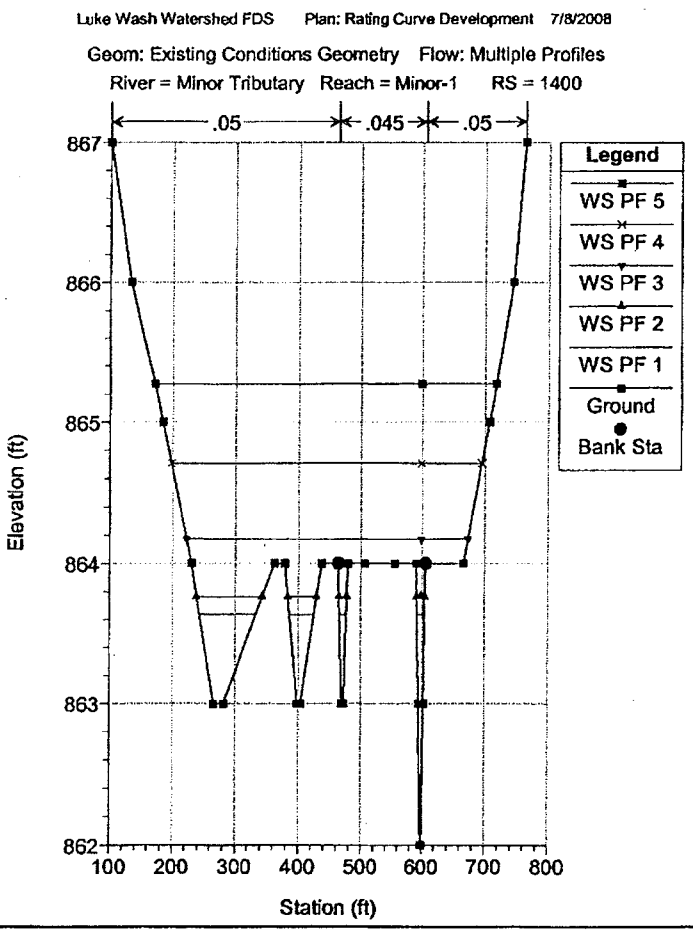


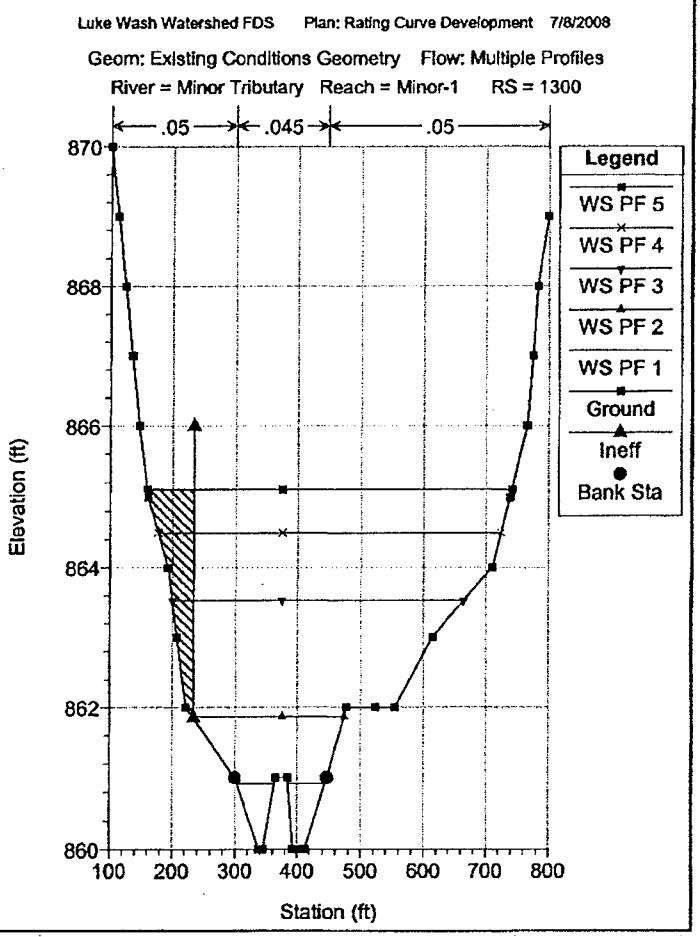
HEC-RAS Plan: FDS River: Minor Tributary Reach: Minor-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(fps)	(sq ft)	(ft)	
Minor-1	1600	PF 1	100.00	869.00	870.26	870.23	870.34	0.009065	3.13	62.98	212.53	0.55
Minor-1	1600	PF 2	300.00	869.00	870.46	870.46	870.65	0.019761	5.20	107.20	234.66	0.83
Minor-1	1600	PF 3	800.00	869.00	870.92	870.80	871.16	0.016748	5.94	227.67	286.39	0.81
Minor-1	1600	PF 4	1200.00	869.00	871.49		871.64	0.007370	4.79	406.15	346.04	0.56
Minor-1	1600	PF 5	1500.00	869.00	871.98	871.17	872.09	0.004068	4.06	589.76	397.77	0.43
Minor-1	1500	PF 1	100.00	866.00	866.70	866.46	866.73	0.005218	1.39	73.92	188.65	0.37
Minor-1	1500	PF 2	300.00	866.00	867.23	866.74	867.27	0.002813	1.72	194.47	264.37	0.31
Minor-1	1500	PF 3	800.00	866.00	867.86	867.16	867.94	0.002961	2.47	389.39	353.10	0.34
Minor-1	1500	PF 4	1200.00	866.00	867.91	867.40	868.08	0.005959	3.56	405.78	359.57	0.49
Minor-1	1500	PF 5	1500.00	866.00	867.67	867.56	868.07	0.017410	5.48	322.21	325.26	0.81
Minor-1	1400	PF 1	100.00	862.00	863.64	863.44	863.68	0.007933	2.23	63.26	151.88	0.48
Minor-1	1400	PF 2	300.00	862.00	863.76	863.76	863.99	0.034254	4.91	84.42	176.18	1.01
Minor-1	1400	PF 3	800.00	862.00	864.17	864.17	864.42	0.039328	3.27	207.46	451.15	0.97
Minor-1	1400	PF 4	1200.00	862.00	864.71		864.82	0.007707	2.67	461.22	496.99	0.50
Minor-1	1400	PF 5	1500.00	862.00	865.27		865.34	0.002660	2.18	756.10	546.22	0.32
Minor-1	1300	PF 1	100.00	860.00	860.92	860.55	860.95	0.004398	1.49	67.23	120.02	0.35
Minor-1	1300	PF 2	300.00	860.00	861.87	860.94	861.89	0.001072	1.35	246.35	241.77	0.20
Minor-1	1300	PF 3	800.00	860.00	863.53	861.47	863.54	0.000297	1.20	843.29	465.33	0.12
Minor-1	1300	PF 4	1200.00	860.00	864.50	861.76	864.51	0.000202	1.19	1297.91	547.57	0.10
Minor-1	1300	PF 5	1500.00	860.00	865.11	861.95	865.12	0.000171	1.20	1602.62	582.15	0.10
Minor-1	1200	PF 1	100.00	858.65	860.36	859.34	860.41	0.001539	1.81	56.17	35.77	0.25
Minor-1	1200	PF 2	300.00	858.65	861.34	860.07	861.51	0.002848	3.35	93.02	39.09	0.36
Minor-1	1200	PF 3	800.00	858.65	862.90	861.33	863.34	0.004057	5.43	157.96	44.35	0.47
Minor-1	1200	PF 4	1200.00	858.65	863.66	862.13	864.32	0.005051	6.77	204.90	75.33	0.54
Minor-1	1200	PF 5	1500.00	858.65	864.18	862.66	864.94	0.005182	7.33	243.72	85.98	0.55
Minor-1	1150		Bridge									
Minor-1	1100	PF 1	100.00	859.10	860.09	859.79	860.24	0.009922	3.13	31.98	34.48	0.57
Minor-1	1100	PF 2	300.00	859.10	860.77	860.50	861.22	0.014484	5.42	56.23	37.53	0.75
Minor-1	1100	PF 3	800.00	859.10	861.74	861.74	862.91	0.020236	8.79	95.06	41.95	0.96
Minor-1	1100	PF 4	1200.00	859.10	862.64	862.64	863.89	0.015150	9.28	144.93	67.42	0.88
Minor-1	1100	PF 5	1500.00	859.10	863.07	863.07	864.49	0.015068	10.00	170.12	73.95	0.89
Minor-1	1000	PF 1	100.00	857.00	857.48	857.28	857.52	0.006227	1.60	70.22	183.06	0.41
Minor-1	1000	PF 2	300.00	857.00	857.86	857.55	857.94	0.006219	2.38	151.04	242.55	0.45
Minor-1	1000	PF 3	800.00	857.00	858.43	857.98	858.55	0.005981	3.23	304.79	319.52	0.48
Minor-1	1000	PF 4	1200.00	857.00	858.75	858.24	858.90	0.005828	3.65	402.23	347.14	0.49
Minor-1	1000	PF 5	1500.00	857.00	858.95	858.38	859.13	0.005729	3.90	465.82	365.00	0.49
Minor-1	900	PF 1	100.00	854.00	854.93	854.60	854.96	0.004540	1.34	74.46	158.75	0.35
Minor-1	900	PF 2	300.00	854.00	855.36	854.94	855.42	0.004434	1.99	157.74	229.20	0.38
Minor-1	900	PF 3	800.00	854.00	855.96	855.39	856.07	0.004487	2.85	323.74	326.71	0.42
Minor-1	900	PF 4	1200.00	854.00	856.27	855.67	856.42	0.004563	3.27	431.90	349.77	0.43
Minor-1	900	PF 5	1500.00	854.00	856.47	855.84	856.63	0.004693	3.56	500.72	360.95	0.45
Minor-1	800	PF 1	100.00	852.00	852.76		852.79	0.005005	1.52	70.72	178.87	0.37
Minor-1	800	PF 2	300.00	852.00	853.15	852.82	853.22	0.005192	2.25	159.45	266.51	0.41
Minor-1	800	PF 3	800.00	852.00	853.69	853.27	853.81	0.005492	3.14	332.44	380.05	0.46
Minor-1	800	PF 4	1200.00	852.00	853.98	853.50	854.13	0.005551	3.57	453.45	442.49	0.48
Minor-1	800	PF 5	1500.00	852.00	854.16	853.65	854.32	0.005506	3.80	534.15	459.31	0.48
Minor-1	700	PF 1	100.00	850.00	850.58	850.33	850.61	0.004504	1.23	81.88	216.92	0.34
Minor-1	700	PF 2	300.00	850.00	850.94	850.59	850.99	0.004501	1.87	176.36	310.92	0.37
Minor-1	700	PF 3	800.00	850.00	851.45	850.98	851.54	0.004509	2.62	358.75	395.47	0.41
Minor-1	700	PF 4	1200.00	850.00	851.75	851.19	851.86	0.004501	3.00	481.43	440.14	0.42
Minor-1	700	PF 5	1500.00	850.00	851.93	851.33	852.07	0.004503	3.24	566.29	468.55	0.43


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Minor Tributary Reach = Minor-1 RS = 1600
.05
.05
Legend
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Minor Tributary Reach = Minor-1 RS = 1500
.05
.045
.05
Legend
WS PF 4
WS PF 3
WS PF 5
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

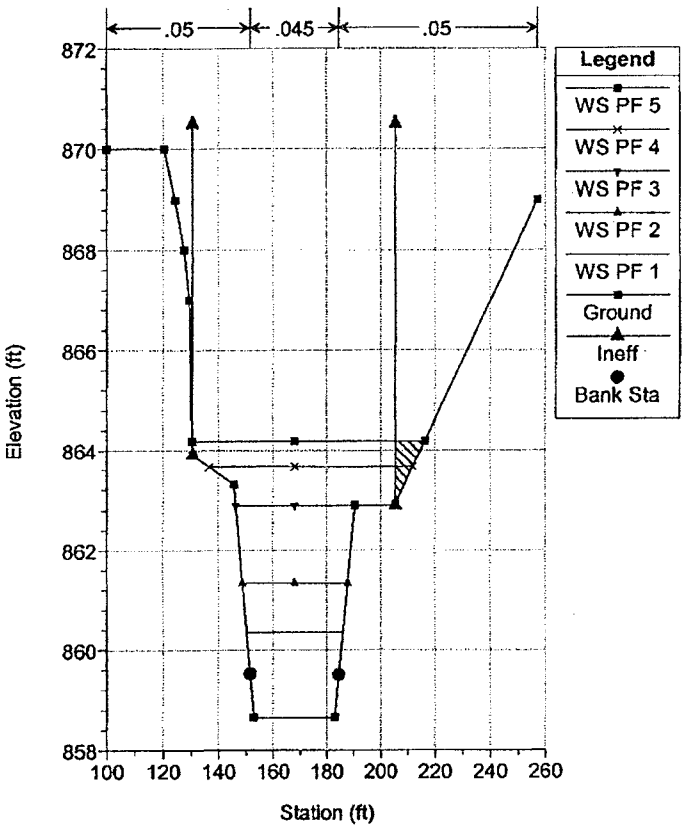

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Minor Tributary Reach = Minor-1 RS = 1400
.05
.045
.05
Legend
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008
Geom: Existing Conditions Geometry Flow: Multiple Profiles
River = Minor Tributary Reach = Minor-1 RS = 1300
.05
.045
.05
Legend
WS PF 5
WS PF 4
WS PF 3
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

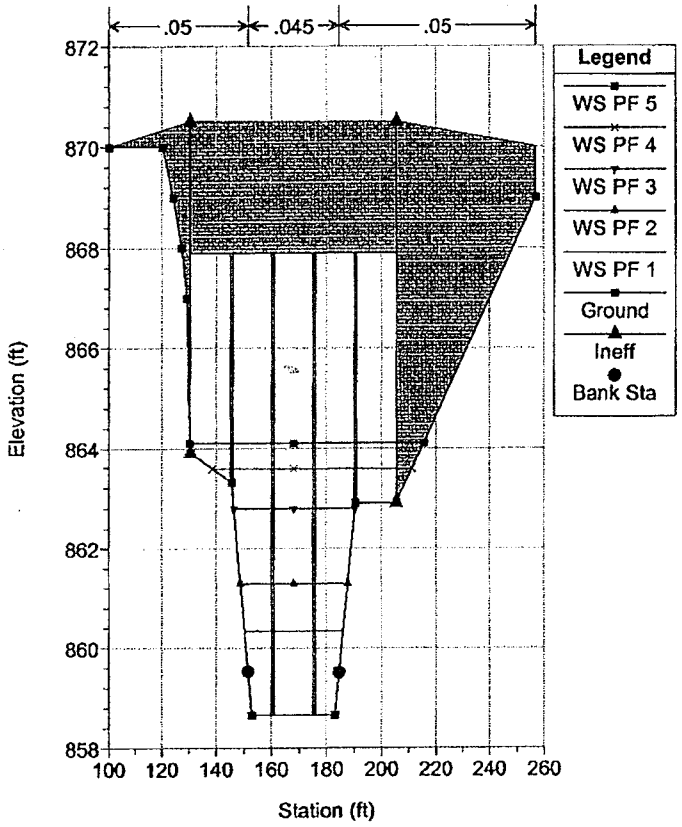
River = Minor Tributary Reach = Minor-1 RS = 1200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

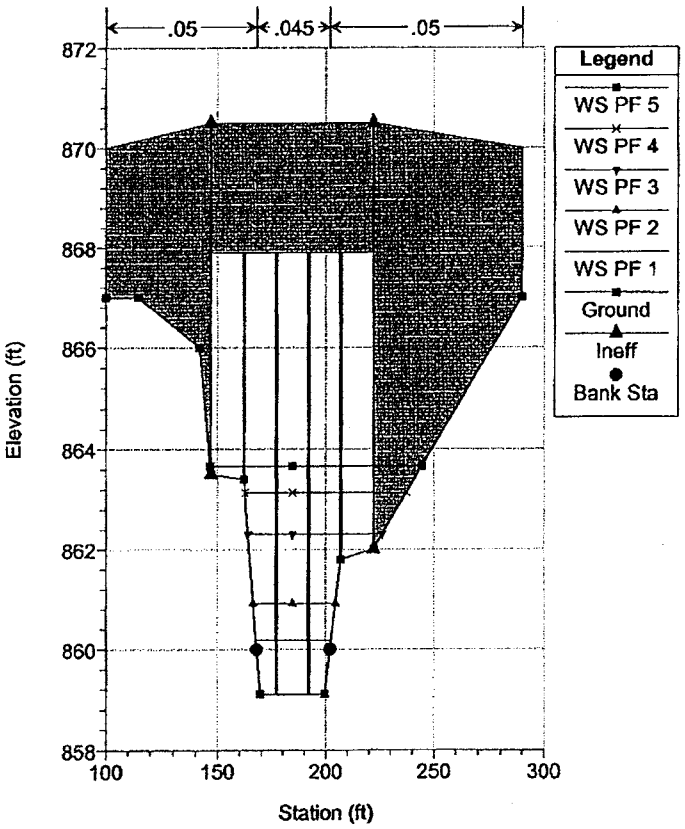
River = Minor Tributary Reach = Minor-1 RS = 1150 BR



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

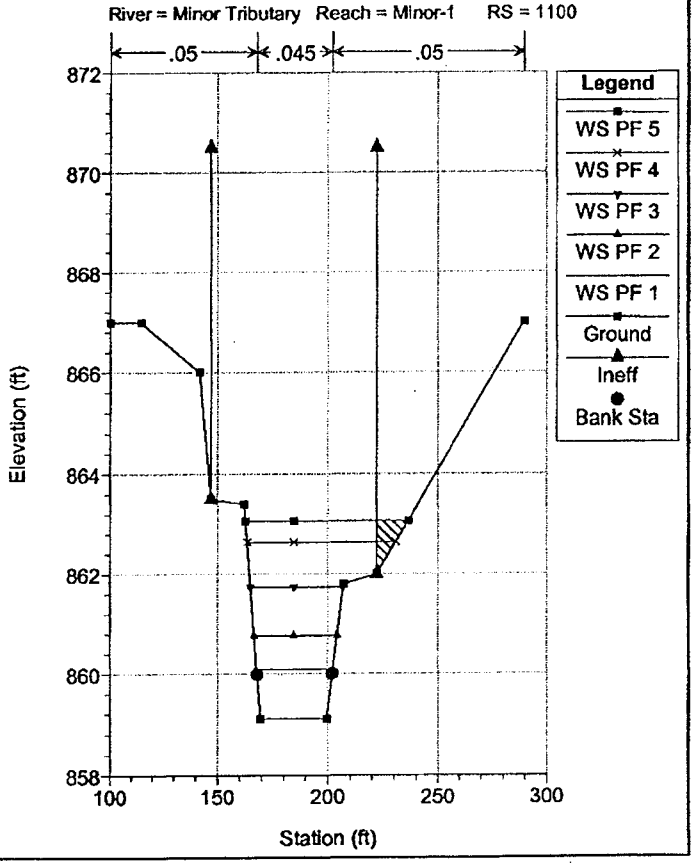
River = Minor Tributary Reach = Minor-1 RS = 1150 BR



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

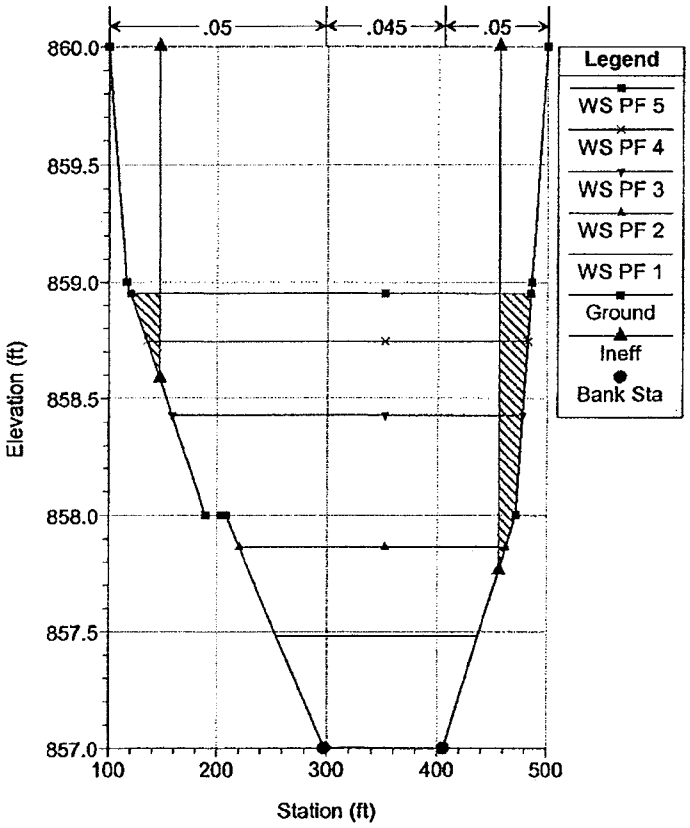
River = Minor Tributary Reach = Minor-1 RS = 1100



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

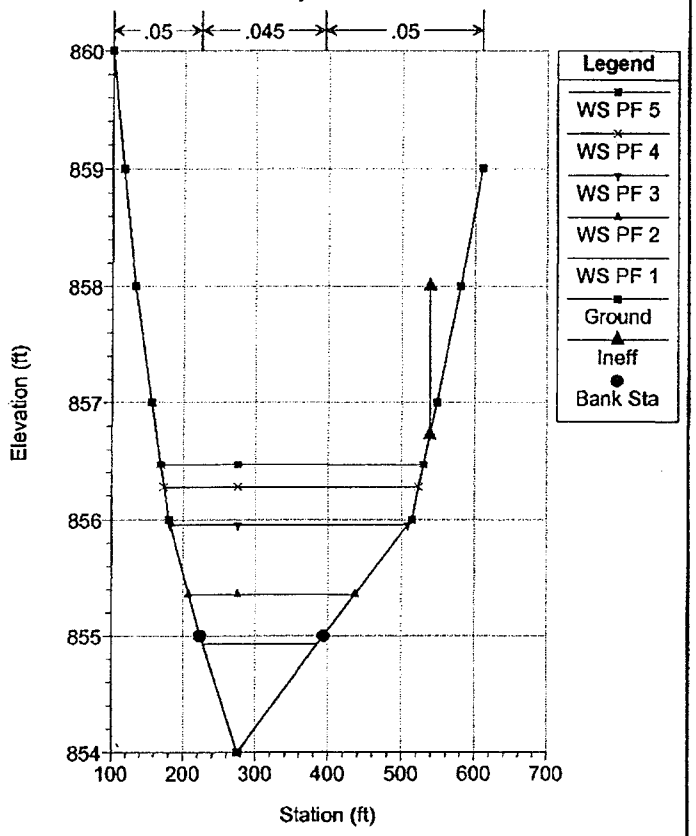
River = Minor Tributary Reach = Minor-1 RS = 1000



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

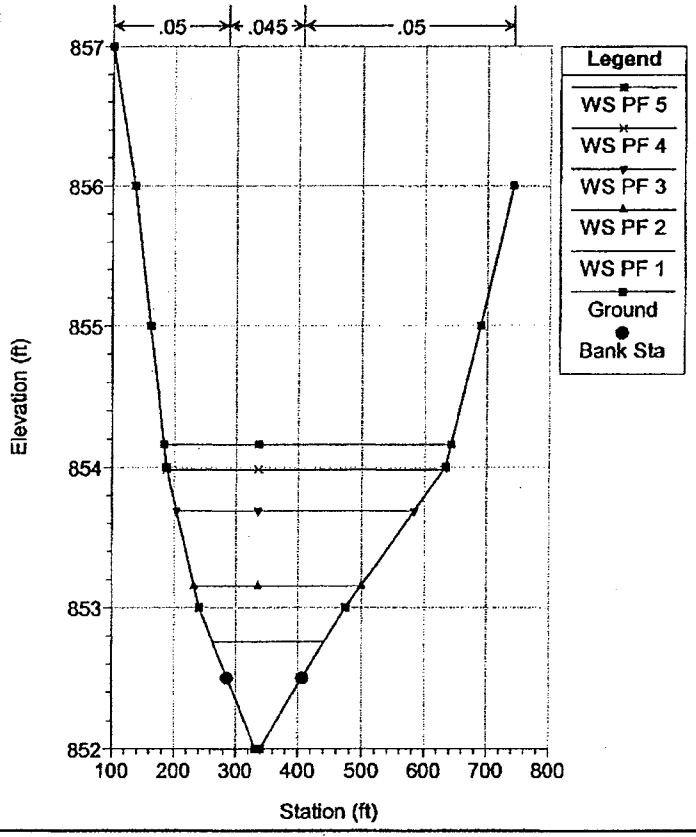
River = Minor Tributary Reach = Minor-1 RS = 900



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

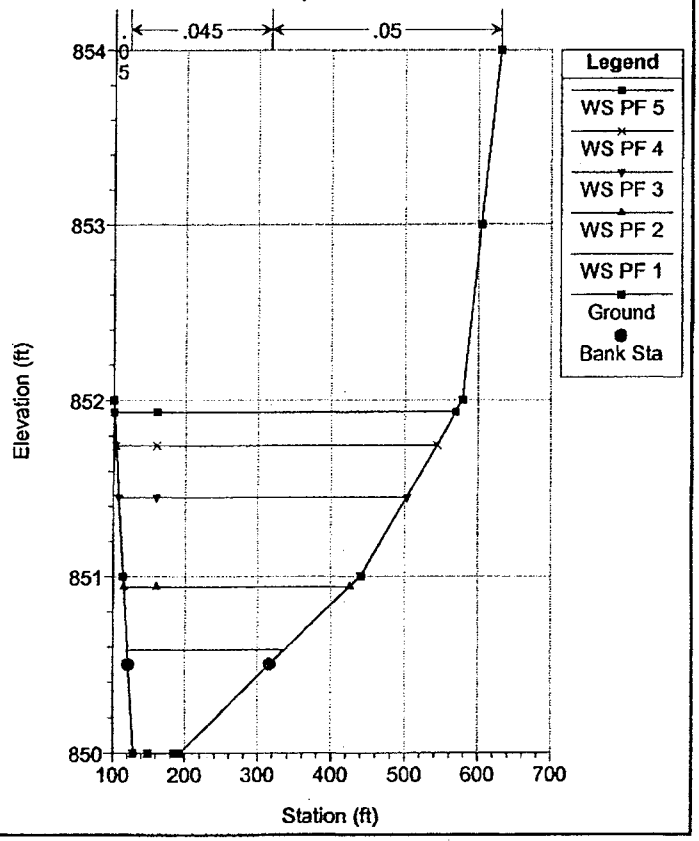
River = Minor Tributary Reach = Minor-1 RS = 800



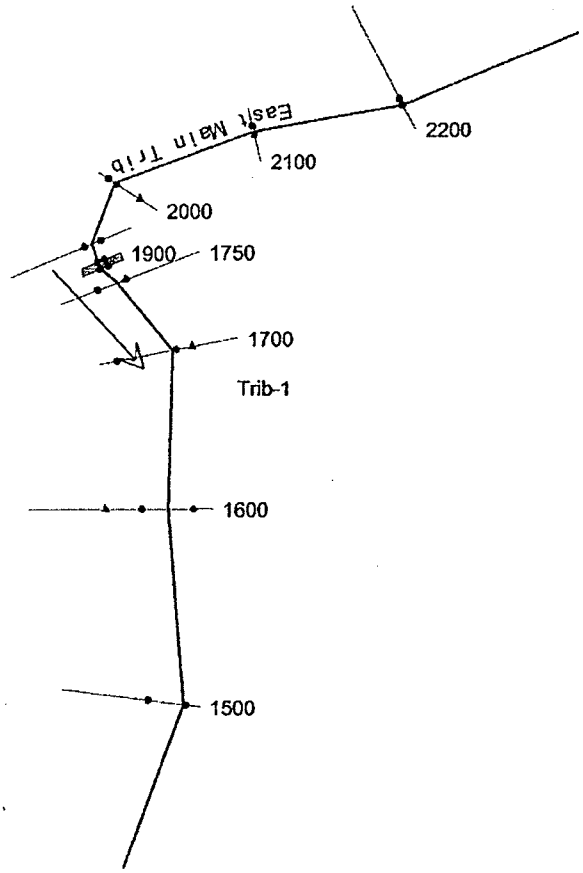
Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = Minor Tributary Reach = Minor-1 RS = 700



for Structure UPR5



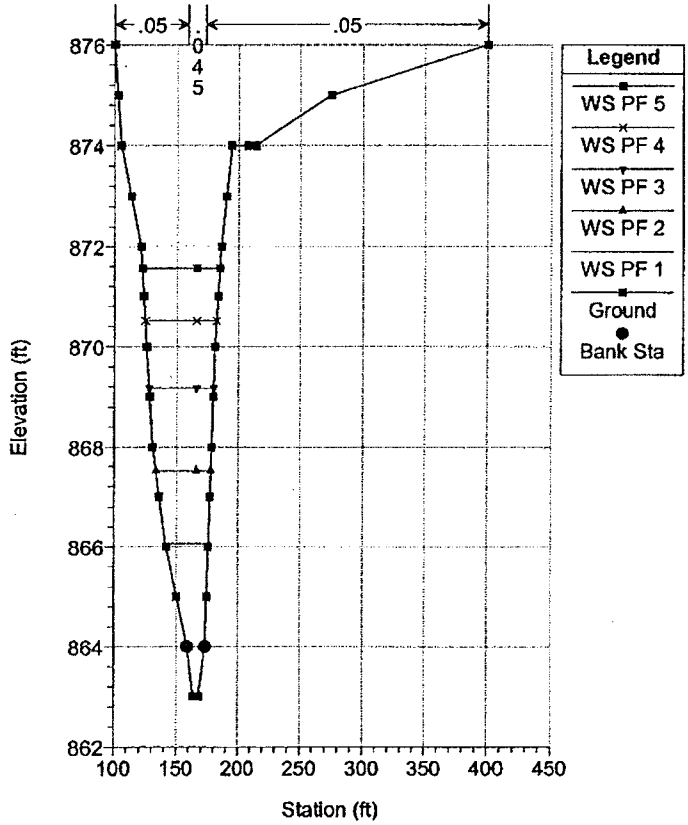
HEC-RAS Plan: FDS River: East Main Trib Reach: Trib-1

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
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Trib-1	2200	PF 1	200.00	863.00	866.06	865.16	866.28	0.004190	4.12	59.82	34.62	0.44
Trib-1	2200	PF 2	500.00	863.00	867.51		867.88	0.004287	5.55	117.59	44.68	0.48
Trib-1	2200	PF 3	1000.00	863.00	869.18		869.66	0.003976	6.68	199.02	52.26	0.49
Trib-1	2200	PF 4	1500.00	863.00	870.51		871.09	0.003693	7.39	272.41	57.70	0.49
Trib-1	2200	PF 5	2000.00	863.00	871.57		872.24	0.003676	8.08	335.81	62.79	0.50
Trib-1	2100	PF 1	200.00	861.00	862.70	862.70	863.41	0.025815	6.81	29.94	22.05	0.99
Trib-1	2100	PF 2	500.00	861.00	863.93	863.91	865.12	0.019936	8.95	59.50	26.06	0.96
Trib-1	2100	PF 3	1000.00	861.00	865.40	865.40	867.13	0.016890	11.00	101.54	31.14	0.95
Trib-1	2100	PF 4	1500.00	861.00	866.57	866.57	868.71	0.015461	12.41	140.92	37.21	0.95
Trib-1	2100	PF 5	2000.00	861.00	867.70	867.70	869.98	0.013199	13.03	187.59	45.14	0.90
Trib-1	2000	PF 1	200.00	854.30	856.83	856.42	857.21	0.010504	4.98	41.79	27.56	0.65
Trib-1	2000	PF 2	500.00	854.30	857.63	857.63	858.63	0.017789	8.27	67.54	38.11	0.90
Trib-1	2000	PF 3	1000.00	854.30	859.00	858.97	860.16	0.013152	9.42	135.64	62.31	0.83
Trib-1	2000	PF 4	1500.00	854.30	860.61	859.88	861.33	0.006017	7.99	260.13	88.06	0.60
Trib-1	2000	PF 5	2000.00	854.30	861.88	860.57	862.46	0.003859	7.33	368.99	96.29	0.49
Trib-1	1950	PF 1	200.00	853.50	855.49	855.12	855.73	0.009988	3.96	51.46	43.21	0.61
Trib-1	1950	PF 2	500.00	853.50	856.99	855.95	857.26	0.004284	4.30	126.09	54.20	0.45
Trib-1	1950	PF 3	1000.00	853.50	858.94	858.91	859.24	0.002517	4.67	241.61	67.48	0.38
Trib-1	1950	PF 4	1500.00	853.50	860.44	857.68	860.79	0.002047	5.06	343.60	162.44	0.36
Trib-1	1950	PF 5	2000.00	853.50	861.69	858.32	862.07	0.001839	5.41	436.85	231.20	0.35
Trib-1	1900	PF 1	200.00	852.16	855.23	854.19	855.47	0.004176	4.11	54.53	25.53	0.44
Trib-1	1900	PF 2	500.00	852.16	856.38	855.47	857.00	0.007057	6.76	86.47	30.15	0.61
Trib-1	1900	PF 3	1000.00	852.16	858.07	856.98	859.01	0.007016	8.59	143.26	36.96	0.64
Trib-1	1900	PF 4	1500.00	852.16	859.40	858.15	860.56	0.006761	9.73	196.06	42.34	0.65
Trib-1	1900	PF 5	2000.00	852.16	860.52	859.08	861.64	0.006477	10.54	245.25	45.29	0.66
Trib-1	1850		Bridge									
Trib-1	1800	PF 1	200.00	852.66	854.94	854.35	855.29	0.008048	4.81	43.77	24.57	0.58
Trib-1	1800	PF 2	500.00	852.66	855.62	855.59	856.77	0.018747	8.83	61.38	27.51	0.93
Trib-1	1800	PF 3	1000.00	852.66	857.05	857.05	858.71	0.016453	10.90	105.05	33.70	0.94
Trib-1	1800	PF 4	1500.00	852.66	858.18	858.18	860.18	0.015031	12.20	145.87	38.60	0.93
Trib-1	1800	PF 5	2000.00	852.66	859.14	859.14	861.40	0.014015	13.16	185.02	42.56	0.92
Trib-1	1750	PF 1	200.00	853.00	854.16	854.16	854.50	0.051603	4.68	42.71	68.18	1.01
Trib-1	1750	PF 2	500.00	853.00	854.73	854.73	855.35	0.040966	6.30	79.58	71.59	1.00
Trib-1	1750	PF 3	1000.00	853.00	855.46	855.46	856.43	0.035049	7.92	127.02	75.96	1.00
Trib-1	1750	PF 4	1500.00	853.00	856.06	856.06	857.33	0.032269	9.08	166.80	158.10	1.00
Trib-1	1750	PF 5	2000.00	853.00	856.62	856.62	858.13	0.029419	9.90	205.13	168.58	0.99
Trib-1	1700	PF 1	200.00	850.00	851.74	850.93	851.76	0.002016	1.32	153.28	140.78	0.22
Trib-1	1700	PF 2	500.00	850.00	852.45	851.37	852.51	0.002402	1.99	257.02	150.10	0.28
Trib-1	1700	PF 3	1000.00	850.00	853.20	851.81	853.32	0.002962	2.78	374.40	162.63	0.30
Trib-1	1700	PF 4	1500.00	850.00	853.76	852.19	853.93	0.003375	3.38	468.26	176.36	0.33
Trib-1	1700	PF 5	2000.00	850.00	854.22	852.51	854.44	0.003674	3.85	547.47	184.87	0.36
Trib-1	1600	PF 1	200.00	849.00	849.86	849.67	850.00	0.021395	2.95	67.79	105.01	0.65
Trib-1	1600	PF 2	500.00	849.00	850.29	850.18	850.51	0.020907	3.95	141.35	213.36	0.69
Trib-1	1600	PF 3	1000.00	849.00	850.74	850.56	851.05	0.018860	4.79	234.73	240.61	0.70
Trib-1	1600	PF 4	1500.00	849.00	851.10	850.85	851.49	0.017804	5.39	310.40	263.10	0.70
Trib-1	1600	PF 5	2000.00	849.00	851.41	851.10	851.88	0.017023	5.86	377.82	284.65	0.70
Trib-1	1500	PF 1	200.00	845.00	846.59	846.21	846.62	0.004001	1.56	148.40	221.30	0.29
Trib-1	1500	PF 2	500.00	845.00	847.10	846.47	847.16	0.004006	2.12	266.68	238.05	0.32
Trib-1	1500	PF 3	1000.00	845.00	847.71	846.79	847.81	0.004006	2.70	417.10	256.43	0.34
Trib-1	1500	PF 4	1500.00	845.00	848.18	847.06	848.31	0.004001	3.11	540.71	266.07	0.35
Trib-1	1500	PF 5	2000.00	845.00	848.58	847.30	848.73	0.004001	3.43	645.57	268.14	0.36

Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

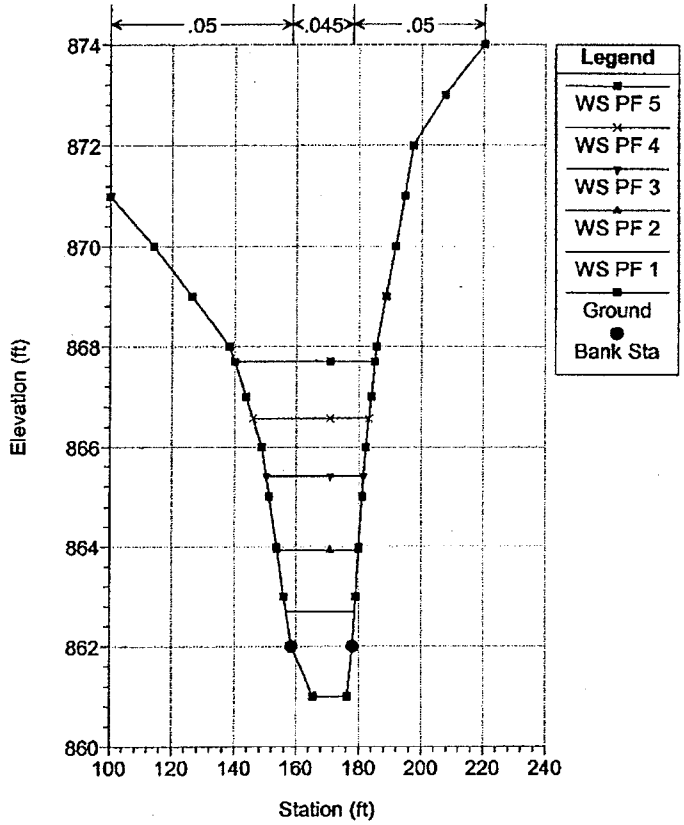
River = East Main Trib Reach = Trib-1 RS = 2200



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

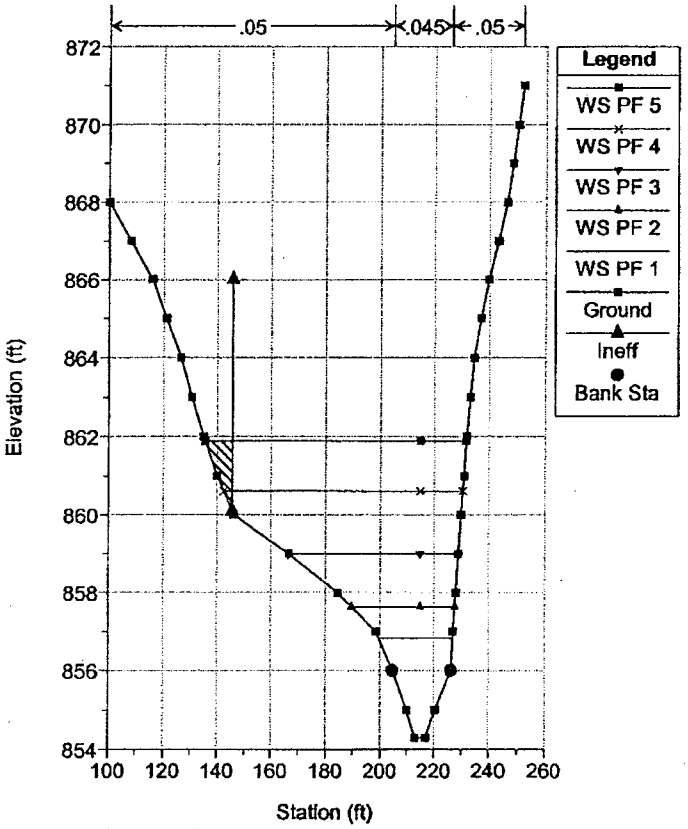
River = East Main Trib Reach = Trib-1 RS = 2100



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

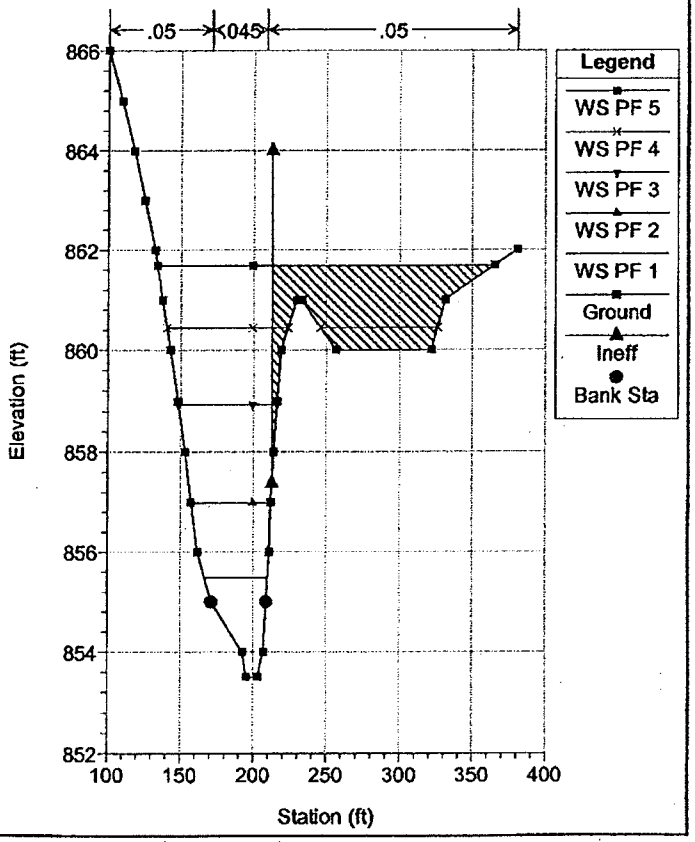
River = East Main Trib Reach = Trib-1 RS = 2000



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

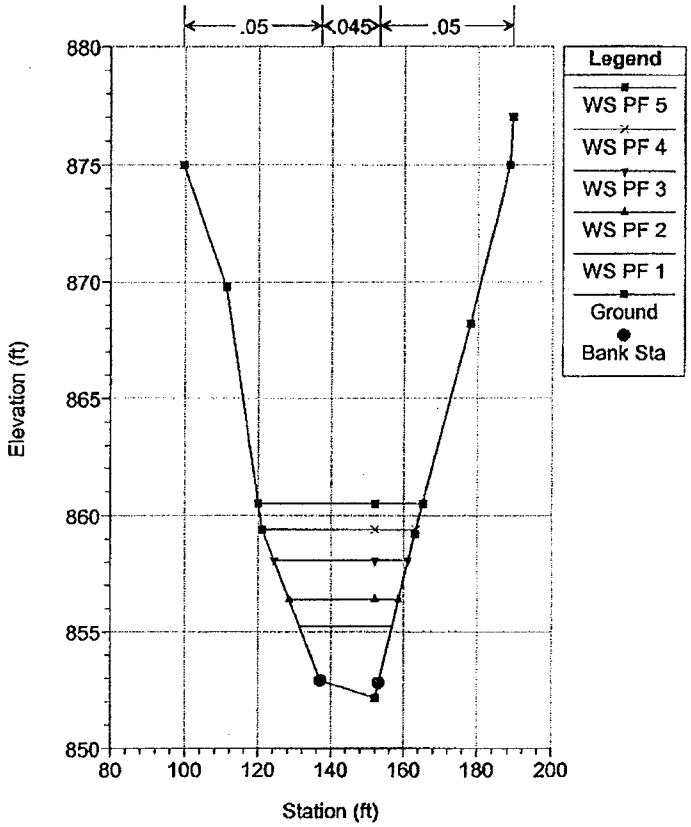
River = East Main Trib Reach = Trib-1 RS = 1950



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

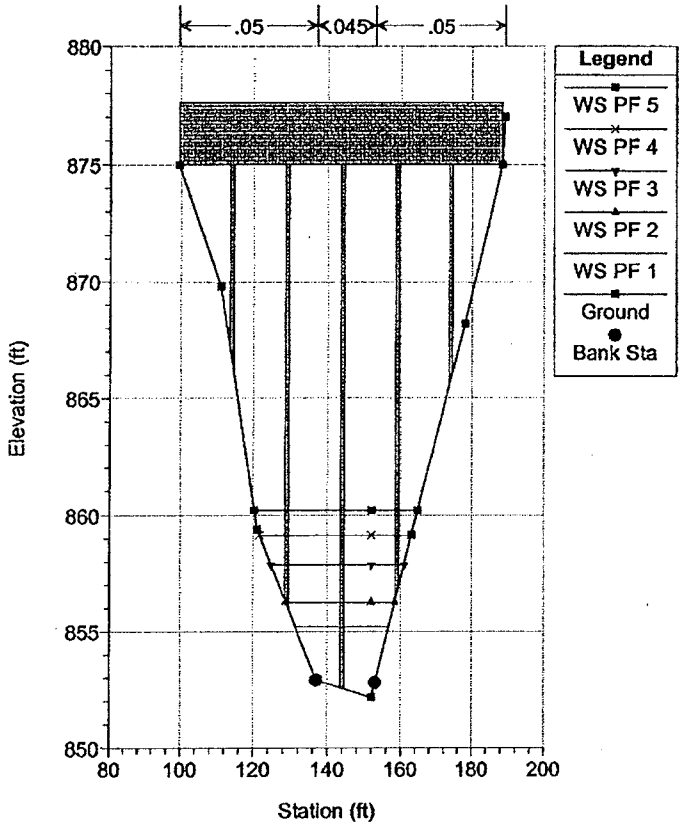
River = East Main Trib Reach = Trib-1 RS = 1900



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

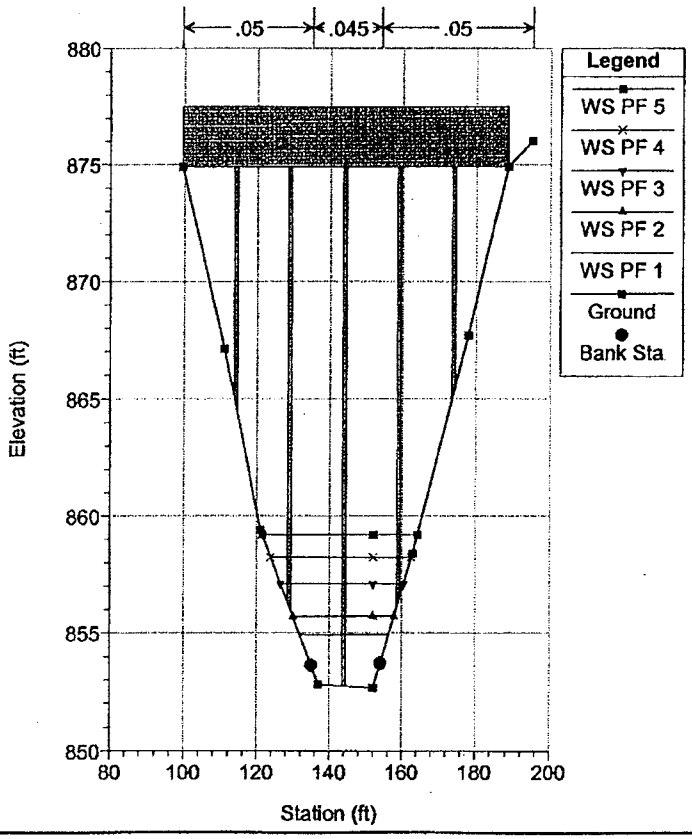
River = East Main Trib Reach = Trib-1 RS = 1850 BR



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

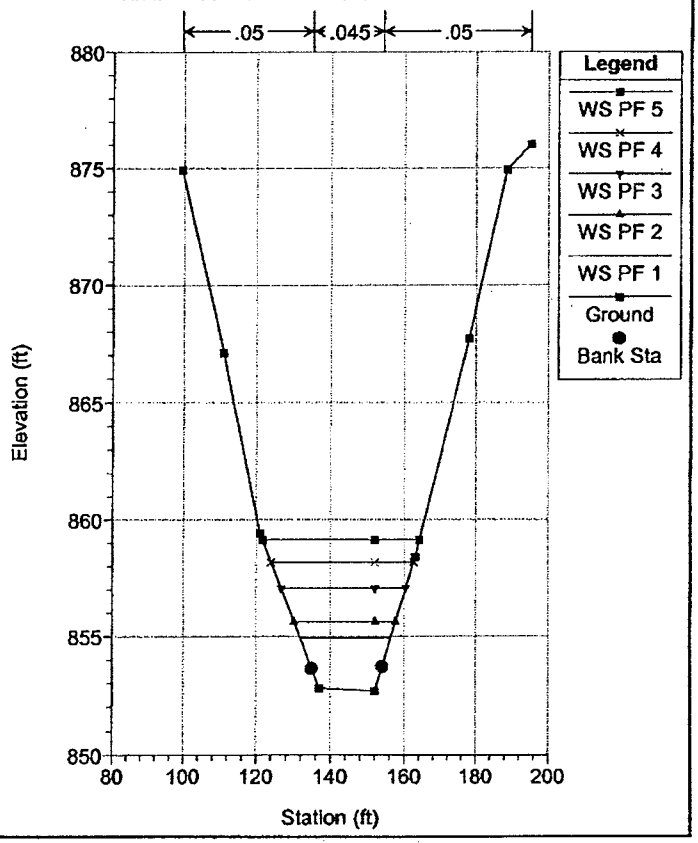
River = East Main Trib Reach = Trib-1 RS = 1850 BR



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

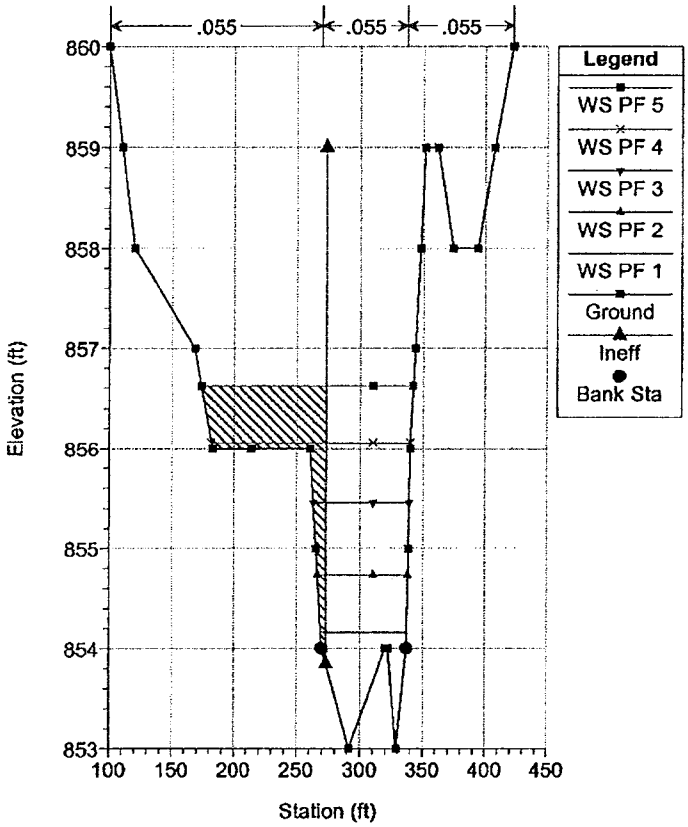
River = East Main Trib Reach = Trib-1 RS = 1800



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

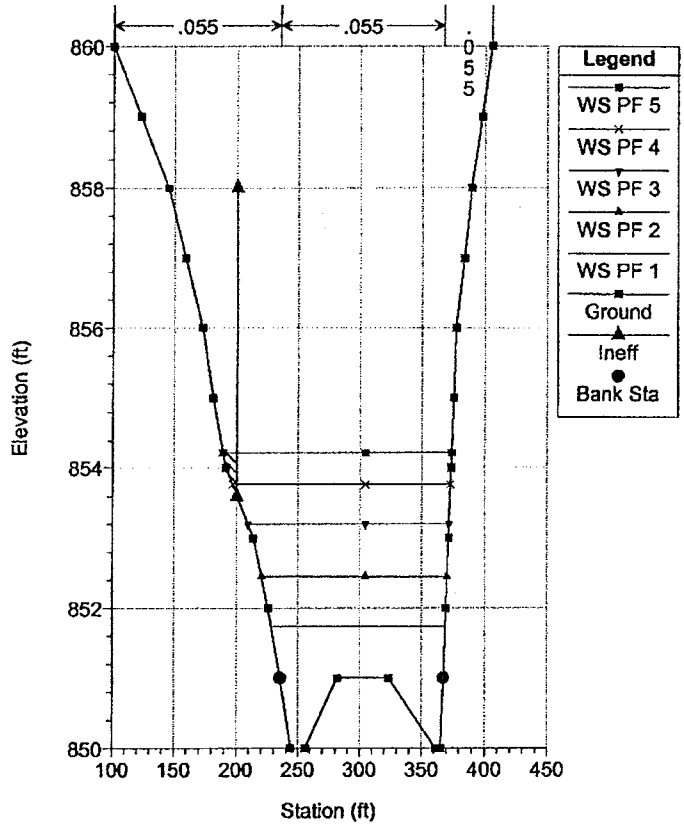
River = East Main Trib Reach = Trib-1 RS = 1750



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

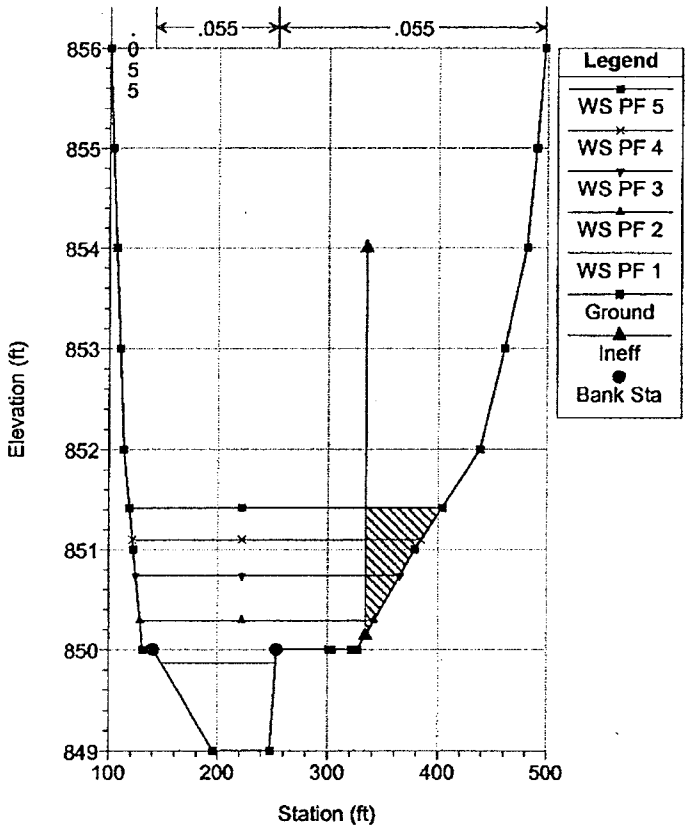
River = East Main Trib Reach = Trib-1 RS = 1700



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

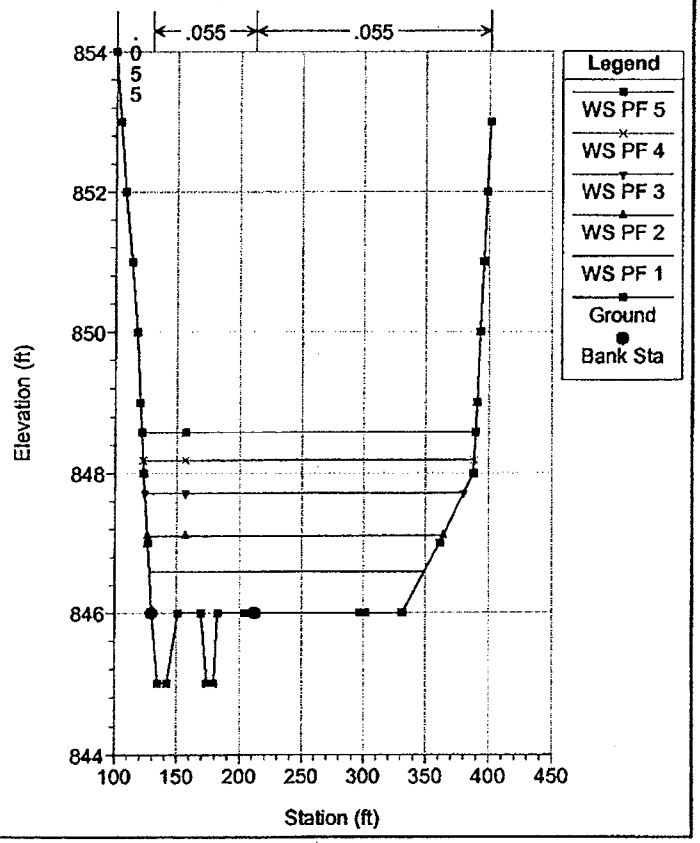
River = East Main Trib Reach = Trib-1 RS = 1600



Luke Wash Watershed FDS Plan: Rating Curve Development 7/8/2008

Geom: Existing Conditions Geometry Flow: Multiple Profiles

River = East Main Trib Reach = Trib-1 RS = 1500



APPENDIX D4.3

Storage Data from DDMSW

Storage ID		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
S14c	Elevation Top of Dam: 869.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		1.30	4.90	13.20	27.20	49.40	80.80	123.70	179.20	
	Discharge (cfs)		208	716	1,223	1,731	2,595	3,168	3,447	3,727	
	Elevation (ft)	861.0	862.0	863.0	864.0	865.0	866.0	867.0	123.7	869.0	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S20b	Elevation Top of Dam: 862.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.80	3.30	8.70	18.60	34.60	57.80	92.50	142.20	
	Discharge (cfs)		100	403	770	1,325	2,286	3,248	4,210	5,170	
	Elevation (ft)	854.0	855.0	856.0	857.0	858.0	859.0	860.0	92.5	862.0	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S20k	Elevation Top of Dam: 1,106.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		3.10	8.40	8.70	9.80	12.40	17.30	24.70	34.90	
	Discharge (cfs)		10	34	44	66	96	124	152	170	
	Elevation (ft)	1,098.0	1,099.0	1,100.0	1,101.0	1,102.0	1,103.0	1,104.0	24.7	1,106.0	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S21a	Elevation Top of Dam: 1,100.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.10	0.60	2.60	7.40	15.80	29.00	48.20		
	Discharge (cfs)		144	283	466	621	775	930	1,084		
	Elevation (ft)	1,093.0	1,094.0	1,095.0	1,096.0	1,097.0	1,098.0	1,099.0	48.2	-	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										

Storage ID		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
S22d	Elevation Top of Dam: 1,099.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.10	0.50	2.30	5.00	10.90	19.60			
	Discharge (cfs)		47	90	127	158	189	221			
	Elevation (ft)	1,093.0	1,094.0	1,095.0	1,096.0	1,097.0	1,098.0	1,099.0	-	-	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S32b	Elevation Top of Dam: 864.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		1.00	3.40	8.00	15.50					
	Discharge (cfs)		258	536	853	1,400					
	Elevation (ft)	860.0	861.0	862.0	863.0	864.0	-	-	-	-	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S44a	Elevation Top of Dam: 1,094.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.30	1.70	4.60	9.70	16.90	26.10	37.70	52.00	
	Discharge (cfs)		87	217	347	516	720	923	1,127	1,302	
	Elevation (ft)	1,086.0	1,087.0	1,088.0	1,089.0	1,090.0	1,091.0	1,092.0	37.7	1,094.0	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S46a	Elevation Top of Dam: 1,094.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.60	2.90	8.80	14.00	34.90	62.00	97.00		
	Discharge (cfs)		258	586	990	1,402	1,823	2,061	2,314		
	Elevation (ft)	1,087.0	1,088.0	1,089.0	1,090.0	1,091.0	1,092.0	1,093.0	97.0	-	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										

Storage ID		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
S64a	Elevation Top of Dam: 1,081.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.03	0.20	1.00	2.60	5.80	12.00	13.30	26.00	44.50
	Discharge (cfs)		66	171	312	454	595	698	792	887	982
	Elevation (ft)	1,072.0	1,073.0	1,074.0	1,075.0	1,076.0	1,077.0	1,078.0	13.3	1,080.0	1,081.0
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S70d	Elevation Top of Dam: 861.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.10	0.30	0.60	1.00	1.50	2.30	3.30		
	Discharge (cfs)		130	412	695	978	1,370	1,776	2,185		
	Elevation (ft)	854.0	855.0	856.0	857.0	858.0	859.0	860.0	3.3	-	-
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S82b	Elevation Top of Dam: 1,080.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.20	0.60	1.50	3.10	5.60	9.10	13.80	20.50	41.30
	Discharge (cfs)		12	40	84	132	172	186	196	204	226
	Elevation (ft)	1,070.0	1,071.0	1,072.0	1,073.0	1,074.0	1,075.0	1,076.0	13.8	1,078.0	1,080.0
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										
S83a	Elevation Top of Dam: 1,046.00			Length of Dam: 100.00		Discharge Coefficient: 3.00			Weir Coefficient:1.50		
	Volume (ac-ft)		0.02	0.10	0.40	1.00	2.20	4.40	7.30	10.90	15.50
	Discharge (cfs)		177	473	769	1,060	1,261	1,462	1,663	1,863	2,071
	Elevation (ft)	1,037.0	1,038.0	1,039.0	1,040.0	1,041.0	1,042.0	1,043.0	7.3	1,045.0	1,046.0
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year				
	Peak Volume (ac-ft)										
	Peak Stage (ft)										

APPENDIX D5

Flow Splits and Diversions Data

Flood Control District of Maricopa County
Drainage Design Management System
HEC-1 DIVERSIONS
Project Reference: LUKE WASH -EC24NODK

Diversion ID/ DT Card ID	Maximum Volume (ac-ft)	Maximum Diversion (cfs)		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
D46kE			**Inflow (cfs)**		10	50	100	500	1,000				
D46kW			**Diversion (cfs)**		3	15	30	150	300				

APPENDIX D6

Evaluation of S-Graph vs. Clark Unit Hydrograph and Manning's n-Values

Manning's n_Value Sensitivity Analysis

(n values reduced by 0.01)

Wash T1S-R5W-S29 (shallow and wide)

		EC24NODK.Out					EC24NDn1.Out					Diff (%)
			Q100	Tp	Qavg24	A		Q100	Tp	Qavg24	A	
HYDROGRAPH	AT	14e	809	12.5	30	1.1	14e	809	12.5	30	1.1	0
ROUTED TO		R14e	720	12.83	30	1.1	R14e	741	12.75	30	1.1	-2.9
HYDROGRAPH	AT	14d	496	12.42	16	0.5	14d	496	12.42	16	0.5	0.0
2 COMBINED	AT	C14d	908	12.67	45	1.61	C14d	1005	12.58	45	1.61	-10.7
ROUTED TO		R14d	861	13.08	45	1.61	R14d	948	12.92	45	1.61	-10.1
HYDROGRAPH	AT	14c	831	12.5	30	1.1	14c	831	12.5	30	1.1	0.0
2 COMBINED	AT	C14c	1294	12.75	74	2.7	C14c	1519	12.67	74	2.7	-17.4
ROUTED TO		R14c	1229	13	74	2.7	R14c	1461	12.92	74	2.7	-18.9
HYDROGRAPH	AT	14b	308	12.25	7	0.26	14b	308	12.25	7	0.26	0.0
2 COMBINED	AT	C14b	1241	13	80	2.96	C14b	1481	12.92	80	2.96	-19.3
ROUTED TO		R14b	1173	13.58	80	2.96	R14b	1377	13.25	80	2.96	-17.4
HYDROGRAPH	AT	14a	322	12.5	11	0.37	14a	322	12.5	11	0.37	0.0
2 COMBINED	AT	C14a	1195	13.5	91	3.33	C14a	1432	13.25	91	3.33	-19.8
HYDROGRAPH	AT	12b	409	12.5	14	0.45	12b	409	12.5	14	0.45	0.0
ROUTED TO		R12b	315	13	14	0.45	R12b	337	12.92	14	0.45	-7.0
HYDROGRAPH	AT	12a	650	12.58	27	0.83	12a	650	12.58	27	0.83	0.0
2 COMBINED	AT	C12a	763	12.75	40	1.28	C12a	866	12.75	40	1.28	-13.5
2 COMBINED	AT	CC12a	1545	13.25	130	4.61	CC12a	1932	13.08	130	4.61	-25.0
HYDROGRAPH	AT	10b	593	12.58	29	0.86	10b	593	12.58	29	0.86	0.0
2 COMBINED	AT	C10b	1856	12.92	158	5.46	C10b	2303	12.83	158	5.46	-24.1
ROUTED TO		R10b	1783	13.42	158	5.46	R10b	2212	13.33	158	5.46	-24.1
HYDROGRAPH	AT	10a	783	12.42	25	0.84	10a	783	12.42	25	0.84	0.0
2 COMBINED	AT	C10a	1829	13.42	182	6.3	C10a	2273	13.33	182	6.3	-24.3

Manning's n_Value Sensitivity Analysis

(n values reduced by 0.01)

Luke Wash (D/S) (well-defined wash)

		EC24NODK.Out					EC24NDn1.Out					Diff (%)
			Q100	Tp	Qavg24	A		Q100	Tp	Qavg24	A	
COMBINED AT		CC30g	2515	14.5	615	24.96	CC30g	2515	14.5	615	24.96	0
ROUTED TO		R30g	2474	15	615	24.96	R30g	2492	14.92	615	24.96	-0.7
HYDROGRAPH	AT	30f	890	12.83	47	1.77	30f	890	12.83	47	1.77	0.0
2 COMBINED	AT	C30f	2478	15	653	26.74	C30f	2496	14.92	653	26.74	-0.7
ROUTED TO		R30f	2458	15.42	653	26.74	R30f	2486	15.17	653	26.74	-1.1
HYDROGRAPH	AT	30e	417	12.33	12	0.4	30e	417	12.33	12	0.4	0.0
2 COMBINED	AT	C30e	2458	15.42	663	27.14	C30e	2486	15.17	663	27.14	-1.1
ROUTED TO		R30e	2440	15.75	662	27.14	R30e	2473	15.42	662	27.14	-1.4
HYDROGRAPH	AT	30d	418	12.58	16	0.62	30d	418	12.58	16	0.62	0.0
2 COMBINED	AT	C30d	2440	15.75	676	27.75	C30d	2473	15.42	676	27.75	-1.4
ROUTED TO		R30d	2422	16	674	27.75	R30d	2455	15.58	675	27.75	-1.4
2 COMBINED	AT	CC20a	3242	15.92	987	41.4	CC20a	3318	15.58	987	41.4	-2.3
ROUTED TO		R20a	3233	16.08	986	41.4	R20a	3303	15.75	987	41.4	-2.2
HYDROGRAPH	AT	30c	246	12.33	8	0.24	30c	246	12.33	8	0.24	0.0
2 COMBINED	AT	C30c	3233	16.08	992	41.64	C30c	3303	15.75	993	41.64	-2.2
HYDROGRAPH	AT	32b	503	12.33	13	0.48	32b	503	12.33	13	0.48	0.0
ROUTED TO		R32b	363	12.83	13	0.48	R32b	363	12.83	13	0.48	0.0
HYDROGRAPH	AT	32a	278	12.33	8	0.29	32a	278	12.33	8	0.29	0.0
2 COMBINED	AT	C32a	449	12.75	20	0.76	C32a	449	12.75	20	0.76	0.0
2 COMBINED	AT	CC30c	3233	16.08	1009	42.41	CC30c	3303	15.75	1009	42.41	-2.2
ROUTED TO		R30c	3206	16.83	1007	42.41	R30c	3271	16.42	1007	42.41	-2.0
HYDROGRAPH	AT	30b	414	12.5	17	0.51	30b	414	12.5	17	0.51	0.0
2 COMBINED	AT	C30b	3206	16.83	1018	42.91	C30b	3271	16.42	1019	42.91	-2.0
2 COMBINED	AT	CC30b	3925	15.5	1237	53.52	CC30b	4197	15.25	1239	53.52	-6.9
HYDROGRAPH	AT	71b	323	12.25	8	0.29	71b	323	12.25	8	0.29	0.0
ROUTED TO		R71b	213	12.83	8	0.29	R71b	213	12.83	8	0.29	0.0
HYDROGRAPH	AT	71a	277	12.25	7	0.26	71a	277	12.25	7	0.26	0.0
2 COMBINED	AT	C71a	275	12.25	14	0.55	C71a	275	12.25	14	0.55	0.0
2 COMBINED	AT	CC70b	3925	15.5	1248	54.07	CC70b	4197	15.25	1249	54.07	-6.9
ROUTED TO		R70b	3915	15.67	1248	54.07	R70b	4188	15.42	1249	54.07	-7.0
HYDROGRAPH	AT	70A	130	12.25	3	0.1	70A	130	12.25	3	0.1	0.0
2 COMBINED	AT	C70a	3915	15.67	1250	54.17	C70a	4188	15.42	1251	54.17	-7.0
HYDROGRAPH	AT	30a	50	12.17	1	0.04	30a	50	12.17	1	0.04	0.0
2 COMBINED	AT	C30a	3915	15.67	1250	54.21	C30a	4188	15.42	1252	54.21	-7.0

Manning's n_Value Sensitivity Analysis

(n values reduced by 0.005)

Wash T1S-R5W-S29 (shallow and wide)

		EC24NODK.Out					EC24NDn2.Out					Diff (%)
			Q100	Tp	Qavg24	A		Q100	Tp	Qavg24	A	
HYDROGRAPH	AT	14e	809	12.5	30	1.1	14e	809	12.5	30	1.1	0
ROUTED TO		R14e	720	12.83	30	1.1	R14e	716	12.83	30	1.1	0.6
HYDROGRAPH	AT	14d	496	12.42	16	0.5	14d	496	12.42	16	0.5	0.0
2 COMBINED	AT	C14d	908	12.67	45	1.61	C14d	950	12.58	45	1.61	-4.6
ROUTED TO		R14d	861	13.08	45	1.61	R14d	890	13	45	1.61	-3.4
HYDROGRAPH	AT	14c	831	12.5	30	1.1	14c	831	12.5	30	1.1	0.0
2 COMBINED	AT	C14c	1294	12.75	74	2.7	C14c	1399	12.75	74	2.7	-8.1
ROUTED TO		R14c	1229	13	74	2.7	R14c	1335	13	74	2.7	-8.6
HYDROGRAPH	AT	14b	308	12.25	7	0.26	14b	308	12.25	7	0.26	0.0
2 COMBINED	AT	C14b	1241	13	80	2.96	C14b	1353	12.92	80	2.96	-9.0
ROUTED TO		R14b	1173	13.58	80	2.96	R14b	1255	13.42	80	2.96	-7.0
HYDROGRAPH	AT	14a	322	12.5	11	0.37	14a	322	12.5	11	0.37	0.0
2 COMBINED	AT	C14a	1195	13.5	91	3.33	C14a	1289	13.42	91	3.33	-7.9
HYDROGRAPH	AT	12b	409	12.5	14	0.45	12b	409	12.5	14	0.45	0.0
ROUTED TO		R12b	315	13	14	0.45	R12b	320	13	14	0.45	-1.6
HYDROGRAPH	AT	12a	650	12.58	27	0.83	12a	650	12.58	27	0.83	0.0
2 COMBINED	AT	C12a	763	12.75	40	1.28	C12a	814	12.75	40	1.28	-6.7
2 COMBINED	AT	CC12a	1545	13.25	130	4.61	CC12a	1716	13.17	130	4.61	-11.1
HYDROGRAPH	AT	10b	593	12.58	29	0.86	10b	593	12.58	29	0.86	0.0
2 COMBINED	AT	C10b	1856	12.92	158	5.46	C10b	2055	12.83	158	5.46	-10.7
ROUTED TO		R10b	1783	13.42	158	5.46	R10b	1978	13.42	158	5.46	-10.9
HYDROGRAPH	AT	10a	783	12.42	25	0.84	10a	783	12.42	25	0.84	0.0
2 COMBINED	AT	C10a	1829	13.42	182	6.3	C10a	2034	13.33	182	6.3	-11.2

Manning's n_Value Sensitivity Analysis

(n values reduced by 0.005)

Luke Wash (D/S) (well-defined wash)

		EC24NODK.Out					EC24NDn2.Out					Diff (%)
			Q100	Tp	Qavg24	A		Q100	Tp	Qavg24	A	
COMBINED AT		CC30g	2515	14.5	615	24.96	CC30g	2515	14.5	615	24.96	0
ROUTED TO		R30g	2474	15	615	24.96	R30g	2486	14.92	615	24.96	-0.5
HYDROGRAPH	AT	30f	890	12.83	47	1.77	30f	890	12.83	47	1.77	0.0
2 COMBINED	AT	C30f	2478	15	653	26.74	C30f	2490	14.92	653	26.74	-0.5
ROUTED TO		R30f	2458	15.42	653	26.74	R30f	2472	15.25	653	26.74	-0.6
HYDROGRAPH	AT	30e	417	12.33	12	0.4	30e	417	12.33	12	0.4	0.0
2 COMBINED	AT	C30e	2458	15.42	663	27.14	C30e	2472	15.25	663	27.14	-0.6
ROUTED TO		R30e	2440	15.75	662	27.14	R30e	2458	15.58	662	27.14	-0.7
HYDROGRAPH	AT	30d	418	12.58	16	0.62	30d	418	12.58	16	0.62	0.0
2 COMBINED	AT	C30d	2440	15.75	676	27.75	C30d	2458	15.58	676	27.75	-0.7
ROUTED TO		R30d	2422	16	674	27.75	R30d	2439	15.83	675	27.75	-0.7
2 COMBINED	AT	CC20a	3242	15.92	987	41.4	CC20a	3281	15.67	987	41.4	-1.2
ROUTED TO		R20a	3233	16.08	986	41.4	R20a	3270	15.92	987	41.4	-1.1
HYDROGRAPH	AT	30c	246	12.33	8	0.24	30c	246	12.33	8	0.24	0.0
2 COMBINED	AT	C30c	3233	16.08	992	41.64	C30c	3270	15.92	992	41.64	-1.1
HYDROGRAPH	AT	32b	503	12.33	13	0.48	32b	503	12.33	13	0.48	0.0
ROUTED TO		R32b	363	12.83	13	0.48	R32b	363	12.83	13	0.48	0.0
HYDROGRAPH	AT	32a	278	12.33	8	0.29	32a	278	12.33	8	0.29	0.0
2 COMBINED	AT	C32a	449	12.75	20	0.76	C32a	449	12.75	20	0.76	0.0
2 COMBINED	AT	CC30c	3233	16.08	1009	42.41	CC30c	3270	15.92	1009	42.41	-1.1
ROUTED TO		R30c	3206	16.83	1007	42.41	R30c	3239	16.58	1007	42.41	-1.0
HYDROGRAPH	AT	30b	414	12.5	17	0.51	30b	414	12.5	17	0.51	0.0
2 COMBINED	AT	C30b	3206	16.83	1018	42.91	C30b	3239	16.58	1019	42.91	-1.0
2 COMBINED	AT	CC30b	3925	15.5	1237	53.52	CC30b	4071	15.33	1238	53.52	-3.7
HYDROGRAPH	AT	71b	323	12.25	8	0.29	71b	323	12.25	8	0.29	0.0
ROUTED TO		R71b	213	12.83	8	0.29	R71b	213	12.83	8	0.29	0.0
HYDROGRAPH	AT	71a	277	12.25	7	0.26	71a	277	12.25	7	0.26	0.0
2 COMBINED	AT	C71a	275	12.25	14	0.55	C71a	275	12.25	14	0.55	0.0
2 COMBINED	AT	CC70b	3925	15.5	1248	54.07	CC70b	4071	15.33	1249	54.07	-3.7
ROUTED TO		R70b	3915	15.67	1248	54.07	R70b	4060	15.5	1248	54.07	-3.7
HYDROGRAPH	AT	70A	130	12.25	3	0.1	70A	130	12.25	3	0.1	0.0
2 COMBINED	AT	C70a	3915	15.67	1250	54.17	C70a	4060	15.5	1250	54.17	-3.7
HYDROGRAPH	AT	30a	50	12.17	1	0.04	30a	50	12.17	1	0.04	0.0
2 COMBINED	AT	C30a	3915	15.67	1250	54.21	C30a	4060	15.5	1251	54.21	-3.7

Unit Hydrograph Method Comparison

		S-Graph Method							Clark Method				
Operation		Hydrograph Name	Peak Flow	Time to Peak	Mean Flow (24-hour)	Basin Area	Unit Flow (cfs/mile²)		Hydrograph Name	Peak Flow	Basin Area	Unit Flow (cfs/mile²)	Difference (%)
HYDROGRAPH	AT	72B	786	12.5	29	1.19	661		72B	918	1.19	771	-16.8
HYDROGRAPH	AT	76A	733	13	47	1.63	450		76A	846	1.63	519	-15.4
HYDROGRAPH	AT	20E	1210	12.5	47	1.53	791		20E	1359	1.53	888	-12.3
HYDROGRAPH	AT	20F	1027	12.5	38	1.35	761		20F	1079	1.35	799	-5.1
HYDROGRAPH	AT	36B	844	12.5	29	1.06	796		36B	871	1.06	822	-3.2
HYDROGRAPH	AT	14E	809	12.5	30	1.1	735		14E	824	1.1	749	-1.9
HYDROGRAPH	AT	20H	905	12.5	36	1.25	724		20H	918	1.25	734	-1.4
HYDROGRAPH	AT	60A	619	12.5	24	0.77	804		60A	624	0.77	810	-0.8
HYDROGRAPH	AT	70E	1083	12.5	36	1.37	791		70E	1087	1.37	793	-0.4
HYDROGRAPH	AT	20G	936	12.5	35	1.18	793		20G	930	1.18	788	0.6
HYDROGRAPH	AT	60B	713	12.58	32	1.11	642		60B	708	1.11	638	0.7
HYDROGRAPH	AT	52A	527	12.42	21	0.58	909		52A	513	0.58	884	2.7
HYDROGRAPH	AT	79B	438	12.17	10	0.36	1217		79B	425	0.36	1181	3.0
HYDROGRAPH	AT	20C	1073	12.58	46	1.42	756		20C	1031	1.42	726	3.9
HYDROGRAPH	AT	70B	430	12.17	9	0.33	1303		70B	411	0.33	1245	4.4
HYDROGRAPH	AT	90A	561	12.33	17	0.56	1002		90A	533	0.56	952	5.0
HYDROGRAPH	AT	60C	745	12.42	24	0.91	819		60C	696	0.91	765	6.6
HYDROGRAPH	AT	23A	322	12.42	11	0.35	920		23A	300	0.35	857	6.8
HYDROGRAPH	AT	72A	401	12.33	11	0.44	911		72A	373	0.44	848	7.0
HYDROGRAPH	AT	20B	750	12.67	34	1.14	658		20B	695	1.14	610	7.3
HYDROGRAPH	AT	30G	640	12.5	24	0.84	762		30G	590	0.84	702	7.8
HYDROGRAPH	AT	12A	650	12.58	27	0.83	783		12A	586	0.83	706	9.8
HYDROGRAPH	AT	50A	536	12.67	25	0.89	602		50A	483	0.89	543	9.9
HYDROGRAPH	AT	36C	644	12.58	27	0.95	678		36C	578	0.95	608	10.2
HYDROGRAPH	AT	10B	593	12.58	29	0.86	690		10B	531	0.86	617	10.5
HYDROGRAPH	AT	36A	625	12.42	20	0.68	919		36A	558	0.68	821	10.7
HYDROGRAPH	AT	40C	536	12.33	14	0.5	1072		40C	476	0.5	952	11.2
HYDROGRAPH	AT	10A	783	12.42	25	0.84	932		10A	694	0.84	826	11.4
HYDROGRAPH	AT	30F	890	12.83	47	1.77	503		30F	787	1.77	445	11.6
HYDROGRAPH	AT	79A	501	12.33	12	0.51	982		79A	442	0.51	867	11.8
HYDROGRAPH	AT	21A	643	12.5	25	0.88	731		21A	562	0.88	639	12.6
HYDROGRAPH	AT	46A	495	12.58	19	0.81	611		46A	428	0.81	528	13.5
HYDROGRAPH	AT	20D	674	12.33	18	0.62	1087		20D	580	0.62	935	13.9
HYDROGRAPH	AT	30B	414	12.5	17	0.51	812		30B	353	0.51	692	14.7
HYDROGRAPH	AT	14C	831	12.5	30	1.1	755		14C	704	1.1	640	15.3
HYDROGRAPH	AT	83E	625	12.42	18	0.84	744		83E	529	0.84	630	15.4
HYDROGRAPH	AT	40D	468	12.58	19	0.73	641		40D	393	0.73	538	16.0
HYDROGRAPH	AT	92B	584	12.42	18	0.7	834		92B	490	0.7	700	16.1
HYDROGRAPH	AT	64B	533	12.58	21	0.84	635		64B	445	0.84	530	16.5
HYDROGRAPH	AT	71A	277	12.25	7	0.26	1065		71A	231	0.26	888	16.6
HYDROGRAPH	AT	74B	487	12.5	18	0.67	727		74B	406	0.67	606	16.6
HYDROGRAPH	AT	82A	523	12.42	15	0.59	886		82A	435	0.59	737	16.8
HYDROGRAPH	AT	62A	506	12.42	14	0.59	858		62A	419	0.59	710	17.2
HYDROGRAPH	AT	33A	138	12.42	4	0.17	812		33A	114	0.17	671	17.4
HYDROGRAPH	AT	44A	477	12.75	26	0.87	548		44A	391	0.87	449	18.0
HYDROGRAPH	AT	32B	503	12.33	13	0.48	1048		32B	411	0.48	856	18.3
HYDROGRAPH	AT	70C	466	12.67	21	0.74	630		70C	380	0.74	514	18.5
HYDROGRAPH	AT	70D	459	12.42	13	0.49	937		70D	373	0.49	761	18.7
HYDROGRAPH	AT	71B	323	12.25	8	0.29	1114		71B	262	0.29	903	18.9
HYDROGRAPH	AT	92A	526	12.58	21	0.79	666		92A	422	0.79	534	19.8
HYDROGRAPH	AT	24A	379	12.42	12	0.41	924		24A	303	0.41	739	20.1
HYDROGRAPH	AT	91A	419	12.33	11	0.43	974		91A	334	0.43	777	20.3
HYDROGRAPH	AT	15A	531	12.33	14	0.51	1041		15A	421	0.51	825	20.7
HYDROGRAPH	AT	93A	521	12.33	13	0.44	1184		93A	412	0.44	936	20.9
HYDROGRAPH	AT	30E	417	12.33	12	0.4	1043		30E	328	0.4	820	21.3
HYDROGRAPH	AT	83G	431	12.42	13	0.62	695		83G	336	0.62	542	22.0
HYDROGRAPH	AT	64C	436	12.5	16	0.64	681		64C	338	0.64	528	22.5
HYDROGRAPH	AT	21B	377	12.58	16	0.55	685		21B	292	0.55	531	22.5
HYDROGRAPH	AT	14D	496	12.42	16	0.5	992		14D	384	0.5	768	22.6
HYDROGRAPH	AT	83K	333	12.33	10	0.31	1074		83K	255	0.31	823	23.4

HYDROGRAPH	AT	34B	375	12.67	18	0.63	595	34B	286	0.63	454	23.7
HYDROGRAPH	AT	22A	376	12.5	13	0.45	836	22A	286	0.45	636	23.9
HYDROGRAPH	AT	78B	442	12.42	14	0.48	921	78B	335	0.48	698	24.2
HYDROGRAPH	AT	73B	487	12.5	16	0.61	798	73B	369	0.61	605	24.2
HYDROGRAPH	AT	80A	343	12.33	9	0.34	1009	80A	259	0.34	762	24.5
HYDROGRAPH	AT	40B	280	12.58	12	0.42	667	40B	209	0.42	498	25.4
HYDROGRAPH	AT	70G	291	12.42	9	0.29	1003	70G	216	0.29	745	25.8
HYDROGRAPH	AT	30D	418	12.58	16	0.62	674	30D	310	0.62	500	25.8
HYDROGRAPH	AT	30A	50	12.17	1	0.04	1250	30A	37	0.04	925	26.0
HYDROGRAPH	AT	16A	250	12.25	6	0.22	1136	16A	185	0.22	841	26.0
HYDROGRAPH	AT	44D	529	12.75	25	0.82	645	44D	391	0.82	477	26.1
HYDROGRAPH	AT	80B	306	12.33	8	0.28	1093	80B	226	0.28	807	26.1
HYDROGRAPH	AT	54A	358	12.42	12	0.360	994	54A	264	0.36	733	26.3
HYDROGRAPH	AT	12B	409	12.5	14	0.45	909	12B	301	0.45	669	26.4
HYDROGRAPH	AT	70F	347	12.42	12	0.39	890	70F	253	0.39	649	27.1
HYDROGRAPH	AT	46G	427	12.58	17	0.58	736	46G	311	0.58	536	27.2
HYDROGRAPH	AT	21D	383	12.58	16	0.49	782	21D	278	0.49	567	27.4
HYDROGRAPH	AT	89B	309	12.33	8	0.28	1104	89B	224	0.28	800	27.5
HYDROGRAPH	AT	42A	372	12.33	10	0.36	1033	42A	269	0.36	747	27.7
HYDROGRAPH	AT	46H	363	12.42	11	0.38	955	46H	262	0.38	689	27.8
HYDROGRAPH	AT	42B	281	12.33	8	0.28	1004	42B	202	0.28	721	28.1
HYDROGRAPH	AT	75A	344	12.5	13	0.46	748	75A	247	0.46	537	28.2
HYDROGRAPH	AT	83B	333	12.42	11	0.43	774	83B	239	0.43	556	28.2
HYDROGRAPH	AT	70A	130	12.25	3	0.1	1300	70A	93	0.1	930	28.5
HYDROGRAPH	AT	83C	315	12.25	7	0.28	1125	83C	225	0.28	804	28.6
HYDROGRAPH	AT	40A	250	12.42	8	0.27	926	40A	178	0.27	659	28.8
HYDROGRAPH	AT	46I	304	12.33	9	0.29	1048	46I	216	0.29	745	28.9
HYDROGRAPH	AT	77B	405	12.42	12	0.44	920	77B	286	0.44	650	29.4
HYDROGRAPH	AT	84A	278	12.25	6	0.22	1264	84A	196	0.22	891	29.5
HYDROGRAPH	AT	78A	184	12.33	5	0.15	1227	78A	129	0.15	860	29.9
HYDROGRAPH	AT	85A	291	12.33	8	0.31	939	85A	204	0.31	658	29.9
HYDROGRAPH	AT	86A	352	12.42	10	0.48	733	86A	245	0.48	510	30.4
HYDROGRAPH	AT	46J	299	12.33	8	0.27	1107	46J	208	0.27	770	30.4
HYDROGRAPH	AT	20A	361	12.42	16	0.37	976	20A	249	0.37	673	31.0
HYDROGRAPH	AT	91B	318	12.67	14	0.56	568	91B	217	0.56	388	31.8
HYDROGRAPH	AT	14B	308	12.25	7	0.26	1185	14B	210	0.26	808	31.8
HYDROGRAPH	AT	64A	332	12.42	9	0.38	874	64A	225	0.38	592	32.2
HYDROGRAPH	AT	35A	74	12.17	1	0.06	1233	35A	50	0.06	833	32.4
HYDROGRAPH	AT	81A	126	12.17	2	0.08	1575	81A	85	0.08	1063	32.5
HYDROGRAPH	AT	46C	340	12.5	12	0.43	791	46C	229	0.43	533	32.6
HYDROGRAPH	AT	46B	324	12.5	11	0.4	810	46B	218	0.4	545	32.7
HYDROGRAPH	AT	81B	372	12.5	14	0.51	729	81B	249	0.51	488	33.1
HYDROGRAPH	AT	32A	278	12.33	8	0.29	959	32A	186	0.29	641	33.1
HYDROGRAPH	AT	36D	284	12.33	7	0.28	1014	36D	190	0.28	679	33.1
HYDROGRAPH	AT	83I	331	12.42	9	0.4	828	83I	220	0.4	550	33.5
HYDROGRAPH	AT	84B	308	12.33	8	0.35	880	84B	204	0.35	583	33.8
HYDROGRAPH	AT	74A	325	12.33	8	0.31	1048	74A	215	0.31	694	33.8
HYDROGRAPH	AT	46E	253	12.33	6	0.22	1150	46E	167	0.22	759	34.0
HYDROGRAPH	AT	82B	279	12.33	7	0.26	1073	82B	183	0.26	704	34.4
HYDROGRAPH	AT	83F	162	12.17	3	0.13	1246	83F	106	0.13	815	34.6
HYDROGRAPH	AT	56A	284	12.42	8	0.3	947	56A	185	0.3	617	34.9
HYDROGRAPH	AT	44E	340	12.58	14	0.46	739	44E	221	0.46	480	35.0
HYDROGRAPH	AT	48A	221	12.5	7	0.28	789	48A	143	0.28	511	35.3
HYDROGRAPH	AT	20I	283	12.33	8	0.29	976	20I	183	0.29	631	35.3
HYDROGRAPH	AT	77A	246	12.33	7	0.25	984	77A	159	0.25	636	35.4
HYDROGRAPH	AT	14A	322	12.5	11	0.37	870	14A	208	0.37	562	35.4
HYDROGRAPH	AT	44C	309	12.42	10	0.34	909	44C	199	0.34	585	35.6
HYDROGRAPH	AT	22B	219	12.25	5	0.16	1369	22B	141	0.16	881	35.6
HYDROGRAPH	AT	73A	258	12.5	9	0.37	697	73A	166	0.37	449	35.7
HYDROGRAPH	AT	44B	275	12.42	8	0.28	982	44B	176	0.28	629	36.0
HYDROGRAPH	AT	20J	233	12.25	5	0.2	1165	20J	148	0.2	740	36.5
HYDROGRAPH	AT	34A	304	12.58	14	0.45	676	34A	192	0.45	427	36.8
HYDROGRAPH	AT	50F	274	12.42	9	0.29	945	50F	173	0.29	597	36.9
HYDROGRAPH	AT	50C	335	12.67	15	0.55	609	50C	211	0.55	384	37.0
HYDROGRAPH	AT	62B	251	12.33	6	0.25	1004	62B	158	0.25	632	37.1
HYDROGRAPH	AT	50B	224	12.33	6	0.2	1120	50B	141	0.2	705	37.1
HYDROGRAPH	AT	20K	205	12.25	5	0.18	1139	20K	128	0.18	711	37.6
HYDROGRAPH	AT	50E	203	12.25	5	0.17	1194	50E	126	0.17	741	37.9

HYDROGRAPH	AT	85B	261	12.25	6	0.24	1088		85B	161	0.24	671	38.3
HYDROGRAPH	AT	30C	246	12.33	8	0.24	1025		30C	151	0.24	629	38.6
HYDROGRAPH	AT	46F	280	12.67	13	0.45	622		46F	171	0.45	380	38.9
HYDROGRAPH	AT	50D	205	12.33	5	0.18	1139		50D	125	0.18	694	39.0
HYDROGRAPH	AT	22E	159	12.17	3	0.09	1767		22E	96	0.09	1067	39.6
HYDROGRAPH	AT	87A	236	12.42	7	0.27	874		87A	142	0.27	526	39.8
HYDROGRAPH	AT	83D	213	12.33	5	0.23	926		83D	128	0.23	557	39.9
HYDROGRAPH	AT	22C	175	12.25	4	0.13	1346		22C	105	0.13	808	40.0
HYDROGRAPH	AT	44F	235	12.5	8	0.27	870		44F	139	0.27	515	40.9
HYDROGRAPH	AT	89A	205	12.33	5	0.22	932		89A	120	0.22	545	41.5
HYDROGRAPH	AT	83A	210	12.42	6	0.24	875		83A	122	0.24	508	41.9
HYDROGRAPH	AT	46D	194	12.5	6	0.23	843		46D	112	0.23	487	42.3
HYDROGRAPH	AT	83H	227	12.5	7	0.29	783		83H	131	0.29	452	42.3
HYDROGRAPH	AT	88A	244	12.42	7	0.28	871		88A	139	0.28	496	43.0
HYDROGRAPH	AT	22D	232	12.42	7	0.24	967		22D	132	0.24	550	43.1
HYDROGRAPH	AT	54B	272	12.33	7	0.230	1183		54B	154	0.23	670	43.4
HYDROGRAPH	AT	24B	278	12.5	10	0.34	818		24B	157	0.34	462	43.5
HYDROGRAPH	AT	20L	160	12.25	4	0.13	1231		20L	89	0.13	685	44.4
HYDROGRAPH	AT	21C	198	12.42	7	0.23	861		21C	110	0.23	478	44.4
HYDROGRAPH	AT	48B	195	12.33	5	0.2	975		48B	105	0.2	525	46.2
HYDROGRAPH	AT	64D	147	12.25	3	0.14	1050		64D	77	0.14	550	47.6
HYDROGRAPH	AT	50G	175	12.33	4	0.15	1167		50G	89	0.15	593	49.1
HYDROGRAPH	AT	83J	147	12.33	4	0.16	919		83J	74	0.16	463	49.7
HYDROGRAPH	AT	87B	142	12.33	4	0.16	888		87B	70	0.16	438	50.7
						Min =	450	cfs			Min =	380	-17
						Max =	1767	cfs			Max =	1245	51
						Mean =	915	cfs			Mean =	677	25

APPENDIX D7

Hydrologic Computer Model Summary Output

All eight models are included on CD in Exhibit E (Volume 1)Two models are also printed here.

HEC-1 Models for the 100-Year, 6-Hour Storm without Dike Conditions

(EC06NODK)

```
1****************************************                    ****************************************
 *                                      *                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                    *          609 SECOND STREET           *
 *                                      *                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   07JUL08  TIME  14:50:00  *                    *           (916) 756-1104             *
 *                                      *                    *                                      *
 ****************************************                    ****************************************
```

```
X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                          HEC-1 INPUT                                          PAGE  1

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

        1           ID   LUKE WASH FDS - Luke Wash Watershed Zone AE FDS
        2           ID   Flood Control District of Maricopa County
        3           ID   Contract FCD 2007C020
        4           ID   100-Year 6-Hour Storm
        5           ID   NOAA 14 Rainfall Data
        6           ID   DDMSW Version 3.5.2
        7           ID   Multiple Storms
        8           ID   Maricopa County 6-hour Local Storm Distribution
        9           ID   Green and Ampt Loss Method
       10           ID   S-Graph Unit Hydrograph
       11           ID   Existing Land Use Conditions
       12           ID   "Without Structure" Conditions Model (I-10 and UPRR are assumed not to exist)
       13           ID   Model Name: EC06NODK.DAT, Wood/Patel, June 2008
       14           ID
       15           ID  ***************************************************************************
       16           ID   HEC-1 ELEMENT NOMENCLATURE
       17           ID
       18           ID   SUB-BASIN HYDROGRAPH:
       19           ID      Example: "20a" is the hydrograph from subbasin 20a
       20           ID
       21           ID   SUB-BASIN FLOW DIVERSION:
       22           ID      Example: "D20aE" is the East component of diversion in Subbasin 20a
       23           ID
       24           ID   CHANNEL ROUTE:
       25           ID      Example: "R20a" is the surface flow routing from 20a
       26           ID
       27           ID   STORAGE ROUTE:
       28           ID      Example: "S20a" is the storage routing in Subbasin 20a
       29           ID
       30           ID   HYDROGRAPH COMBINE:
       31           ID      Example: "C20a" is the combined flow in Subbasin 20a
       32           ID
       33           ID   HYDROGRAPH RETRIEVAL:
       34           ID      Example: "B20a" is the retrieved flow from Subbasin 20a
       35           ID
       36           ID   "DUMMY" COMBINE:
       37           ID      Example: "DUMMY" is the dummy hydrograph combining to free up a HEC-1
       38           ID               computational path.
       39           ID  ***************************************************************************
       40           IT       5  1JAN99    1200    2000
       41           IN      15
       42           IO       5
                    *DIAGRAM
                    *
       43           JD   2.911  0.0001
```

```
 44          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 45          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 46          PC   0.962   0.972   0.983   0.991   1.000
 47          JD   2.894  0.5000
 48          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 49          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 50          PC   0.962   0.972   0.983   0.991   1.000
 51          JD   2.838     2.8
 52          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.068   0.077
 53          PC   0.088   0.101   0.121   0.164   0.253   0.451   0.694   0.836   0.900   0.938
1                                          HEC-1 INPUT                                          PAGE  2

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 54          PC   0.950   0.963   0.975   0.988   1.000
 55          JD   2.684    16.0
 56          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 57          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 58          PC   0.946   0.960   0.973   0.987   1.000
 59          JD   2.358    90.0
 60          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 61          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 62          PC   0.927   0.945   0.964   0.982   1.000
             *

 63          KK     14e   BASIN
 64          KM    A Subbasin of T1S-R5W-S29 North of Elliot Rd. and West of 355th Ave.
 65          KM    L=1.81, Lca=0.92, S=34.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.2
 66          BA   1.101
 67          LG    0.30    0.25    4.65    0.32       1
 68          UI       0      92     120     316     495     664     801     858     887     817
 69          UI     681     555     442     358     291     227     185     153     120      97
 70          UI      73      63      62      22      23      22      22      23      22      22
 71          UI       0       0       0       0       0       0       0       0       0       0
 72          UI       0       0       0       0       0       0       0       0       0       0
             *

 73          KK    R14e   ROUTE
 74          KM    Route 14e to 14d in Wash T1S-R5W-S29
 75          RS       4    FLOW      -1
 76          RC   0.050   0.040   0.050    2626  0.0053    0.00
 77          RX    0.00  130.50  522.00  652.50  727.50  858.00 1249.50 1380.00
 78          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

 79          KK     14d   BASIN
 80          KM    A Subbasin of T1S-R5W-S29 at Elliot Rd. and 355th Ave.
 81          KM    L=1.43, Lca=0.53, S=34.9, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=30.4
 82          BA   0.505
 83          LG    0.30    0.25    4.90    0.29       4
 84          UI       0      55     127     279     410     511     531     489     382     284
 85          UI     217     161     117      91      67      50      38      28      14      14
 86          UI      14      13      14       0       0       0       0       0       0       0
 87          UI       0       0       0       0       0       0       0       0       0       0
 88          UI       0       0       0       0       0       0       0       0       0       0
             *

 89          KK    C14d COMBINE
 90          KM    Combine 14d and R14e at Elliot Rd. and 355th Ave.
 91          HC       2
             *

 92          KK    R14d   ROUTE
 93          KM    Route 14d to 14c in Wash T1S-R5W-S29
 94          RS       4    FLOW      -1
 95          RC   0.050   0.040   0.050    3603  0.0056    0.00
 96          RX    0.00  103.00  412.00  515.00  690.00  793.00 1102.00 1205.00
 97          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *
1                                          HEC-1 INPUT                                          PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 98          KK     14c   BASIN
 99          KM    A Subbasin of T1S-R5W-S29 at UPRR and East of 355th Ave.
100          KM    L=1.97, Lca=0.71, S=24.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.1
101          BA   1.095
102          LG    0.30    0.25    4.90    0.29       0
103          UI       0     100     160     389     606     791     910     957     925     776
104          UI     613     488     383     297     239     184     153     107      90      69
105          UI      70      26      25      24      25      24      25       0       0       0
106          UI       0       0       0       0       0       0       0       0       0       0
```

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107          UI       0       0       0       0       0       0       0       0       0       0
             *

108          KK    C14c COMBINE
109          KM    Combine 14c and R14d at SPRR and East of 355th Ave.
110          HC       2
             *

111          KK    R14c   ROUTE
112          KM    Route 14c to 14b in Wash T1S-R5W-S29
113          RS       4    FLOW      -1
114          RC   0.050   0.040   0.050    2902  0.0055    0.00
115          RX    0.00  125.00  500.00  625.00  645.00  770.00 1145.00 1270.00
116          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

117          KK     14b   BASIN
118          KM    A Subbasin of T1S-R5W-S29 at Narramore Rd. and East of 355th Ave.
119          KM    L=0.88, Lca=0.40, S=34.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.3
120          BA   0.259
121          LG    0.30    0.25    4.60    0.34       0
122          UI       0      39     152     278     360     362     266     181     123      80
123          UI      55      38      27      13       9      10       9       0       0       0
124          UI       0       0       0       0       0       0       0       0       0       0
125          UI       0       0       0       0       0       0       0       0       0       0
126          UI       0       0       0       0       0       0       0       0       0       0
             *

127          KK    C14b COMBINE
128          KM    Combine 14b and R14c at Narramore Rd. and East of 355th Ave.
129          HC       2
             *

130          KK    R14b   ROUTE
131          KM    Route 14b to 14a in Wash T1S-R5W-S29
132          RS       7    FLOW      -1
133          RC   0.050   0.040   0.050    6585  0.0055    0.00
134          RX    0.00   67.60  270.40  338.00  378.00  445.60  648.40  716.00
135          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

136          KK     14a   BASIN
137          KM    A Subbasin of T1S-R5W-S29 at Ray Rd. and East of 347th Ave.
138          KM    L=1.72, Lca=0.82, S=31.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=38.4
139          BA   0.367
140          LG    0.30    0.25    5.70    0.20       0
141          UI       0      32      47     117     184     242     284     307     302     270
142          UI     216     175     138     109      89      68      55      46      34      26
143          UI      23      21       8       8       8       8       7       8       8       0
144          UI       0       0       0       0       0       0       0       0       0       0
145          UI       0       0       0       0       0       0       0       0       0       0
             *

146          KK    C14a COMBINE
147          KM    Combine 14a and R14b at Ray Rd. and East of 347 Ave.
148          HC       2
             *

149          KK     12b   BASIN
150          KM    A Subbasin of T1S-R5W-S29W at North of Ray Rd. and East of 355th Ave.
151          KM    L=1.62, Lca=0.77, S=32.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.5
152          BA   0.451
153          LG    0.30    0.25    5.70    0.20       0
154          UI       0      42      67     161     252     330     377     398     382     317
155          UI     250     201     155     122      96      75      62      44      36      29
156          UI      28      10      10      10      10      10      10       0       0       0
157          UI       0       0       0       0       0       0       0       0       0       0
158          UI       0       0       0       0       0       0       0       0       0       0
             *

159          KK    R12b   ROUTE
160          KM    Route 12b to 12a in Wash T1S-R5W-S29W
161          RS       6    FLOW      -1
162          RC   0.050   0.040   0.050    6106  0.0059    0.00
163          RX    0.00  115.00  460.00  575.00  601.00  716.00 1061.00 1176.00
164          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
             *

165          KK     12a   BASIN
```

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 166          KM    A Subbasin of T1S-R5W-S29W at Ray Rd. and 347th Ave.
 167          KM    L=2.04, Lca=1.09, S=32.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.4
 168          BA   0.831
 169          LG    0.30    0.21    6.40    0.16       0
 170          UI       0      62      62     177     285     390     477     545     590     582
 171          UI     550     486     393     323     272     223     182     150     122     103
 172          UI      89      65      60      43      42      37      15      15      15      15
 173          UI      15      14      15      15       0       0       0       0       0       0
 174          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 175          KK    C12a COMBINE
 176          KM    Combine 12a and R12b at Ray Rd. and East of 347 Ave.
 177          HC       2
              *

 178          KK   CC12a COMBINE
 179          KM    Combine C12a and C14a at Ray Rd. and East of 347 Ave.
 180          HC       2
              *

 181          KK     10b   BASIN
 182          KM    A Subbasin of T1S-R5W-S29 at Ray Rd. and East of 347th Ave.
 183          KM    L=2.06, Lca=1.04, S=29.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.6
 184          BA   0.855
 185          LG    0.30    0.25    4.55    0.35      12
 186          UI       0      63      63     181     289     400     486     557     602     600
 187          UI     566     499     406     337     280     233     186     157     126     108
 188          UI      94      66      63      44      43      41      16      15      15      16
 189          UI      15      15      16      15       0       0       0       0       0       0
 190          UI       0       0       0       0       0       0       0       0       0       0
              *

 191          KK    C10b COMBINE
 192          KM    Combine 10b and CC12a at Ray Rd. and East of 347th Ave.
 193          HC       2
              *

 194          KK    R10b   ROUTE
 195          KM    Route 10b to 10a in Wash T1S-R5W-S29
 196          RS       6    FLOW      -1
 197          RC   0.065   0.085   0.065    4228  0.0043    0.00
 198          RX    0.00   62.50  250.00  312.50  427.50  490.00  677.50  740.00
 199          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
              *

 200          KK     10a   BASIN
 201          KM    A Subbasin of T1S-R5W-S29 at North of Cactus Rose Rd. East of 347th Ave.
 202          KM    L=1.47, Lca=0.61, S=24.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=33.8
 203          BA   0.838
 204          LG    0.30    0.25    5.60    0.22       0
 205          UI       0      89     188     431     633     796     858     806     664     492
 206          UI     375     290     216     162     126      95      64      62      30      22
 207          UI      22      21      22      22       0       0       0       0       0       0
 208          UI       0       0       0       0       0       0       0       0       0       0
 209          UI       0       0       0       0       0       0       0       0       0       0
              *

 210          KK    C10a COMBINE
 211          KM    Combine 10a and R10b at North of Cactus Rose Rd. East of 347th Ave.
 212          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE  6

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 213          KK     21d   BASIN
 214          KM    A Subbasin of T1S-R5W-S17 at Bethany Home Rd. and West of 355th Ave.
 215          KM    L=2.04, Lca=1.09, S=34.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.9
 216          BA   0.494
 217          LG    0.30    0.25    5.80    0.19       0
 218          UI       0      37      38     110     173     238     288     329     356     352
 219          UI     327     283     230     190     160     128     106      88      71      59
 220          UI      50      39      32      26      26      17       9       9       9      10
 221          UI       9       9       9       9       0       0       0       0       0       0
 222          UI       0       0       0       0       0       0       0       0       0       0
              *
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223          KK    R21d   ROUTE
224          KM    Route 21d to 21c in Wash T1S-R5W-S17
225          RS       9    FLOW      -1
226          RC   0.050   0.065   0.050    5510  0.0058    0.00
227          RX    0.00   29.00  116.00  145.00  230.00  259.00  346.00  375.00
228          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

229          KK     21c   BASIN
230          KM    A Subbasin of T1S-R5W-S17 at Camelback Rd. and East of 363rd Ave.
231          KM    L=1.47, Lca=0.77, S=29.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.6
232          BA   0.234
233          LG    0.30    0.25    4.80    0.30       0
234          UI       0      22      37      90     137     181     204     209     200     160
235          UI     125     100      76      62      46      37      28      25      15      15
236          UI      10       5       6       5       5       6       5       0       0       0
237          UI       0       0       0       0       0       0       0       0       0       0
238          UI       0       0       0       0       0       0       0       0       0       0
             *

239          KK    C21c COMBINE
240          KM    Combine 21c and R21d at Camelback Rd. and East of 363rd Ave.
241          HC       2
             *

242          KK    R21c   ROUTE
243          KM    Route 21c to 21b in Wash T1S-R5W-S17
244          RS      12    FLOW      -1
245          RC   0.050   0.065   0.050    6436  0.0059    0.00
246          RX    0.00   52.30  209.20  261.50  283.50  335.80  492.70  545.00
247          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

248          KK     21b   BASIN
249          KM    A Subbasin of T1S-R5W-S17 at South of Indian School, East of 363rd Ave.
250          KM    L=2.05, Lca=1.11, S=30.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=46.3
251          BA   0.547
252          LG    0.30    0.25    5.00    0.28       2
253          UI       0      40      40     109     179     246     303     350     376     381
254          UI     360     323     264     219     184     152     125     103      83      73
255          UI      62      45      42      30      27      27      15      10       9      10
256          UI      10       9      10      10      10       0       0       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

257          UI       0       0       0       0       0       0       0       0       0       0
             *

258          KK    C21b COMBINE
259          KM    Combine 21b and R21c at South of Indian School and East of 363rd Ave.
260          HC       2
             *

261          KK     24b   BASIN
262          KM    A Subbasin at Camelback Rd. and 363rd Ave.
263          KM    L=1.80, Lca=0.74, S=31.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=37.5
264          BA   0.335
265          LG    0.30    0.25    5.10    0.26       0
266          UI       0      30      46     113     174     236     269     287     279     242
267          UI     192     153     122      96      76      60      48      37      30      21
268          UI      21      14       7       7       8       7       7       8       0       0
269          UI       0       0       0       0       0       0       0       0       0       0
270          UI       0       0       0       0       0       0       0       0       0       0
             *

271          KK    R24b   ROUTE
272          KM    Route 24b to 24a
273          RS      11    FLOW      -1
274          RC   0.050   0.050   0.050    6238  0.0058    0.00
275          RX    0.00   45.70  182.80  228.50  246.50  292.20  429.30  475.00
276          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

277          KK     24a   BASIN
278          KM    A Subbasin South of Indian School, East of 363rd Ave.
279          KM    L=1.29, Lca=0.64, S=31.0, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=32.1
280          BA   0.409
281          LG    0.30    0.25    4.70    0.31       1
282          UI       0      43      86     201     299     376     408     393     330     247
283          UI     190     146     109      83      67      45      36      29      21      10
284          UI      11      10      10      11       0       0       0       0       0       0
285          UI       0       0       0       0       0       0       0       0       0       0
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 286          UI       0       0       0       0       0       0       0       0       0       0
              *

 287          KK    C24a COMBINE
 288          KM    Combine 24a and R24b at South of Indian School and East of 363rd Ave.
 289          HC       2
              *

 290          KK   CC24a COMBINE
 291          KM    Combine C24a and C21b at South of Indian School and East of 363rd Ave.
 292          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE  8

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 293          KK    R21b   ROUTE
 294          KM    Route 21b to 21a in Wash T1S-R5W-S17
 295          RS       8    FLOW      -1
 296          RC   0.050   0.065   0.050    6096  0.0053    0.00
 297          RX    0.00   81.00  324.00  405.00  459.00  540.00  783.00  864.00
 298          RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
              *

 299          KK     21a   BASIN
 300          KM    A Subbasin of T1S-R5W-S17 at I-10 and West of 363rd Ave.
 301          KM    L=1.97, Lca=0.88, S=30.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=41.8
 302          BA   0.882
 303          LG    0.30    0.25    4.70    0.31       1
 304          UI       0      71      83     233     365     484     600     655     685     649
 305          UI     570     467     373     306     251     203     158     135     108      83
 306          UI      76      49      49      44      17      17      17      18      17      17
 307          UI      17       0       0       0       0       0       0       0       0       0
 308          UI       0       0       0       0       0       0       0       0       0       0
              *

 309          KK    C21a COMBINE
 310          KM    Combine 21a and R21b at I-10 and West of 363rd Ave.
 311          HC       2
              *

 312          KK    R21a   ROUTE
 313          KM    Route 21a to 201 in Wash T1S-R5W-S17
 314          RS       5    FLOW      -1
 315          RC   0.050   0.065   0.050    4133  0.0053    0.00
 316          RX    0.00   34.70  138.80  173.50  226.50  261.20  365.30  400.00
 317          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

 318          KK     201   BASIN
 319          KM    A Subbasin of T1S-R5W-S17 at McDowell Rd. and West of 363rd Ave.
 320          KM    L=0.76, Lca=0.42, S=29.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.1
 321          BA   0.129
 322          LG    0.30    0.25    4.65    0.32       0
 323          UI       0      20      77     143     180     181     130      89      61      39
 324          UI      27      18      13       5       5       5       5       0       0       0
 325          UI       0       0       0       0       0       0       0       0       0       0
 326          UI       0       0       0       0       0       0       0       0       0       0
 327          UI       0       0       0       0       0       0       0       0       0       0
              *

 328          KK    C201 COMBINE
 329          KM    Combine 201 and R21a at McDowell Rd. and West of 363rd Ave.
 330          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE  9

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 331          KK     20K   BASIN
 332          KM    A Subbasin at I-10 and West of 363rd Ave.
 333          KM    L=0.86, Lca=0.44, S=32.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.2
 334          BA   0.176
 335          LG    0.30    0.25    4.65    0.32       1
 336          UI       0      25      94     176     229     242     188     129      91      60
 337          UI      42      29      19      14       6       6       6       7       0       0
 338          UI       0       0       0       0       0       0       0       0       0       0
 339          UI       0       0       0       0       0       0       0       0       0       0
 340          UI       0       0       0       0       0       0       0       0       0       0
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341          KK    R20k   ROUTE
342          KM    Route 20k to 20j
343          RS       6    FLOW      -1
344          RC   0.050   0.050   0.050    4495  0.0062    0.00
345          RX    0.00   38.50  154.00  192.50  212.50  251.00  366.50  405.00
346          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

347          KK     20j   BASIN
348          KM    A Subbasin at McDowell Rd. and West of 363rd Ave.
349          KM    L=0.82, Lca=0.42, S=27.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.1
350          BA   0.203
351          LG    0.30    0.25    4.55    0.35       0
352          UI       0      30     119     219     282     284     208     141      97      63
353          UI      44      29      21      10       7       8       7       0       0       0
354          UI       0       0       0       0       0       0       0       0       0       0
355          UI       0       0       0       0       0       0       0       0       0       0
356          UI       0       0       0       0       0       0       0       0       0       0
             *

357          KK    C20j COMBINE
358          KM    Combine 20j and R20k at McDowell Rd. and West of 363rd Ave.
359          HC       2
             *

360          KK   CC20j COMBINE
361          KM    Combine C20j and C20l at McDowell Rd. and West of 363rd Ave.
362          HC       2
             *

363          KK    R20l   ROUTE
364          KM    Route 20l to 20i in Wash T1S-R5W-S17
365          RS       5    FLOW      -1
366          RC   0.050   0.065   0.050    5532  0.0054    0.00
367          RX    0.00   25.00  100.00  125.00  195.00  220.00  295.00  320.00
368          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

369          KK     20i   BASIN
370          KM    A Subbasin of T1S-R5W-S17 at Van Buren St. and West of 363rd Ave.
371          KM    L=1.20, Lca=0.59, S=33.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.1
372          BA   0.291
373          LG    0.30    0.25    4.65    0.32       0
374          UI       0      33      83     178     258     312     318     277     211     152
375          UI     115      84      62      46      35      23      22       8       8       8
376          UI       9       8       0       0       0       0       0       0       0       0
377          UI       0       0       0       0       0       0       0       0       0       0
378          UI       0       0       0       0       0       0       0       0       0       0
             *

379          KK    C20i COMBINE
380          KM    Combine  20i and R20l at Van Buren St. and West of 363rd Ave.
381          HC       2
             *

382          KK     22c   BASIN
383          KM    A Subbasin at McDowell Rd. and East of 363rd Ave.
384          KM    L=1.12, Lca=0.62, S=35.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.6
385          BA   0.220
386          LG    0.30    0.25    4.70    0.31       0
387          UI       0      26      65     140     202     242     242     207     156     113
388          UI      83      62      45      33      25      18      13       7       6       6
389          UI       7       6       0       0       0       0       0       0       0       0
390          UI       0       0       0       0       0       0       0       0       0       0
391          UI       0       0       0       0       0       0       0       0       0       0
             *

392          KK     22d   BASIN
393          KM    A Subbasin of T1N-R6W-S11 at I-10 and East of 363rd Ave.
394          KM    L=1.32, Lca=0.55, S=30.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.0
395          BA   0.244
396          LG    0.30    0.25    4.65    0.32       1
397          UI       0      27      64     138     204     250     262     234     183     135
398          UI     100      77      55      43      31      23      19      11       7       6
399          UI       7       7       7       0       0       0       0       0       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
401          UI       0       0       0       0       0       0       0       0       0       0
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402          KK    R22d   ROUTE
403          KM    Route 22d to 22b in Wash T1N-R6W-S11
404          RS       4    FLOW      -1
405          RC   0.055   0.060   0.055    3362  0.0060    0.00
406          RX    0.00   62.00  248.00  310.00  325.00  387.00  573.00  635.00
407          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

408          KK     22b   BASIN
409          KM    A Subbasin of T1N-R6W-S11 at McDowell Rd. and East of 363rd Ave.
410          KM    L=0.69, Lca=0.36, S=31.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=19.8
411          BA   0.164
412          LG    0.30    0.25    4.70    0.31       0
413          UI       0      32     127     222     263     226     143      93      60      39
414          UI      24      17       7       7       6       0       0       0       0       0
415          UI       0       0       0       0       0       0       0       0       0       0
416          UI       0       0       0       0       0       0       0       0       0       0
417          UI       0       0       0       0       0       0       0       0       0       0
             *

418          KK    C22b COMBINE
419          KM    Combine 22b and R22d at McDowell Rd. and East of 363rd Ave.
420          HC       2
             *

421          KK   CC22b COMBINE
422          KM    Combine C22b and 22c at McDowell Rd. and East of 363rd Ave.
423          HC       2
             *

424          KK    R22b   ROUTE
425          KM    Route 22b to 22a in Wash T1N-R6W-S11
426          RS       9    FLOW      -1
427          RC   0.055   0.060   0.055    5706  0.0056    0.00
428          RX    0.00   62.50  250.00  312.50  402.50  465.00  652.50  715.00
429          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

430          KK     22a   BASIN
431          KM    A Subbasin of T1N-R6W-S11 at Van Buren St. and West of 363rd Ave.
432          KM    L=1.56, Lca=0.82, S=32.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.8
433          BA   0.451
434          LG    0.30    0.25    5.00    0.28       1
435          UI       0      41      66     158     249     324     372     397     378     320
436          UI     252     203     158     124      98      78      63      44      38      28
437          UI      29      12      10      10      10      10      10      10       0       0
438          UI       0       0       0       0       0       0       0       0       0       0
439          UI       0       0       0       0       0       0       0       0       0       0
             *

440          KK    C22a COMBINE
441          KM    Combine R22b and 22a at Van Buren St. and West of 363rd Ave.
442          HC       2
             *

443          KK   CC20i COMBINE
444          KM    Combine C22a and C20i at Van Buren St. and West of 363rd Ave.
445          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

446          KK    R20i   ROUTE
447          KM    Route 20i to 20h in Wash T1S-R5W-S17
448          RS       7    FLOW      -1
449          RC   0.050   0.050   0.050    5350  0.0052    0.00
450          RX    0.00  122.00  488.00  610.00  660.00  782.00 1148.00 1270.00
451          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

452          KK     20h   BASIN
453          KM    A Subbasin of T1S-R5W-S17 at Buckeye Rd. and 363rd Ave.
454          KM    L=2.14, Lca=0.86, S=32.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=42.1
455          BA   1.250
456          LG    0.30    0.25    4.70    0.31       2
457          UI       0     100     114     324     509     678     843     917     968     914
458          UI     810     668     535     438     361     287     233     191     156     122
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459          UI     107      74      68      69      24      25      24      24      25      24
460          UI      25       0       0       0       0       0       0       0       0       0
461          UI       0       0       0       0       0       0       0       0       0       0
             *

462          KK    C20h COMBINE
463          KM    Combine 20h and R20i at Buckeye Rd. and 363rd Ave.
464          HC       2
             *

465          KK    R20h   ROUTE
466          KM    Route 20h to 20g in Wash T1S-R5W-S17
467          RS       6    FLOW      -1
468          RC   0.050   0.050   0.050    5408  0.0052    0.00
469          RX    0.00   87.70  350.80  438.50  561.50  649.20  912.30 1000.00
470          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
             *

471          KK     20g   BASIN
472          KM    A Subbasin of T1S-R5W-S17 at Lower Buckeye Rd. and East of 363rd Ave.
473          KM    L=2.02, Lca=0.69, S=33.7, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=38.5
474          BA   1.178
475          LG    0.30    0.25    4.80    0.30       3
476          UI       0     102     148     374     587     776     909     981     969     865
477          UI     697     560     445     352     288     218     181     148     109      87
478          UI      71      70      27      25      25      25      25      25      25       0
479          UI       0       0       0       0       0       0       0       0       0       0
480          UI       0       0       0       0       0       0       0       0       0       0
             *

481          KK    C20g COMBINE
482          KM    Combine 20g and R20h at Lower Buckeye Rd. and East of 363rd Ave.
483          HC       2
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

484          KK    R20g   ROUTE
485          KM    Route 20g to 20f in Wash T1S-R5W-S17
486          RS      12    FLOW      -1
487          RC   0.050   0.050   0.050    7229  0.0044    0.00
488          RX    0.00   92.50  370.00  462.50  517.50  610.00  887.50  980.00
489          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
             *

490          KK     20f   BASIN
491          KM    A Subbasin of T1S-R5W-S17 at Salome Hwy and East of 363rd Ave.
492          KM    L=1.95, Lca=0.89, S=37.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.2
493          BA   1.346
494          LG    0.30    0.25    4.90    0.29       1
495          UI       0     112     146     387     606     812     978    1050    1084     998
496          UI     833     678     542     438     355     278     226     186     146     119
497          UI      90      77      75      28      27      27      28      27      27      28
498          UI       0       0       0       0       0       0       0       0       0       0
499          UI       0       0       0       0       0       0       0       0       0       0
             *

500          KK    C20f COMBINE
501          KM    Combine 20f and R20g at Salome Hwy and East of 363rd Ave.
502          HC       2
             *

503          KK    R20f   ROUTE
504          KM    Route 20f to 20e in Wash T1S-R5W-S17
505          RS       7    FLOW      -1
506          RC   0.050   0.050   0.050    5953  0.0050    0.00
507          RX    0.00  102.00  408.00  510.00  720.00  822.00 1128.00 1230.00
508          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
             *

509          KK     20e   BASIN
510          KM    A Subbasin of T1S-R5W-S17 at South of Southern Ave. and 355th Ave.
511          KM    L=1.92, Lca=0.89, S=34.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.6
512          BA   1.534
513          LG    0.30    0.25    5.30    0.24       3
514          UI       0     127     159     427     684     904    1095    1178    1226    1140
515          UI     954     790     628     505     412     325     260     218     176     134
516          UI     110      87      86      42      31      31      31      31      31      31
517          UI       0       0       0       0       0       0       0       0       0       0
518          UI       0       0       0       0       0       0       0       0       0       0
             *
```

```
 519          KK    C20e COMBINE
 520          KM    Combine 20e and R20f at South of Southern Ave. and 355th Ave.
 521          HC       2
              *
1                                          HEC-1 INPUT                                                    PAGE 14

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 522          KK    R20e   ROUTE
 523          KM    Route 20e to 20d in Wash T1S-R5W-S17
 524          RS       6    FLOW      -1
 525          RC   0.050   0.050   0.050    4439  0.0036    0.00
 526          RX    0.00  122.30  489.20  611.50  803.50  925.80 1292.70 1415.00
 527          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

 528          KK     20d   BASIN
 529          KM    A Subbasin of T1S-R5W-S17 at Baseline Rd. and East of 355th Ave.
 530          KM    L=1.26, Lca=0.49, S=41.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.6
 531          BA   0.623
 532          LG    0.30    0.25    5.00    0.28       1
 533          UI       0      78     225     469     649     754     712     544     399     282
 534          UI     204     148     105      77      54      37      19      19      19      19
 535          UI       0       0       0       0       0       0       0       0       0       0
 536          UI       0       0       0       0       0       0       0       0       0       0
 537          UI       0       0       0       0       0       0       0       0       0       0
              *

 538          KK    C20d COMBINE
 539          KM    Combine 20d and R20e at Baseline Rd. and East of 355th Ave.
 540          HC       2
              *

 541          KK    R20d   ROUTE
 542          KM    Route 20d to 20c in Wash T1S-R5W-S17
 543          RS       7    FLOW      -1
 544          RC   0.050   0.050   0.050    5373  0.0045    0.00
 545          RX    0.00  111.50  446.00  557.50  652.50  764.00 1098.50 1210.00
 546          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

 547          KK     20c   BASIN
 548          KM    A Subbasin of T1S-R5W-S17 at Dobbins Rd. and East of 355th Ave.
 549          KM    L=2.41, Lca=0.89, S=34.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.1
 550          BA   1.422
 551          LG    0.30    0.25    5.40    0.23       4
 552          UI       0     108     109     336     520     707     863     972    1049    1025
 553          UI     939     805     645     534     446     356     296     238     201     164
 554          UI     128     115      79      76      74      31      26      27      26      26
 555          UI      27      26      27       0       0       0       0       0       0       0
 556          UI       0       0       0       0       0       0       0       0       0       0
              *

 557          KK    C20c COMBINE
 558          KM    Combine 20c and R20d at Dobbins Rd. and East of 355th Ave.
 559          HC       2
              *
1                                          HEC-1 INPUT                                                    PAGE 15

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 560          KK    R20c   ROUTE
 561          KM    Route 20c to 20b in Wash T1S-R5W-S17
 562          RS      11    FLOW      -1
 563          RC   0.060   0.070   0.060    7396  0.0043    0.00
 564          RX    0.00  108.80  435.20  544.00  706.00  814.80 1141.20 1250.00
 565          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

 566          KK     20b   BASIN
 567          KM    A Subbasin of T1S-R5W-S17 at UPRR and East of 347th Ave.
 568          KM    L=2.28, Lca=1.02, S=25.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=48.2
 569          BA   1.142
 570          LG    0.30    0.25    4.90    0.29       3
 571          UI       0      79      81     198     340     477     578     681     741     763
 572          UI     745     692     580     480     409     336     284     233     194     160
 573          UI     140     122      84      85      57      55      55      31      19      20
 574          UI      19      19      20      19      20      19       0       0       0       0
 575          UI       0       0       0       0       0       0       0       0       0       0
              *
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576          KK    C20b COMBINE
577          KM    Combine 20b and R20c at UPRR and East of 347th Ave.
578          HC       2
             *

579          KK    R20b   ROUTE
580          KM    Route 20b to 20a in Wash T1S-R5W-S17
581          RS       6    FLOW      -1
582          RC   0.060   0.070   0.060    3435  0.0029    0.00
583          RX    0.00   93.50  374.00  467.50  587.50  681.00  961.50 1055.00
584          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

585          KK     20a   BASIN
586          KM    A Subbasin of T1S-R5W-S17 at South of Elliot Rd. and East of 347th Ave.
587          KM    L=1.46, Lca=0.61, S=31.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
588          BA   0.373
589          LG    0.30    0.25    4.35    0.40      23
590          UI       0      39      79     182     270     342     372     357     300     226
591          UI     175     133     101      76      62      41      33      27      20       9
592          UI      10       9       9      10       0       0       0       0       0       0
593          UI       0       0       0       0       0       0       0       0       0       0
594          UI       0       0       0       0       0       0       0       0       0       0
             *

595          KK    C20a COMBINE
596          KM    Combine 20a and R20b at South of Elliot Rd. and East of 347th Ave.
597          HC       2
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

598          KK     46k   BASIN
599          KM    A Subbasin of Phillips Wash at CAP and 355th Ave.
600          KM    L=1.08, Lca=0.45, S=37.0, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=24.3
601          BA   0.442
602          LG    0.29    0.24    5.20    0.25       0
603          UI       0      61     206     399     539     587     492     345     248     167
604          UI     117      83      57      42      22      15      15      15       0       0
605          UI       0       0       0       0       0       0       0       0       0       0
606          UI       0       0       0       0       0       0       0       0       0       0
607          UI       0       0       0       0       0       0       0       0       0       0
             *

608          KK   D46kE  DIVERT
609          KM   Divert flow to 46i
610          DT   D46kW     0.0     0.0
611          DI     0.0    10.0    50.0   100.0   500.0  1000.0     0.0     0.0     0.0     0.0
612          DQ     0.0     3.0    15.0    30.0   150.0   300.0     0.0     0.0     0.0     0.0
             *

613          KK   R46kE   ROUTE
614          KM    Route 46k to 46j
615          RS       4    FLOW      -1
616          RC   0.060   0.050   0.060    6227  0.0090    0.00
617          RX    0.00   33.50  134.00  167.50  182.50  216.00  316.50  350.00
618          RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
             *

619          KK     46j   BASIN
620          KM    A Subbasin of Phillips Wash at South of Peoria Ave and East of 355th Ave.
621          KM    L=1.24, Lca=0.72, S=41.9, Kn=0.043, S-Graph=DESERT/RANGELAND, Tlag=29.2
622          BA   0.294
623          LG    0.28    0.23    5.00    0.27       0
624          UI       0      34      82     179     258     316     319     281     212     156
625          UI     116      86      64      47      36      23      22       9       8       8
626          UI       9       8       0       0       0       0       0       0       0       0
627          UI       0       0       0       0       0       0       0       0       0       0
628          UI       0       0       0       0       0       0       0       0       0       0
             *

629          KK    C46j COMBINE
630          KM    Combine 46j and R46kE at South of Peoria Ave. and East of 355th Ave.
631          HC       2
             *

632          KK  BD46kWRETRIEVE
633          KM    Retrieve diverted flow of D46kW
634          DR   D46kW
             *
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 635          KK   R46kW   ROUTE
 636          KM    Route D46kW to 46i
 637          RS       4    FLOW      -1
 638          RC   0.060   0.050   0.060    5990  0.0090    0.00
 639          RX    0.00   12.00   48.00   60.00   80.00   92.00  128.00  140.00
 640          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

 641          KK     46i   BASIN
 642          KM    A Subbasin South of Peoria Ave and East of 355th Ave.
 643          KM    L=1.12, Lca=0.60, S=46.6, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=26.2
 644          BA   0.270
 645          LG    0.29    0.24    4.90    0.29       0
 646          UI       0      35     102     209     289     335     307     230     171     119
 647          UI      85      62      43      31      24      13       8       9       8       9
 648          UI       0       0       0       0       0       0       0       0       0       0
 649          UI       0       0       0       0       0       0       0       0       0       0
 650          UI       0       0       0       0       0       0       0       0       0       0
              *

 651          KK    C46i COMBINE
 652          KM    Combine 46i and R46kW at South of Peoria Ave. and East of 355th Ave.
 653          HC       2
              *

 654          KK   CC46i COMBINE
 655          KM    Combine C46j and C46i at South of Peoria Ave. and East of 355th Ave.
 656          HC       2
              *

 657          KK    R46i   ROUTE
 658          KM    Route 46i to 46h in Phillips Wash
 659          RS       3    FLOW      -1
 660          RC   0.060   0.050   0.060    6015  0.0060    0.00
 661          RX    0.00   26.30  105.20  131.50  153.50  179.80  258.70  285.00
 662          RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
              *

 663          KK     46h   BASIN
 664          KM    A Subbasin of Phillips Wash at Dunlap Ave. and East of 355th Ave.
 665          KM    L=1.48, Lca=0.76, S=40.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=33.5
 666          BA   0.384
 667          LG    0.30    0.25    5.30    0.24       0
 668          UI       0      38      73     171     253     332     364     359     322     245
 669          UI     189     150     112      84      68      51      42      27      26      15
 670          UI       9      10       9      10       9       0       0       0       0       0
 671          UI       0       0       0       0       0       0       0       0       0       0
 672          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 673          KK    C46h COMBINE
 674          KM    Combine 46h and R46i at Dunlap Ave. and East of 355th Ave.
 675          HC       2
              *

 676          KK     54b   BASIN
 677          KM    A Subbasin at Peoria Ave. and 347th Ave.
 678          KM    L=1.16, Lca=0.38, S=34.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.3
 679          BA   0.235
 680          LG    0.30    0.25    4.70    0.31       4
 681          UI       0      32     110     212     287     312     261     183     133      88
 682          UI      63      44      30      22      12       8       8       8       0       0
 683          UI       0       0       0       0       0       0       0       0       0       0
 684          UI       0       0       0       0       0       0       0       0       0       0
 685          UI       0       0       0       0       0       0       0       0       0       0
              *

 686          KK    R54b   ROUTE
 687          KM    Route 54b to 54a in Wash T3N-R5W-S31
 688          RS       2    FLOW      -1
 689          RC   0.060   0.050   0.060    4379  0.0089    0.00
 690          RX    0.00    8.00   32.00   40.00   60.00   68.00   92.00  100.00
 691          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *
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692          KK     54a   BASIN
693          KM    A Subbasin of T3N-R5W-S31 at North of Dunlap Ave. and West of 347th Ave.
694          KM    L=1.35, Lca=0.66, S=44.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.1
695          BA   0.360
696          LG    0.30    0.25    4.80    0.30       6
697          UI       0      40      93     205     297     369     381     350     269     200
698          UI     150     112      82      66      44      34      27      18      10      10
699          UI      10      10      10       0       0       0       0       0       0       0
700          UI       0       0       0       0       0       0       0       0       0       0
701          UI       0       0       0       0       0       0       0       0       0       0
             *

702          KK    C54a COMBINE
703          KM    Combine 54a and R54b at North of Dunlap Ave. and West of 347th Ave.
704          HC       2
             *

705          KK    R54a   ROUTE
706          KM    Route 54a to 52a in Wash T3N-R5W-S30
707          RS       2    FLOW      -1
708          RC   0.060   0.050   0.060    1801  0.0067    0.00
709          RX    0.00   27.50  110.00  137.50  162.50  190.00  272.50  300.00
710          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

711          KK     52a   BASIN
712          KM    A Subbasin of T3N-R5W-S30 at Dunlap Ave. and West of 347th Ave.
713          KM    L=1.56, Lca=0.95, S=89.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.0
714          BA   0.577
715          LG    0.30    0.25    4.15    0.44      18
716          UI       0      60     125     284     425     530     583     553     463     347
717          UI     266     207     150     119      92      64      49      42      28      14
718          UI      15      15      14      15       0       0       0       0       0       0
719          UI       0       0       0       0       0       0       0       0       0       0
720          UI       0       0       0       0       0       0       0       0       0       0
             *

721          KK    C52a COMBINE
722          KM    Combine 52a and R54a at Dunlap Ave. and West of 347th Ave.
723          HC       2
             *

724          KK   CC46h COMBINE
725          KM    Combine C52a and C46h at Dunlap Ave. and West of 347th Ave.
726          HC       2
             *

727          KK    R46h   ROUTE
728          KM    Route 46h to 46g in Phillips Wash
729          RS       8    FLOW      -1
730          RC   0.060   0.050   0.060   11103  0.0052    0.00
731          RX    0.00   61.50  246.00  307.50  342.50  404.00  588.50  650.00
732          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
             *

733          KK     46g   BASIN
734          KM    A Subbasin of Phillips Wash at Glendale Ave. and West of 347th Ave.
735          KM    L=2.49, Lca=1.28, S=32.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=52.1
736          BA   0.451
737          LG    0.30    0.25    5.10    0.26       0
738          UI       0      29      29      63     110     156     197     233     261     276
739          UI     276     269     249     208     178     149     127     110      90      76
740          UI      64      55      46      41      31      30      21      20      20      13
741          UI       7       7       7       7       7       7       8       7       7       0
742          UI       0       0       0       0       0       0       0       0       0       0
             *

743          KK    C46g COMBINE
744          KM    Combine 46g and R46h at Glendale Ave. and West of 347th Ave.
745          HC       2
             *

746          KK     46f   BASIN
747          KM    A Subbasin South of Glendale Ave.,West of 347th Ave.
748          KM    L=2.12, Lca=1.00, S=34.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=43.9
749          BA   0.576
750          LG    0.30    0.25    5.20    0.25       0
751          UI       0      44      44     138     211     292     351     400     425     414
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 752          UI     383     324     260     214     178     145     117      96      80      68
1                                              HEC-1 INPUT                                                    PAGE 20

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 753          UI      50      46      31      30      30      11      11      11      11      10
 754          UI      11      11      11       0       0       0       0       0       0       0
 755          UI       0       0       0       0       0       0       0       0       0       0
              *

 756          KK    C46f COMBINE
 757          KM    Combine C46g and 46f at South of Glendale Ave. and West of 347th Ave.
 758          HC       2
              *

 759          KK    R46f   ROUTE
 760          KM    Route 46f to 46e in Phillips Wash
 761          RS       4    FLOW      -1
 762          RC   0.060   0.050   0.060    4690  0.0064    0.00
 763          RX    0.00   72.00  288.00  360.00  395.00  467.00  683.00  755.00
 764          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

 765          KK     46e   BASIN
 766          KM    A Subbasin of Phillips Wash at North of Bethany Home Rd,East of 347th Ave.
 767          KM    L=0.97, Lca=0.51, S=37.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.0
 768          BA   0.220
 769          LG    0.30    0.25    5.10    0.26       0
 770          UI       0      29      95     186     259     283     248     180     128      89
 771          UI      62      46      31      21      16       7       7       7       7       0
 772          UI       0       0       0       0       0       0       0       0       0       0
 773          UI       0       0       0       0       0       0       0       0       0       0
 774          UI       0       0       0       0       0       0       0       0       0       0
              *

 775          KK    C46e COMBINE
 776          KM    Combine 46e and R46f at North of Bethany Home Rd and East of 347th Ave.
 777          HC       2
              *

 778          KK     56a   BASIN
 779          KM    A Subbasin North of Bethany Home Rd,East of 347th Ave.
 780          KM    L=1.29, Lca=0.64, S=37.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.3
 781          BA   0.297
 782          LG    0.30    0.25    4.65    0.32       0
 783          UI       0      33      75     166     243     300     315     287     223     167
 784          UI     125      95      68      55      38      29      22      17       8       8
 785          UI       8       8       8       0       0       0       0       0       0       0
 786          UI       0       0       0       0       0       0       0       0       0       0
 787          UI       0       0       0       0       0       0       0       0       0       0
              *

 788          KK   CC46e COMBINE
 789          KM    Combine C46e and 56a at North of Bethany Home Rd and East of 347th Ave.
 790          HC       2
              *
1                                              HEC-1 INPUT                                                    PAGE 21

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 791          KK    R46e   ROUTE
 792          KM    Route 46e to 46c in Phillips Wash
 793          RS       7    FLOW      -1
 794          RC   0.060   0.050   0.060    7330  0.0055    0.00
 795          RX    0.00   62.50  250.00  312.50  337.50  400.00  587.50  650.00
 796          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

 797          KK     46d   BASIN
 798          KM    A Subbasin of Phillips Wash at Camelback Rd and 347th Ave.
 799          KM    L=1.81, Lca=0.86, S=38.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=38.3
 800          BA   0.431
 801          LG    0.30    0.25    4.70    0.31       0
 802          UI       0      38      55     138     216     287     334     363     355     317
 803          UI     254     203     161     128     103      80      65      53      40      31
 804          UI      26      25       9       9       9      10       9       9       9       0
 805          UI       0       0       0       0       0       0       0       0       0       0
 806          UI       0       0       0       0       0       0       0       0       0       0
              *

 807          KK    C46d COMBINE
 808          KM    Combine 46d and R46e at Camelback Rd. and 347th Ave.
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809          HC       2
             *

810          KK     46c   BASIN
811          KM    A Subbasin at Camelback Rd and West of 347th Ave.
812          KM    L=1.51, Lca=0.84, S=35.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.0
813          BA   0.226
814          LG    0.30    0.25    5.00    0.28       0
815          UI       0      21      35      84     131     169     193     202     191     157
816          UI     124      97      76      61      45      37      29      22      17      14
817          UI      12       5       5       5       5       5       6       0       0       0
818          UI       0       0       0       0       0       0       0       0       0       0
819          UI       0       0       0       0       0       0       0       0       0       0
             *

820          KK    C46c COMBINE
821          KM    Combine C46d and 46c at Camelback Rd and West of 347th Ave.
822          HC       2
             *

823          KK    R46c   ROUTE
824          KM    Route 46c to 46b in Phillips Wash
825          RS       3    FLOW      -1
826          RC   0.060   0.050   0.060    5471  0.0059    0.00
827          RX    0.00   50.00  200.00  250.00  275.00  325.00  475.00  525.00
828          RY   13.00    9.10    5.20    0.00    0.00    5.20    9.10   13.00
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

829          KK     46b   BASIN
830          KM    A Subbasin of Phillips Wash at Indian School Rd and West of 347th Ave.
831          KM    L=1.67, Lca=0.83, S=35.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=37.2
832          BA   0.401
833          LG    0.30    0.25    4.70    0.31       0
834          UI       0      36      56     137     215     283     329     343     340     286
835          UI     228     182     142     114      89      70      57      42      36      25
836          UI      25      14       9       9       8       9       9       9       0       0
837          UI       0       0       0       0       0       0       0       0       0       0
838          UI       0       0       0       0       0       0       0       0       0       0
             *

839          KK    C46b COMBINE
840          KM    Combine 46b and R46c at Indian School Rd. and West of 347th Ave.
841          HC       2
             *

842          KK     50g   BASIN
843          KM    A Subbasin South of Dunlap Ave. and East of 355th Ave.
844          KM    L=1.11, Lca=0.47, S=41.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.9
845          BA   0.146
846          LG    0.30    0.25    5.30    0.24       0
847          UI       0      20      63     125     172     190     163     119      84      60
848          UI      40      30      20      14      10       5       5       5       4       0
849          UI       0       0       0       0       0       0       0       0       0       0
850          UI       0       0       0       0       0       0       0       0       0       0
851          UI       0       0       0       0       0       0       0       0       0       0
             *

852          KK    R50g   ROUTE
853          KM    Route 50g to 50f
854          RS      10    FLOW      -1
855          RC   0.050   0.050   0.050    6582  0.0067    0.00
856          RX    0.00   38.50  154.00  192.50  222.50  261.00  376.50  415.00
857          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

858          KK     50f   BASIN
859          KM    A Subbasin North of Glendale Ave., East of 355th Ave.
860          KM    L=1.41, Lca=0.70, S=32.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=33.3
861          BA   0.292
862          LG    0.30    0.25    5.10    0.26       0
863          UI       0      30      58     136     203     261     283     278     238     184
864          UI     141     107      82      62      50      35      29      20      20       7
865          UI       7       7       8       7       7       0       0       0       0       0
866          UI       0       0       0       0       0       0       0       0       0       0
867          UI       0       0       0       0       0       0       0       0       0       0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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868          KK    C50f COMBINE
869          KM    Combine 50f and R50g at North of Glendale Ave. and East of 355th Ave.
870          HC       2
             *

871          KK    R50f   ROUTE
872          KM    Route 50f to 50e
873          RS       6    FLOW      -1
874          RC   0.050   0.050   0.050    4264  0.0066    0.00
875          RX    0.00   58.00  232.00  290.00  385.00  443.00  617.00  675.00
876          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

877          KK     50e   BASIN
878          KM    A Subbasin South of Glendale Ave., East of 355th Ave.
879          KM    L=0.88, Lca=0.47, S=34.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.6
880          BA   0.171
881          LG    0.30    0.25    5.00    0.28       0
882          UI       0      24      87     163     220     232     185     129      90      62
883          UI      42      29      20      16       5       6       6       6       0       0
884          UI       0       0       0       0       0       0       0       0       0       0
885          UI       0       0       0       0       0       0       0       0       0       0
886          UI       0       0       0       0       0       0       0       0       0       0
             *

887          KK    C50e COMBINE
888          KM    Combine 50e and R50f at South of Glendale Ave. and East of 355th Ave.
889          HC       2
             *

890          KK    R50e   ROUTE
891          KM    Route 50e to 50d
892          RS       4    FLOW      -1
893          RC   0.050   0.050   0.050    4259  0.0075    0.00
894          RX    0.00   55.00  220.00  275.00  305.00  360.00  525.00  580.00
895          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

896          KK     50d   BASIN
897          KM    A Subbasin South of Bethany Home Rd, East of 355th Ave.
898          KM    L=0.94, Lca=0.51, S=34.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.1
899          BA   0.178
900          LG    0.30    0.25    5.00    0.28       0
901          UI       0      24      77     147     207     231     200     146     104      73
902          UI      51      38      24      17      14       5       6       6       5       0
903          UI       0       0       0       0       0       0       0       0       0       0
904          UI       0       0       0       0       0       0       0       0       0       0
905          UI       0       0       0       0       0       0       0       0       0       0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

906          KK    C50d COMBINE
907          KM    Combine 50d and R50e at South of Bethany Home Rd. and East of 355th Ave.
908          HC       2
             *

909          KK     50c   BASIN
910          KM    A Subbasin South of Bethany Home Rd, East of 355th Ave.
911          KM    L=2.70, Lca=1.23, S=33.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=52.6
912          BA   0.548
913          LG    0.30    0.25    5.00    0.28       0
914          UI       0      35      35      73     132     187     235     276     312     328
915          UI     335     329     300     256     220     184     158     133     112      95
916          UI      79      67      58      53      37      37      27      24      24      20
917          UI       9       8       9       8       9       9       8       9       8       0
918          UI       0       0       0       0       0       0       0       0       0       0
             *

919          KK    C50c COMBINE
920          KM    Combine 50c and C50d at South of Bethany Home Rd. and East of 355th Ave.
921          HC       2
             *

922          KK    R50d   ROUTE
923          KM    Route 50d to 50b
924          RS       2    FLOW      -1
925          RC   0.050   0.050   0.050    1710  0.0047    0.00
926          RX    0.00   28.00  112.00  140.00  160.00  188.00  272.00  300.00
```

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927          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
             *

928          KK     50b   BASIN
929          KM    A Subbasin of T2N-R5W-S19 at South of Bethany Home Rd, East of 355th Ave.
930          KM    L=1.06, Lca=0.58, S=37.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.0
931          BA   0.205
932          LG    0.30    0.25    5.00    0.28       0
933          UI       0      26      70     149     210     244     232     182     133      97
934          UI      69      51      35      27      18      15       6       6       6       7
935          UI       0       0       0       0       0       0       0       0       0       0
936          UI       0       0       0       0       0       0       0       0       0       0
937          UI       0       0       0       0       0       0       0       0       0       0
             *

938          KK    C50b COMBINE
939          KM    Combine 50b and R50d at South of Bethany Home Rd. and East of 355th Ave.
940          HC       2
             *

941          KK    R50b   ROUTE
942          KM    Route 50b to 50a in Wash T2N-R5W-S19
943          RS       8    FLOW      -1
944          RC   0.060   0.050   0.060    9252  0.0056    0.00
945          RX    0.00   63.00  252.00  315.00  335.00  398.00  587.00  650.00
946          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

947          KK     50a   BASIN
948          KM    A Subbasin of T2N-R5W-S19 at Indian School Rd. and East of 355th Ave.
949          KM    L=2.33, Lca=1.40, S=30.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=53.1
950          BA   0.891
951          LG    0.30    0.25    5.00    0.28       0
952          UI       0      56      57     116     205     301     374     438     504     527
953          UI     540     530     492     419     362     302     259     221     185     158
954          UI     132     111      98      88      63      59      49      38      39      39
955          UI      14      13      14      14      14      13      14      14      14      13
956          UI       0       0       0       0       0       0       0       0       0       0
             *

957          KK    C50a COMBINE
958          KM    Combine 50a and R50b at Indian School Rd. and East of 355th Ave.
959          HC       2
             *

960          KK   CC46b COMBINE
961          KM    Combine C46b and C50a
962          HC       2
             *

963          KK    R46b   ROUTE
964          KM    Route 46b to 46a in Phillips Wash
965          RS       7    FLOW      -1
966          RC   0.060   0.050   0.060    9206  0.0039    0.00
967          RX    0.00   74.50  298.00  372.50  402.50  477.00  700.50  775.00
968          RY    9.00    6.30    3.60    0.00    0.00    3.60    6.30    9.00
             *

969          KK     46a   BASIN
970          KM    A Subbasin of Phillips Wash at I-10 and East of 355th Ave.
971          KM    L=1.95, Lca=1.07, S=31.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.5
972          BA   0.807
973          LG    0.30    0.25    4.10    0.46       0
974          UI       0      61      61     185     290     398     480     539     590     577
975          UI     538     456     373     307     255     206     173     139     114      95
976          UI      77      64      49      42      42      23      15      15      15      15
977          UI      15      14      15       0       0       0       0       0       0       0
978          UI       0       0       0       0       0       0       0       0       0       0
             *

979          KK    C46a COMBINE
980          KM    Combine 46a and R46b at I-10 and East of 355th Ave.
981          HC       2
             *

982          KK    R46a   ROUTE
983          KM    Route 46a to CC46a in Phillips Wash
984          RS       2    FLOW      -1
985          RC   0.060   0.050   0.060    2368  0.0051    0.00
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 986          RX    0.00   51.50  206.00  257.50  287.50  339.00  493.50  545.00
 987          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 988          KK     44f   BASIN
 989          KM    A Subbasin at Northern Ave., West of 355th Ave.
 990          KM    L=1.67, Lca=0.86, S=38.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=37.2
 991          BA   0.267
 992          LG    0.30    0.25    5.40    0.23       0
 993          UI       0      24      38      91     142     189     219     229     226     190
 994          UI     152     122      94      76      59      47      38      28      24      16
 995          UI      17       9       6       6       6       6       6       6       0       0
 996          UI       0       0       0       0       0       0       0       0       0       0
 997          UI       0       0       0       0       0       0       0       0       0       0
              *

 998          KK     44e   BASIN
 999          KM    A Subbasin of T2N-R6W-S36 at South of Northern Ave. and 355th Ave.
1000          KM    L=2.25, Lca=1.07, S=36.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.6
1001          BA   0.463
1002          LG    0.30    0.25    5.40    0.23       0
1003          UI       0      34      35      97     157     216     264     301     326     325
1004          UI     307     270     220     182     152     126     100      85      69      59
1005          UI      50      36      34      24      24      22       8       8       8       9
1006          UI       8       8       8       9       0       0       0       0       0       0
1007          UI       0       0       0       0       0       0       0       0       0       0
              *

1008          KK    C44e COMBINE
1009          KM    Combine 44e and 44f at South of Northern Ave. West of 355th Ave.
1010          HC       2
              *

1011          KK    R44e   ROUTE
1012          KM    Route 44e to 44d in Wash T2N-R6W-S36
1013          RS       8    FLOW      -1
1014          RC   0.055   0.060   0.055    9594  0.0067    0.00
1015          RX    0.00   51.00  204.00  255.00  275.00  326.00  479.00  530.00
1016          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1017          KK     44d   BASIN
1018          KM    A Subbasin of T2N-R6W-S36 at Bethany Home Rd., West of 355th Ave.
1019          KM    L=2.97, Lca=1.24, S=35.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=53.9
1020          BA   0.821
1021          LG    0.30    0.25    5.80    0.19       0
1022          UI       0      51      51     102     183     268     331     393     453     475
1023          UI     490     487     452     392     340     287     242     211     175     149
1024          UI     127     106      93      80      66      54      51      36      35      35
1025          UI      23      12      13      12      13      12      13      12      13      12
1026          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1027          KK    C44d COMBINE
1028          KM    Combine 44d and R44e at Bethany Home Rd. and West of 355th Ave.
1029          HC       2
              *

1030          KK    R44d   ROUTE
1031          KM    Route 44d to 44c in Wash T2N-R6W-S36
1032          RS       5    FLOW      -1
1033          RC   0.055   0.060   0.055    5423  0.0054    0.00
1034          RX    0.00   24.50   98.00  122.50  147.50  172.00  245.50  270.00
1035          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1036          KK     44c   BASIN
1037          KM    A Subbasin of T2N-R6W-S36 at Camelback Rd. and West of 355th Ave.
1038          KM    L=1.57, Lca=0.73, S=33.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.1
1039          BA   0.338
1040          LG    0.30    0.25    5.60    0.22       0
1041          UI       0      32      57     133     205     268     300     307     287     228
1042          UI     177     141     109      83      66      52      39      33      22      22
1043          UI      10       8       8       8       8       8       0       0       0       0
1044          UI       0       0       0       0       0       0       0       0       0       0
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1045          UI       0       0       0       0       0       0       0       0       0       0
              *

1046          KK    C44c COMBINE
1047          KM    Combine 44c and R44d at Camelback Rd. and West of 355th Ave.
1048          HC       2
              *

1049          KK    R44c   ROUTE
1050          KM    Route 44c to 44b in Wash T2N-R6W-S36
1051          RS       4    FLOW      -1
1052          RC   0.055   0.060   0.055    5610  0.0055    0.00
1053          RX    0.00   37.00  148.00  185.00  225.00  262.00  373.00  410.00
1054          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1055          KK     44b   BASIN
1056          KM    A Subbasin of T2N-R6W-S36 at Indian School Rd. and West of 355th Ave.
1057          KM    L=1.35, Lca=0.64, S=32.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.7
1058          BA   0.279
1059          LG    0.30    0.25    5.30    0.24       1
1060          UI       0      29      61     141     210     261     285     266     223     166
1061          UI     127      97      73      55      43      31      22      21      11       7
1062          UI       8       7       7       8       0       0       0       0       0       0
1063          UI       0       0       0       0       0       0       0       0       0       0
1064          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1065          KK    C44b COMBINE
1066          KM    Combine 44b and R44c at Indian School Rd. and West of 355th Ave.
1067          HC       2
              *

1068          KK    R44b   ROUTE
1069          KM    Route 44b to 44a in Wash T2N-R6W-S36
1070          RS       8    FLOW      -1
1071          RC   0.055   0.060   0.055    8676  0.0052    0.00
1072          RX    0.00   61.00  244.00  305.00  350.00  411.00  594.00  655.00
1073          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1074          KK     44a   BASIN
1075          KM    A Subbasin of T2N-R6W-S36 at I-10 and 355th Ave.
1076          KM    L=3.04, Lca=1.41, S=29.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=59.2
1077          BA   0.833
1078          LG    0.29    0.25    4.90    0.29       3
1079          UI       0      48      48      74     156     221     282     332     402     427
1080          UI     450     463     446     421     378     321     277     240     207     178
1081          UI     154     133     110      97      86      73      64      50      51      34
1082          UI      33      33      33      11      12      12      11      12      12      11
1083          UI      12      12      11      12       0       0       0       0       0       0
              *

1084          KK    C44a COMBINE
1085          KM    Combine 44a and R44b at I-10 and 355th Ave.
1086          HC       2
              *

1087          KK    R44a   ROUTE
1088          KM    Route 44a to CC44a in Wash T2N-R6W-S36
1089          RS       2    FLOW      -1
1090          RC   0.055   0.060   0.055    1962  0.0041    0.00
1091          RX    0.00   31.00  124.00  155.00  205.00  236.00  329.00  360.00
1092          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1093          KK     48b   BASIN
1094          KM    A Subbasin of T2N-R6W-S36W at South of Indian School Rd and East of 355th Av
1095          KM    L=1.18, Lca=0.54, S=30.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.5
1096          BA   0.204
1097          LG    0.30    0.25    4.35    0.40       0
1098          UI       0      24      62     130     190     223     227     191     143     104
1099          UI      77      57      41      31      23      16      11       6       6       6
1100          UI       6       0       0       0       0       0       0       0       0       0
1101          UI       0       0       0       0       0       0       0       0       0       0
1102          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1103          KK    R48b   ROUTE
1104          KM    Route 48b to 48a in Wash T2N-R6W-S36W
1105          RS      12    FLOW      -1
1106          RC   0.055   0.060   0.055    6543  0.0055    0.00
1107          RX    0.00   67.00  268.00  335.00  400.00  467.00  668.00  735.00
1108          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
              *

1109          KK     48a   BASIN
1110          KM    A Subbasin of T2N-R6W-S36W at I-10 and 355th Ave.
1111          KM    L=1.44, Lca=0.74, S=30.5, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=35.5
1112          BA   0.283
1113          LG    0.30    0.25    4.25    0.42       1
1114          UI       0      27      46     107     169     218     247     256     240     194
1115          UI     151     119      93      73      56      45      34      29      18      19
1116          UI      11       7       6       7       6       7       6       0       0       0
1117          UI       0       0       0       0       0       0       0       0       0       0
1118          UI       0       0       0       0       0       0       0       0       0       0
              *

1119          KK    C48a COMBINE
1120          KM    Combine 48a and R48b at I-10 and 355th Ave.
1121          HC       2
              *

1122          KK    R48a   ROUTE
1123          KM    Route 48a to CC44a in Wash T2N-R6W-S36W
1124          RS       2    FLOW      -1
1125          RC   0.055   0.060   0.055    1972  0.0051    0.00
1126          RX    0.00   41.50  166.00  207.50  267.50  309.00  433.50  475.00
1127          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1128          KK   CC44a COMBINE
1129          KM    Combine C48a and C44a at South of I-10 and 355th Ave.
1130          HC       2
              *

1131          KK   CC46a COMBINE
1132          KM    Combine R46a and CC44a at South of I-10 and 355th Ave.
1133          HC       2
              *

1134          KK  R44a-d   ROUTE
1135          KM    Route from u/s of 40d to d/s of 40d in Phillips Wash
1136          RS       6    FLOW      -1
1137          RC   0.060   0.050   0.060    7483  0.0054    0.00
1138          RX    0.00   35.00  140.00  175.00  225.00  260.00  365.00  400.00
1139          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1140          KK     40d   BASIN
1141          KM    A Subbasin of Phillips Wash at South of Van Buren and 355th Ave.
1142          KM    L=1.88, Lca=1.04, S=26.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.9
1143          BA   0.728
1144          LG    0.30    0.25    4.40    0.38       1
1145          UI       0      55      55     162     256     350     424     485     525     519
1146          UI     482     417     340     279     235     190     157     128     106      86
1147          UI      73      58      48      38      37      26      14      13      13      14
1148          UI      13      13      13      14       0       0       0       0       0       0
1149          UI       0       0       0       0       0       0       0       0       0       0
              *

1150          KK    C40d COMBINE
1151          KM    Combine 40d and R44a-d at South of Van Buren and 355th Ave.
1152          HC       2
              *

1153          KK     42b   BASIN
1154          KM    A Subbasin of T1N-R6W-S12 at North of Van Buren St., West of 355th Ave.
1155          KM    L=1.34, Lca=0.67, S=32.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.0
1156          BA   0.309
1157          LG    0.30    0.25    4.70    0.31       1
1158          UI       0      32      67     152     228     284     312     296     248     186
1159          UI     142     111      81      63      49      34      27      22      15       8
1160          UI       8       8       8       8       0       0       0       0       0       0
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1161          UI       0       0       0       0       0       0       0       0       0       0
1162          UI       0       0       0       0       0       0       0       0       0       0
              *

1163          KK    R42b   ROUTE
1164          KM    Route 42b to 42a in Wash T1N-R6W-S12
1165          RS       6    FLOW      -1
1166          RC   0.055   0.060   0.055    4141  0.0058    0.00
1167          RX    0.00  103.50  414.00  517.50  537.50  641.00  951.50 1055.00
1168          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1169          KK     42a   BASIN
1170          KM    A Subbasin of T1N-T6W-S12 at South of Van Buren and West of 355th Ave.
1171          KM    L=1.23, Lca=0.56, S=37.5, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=27.6
1172          BA   0.360
1173          LG    0.29    0.25    4.60    0.34       3
1174          UI       0      44     117     249     352     419     403     328     243     174
1175          UI     128      92      70      47      33      30      13      11      10      11
1176          UI      11       0       0       0       0       0       0       0       0       0
1177          UI       0       0       0       0       0       0       0       0       0       0
1178          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1179          KK    C42a COMBINE
1180          KM    Combine 42a and R42b at South of Van Buren and West of 355th Ave.
1181          HC       2
              *

1182          KK   CC40d COMBINE
1183          KM    Combine C40d and C42a at South of Van Buren and West of 355th Ave.
1184          HC       2
              *

1185          KK    R40d   ROUTE
1186          KM    Route 40d to 40c in Phillips Wash
1187          RS       4    FLOW      -1
1188          RC   0.060   0.045   0.060    4406  0.0041    0.00
1189          RX    0.00  134.00  536.00  670.00  710.00  844.00 1246.00 1380.00
1190          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1191          KK     40c   BASIN
1192          KM    A Subbasin of Phillips Wash at Buckeye Rd. and 355th Ave.
1193          KM    L=1.06, Lca=0.53, S=39.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.9
1194          BA   0.501
1195          LG    0.30    0.25    4.60    0.34       1
1196          UI       0      65     197     395     550     624     574     423     307     219
1197          UI     153     111      78      55      45      20      15      17      15      16
1198          UI       0       0       0       0       0       0       0       0       0       0
1199          UI       0       0       0       0       0       0       0       0       0       0
1200          UI       0       0       0       0       0       0       0       0       0       0
              *

1201          KK    C40c COMBINE
1202          KM    Combine 40c and R40d at Buckeye Rd. and 355th Ave.
1203          HC       2
              *

1204          KK    R40c   ROUTE
1205          KM    Route 40c to 40b in Phillips Wash
1206          RS       6    FLOW      -1
1207          RC   0.060   0.045   0.060    7542  0.0048    0.00
1208          RX    0.00  181.00  724.00  905.00  960.00 1141.00 1684.00 1865.00
1209          RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
              *

1210          KK     40b   BASIN
1211          KM    A Subbasin of Phillips Wash at South of Lower Buckeye Rd., East of 355th Ave
1212          KM    L=1.89, Lca=1.13, S=28.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.8
1213          BA   0.416
1214          LG    0.29    0.25    4.60    0.34       4
1215          UI       0      30      31      86     141     191     236     267     293     292
1216          UI     274     243     199     165     138     112      92      77      63      53
1217          UI      47      32      32      21      21      21       7       8       7       7
1218          UI       8       7       8       7       0       0       0       0       0       0
1219          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1220          KK    C40b COMBINE
1221          KM    Combine 40b and R40c at South of Lower Buckeye and East of 355th Ave.
1222          HC       2
              *

1223          KK     64d   BASIN
1224          KM    A Subbasin at South of Bethany Home Rd., East of 347th Ave.
1225          KM    L=0.82, Lca=0.41, S=34.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=21.9
1226          BA   0.144
1227          LG    0.30    0.27    3.31    0.62       0
1228          UI       0      22      89     161     205     202     143      98      66      44
1229          UI      29      20      14       5       6       5       5       0       0       0
1230          UI       0       0       0       0       0       0       0       0       0       0
1231          UI       0       0       0       0       0       0       0       0       0       0
1232          UI       0       0       0       0       0       0       0       0       0       0
              *

1233          KK    R64d   ROUTE
1234          KM    Route 64d to 64c in Dickey Wash
1235          RS      14    FLOW      -1
1236          RC   0.060   0.050   0.060    9783  0.0065    0.00
1237          RX    0.00   38.00  152.00  190.00  230.00  268.00  382.00  420.00
1238          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1239          KK     64c   BASIN
1240          KM    A Subbasin of Dickey Wash at Indian School Rd. and 347th Ave.
1241          KM    L=1.96, Lca=0.98, S=36.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=41.8
1242          BA   0.637
1243          LG    0.30    0.25    3.92    0.41       0
1244          UI       0      51      60     168     264     350     434     472     495     468
1245          UI     412     338     269     221     182     145     116      96      79      60
1246          UI      55      35      35      31      13      12      13      12      13      12
1247          UI      13       0       0       0       0       0       0       0       0       0
1248          UI       0       0       0       0       0       0       0       0       0       0
              *

1249          KK    C64c COMBINE
1250          KM    Combine 64c and R64d at Indian School Rd. and 347th Ave.
1251          HC       2
              *

1252          KK    R64c   ROUTE
1253          KM    Route 64c to 64b in Dickey Wash
1254          RS       4    FLOW      -1
1255          RC   0.060   0.050   0.060    5389  0.0063    0.00
1256          RX    0.00   50.00  200.00  250.00  275.00  325.00  475.00  525.00
1257          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1258          KK     64b   BASIN
1259          KM    A Subbasin of Dickey Wash at Thomas Rd. and 347th Ave.
1260          KM    L=2.19, Lca=1.06, S=36.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.0
1261          BA   0.836
1262          LG    0.30    0.25    3.92    0.41       0
1263          UI       0      62      63     188     294     407     488     557     610     590
1264          UI     554     481     388     321     268     218     179     147     120     100
1265          UI      83      66      54      43      42      29      15      16      15      16
1266          UI      15      15      16       0       0       0       0       0       0       0
1267          UI       0       0       0       0       0       0       0       0       0       0
              *

1268          KK    C64b COMBINE
1269          KM    Combine 64b and R64c at Thomas Rd. and 347th Ave.
1270          HC       2
              *

1271          KK    R64b   ROUTE
1272          KM    Route 64b to 64a in Dickey Wash
1273          RS       4    FLOW      -1
1274          RC   0.060   0.050   0.060    5503  0.0051    0.00
1275          RX    0.00   21.00   84.00  105.00  125.00  146.00  209.00  230.00
1276          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *
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1277          KK     64a   BASIN
1278          KM    A Subbasin of Dickey Wash at I-10 and 347th Ave.
1279          KM    L=1.35, Lca=0.62, S=40.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.0
1280          BA   0.377
1281          LG    0.30    0.25    4.20    0.43       0
1282          UI       0      42      98     213     316     387     404     362     283     207
1283          UI     156     118      86      67      47      35      29      17      10      11
1284          UI      10      10      10       0       0       0       0       0       0       0
1285          UI       0       0       0       0       0       0       0       0       0       0
1286          UI       0       0       0       0       0       0       0       0       0       0
              *

1287          KK    C64a COMBINE
1288          KM    Combine 64a and R64b at I-10 and 347th Ave.
1289          HC       2
              *

1290          KK     62b   BASIN
1291          KM    A Subbasin of T2N-R5W-S32 at Thomas Rd. and East of 347th Ave.
1292          KM    L=1.04, Lca=0.51, S=38.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.4
1293          BA   0.245
1294          LG    0.30    0.25    4.15    0.44       0
1295          UI       0      33     101     200     280     312     276     204     147     102
1296          UI      72      53      35      24      21       8       8       8       8       0
1297          UI       0       0       0       0       0       0       0       0       0       0
1298          UI       0       0       0       0       0       0       0       0       0       0
1299          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1300          KK    R62b   ROUTE
1301          KM    Route 62b to 62a in Wash T2N-R5W-S32
1302          RS       5    FLOW      -1
1303          RC   0.060   0.050   0.060    5554  0.0076    0.00
1304          RX    0.00   40.40  161.60  202.00  218.00  258.40  379.60  420.00
1305          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1306          KK     62a   BASIN
1307          KM    A Subbasin of T2N-R5W-S32 at I-10 and 347th Ave.
1308          KM    L=1.38, Lca=0.66, S=46.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.1
1309          BA   0.586
1310          LG    0.30    0.25    4.15    0.44       0
1311          UI       0      66     150     334     483     601     621     570     437     325
1312          UI     244     183     134     106      73      55      45      29      16      16
1313          UI      16      16      16       0       0       0       0       0       0       0
1314          UI       0       0       0       0       0       0       0       0       0       0
1315          UI       0       0       0       0       0       0       0       0       0       0
              *

1316          KK    C62a COMBINE
1317          KM    Combine 62a and R62b at I-10 and 347th Ave.
1318          HC       2
              *

1319          KK   CC62a COMBINE
1320          KM    Combine C62a and C64a at I-10 and 347th Ave.
1321          HC       2
              *

1322          KK    R62a   ROUTE
1323          KM    Route 62a to 60c in Dickey Wash
1324          RS       4    FLOW      -1
1325          RC   0.060   0.050   0.060    5737  0.0038    0.00
1326          RX    0.00   30.50  122.00  152.50  182.50  213.00  304.50  335.00
1327          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1328          KK     60c   BASIN
1329          KM    A Subbasin of Dickey Wash at Van Buren St. and 347th Ave.
1330          KM    L=2.20, Lca=0.90, S=35.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=42.6
1331          BA   1.044
1332          LG    0.30    0.25    4.35    0.40       1
1333          UI       0      82      91     266     411     558     685     751     799     759
1334          UI     684     567     455     372     307     244     199     163     135     110
1335          UI      87      69      56      57      30      21      20      20      20      20
1336          UI      20      20       0       0       0       0       0       0       0       0
1337          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1338          KK    C60c COMBINE
1339          KM    Combine 60c and R62a at Van Buren St. and 347th Ave.
1340          HC       2
              *

1341          KK    R60c   ROUTE
1342          KM    Route 60c to 60b in Dickey Wash
1343          RS       5    FLOW      -1
1344          RC   0.060   0.050   0.060    5841  0.0051    0.00
1345          RX    0.00   69.50  278.00  347.50  397.50  467.00  675.50  745.00
1346          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1347          KK     60b   BASIN
1348          KM    A Subbasin of Dickey Wash at Buckeye Rd. and West of 347th Ave.
1349          KM    L=2.31, Lca=1.05, S=32.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=47.0
1350          BA   1.111
1351          LG    0.29    0.25    4.55    0.35       4
1352          UI       0      79      81     210     349     485     595     696     747     761
1353          UI     729     667     546     455     382     313     262     222     175     150
1354          UI     125     102      83      71      54      55      43      20      19      20
1355          UI      19      20      19      20      19       0       0       0       0       0
1356          UI       0       0       0       0       0       0       0       0       0       0
              *

1357          KK    C60b COMBINE
1358          KM    Combine 60b and R60c at Buckeye Rd. and West of 347th Ave.
1359          HC       2
              *

1360          KK    R60b   ROUTE
1361          KM    Route 60b to 60a in Dickey Wash
1362          RS       7    FLOW      -1
1363          RC   0.060   0.050   0.060    6955  0.0046    0.00
1364          RX    0.00  137.50  550.00  687.50  747.50  885.00 1297.50 1435.00
1365          RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
              *

1366          KK     60a   BASIN
1367          KM    A Subbasin of Dickey Wash at South of Lower Buckeye Rd., West of 347th Ave.
1368          KM    L=1.70, Lca=0.92, S=35.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=39.0
1369          BA   0.771
1370          LG    0.29    0.25    4.90    0.29       4
1371          UI       0      66      92     239     371     499     580     631     634     570
1372          UI     462     373     294     238     192     148     121     103      70      63
1373          UI      46      45      25      17      16      16      16      17      16       0
1374          UI       0       0       0       0       0       0       0       0       0       0
1375          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1376          KK    C60a COMBINE
1377          KM    Combine 60a and R60b at South of Lower Buckeye Rd and West of 347th Ave.
1378          HC       2
              *

1379          KK   CC40b COMBINE
1380          KM    Combine C40b and C60a at South of Lower Buckeye Rd and West of 347th Ave.
1381          HC       2
              *

1382          KK    R40b   ROUTE
1383          KM    Route 40b to 40a in Phillips Wash
1384          RS       3    FLOW      -1
1385          RC   0.060   0.045   0.060    4432  0.0050    0.00
1386          RX    0.00  112.50  450.00  562.50  632.50  745.00 1082.50 1195.00
1387          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1388          KK     40a   BASIN
1389          KM    A Subbasin of Phillips Wash at Broadway Rd. and 347th Ave.
1390          KM    L=1.15, Lca=0.67, S=29.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.8
1391          BA   0.268
1392          LG    0.30    0.25    4.55    0.35       2
1393          UI       0      30      64     144     213     264     278     260     206     154
1394          UI     116      88      65      49      38      28      20      18       7       7
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1395        UI       7       7       7       0       0       0       0       0       0       0
1396        UI       0       0       0       0       0       0       0       0       0       0
1397        UI       0       0       0       0       0       0       0       0       0       0
            *

1398        KK    C40a COMBINE
1399        KM    Combine 40a and R40b at Broadway Rd. and 347th Ave.
1400        HC       2
            *

1401        KK     36c   BASIN
1402        KM    A Subbasin of Luke Wash at Buckeye Rd. and East of 347th Ave.
1403        KM    L=2.99, Lca=1.17, S=32.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=53.7
1404        BA   1.085
1405        LG    0.30    0.25    4.45    0.37       2
1406        UI       0      68      68     136     244     354     445     526     600     632
1407        UI     648     648     595     514     452     372     320     277     229     195
1408        UI     166     139     123     106      84      72      66      46      46      47
1409        UI      27      16      17      17      16      17      16      17      16      17
1410        UI       0       0       0       0       0       0       0       0       0       0
            *

1411        KK    R36c   ROUTE
1412        KM    Route 36c to 36b in Luke Wash
1413        RS       5    FLOW      -1
1414        RC   0.050   0.045   0.050    5419  0.0063    0.00
1415        RX    0.00   79.30  317.20  396.50  446.50  525.80  763.70  843.00
1416        RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1417        KK     36b   BASIN
1418        KM    A Subbasin of Luke Wash at Lower Buckeye Rd. and East of 347th Ave.
1419        KM    L=1.73, Lca=0.79, S=38.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.6
1420        BA   1.059
1421        LG    0.30    0.25    4.65    0.32       2
1422        UI       0      97     157     379     584     772     886     930     893     748
1423        UI     590     470     370     286     228     177     147     104      85      67
1424        UI      67      24      23      24      24      23      24       0       0       0
1425        UI       0       0       0       0       0       0       0       0       0       0
1426        UI       0       0       0       0       0       0       0       0       0       0
            *

1427        KK    C36b COMBINE
1428        KM    Combine 36b and R36c at Lower Buckeye Rd. and East of 347th Ave.
1429        HC       2
            *

1430        KK    R36b   ROUTE
1431        KM    Route 36b to 36a in Luke Wash
1432        RS       5    FLOW      -1
1433        RC   0.050   0.045   0.050    5446  0.0051    0.00
1434        RX    0.00   71.00  284.00  355.00  380.00  451.00  664.00  735.00
1435        RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
            *

1436        KK     36a   BASIN
1437        KM    A Subbasin of Luke Wash at Broadway Rd. and 347th Ave.
1438        KM    L=1.51, Lca=0.64, S=38.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.0
1439        BA   0.677
1440        LG    0.29    0.25    4.70    0.31       3
1441        UI       0      71     146     333     499     622     684     649     544     406
1442        UI     312     243     177     138     109      75      57      50      32      17
1443        UI      18      17      17      18       0       0       0       0       0       0
1444        UI       0       0       0       0       0       0       0       0       0       0
1445        UI       0       0       0       0       0       0       0       0       0       0
            *

1446        KK    C36a COMBINE
1447        KM    Combine 36a and R36b at Broadway Rd. and 347th Ave.
1448        HC       2
            *

1449        KK   CC36a COMBINE
1450        KM    Combine C36a and C40a at Broadway Rd. and 347th Ave.
1451        HC       2
            *

1452        KK    R36a   ROUTE
1453        KM    Route 36a to 30g in Luke Wash
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1454          RS       7    FLOW      -1
1455          RC   0.060   0.045   0.060    6970  0.0046    0.00
1456          RX    0.00   54.00  216.00  270.00  310.00  364.00  526.00  580.00
1457          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1458          KK     30g   BASIN
1459          KM    A Subbasin of Luke Wash at Salome Hwy. and 347th Ave.
1460          KM    L=1.84, Lca=0.92, S=38.0, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=38.8
1461          BA   0.844
1462          LG    0.29    0.25    4.50    0.36       4
1463          UI       0      73     104     261     414     550     640     695     693     628
1464          UI     501     404     321     258     210     158     131     110      78      65
1465          UI      51      50      24      18      18      18      18      18      17       0
1466          UI       0       0       0       0       0       0       0       0       0       0
1467          UI       0       0       0       0       0       0       0       0       0       0
              *

1468          KK    C30g COMBINE
1469          KM    Combine 30g and R36a at Salome Hwy. and 347th Ave.
1470          HC       2
              *

1471          KK     34b   BASIN
1472          KM    A Subbasin of T1N-R5W-S32 at Broadway Rd. and West of 347th Ave.
1473          KM    L=2.36, Lca=1.26, S=28.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=51.8
1474          BA   0.631
1475          LG    0.30    0.25    4.55    0.35       3
1476          UI       0      41      41      88     156     225     277     328     368     389
1477          UI     390     380     343     294     244     208     175     153     122     107
1478          UI      88      77      63      55      43      41      28      28      28      16
1479          UI      10      10      10      10       9      10      10      10      10       0
1480          UI       0       0       0       0       0       0       0       0       0       0
              *

1481          KK    R34b   ROUTE
1482          KM    Route 34b to 34a in Wash T1N-R5W-S32
1483          RS       9    FLOW      -1
1484          RC   0.050   0.050   0.050    7227  0.0053    0.00
1485          RX    0.00   91.00  364.00  455.00  485.00  576.00  849.00  940.00
1486          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1487          KK     34a   BASIN
1488          KM    A Subbasin of T1N-R5W-S32 at Salome Hwy. and West of 347th Ave.
1489          KM    L=2.28, Lca=1.00, S=28.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=47.1
1490          BA   0.446
1491          LG    0.29    0.25    4.70    0.31       5
1492          UI       0      32      32      84     141     193     237     277     301     304
1493          UI     292     268     221     182     155     127     104      90      70      61
1494          UI      50      42      34      28      22      22      18       8       8       7
1495          UI       8       8       8       7       8       0       0       0       0       0
1496          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1497          KK    C34a COMBINE
1498          KM    Combine 34a and R34b at Salome Hwy. and West of 347th Ave.
1499          HC       2
              *

1500          KK   CC30g COMBINE
1501          KM    Combine C30g and C34a at Salome Hwy. and 347th Ave.
1502          HC       2
              *

1503          KK    R30g   ROUTE
1504          KM    Route 30g to 30f in Luke Wash
1505          RS       6    FLOW      -1
1506          RC   0.060   0.045   0.060    6597  0.0049    0.00
1507          RX    0.00  170.00  680.00  850.00  880.00 1050.00 1560.00 1730.00
1508          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1509          KK     30f   BASIN
1510          KM    A Subbasin of Luke Wash at South of Baseline Rd. and 347th Ave.
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1511          KM    L=3.46, Lca=1.20, S=27.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=59.4
1512          BA   1.771
1513          LG    0.30    0.25    4.55    0.35       1
1514          UI       0     100     101     150     321     452     585     693     828     895
1515          UI     932     966     944     896     817     698     590     524     449     385
1516          UI     335     289     245     214     188     158     150     106     105      87
1517          UI      68      69      69      44      25      24      25      24      25      24
1518          UI      25      24      25      24       0       0       0       0       0       0
              *

1519          KK    C30f COMBINE
1520          KM    Combine 30f and R30g at South of Baseline Rd. and 347th Ave.
1521          HC       2
              *

1522          KK    R30f   ROUTE
1523          KM    Route 30f to 30e in Luke Wash
1524          RS       4    FLOW      -1
1525          RC   0.060   0.045   0.060    4599  0.0044    0.00
1526          RX    0.00  162.50  650.00  812.50  842.50 1005.00 1492.50 1655.00
1527          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1528          KK     30e   BASIN
1529          KM    A Subbasin of Luke Wash at South of Dobbins Rd. and East of 347th Ave.
1530          KM    L=1.26, Lca=0.62, S=39.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.3
1531          BA   0.400
1532          LG    0.30    0.25    5.30    0.24       1
1533          UI       0      46     112     240     350     424     434     384     290     213
1534          UI     159     119      87      65      49      32      32      11      11      11
1535          UI      12      11       0       0       0       0       0       0       0       0
1536          UI       0       0       0       0       0       0       0       0       0       0
1537          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1538          KK    C30e COMBINE
1539          KM    Combine 30e and R30f at South of Dobbins Rd. and East of 347th Ave.
1540          HC       2
              *

1541          KK    R30e   ROUTE
1542          KM    Route 30e to 30d in Luke Wash
1543          RS       3    FLOW      -1
1544          RC   0.060   0.045   0.060    4256  0.0047    0.00
1545          RX    0.00  138.50  554.00  692.50  762.50  901.00 1316.50 1455.00
1546          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1547          KK     30d   BASIN
1548          KM    A Subbasin of Luke Wash at Elliot Rd. and East of 347th Ave.
1549          KM    L=2.11, Lca=1.00, S=37.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=43.3
1550          BA   0.615
1551          LG    0.30    0.25    4.50    0.36       0
1552          UI       0      48      49     153     233     319     389     433     461     445
1553          UI     409     339     270     225     187     150     121     100      82      70
1554          UI      51      46      33      32      26      12      11      12      12      12
1555          UI      11      12       0       0       0       0       0       0       0       0
1556          UI       0       0       0       0       0       0       0       0       0       0
              *

1557          KK    C30d COMBINE
1558          KM    Combine 30d and R30e at Elliot Rd. and East of 347th Ave.
1559          HC       2
              *

1560          KK    R30d   ROUTE
1561          KM    Route 30d to 20a in Luke Wash
1562          RS       4    FLOW      -1
1563          RC   0.060   0.045   0.060    3027  0.0053    0.00
1564          RX    0.00  105.00  420.00  525.00  555.00  660.00  975.00 1080.00
1565          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1566          KK   CC20a COMBINE
1567          KM    Combine C20a and R30d South of Elliot Rd. and East of 347th Ave.
1568          HC       2
              *

1569          KK    R20a   ROUTE
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1570          KM    Route CC20a to 30c in luke Wash
1571          RS       2    FLOW      -1
1572          RC   0.060   0.045   0.060    2904  0.0048    0.00
1573          RX    0.00   71.50  286.00  357.50  397.50  469.00  683.50  755.00
1574          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *
1                                          HEC-1 INPUT                                                    PAGE 41

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1575          KK     30c   BASIN
1576          KM    A Subbasin of Luke Wash at Narramore Rd. and 339th Ave.
1577          KM    L=1.14, Lca=0.53, S=28.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.4
1578          BA   0.243
1579          LG    0.30    0.25    4.40    0.38       9
1580          UI       0      29      73     157     227     270     270     226     170     123
1581          UI      91      67      49      36      27      19      13       8       7       7
1582          UI       7       0       0       0       0       0       0       0       0       0
1583          UI       0       0       0       0       0       0       0       0       0       0
1584          UI       0       0       0       0       0       0       0       0       0       0
              *

1585          KK    C30c COMBINE
1586          KM    Combine R20a and 30c
1587          HC       2
              *

1588          KK     32b   BASIN
1589          KM    A Subbasin of Minor Tributary at UPRR and Elliot Rd.
1590          KM    L=1.19, Lca=0.55, S=50.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.2
1591          BA   0.476
1592          LG    0.30    0.25    4.60    0.34       0
1593          UI       0      61     181     368     509     590     542     407     300     210
1594          UI     150     108      77      54      42      23      15      15      15      15
1595          UI       0       0       0       0       0       0       0       0       0       0
1596          UI       0       0       0       0       0       0       0       0       0       0
1597          UI       0       0       0       0       0       0       0       0       0       0
              *

1598          KK    R32b   ROUTE
1599          KM    Route 32b to 32a in Wash Minor Tributary
1600          RS       6    FLOW      -1
1601          RC   0.050   0.045   0.050    5658  0.0053    0.00
1602          RX    0.00   39.00  156.00  195.00  205.00  244.00  361.00  400.00
1603          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1604          KK     32a   BASIN
1605          KM    A Subbasin of Minor Tributary at Narramore Rd. and 339th Ave.
1606          KM    L=1.24, Lca=0.61, S=37.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.3
1607          BA   0.289
1608          LG    0.30    0.25    4.55    0.35       1
1609          UI       0      33      81     173     253     306     315     277     209     154
1610          UI     115      85      64      47      35      23      23       8       8       8
1611          UI       8       9       0       0       0       0       0       0       0       0
1612          UI       0       0       0       0       0       0       0       0       0       0
1613          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE 42

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1614          KK    C32a COMBINE
1615          KM    Combine 32a and R32b at Narramore Rd. and 339th Ave.
1616          HC       2
              *

1617          KK   CC30c COMBINE
1618          KM    Combine C30c and C32a at Narramore Rd. and 339th Ave.
1619          HC       2
              *

1620          KK    R30c   ROUTE
1621          KM    Route 30c to 30b in Luke Wash
1622          RS       9    FLOW      -1
1623          RC   0.075   0.070   0.075    6381  0.0047    0.00
1624          RX    0.00  158.50  634.00  792.50  822.50  981.00 1456.50 1615.00
1625          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1626          KK     30b   BASIN
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1627          KM    A Subbasin of Luke Wash at Old US80 and West of 331st Ave.
1628          KM    L=1.64, Lca=0.85, S=31.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=38.1
1629          BA   0.508
1630          LG    0.29    0.25    4.60    0.34       9
1631          UI       0      45      66     166     256     341     401     426     423     370
1632          UI     297     239     190     148     120      93      75      61      48      35
1633          UI      30      27      11      11      11      11      11      11      11       0
1634          UI       0       0       0       0       0       0       0       0       0       0
1635          UI       0       0       0       0       0       0       0       0       0       0
              *

1636          KK    C30b COMBINE
1637          KM    Combine 30b and R30c at Old US80 and 331st Ave.
1638          HC       2
              *

1639          KK     78b   BASIN
1640          KM    A Subbasin of East Main Trib at Broadway Rd. and 335th Ave.
1641          KM    L=1.54, Lca=0.65, S=37.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.6
1642          BA   0.479
1643          LG    0.30    0.25    4.80    0.30       2
1644          UI       0      49      97     229     335     435     464     457     394     294
1645          UI     229     175     132     101      81      56      46      34      29      12
1646          UI      12      12      12      12       0       0       0       0       0       0
1647          UI       0       0       0       0       0       0       0       0       0       0
1648          UI       0       0       0       0       0       0       0       0       0       0
              *

1649          KK    R78b   ROUTE
1650          KM    Route 78b to 78a in East Main Trib
1651          RS       5    FLOW      -1
1652          RC   0.055   0.060   0.055    3996  0.0065    0.00
1653          RX    0.00   85.00  340.00  425.00  455.00  540.00  795.00  880.00
1654          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1655          KK     78a   BASIN
1656          KM    A Subbasin of East Main Trib at North of Southern Ave. and 335th Ave.
1657          KM    L=0.85, Lca=0.46, S=35.5, Kn=0.047, S-Graph=DESERT/RANGELAND, Tlag=24.0
1658          BA   0.151
1659          LG    0.30    0.25    5.30    0.24       2
1660          UI       0      21      73     140     189     201     167     116      82      56
1661          UI      39      28      18      14       7       5       5       5       0       0
1662          UI       0       0       0       0       0       0       0       0       0       0
1663          UI       0       0       0       0       0       0       0       0       0       0
1664          UI       0       0       0       0       0       0       0       0       0       0
              *

1665          KK    C78a COMBINE
1666          KM    Combine 78a and R78b at North of Southern Ave. and 335th Ave.
1667          HC       2
              *

1668          KK     77b   BASIN
1669          KM    A Subbasin of T1N-R5W-S28E at Broadway Rd. and East of 335th Ave.
1670          KM    L=1.50, Lca=0.63, S=35.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
1671          BA   0.442
1672          LG    0.30    0.25    4.65    0.32       1
1673          UI       0      46      93     216     321     404     442     422     357     267
1674          UI     207     159     118      91      72      50      39      31      24      11
1675          UI      11      12      11      11       0       0       0       0       0       0
1676          UI       0       0       0       0       0       0       0       0       0       0
1677          UI       0       0       0       0       0       0       0       0       0       0
              *

1678          KK    R77b   ROUTE
1679          KM    Route 77b to 77a in Wash T1N-R5W-S28E
1680          RS       5    FLOW      -1
1681          RC   0.055   0.060   0.055    4056  0.0069    0.00
1682          RX    0.00   80.50  322.00  402.50  442.50  523.00  764.50  845.00
1683          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1684          KK     77a   BASIN
1685          KM    A Subbasin of T1N-R5W-S28E at North of Southern Ave. and 335th Ave.
1686          KM    L=1.17, Lca=0.59, S=39.4, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=27.4
1687          BA   0.245
1688          LG    0.29    0.25    4.40    0.38       3
1689          UI       0      30      81     173     244     286     274     223     164     118
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1690          UI      84      61      47      32      22      20       7       8       7       8
1691          UI       7       0       0       0       0       0       0       0       0       0
1692          UI       0       0       0       0       0       0       0       0       0       0
1693          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1694          KK    C77a COMBINE
1695          KM    Combine 77a and R77b at North of Southern Ave. and 335th Ave.
1696          HC       2
              *

1697          KK   CC77a COMBINE
1698          KM    Combine C77a and C78a at North of Southern Ave. and 335th Ave.
1699          HC       2
              *

1700          KK    R77a   ROUTE
1701          KM    Route 77a to 70h in East Main Trib
1702          RS       4    FLOW      -1
1703          RC   0.060   0.055   0.060    3568  0.0056    0.00
1704          RX    0.00  133.40  533.60  667.00  733.00  866.40 1266.60 1400.00
1705          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1706          KK     70h   BASIN
1707          KM    A Subbasin of East Main Trib at South of Southern Ave. and 335th Ave.
1708          KM    L=1.32, Lca=0.70, S=37.9, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=30.8
1709          BA   0.293
1710          LG    0.29    0.25    5.00    0.28       5
1711          UI       0      32      71     157     233     289     304     284     225     168
1712          UI     128      96      70      54      41      31      23      19       8       8
1713          UI       8       7       8       0       0       0       0       0       0       0
1714          UI       0       0       0       0       0       0       0       0       0       0
1715          UI       0       0       0       0       0       0       0       0       0       0
              *

1716          KK    C70h COMBINE
1717          KM    Combine 70h and R77a at South of Southern Ave. and 335th Ave.
1718          HC       2
              *

1719          KK     70g   BASIN
1720          KM    A Subbasin of T1N-R5W-S33N at South of Southern Ave., West of 335th Ave.
1721          KM    L=3.51, Lca=1.87, S=33.0, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=69.7
1722          BA   1.633
1723          LG    0.29    0.25    4.55    0.35       4
1724          UI       0      79      79      79     196     282     380     460     546     612
1725          UI     685     715     755     750     749     715     659     579     520     451
1726          UI     404     353     315     277     240     214     185     164     148     130
1727          UI     121      97      85      83      65      55      53      54      54      23
1728          UI      19      19      19      19      20      19      19      19      20      19
              *

1729          KK    C70g COMBINE
1730          KM    Combine 70g and C70h at South of Southern Ave. and 335th Ave.
1731          HC       2
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1732          KK    R70g   ROUTE
1733          KM    Route 70g to 70f in East Main Trib
1734          RS       4    FLOW      -1
1735          RC   0.060   0.055   0.060    2950  0.0041    0.00
1736          RX    0.00  120.00  480.00  600.00  640.00  760.00 1120.00 1240.00
1737          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1738          KK     70f   BASIN
1739          KM    A Subbasin of East Main Trib at Salome Hwy. and Baseline Rd.
1740          KM    L=1.51, Lca=0.79, S=34.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.4
1741          BA   0.392
1742          LG    0.30    0.25    5.10    0.26       1
1743          UI       0      37      64     152     233     303     348     353     331     268
1744          UI     209     165     127     100      78      61      46      40      25      26
1745          UI      15       9       9       9       9      10       9       0       0       0
1746          UI       0       0       0       0       0       0       0       0       0       0
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1747          UI       0       0       0       0       0       0       0       0       0       0
              *

1748          KK    C70f COMBINE
1749          KM    Combine 70f and R70g at Salome Hwy. and Baseline Rd.
1750          HC       2
              *

1751          KK     75a   BASIN
1752          KM    A Subbasin of T1N-R5W-S33E at Salome Hwy. and Baseline Rd.
1753          KM    L=1.85, Lca=0.95, S=32.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=41.4
1754          BA   0.460
1755          LG    0.30    0.25    4.80    0.30       2
1756          UI       0      37      44     124     195     260     317     347     361     340
1757          UI     292     243     191     158     127     104      80      69      56      41
1758          UI      38      26      25      19      10       9       9       9       9       9
1759          UI       9       0       0       0       0       0       0       0       0       0
1760          UI       0       0       0       0       0       0       0       0       0       0
              *

1761          KK    C75a COMBINE
1762          KM    Combine 75a and C70f at Salome Hwy. and Baseline Rd.
1763          HC       2
              *

1764          KK    R70f   ROUTE
1765          KM    Route 70f to 74a in East Main Trib
1766          RS       2    FLOW      -1
1767          RC   0.060   0.055   0.060    1071  0.0056    0.00
1768          RX    0.00  128.00  512.00  640.00  715.00  843.00 1227.00 1355.00
1769          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1770          KK     74b   BASIN
1771          KM    A Subbasin of T1N-R5W-S33W at Salome Hwy. and 339th Ave.
1772          KM    L=1.81, Lca=0.90, S=36.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=39.4
1773          BA   0.665
1774          LG    0.30    0.25    4.45    0.37       1
1775          UI       0      57      77     201     314     419     495     536     540     494
1776          UI     403     327     260     209     167     133     107      87      65      58
1777          UI      39      38      27      14      14      14      14      14      13       0
1778          UI       0       0       0       0       0       0       0       0       0       0
1779          UI       0       0       0       0       0       0       0       0       0       0
              *

1780          KK    R74b   ROUTE
1781          KM    Route 74b to 74a in Wash T1N-R5W-S33W
1782          RS       6    FLOW      -1
1783          RC   0.050   0.045   0.050    3352  0.0054    0.00
1784          RX    0.00  147.00  588.00  735.00  805.00  952.00 1393.00 1540.00
1785          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
              *

1786          KK     74a   BASIN
1787          KM    A Subbasin of T1N-R5W-S33W at Salome Hwy. and East of 339th Ave.
1788          KM    L=1.19, Lca=0.50, S=38.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.6
1789          BA   0.309
1790          LG    0.30    0.25    4.60    0.34       0
1791          UI       0      39     112     232     322     374     353     270     197     141
1792          UI     101      72      53      38      27      18      10      10       9      10
1793          UI       0       0       0       0       0       0       0       0       0       0
1794          UI       0       0       0       0       0       0       0       0       0       0
1795          UI       0       0       0       0       0       0       0       0       0       0
              *

1796          KK    C74a COMBINE
1797          KM    Combine 74a and R74b at Salome Hwy. and South of Baseline Rd.
1798          HC       2
              *

1799          KK   CC74a COMBINE
1800          KM    Combine C74a and R70f at Salome Hwy. and South of Baseline Rd.
1801          HC       2
              *

1802          KK    R74a   ROUTE
1803          KM    Route 74a to 70e in East Main Trib
1804          RS       6    FLOW      -1
1805          RC   0.050   0.045   0.050    4623  0.0043    0.00
```

```
1806          RX    0.00  168.50  674.00  842.50 1032.50 1201.00 1706.50 1875.00
1807          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *
1                                        HEC-1 INPUT                                                    PAGE 47

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1808          KK     70e   BASIN
1809          KM    A Subbasin of East Main Trib at Dobbins Rd. and East of 339th Ave.
1810          KM    L=1.82, Lca=0.71, S=35.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.3
1811          BA   1.372
1812          LG    0.30    0.25    4.60    0.34       0
1813          UI       0     127     207     501     775    1020    1152    1219    1161     957
1814          UI     759     602     468     368     283     228     184     136     105      87
1815          UI      78      31      31      31      31      31      31       0       0       0
1816          UI       0       0       0       0       0       0       0       0       0       0
1817          UI       0       0       0       0       0       0       0       0       0       0
              *

1818          KK    C70e COMBINE
1819          KM    Combine 70e and R74a at Dobbins Rd. and East of 339th Ave.
1820          HC       2
              *

1821          KK    R70e   ROUTE
1822          KM    Route 70e to 73a in East Main Trib
1823          RS       2    FLOW      -1
1824          RC   0.050   0.045   0.050    2256  0.0044    0.00
1825          RX    0.00  118.50  474.00  592.50  722.50  841.00 1196.50 1315.00
1826          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1827          KK     73b   BASIN
1828          KM    A Subbasin of T1S-R5W-S09W at Dobbins Rd. and 331st Ave.
1829          KM    L=1.62, Lca=0.70, S=28.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.0
1830          BA   0.606
1831          LG    0.30    0.25    4.60    0.34       0
1832          UI       0      57      94     224     351     453     517     544     511     421
1833          UI     332     261     204     163     121      98      79      60      44      39
1834          UI      31      13      14      14      14      14      14       0       0       0
1835          UI       0       0       0       0       0       0       0       0       0       0
1836          UI       0       0       0       0       0       0       0       0       0       0
              *

1837          KK    R73b   ROUTE
1838          KM    Route 73b to 73a in Wash T1S-R5W-S09W
1839          RS       7    FLOW      -1
1840          RC   0.045   0.055   0.045    4440  0.0050    0.00
1841          RX    0.00   53.00  212.00  265.00  335.00  388.00  547.00  600.00
1842          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
              *

1843          KK     73a   BASIN
1844          KM    A Subbasin of T1S-R5W-S09W at South of Dobbins Rd., East of 339th Ave.
1845          KM    L=1.61, Lca=0.77, S=26.1, Kn=0.048, S-Graph=DESERT/RANGELAND, Tlag=40.3
1846          BA   0.368
1847          LG    0.31    0.25    4.35    0.41       0
1848          UI       0      31      40     104     165     221     266     288     293     274
1849          UI     229     186     148     121      97      76      62      51      41      33
1850          UI      25      21      20       8       8       7       8       7       8       7
1851          UI       0       0       0       0       0       0       0       0       0       0
1                                        HEC-1 INPUT                                                    PAGE 48

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1852          UI       0       0       0       0       0       0       0       0       0       0
              *

1853          KK    C73a COMBINE
1854          KM    Combine 73a and R73b at South of Dobbins Rd. and East of 339th Ave.
1855          HC       2
              *

1856          KK   CC70e COMBINE
1857          KM    Combine C73a and R70e at South of Dobbins Rd. and East of 339th Ave.
1858          HC       2
              *

1859          KK    R73a   ROUTE
1860          KM    Route 73a to 70d in East Main Trib
1861          RS       2    FLOW      -1
1862          RC   0.050   0.045   0.050    2646  0.0083    0.00
```

```
1863          RX    0.00  109.50  438.00  547.50  622.50  732.00 1060.50 1170.00
1864          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1865          KK     70d   BASIN
1866          KM    A Subbasin of East Main Trib at UPRR and East of 339th Ave.
1867          KM    L=1.35, Lca=0.67, S=42.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.5
1868          BA   0.486
1869          LG    0.30    0.25    4.70    0.31       0
1870          UI       0      53     121     267     392     491     508     471     369     275
1871          UI     207     158     113      88      65      49      36      29      14      13
1872          UI      13      13      13       0       0       0       0       0       0       0
1873          UI       0       0       0       0       0       0       0       0       0       0
1874          UI       0       0       0       0       0       0       0       0       0       0
              *

1875          KK    C70d COMBINE
1876          KM    Combine 70d and R73a UPRR and East of 339th Ave.
1877          HC       2
              *

1878          KK    R70d   ROUTE
1879          KM    Route 70d to 70c in East Main Tributary
1880          RS       9    FLOW      -1
1881          RC   0.055   0.055   0.055    8370  0.0053    0.00
1882          RX    0.00  173.00  692.00  865.00 1030.00 1203.00 1722.00 1895.00
1883          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1884          KK     70c   BASIN
1885          KM    A Subbasin of East Main Trib at Narramore Rd. and West of 331st Ave.
1886          KM    L=2.29, Lca=1.02, S=33.2, Kn=0.047, S-Graph=DESERT/RANGELAND, Tlag=48.0
1887          BA   0.742
1888          LG    0.30    0.25    4.60    0.34       2
1889          UI       0      52      52     131     222     310     382     444     488     495
1890          UI     483     454     373     310     265     217     182     152     123     104
1891          UI      89      78      54      56      35      36      36      18      12      13
1892          UI      13      12      13      13      12      13       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1893          UI       0       0       0       0       0       0       0       0       0       0
              *

1894          KK    C70c COMBINE
1895          KM    Combine 70c and R70d at Narramore Rd. and West of 331st Ave.
1896          HC       2
              *

1897          KK     72b   BASIN
1898          KM    A Subbasin of East Sub Trib at South of Elliot Rd., West of 331st Ave.
1899          KM    L=1.92, Lca=0.78, S=44.8, Kn=0.051, S-Graph=MOUNTAIN        , Tlag=41.6
1900          BA   1.187
1901          LG    0.32    0.25    4.15    0.47       2
1902          UI       0      96     114     311     497     646     746     984     983     644
1903          UI     557     500     443     386     334     269     235     216     185     151
1904          UI     123     111     105      75      73      61      48      47      47      31
1905          UI      19      18      18      19      18      19      18      18      19       0
1906          UI       0       0       0       0       0       0       0       0       0       0
              *

1907          KK    R72b   ROUTE
1908          KM    Route 72b to 72a in East Sub Tributary
1909          RS       5    FLOW      -1
1910          RC   0.050   0.075   0.050    3300  0.0049    0.00
1911          RX    0.00   70.00  280.00  350.00  530.00  600.00  810.00  880.00
1912          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1913          KK     72a   BASIN
1914          KM    A Subbasin of East Sub Trib at Narramore Rd. and 333rd Ave.
1915          KM    L=1.36, Lca=0.66, S=118, Kn=0.048, S-Graph=MOUNTAIN        , Tlag=26.8
1916          BA   0.443
1917          LG    0.31    0.25    4.20    0.45       1
1918          UI       0      56     156     319     436     600     374     303     253     202
1919          UI     150     128     101      72      63      45      40      28      27      16
1920          UI      11      11      10      11      11       0       0       0       0       0
1921          UI       0       0       0       0       0       0       0       0       0       0
1922          UI       0       0       0       0       0       0       0       0       0       0
              *

1923          KK    C72a COMBINE
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1924          KM    Combine 72a and R72b at Narramore Rd. and 333rd Ave.
1925          HC       2
              *

1926          KK   CC70c COMBINE
1927          KM    Combine C70c and C72a at Narramore Rd. and 333rd Ave.
1928          HC       2
              *
1                                        HEC-1 INPUT                                                    PAGE 50

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1929          KK    R70c   ROUTE
1930          KM    Route 70c to 70b in East Main Tributary
1931          RS       4    FLOW      -1
1932          RC   0.055   0.055   0.055    2956  0.0041    0.00
1933          RX    0.00   81.50  326.00  407.50  497.50  579.00  823.50  905.00
1934          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1935          KK     70b   BASIN
1936          KM    A Subbasin of East Main Trib at Old US80 and 331st Ave.
1937          KM    L=0.84, Lca=0.39, S=123, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=17.0
1938          BA   0.333
1939          LG    0.30    0.25    4.40    0.38       2
1940          UI       0      92     355     619     467     324     227     155     109      75
1941          UI      51      33      25      12      13      13       0       0       0       0
1942          UI       0       0       0       0       0       0       0       0       0       0
1943          UI       0       0       0       0       0       0       0       0       0       0
1944          UI       0       0       0       0       0       0       0       0       0       0
              *

1945          KK    C70b COMBINE
1946          KM    Combine 70b and R70c at Old US80 and 331st Ave.
1947          HC       2
              *

1948          KK   CC30b COMBINE
1949          KM    Combine C70b and C30b at Old US80 and 331st Ave.
1950          KM    (total flow for the Bridge and Culvert)
1951          HC       2
              *

1952          KK     71b   BASIN
1953          KM    A Subbasin of T1S-R5W-S22N at Old US 80 and East of 331st Ave.
1954          KM    L=1.27, Lca=0.59, S=165, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=22.0
1955          BA   0.290
1956          LG    0.30    0.25    4.00    0.47       2
1957          UI       0      44     178     309     462     304     233     183     134     102
1958          UI      77      55      44      33      22      21       9       8       9       8
1959          UI       9       0       0       0       0       0       0       0       0       0
1960          UI       0       0       0       0       0       0       0       0       0       0
1961          UI       0       0       0       0       0       0       0       0       0       0
              *

1962          KK    R71b   ROUTE
1963          KM    Route 71b to 71a in Wash T1S-R5W-S22N
1964          RS       7    FLOW      -1
1965          RC   0.050   0.075   0.050    4928  0.0162    0.00
1966          RX    0.00   39.50  158.00  197.50  217.50  257.00  375.50  415.00
1967          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
              *
1                                        HEC-1 INPUT                                                    PAGE 51

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1968          KK     71a   BASIN
1969          KM    A Subbasin of T1S-R5W-S22N at Old US 80 and East of 331st Ave.
1970          KM    L=0.95, Lca=0.56, S=84.6, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=21.9
1971          BA   0.262
1972          LG    0.30    0.25    4.10    0.46       1
1973          UI       0      41     159     280     417     275     210     165     122      92
1974          UI      70      50      38      30      20      19       8       8       8       7
1975          UI       8       0       0       0       0       0       0       0       0       0
1976          UI       0       0       0       0       0       0       0       0       0       0
1977          UI       0       0       0       0       0       0       0       0       0       0
              *

1978          KK    C71a COMBINE
1979          KM    Combine 71a and R71b at Old US80 and East of 331st Ave.
1980          HC       2
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                *

1981            KK   CC70b COMBINE
1982            KM    Combine CC30b and C71a at Old US80 and East of 331st Ave.
1983            HC       2
                *

1984            KK    R70b   ROUTE
1985            KM    Route CC70b to 70a in Luke Wash
1986            RS       2    FLOW      -1
1987            RC   0.055   0.055   0.055    2206  0.0027    0.00
1988            RX    0.00   55.00  220.00  275.00  315.00  370.00  535.00  590.00
1989            RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
                *

1990            KK     70a   BASIN
1991            KM    A Subbasin of East Main Trib at North of Arlington Canal and East of 331st A
1992            KM    L=0.46, Lca=0.25, S=26.0, Kn=0.056, S-Graph=DESERT/RANGELAND, Tlag=19.1
1993            BA   0.103
1994            LG    0.34    0.25    4.45    0.41       1
1995            UI       0      22      87     148     170     138      86      55      35      22
1996            UI      13       8       5       4       5       0       0       0       0       0
1997            UI       0       0       0       0       0       0       0       0       0       0
1998            UI       0       0       0       0       0       0       0       0       0       0
1999            UI       0       0       0       0       0       0       0       0       0       0
                *

2000            KK    C70a COMBINE
2001            KM    Combine 70a and R70b at North of Arlington Canal and East of 331st Ave.
2002            HC       2
                *

2003            KK     30a   BASIN
2004            KM    A Subbasin of Luke Wash at Arlington Canal and 331st Ave.
2005            KM    L=0.35, Lca=0.19, S=45.2, Kn=0.066, S-Graph=DESERT/RANGELAND, Tlag=16.5
2006            BA   0.036
2007            LG    0.36    0.25    4.25    0.53      17
2008            UI       0       9      34      56      63      45      28      17      11       6
2009            UI       4       2       2       1       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 52

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2010            UI       0       0       0       0       0       0       0       0       0       0
2011            UI       0       0       0       0       0       0       0       0       0       0
2012            UI       0       0       0       0       0       0       0       0       0       0
                *

2013            KK    C30a COMBINE
2014            KM    Combine 30a and C70a at Arlington Canal and 331st Ave.
2015            HC       2
                *

2016            KK     15a   BASIN
2017            KM    A Subbasin at Old US 80 and West of 339th Ave.
2018            KM    L=1.19, Lca=0.49, S=33.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.1
2019            BA   0.514
2020            LG    0.30    0.25    4.65    0.32       1
2021            UI       0      68     209     411     579     651     580     434     310     217
2022            UI     152     115      76      53      46      16      17      16      16       0
2023            UI       0       0       0       0       0       0       0       0       0       0
2024            UI       0       0       0       0       0       0       0       0       0       0
2025            UI       0       0       0       0       0       0       0       0       0       0
                *

2026            KK     16a   BASIN
2027            KM    A Subbasin at Old US 80 and East of 339th Ave.
2028            KM    L=0.93, Lca=0.46, S=40.8, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=23.7
2029            BA   0.218
2030            LG    0.29    0.25    4.60    0.34       3
2031            UI       0      32     116     220     289     297     232     160     111      74
2032            UI      52      36      22      16       8       7       8       0       0       0
2033            UI       0       0       0       0       0       0       0       0       0       0
2034            UI       0       0       0       0       0       0       0       0       0       0
2035            UI       0       0       0       0       0       0       0       0       0       0
                *

2036            KK     23a   BASIN
2037            KM    A Subbasin at Old US 80 and 335th Ave.
2038            KM    L=1.10, Lca=0.49, S=29.2, Kn=0.053, S-Graph=DESERT/RANGELAND, Tlag=31.7
2039            BA   0.353
2040            LG    0.32    0.25    4.65    0.35       5
2041            UI       0      39      85     192     281     350     369     342     270     202
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2042        UI     152     116      83      66      48      37      26      23      10       9
2043        UI      10       9      10       0       0       0       0       0       0       0
2044        UI       0       0       0       0       0       0       0       0       0       0
2045        UI       0       0       0       0       0       0       0       0       0       0
            *

2046        KK     33a   BASIN
2047        KM    A Subbasin at Arlington Canal and East of 331st Ave.
2048        KM    L=0.70, Lca=0.33, S=34.4, Kn=0.070, S-Graph=DESERT/RANGELAND, Tlag=29.4
2049        BA   0.167
2050        LG    0.39    0.25    4.35    0.50       0
2051        UI       0      19      46      99     146     177     181     160     121      90
2052        UI      66      50      37      28      20      14      12       5       5       5
2053        UI       4       5       0       0       0       0       0       0       0       0
2054        UI       0       0       0       0       0       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2055        UI       0       0       0       0       0       0       0       0       0       0
            *

2056        KK     35a   BASIN
2057        KM    A Subbasin at Arlington Canal and West of 323rd Ave.
2058        KM    L=0.38, Lca=0.17, S=52.5, Kn=0.068, S-Graph=DESERT/RANGELAND, Tlag=16.3
2059        BA   0.057
2060        LG    0.38    0.24    4.20    0.54       0
2061        UI       0      18      67     106     101      63      36      22      13       7
2062        UI       3       2       0       0       0       0       0       0       0       0
2063        UI       0       0       0       0       0       0       0       0       0       0
2064        UI       0       0       0       0       0       0       0       0       0       0
2065        UI       0       0       0       0       0       0       0       0       0       0
            *

2066        KK   DUMMY COMBINE
2067        KM    Dummy Combining
2068        HC       5
            *

2069        KK   DUMMY COMBINE
2070        KM    Dummy Combining
2071        HC       3
            *

2072        KK     79b   BASIN
2073        KM    A Subbasin of T1S-R5W-S22S at Narramore Rd. and 323rd Ave.
2074        KM    L=1.06, Lca=0.49, S=206, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=18.4
2075        BA   0.362
2076        LG    0.30    0.25    3.95    0.40       1
2077        UI       0      86     335     569     565     358     268     181     136      90
2078        UI      65      47      32      22      13      13      13       0       0       0
2079        UI       0       0       0       0       0       0       0       0       0       0
2080        UI       0       0       0       0       0       0       0       0       0       0
2081        UI       0       0       0       0       0       0       0       0       0       0
            *

2082        KK    R79b   ROUTE
2083        KM    Route 79b to 79a in Wash T1S-R5W-S22S
2084        RS       3    FLOW      -1
2085        RC   0.075   0.075   0.075    4398  0.0175    0.00
2086        RX    0.00   15.00   60.00   75.00  100.00  115.00  160.00  175.00
2087        RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
            *

2088        KK     79a   BASIN
2089        KM    A Subbasin of T1S-R5W-S22S at Arlington Canal Rd. and 323rd Ave.
2090        KM    L=1.28, Lca=0.60, S=89.2, Kn=0.047, S-Graph=DESERT/RANGELAND, Tlag=26.1
2091        BA   0.515
2092        LG    0.30    0.25    4.00    0.47       0
2093        UI       0      66     197     402     558     636     587     442     319     227
2094        UI     160     117      82      58      46      23      16      17      16      16
2095        UI       0       0       0       0       0       0       0       0       0       0
2096        UI       0       0       0       0       0       0       0       0       0       0
2097        UI       0       0       0       0       0       0       0       0       0       0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2098        KK    C79a COMBINE
2099        KM    Combine 79a and R79b at Arlington Canal Rd. and 323rd Ave.
2100        HC       2
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2101            KK     80b   BASIN
2102            KM    A Subbasin of T1N-R5W-S22 at Buckeye Rd. and East of 339th Ave.
2103            KM    L=1.04, Lca=0.46, S=44.2, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=24.4
2104            BA   0.278
2105            LG    0.30    0.25    4.50    0.36       1
2106            UI       0      38     128     249     339     365     311     219     156     106
2107            UI      76      52      36      26      15      10       9       9       0       0
2108            UI       0       0       0       0       0       0       0       0       0       0
2109            UI       0       0       0       0       0       0       0       0       0       0
2110            UI       0       0       0       0       0       0       0       0       0       0
                *

2111            KK    R80b   ROUTE
2112            KM    Route 80b to 80a in Wash T1N-R5W-S22
2113            RS       3    FLOW      -1
2114            RC   0.065   0.050   0.065    4668  0.0069    0.00
2115            RX    0.00   27.00  108.00  135.00  165.00  192.00  273.00  300.00
2116            RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
                *

2117            KK     80a   BASIN
2118            KM    A Subbasin of T1N-R5W-S22 at South of Buckeye Rd. and 331st Ave.
2119            KM    L=1.19, Lca=0.55, S=45.5, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=27.3
2120            BA   0.337
2121            LG    0.30    0.25    4.45    0.37       2
2122            UI       0      41     114     238     338     393     381     307     222     161
2123            UI     115      85      63      43      31      27      10      10      10      10
2124            UI      10       0       0       0       0       0       0       0       0       0
2125            UI       0       0       0       0       0       0       0       0       0       0
2126            UI       0       0       0       0       0       0       0       0       0       0
                *

2127            KK    C80a COMBINE
2128            KM    Combine 80a and R80b at South of Buckeye Rd. and 331st Ave.
2129            HC       2
                *

2130            KK     81b   BASIN
2131            KM    A Subbasin of T1N-R5W-S15 at Buckeye Rd. and West of 331st Ave.
2132            KM    L=2.05, Lca=0.86, S=39.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.1
2133            BA   0.512
2134            LG    0.30    0.25    4.45    0.37       3
2135            UI       0      43      56     146     234     310     372     405     411     380
2136            UI     317     257     204     166     133     105      86      71      55      45
2137            UI      33      30      28      10      11      10      11      10      10      11
2138            UI       0       0       0       0       0       0       0       0       0       0
2139            UI       0       0       0       0       0       0       0       0       0       0
                *
1                                          HEC-1 INPUT                                          PAGE 55

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2140            KK    R81b   ROUTE
2141            KM    Route 81b to 81a in Wash T1N-R5W-S15
2142            RS       2    FLOW      -1
2143            RC   0.065   0.050   0.065    2533  0.0079    0.00
2144            RX    0.00   37.00  148.00  185.00  245.00  282.00  393.00  430.00
2145            RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
                *

2146            KK     81a   BASIN
2147            KM    A Subbasin of T1N-R5W-S15 at South of Buckeye Rd. and 331st Ave.
2148            KM    L=0.52, Lca=0.29, S=61.1, Kn=0.043, S-Graph=DESERT/RANGELAND, Tlag=13.9
2149            BA   0.078
2150            LG    0.28    0.25    4.30    0.41       8
2151            UI       0      34     129     177     123      68      35      18      10       4
2152            UI       5       0       0       0       0       0       0       0       0       0
2153            UI       0       0       0       0       0       0       0       0       0       0
2154            UI       0       0       0       0       0       0       0       0       0       0
2155            UI       0       0       0       0       0       0       0       0       0       0
                *

2156            KK    C81a COMBINE
2157            KM    Combine 81a and R81b at South of Buckeye Rd. and 331st Ave.
2158            HC       2
                *

2159            KK   DUMMY COMBINE
2160            KM    Dummy Combining
2161            HC       4
```

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                 *
2162             KK     82b   BASIN
2163             KM    A Subbasin at I-10 and East of 339th Ave.
2164             KM    L=1.04, Lca=0.49, S=44.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.4
2165             BA   0.265
2166             LG    0.30    0.25    4.20    0.43       0
2167             UI       0      36     122     237     324     348     296     209     149     101
2168             UI      71      50      35      25      14       9       9       9       0       0
2169             UI       0       0       0       0       0       0       0       0       0       0
2170             UI       0       0       0       0       0       0       0       0       0       0
2171             UI       0       0       0       0       0       0       0       0       0       0
                 *

2172             KK    R82b   ROUTE
2173             KM    Route 82b to the middle of 82a in Wash T1N-R5W-S10
2174             RS       4    FLOW      -1
2175             RC   0.055   0.045   0.055    5300  0.0083    0.00
2176             RX    0.00   27.50  110.00  137.50  187.50  215.00  297.50  325.00
2177             RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
                 *
1                                          HEC-1 INPUT                                                    PAGE 56

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2178             KK     84b   BASIN
2179             KM    A Subbasin of T1N-R5W-S04 at North of McDowell Rd. and East of 339th Ave.
2180             KM    L=1.32, Lca=0.61, S=42.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.2
2181             BA   0.347
2182             LG    0.30    0.25    4.15    0.44       0
2183             UI       0      40      97     210     306     373     376     332     249     185
2184             UI     137     101      76      56      42      27      26      10      10      10
2185             UI      10       9       0       0       0       0       0       0       0       0
2186             UI       0       0       0       0       0       0       0       0       0       0
2187             UI       0       0       0       0       0       0       0       0       0       0
                 *

2188             KK    R84b   ROUTE
2189             KM    Route 84b to 84a in Wash T1N-R5W-S04
2190             RS       3    FLOW      -1
2191             RC   0.055   0.060   0.055    4440  0.0079    0.00
2192             RX    0.00   38.50  154.00  192.50  232.50  271.00  386.50  425.00
2193             RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
                 *

2194             KK     84a   BASIN
2195             KM    A Subbasin of T1N-R5W-S04 at I-10 and West of 331st Ave.
2196             KM    L=0.71, Lca=0.38, S=36.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=19.9
2197             BA   0.223
2198             LG    0.30    0.25    4.30    0.41       0
2199             UI       0      44     169     301     353     307     200     127      83      52
2200             UI      34      23       9      10       9       0       0       0       0       0
2201             UI       0       0       0       0       0       0       0       0       0       0
2202             UI       0       0       0       0       0       0       0       0       0       0
2203             UI       0       0       0       0       0       0       0       0       0       0
                 *

2204             KK    C84a COMBINE
2205             KM    Combine 84a and R84b at I-10 and West of 331st Ave.
2206             HC       2
                 *

2207             KK    R84a   ROUTE
2208             KM    Route c84a to middel of 82a in Wash T1N-R5W-S10
2209             RS       1    FLOW      -1
2210             RC   0.055   0.045   0.055    3000  0.0083    0.00
2211             RX    0.00   27.50  110.00  137.50  187.50  215.00  297.50  325.00
2212             RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
                 *

2213             KK    C82b COMBINE
2214             KM    Combine C84a and R82b at middel of 82a
2215             HC       2
                 *
1                                          HEC-1 INPUT                                                    PAGE 57

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2216             KK   R82b1   ROUTE
2217             KM    Route C82b to 82a in Wash T1N-R5W-S10
2218             RS       2    FLOW      -1
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2219          RC   0.055   0.045   0.055    2500  0.0083    0.00
2220          RX    0.00   27.50  110.00  137.50  187.50  215.00  297.50  325.00
2221          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2222          KK     82a   BASIN
2223          KM    A Subbasin of T1N-R5W-S10 at Van Buren and 331st Ave.
2224          KM    L=1.49, Lca=0.71, S=49.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.5
2225          BA   0.588
2226          LG    0.30    0.25    4.45    0.37       0
2227          UI       0      62     132     302     445     558     603     565     465     347
2228          UI     263     203     151     114      88      67      45      43      21      15
2229          UI      16      15      15      16       0       0       0       0       0       0
2230          UI       0       0       0       0       0       0       0       0       0       0
2231          UI       0       0       0       0       0       0       0       0       0       0
              *

2232          KK    C82a COMBINE
2233          KM    Combine 82a and R82b1 at Van Buren and 331st Ave.
2234          HC       2
              *

2235          KK     831   BASIN
2236          KM    A Subbasin of T3N-R5W-S32E at Northern Ave. and East of 347th Ave.
2237          KM    L=1.28, Lca=0.75, S=62.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.0
2238          BA   0.555
2239          LG    0.30    0.25    4.80    0.30       4
2240          UI       0      64     160     343     493     602     606     526     398     290
2241          UI     218     159     118      88      66      44      39      16      16      15
2242          UI      16      16       0       0       0       0       0       0       0       0
2243          UI       0       0       0       0       0       0       0       0       0       0
2244          UI       0       0       0       0       0       0       0       0       0       0
              *

2245          KK     83k   BASIN
2246          KM    A Subbasin of T2N-R5W-S33E at Northern Ave. and East of 347th Ave.
2247          KM    L=1.30, Lca=0.66, S=109, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.0
2248          BA   0.315
2249          LG    0.30    0.25    4.10    0.46       8
2250          UI       0      42     136     265     372     405     355     257     184     128
2251          UI      88      66      45      29      23      10      10      10      10       0
2252          UI       0       0       0       0       0       0       0       0       0       0
2253          UI       0       0       0       0       0       0       0       0       0       0
2254          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2255          KK    C83k COMBINE
2256          KM    Combine 83k and 831 at Northern Ave. and East of 347th Ave.
2257          HC       2
              *

2258          KK    R83k   ROUTE
2259          KM    Route 83k to 83j in Wash T2N-5W-S33E
2260          RS       3    FLOW      -1
2261          RC   0.060   0.050   0.060    4228  0.0062    0.00
2262          RX    0.00   46.00  184.00  230.00  250.00  296.00  434.00  480.00
2263          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

2264          KK     83j   BASIN
2265          KM    A Subbasin of T2N-R5W-S33E at South of Northern Ave. and 339th Ave.
2266          KM    L=1.15, Lca=0.59, S=41.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.5
2267          BA   0.163
2268          LG    0.30    0.26    3.48    0.55       0
2269          UI       0      20      54     113     160     190     183     149     109      79
2270          UI      57      41      32      21      15      14       5       5       4       5
2271          UI       5       0       0       0       0       0       0       0       0       0
2272          UI       0       0       0       0       0       0       0       0       0       0
2273          UI       0       0       0       0       0       0       0       0       0       0
              *

2274          KK    C83j COMBINE
2275          KM    Combine 83j and R83k at South of Northern Ave. and 339th Ave.
2276          HC       2
              *

2277          KK     89b   BASIN
2278          KM    A Subbasin of T2N-R5W-S05W at Northern Ave. and 339th Ave.
2279          KM    L=1.16, Lca=0.57, S=74.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.5
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2280          BA   0.283
2281          LG    0.30    0.25    4.00    0.47       2
2282          UI       0      39     129     250     342     372     317     226     158     109
2283          UI      77      55      37      26      17       9      10       9      10       0
2284          UI       0       0       0       0       0       0       0       0       0       0
2285          UI       0       0       0       0       0       0       0       0       0       0
2286          UI       0       0       0       0       0       0       0       0       0       0
              *

2287          KK    R89b   ROUTE
2288          KM    Route 89b to 89a in Wash T2N-R5W-S05W
2289          RS       2    FLOW      -1
2290          RC   0.050   0.060   0.050    3054  0.0075    0.00
2291          RX    0.00   33.00  132.00  165.00  190.00  223.00  322.00  355.00
2292          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2293          KK     89a   BASIN
2294          KM    A Subbasin of T2N-R5W-S05W at North of Glendale Ave. and 339th Ave.
2295          KM    L=1.01, Lca=0.47, S=47.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.4
2296          BA   0.215
2297          LG    0.30    0.27    3.29    0.63       0
2298          UI       0      30     111     210     282     289     234     160     111      75
2299          UI      53      36      24      19       7       8       7       7       0       0
2300          UI       0       0       0       0       0       0       0       0       0       0
2301          UI       0       0       0       0       0       0       0       0       0       0
2302          UI       0       0       0       0       0       0       0       0       0       0
              *

2303          KK    C89a COMBINE
2304          KM    Combine 89a and R89b at North of Glendale Ave. and 339th Ave.
2305          HC       2
              *

2306          KK   CC83j COMBINE
2307          KM    Combine C83j and C89a at North of Glendale Ave. and 339th Ave.
2308          HC       2
              *

2309          KK    R83j   ROUTE
2310          KM    Route 83j to 88a in Wash T2N-R5W-S33E
2311          RS       1    FLOW      -1
2312          RC   0.060   0.050   0.060    1430  0.0056    0.00
2313          RX    0.00   31.00  124.00  155.00  195.00  226.00  319.00  350.00
2314          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2315          KK     88a   BASIN
2316          KM    A Subbasin of T2N-R5W-S05E at North of Glendale Ave. and 339th Ave.
2317          KM    L=1.52, Lca=0.66, S=40.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.1
2318          BA   0.276
2319          LG    0.30    0.25    4.00    0.47       0
2320          UI       0      29      57     136     202     254     275     266     222     167
2321          UI     128      99      73      56      45      31      24      20      14       7
2322          UI       7       7       7       7       0       0       0       0       0       0
2323          UI       0       0       0       0       0       0       0       0       0       0
2324          UI       0       0       0       0       0       0       0       0       0       0
              *

2325          KK    C88a COMBINE
2326          KM    Combine 88a and R83j at Glendale Ave. and 339th Ave.
2327          HC       2
              *

2328          KK    R88a   ROUTE
2329          KM    Route 88a to 83i in Wash T2N-5W-S33E
2330          RS       2    FLOW      -1
2331          RC   0.060   0.050   0.060    2567  0.0047    0.00
2332          RX    0.00   27.50  110.00  137.50  167.50  195.00  277.50  305.00
2333          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *
1                                          HEC-1 INPUT                                                    PAGE 60

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2334          KK     83i   BASIN
2335          KM    A Subbasin of T2N-R5W-S33E at South of Glendale Ave., West of 339th Ave.
2336          KM    L=1.41, Lca=0.63, S=41.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.6
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2337          BA   0.404
2338          LG    0.30    0.26    3.48    0.55       0
2339          UI       0      45      99     221     323     402     426     390     309     227
2340          UI     175     132      94      75      54      41      31      25      11      11
2341          UI      11      11      11       0       0       0       0       0       0       0
2342          UI       0       0       0       0       0       0       0       0       0       0
2343          UI       0       0       0       0       0       0       0       0       0       0
              *

2344          KK    C83i COMBINE
2345          KM    Combine 83i and R88a at South of Glendale Ave. and West of 339th Ave.
2346          HC       2
              *

2347          KK     83h   BASIN
2348          KM    A Subbasin South of Glendale Ave., West of 339th Ave.
2349          KM    L=1.64, Lca=0.81, S=37.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.2
2350          BA   0.289
2351          LG    0.30    0.25    3.92    0.41       0
2352          UI       0      27      44     105     165     216     246     255     245     201
2353          UI     159     126      99      77      59      48      38      28      22      19
2354          UI      16       6       7       6       7       6       7       0       0       0
2355          UI       0       0       0       0       0       0       0       0       0       0
2356          UI       0       0       0       0       0       0       0       0       0       0
              *

2357          KK    C83h COMBINE
2358          KM    Combine 83h and C83i at South of Glendale Ave. and West of 339th Ave.
2359          HC       2
              *

2360          KK    R83i   ROUTE
2361          KM    Route 83i to 83g in Wash T2N-5W-S33E
2362          RS       3    FLOW      -1
2363          RC   0.060   0.050   0.060    4018  0.0045    0.00
2364          RX    0.00   64.00  256.00  320.00  360.00  424.00  616.00  680.00
2365          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2366          KK     83g   BASIN
2367          KM    A Subbasin of T2N-R5W-S33E at Bethany Home Rd. and 339th Ave.
2368          KM    L=1.60, Lca=0.75, S=41.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=34.2
2369          BA   0.619
2370          LG    0.30    0.27    3.35    0.60       0
2371          UI       0      61     110     260     397     514     568     576     520     406
2372          UI     313     248     189     145     114      91      64      52      41      34
2373          UI      15      14      15      15      15      15       0       0       0       0
2374          UI       0       0       0       0       0       0       0       0       0       0
2375          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2376          KK    C83g COMBINE
2377          KM    Combine 83g and R83i at Bethany Home Rd. and 339th Ave.
2378          HC       2
              *

2379          KK     83f   BASIN
2380          KM    A Subbasin at Bethany Home Rd. and East of 339th Ave.
2381          KM    L=0.62, Lca=0.36, S=61.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=16.7
2382          BA   0.132
2383          LG    0.30    0.27    3.35    0.60       0
2384          UI       0      38     149     239     233     150      89      51      32      19
2385          UI       8       6       6       0       0       0       0       0       0       0
2386          UI       0       0       0       0       0       0       0       0       0       0
2387          UI       0       0       0       0       0       0       0       0       0       0
2388          UI       0       0       0       0       0       0       0       0       0       0
              *

2389          KK    C83f COMBINE
2390          KM    Combine 83f and C83g at Bethany Home Rd. and 339th Ave.
2391          HC       2
              *

2392          KK    R83g   ROUTE
2393          KM    Route 83g to 83e in Wash T2N-5W-S33E
2394          RS       4    FLOW      -1
2395          RC   0.060   0.050   0.060    6004  0.0053    0.00
2396          RX    0.00   66.00  264.00  330.00  400.00  466.00  664.00  730.00
2397          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
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                *

2398            KK     83e   BASIN
2399            KM    A Subbasin of T2N-R5W-S33E at Camelback Rd. and 339th Ave.
2400            KM    L=1.54, Lca=0.67, S=41.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
2401            BA   0.837
2402            LG    0.30    0.27    3.38    0.59       0
2403            UI       0      88     175     410     606     767     836     800     675     507
2404            UI     390     301     225     171     139      92      74      61      44      21
2405            UI      22      21      21      22       0       0       0       0       0       0
2406            UI       0       0       0       0       0       0       0       0       0       0
2407            UI       0       0       0       0       0       0       0       0       0       0
                *

2408            KK    C83e COMBINE
2409            KM    Combine 83e and C83f at Camelback Rd. and 339th Ave.
2410            HC       2
                *

2411            KK    R83e   ROUTE
2412            KM    Route 83e to 83d in Wash T2N-5W-S33E
2413            RS       4    FLOW      -1
2414            RC   0.060   0.050   0.060    4439  0.0059    0.00
2415            RX    0.00   47.50  190.00  237.50  262.50  310.00  452.50  500.00
2416            RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2417            KK     83d   BASIN
2418            KM    A Subbasin of T2N-R5W-S33E at North of Indian School, East of 339th Ave.
2419            KM    L=1.16, Lca=0.59, S=44.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.3
2420            BA   0.230
2421            LG    0.30    0.26    3.55    0.52       0
2422            UI       0      28      78     162     231     269     259     209     151     111
2423            UI      78      59      42      30      21      18       7       7       7       6
2424            UI       7       0       0       0       0       0       0       0       0       0
2425            UI       0       0       0       0       0       0       0       0       0       0
2426            UI       0       0       0       0       0       0       0       0       0       0
                *

2427            KK    C83d COMBINE
2428            KM    Combine 83d and R83e at North of Indian School Rd. and East of 339th Ave.
2429            HC       2
                *

2430            KK     86a   BASIN
2431            KM    A Subbasin of T2N-R5W-S21 at North of Indian School, East of 339th Ave.
2432            KM    L=1.55, Lca=0.71, S=41.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=33.1
2433            BA   0.479
2434            LG    0.30    0.27    3.38    0.59       0
2435            UI       0      48      93     220     326     421     461     450     398     302
2436            UI     233     182     136     103      83      61      48      34      33      14
2437            UI      12      12      11      12      12       0       0       0       0       0
2438            UI       0       0       0       0       0       0       0       0       0       0
2439            UI       0       0       0       0       0       0       0       0       0       0
                *

2440            KK   CC83d COMBINE
2441            KM    Combine C83d and 86a North of Indian School Rd. and East of 339th Ave.
2442            HC       2
                *

2443            KK    R83d   ROUTE
2444            KM    Route 83d to 83c in Wash T2N-5W-S33E
2445            RS       2    FLOW      -1
2446            RC   0.060   0.050   0.060    3074  0.0052    0.00
2447            RX    0.00   54.50  218.00  272.50  297.50  352.00  515.50  570.00
2448            RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
                *

2449            KK     83c   BASIN
2450            KM    A Subbasin of T2N-R5W-S33E at South of Indian School, East of 339th Ave.
2451            KM    L=0.98, Lca=0.47, S=53.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.7
2452            BA   0.278
2453            LG    0.30    0.25    3.92    0.41       0
2454            UI       0      41     155     291     374     388     290     198     136      92
2455            UI      64      42      28      17      10      10      10       0       0       0
2456            UI       0       0       0       0       0       0       0       0       0       0
2457            UI       0       0       0       0       0       0       0       0       0       0
2458            UI       0       0       0       0       0       0       0       0       0       0
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                *
LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2459            KK    C83c COMBINE
2460            KM    Combine 83c and R83d at South of Indian School Rd. and East of 339th Ave.
2461            HC       2
                *

2462            KK     87b   BASIN
2463            KM    A Subbasin at Camelback Rd. and East of 339th Ave.
2464            KM    L=1.09, Lca=0.56, S=36.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.0
2465            BA   0.161
2466            LG    0.30    0.27    3.33    0.61       0
2467            UI       0      20      56     117     164     192     182     143     105      75
2468            UI      54      40      29      21      14      11       5       5       5       5
2469            UI       0       0       0       0       0       0       0       0       0       0
2470            UI       0       0       0       0       0       0       0       0       0       0
2471            UI       0       0       0       0       0       0       0       0       0       0
                *

2472            KK    R87b   ROUTE
2473            KM    Route 87b to 87a in Wash T2N-R5W-S28
2474            RS       9    FLOW      -1
2475            RC   0.050   0.060   0.050    6497  0.0077    0.00
2476            RX    0.00   45.50  182.00  227.50  257.50  303.00  439.50  485.00
2477            RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
                *

2478            KK     87a   BASIN
2479            KM    A Subbasin of T2N-R5W-S28 at South of Indian School, East of 339th Ave.
2480            KM    L=1.41, Lca=0.71, S=39.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
2481            BA   0.273
2482            LG    0.30    0.25    3.88    0.42       0
2483            UI       0      28      58     133     198     251     272     261     220     165
2484            UI     128      98      73      56      45      31      24      20      14       7
2485            UI       7       7       6       7       0       0       0       0       0       0
2486            UI       0       0       0       0       0       0       0       0       0       0
2487            UI       0       0       0       0       0       0       0       0       0       0
                *

2488            KK    C87a COMBINE
2489            KM    Combine 87a and R87b at South of Indian School Rd. and East of 339th Ave.
2490            HC       2
                *

2491            KK   CC83c COMBINE
2492            KM    Combine C83c and C87a at South of Indian School Rd., East of 339th Ave.
2493            HC       2
                *

2494            KK    R83c   ROUTE
2495            KM    Route 83c to 83b in Wash T2N-5W-S33E
2496            RS       3    FLOW      -1
2497            RC   0.060   0.050   0.060    5898  0.0054    0.00
2498            RX    0.00   46.00  184.00  230.00  270.00  316.00  454.00  500.00
2499            RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2500            KK     83b   BASIN
2501            KM    A Subbasin of T2N-R5W-S33E at South of Thomas Rd. and East of 339th Ave.
2502            KM    L=1.57, Lca=0.80, S=39.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.1
2503            BA   0.432
2504            LG    0.30    0.25    4.15    0.44       0
2505            UI       0      41      73     170     262     342     383     393     367     292
2506            UI     226     180     139     107      84      67      50      41      28      28
2507            UI      13      10      10      11      10      10       0       0       0       0
2508            UI       0       0       0       0       0       0       0       0       0       0
2509            UI       0       0       0       0       0       0       0       0       0       0
                *

2510            KK    C83b COMBINE
2511            KM    Combine 83b and R83c at South of Thomas Rd. and East of 339th Ave.
2512            HC       2
                *

2513            KK     85b   BASIN
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```
2514        KM    A Subbasin of T2N-R5W-S33W at South of Indian School Rd. and 339th Ave.
2515        KM    L=0.98, Lca=0.41, S=42.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.4
2516        BA   0.237
2517        LG    0.30    0.25    4.10    0.46       0
2518        UI       0      36     138     252     329     328     245     165     115      74
2519        UI      52      35      24      12       9       8       9       0       0       0
2520        UI       0       0       0       0       0       0       0       0       0       0
2521        UI       0       0       0       0       0       0       0       0       0       0
2522        UI       0       0       0       0       0       0       0       0       0       0
            *

2523        KK    R85b   ROUTE
2524        KM    Route 85b to 85a in Wash T2N-R5W-S33W
2525        RS       6    FLOW      -1
2526        RC   0.055   0.060   0.055    4836  0.0083    0.00
2527        RX    0.00   56.00  224.00  280.00  345.00  401.00  569.00  625.00
2528        RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
            *

2529        KK     85a   BASIN
2530        KM    A Subbasin of T2N-R5W-S33W at South of Thomas Rd. and East of 339th Ave.
2531        KM    L=1.21, Lca=0.64, S=44.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.5
2532        BA   0.315
2533        LG    0.30    0.25    4.15    0.44       0
2534        UI       0      37      95     201     293     346     349     295     222     160
2535        UI     120      86      65      47      35      25      19       9       9       8
2536        UI       9       0       0       0       0       0       0       0       0       0
2537        UI       0       0       0       0       0       0       0       0       0       0
2538        UI       0       0       0       0       0       0       0       0       0       0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2539        KK    C85a COMBINE
2540        KM    Combine 85a and R85b at South of Thomas Rd. and East of 339th Ave.
2541        HC       2
            *

2542        KK   CC83b COMBINE
2543        KM    Combine C83b and C85a at South of Thomas Rd. and East of 339th Ave.
2544        HC       2
            *

2545        KK    R83b   ROUTE
2546        KM    Route 83b to 83a in Wash T2N-5W-S33E
2547        RS       4    FLOW      -1
2548        RC   0.060   0.050   0.060    6084  0.0063    0.00
2549        RX    0.00   51.00  204.00  255.00  320.00  371.00  524.00  575.00
2550        RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
            *

2551        KK     83a   BASIN
2552        KM    A Subbasin of T2N-R5W-S33E at I-10 and West of 331st Ave.
2553        KM    L=1.38, Lca=0.71, S=42.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.6
2554        BA   0.242
2555        LG    0.30    0.25    4.25    0.42       0
2556        UI       0      25      55     122     183     229     245     233     193     143
2557        UI     110      83      63      47      37      27      19      18      10       6
2558        UI       6       6       6       7       0       0       0       0       0       0
2559        UI       0       0       0       0       0       0       0       0       0       0
2560        UI       0       0       0       0       0       0       0       0       0       0
            *

2561        KK    C83a COMBINE
2562        KM    Combine 83a and R83b at I-10 and West of 331st Ave.
2563        HC       2
            *

2564        KK     91b   BASIN
2565        KM    A Subbasin of T2N-R5W-S27S at Indian School Rd. and West of 331st Ave.
2566        KM    L=2.53, Lca=1.34, S=43.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=50.3
2567        BA   0.561
2568        LG    0.30    0.25    4.20    0.43       0
2569        UI       0      37      38      86     151     209     261     312     342     359
2570        UI     356     339     296     252     211     177     149     126     107      86
2571        UI      74      63      56      40      40      27      25      26      17       9
2572        UI       9       9       9       9      10       9       9       9       0       0
2573        UI       0       0       0       0       0       0       0       0       0       0
            *

2574        KK    R91b   ROUTE
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2575          KM    Route 91b to 91a in Wash T2N-R5W-S27S
2576          RS       4    FLOW      -1
2577          RC   0.050   0.060   0.050    4978  0.0084    0.00
2578          RX    0.00   40.00  160.00  200.00  230.00  270.00  390.00  430.00
2579          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *
1                                          HEC-1 INPUT                                                    PAGE 66

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2580          KK     91a   BASIN
2581          KM    A Subbasin of T2N-R5W-S27S at North of Thomas Rd. and East of 331st Ave.
2582          KM    L=1.20, Lca=0.60, S=56.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.6
2583          BA   0.434
2584          LG    0.30    0.25    4.15    0.44       0
2585          UI       0      55     157     326     452     526     495     379     278     196
2586          UI     143     102      74      53      38      26      14      13      13      13
2587          UI       0       0       0       0       0       0       0       0       0       0
2588          UI       0       0       0       0       0       0       0       0       0       0
2589          UI       0       0       0       0       0       0       0       0       0       0
              *

2590          KK    C91a COMBINE
2591          KM    Combine 91a and R91b at North of Thomas Rd. and East of 331st Ave.
2592          HC       2
              *

2593          KK     92b   BASIN
2594          KM    A Subbasin of T2N-R5W-S27N at South of Camelback Rd., East of 331st Ave.
2595          KM    L=1.83, Lca=0.79, S=61.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=34.1
2596          BA   0.700
2597          LG    0.30    0.25    4.50    0.36       0
2598          UI       0      68     127     298     447     586     642     651     593     457
2599          UI     355     276     213     164     128     101      73      56      47      36
2600          UI      17      17      17      17      17      17       0       0       0       0
2601          UI       0       0       0       0       0       0       0       0       0       0
2602          UI       0       0       0       0       0       0       0       0       0       0
              *

2603          KK    R92b   ROUTE
2604          KM    Route 92b to 92a in Wash T2N-R5W-S27N
2605          RS       6    FLOW      -1
2606          RC   0.060   0.050   0.060    7166  0.0067    0.00
2607          RX    0.00   63.50  254.00  317.50  362.50  426.00  616.50  680.00
2608          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2609          KK     92a   BASIN
2610          KM    A Subbasin of T2N-R5W-S27N at South of Indian School, East of 331st Ave.
2611          KM    L=2.35, Lca=1.08, S=45.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.7
2612          BA   0.785
2613          LG    0.30    0.25    4.60    0.34       0
2614          UI       0      59      60     177     277     385     460     527     568     559
2615          UI     521     448     366     299     251     202     170     136     112      93
2616          UI      77      63      49      41      40      25      15      14      15      14
2617          UI      15      14      15       0       0       0       0       0       0       0
2618          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE 67

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2619          KK    C92a COMBINE
2620          KM    Combine 92a and R92b at South of Indian School Rd. and East of 331st Ave.
2621          HC       2
              *
2622          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   63         14e
                V
                V
   73        R14e
                .
                .
   79           .          14d
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                .           .
                .           .
 89         C14d............
                V
                V
 92         R14d
                .
                .
 98             .         14c
                .           .
                .           .
108         C14c............
                V
                V
111         R14c
                .
                .
117             .         14b
                .           .
                .           .
127         C14b............
                V
                V
130         R14b
                .
                .
136             .         14a
                .           .
                .           .
146         C14a............
                .
                .
149             .         12b
                .           V
                .           V
159             .        R12b
                .           .
                .           .
165             .           .         12a
                .           .           .
                .           .           .
175             .        C12a............
                .           .
                .           .
178        CC12a............
                .
                .
181             .         10b
                .           .
                .           .
191         C10b............
                V
                V
194         R10b
                .
                .
200             .         10a
                .           .
                .           .
210         C10a............
                .
                .
213             .         21d
                .           V
                .           V
223             .        R21d
                .           .
                .           .
229             .           .         21c
                .           .           .
                .           .           .
239             .        C21c............
                .           V
                .           V
242             .        R21c
                .           .
                .           .
248             .           .         21b
                .           .           .
                .           .           .
258             .        C21b............
                .           .
                .           .
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261          .           .         24b
             .           .           V
             .           .           V
271          .           .        R24b
             .           .           .
             .           .           .
277          .           .           .         24a
             .           .           .           .
             .           .           .           .
287          .           .        C24a............
             .           .           .
             .           .           .
290          .       CC24a............
             .           V
             .           V
293          .        R21b
             .           .
             .           .
299          .           .         21a
             .           .           .
             .           .           .
309          .        C21a............
             .           V
             .           V
312          .        R21a
             .           .
             .           .
318          .           .         20l
             .           .           .
             .           .           .
328          .        C20l............
             .           .
             .           .
331          .           .         20K
             .           .           V
             .           .           V
341          .           .        R20k
             .           .           .
             .           .           .
347          .           .           .         20j
             .           .           .           .
             .           .           .           .
357          .           .        C20j............
             .           .           .
             .           .           .
360          .       CC20j............
             .           V
             .           V
363          .        R20l
             .           .
             .           .
369          .           .         20i
             .           .           .
             .           .           .
379          .        C20i............
             .           .
             .           .
382          .           .         22c
             .           .           .
             .           .           .
392          .           .           .         22d
             .           .           .           V
             .           .           .           V
402          .           .           .        R22d
             .           .           .           .
             .           .           .           .
408          .           .           .           .         22b
             .           .           .           .           .
             .           .           .           .           .
418          .           .           .        C22b............
             .           .           .           .
             .           .           .           .
421          .           .       CC22b............
             .           .           V
             .           .           V
424          .           .        R22b
             .           .           .
             .           .           .
430          .           .           .         22a
             .           .           .           .
             .           .           .           .
440          .           .        C22a............
             .           .           .
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443          .        CC20i............
             .           V
             .           V
446          .         R20i
             .           .
             .           .
452          .           .         20h
             .           .           .
             .           .           .
462          .         C20h............
             .           V
             .           V
465          .         R20h
             .           .
             .           .
471          .           .         20g
             .           .           .
             .           .           .
481          .         C20g............
             .           V
             .           V
484          .         R20g
             .           .
             .           .
490          .           .         20f
             .           .           .
             .           .           .
500          .         C20f............
             .           V
             .           V
503          .         R20f
             .           .
             .           .
509          .           .         20e
             .           .           .
             .           .           .
519          .         C20e............
             .           V
             .           V
522          .         R20e
             .           .
             .           .
528          .           .         20d
             .           .           .
             .           .           .
538          .         C20d............
             .           V
             .           V
541          .         R20d
             .           .
             .           .
547          .           .         20c
             .           .           .
             .           .           .
557          .         C20c............
             .           V
             .           V
560          .         R20c
             .           .
             .           .
566          .           .         20b
             .           .           .
             .           .           .
576          .         C20b............
             .           V
             .           V
579          .         R20b
             .           .
             .           .
585          .           .         20a
             .           .           .
             .           .           .
595          .         C20a............
             .           .
             .           .
598          .           .         46k
             .           .           .
             .           .           .
610          .           .           .-------->   D46kW
608          .           .       D46kE
             .           .           V
             .           .           V
```

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613          .          .       R46kE
             .          .          .
             .          .          .
619          .          .          .         46j
             .          .          .           .
             .          .          .           .
629          .          .       C46j............
             .          .          .
             .          .          .
634          .          .          .           .<-------   D46kW
632          .          .          .      BD46kW
             .          .          .           V
             .          .          .           V
635          .          .          .       R46kW
             .          .          .           .
             .          .          .           .
641          .          .          .           .         46i
             .          .          .           .           .
             .          .          .           .           .
651          .          .          .        C46i............
             .          .          .           .
             .          .          .           .
654          .          .       CC46i............
             .          .          V
             .          .          V
657          .          .       R46i
             .          .          .
             .          .          .
663          .          .          .         46h
             .          .          .           .
             .          .          .           .
673          .          .       C46h............
             .          .          .
             .          .          .
676          .          .          .         54b
             .          .          .           V
             .          .          .           V
686          .          .          .        R54b
             .          .          .           .
             .          .          .           .
692          .          .          .           .         54a
             .          .          .           .           .
             .          .          .           .           .
702          .          .          .        C54a............
             .          .          .           V
             .          .          .           V
705          .          .          .        R54a
             .          .          .           .
             .          .          .           .
711          .          .          .           .         52a
             .          .          .           .           .
             .          .          .           .           .
721          .          .          .        C52a............
             .          .          .           .
             .          .          .           .
724          .          .       CC46h............
             .          .          V
             .          .          V
727          .          .       R46h
             .          .          .
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733          .          .          .         46g
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743          .          .       C46g............
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746          .          .          .         46f
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756          .          .       C46f............
             .          .          V
             .          .          V
759          .          .       R46f
             .          .          .
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765          .          .          .         46e
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             .          .          .           .
775          .          .       C46e............
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778          .          .          .         56a
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788              .          .     CC46e...........
                 .          .         V
                 .          .         V
791              .          .      R46e
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                 .          .         .
797              .          .         .       46d
                 .          .         .         .
                 .          .         .         .
807              .          .     C46d...........
                 .          .         .
                 .          .         .
810              .          .         .       46c
                 .          .         .         .
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820              .          .     C46c...........
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                 .          .         V
823              .          .     R46c
                 .          .         .
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829              .          .         .       46b
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839              .          .     C46b...........
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                 .          .         .
842              .          .         .       50g
                 .          .         .         V
                 .          .         .         V
852              .          .         .      R50g
                 .          .         .         .
                 .          .         .         .
858              .          .         .         .         50f
                 .          .         .         .           .
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868              .          .         .      C50f...........
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871              .          .         .      R50f
                 .          .         .         .
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877              .          .         .         .         50e
                 .          .         .         .           .
                 .          .         .         .           .
887              .          .         .      C50e...........
                 .          .         .         V
                 .          .         .         V
890              .          .         .      R50e
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896              .          .         .         .         50d
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906              .          .         .      C50d...........
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909              .          .         .         .         50c
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919              .          .         .      C50c...........
                 .          .         .         V
                 .          .         .         V
922              .          .         .      R50d
                 .          .         .         .
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928              .          .         .         .         50b
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938              .          .         .      C50b...........
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                 .          .         .         V
941              .          .         .      R50b
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947              .          .         .         .         50a
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957              .          .         .      C50a...........
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960   .   .   CC46b............
      .   .      V
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963   .   .    R46b
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969   .   .      .        46a
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979   .   .    C46a............
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      .   .      V
982   .   .    R46a
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988   .   .      .        44f
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998   .   .      .         .        44e
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1008  .   .      .       C44e............
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      .   .      .         V
1011  .   .      .       R44e
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1017  .   .      .         .        44d
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1027  .   .      .       C44d............
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1030  .   .      .       R44d
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1036  .   .      .         .        44c
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1046  .   .      .       C44c............
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1049  .   .      .       R44c
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1055  .   .      .         .        44b
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1065  .   .      .       C44b............
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1068  .   .      .       R44b
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1074  .   .      .         .        44a
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1084  .   .      .       C44a............
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      .   .      .         V
1087  .   .      .       R44a
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1093  .   .      .         .        48b
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      .   .      .         .         V
1103  .   .      .         .       R48b
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1109  .   .      .         .         .         48a
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1119  .   .      .         .       C48a............
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1122  .   .      .         .       R48a
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      .   .      .         .         .
1128  .   .      .      CC44a............
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1131  .   .    CC46a............
      .   .      V
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1134             .         .   R44a-d
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1140             .         .         .        40d
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1150             .         .     C40d............
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1153             .         .         .        42b
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1163             .         .         .       R42b
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1169             .         .         .          .         42a
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1179             .         .         .       C42a............
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1182             .         .    CC40d............
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1185             .         .     R40d
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1191             .         .         .        40c
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1201             .         .     C40c............
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1204             .         .     R40c
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1210             .         .         .        40b
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1220             .         .     C40b............
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1223             .         .         .        64d
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1233             .         .         .       R64d
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1239             .         .         .          .         64c
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1249             .         .         .       C64c............
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                 .         .         .          V
1252             .         .         .       R64c
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1258             .         .         .          .         64b
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1268             .         .         .       C64b............
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1271             .         .         .       R64b
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1277             .         .         .          .         64a
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1287             .         .         .       C64a............
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1290             .         .         .          .         62b
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1300             .         .         .          .       R62b
                 .         .         .          .           .
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1306             .         .         .          .           .         62a
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1316             .         .         .          .       C62a............
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1319            .         .         .      CC62a.........
                .         .         .         V
                .         .         .         V
1322            .         .         .       R62a
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1328            .         .         .         .        60c
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1338            .         .         .       C60c.........
                .         .         .         V
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1341            .         .         .       R60c
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1347            .         .         .         .        60b
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1357            .         .         .       C60b.........
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1360            .         .         .       R60b
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1366            .         .         .         .        60a
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1376            .         .         .       C60a.........
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1379            .         .     CC40b.........
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1382            .         .      R40b
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1388            .         .         .        40a
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1398            .         .      C40a.........
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1401            .         .         .        36c
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                .         .         .         V
1411            .         .         .       R36c
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1417            .         .         .         .        36b
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1427            .         .         .       C36b.........
                .         .         .         V
                .         .         .         V
1430            .         .         .       R36b
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1436            .         .         .         .        36a
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1446            .         .         .       C36a.........
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1449            .         .     CC36a.........
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                .         .         V
1452            .         .      R36a
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1458            .         .         .        30g
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1468            .         .      C30g.........
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1471            .         .         .        34b
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                .         .         .         V
1481            .         .         .       R34b
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1487          .           .           .           .         34a
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1497          .           .           .       C34a............
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1500          .           .      CC30g............
              .           .          V
              .           .          V
1503          .           .       R30g
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1509          .           .           .        30f
              .           .           .           .
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1519          .           .       C30f............
              .           .          V
              .           .          V
1522          .           .       R30f
              .           .           .
              .           .           .
1528          .           .           .        30e
              .           .           .           .
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1538          .           .       C30e............
              .           .          V
              .           .          V
1541          .           .       R30e
              .           .           .
              .           .           .
1547          .           .           .        30d
              .           .           .           .
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1557          .           .       C30d............
              .           .          V
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1560          .           .       R30d
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              .           .           .
1566          .      CC20a............
              .          V
              .          V
1569          .       R20a
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1575          .           .        30c
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1585          .       C30c............
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              .           .
1588          .           .        32b
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1598          .           .       R32b
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1604          .           .           .        32a
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1614          .           .       C32a............
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1617          .      CC30c............
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              .          V
1620          .       R30c
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1626          .           .        30b
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1636          .       C30b............
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1639          .           .        78b
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1649          .           .       R78b
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1655          .           .           .        78a
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1665          .         .         .         .
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1678          .         .         .       R77b
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1684          .         .         .          .        77a
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1694          .         .         .       C77a...........
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1697          .         .      CC77a...........
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1700          .         .      R77a
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1706          .         .         .        70h
              .         .         .          .
              .         .         .          .
1716          .         .      C70h...........
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1719          .         .         .        70g
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1729          .         .      C70g...........
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              .         .         V
1732          .         .      R70g
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1738          .         .         .        70f
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1748          .         .      C70f...........
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1751          .         .         .        75a
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1761          .         .      C75a...........
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1764          .         .      R70f
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1770          .         .         .        74b
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1780          .         .         .       R74b
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1786          .         .         .          .        74a
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1796          .         .         .       C74a...........
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1799          .         .      CC74a...........
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1802          .         .      R74a
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1808          .         .         .        70e
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1818          .         .      C70e...........
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1821          .         .      R70e
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1827          .         .         .        73b
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              .         .         .          V
1837          .         .         .       R73b
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1843            .         .         .         .        73a
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1853            .         .         .       C73a............
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1856            .         .      CC70e............
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1859            .         .       R73a
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1865            .         .         .        70d
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1875            .         .       C70d............
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1878            .         .       R70d
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1884            .         .         .        70c
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1894            .         .       C70c............
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1897            .         .         .        72b
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1907            .         .         .       R72b
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1913            .         .         .         .        72a
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1923            .         .         .       C72a............
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1926            .         .      CC70c............
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1929            .         .       R70c
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1935            .         .         .        70b
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1945            .         .       C70b............
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1948            .      CC30b............
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1952            .         .        71b
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1962            .         .       R71b
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1968            .         .         .        71a
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1978            .         .       C71a............
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1981            .      CC70b............
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1984            .       R70b
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1990            .         .        70a
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2000            .       C70a............
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2003            .         .        30a
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2013          .        C30a............
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2016          .          .        15a
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2026          .          .          .        16a
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2036          .          .          .          .        23a
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2046          .          .          .          .          .        33a
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2056          .          .          .          .          .          .        35a
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2066          .          .      DUMMY.............................................
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2069      DUMMY......................
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2072          .         79b
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2082          .        R79b
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2088          .          .        79a
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2098          .        C79a............
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2101          .          .        80b
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2111          .          .       R80b
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2117          .          .          .        80a
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2127          .          .       C80a............
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2140          .          .          .       R81b
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2146          .          .          .          .        81a
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2156          .          .          .       C81a............
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2159      DUMMY...................................
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2162          .         82b
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2172          .        R82b
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2178          .          .        84b
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2188          .          .       R84b
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2194          .          .          .        84a
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2204          .          .       C84a............
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2207          .          .       R84a
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2213          .        C82b............
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2216          .       R82b1
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2222          .           .        82a
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2232          .        C82a............
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2235          .           .        83l
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2245          .           .          .        83k
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2255          .           .       C83k............
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2258          .           .       R83k
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2264          .           .          .        83j
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2274          .           .       C83j............
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              .           .          .
2277          .           .          .        89b
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2287          .           .          .       R89b
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2293          .           .          .          .        89a
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2303          .           .          .       C89a............
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2306          .           .      CC83j............
              .           .          V
              .           .          V
2309          .           .       R83j
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2315          .           .          .        88a
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2325          .           .       C88a............
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2328          .           .       R88a
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              .           .          .
2334          .           .          .        83i
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2344          .           .       C83i............
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2347          .           .          .        83h
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2357          .           .       C83h............
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2360          .           .       R83i
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              .           .          .
2366          .           .          .        83g
              .           .          .          .
              .           .          .          .
2376          .           .       C83g............
              .           .          .
              .           .          .
2379          .           .          .        83f
              .           .          .          .
              .           .          .          .
2389          .           .       C83f............
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                 .         .         V
                 .         .         V
2392             .         .      R83g
                 .         .         .
                 .         .         .
2398             .         .         .        83e
                 .         .         .          .
                 .         .         .          .
2408             .         .      C83e............
                 .         .         V
                 .         .         V
2411             .         .      R83e
                 .         .         .
                 .         .         .
2417             .         .         .        83d
                 .         .         .          .
                 .         .         .          .
2427             .         .      C83d............
                 .         .         .
                 .         .         .
2430             .         .         .        86a
                 .         .         .          .
                 .         .         .          .
2440             .         .     CC83d............
                 .         .         V
                 .         .         V
2443             .         .      R83d
                 .         .         .
                 .         .         .
2449             .         .         .        83c
                 .         .         .          .
                 .         .         .          .
2459             .         .      C83c............
                 .         .         .
                 .         .         .
2462             .         .         .        87b
                 .         .         .          V
                 .         .         .          V
2472             .         .         .       R87b
                 .         .         .          .
                 .         .         .          .
2478             .         .         .          .        87a
                 .         .         .          .          .
                 .         .         .          .          .
2488             .         .         .       C87a............
                 .         .         .          .
                 .         .         .          .
2491             .         .     CC83c............
                 .         .         V
                 .         .         V
2494             .         .      R83c
                 .         .         .
                 .         .         .
2500             .         .         .        83b
                 .         .         .          .
                 .         .         .          .
2510             .         .      C83b............
                 .         .         .
                 .         .         .
2513             .         .         .        85b
                 .         .         .          V
                 .         .         .          V
2523             .         .         .       R85b
                 .         .         .          .
                 .         .         .          .
2529             .         .         .          .        85a
                 .         .         .          .          .
                 .         .         .          .          .
2539             .         .         .       C85a............
                 .         .         .          .
                 .         .         .          .
2542             .         .     CC83b............
                 .         .         V
                 .         .         V
2545             .         .      R83b
                 .         .         .
                 .         .         .
2551             .         .         .        83a
                 .         .         .          .
                 .         .         .          .
2561             .         .      C83a............
                 .         .         .
                 .         .         .
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 2564          .          .          .        91b
               .          .          .          V
               .          .          .          V
 2574          .          .          .       R91b
               .          .          .          .
               .          .          .          .
 2580          .          .          .          .        91a
               .          .          .          .          .
               .          .          .          .          .
 2590          .          .          .       C91a............
               .          .          .          .
               .          .          .          .
 2593          .          .          .          .        92b
               .          .          .          .          V
               .          .          .          .          V
 2603          .          .          .          .       R92b
               .          .          .          .          .
               .          .          .          .          .
 2609          .          .          .          .          .        92a
               .          .          .          .          .          .
               .          .          .          .          .          .
 2619          .          .          .          .       C92a............

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*************************************
 *                                    *                                                    *
*
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                  *    U.S. ARMY CORPS OF ENGINEERS
*
 *              JUN   1998            *                                                    *    HYDROLOGIC ENGINEERING CENTER
*
 *           VERSION 4.1              *                                                    *          609 SECOND STREET
*
 *                                    *                                                    *       DAVIS, CALIFORNIA 95616
*
 *  RUN DATE   07JUL08  TIME  14:50:00 *                                                    *           (916) 756-1104
*
 *                                    *                                                    *
*
 ****************************************
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LUKE WASH FDS - Luke Wash Watershed Zone AE FDS
Flood Control District of Maricopa County
Contract FCD 2007C020
100-Year 6-Hour Storm
NOAA 14 Rainfall Data
DDMSW Version 3.5.2
Multiple Storms
Maricopa County 6-hour Local Storm Distribution
Green and Ampt Loss Method
S-Graph Unit Hydrograph
Existing Land Use Conditions
"Without Structure" Conditions Model (I-10 and UPRR are assumed not to exist)
Model Name: EC06NODK.DAT, Wood/Patel, June 2008

*****************************************************************************
HEC-1 ELEMENT NOMENCLATURE

SUB-BASIN HYDROGRAPH:
   Example: "20a" is the hydrograph from subbasin 20a

SUB-BASIN FLOW DIVERSION:
   Example: "D20aE" is the East component of diversion in Subbasin 20a

CHANNEL ROUTE:
   Example: "R20a" is the surface flow routing from 20a

STORAGE ROUTE:
   Example: "S20a" is the storage routing in Subbasin 20a

HYDROGRAPH COMBINE:
   Example: "C20a" is the combined flow in Subbasin 20a

HYDROGRAPH RETRIEVAL:
   Example: "B20a" is the retrieved flow from Subbasin 20a

"DUMMY" COMBINE:
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                    Example: "DUMMY" is the dummy hydrograph combining to free up a HEC-1
                                 computational path.
                    ******************************************************************************

42 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1JAN99  STARTING DATE
                     ITIME        1200  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      8JAN99  ENDING DATE
                    NDTIME        1035  ENDING TIME
                     ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

43 JD          INDEX STORM NO. 1
                      STRM        2.91  PRECIPITATION DEPTH
                      TRDA         .00  TRANSPOSITION DRAINAGE AREA

44 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                    .03       .03       .05       .05       .05       .15       .15       .15       .03       .03
                    .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

47 JD          INDEX STORM NO. 2
                      STRM        2.89  PRECIPITATION DEPTH
                      TRDA         .50  TRANSPOSITION DRAINAGE AREA

48 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                    .03       .03       .05       .05       .05       .15       .15       .15       .03       .03
                    .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

51 JD          INDEX STORM NO. 3
                      STRM        2.84  PRECIPITATION DEPTH
                      TRDA        2.80  TRANSPOSITION DRAINAGE AREA

52 PI            PRECIPITATION PATTERN
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00       .00       .01       .01       .01       .01       .01       .01       .03
                    .03       .03       .07       .07       .07       .08       .08       .08       .05       .05
                    .05       .02       .02       .02       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

55 JD          INDEX STORM NO. 4
                      STRM        2.68  PRECIPITATION DEPTH
                      TRDA       16.00  TRANSPOSITION DRAINAGE AREA

56 PI            PRECIPITATION PATTERN
                    .01       .01       .00       .00       .00       .00       .00       .00       .00       .01
                    .01       .01       .00       .01       .00       .00       .00       .00       .00       .00
                    .00       .00       .01       .00       .00       .00       .00       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                    .03       .03       .06       .06       .06       .07       .07       .07       .04       .04
                    .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
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                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

59 JD          INDEX STORM NO. 5
                    STRM        2.36  PRECIPITATION DEPTH
                    TRDA       90.00  TRANSPOSITION DRAINAGE AREA

60 PI           PRECIPITATION PATTERN
                    .01       .01       .01       .00       .00       .00       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                    .03       .03       .05       .05       .05       .05       .05       .05       .04       .04
                    .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                    .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                    .01       .01
1
                                                  RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                        TIME IN HOURS,  AREA IN SQUARE MILES

                                        PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION        STATION      FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                          6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                            14e        936.    4.50        144.        36.         12.       1.10
          ROUTED TO
+                           R14e        844.    4.83        144.        36.         12.       1.10
          HYDROGRAPH AT
+                            14d        655.    4.42         77.        19.          6.        .50
          2 COMBINED AT
+                           C14d       1025.    4.75        203.        51.         17.       1.61
          ROUTED TO
+                           R14d        960.    5.08        203.        51.         17.       1.61
          HYDROGRAPH AT
+                            14c       1Q23.    4.50        146.        36.         12.       1.10
          2 COMBINED AT
+                           C14c       1316.    4.75        316.        79.         26.       2.70
          ROUTED TO
+                           R14c       1280.    5.08        316.        79.         26.       2.70
          HYDROGRAPH AT
+                            14b        404.    4.25         36.         9.          3.        .26
          2 COMBINED AT
+                           C14b       1281.    5.00        339.        85.         28.       2.96
          ROUTED TO
+                           R14b       1219.    5.58        337.        85.         28.       2.96
          HYDROGRAPH AT
+                            14a        415.    4.50         59.        15.          5.        .37
          2 COMBINED AT
+                           C14a       1234.    5.50        377.        96.         32.       3.33
          HYDROGRAPH AT
+                            12b        532.    4.50         72.        18.          6.        .45
          ROUTED TO
+                           R12b        423.    5.00         72.        18.          6.        .45
          HYDROGRAPH AT
+                            12a        797.    4.58        136.        34.         11.        .83
          2 COMBINED AT
+                           C12a        921.    4.83        197.        49.         16.       1.28
          2 COMBINED AT
+                          CC12a       1642.    5.17        530.       134.         45.       4.61
          HYDROGRAPH AT
+                            10b        721.    4.58        128.        32.         11.        .86
          2 COMBINED AT
```

+		C10b	1910.	5.00	615.	156.	52.	5.46
	ROUTED TO							
+		R10b	1829.	5.50	612.	156.	52.	5.46
	HYDROGRAPH AT							
+		10a	982.	4.42	124.	31.	10.	.84
	2 COMBINED AT							
+		C10a	1828.	5.50	691.	177.	59.	6.30
	HYDROGRAPH AT							
+		21d	494.	4.58	80.	20.	7.	.49
	ROUTED TO							
+		R21d	406.	5.33	79.	20.	7.	.49
	HYDROGRAPH AT							
+		21c	261.	4.50	34.	9.	3.	.23
	2 COMBINED AT							
+		C21c	419.	5.25	109.	27.	9.	.73
	ROUTED TO							
+		R21c	351.	6.25	107.	27.	9.	.73
	HYDROGRAPH AT							
+		21b	490.	4.58	82.	21.	7.	.55
	2 COMBINED AT							
+		C21b	420.	4.58	172.	44.	15.	1.27
	HYDROGRAPH AT							
+		24b	369.	4.50	51.	13.	4.	.34
	ROUTED TO							
+		R24b	273.	5.42	51.	13.	4.	.34
	HYDROGRAPH AT							
+		24a	498.	4.42	60.	15.	5.	.41
	2 COMBINED AT							
+		C24a	458.	4.42	105.	26.	9.	.74
	2 COMBINED AT							
+		CC24a	710.	4.50	254.	65.	22.	2.02
	ROUTED TO							
+		R21b	609.	5.17	250.	65.	22.	2.02
	HYDROGRAPH AT							
+		21a	770.	4.58	120.	30.	10.	.88
	2 COMBINED AT							
+		C21a	850.	5.00	334.	87.	29.	2.90
	ROUTED TO							
+		R21a	798.	5.42	331.	87.	29.	2.90
	HYDROGRAPH AT							
+		20l	206.	4.25	19.	5.	2.	.13
	2 COMBINED AT							
+		C20l	798.	5.42	340.	91.	30.	3.03
	HYDROGRAPH AT							
+		20K	269.	4.25	26.	6.	2.	.18
	ROUTED TO							
+		R20k	202.	4.75	26.	6.	2.	.18
	HYDROGRAPH AT							
+		20j	315.	4.25	28.	7.	2.	.20
	2 COMBINED AT							
+		C20j	317.	4.25	54.	13.	4.	.38
	2 COMBINED AT							
+		CC20j	829.	5.33	372.	99.	33.	3.41
	ROUTED TO							
+		R20l	804.	5.75	366.	99.	33.	3.41

+	HYDROGRAPH AT	20i	374.	4.42	42.	10.	3.	.29
+	2 COMBINED AT	C20i	803.	5.67	388.	106.	35.	3.70
+	HYDROGRAPH AT	22c	290.	4.33	32.	8.	3.	.22
+	HYDROGRAPH AT	22d	310.	4.42	36.	9.	3.	.24
+	ROUTED TO	R22d	238.	4.75	35.	9.	3.	.24
+	HYDROGRAPH AT	22b	287.	4.25	24.	6.	2.	.16
+	2 COMBINED AT	C22b	293.	4.25	59.	15.	5.	.41
+	2 COMBINED AT	CC22b	538.	4.33	89.	22.	7.	.63
+	ROUTED TO	R22b	436.	5.00	88.	22.	7.	.63
+	HYDROGRAPH AT	22a	499.	4.50	68.	17.	6.	.45
+	2 COMBINED AT	C22a	551.	4.92	143.	36.	12.	1.08
+	2 COMBINED AT	CC20i	1011.	5.33	482.	130.	43.	4.78
+	ROUTED TO	R20i	991.	5.92	475.	130.	43.	4.78
+	HYDROGRAPH AT	20h	1017.	4.58	165.	41.	14.	1.25
+	2 COMBINED AT	C20h	997.	5.83	570.	158.	53.	6.03
+	ROUTED TO	R20h	979.	6.33	561.	158.	53.	6.03
+	HYDROGRAPH AT	20g	1053.	4.50	160.	40.	13.	1.18
+	2 COMBINED AT	C20g	1013.	5.08	641.	184.	61.	7.21
+	ROUTED TO	R20g	980.	6.08	630.	184.	61.	7.21
+	HYDROGRAPH AT	20f	1122.	4.50	177.	44.	15.	1.35
+	2 COMBINED AT	C20f	980.	6.00	701.	212.	71.	8.55
+	ROUTED TO	R20f	962.	6.58	687.	212.	71.	8.55
+	HYDROGRAPH AT	20e	1308.	4.58	215.	54.	18.	1.53
+	2 COMBINED AT	C20e	1044.	5.08	781.	247.	83.	10.09
+	ROUTED TO	R20e	994.	5.50	769.	246.	83.	10.09
+	HYDROGRAPH AT	20d	851.	4.33	91.	23.	8.	.62
+	2 COMBINED AT	C20d	995.	5.50	778.	259.	87.	10.71
+	ROUTED TO	R20d	964.	6.08	774.	258.	87.	10.71

+	HYDROGRAPH AT 20c	1182.	4.58	206.	51.	17.	1.42
+	2 COMBINED AT C20c	997.	5.92	842.	290.	98.	12.13
+	ROUTED TO R20c	978.	6.83	825.	289.	98.	12.13
+	HYDROGRAPH AT 20b	868.	4.67	157.	39.	13.	1.14
+	2 COMBINED AT C20b	978.	6.75	830.	311.	106.	13.27
+	ROUTED TO R20b	967.	7.17	823.	310.	106.	13.27
+	HYDROGRAPH AT 20a	475.	4.42	65.	16.	5.	.37
+	2 COMBINED AT C20a	967.	7.17	824.	319.	109.	13.65
+	HYDROGRAPH AT 46k	690.	4.33	68.	17.	6.	.44
+	DIVERSION TO D46kW	207.	4.33	20.	5.	2.	.44
+	HYDROGRAPH AT D46kE	483.	4.33	48.	12.	4.	.44
+	ROUTED TO R46kE	379.	4.67	48.	12.	4.	.44
+	HYDROGRAPH AT 46j	397.	4.42	45.	11.	4.	.29
+	2 COMBINED AT C46j	615.	4.50	89.	22.	7.	.74
+	HYDROGRAPH AT BD46kW	207.	4.33	20.	5.	2.	.44
+	ROUTED TO R46kW	157.	4.67	20.	5.	2.	.44
+	HYDROGRAPH AT 46i	393.	4.33	40.	10.	3.	.27
+	2 COMBINED AT C46i	432.	4.42	61.	15.	5.	.27
+	2 COMBINED AT CC46i	937.	4.50	142.	35.	12.	1.01
+	ROUTED TO R46i	823.	4.83	141.	35.	12.	1.01
+	HYDROGRAPH AT 46h	470.	4.42	59.	15.	5.	.38
+	2 COMBINED AT C46h	1010.	4.75	188.	47.	16.	1.39
+	HYDROGRAPH AT 54b	357.	4.33	36.	9.	3.	.23
+	ROUTED TO R54b	296.	4.50	35.	9.	3.	.23
+	HYDROGRAPH AT 54a	472.	4.42	56.	14.	5.	.36
+	2 COMBINED AT C54a	718.	4.42	90.	22.	7.	.60
+	ROUTED TO R54a	677.	4.58	90.	22.	7.	.60
	HYDROGRAPH AT						

+	52a	686.	4.42	91.	23.	8.	.58
+ 2 COMBINED AT	C52a	1126.	4.50	167.	42.	14.	1.17
+ 2 COMBINED AT	CC46h	1709.	4.58	324.	82.	27.	2.56
+ ROUTED TO	R46h	1465.	5.33	322.	82.	27.	2.56
+ HYDROGRAPH AT	46g	372.	4.67	68.	17.	6.	.45
+ 2 COMBINED AT	C46g	1562.	5.25	368.	93.	31.	3.01
+ HYDROGRAPH AT	46f	547.	4.58	87.	22.	7.	.58
+ 2 COMBINED AT	C46f	1660.	5.25	428.	108.	36.	3.59
+ ROUTED TO	R46f	1565.	5.58	426.	108.	36.	3.59
+ HYDROGRAPH AT	46e	334.	4.33	33.	8.	3.	.22
+ 2 COMBINED AT	C46e	1565.	5.58	449.	115.	38.	3.81
+ HYDROGRAPH AT	56a	374.	4.42	43.	11.	4.	.30
+ 2 COMBINED AT	CC46e	1565.	5.58	479.	122.	41.	4.11
+ ROUTED TO	R46e	1424.	6.08	468.	120.	40.	4.11
+ HYDROGRAPH AT	46d	451.	4.50	63.	16.	5.	.43
+ 2 COMBINED AT	C46d	1421.	6.08	506.	131.	44.	4.54
+ HYDROGRAPH AT	46c	253.	4.50	34.	8.	3.	.23
+ 2 COMBINED AT	C46c	1418.	6.08	529.	137.	46.	4.76
+ ROUTED TO	R46c	1354.	6.33	518.	135.	45.	4.76
+ HYDROGRAPH AT	46b	431.	4.50	58.	15.	5.	.40
+ 2 COMBINED AT	C46b	1350.	6.33	554.	145.	48.	5.16
+ HYDROGRAPH AT	50g	225.	4.33	23.	6.	2.	.15
+ ROUTED TO	R50g	139.	5.17	22.	6.	2.	.15
+ HYDROGRAPH AT	50f	360.	4.42	44.	11.	4.	.29
+ 2 COMBINED AT	C50f	360.	4.42	67.	17.	6.	.44
+ ROUTED TO	R50f	285.	4.92	66.	17.	6.	.44
+ HYDROGRAPH AT	50e	264.	4.33	25.	6.	2.	.17
+ 2 COMBINED AT	C50e	304.	4.92	89.	22.	7.	.61

+	ROUTED TO	R50e	273.	5.25	88.	22.	7.	.61
+	HYDROGRAPH AT	50d	266.	4.33	26.	7.	2.	.18
+	2 COMBINED AT	C50d	277.	4.50	110.	28.	9.	.79
+	HYDROGRAPH AT	50c	433.	4.75	80.	20.	7.	.55
+	2 COMBINED AT	C50c	614.	4.67	174.	44.	15.	1.33
+	ROUTED TO	R50d	603.	4.83	174.	44.	15.	1.33
+	HYDROGRAPH AT	50b	290.	4.33	30.	8.	3.	.20
+	2 COMBINED AT	C50b	688.	4.67	197.	50.	17.	1.54
+	ROUTED TO	R50b	621.	5.42	194.	50.	17.	1.54
+	HYDROGRAPH AT	50a	645.	4.75	123.	31.	10.	.89
+	2 COMBINED AT	C50a	843.	5.25	286.	74.	25.	2.43
+	2 COMBINED AT	CC46b	1549.	6.33	753.	197.	66.	7.60
+	ROUTED TO	R46b	1503.	6.83	741.	197.	66.	7.60
+	HYDROGRAPH AT	46a	595.	4.58	94.	24.	8.	.81
+	2 COMBINED AT	C46a	1503.	6.83	781.	212.	71.	8.40
+	ROUTED TO	R46a	1459.	7.00	765.	209.	70.	8.40
+	HYDROGRAPH AT	44f	304.	4.50	42.	10.	3.	.27
+	HYDROGRAPH AT	44e	440.	4.58	72.	18.	6.	.46
+	2 COMBINED AT	C44e	683.	4.58	109.	27.	9.	.73
+	ROUTED TO	R44e	531.	5.33	109.	27.	9.	.73
+	HYDROGRAPH AT	44d	650.	4.75	126.	32.	11.	.82
+	2 COMBINED AT	C44d	803.	5.17	217.	54.	18.	1.55
+	ROUTED TO	R44d	754.	5.58	216.	54.	18.	1.55
+	HYDROGRAPH AT	44c	400.	4.50	53.	13.	4.	.34
+	2 COMBINED AT	C44c	752.	5.58	255.	65.	22.	1.89
+	ROUTED TO	R44c	728.	5.83	253.	65.	22.	1.89
+	HYDROGRAPH AT	44b	359.	4.42	43.	11.	4.	.28
+	2 COMBINED AT	C44b	728.	5.83	286.	73.	24.	2.17

+	ROUTED TO	R44b	684.	6.50	277.	73.	24.	2.17
+	HYDROGRAPH AT	44a	568.	4.83	120.	30.	10.	.83
+	2 COMBINED AT	C44a	684.	6.50	357.	95.	32.	3.00
+	ROUTED TO	R44a	680.	6.58	356.	95.	32.	3.00
+	HYDROGRAPH AT	48b	253.	4.33	27.	7.	2.	.20
+	ROUTED TO	R48b	157.	5.33	27.	7.	2.	.20
+	HYDROGRAPH AT	48a	291.	4.50	37.	9.	3.	.28
+	2 COMBINED AT	C48a	291.	4.50	64.	16.	5.	.49
+	ROUTED TO	R48a	251.	4.67	64.	16.	5.	.49
+	2 COMBINED AT	CC44a	705.	6.58	394.	105.	35.	3.49
+	2 COMBINED AT	CC46a	1889.	6.92	1035.	283.	94.	11.89
+	ROUTED TO	R44a-d	1861.	7.42	1026.	283.	94.	11.89
+	HYDROGRAPH AT	40d	586.	4.58	95.	24.	8.	.73
+	2 COMBINED AT	C40d	1856.	7.42	1045.	296.	99.	12.62
+	HYDROGRAPH AT	42b	377.	4.42	45.	11.	4.	.31
+	ROUTED TO	R42b	293.	4.92	45.	11.	4.	.31
+	HYDROGRAPH AT	42a	488.	4.33	53.	13.	4.	.36
+	2 COMBINED AT	C42a	459.	4.33	94.	24.	8.	.67
+	2 COMBINED AT	CC40d	1851.	7.42	1087.	310.	103.	13.29
+	ROUTED TO	R40d	1806.	7.75	1065.	306.	102.	13.29
+	HYDROGRAPH AT	40c	709.	4.33	71.	18.	6.	.50
+	2 COMBINED AT	C40c	1803.	7.75	1074.	316.	105.	13.79
+	ROUTED TO	R40c	1766.	8.25	1061.	314.	105.	13.79
+	HYDROGRAPH AT	40b	371.	4.58	61.	15.	5.	.42
+	2 COMBINED AT	C40b	1762.	8.25	1065.	322.	108.	14.20
+	HYDROGRAPH AT	64d	199.	4.25	17.	4.	1.	.14
+	ROUTED TO	R64d	95.	5.42	17.	4.	1.	.14
	HYDROGRAPH AT							

+		64c	553.	4.58	83.	21.	7.	.64
+	2 COMBINED AT	C64c	530.	4.58	95.	24.	8.	.78
+	ROUTED TO	R64c	464.	4.92	95.	24.	8.	.78
+	HYDROGRAPH AT	64b	648.	4.58	104.	26.	9.	.84
+	2 COMBINED AT	C64b	853.	4.75	177.	44.	15.	1.62
+	ROUTED TO	R64b	794.	5.08	176.	44.	15.	1.62
+	HYDROGRAPH AT	64a	442.	4.42	49.	12.	4.	.38
+	2 COMBINED AT	C64a	811.	5.00	208.	52.	17.	1.99
+	HYDROGRAPH AT	62b	330.	4.33	31.	8.	3.	.25
+	ROUTED TO	R62b	243.	4.75	31.	8.	3.	.25
+	HYDROGRAPH AT	62a	659.	4.42	74.	18.	6.	.59
+	2 COMBINED AT	C62a	657.	4.50	99.	25.	8.	.83
+	2 COMBINED AT	CC62a	1031.	4.83	273.	69.	23.	2.83
+	ROUTED TO	R62a	979.	5.17	270.	69.	23.	2.83
+	HYDROGRAPH AT	60c	798.	4.58	126.	31.	10.	1.04
+	2 COMBINED AT	C60c	1229.	4.92	353.	90.	30.	3.87
+	ROUTED TO	R60c	1184.	5.33	350.	90.	30.	3.87
+	HYDROGRAPH AT	60b	826.	4.67	147.	37.	12.	1.11
+	2 COMBINED AT	C60b	1405.	5.17	446.	115.	38.	4.98
+	ROUTED TO	R60b	1316.	5.75	441.	115.	38.	4.98
+	HYDROGRAPH AT	60a	756.	4.50	113.	28.	9.	.77
+	2 COMBINED AT	C60a	1314.	5.67	507.	133.	44.	5.75
+	2 COMBINED AT	CC40b	1756.	8.17	1296.	397.	132.	19.95
+	ROUTED TO	R40b	1744.	8.42	1293.	396.	132.	19.95
+	HYDROGRAPH AT	40a	329.	4.42	38.	10.	3.	.27
+	2 COMBINED AT	C40a	1739.	8.42	1292.	401.	134.	20.22
+	HYDROGRAPH AT	36c	702.	4.75	136.	34.	11.	1.09
+	ROUTED TO	R36c	638.	5.17	136.	34.	11.	1.09

+	HYDROGRAPH AT	36b	987.	4.50	141.	35.	12.	1.06
+	2 COMBINED AT	C36b	904.	4.67	249.	63.	21.	2.14
+	ROUTED TO	R36b	885.	5.08	248.	63.	21.	2.14
+	HYDROGRAPH AT	36a	784.	4.42	98.	25.	8.	.68
+	2 COMBINED AT	C36a	1044.	4.83	317.	80.	27.	2.82
+	2 COMBINED AT	CC36a	1729.	8.42	1437.	448.	150.	23.04
+	ROUTED TO	R36a	1670.	8.92	1393.	438.	146.	23.04
+	HYDROGRAPH AT	30g	772.	4.50	114.	29.	10.	.84
+	2 COMBINED AT	C30g	1657.	8.92	1397.	451.	151.	23.89
+	HYDROGRAPH AT	34b	476.	4.67	88.	22.	7.	.63
+	ROUTED TO	R34b	393.	5.50	88.	22.	7.	.63
+	HYDROGRAPH AT	34a	399.	4.67	68.	17.	6.	.45
+	2 COMBINED AT	C34a	448.	5.42	143.	36.	12.	1.08
+	2 COMBINED AT	CC30g	1635.	6.58	1430.	463.	155.	24.96
+	ROUTED TO	R30g	1618.	7.08	1422.	463.	155.	24.96
+	HYDROGRAPH AT	30f	963.	4.83	208.	52.	17.	1.77
+	2 COMBINED AT	C30f	1589.	7.08	1425.	483.	162.	26.74
+	ROUTED TO	R30f	1580.	7.42	1420.	483.	162.	26.74
+	HYDROGRAPH AT	30e	541.	4.42	62.	16.	5.	.40
+	2 COMBINED AT	C30e	1574.	7.42	1415.	489.	164.	27.14
+	ROUTED TO	R30e	1563.	7.67	1408.	488.	164.	27.14
+	HYDROGRAPH AT	30d	533.	4.58	82.	21.	7.	.62
+	2 COMBINED AT	C30d	1555.	7.67	1402.	495.	167.	27.75
+	ROUTED TO	R30d	1543.	8.00	1395.	494.	166.	27.75
+	2 COMBINED AT	CC20a	1918.	7.67	1740.	664.	226.	41.40
+	ROUTED TO	R20a	1914.	7.92	1738.	664.	226.	41.40
+	HYDROGRAPH AT	30c	321.	4.33	37.	9.	3.	.24
+	2 COMBINED AT	C30c	1911.	7.92	1736.	667.	227.	41.64

+	HYDROGRAPH AT	32b	665.	4.33	67.	17.	6.	.48
+	ROUTED TO	R32b	478.	4.83	67.	17.	6.	.48
+	HYDROGRAPH AT	32a	364.	4.42	41.	10.	3.	.29
+	2 COMBINED AT	C32a	559.	4.75	101.	25.	8.	.76
+	2 COMBINED AT	CC30c	1908.	7.92	1734.	676.	230.	42.41
+	ROUTED TO	R30c	1884.	8.58	1716.	671.	229.	42.41
+	HYDROGRAPH AT	30b	546.	4.50	79.	20.	7.	.51
+	2 COMBINED AT	C30b	1882.	8.58	1714.	678.	232.	42.91
+	HYDROGRAPH AT	78b	582.	4.42	71.	18.	6.	.48
+	ROUTED TO	R78b	467.	4.83	71.	18.	6.	.48
+	HYDROGRAPH AT	78a	238.	4.33	24.	6.	2.	.15
+	2 COMBINED AT	C78a	489.	4.83	92.	23.	8.	.63
+	HYDROGRAPH AT	77b	533.	4.42	64.	16.	5.	.44
+	ROUTED TO	R77b	426.	4.83	64.	16.	5.	.44
+	HYDROGRAPH AT	77a	326.	4.33	35.	9.	3.	.25
+	2 COMBINED AT	C77a	481.	4.75	94.	24.	8.	.69
+	2 COMBINED AT	CC77a	847.	4.83	171.	43.	14.	1.32
+	ROUTED TO	R77a	763.	5.17	170.	43.	14.	1.32
+	HYDROGRAPH AT	70h	382.	4.42	46.	11.	4.	.29
+	2 COMBINED AT	C70h	780.	5.17	205.	52.	17.	1.61
+	HYDROGRAPH AT	70g	811.	5.00	203.	51.	17.	1.63
+	2 COMBINED AT	C70g	1370.	5.08	367.	93.	31.	3.24
+	ROUTED TO	R70g	1299.	5.42	367.	93.	31.	3.24
+	HYDROGRAPH AT	70f	453.	4.50	60.	15.	5.	.39
+	2 COMBINED AT	C70f	1312.	5.42	407.	103.	34.	3.63
+	HYDROGRAPH AT	75a	455.	4.58	69.	17.	6.	.46
+	2 COMBINED AT	C75a	1358.	5.33	451.	114.	38.	4.09
	ROUTED TO							

+	R70f	1347.	5.42	450.	114.	38.	4.09
HYDROGRAPH AT +	74b	613.	4.50	88.	22.	7.	.67
ROUTED TO +	R74b	525.	5.00	88.	22.	7.	.67
HYDROGRAPH AT +	74a	426.	4.33	43.	11.	4.	.31
2 COMBINED AT +	C74a	549.	4.92	123.	31.	10.	.97
2 COMBINED AT +	CC74a	1570.	5.17	529.	134.	45.	5.07
ROUTED TO +	R74a	1535.	5.67	525.	134.	45.	5.07
HYDROGRAPH AT +	70e	1171.	4.50	167.	42.	14.	1.37
2 COMBINED AT +	C70e	1535.	5.58	631.	161.	54.	6.44
ROUTED TO +	R70e	1518.	5.75	626.	161.	54.	6.44
HYDROGRAPH AT +	73b	625.	4.50	83.	21.	7.	.61
ROUTED TO +	R73b	488.	5.08	83.	21.	7.	.61
HYDROGRAPH AT +	73a	336.	4.50	48.	12.	4.	.37
2 COMBINED AT +	C73a	564.	5.00	121.	30.	10.	.97
2 COMBINED AT +	CC70e	1674.	5.50	694.	178.	59.	7.41
ROUTED TO +	R73a	1657.	5.67	692.	178.	59.	7.41
HYDROGRAPH AT +	70d	613.	4.42	70.	18.	6.	.49
2 COMBINED AT +	C70d	1655.	5.67	730.	189.	63.	7.90
ROUTED TO +	R70d	1596.	6.42	711.	188.	63.	7.90
HYDROGRAPH AT +	70c	583.	4.67	101.	25.	8.	.74
2 COMBINED AT +	C70c	1589.	6.42	747.	203.	68.	8.64
HYDROGRAPH AT +	72b	819.	4.50	131.	33.	11.	1.19
ROUTED TO +	R72b	674.	4.92	131.	33.	11.	1.19
HYDROGRAPH AT +	72a	532.	4.33	57.	14.	5.	.44
2 COMBINED AT +	C72a	718.	4.92	169.	43.	14.	1.63
2 COMBINED AT +	CC70c	1609.	6.33	830.	224.	75.	10.27
ROUTED TO +	R70c	1591.	6.67	826.	224.	75.	10.27
HYDROGRAPH AT +	70b	566.	4.17	46.	12.	4.	.33

+	2 COMBINED AT C70b	1583.	6.67	834.	230.	77.	10.61
+	2 COMBINED AT CC30b	2277.	7.75	1875.	761.	260.	53.52
+	HYDROGRAPH AT 71b	406.	4.25	38.	9.	3.	.29
+	ROUTED TO R71b	267.	4.83	38.	9.	3.	.29
+	HYDROGRAPH AT 71a	366.	4.25	34.	8.	3.	.26
+	2 COMBINED AT C71a	357.	4.25	70.	18.	6.	.55
+	2 COMBINED AT CC70b	2268.	7.75	1868.	763.	260.	54.07
+	ROUTED TO R70b	2259.	8.00	1865.	763.	260.	54.07
+	HYDROGRAPH AT 70a	171.	4.25	13.	3.	1.	.10
+	2 COMBINED AT C70a	2257.	8.00	1863.	763.	261.	54.17
+	HYDROGRAPH AT 30a	62.	4.25	5.	1.	0.	.04
+	2 COMBINED AT C30a	2256.	8.00	1863.	763.	261.	54.21
+	HYDROGRAPH AT 15a	739.	4.33	74.	19.	6.	.51
+	HYDROGRAPH AT 16a	333.	4.25	32.	8.	3.	.22
+	HYDROGRAPH AT 23a	437.	4.42	51.	13.	4.	.35
+	HYDROGRAPH AT 33a	183.	4.42	19.	5.	2.	.17
+	HYDROGRAPH AT 35a	96.	4.17	7.	2.	1.	.06
+	5 COMBINED AT DUMMY	1358.	4.33	160.	40.	13.	1.31
+	3 COMBINED AT DUMMY	2282.	7.83	1896.	840.	287.	61.82
+	HYDROGRAPH AT 79b	581.	4.17	50.	12.	4.	.36
+	ROUTED TO R79b	477.	4.42	50.	12.	4.	.36
+	HYDROGRAPH AT 79a	665.	4.33	65.	16.	5.	.51
+	2 COMBINED AT C79a	948.	4.42	105.	26.	9.	.88
+	HYDROGRAPH AT 80b	404.	4.33	39.	10.	3.	.28
+	ROUTED TO R80b	310.	4.58	39.	10.	3.	.28
+	HYDROGRAPH AT 80a	450.	4.33	47.	12.	4.	.34
+	2 COMBINED AT C80a	617.	4.50	83.	21.	7.	.62
+	HYDROGRAPH AT 81b	495.	4.50	72.	18.	6.	.51

	ROUTED TO							
+		R81b	465.	4.67	72.	18.	6.	.51
	HYDROGRAPH AT							
+		81a	165.	4.17	11.	3.	1.	.08
	2 COMBINED AT							
+		C81a	465.	4.67	82.	21.	7.	.59
	4 COMBINED AT							
+		DUMMY	2272.	7.83	1906.	859.	293.	63.90
	HYDROGRAPH AT							
+		82b	368.	4.33	34.	9.	3.	.26
	ROUTED TO							
+		R82b	282.	4.67	34.	9.	3.	.26
	HYDROGRAPH AT							
+		84b	411.	4.42	45.	11.	4.	.35
	ROUTED TO							
+		R84b	321.	4.67	45.	11.	4.	.35
	HYDROGRAPH AT							
+		84a	366.	4.25	29.	7.	2.	.22
	2 COMBINED AT							
+		C84a	382.	4.58	72.	18.	6.	.57
	ROUTED TO							
+		R84a	364.	4.67	72.	18.	6.	.57
	2 COMBINED AT							
+		C82b	584.	4.67	100.	25.	8.	.83
	ROUTED TO							
+		R82b1	562.	4.75	100.	25.	8.	.83
	HYDROGRAPH AT							
+		82a	669.	4.42	79.	20.	7.	.59
	2 COMBINED AT							
+		C82a	815.	4.58	160.	40.	13.	1.42
	HYDROGRAPH AT							
+		831	719.	4.33	84.	21.	7.	.56
	HYDROGRAPH AT							
+		83k	442.	4.33	44.	11.	4.	.31
	2 COMBINED AT							
+		C83k	1031.	4.33	120.	30.	10.	.87
	ROUTED TO							
+		R83k	893.	4.58	120.	30.	10.	.87
	HYDROGRAPH AT							
+		83j	195.	4.33	20.	5.	2.	.16
	2 COMBINED AT							
+		C83j	962.	4.58	135.	34.	11.	1.03
	HYDROGRAPH AT							
+		89b	389.	4.33	37.	9.	3.	.28
	ROUTED TO							
+		R89b	301.	4.50	37.	9.	3.	.28
	HYDROGRAPH AT							
+		89a	279.	4.33	25.	6.	2.	.22
	2 COMBINED AT							
+		C89a	498.	4.42	61.	15.	5.	.50
	2 COMBINED AT							
+		CC83j	1191.	4.58	177.	44.	15.	1.53
	ROUTED TO							
+		R83j	1163.	4.58	177.	44.	15.	1.53
	HYDROGRAPH AT							

+		88a	302.	4.42	35.	9.	3.	.28
+	2 COMBINED AT	C88a	1291.	4.58	200.	50.	17.	1.81
+	ROUTED TO	R88a	1222.	4.75	199.	50.	17.	1.81
+	HYDROGRAPH AT	83i	444.	4.42	49.	12.	4.	.40
+	2 COMBINED AT	C83i	1309.	4.75	228.	57.	19.	2.21
+	HYDROGRAPH AT	83h	299.	4.50	39.	10.	3.	.29
+	2 COMBINED AT	C83h	1432.	4.67	253.	63.	21.	2.50
+	ROUTED TO	R83i	1335.	4.92	253.	63.	21.	2.50
+	HYDROGRAPH AT	83g	559.	4.42	69.	17.	6.	.62
+	2 COMBINED AT	C83g	1408.	4.92	289.	73.	24.	3.12
+	HYDROGRAPH AT	83f	218.	4.17	15.	4.	1.	.13
+	2 COMBINED AT	C83f	1408.	4.92	298.	75.	25.	3.25
+	ROUTED TO	R83g	1267.	5.25	295.	74.	25.	3.25
+	HYDROGRAPH AT	83e	743.	4.42	88.	22.	7.	.84
+	2 COMBINED AT	C83e	1261.	5.25	343.	87.	29.	4.09
+	ROUTED TO	R83e	1199.	5.58	339.	86.	29.	4.09
+	HYDROGRAPH AT	83d	282.	4.33	28.	7.	2.	.23
+	2 COMBINED AT	C83d	1193.	5.58	354.	90.	30.	4.32
+	HYDROGRAPH AT	86a	476.	4.42	56.	14.	5.	.48
+	2 COMBINED AT	CC83d	1184.	5.58	382.	97.	32.	4.80
+	ROUTED TO	R83d	1132.	5.75	375.	96.	32.	4.80
+	HYDROGRAPH AT	83c	416.	4.25	37.	9.	3.	.28
+	2 COMBINED AT	C83c	1125.	5.75	397.	102.	34.	5.07
+	HYDROGRAPH AT	87b	190.	4.33	19.	5.	2.	.16
+	ROUTED TO	R87b	117.	5.08	19.	5.	2.	.16
+	HYDROGRAPH AT	87a	312.	4.42	37.	9.	3.	.27
+	2 COMBINED AT	C87a	311.	4.42	55.	14.	5.	.43
+	2 COMBINED AT	CC83c	1128.	5.75	420.	108.	36.	5.51

	ROUTED TO						
+	R83c	1071.	6.00	416.	108.	36.	5.51
	HYDROGRAPH AT						
+	83b	439.	4.50	55.	14.	5.	.43
	2 COMBINED AT						
+	C83b	1056.	6.00	443.	115.	38.	5.94
	HYDROGRAPH AT						
+	85b	344.	4.25	30.	7.	2.	.24
	ROUTED TO						
+	R85b	238.	4.75	30.	7.	2.	.24
	HYDROGRAPH AT						
+	85a	382.	4.33	40.	10.	3.	.31
	2 COMBINED AT						
+	C85a	405.	4.58	69.	17.	6.	.55
	2 COMBINED AT						
+	CC83b	1044.	6.00	474.	123.	41.	6.49
	ROUTED TO						
+	R83b	1015.	6.33	469.	123.	41.	6.49
	HYDROGRAPH AT						
+	83a	275.	4.42	32.	8.	3.	.24
	2 COMBINED AT						
+	C83a	1004.	6.33	479.	127.	42.	6.74
	HYDROGRAPH AT						
+	91b	409.	4.67	71.	18.	6.	.56
	ROUTED TO						
+	R91b	373.	5.00	71.	18.	6.	.56
	HYDROGRAPH AT						
+	91a	563.	4.33	56.	14.	5.	.43
	2 COMBINED AT						
+	C91a	477.	4.33	115.	29.	10.	1.00
	HYDROGRAPH AT						
+	92b	718.	4.42	92.	23.	8.	.70
	ROUTED TO						
+	R92b	585.	4.92	92.	23.	8.	.70
	HYDROGRAPH AT						
+	92a	642.	4.58	104.	26.	9.	.79
	2 COMBINED AT						
+	C92a	921.	4.83	176.	44.	15.	1.49

*** NORMAL END OF HEC-1 ***

HEC-1 Models for the 100-Year, 24-Hour Storm with Dike Conditions

(EC24DIKE)

```
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   11JUL08  TIME  16:35:49  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                                HEC-1 INPUT                                                    PAGE  1

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

        1           ID   LUKE WASH FDS - Luke Wash Watershed Zone AE FDS
        2           ID   Flood Control District of Maricopa County
        3           ID   Contract FCD 2007C020
        4           ID   100-Year 24-Hour Storm
        5           ID   NOAA 14 Rainfall Data
        6           ID   DDMSW Version 3.5.2
        7           ID   Multiple Storms
        8           ID   SCS Type II Precipitation Distribution
        9           ID   Green and Ampt Loss Method
       10           ID   S-Graph Unit Hydrograph
       11           ID   Existing Land Use Conditions
       12           ID   "With Structure" Conditions Model (I-10 and UPRR are assumed to exist)
       13           ID   Model Name: EC24DIKE.DAT, Wood/Patel,June 2008
       14           ID
       15           ID  ******************************************************************************
       16           ID   HEC-1 ELEMENT NOMENCLATURE
       17           ID
       18           ID   SUB-BASIN HYDROGRAPH:
       19           ID      Example: "20a" is the hydrograph from subbasin 20a
       20           ID
       21           ID   SUB-BASIN FLOW DIVERSION:
       22           ID      Example: "D20aE" is the East component of diversion in Subbasin 20a
       23           ID
       24           ID   CHANNEL ROUTE:
       25           ID      Example: "R20a" is the surface flow routing from 20a
       26           ID
       27           ID   STORAGE ROUTE:
       28           ID      Example: "S20a" is the storage routing in Subbasin 20a
       29           ID
       30           ID   HYDROGRAPH COMBINE:
       31           ID      Example: "C20a" is the combined flow in Subbasin 20a
       32           ID
       33           ID   HYDROGRAPH RETRIEVAL:
       34           ID      Example: "B20a" is the retrieved flow from Subbasin 20a
       35           ID
       36           ID   "DUMMY" COMBINE:
       37           ID      Example: "DUMMY" is the dummy hydrograph combining to free up a HEC-1
       38           ID              computational path.
       39           ID  ******************************************************************************
       40           IT       5  1JAN99    1200    2000
       41           IN      15
       42           IO       5
                    *DIAGRAM
                    *
       43           JD   3.693  0.0001
```

```
 44   PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 45   PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 46   PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 47   PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 48   PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 49   PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 50   PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 51   PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 52   PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 53   PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
1                                   HEC-1 INPUT                                          PAGE  2

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 54   JD   3.508    10.0
 55   JD   3.324    30.0
 56   JD   3.213    60.0
 57   JD   3.146    90.0
      *

 58   KK     14e   BASIN
 59   KM    A Subbasin of T1S-R5W-S29 North of Elliot Rd. and West of 355th Ave.
 60   KM    L=1.81, Lca=0.92, S=34.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.2
 61   BA   1.101
 62   LG    0.30    0.25    4.65    0.32       1
 63   UI       0      92     120     316     495     664     801     858     887     817
 64   UI     681     555     442     358     291     227     185     153     120      97
 65   UI      73      63      62      22      23      22      22      23      22      22
 66   UI       0       0       0       0       0       0       0       0       0       0
 67   UI       0       0       0       0       0       0       0       0       0       0
      *

 68   KK    R14e   ROUTE
 69   KM    Route 14e to 14d in Wash T1S-R5W-S29
 70   RS       4    FLOW      -1
 71   RC   0.050   0.040   0.050    2626  0.0053    0.00
 72   RX    0.00  130.50  522.00  652.50  727.50  858.00 1249.50 1380.00
 73   RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
      *

 74   KK     14d   BASIN
 75   KM    A Subbasin of T1S-R5W-S29 at Elliot Rd. and 355th Ave.
 76   KM    L=1.43, Lca=0.53, S=34.9, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=30.4
 77   BA   0.505
 78   LG    0.30    0.25    4.90    0.29       4
 79   UI       0      55     127     279     410     511     531     489     382     284
 80   UI     217     161     117      91      67      50      38      28      14      14
 81   UI      14      13      14       0       0       0       0       0       0       0
 82   UI       0       0       0       0       0       0       0       0       0       0
 83   UI       0       0       0       0       0       0       0       0       0       0
      *

 84   KK    C14d COMBINE
 85   KM    Combine 14d and R14e at Elliot Rd. and 355th Ave.
 86   HC       2
      *

 87   KK    R14d   ROUTE
 88   KM    Route 14d to 14c in Wash T1S-R5W-S29
 89   RS       5    FLOW      -1
 90   RC   0.050   0.040   0.050    3603  0.0056    0.00
 91   RX    0.00  103.00  412.00  515.00  690.00  793.00 1102.00 1205.00
 92   RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
      *
1                                   HEC-1 INPUT                                          PAGE  3

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 93   KK     14c   BASIN
 94   KM    A Subbasin of T1S-R5W-S29 at UPRR and East of 355th Ave.
 95   KM    L=1.97, Lca=0.65, S=32.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.7
 96   BA   1.095
 97   LG    0.30    0.25    4.90    0.29       0
 98   UI       0     100     160     389     606     791     910     957     925     776
 99   UI     613     488     383     297     239     184     153     107      90      69
100   UI      70      26      25      24      25      24      25       0       0       0
101   UI       0       0       0       0       0       0       0       0       0       0
102   UI       0       0       0       0       0       0       0       0       0       0
      *

103   KK    C14c COMBINE
104   KM    Combine 14c and R14d at SPRR and East of 355th Ave.
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105          HC       2
             *

106          KK    S14c STORAGE
107          KM    Storage Routing through UPRR bridge
108          RS       1    STOR       0
109          SV     0.0    1.30    4.90   13.20   27.20   49.40   80.80  123.70  179.20
110          SE     861     862     863     864     865     866     867     868     869
111          SQ     0.0   208.0   716.0  1223.0  1731.0  2595.0  3168.0  3447.0  3727.0
             *

112          KK    R14c   ROUTE
113          KM    Route 14c to 14b in Wash T1S-R5W-S29
114          RS       3    FLOW      -1
115          RC   0.050   0.040   0.050    2902  0.0055    0.00
116          RX    0.00  125.00  500.00  625.00  645.00  770.00 1145.00 1270.00
117          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

118          KK     14b   BASIN
119          KM    A Subbasin of T1S-R5W-S29 at Narramore Rd. and East of 355th Ave.
120          KM    L=0.88, Lca=0.40, S=34.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.3
121          BA   0.259
122          LG    0.30    0.25    4.60    0.34       0
123          UI       0      39     152     278     360     362     266     181     123      80
124          UI      55      38      27      13       9      10       9       0       0       0
125          UI       0       0       0       0       0       0       0       0       0       0
126          UI       0       0       0       0       0       0       0       0       0       0
127          UI       0       0       0       0       0       0       0       0       0       0
             *

128          KK    C14b COMBINE
129          KM    Combine 14b and R14c at Narramore Rd. and East of 355th Ave.
130          HC       2
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

131          KK    R14b   ROUTE
132          KM    Route 14b to 14a in Wash T1S-R5W-S29
133          RS       6    FLOW      -1
134          RC   0.050   0.040   0.050    6585  0.0055    0.00
135          RX    0.00   67.60  270.40  338.00  378.00  445.60  648.40  716.00
136          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
             *

137          KK     14a   BASIN
138          KM    A Subbasin of T1S-R5W-S29 at Ray Rd. and East of 347th Ave.
139          KM    L=1.72, Lca=0.82, S=31.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=38.4
140          BA   0.367
141          LG    0.30    0.25    5.70    0.20       0
142          UI       0      32      47     117     184     242     284     307     302     270
143          UI     216     175     138     109      89      68      55      46      34      26
144          UI      23      21       8       8       8       8       7       8       8       0
145          UI       0       0       0       0       0       0       0       0       0       0
146          UI       0       0       0       0       0       0       0       0       0       0
             *

147          KK    C14a COMBINE
148          KM    Combine 14a and R14b at Ray Rd. and East of 347 Ave.
149          HC       2
             *

150          KK     12b   BASIN
151          KM    A Subbasin of T1S-R5W-S29W at North of Ray Rd. and East of 355th Ave.
152          KM    L=1.62, Lca=0.77, S=32.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.5
153          BA   0.451
154          LG    0.30    0.25    5.70    0.20       0
155          UI       0      42      67     161     252     330     377     398     382     317
156          UI     250     201     155     122      96      75      62      44      36      29
157          UI      28      10      10      10      10      10      10       0       0       0
158          UI       0       0       0       0       0       0       0       0       0       0
159          UI       0       0       0       0       0       0       0       0       0       0
             *

160          KK    R12b   ROUTE
161          KM    Route 12b to 12a in Wash T1S-R5W-S29W
162          RS       7    FLOW      -1
163          RC   0.050   0.040   0.050    6106  0.0059    0.00
164          RX    0.00  115.00  460.00  575.00  601.00  716.00 1061.00 1176.00
165          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
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                *

 166            KK     12a   BASIN
 167            KM    A Subbasin of T1S-R5W-S29W at Ray Rd. and 347th Ave.
 168            KM    L=2.04, Lca=1.09, S=32.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.4
 169            BA   0.831
 170            LG    0.30    0.21    6.40    0.16       0
 171            UI       0      62      62     177     285     390     477     545     590     582
 172            UI     550     486     393     323     272     223     182     150     122     103
 173            UI      89      65      60      43      42      37      15      15      15      15
 174            UI      15      14      15      15       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE  5

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 175            UI       0       0       0       0       0       0       0       0       0       0
                *

 176            KK    C12a COMBINE
 177            KM    Combine 12a and R12b at Ray Rd. and East of 347 Ave.
 178            HC       2
                *

 179            KK   CC12a COMBINE
 180            KM    Combine C12a and C14a at Ray Rd. and East of 347 Ave.
 181            HC       2
                *

 182            KK     10b   BASIN
 183            KM    A Subbasin of T1S-R5W-S29 at Ray Rd. and East of 347th Ave.
 184            KM    L=2.06, Lca=1.04, S=29.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.6
 185            BA   0.855
 186            LG    0.30    0.25    4.55    0.35      12
 187            UI       0      63      63     181     289     400     486     557     602     600
 188            UI     566     499     406     337     280     233     186     157     126     108
 189            UI      94      66      63      44      43      41      16      15      15      16
 190            UI      15      15      16      15       0       0       0       0       0       0
 191            UI       0       0       0       0       0       0       0       0       0       0
                *

 192            KK    C10b COMBINE
 193            KM    Combine 10b and CC12a at Ray Rd. and East of 347th Ave.
 194            HC       2
                *

 195            KK    R10b   ROUTE
 196            KM    Route 10b to 10a in Wash T1S-R5W-S29
 197            RS       7    FLOW      -1
 198            RC   0.065   0.085   0.065    4228  0.0043    0.00
 199            RX    0.00   62.50  250.00  312.50  427.50  490.00  677.50  740.00
 200            RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
                *

 201            KK     10a   BASIN
 202            KM    A Subbasin of T1S-R5W-S29 at North of Cactus Rose Rd. East of 347th Ave.
 203            KM    L=1.47, Lca=0.61, S=35.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.5
 204            BA   0.838
 205            LG    0.30    0.25    5.60    0.22       0
 206            UI       0      89     188     431     633     796     858     806     664     492
 207            UI     375     290     216     162     126      95      64      62      30      22
 208            UI      22      21      22      22       0       0       0       0       0       0
 209            UI       0       0       0       0       0       0       0       0       0       0
 210            UI       0       0       0       0       0       0       0       0       0       0
                *
1                                          HEC-1 INPUT                                          PAGE  6

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 211            KK    C10a COMBINE
 212            KM    Combine 10a and R10b at North of Cactus Rose Rd. East of 347th Ave.
 213            HC       2
                *

 214            KK     21d   BASIN
 215            KM    A Subbasin of T1S-R5W-S17 at Bethany Home Rd. and West of 355th Ave.
 216            KM    L=2.04, Lca=1.09, S=34.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.9
 217            BA   0.494
 218            LG    0.30    0.25    5.80    0.19       0
 219            UI       0      37      38     110     173     238     288     329     356     352
 220            UI     327     283     230     190     160     128     106      88      71      59
 221            UI      50      39      32      26      26      17       9       9       9      10
 222            UI       9       9       9       9       0       0       0       0       0       0
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223          UI       0       0       0       0       0       0       0       0       0       0
             *

224          KK    R21d   ROUTE
225          KM    Route 21d to 21c in Wash T1S-R5W-S17
226          RS       9    FLOW      -1
227          RC   0.050   0.065   0.050    5510  0.0058    0.00
228          RX    0.00   29.00  116.00  145.00  230.00  259.00  346.00  375.00
229          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

230          KK     21c   BASIN
231          KM    A Subbasin of T1S-R5W-S17 at Camelback Rd. and East of 363rd Ave.
232          KM    L=1.47, Lca=0.77, S=29.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.6
233          BA   0.234
234          LG    0.30    0.25    4.80    0.30       0
235          UI       0      22      37      90     137     181     204     209     200     160
236          UI     125     100      76      62      46      37      28      25      15      15
237          UI      10       5       6       5       5       6       5       0       0       0
238          UI       0       0       0       0       0       0       0       0       0       0
239          UI       0       0       0       0       0       0       0       0       0       0
             *

240          KK    C21c COMBINE
241          KM    Combine 21c and R21d at Camelback Rd. and East of 363rd Ave.
242          HC       2
             *

243          KK    R21c   ROUTE
244          KM    Route 21c to 21b in Wash T1S-R5W-S17
245          RS      12    FLOW      -1
246          RC   0.050   0.065   0.050    6436  0.0059    0.00
247          RX    0.00   52.30  209.20  261.50  283.50  335.80  492.70  545.00
248          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

249          KK     21b   BASIN
250          KM    A Subbasin of T1S-R5W-S17 at South of Indian School, East of 363rd Ave.
251          KM    L=2.05, Lca=1.11, S=30.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=46.3
252          BA   0.547
253          LG    0.30    0.25    5.00    0.28       2
254          UI       0      40      40     109     179     246     303     350     376     381
255          UI     360     323     264     219     184     152     125     103      83      73
256          UI      62      45      42      30      27      27      15      10       9      10
257          UI      10       9      10      10      10       0       0       0       0       0
258          UI       0       0       0       0       0       0       0       0       0       0
             *

259          KK    C21b COMBINE
260          KM    Combine 21b and R21c at South of Indian School and East of 363rd Ave.
261          HC       2
             *

262          KK     24b   BASIN
263          KM    A Subbasin at Camelback Rd. and 363rd Ave.
264          KM    L=1.80, Lca=0.74, S=31.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=37.5
265          BA   0.335
266          LG    0.30    0.25    5.10    0.26       0
267          UI       0      30      46     113     174     236     269     287     279     242
268          UI     192     153     122      96      76      60      48      37      30      21
269          UI      21      14       7       7       8       7       7       8       0       0
270          UI       0       0       0       0       0       0       0       0       0       0
271          UI       0       0       0       0       0       0       0       0       0       0
             *

272          KK    R24b   ROUTE
273          KM    Route 24b to 24a
274          RS      11    FLOW      -1
275          RC   0.050   0.050   0.050    6238  0.0058    0.00
276          RX    0.00   45.70  182.80  228.50  246.50  292.20  429.30  475.00
277          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

278          KK     24a   BASIN
279          KM    A Subbasin South of Indian School, East of 363rd Ave.
280          KM    L=1.29, Lca=0.64, S=31.0, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=32.1
281          BA   0.409
282          LG    0.30    0.25    4.70    0.31       1
283          UI       0      43      86     201     299     376     408     393     330     247
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 284          UI     190     146     109      83      67      45      36      29      21      10
 285          UI      11      10      10      11       0       0       0       0       0       0
 286          UI       0       0       0       0       0       0       0       0       0       0
 287          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE  8

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 288          KK    C24a COMBINE
 289          KM    Combine 24a and R24b at South of Indian School and East of 363rd Ave.
 290          HC       2
              *

 291          KK   CC24a COMBINE
 292          KM    Combine C24a and C21b at South of Indian School and East of 363rd Ave.
 293          HC       2
              *

 294          KK    R21b   ROUTE
 295          KM    Route 21b to 21a in Wash T1S-R5W-S17
 296          RS       8    FLOW      -1
 297          RC   0.050   0.065   0.050    6096  0.0053    0.00
 298          RX    0.00   81.00  324.00  405.00  459.00  540.00  783.00  864.00
 299          RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
              *

 300          KK     21a   BASIN
 301          KM    A Subbasin of T1S-R5W-S17 at I-10 and West of 363rd Ave.
 302          KM    L=1.97, Lca=0.88, S=30.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=41.8
 303          BA   0.882
 304          LG    0.30    0.25    4.70    0.31       1
 305          UI       0      71      83     233     365     484     600     655     685     649
 306          UI     570     467     373     306     251     203     158     135     108      83
 307          UI      76      49      49      44      17      17      17      18      17      17
 308          UI      17       0       0       0       0       0       0       0       0       0
 309          UI       0       0       0       0       0       0       0       0       0       0
              *

 310          KK    C21a COMBINE
 311          KM    Combine 21a and R21b at I-10 and West of 363rd Ave.
 312          HC       2
              *

 313          KK    S21a STORAGE
 314          KM    Storage Routing through 2-10'x5' CBC
 315          RS       1    STOR       0
 316          SV     0.0    0.10    0.60    2.60    7.40   15.80   29.00   48.20
 317          SE    1093    1094    1095    1096    1097    1098    1099    1100
 318          SQ     0.0   144.0   283.0   466.0   621.0   775.0   930.0  1084.0
              *

 319          KK    R21a   ROUTE
 320          KM    Route 21a to 20l in Wash T1S-R5W-S17
 321          RS       5    FLOW      -1
 322          RC   0.050   0.065   0.050    4133  0.0053    0.00
 323          RX    0.00   34.70  138.80  173.50  226.50  261.20  365.30  400.00
 324          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *
1                                          HEC-1 INPUT                                          PAGE  9

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 325          KK     201   BASIN
 326          KM    A Subbasin of T1S-R5W-S17 at McDowell Rd. and West of 363rd Ave.
 327          KM    L=0.76, Lca=0.42, S=29.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.1
 328          BA   0.129
 329          LG    0.30    0.25    4.65    0.32       0
 330          UI       0      20      77     143     180     181     130      89      61      39
 331          UI      27      18      13       5       5       5       5       0       0       0
 332          UI       0       0       0       0       0       0       0       0       0       0
 333          UI       0       0       0       0       0       0       0       0       0       0
 334          UI       0       0       0       0       0       0       0       0       0       0
              *

 335          KK    C20l COMBINE
 336          KM    Combine 20l and R21a at McDowell Rd. and West of 363rd Ave.
 337          HC       2
              *

 338          KK     20K   BASIN
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 339          KM    A Subbasin at I-10 and West of 363rd Ave.
 340          KM    L=0.86, Lca=0.44, S=32.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.2
 341          BA   0.176
 342          LG    0.30    0.25    4.65    0.32       1
 343          UI       0      25      94     176     229     242     188     129      91      60
 344          UI      42      29      19      14       6       6       6       7       0       0
 345          UI       0       0       0       0       0       0       0       0       0       0
 346          UI       0       0       0       0       0       0       0       0       0       0
 347          UI       0       0       0       0       0       0       0       0       0       0
              *

 348          KK    S20k STORAGE
 349          KM    Storage Routing through 2-42" CMP and 2-36" CMP
 350          RS       1    STOR       0
 351          SV     0.0    3.10    8.40    8.70    9.80   12.40   17.30   24.70   34.90
 352          SE    1098    1099    1100    1101    1102    1103    1104    1105    1106
 353          SQ     0.0    10.0    34.0    44.0    66.0    96.0   124.0   152.0   170.0
              *

 354          KK    R20k   ROUTE
 355          KM    Route 20k to 20j
 356          RS       9    FLOW      -1
 357          RC   0.050   0.050   0.050    4495  0.0062    0.00
 358          RX    0.00   38.50  154.00  192.50  212.50  251.00  366.50  405.00
 359          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

 360          KK     20j   BASIN
 361          KM    A Subbasin at McDowell Rd. and West of 363rd Ave.
 362          KM    L=0.82, Lca=0.42, S=31.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.3
 363          BA   0.203
 364          LG    0.30    0.25    4.55    0.35       0
 365          UI       0      30     119     219     282     284     208     141      97      63
 366          UI      44      29      21      10       7       8       7       0       0       0
 367          UI       0       0       0       0       0       0       0       0       0       0
 368          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 369          UI       0       0       0       0       0       0       0       0       0       0
              *

 370          KK    C20j COMBINE
 371          KM    Combine 20j and R20k at McDowell Rd. and West of 363rd Ave.
 372          HC       2
              *

 373          KK   CC20j COMBINE
 374          KM    Combine C20j and C20l at McDowell Rd. and West of 363rd Ave.
 375          HC       2
              *

 376          KK    R20l   ROUTE
 377          KM    Route 20l to 20i in Wash T1S-R5W-S17
 378          RS       5    FLOW      -1
 379          RC   0.050   0.065   0.050    5532  0.0054    0.00
 380          RX    0.00   25.00  100.00  125.00  195.00  220.00  295.00  320.00
 381          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

 382          KK     20i   BASIN
 383          KM    A Subbasin of T1S-R5W-S17 at Van Buren St. and West of 363rd Ave.
 384          KM    L=1.20, Lca=0.59, S=33.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.1
 385          BA   0.291
 386          LG    0.30    0.25    4.65    0.32       0
 387          UI       0      33      83     178     258     312     318     277     211     152
 388          UI     115      84      62      46      35      23      22       8       8       8
 389          UI       9       8       0       0       0       0       0       0       0       0
 390          UI       0       0       0       0       0       0       0       0       0       0
 391          UI       0       0       0       0       0       0       0       0       0       0
              *

 392          KK    C20i COMBINE
 393          KM    Combine  20i and R20l at Van Buren St. and West of 363rd Ave.
 394          HC       2
              *

 395          KK     22c   BASIN
 396          KM    A Subbasin at McDowell Rd. and East of 363rd Ave.
 397          KM    L=1.12, Lca=0.62, S=35.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.6
 398          BA   0.220
 399          LG    0.30    0.25    4.70    0.31       0
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 400        UI       0      26      65     140     202     242     242     207     156     113
 401        UI      83      62      45      33      25      18      13       7       6       6
 402        UI       7       6       0       0       0       0       0       0       0       0
 403        UI       0       0       0       0       0       0       0       0       0       0
 404        UI       0       0       0       0       0       0       0       0       0       0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 405        KK     22d   BASIN
 406        KM    A Subbasin of T1N-R6W-S11 at I-10 and East of 363rd Ave.
 407        KM    L=1.32, Lca=0.55, S=30.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.0
 408        BA   0.244
 409        LG    0.30    0.25    4.65    0.32       1
 410        UI       0      27      64     138     204     250     262     234     183     135
 411        UI     100      77      55      43      31      23      19      11       7       6
 412        UI       7       7       7       0       0       0       0       0       0       0
 413        UI       0       0       0       0       0       0       0       0       0       0
 414        UI       0       0       0       0       0       0       0       0       0       0
            *

 415        KK    S22d STORAGE
 416        KM    Storage Routing through 3-36" CMP and 42" CMP
 417        RS       1    STOR       0
 418        SV     0.0    0.10    0.50    2.30    5.00   10.90   19.60
 419        SE    1093    1094    1095    1096    1097    1098    1099
 420        SQ     0.0    47.0    90.0   127.0   158.0   189.0   221.0
            *

 421        KK    R22d   ROUTE
 422        KM    Route 22d to 22b in Wash T1N-R6W-S11
 423        RS       6    FLOW      -1
 424        RC   0.055   0.060   0.055    3362  0.0060    0.00
 425        RX    0.00   62.00  248.00  310.00  325.00  387.00  573.00  635.00
 426        RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
            *

 427        KK     22b   BASIN
 428        KM    A Subbasin of T1N-R6W-S11 at McDowell Rd. and East of 363rd Ave.
 429        KM    L=0.69, Lca=0.36, S=31.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=19.8
 430        BA   0.164
 431        LG    0.30    0.25    4.70    0.31       0
 432        UI       0      32     127     222     263     226     143      93      60      39
 433        UI      24      17       7       7       6       0       0       0       0       0
 434        UI       0       0       0       0       0       0       0       0       0       0
 435        UI       0       0       0       0       0       0       0       0       0       0
 436        UI       0       0       0       0       0       0       0       0       0       0
            *

 437        KK    C22b COMBINE
 438        KM    Combine 22b and R22d at McDowell Rd. and East of 363rd Ave.
 439        HC       2
            *

 440        KK   CC22b COMBINE
 441        KM    Combine C22b and 22c at McDowell Rd. and East of 363rd Ave.
 442        HC       2
            *
1                                          HEC-1 INPUT                                          PAGE 12

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 443        KK    R22b   ROUTE
 444        KM    Route 22b to 22a in Wash T1N-R6W-S11
 445        RS      10    FLOW      -1
 446        RC   0.055   0.060   0.055    5706  0.0056    0.00
 447        RX    0.00   62.50  250.00  312.50  402.50  465.00  652.50  715.00
 448        RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
            *

 449        KK     22a   BASIN
 450        KM    A Subbasin of T1N-R6W-S11 at Van Buren St. and West of 363rd Ave.
 451        KM    L=1.56, Lca=0.82, S=32.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.8
 452        BA   0.451
 453        LG    0.30    0.25    5.00    0.28       1
 454        UI       0      41      66     158     249     324     372     397     378     320
 455        UI     252     203     158     124      98      78      63      44      38      28
 456        UI      29      12      10      10      10      10      10      10       0       0
 457        UI       0       0       0       0       0       0       0       0       0       0
 458        UI       0       0       0       0       0       0       0       0       0       0
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                *

 459            KK    C22a COMBINE
 460            KM    Combine R22b and 22a at Van Buren St. and West of 363rd Ave.
 461            HC       2
                *

 462            KK   CC20i COMBINE
 463            KM    Combine C22a and C20i at Van Buren St. and West of 363rd Ave.
 464            HC       2
                *

 465            KK    R20i   ROUTE
 466            KM    Route 20i to 20h in Wash T1S-R5W-S17
 467            RS       5    FLOW      -1
 468            RC   0.050   0.050   0.050    5350  0.0052    0.00
 469            RX    0.00  122.00  488.00  610.00  660.00  782.00 1148.00 1270.00
 470            RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
                *

 471            KK     20h   BASIN
 472            KM    A Subbasin of T1S-R5W-S17 at Buckeye Rd. and 363rd Ave.
 473            KM    L=2.14, Lca=0.86, S=32.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=42.1
 474            BA   1.250
 475            LG    0.30    0.25    4.70    0.31       2
 476            UI       0     100     114     324     509     678     843     917     968     914
 477            UI     810     668     535     438     361     287     233     191     156     122
 478            UI     107      74      68      69      24      25      24      24      25      24
 479            UI      25       0       0       0       0       0       0       0       0       0
 480            UI       0       0       0       0       0       0       0       0       0       0
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 481            KK    C20h COMBINE
 482            KM    Combine 20h and R20i at Buckeye Rd. and 363rd Ave.
 483            HC       2
                *

 484            KK    R20h   ROUTE
 485            KM    Route 20h to 20g in Wash T1S-R5W-S17
 486            RS       8    FLOW      -1
 487            RC   0.050   0.050   0.050    5408  0.0052    0.00
 488            RX    0.00   87.70  350.80  438.50  561.50  649.20  912.30 1000.00
 489            RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
                *

 490            KK     20g   BASIN
 491            KM    A Subbasin of T1S-R5W-S17 at Lower Buckeye Rd. and East of 363rd Ave.
 492            KM    L=2.02, Lca=0.69, S=33.7, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=38.5
 493            BA   1.178
 494            LG    0.30    0.25    4.80    0.30       3
 495            UI       0     102     148     374     587     776     909     981     969     865
 496            UI     697     560     445     352     288     218     181     148     109      87
 497            UI      71      70      27      25      25      25      25      25      25       0
 498            UI       0       0       0       0       0       0       0       0       0       0
 499            UI       0       0       0       0       0       0       0       0       0       0
                *

 500            KK    C20g COMBINE
 501            KM    Combine 20g and R20h at Lower Buckeye Rd. and East of 363rd Ave.
 502            HC       2
                *

 503            KK    R20g   ROUTE
 504            KM    Route 20g to 20f in Wash T1S-R5W-S17
 505            RS      11    FLOW      -1
 506            RC   0.050   0.050   0.050    7229  0.0044    0.00
 507            RX    0.00   92.50  370.00  462.50  517.50  610.00  887.50  980.00
 508            RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
                *

 509            KK     20f   BASIN
 510            KM    A Subbasin of T1S-R5W-S17 at Salome Hwy and East of 363rd Ave.
 511            KM    L=1.95, Lca=0.89, S=37.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.2
 512            BA   1.346
 513            LG    0.30    0.25    4.90    0.29       1
 514            UI       0     112     146     387     606     812     978    1050    1084     998
 515            UI     833     678     542     438     355     278     226     186     146     119
 516            UI      90      77      75      28      27      27      28      27      27      28
 517            UI       0       0       0       0       0       0       0       0       0       0
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 518          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                PAGE 14

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 519          KK    C20f COMBINE
 520          KM    Combine 20f and R20g at Salome Hwy and East of 363rd Ave.
 521          HC       2
              *

 522          KK    R20f   ROUTE
 523          KM    Route 20f to 20e in Wash T1S-R5W-S17
 524          RS       6    FLOW      -1
 525          RC   0.050   0.050   0.050    5953  0.0050    0.00
 526          RX    0.00  102.00  408.00  510.00  720.00  822.00 1128.00 1230.00
 527          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

 528          KK     20e   BASIN
 529          KM    A Subbasin of T1S-R5W-S17 at South of Southern Ave. and 355th Ave.
 530          KM    L=1.92, Lca=0.89, S=34.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.6
 531          BA   1.534
 532          LG    0.30    0.25    5.30    0.24       3
 533          UI       0     127     159     427     684     904    1095    1178    1226    1140
 534          UI     954     790     628     505     412     325     260     218     176     134
 535          UI     110      87      86      42      31      31      31      31      31      31
 536          UI       0       0       0       0       0       0       0       0       0       0
 537          UI       0       0       0       0       0       0       0       0       0       0
              *

 538          KK    C20e COMBINE
 539          KM    Combine 20e and R20f at South of Southern Ave. and 355th Ave.
 540          HC       2
              *

 541          KK    R20e   ROUTE
 542          KM    Route 20e to 20d in Wash T1S-R5W-S17
 543          RS      11    FLOW      -1
 544          RC   0.050   0.050   0.050    4439  0.0036    0.00
 545          RX    0.00  122.30  489.20  611.50  803.50  925.80 1292.70 1415.00
 546          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

 547          KK     20d   BASIN
 548          KM    A Subbasin of T1S-R5W-S17 at Baseline Rd. and East of 355th Ave.
 549          KM    L=1.26, Lca=0.49, S=41.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.6
 550          BA   0.623
 551          LG    0.30    0.25    5.00    0.28       1
 552          UI       0      78     225     469     649     754     712     544     399     282
 553          UI     204     148     105      77      54      37      19      19      19      19
 554          UI       0       0       0       0       0       0       0       0       0       0
 555          UI       0       0       0       0       0       0       0       0       0       0
 556          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 557          KK    C20d COMBINE
 558          KM    Combine 20d and R20e at Baseline Rd. and East of 355th Ave.
 559          HC       2
              *

 560          KK    R20d   ROUTE
 561          KM    Route 20d to 20c in Wash T1S-R5W-S17
 562          RS      10    FLOW      -1
 563          RC   0.050   0.050   0.050    5373  0.0045    0.00
 564          RX    0.00  111.50  446.00  557.50  652.50  764.00 1098.50 1210.00
 565          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

 566          KK     20c   BASIN
 567          KM    A Subbasin of T1S-R5W-S17 at Dobbins Rd. and East of 355th Ave.
 568          KM    L=2.41, Lca=0.89, S=34.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.1
 569          BA   1.422
 570          LG    0.30    0.25    5.40    0.23       4
 571          UI       0     108     109     336     520     707     863     972    1049    1025
 572          UI     939     805     645     534     446     356     296     238     201     164
 573          UI     128     115      79      76      74      31      26      27      26      26
 574          UI      27      26      27       0       0       0       0       0       0       0
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 575          UI       0       0       0       0       0       0       0       0       0       0
              *

 576          KK    C20c COMBINE
 577          KM    Combine 20c and R20d at Dobbins Rd. and East of 355th Ave.
 578          HC       2
              *

 579          KK    R20c   ROUTE
 580          KM    Route 20c to 20b in Wash T1S-R5W-S17
 581          RS      11    FLOW      -1
 582          RC   0.060   0.070   0.060    7396  0.0043    0.00
 583          RX    0.00  108.80  435.20  544.00  706.00  814.80 1141.20 1250.00
 584          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

 585          KK     20b   BASIN
 586          KM    A Subbasin of T1S-R5W-S17 at UPRR and East of 347th Ave.
 587          KM    L=2.28, Lca=0.84, S=25.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.8
 588          BA   1.275
 589          LG    0.30    0.25    4.90    0.29       2
 590          UI       0      95      96     287     447     622     744     849     930     900
 591          UI     846     733     592     489     408     333     274     223     183     153
 592          UI     126     101      83      65      66      43      24      23      23      24
 593          UI      23      24      23       0       0       0       0       0       0       0
 594          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 595          KK    C20b COMBINE
 596          KM    Combine 20b and R20c at UPRR and East of 347th Ave.
 597          HC       2
              *

 598          KK     46k   BASIN
 599          KM    A Subbasin of Phillips Wash at CAP and 355th Ave.
 600          KM    L=1.08, Lca=0.45, S=37.0, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=24.3
 601          BA   0.442
 602          LG    0.29    0.24    5.20    0.25       0
 603          UI       0      61     206     399     539     587     492     345     248     167
 604          UI     117      83      57      42      22      15      15      15       0       0
 605          UI       0       0       0       0       0       0       0       0       0       0
 606          UI       0       0       0       0       0       0       0       0       0       0
 607          UI       0       0       0       0       0       0       0       0       0       0
              *

 608          KK   D46kE  DIVERT
 609          KM   Divert flow to 46i
 610          DT   D46kW     0.0     0.0
 611          DI     0.0    10.0    50.0   100.0   500.0  1000.0     0.0     0.0     0.0     0.0
 612          DQ     0.0     3.0    15.0    30.0   150.0   300.0     0.0     0.0     0.0     0.0
              *

 613          KK   R46kE   ROUTE
 614          KM    Route 46k to 46j
 615          RS       4    FLOW      -1
 616          RC   0.060   0.050   0.060    6227  0.0090    0.00
 617          RX    0.00   33.50  134.00  167.50  182.50  216.00  316.50  350.00
 618          RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
              *

 619          KK     46j   BASIN
 620          KM    A Subbasin of Phillips Wash at South of Peoria Ave and East of 355th Ave.
 621          KM    L=1.24, Lca=0.72, S=41.9, Kn=0.043, S-Graph=DESERT/RANGELAND, Tlag=29.2
 622          BA   0.294
 623          LG    0.28    0.23    5.00    0.27       0
 624          UI       0      34      82     179     258     316     319     281     212     156
 625          UI     116      86      64      47      36      23      22       9       8       8
 626          UI       9       8       0       0       0       0       0       0       0       0
 627          UI       0       0       0       0       0       0       0       0       0       0
 628          UI       0       0       0       0       0       0       0       0       0       0
              *

 629          KK    C46j COMBINE
 630          KM    Combine 46j and R46kE at South of Peoria Ave. and East of 355th Ave.
 631          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 17

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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632          KK  BD46kWRETRIEVE
633          KM    Retrieve diverted flow of D46kW
634          DR   D46kW
             *

635          KK   R46kW   ROUTE
636          KM    Route D46kW to 46i
637          RS       4    FLOW      -1
638          RC   0.060   0.050   0.060    5990  0.0090    0.00
639          RX    0.00   12.00   48.00   60.00   80.00   92.00  128.00  140.00
640          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
             *

641          KK     46i   BASIN
642          KM    A Subbasin South of Peoria Ave and East of 355th Ave.
643          KM    L=1.12, Lca=0.60, S=46.6, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=26.2
644          BA   0.270
645          LG    0.29    0.24    4.90    0.29       0
646          UI       0      35     102     209     289     335     307     230     171     119
647          UI      85      62      43      31      24      13       8       9       8       9
648          UI       0       0       0       0       0       0       0       0       0       0
649          UI       0       0       0       0       0       0       0       0       0       0
650          UI       0       0       0       0       0       0       0       0       0       0
             *

651          KK    C46i COMBINE
652          KM    Combine 46i and R46kW at South of Peoria Ave. and East of 355th Ave.
653          HC       2
             *

654          KK   CC46i COMBINE
655          KM    Combine C46j and C46i at South of Peoria Ave. and East of 355th Ave.
656          HC       2
             *

657          KK    R46i   ROUTE
658          KM    Route 46i to 46h in Phillips Wash
659          RS       4    FLOW      -1
660          RC   0.060   0.050   0.060    6015  0.0060    0.00
661          RX    0.00   26.30  105.20  131.50  153.50  179.80  258.70  285.00
662          RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
             *

663          KK     46h   BASIN
664          KM    A Subbasin of Phillips Wash at Dunlap Ave. and East of 355th Ave.
665          KM    L=1.48, Lca=0.76, S=40.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=33.5
666          BA   0.384
667          LG    0.30    0.25    5.30    0.24       0
668          UI       0      38      73     171     253     332     364     359     322     245
669          UI     189     150     112      84      68      51      42      27      26      15
670          UI       9      10       9      10       9       0       0       0       0       0
671          UI       0       0       0       0       0       0       0       0       0       0
672          UI       0       0       0       0       0       0       0       0       0       0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

673          KK    C46h COMBINE
674          KM    Combine 46h and R46i at Dunlap Ave. and East of 355th Ave.
675          HC       2
             *

676          KK     54b   BASIN
677          KM    A Subbasin at Peoria Ave. and 347th Ave.
678          KM    L=1.16, Lca=0.38, S=34.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.3
679          BA   0.235
680          LG    0.30    0.25    4.70    0.31       4
681          UI       0      32     110     212     287     312     261     183     133      88
682          UI      63      44      30      22      12       8       8       8       0       0
683          UI       0       0       0       0       0       0       0       0       0       0
684          UI       0       0       0       0       0       0       0       0       0       0
685          UI       0       0       0       0       0       0       0       0       0       0
             *

686          KK    R54b   ROUTE
687          KM    Route 54b to 54a in Wash T3N-R5W-S31
688          RS       2    FLOW      -1
689          RC   0.060   0.050   0.060    4379  0.0089    0.00
690          RX    0.00    8.00   32.00   40.00   60.00   68.00   92.00  100.00
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691          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
             *

692          KK     54a   BASIN
693          KM    A Subbasin of T3N-R5W-S31 at North of Dunlap Ave. and West of 347th Ave.
694          KM    L=1.35, Lca=0.66, S=44.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.1
695          BA   0.360
696          LG    0.30    0.25    4.80    0.30       6
697          UI       0      40      93     205     297     369     381     350     269     200
698          UI     150     112      82      66      44      34      27      18      10      10
699          UI      10      10      10       0       0       0       0       0       0       0
700          UI       0       0       0       0       0       0       0       0       0       0
701          UI       0       0       0       0       0       0       0       0       0       0
             *

702          KK    C54a COMBINE
703          KM    Combine 54a and R54b at North of Dunlap Ave. and West of 347th Ave.
704          HC       2
             *

705          KK    R54a   ROUTE
706          KM    Route 54a to 52a in Wash T3N-R5W-S30
707          RS       2    FLOW      -1
708          RC   0.060   0.050   0.060    1801  0.0067    0.00
709          RX    0.00   27.50  110.00  137.50  162.50  190.00  272.50  300.00
710          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

711          KK     52a   BASIN
712          KM    A Subbasin of T3N-R5W-S30 at Dunlap Ave. and West of 347th Ave.
713          KM    L=1.56, Lca=0.95, S=89.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.0
714          BA   0.577
715          LG    0.30    0.25    4.15    0.44      18
716          UI       0      60     125     284     425     530     583     553     463     347
717          UI     266     207     150     119      92      64      49      42      28      14
718          UI      15      15      14      15       0       0       0       0       0       0
719          UI       0       0       0       0       0       0       0       0       0       0
720          UI       0       0       0       0       0       0       0       0       0       0
             *

721          KK    C52a COMBINE
722          KM    Combine 52a and R54a at Dunlap Ave. and West of 347th Ave.
723          HC       2
             *

724          KK   CC46h COMBINE
725          KM    Combine C52a and C46h at Dunlap Ave. and West of 347th Ave.
726          HC       2
             *

727          KK    R46h   ROUTE
728          KM    Route 46h to 46g in Phillips Wash
729          RS       8    FLOW      -1
730          RC   0.060   0.050   0.060   11103  0.0052    0.00
731          RX    0.00   61.50  246.00  307.50  342.50  404.00  588.50  650.00
732          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
             *

733          KK     46g   BASIN
734          KM    A Subbasin of Phillips Wash at Glendale Ave. and West of 347th Ave.
735          KM    L=2.49, Lca=1.28, S=32.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=52.1
736          BA   0.451
737          LG    0.30    0.25    5.10    0.26       0
738          UI       0      29      29      63     110     156     197     233     261     276
739          UI     276     269     249     208     178     149     127     110      90      76
740          UI      64      55      46      41      31      30      21      20      20      13
741          UI       7       7       7       7       7       7       8       7       7       0
742          UI       0       0       0       0       0       0       0       0       0       0
             *

743          KK    C46g COMBINE
744          KM    Combine 46g and R46h at Glendale Ave. and West of 347th Ave.
745          HC       2
             *

746          KK     46f   BASIN
747          KM    A Subbasin South of Glendale Ave.,West of 347th Ave.
748          KM    L=2.12, Lca=1.00, S=34.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=43.9
749          BA   0.576
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 750          LG    0.30    0.25    5.20    0.25       0
 751          UI       0      44      44     138     211     292     351     400     425     414
 752          UI     383     324     260     214     178     145     117      96      80      68
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 753          UI      50      46      31      30      30      11      11      11      11      10
 754          UI      11      11      11       0       0       0       0       0       0       0
 755          UI       0       0       0       0       0       0       0       0       0       0
              *

 756          KK    C46f COMBINE
 757          KM    Combine C46g and 46f at South of Glendale Ave. and West of 347th Ave.
 758          HC       2
              *

 759          KK    R46f   ROUTE
 760          KM    Route 46f to 46e in Phillips Wash
 761          RS       4    FLOW      -1
 762          RC   0.060   0.050   0.060    4690  0.0064    0.00
 763          RX    0.00   72.00  288.00  360.00  395.00  467.00  683.00  755.00
 764          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

 765          KK     46e   BASIN
 766          KM    A Subbasin of Phillips Wash at North of Bethany Home Rd,East of 347th Ave.
 767          KM    L=0.97, Lca=0.51, S=37.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.0
 768          BA   0.220
 769          LG    0.30    0.25    5.10    0.26       0
 770          UI       0      29      95     186     259     283     248     180     128      89
 771          UI      62      46      31      21      16       7       7       7       7       0
 772          UI       0       0       0       0       0       0       0       0       0       0
 773          UI       0       0       0       0       0       0       0       0       0       0
 774          UI       0       0       0       0       0       0       0       0       0       0
              *

 775          KK    C46e COMBINE
 776          KM    Combine 46e and R46f at North of Bethany Home Rd and East of 347th Ave.
 777          HC       2
              *

 778          KK     56a   BASIN
 779          KM    A Subbasin North of Bethany Home Rd,East of 347th Ave.
 780          KM    L=1.29, Lca=0.64, S=37.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.3
 781          BA   0.297
 782          LG    0.30    0.25    4.65    0.32       0
 783          UI       0      33      75     166     243     300     315     287     223     167
 784          UI     125      95      68      55      38      29      22      17       8       8
 785          UI       8       8       8       0       0       0       0       0       0       0
 786          UI       0       0       0       0       0       0       0       0       0       0
 787          UI       0       0       0       0       0       0       0       0       0       0
              *

 788          KK   CC46e COMBINE
 789          KM    Combine C46e and 56a at North of Bethany Home Rd and East of 347th Ave.
 790          HC       2
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 791          KK    R46e   ROUTE
 792          KM    Route 46e to 46c in Phillips Wash
 793          RS       6    FLOW      -1
 794          RC   0.060   0.050   0.060    7330  0.0055    0.00
 795          RX    0.00   62.50  250.00  312.50  337.50  400.00  587.50  650.00
 796          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

 797          KK     46d   BASIN
 798          KM    A Subbasin of Phillips Wash at Camelback Rd and 347th Ave.
 799          KM    L=1.81, Lca=0.86, S=38.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=38.3
 800          BA   0.431
 801          LG    0.30    0.25    4.70    0.31       0
 802          UI       0      38      55     138     216     287     334     363     355     317
 803          UI     254     203     161     128     103      80      65      53      40      31
 804          UI      26      25       9       9       9      10       9       9       9       0
 805          UI       0       0       0       0       0       0       0       0       0       0
 806          UI       0       0       0       0       0       0       0       0       0       0
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807          KK    C46d COMBINE
808          KM    Combine 46d and R46e at Camelback Rd. and 347th Ave.
809          HC       2
             *

810          KK     46c   BASIN
811          KM    A Subbasin at Camelback Rd and West of 347th Ave.
812          KM    L=1.51, Lca=0.84, S=35.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.0
813          BA   0.226
814          LG    0.30    0.25    5.00    0.28       0
815          UI       0      21      35      84     131     169     193     202     191     157
816          UI     124      97      76      61      45      37      29      22      17      14
817          UI      12       5       5       5       5       5       6       0       0       0
818          UI       0       0       0       0       0       0       0       0       0       0
819          UI       0       0       0       0       0       0       0       0       0       0
             *

820          KK    C46c COMBINE
821          KM    Combine C46d and 46c at Camelback Rd and West of 347th Ave.
822          HC       2
             *

823          KK    R46c   ROUTE
824          KM    Route 46c to 46b in Phillips Wash
825          RS       3    FLOW      -1
826          RC   0.060   0.050   0.060    5471  0.0059    0.00
827          RX    0.00   50.00  200.00  250.00  275.00  325.00  475.00  525.00
828          RY   13.00    9.10    5.20    0.00    0.00    5.20    9.10   13.00
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

829          KK     46b   BASIN
830          KM    A Subbasin of Phillips Wash at Indian School Rd and West of 347th Ave.
831          KM    L=1.67, Lca=0.83, S=35.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=37.2
832          BA   0.401
833          LG    0.30    0.25    4.70    0.31       0
834          UI       0      36      56     137     215     283     329     343     340     286
835          UI     228     182     142     114      89      70      57      42      36      25
836          UI      25      14       9       9       8       9       9       9       0       0
837          UI       0       0       0       0       0       0       0       0       0       0
838          UI       0       0       0       0       0       0       0       0       0       0
             *

839          KK    C46b COMBINE
840          KM    Combine 46b and R46c at Indian School Rd. and West of 347th Ave.
841          HC       2
             *

842          KK     50g   BASIN
843          KM    A Subbasin South of Dunlap Ave. and East of 355th Ave.
844          KM    L=1.11, Lca=0.47, S=41.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.9
845          BA   0.146
846          LG    0.30    0.25    5.30    0.24       0
847          UI       0      20      63     125     172     190     163     119      84      60
848          UI      40      30      20      14      10       5       5       5       4       0
849          UI       0       0       0       0       0       0       0       0       0       0
850          UI       0       0       0       0       0       0       0       0       0       0
851          UI       0       0       0       0       0       0       0       0       0       0
             *

852          KK    R50g   ROUTE
853          KM    Route 50g to 50f
854          RS      10    FLOW      -1
855          RC   0.050   0.050   0.050    6582  0.0067    0.00
856          RX    0.00   38.50  154.00  192.50  222.50  261.00  376.50  415.00
857          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
             *

858          KK     50f   BASIN
859          KM    A Subbasin North of Glendale Ave., East of 355th Ave.
860          KM    L=1.41, Lca=0.70, S=35.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.8
861          BA   0.292
862          LG    0.30    0.25    5.10    0.26       0
863          UI       0      30      58     136     203     261     283     278     238     184
864          UI     141     107      82      62      50      35      29      20      20       7
865          UI       7       7       8       7       7       0       0       0       0       0
866          UI       0       0       0       0       0       0       0       0       0       0
867          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 868          KK    C50f COMBINE
 869          KM    Combine 50f and R50g at North of Glendale Ave. and East of 355th Ave.
 870          HC       2
              *

 871          KK    R50f   ROUTE
 872          KM    Route 50f to 50e
 873          RS       7    FLOW      -1
 874          RC   0.050   0.050   0.050    4264  0.0066    0.00
 875          RX    0.00   58.00  232.00  290.00  385.00  443.00  617.00  675.00
 876          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
              *

 877          KK     50e   BASIN
 878          KM    A Subbasin South of Glendale Ave., East of 355th Ave.
 879          KM    L=0.88, Lca=0.47, S=34.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.6
 880          BA   0.171
 881          LG    0.30    0.25    5.00    0.28       0
 882          UI       0      24      87     163     220     232     185     129      90      62
 883          UI      42      29      20      16       5       6       6       6       0       0
 884          UI       0       0       0       0       0       0       0       0       0       0
 885          UI       0       0       0       0       0       0       0       0       0       0
 886          UI       0       0       0       0       0       0       0       0       0       0
              *

 887          KK    C50e COMBINE
 888          KM    Combine 50e and R50f at South of Glendale Ave. and East of 355th Ave.
 889          HC       2
              *

 890          KK    R50e   ROUTE
 891          KM    Route 50e to 50d
 892          RS       5    FLOW      -1
 893          RC   0.050   0.050   0.050    4259  0.0075    0.00
 894          RX    0.00   55.00  220.00  275.00  305.00  360.00  525.00  580.00
 895          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

 896          KK     50d   BASIN
 897          KM    A Subbasin South of Bethany Home Rd, East of 355th Ave.
 898          KM    L=0.94, Lca=0.51, S=34.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.1
 899          BA   0.178
 900          LG    0.30    0.25    5.00    0.28       0
 901          UI       0      24      77     147     207     231     200     146     104      73
 902          UI      51      38      24      17      14       5       6       6       5       0
 903          UI       0       0       0       0       0       0       0       0       0       0
 904          UI       0       0       0       0       0       0       0       0       0       0
 905          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 906          KK    C50d COMBINE
 907          KM    Combine 50d and R50e at South of Bethany Home Rd. and East of 355th Ave.
 908          HC       2
              *

 909          KK     50c   BASIN
 910          KM    A Subbasin South of Bethany Home Rd, East of 355th Ave.
 911          KM    L=2.70, Lca=1.23, S=33.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=52.6
 912          BA   0.548
 913          LG    0.30    0.25    5.00    0.28       0
 914          UI       0      35      35      73     132     187     235     276     312     328
 915          UI     335     329     300     256     220     184     158     133     112      95
 916          UI      79      67      58      53      37      37      27      24      24      20
 917          UI       9       8       9       8       9       9       8       9       8       0
 918          UI       0       0       0       0       0       0       0       0       0       0
              *

 919          KK    C50c COMBINE
 920          KM    Combine 50c and C50d at South of Bethany Home Rd. and East of 355th Ave.
 921          HC       2
              *

 922          KK    R50d   ROUTE
 923          KM    Route 50d to 50b
 924          RS       1    FLOW      -1
```

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925          RC   0.050   0.050   0.050    1710  0.0047    0.00
926          RX    0.00   28.00  112.00  140.00  160.00  188.00  272.00  300.00
927          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
             *

928          KK     50b   BASIN
929          KM    A Subbasin of T2N-R5W-S19 at South of Bethany Home Rd, East of 355th Ave.
930          KM    L=1.06, Lca=0.58, S=37.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.0
931          BA   0.205
932          LG    0.30    0.25    5.00    0.28       0
933          UI       0      26      70     149     210     244     232     182     133      97
934          UI      69      51      35      27      18      15       6       6       6       7
935          UI       0       0       0       0       0       0       0       0       0       0
936          UI       0       0       0       0       0       0       0       0       0       0
937          UI       0       0       0       0       0       0       0       0       0       0
             *

938          KK    C50b COMBINE
939          KM    Combine 50b and R50d at South of Bethany Home Rd. and East of 355th Ave.
940          HC       2
             *

941          KK    R50b   ROUTE
942          KM    Route 50b to 50a in Wash T2N-R5W-S19
943          RS       9    FLOW      -1
944          RC   0.060   0.050   0.060    9252  0.0056    0.00
945          RX    0.00   63.00  252.00  315.00  335.00  398.00  587.00  650.00
946          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
             *
1                                          HEC-1 INPUT                                                    PAGE 25

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

947          KK     50a   BASIN
948          KM    A Subbasin of T2N-R5W-S19 at Indian School Rd. and East of 355th Ave.
949          KM    L=2.33, Lca=1.40, S=30.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=53.1
950          BA   0.891
951          LG    0.30    0.25    5.00    0.28       0
952          UI       0      56      57     116     205     301     374     438     504     527
953          UI     540     530     492     419     362     302     259     221     185     158
954          UI     132     111      98      88      63      59      49      38      39      39
955          UI      14      13      14      14      14      13      14      14      14      13
956          UI       0       0       0       0       0       0       0       0       0       0
             *

957          KK    C50a COMBINE
958          KM    Combine 50a and R50b at Indian School Rd. and East of 355th Ave.
959          HC       2
             *

960          KK   CC46b COMBINE
961          KM    Combine C46b and C50a
962          HC       2
             *

963          KK    R46b   ROUTE
964          KM    Route 46b to 46a in Phillips Wash
965          RS       6    FLOW      -1
966          RC   0.060   0.050   0.060    9206  0.0039    0.00
967          RX    0.00   74.50  298.00  372.50  402.50  477.00  700.50  775.00
968          RY    9.00    6.30    3.60    0.00    0.00    3.60    6.30    9.00
             *

969          KK     46a   BASIN
970          KM    A Subbasin of Phillips Wash at I-10 and East of 355th Ave.
971          KM    L=1.95, Lca=1.07, S=31.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.5
972          BA   0.807
973          LG    0.30    0.25    4.10    0.46       0
974          UI       0      61      61     185     290     398     480     539     590     577
975          UI     538     456     373     307     255     206     173     139     114      95
976          UI      77      64      49      42      42      23      15      15      15      15
977          UI      15      14      15       0       0       0       0       0       0       0
978          UI       0       0       0       0       0       0       0       0       0       0
             *

979          KK    C46a COMBINE
980          KM    Combine 46a and R46b at I-10 and East of 355th Ave.
981          HC       2
             *

982          KK     48b   BASIN
983          KM    A Subbasin of T2N-R6W-S36W at South of Indian School Rd and East of 355th Av
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 984          KM    L=1.18, Lca=0.54, S=30.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.5
 985          BA   0.204
 986          LG    0.30     0.25     4.35     0.40        0
 987          UI       0       24       62      130      190      223      227      191      143      104
 988          UI      77       57       41       31       23       16       11        6        6        6
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 989          UI       6        0        0        0        0        0        0        0        0        0
 990          UI       0        0        0        0        0        0        0        0        0        0
 991          UI       0        0        0        0        0        0        0        0        0        0
              *

 992          KK    R48b   ROUTE
 993          KM    Route 48b to 48a in Wash T2N-R6W-S36W
 994          RS      13    FLOW       -1
 995          RC   0.055   0.060    0.055     6543   0.0055     0.00
 996          RX    0.00   67.00   268.00   335.00   400.00   467.00   668.00   735.00
 997          RY    5.00    3.50     2.00     0.00     0.00     2.00     3.50     5.00
              *

 998          KK     48a   BASIN
 999          KM    A Subbasin of T2N-R6W-S36W at I-10 and 355th Ave.
1000          KM    L=1.44, Lca=0.74, S=30.5, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=35.5
1001          BA   0.283
1002          LG    0.30     0.25     4.25     0.42        1
1003          UI       0       27       46      107      169      218      247      256      240      194
1004          UI     151      119       93       73       56       45       34       29       18       19
1005          UI      11        7        6        7        6        7        6        0        0        0
1006          UI       0        0        0        0        0        0        0        0        0        0
1007          UI       0        0        0        0        0        0        0        0        0        0
              *

1008          KK    C48a COMBINE
1009          KM    Combine 48a and R48b at I-10 and 355th Ave.
1010          HC       2
              *

1011          KK   CC48a COMBINE
1012          KM    Combine C48a and C46a at I-10 and E. 355th Ave.
1013          HC       2
              *

1014          KK    S46a STORAGE
1015          KM    Storage Routing through 2-10'x3' CBC, 3-10'x5' CBC, & 48" CMP
1016          RS       1    STOR        0
1017          SV     0.0     0.60     2.90     8.80    14.00    34.90    62.00    97.00
1018          SE    1087     1088     1089     1090     1091     1092     1093     1094
1019          SQ     0.0    258.0    586.0    990.0   1402.0   1823.0   2061.0   2314.0
              *

1020          KK    R46a   ROUTE
1021          KM    Route S46a to CC46a in Phillips Wash
1022          RS       2    FLOW       -1
1023          RC   0.060   0.050    0.060     2368   0.0051     0.00
1024          RX    0.00   51.50   206.00   257.50   287.50   339.00   493.50   545.00
1025          RY    4.00    2.80     1.60     0.00     0.00     1.60     2.80     4.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1026          KK     44f   BASIN
1027          KM    A Subbasin at Northern Ave., West of 355th Ave.
1028          KM    L=1.67, Lca=0.86, S=38.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=37.2
1029          BA   0.267
1030          LG    0.30     0.25     5.40     0.23        0
1031          UI       0       24       38       91      142      189      219      229      226      190
1032          UI     152      122       94       76       59       47       38       28       24       16
1033          UI      17        9        6        6        6        6        6        6        0        0
1034          UI       0        0        0        0        0        0        0        0        0        0
1035          UI       0        0        0        0        0        0        0        0        0        0
              *

1036          KK     44e   BASIN
1037          KM    A Subbasin of T2N-R6W-S36 at South of Northern Ave. and 355th Ave.
1038          KM    L=2.25, Lca=1.07, S=36.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.6
1039          BA   0.463
1040          LG    0.30     0.25     5.40     0.23        0
1041          UI       0       34       35       97      157      216      264      301      326      325
1042          UI     307      270      220      182      152      126      100       85       69       59
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1043          UI      50      36      34      24      24      22       8       8       8       9
1044          UI       8       8       8       9       0       0       0       0       0       0
1045          UI       0       0       0       0       0       0       0       0       0       0
              *

1046          KK    C44e COMBINE
1047          KM    Combine 44e and 44f at South of Northern Ave. West of 355th Ave.
1048          HC       2
              *

1049          KK    R44e   ROUTE
1050          KM    Route 44e to 44d in Wash T2N-R6W-S36
1051          RS      10    FLOW      -1
1052          RC   0.055   0.060   0.055    9594  0.0067    0.00
1053          RX    0.00   51.00  204.00  255.00  275.00  326.00  479.00  530.00
1054          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1055          KK     44d   BASIN
1056          KM    A Subbasin of T2N-R6W-S36 at Bethany Home Rd., West of 355th Ave.
1057          KM    L=2.97, Lca=1.24, S=35.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=53.9
1058          BA   0.821
1059          LG    0.30    0.25    5.80    0.19       0
1060          UI       0      51      51     102     183     268     331     393     453     475
1061          UI     490     487     452     392     340     287     242     211     175     149
1062          UI     127     106      93      80      66      54      51      36      35      35
1063          UI      23      12      13      12      13      12      13      12      13      12
1064          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1065          KK    C44d COMBINE
1066          KM    Combine 44d and R44e at Bethany Home Rd. and West of 355th Ave.
1067          HC       2
              *

1068          KK    R44d   ROUTE
1069          KM    Route 44d to 44c in Wash T2N-R6W-S36
1070          RS       4    FLOW      -1
1071          RC   0.055   0.060   0.055    5423  0.0054    0.00
1072          RX    0.00   24.50   98.00  122.50  147.50  172.00  245.50  270.00
1073          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1074          KK     44c   BASIN
1075          KM    A Subbasin of T2N-R6W-S36 at Camelback Rd. and West of 355th Ave.
1076          KM    L=1.57, Lca=0.73, S=33.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.1
1077          BA   0.338
1078          LG    0.30    0.25    5.60    0.22       0
1079          UI       0      32      57     133     205     268     300     307     287     228
1080          UI     177     141     109      83      66      52      39      33      22      22
1081          UI      10       8       8       8       8       8       0       0       0       0
1082          UI       0       0       0       0       0       0       0       0       0       0
1083          UI       0       0       0       0       0       0       0       0       0       0
              *

1084          KK    C44c COMBINE
1085          KM    Combine 44c and R44d at Camelback Rd. and West of 355th Ave.
1086          HC       2
              *

1087          KK    R44c   ROUTE
1088          KM    Route 44c to 44b in Wash T2N-R6W-S36
1089          RS       4    FLOW      -1
1090          RC   0.055   0.060   0.055    5610  0.0055    0.00
1091          RX    0.00   37.00  148.00  185.00  225.00  262.00  373.00  410.00
1092          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1093          KK     44b   BASIN
1094          KM    A Subbasin of T2N-R6W-S36 at Indian School Rd. and West of 355th Ave.
1095          KM    L=1.35, Lca=0.64, S=32.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.7
1096          BA   0.279
1097          LG    0.30    0.25    5.30    0.24       1
1098          UI       0      29      61     141     210     261     285     266     223     166
1099          UI     127      97      73      55      43      31      22      21      11       7
1100          UI       8       7       7       8       0       0       0       0       0       0
1101          UI       0       0       0       0       0       0       0       0       0       0
1102          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1103          KK    C44b COMBINE
1104          KM    Combine 44b and R44c at Indian School Rd. and West of 355th Ave.
1105          HC       2
              *

1106          KK    R44b   ROUTE
1107          KM    Route 44b to 44a in Wash T2N-R6W-S36
1108          RS       8    FLOW      -1
1109          RC   0.055   0.060   0.055    8676  0.0052    0.00
1110          RX    0.00   61.00  244.00  305.00  350.00  411.00  594.00  655.00
1111          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1112          KK     44a   BASIN
1113          KM    A Subbasin of T2N-R6W-S36 at I-10 and 355th Ave.
1114          KM    L=3.04, Lca=1.41, S=31.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=58.6
1115          BA   0.833
1116          LG    0.29    0.25    4.90    0.29       3
1117          UI       0      48      48      74     156     221     282     332     402     427
1118          UI     450     463     446     421     378     321     277     240     207     178
1119          UI     154     133     110      97      86      73      64      50      51      34
1120          UI      33      33      33      11      12      12      11      12      12      11
1121          UI      12      12      11      12       0       0       0       0       0       0
              *

1122          KK    C44a COMBINE
1123          KM    Combine 44a and R44b at I-10 and 355th Ave.
1124          HC       2
              *

1125          KK    S44a STORAGE
1126          KM    Storage Routing through 2-10'x8' CBC
1127          RS       1    STOR       0
1128          SV     0.0    0.30    1.70    4.60    9.70   16.90   26.10   37.70   52.00
1129          SE    1086    1087    1088    1089    1090    1091    1092    1093    1094
1130          SQ     0.0    87.0   217.0   347.0   516.0   720.0   923.0  1127.0  1302.0
              *

1131          KK    R44a   ROUTE
1132          KM    Route 44a to CC44a in Wash T2N-R6W-S36
1133          RS       2    FLOW      -1
1134          RC   0.055   0.060   0.055    1962  0.0041    0.00
1135          RX    0.00   31.00  124.00  155.00  205.00  236.00  329.00  360.00
1136          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1137          KK   CC46a COMBINE
1138          KM    Combine R46a and R44a at South of I-10 and 355th Ave.
1139          HC       2
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1140          KK  R44a-d   ROUTE
1141          KM    Route from u/s of 40d to d/s of 40d in Phillips Wash
1142          RS       5    FLOW      -1
1143          RC   0.060   0.050   0.060    7483  0.0054    0.00
1144          RX    0.00   35.00  140.00  175.00  225.00  260.00  365.00  400.00
1145          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
              *

1146          KK     40d   BASIN
1147          KM    A Subbasin of Phillips Wash at South of Van Buren and 355th Ave.
1148          KM    L=1.88, Lca=1.04, S=26.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.9
1149          BA   0.728
1150          LG    0.30    0.25    4.40    0.38       1
1151          UI       0      55      55     162     256     350     424     485     525     519
1152          UI     482     417     340     279     235     190     157     128     106      86
1153          UI      73      58      48      38      37      26      14      13      13      14
1154          UI      13      13      13      14       0       0       0       0       0       0
1155          UI       0       0       0       0       0       0       0       0       0       0
              *

1156          KK    C40d COMBINE
1157          KM    Combine 40d and R44a-d at South of Van Buren and 355th Ave.
1158          HC       2
```

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                *

1159            KK     42b   BASIN
1160            KM    A Subbasin of T1N-R6W-S12 at North of Van Buren St., West of 355th Ave.
1161            KM    L=1.34, Lca=0.67, S=32.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.0
1162            BA   0.309
1163            LG    0.30    0.25    4.70    0.31       1
1164            UI       0      32      67     152     228     284     312     296     248     186
1165            UI     142     111      81      63      49      34      27      22      15       8
1166            UI       8       8       8       8       0       0       0       0       0       0
1167            UI       0       0       0       0       0       0       0       0       0       0
1168            UI       0       0       0       0       0       0       0       0       0       0
                *

1169            KK    R42b   ROUTE
1170            KM    Route 42b to 42a in Wash T1N-R6W-S12
1171            RS       6    FLOW      -1
1172            RC   0.055   0.060   0.055    4141  0.0058    0.00
1173            RX    0.00  103.50  414.00  517.50  537.50  641.00  951.50 1055.00
1174            RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
                *

1175            KK     42a   BASIN
1176            KM    A Subbasin of T1N-T6W-S12 at South of Van Buren and West of 355th Ave.
1177            KM    L=1.23, Lca=0.56, S=37.5, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=27.6
1178            BA   0.360
1179            LG    0.29    0.25    4.60    0.34       3
1180            UI       0      44     117     249     352     419     403     328     243     174
1181            UI     128      92      70      47      33      30      13      11      10      11
1182            UI      11       0       0       0       0       0       0       0       0       0
1183            UI       0       0       0       0       0       0       0       0       0       0
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1184            UI       0       0       0       0       0       0       0       0       0       0
                *

1185            KK    C42a COMBINE
1186            KM    Combine 42a and R42b at South of Van Buren and West of 355th Ave.
1187            HC       2
                *

1188            KK   CC40d COMBINE
1189            KM    Combine C40d and C42a at South of Van Buren and West of 355th Ave.
1190            HC       2
                *

1191            KK    R40d   ROUTE
1192            KM    Route 40d to 40c in Phillips Wash
1193            RS       4    FLOW      -1
1194            RC   0.060   0.045   0.060    4406  0.0041    0.00
1195            RX    0.00  134.00  536.00  670.00  710.00  844.00 1246.00 1380.00
1196            RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
                *

1197            KK     40c   BASIN
1198            KM    A Subbasin of Phillips Wash at Buckeye Rd. and 355th Ave.
1199            KM    L=1.06, Lca=0.53, S=39.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.9
1200            BA   0.501
1201            LG    0.30    0.25    4.60    0.34       1
1202            UI       0      65     197     395     550     624     574     423     307     219
1203            UI     153     111      78      55      45      20      15      17      15      16
1204            UI       0       0       0       0       0       0       0       0       0       0
1205            UI       0       0       0       0       0       0       0       0       0       0
1206            UI       0       0       0       0       0       0       0       0       0       0
                *

1207            KK    C40c COMBINE
1208            KM    Combine 40c and R40d at Buckeye Rd. and 355th Ave.
1209            HC       2
                *

1210            KK    R40c   ROUTE
1211            KM    Route 40c to 40b in Phillips Wash
1212            RS       6    FLOW      -1
1213            RC   0.060   0.045   0.060    7542  0.0048    0.00
1214            RX    0.00  181.00  724.00  905.00  960.00 1141.00 1684.00 1865.00
1215            RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
                *

1216            KK     40b   BASIN
1217            KM    A Subbasin of Phillips Wash at South of Lower Buckeye Rd., East of 355th Ave
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1218          KM    L=1.89, Lca=1.13, S=28.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=45.8
1219          BA   0.416
1220          LG    0.29    0.25    4.60    0.34       4
1221          UI       0      30      31      86     141     191     236     267     293     292
1222          UI     274     243     199     165     138     112      92      77      63      53
1223          UI      47      32      32      21      21      21       7       8       7       7
1224          UI       8       7       8       7       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1225          UI       0       0       0       0       0       0       0       0       0       0
              *

1226          KK    C40b COMBINE
1227          KM    Combine 40b and R40c at South of Lower Buckeye and East of 355th Ave.
1228          HC       2
              *

1229          KK     64d   BASIN
1230          KM    A Subbasin at South of Bethany Home Rd., East of 347th Ave.
1231          KM    L=0.82, Lca=0.41, S=34.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=21.9
1232          BA   0.144
1233          LG    0.30    0.27    3.31    0.62       0
1234          UI       0      22      89     161     205     202     143      98      66      44
1235          UI      29      20      14       5       6       5       5       0       0       0
1236          UI       0       0       0       0       0       0       0       0       0       0
1237          UI       0       0       0       0       0       0       0       0       0       0
1238          UI       0       0       0       0       0       0       0       0       0       0
              *

1239          KK    R64d   ROUTE
1240          KM    Route 64d to 64c in Dickey Wash
1241          RS      15    FLOW      -1
1242          RC   0.060   0.050   0.060    9783  0.0065    0.00
1243          RX    0.00   38.00  152.00  190.00  230.00  268.00  382.00  420.00
1244          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1245          KK     64c   BASIN
1246          KM    A Subbasin of Dickey Wash at Indian School Rd. and 347th Ave.
1247          KM    L=1.96, Lca=0.98, S=36.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=41.8
1248          BA   0.637
1249          LG    0.30    0.25    3.92    0.41       0
1250          UI       0      51      60     168     264     350     434     472     495     468
1251          UI     412     338     269     221     182     145     116      96      79      60
1252          UI      55      35      35      31      13      12      13      12      13      12
1253          UI      13       0       0       0       0       0       0       0       0       0
1254          UI       0       0       0       0       0       0       0       0       0       0
              *

1255          KK    C64c COMBINE
1256          KM    Combine 64c and R64d at Indian School Rd. and 347th Ave.
1257          HC       2
              *

1258          KK    R64c   ROUTE
1259          KM    Route 64c to 64b in Dickey Wash
1260          RS       5    FLOW      -1
1261          RC   0.060   0.050   0.060    5389  0.0063    0.00
1262          RX    0.00   50.00  200.00  250.00  275.00  325.00  475.00  525.00
1263          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1264          KK     64b   BASIN
1265          KM    A Subbasin of Dickey Wash at Thomas Rd. and 347th Ave.
1266          KM    L=2.19, Lca=1.06, S=37.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.8
1267          BA   0.836
1268          LG    0.30    0.25    3.92    0.41       0
1269          UI       0      62      63     188     294     407     488     557     610     590
1270          UI     554     481     388     321     268     218     179     147     120     100
1271          UI      83      66      54      43      42      29      15      16      15      16
1272          UI      15      15      16       0       0       0       0       0       0       0
1273          UI       0       0       0       0       0       0       0       0       0       0
              *

1274          KK    C64b COMBINE
1275          KM    Combine 64b and R64c at Thomas Rd. and 347th Ave.
1276          HC       2
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                *

1277            KK    R64b   ROUTE
1278            KM    Route 64b to 64a in Dickey Wash
1279            RS       4    FLOW      -1
1280            RC   0.060   0.050   0.060    5503  0.0051    0.00
1281            RX    0.00   21.00   84.00  105.00  125.00  146.00  209.00  230.00
1282            RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
                *

1283            KK     64a   BASIN
1284            KM    A Subbasin of Dickey Wash at I-10 and 347th Ave.
1285            KM    L=1.35, Lca=0.62, S=40.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.0
1286            BA   0.377
1287            LG    0.30    0.25    4.20    0.43       0
1288            UI       0      42      98     213     316     387     404     362     283     207
1289            UI     156     118      86      67      47      35      29      17      10      11
1290            UI      10      10      10       0       0       0       0       0       0       0
1291            UI       0       0       0       0       0       0       0       0       0       0
1292            UI       0       0       0       0       0       0       0       0       0       0
                *

1293            KK    C64a COMBINE
1294            KM    Combine 64a and R64b at I-10 and 347th Ave.
1295            HC       2
                *

1296            KK     62b   BASIN
1297            KM    A Subbasin of T2N-R5W-S32 at Thomas Rd. and East of 347th Ave.
1298            KM    L=1.04, Lca=0.51, S=38.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.4
1299            BA   0.245
1300            LG    0.30    0.25    4.15    0.44       0
1301            UI       0      33     101     200     280     312     276     204     147     102
1302            UI      72      53      35      24      21       8       8       8       8       0
1303            UI       0       0       0       0       0       0       0       0       0       0
1304            UI       0       0       0       0       0       0       0       0       0       0
1305            UI       0       0       0       0       0       0       0       0       0       0
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1306            KK    R62b   ROUTE
1307            KM    Route 62b to 62a in Wash T2N-R5W-S32
1308            RS       5    FLOW      -1
1309            RC   0.060   0.050   0.060    5554  0.0076    0.00
1310            RX    0.00   40.40  161.60  202.00  218.00  258.40  379.60  420.00
1311            RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
                *

1312            KK     62a   BASIN
1313            KM    A Subbasin of T2N-R5W-S32 at I-10 and 347th Ave.
1314            KM    L=1.38, Lca=0.66, S=46.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.1
1315            BA   0.586
1316            LG    0.30    0.25    4.15    0.44       0
1317            UI       0      66     150     334     483     601     621     570     437     325
1318            UI     244     183     134     106      73      55      45      29      16      16
1319            UI      16      16      16       0       0       0       0       0       0       0
1320            UI       0       0       0       0       0       0       0       0       0       0
1321            UI       0       0       0       0       0       0       0       0       0       0
                *

1322            KK    C62a COMBINE
1323            KM    Combine 62a and R62b at I-10 and 347th Ave.
1324            HC       2
                *

1325            KK   CC64a COMBINE
1326            KM    Combine C62a and D62aW at I-10 and 347th Ave.
1327            HC       2
                *

1328            KK    S64a STORAGE
1329            KM    Storage Routing through 72" CMP and 10'x5' CBC
1330            RS       1    STOR       0
1331            SV     0.0    0.03    0.20    1.00    2.60    5.80   12.00   13.30   26.00   44.50
1332            SE    1072    1073    1074    1075    1076    1077    1078    1079    1080    1081
1333            SQ     0.0    66.0   171.0   312.0   454.0   595.0   698.0   792.0   887.0   982.0
                *

1334            KK    R62a   ROUTE
1335            KM    Route 62a to 60c in Dickey Wash
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1336          RS       5    FLOW      -1
1337          RC   0.060   0.050   0.060    5737  0.0038    0.00
1338          RX    0.00   30.50  122.00  152.50  182.50  213.00  304.50  335.00
1339          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1340          KK     60c   BASIN
1341          KM    A Subbasin of Dickey Wash at Van Buren St. and 347th Ave.
1342          KM    L=2.20, Lca=0.90, S=35.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=42.6
1343          BA   1.044
1344          LG    0.30    0.25    4.35    0.40       1
1345          UI       0      82      91     266     411     558     685     751     799     759
1346          UI     684     567     455     372     307     244     199     163     135     110
1347          UI      87      69      56      57      30      21      20      20      20      20
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1348          UI      20      20       0       0       0       0       0       0       0       0
1349          UI       0       0       0       0       0       0       0       0       0       0
              *

1350          KK    C60c COMBINE
1351          KM    Combine 60c and R62a at Van Buren St. and 347th Ave.
1352          HC       2
              *

1353          KK    R60c   ROUTE
1354          KM    Route 60c to 60b in Dickey Wash
1355          RS       6    FLOW      -1
1356          RC   0.060   0.050   0.060    5841  0.0051    0.00
1357          RX    0.00   69.50  278.00  347.50  397.50  467.00  675.50  745.00
1358          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

1359          KK     60b   BASIN
1360          KM    A Subbasin of Dickey Wash at Buckeye Rd. and West of 347th Ave.
1361          KM    L=2.31, Lca=1.05, S=32.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=47.0
1362          BA   1.111
1363          LG    0.29    0.25    4.55    0.35       4
1364          UI       0      79      81     210     349     485     595     696     747     761
1365          UI     729     667     546     455     382     313     262     222     175     150
1366          UI     125     102      83      71      54      55      43      20      19      20
1367          UI      19      20      19      20      19       0       0       0       0       0
1368          UI       0       0       0       0       0       0       0       0       0       0
              *

1369          KK    C60b COMBINE
1370          KM    Combine 60b and R60c at Buckeye Rd. and West of 347th Ave.
1371          HC       2
              *

1372          KK    R60b   ROUTE
1373          KM    Route 60b to 60a in Dickey Wash
1374          RS       7    FLOW      -1
1375          RC   0.060   0.050   0.060    6955  0.0046    0.00
1376          RX    0.00  137.50  550.00  687.50  747.50  885.00 1297.50 1435.00
1377          RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
              *

1378          KK     60a   BASIN
1379          KM    A Subbasin of Dickey Wash at South of Lower Buckeye Rd., West of 347th Ave.
1380          KM    L=1.70, Lca=0.92, S=35.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=39.0
1381          BA   0.771
1382          LG    0.29    0.25    4.90    0.29       4
1383          UI       0      66      92     239     371     499     580     631     634     570
1384          UI     462     373     294     238     192     148     121     103      70      63
1385          UI      46      45      25      17      16      16      16      17      16       0
1386          UI       0       0       0       0       0       0       0       0       0       0
1387          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1388          KK    C60a COMBINE
1389          KM    Combine 60a and R60b at South of Lower Buckeye Rd and West of 347th Ave.
1390          HC       2
              *

1391          KK   CC40b COMBINE
1392          KM    Combine C40b and C60a at South of Lower Buckeye Rd and West of 347th Ave.
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1393          HC       2
              *

1394          KK    R40b   ROUTE
1395          KM    Route 40b to 40a in Phillips Wash
1396          RS       4    FLOW      -1
1397          RC   0.060   0.045   0.060    4432  0.0050    0.00
1398          RX    0.00  112.50  450.00  562.50  632.50  745.00 1082.50 1195.00
1399          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1400          KK     40a   BASIN
1401          KM    A Subbasin of Phillips Wash at Broadway Rd. and 347th Ave.
1402          KM    L=1.15, Lca=0.67, S=29.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.8
1403          BA   0.268
1404          LG    0.30    0.25    4.55    0.35       2
1405          UI       0      30      64     144     213     264     278     260     206     154
1406          UI     116      88      65      49      38      28      20      18       7       7
1407          UI       7       7       7       0       0       0       0       0       0       0
1408          UI       0       0       0       0       0       0       0       0       0       0
1409          UI       0       0       0       0       0       0       0       0       0       0
              *

1410          KK    C40a COMBINE
1411          KM    Combine 40a and R40b at Broadway Rd. and 347th Ave.
1412          HC       2
              *

1413          KK     36c   BASIN
1414          KM    A Subbasin of Luke Wash at Buckeye Rd. and East of 347th Ave.
1415          KM    L=2.99, Lca=1.17, S=32.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=53.7
1416          BA   1.085
1417          LG    0.30    0.25    4.45    0.37       2
1418          UI       0      68      68     136     244     354     445     526     600     632
1419          UI     648     648     595     514     452     372     320     277     229     195
1420          UI     166     139     123     106      84      72      66      46      46      47
1421          UI      27      16      17      17      16      17      16      17      16      17
1422          UI       0       0       0       0       0       0       0       0       0       0
              *

1423          KK    R36c   ROUTE
1424          KM    Route 36c to 36b in Luke Wash
1425          RS       5    FLOW      -1
1426          RC   0.050   0.045   0.050    5419  0.0063    0.00
1427          RX    0.00   79.30  317.20  396.50  446.50  525.80  763.70  843.00
1428          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1429          KK     36b   BASIN
1430          KM    A Subbasin of Luke Wash at Lower Buckeye Rd. and East of 347th Ave.
1431          KM    L=1.73, Lca=0.79, S=38.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.6
1432          BA   1.059
1433          LG    0.30    0.25    4.65    0.32       2
1434          UI       0      97     157     379     584     772     886     930     893     748
1435          UI     590     470     370     286     228     177     147     104      85      67
1436          UI      67      24      23      24      24      23      24       0       0       0
1437          UI       0       0       0       0       0       0       0       0       0       0
1438          UI       0       0       0       0       0       0       0       0       0       0
              *

1439          KK    C36b COMBINE
1440          KM    Combine 36b and R36c at Lower Buckeye Rd. and East of 347th Ave.
1441          HC       2
              *

1442          KK    R36b   ROUTE
1443          KM    Route 36b to 36a in Luke Wash
1444          RS       5    FLOW      -1
1445          RC   0.050   0.045   0.050    5446  0.0051    0.00
1446          RX    0.00   71.00  284.00  355.00  380.00  451.00  664.00  735.00
1447          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1448          KK     36a   BASIN
1449          KM    A Subbasin of Luke Wash at Broadway Rd. and 347th Ave.
1450          KM    L=1.51, Lca=0.64, S=38.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.0
1451          BA   0.677
1452          LG    0.29    0.25    4.70    0.31       3
1453          UI       0      71     146     333     499     622     684     649     544     406
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1454          UI     312     243     177     138     109      75      57      50      32      17
1455          UI      18      17      17      18       0       0       0       0       0       0
1456          UI       0       0       0       0       0       0       0       0       0       0
1457          UI       0       0       0       0       0       0       0       0       0       0
              *

1458          KK    C36a COMBINE
1459          KM    Combine 36a and R36b at Broadway Rd. and 347th Ave.
1460          HC       2
              *

1461          KK   CC36a COMBINE
1462          KM    Combine C36a and C40a at Broadway Rd. and 347th Ave.
1463          HC       2
              *

1464          KK    R36a   ROUTE
1465          KM    Route 36a to 30g in Luke Wash
1466          RS       8    FLOW      -1
1467          RC   0.060   0.045   0.060    6970  0.0046    0.00
1468          RX    0.00   54.00  216.00  270.00  310.00  364.00  526.00  580.00
1469          RY    5.00    3.50    2.00    0.00    0.00    2.00    3.50    5.00
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1470          KK     30g   BASIN
1471          KM    A Subbasin of Luke Wash at Salome Hwy. and 347th Ave.
1472          KM    L=1.84, Lca=0.92, S=38.0, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=38.8
1473          BA   0.844
1474          LG    0.29    0.25    4.50    0.36       4
1475          UI       0      73     104     261     414     550     640     695     693     628
1476          UI     501     404     321     258     210     158     131     110      78      65
1477          UI      51      50      24      18      18      18      18      18      17       0
1478          UI       0       0       0       0       0       0       0       0       0       0
1479          UI       0       0       0       0       0       0       0       0       0       0
              *

1480          KK    C30g COMBINE
1481          KM    Combine 30g and R36a at Salome Hwy. and 347th Ave.
1482          HC       2
              *

1483          KK     34b   BASIN
1484          KM    A Subbasin of T1N-R5W-S32 at Broadway Rd. and West of 347th Ave.
1485          KM    L=2.36, Lca=1.26, S=28.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=51.8
1486          BA   0.631
1487          LG    0.30    0.25    4.55    0.35       3
1488          UI       0      41      41      88     156     225     277     328     368     389
1489          UI     390     380     343     294     244     208     175     153     122     107
1490          UI      88      77      63      55      43      41      28      28      28      16
1491          UI      10      10      10      10       9      10      10      10      10       0
1492          UI       0       0       0       0       0       0       0       0       0       0
              *

1493          KK    R34b   ROUTE
1494          KM    Route 34b to 34a in Wash T1N-R5W-S32
1495          RS      10    FLOW      -1
1496          RC   0.050   0.050   0.050    7227  0.0053    0.00
1497          RX    0.00   91.00  364.00  455.00  485.00  576.00  849.00  940.00
1498          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1499          KK     34a   BASIN
1500          KM    A Subbasin of T1N-R5W-S32 at Salome Hwy. and West of 347th Ave.
1501          KM    L=2.28, Lca=1.00, S=28.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=47.1
1502          BA   0.446
1503          LG    0.29    0.25    4.70    0.31       5
1504          UI       0      32      32      84     141     193     237     277     301     304
1505          UI     292     268     221     182     155     127     104      90      70      61
1506          UI      50      42      34      28      22      22      18       8       8       7
1507          UI       8       8       8       7       8       0       0       0       0       0
1508          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1509          KK    C34a COMBINE
1510          KM    Combine 34a and R34b at Salome Hwy. and West of 347th Ave.
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1511          HC       2
              *

1512          KK   CC30g COMBINE
1513          KM    Combine C30g and C34a at Salome Hwy. and 347th Ave.
1514          HC       2
              *

1515          KK    R30g   ROUTE
1516          KM    Route 30g to 30f in Luke Wash
1517          RS       7    FLOW      -1
1518          RC   0.060   0.045   0.060    6597  0.0049    0.00
1519          RX    0.00  170.00  680.00  850.00  880.00 1050.00 1560.00 1730.00
1520          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1521          KK     30f   BASIN
1522          KM    A Subbasin of Luke Wash at South of Baseline Rd. and 347th Ave.
1523          KM    L=3.46, Lca=1.20, S=27.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=59.4
1524          BA   1.771
1525          LG    0.30    0.25    4.55    0.35       1
1526          UI       0     100     101     150     321     452     585     693     828     895
1527          UI     932     966     944     896     817     698     590     524     449     385
1528          UI     335     289     245     214     188     158     150     106     105      87
1529          UI      68      69      69      44      25      24      25      24      25      24
1530          UI      25      24      25      24       0       0       0       0       0       0
              *

1531          KK    C30f COMBINE
1532          KM    Combine 30f and R30g at South of Baseline Rd. and 347th Ave.
1533          HC       2
              *

1534          KK    R30f   ROUTE
1535          KM    Route 30f to 30e in Luke Wash
1536          RS       5    FLOW      -1
1537          RC   0.060   0.045   0.060    4599  0.0044    0.00
1538          RX    0.00  162.50  650.00  812.50  842.50 1005.00 1492.50 1655.00
1539          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1540          KK     30e   BASIN
1541          KM    A Subbasin of Luke Wash at South of Dobbins Rd. and East of 347th Ave.
1542          KM    L=1.26, Lca=0.62, S=39.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.3
1543          BA   0.400
1544          LG    0.30    0.25    5.30    0.24       1
1545          UI       0      46     112     240     350     424     434     384     290     213
1546          UI     159     119      87      65      49      32      32      11      11      11
1547          UI      12      11       0       0       0       0       0       0       0       0
1548          UI       0       0       0       0       0       0       0       0       0       0
1549          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1550          KK    C30e COMBINE
1551          KM    Combine 30e and R30f at South of Dobbins Rd. and East of 347th Ave.
1552          HC       2
              *

1553          KK    R30e   ROUTE
1554          KM    Route 30e to 30d in Luke Wash
1555          RS       3    FLOW      -1
1556          RC   0.060   0.045   0.060    4256  0.0047    0.00
1557          RX    0.00  138.50  554.00  692.50  762.50  901.00 1316.50 1455.00
1558          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1559          KK     30d   BASIN
1560          KM    A Subbasin of Luke Wash at Elliot Rd. and East of 347th Ave.
1561          KM    L=2.11, Lca=1.00, S=37.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=43.3
1562          BA   0.615
1563          LG    0.30    0.25    4.50    0.36       0
1564          UI       0      48      49     153     233     319     389     433     461     445
1565          UI     409     339     270     225     187     150     121     100      82      70
1566          UI      51      46      33      32      26      12      11      12      12      12
1567          UI      11      12       0       0       0       0       0       0       0       0
1568          UI       0       0       0       0       0       0       0       0       0       0
              *

1569          KK    C30d COMBINE
```

```
1570          KM    Combine 30d and R30e at Elliot Rd. and East of 347th Ave.
1571          HC       2
              *

1572          KK   CC20b COMBINE
1573          KM    Combine C20b and C30d at UPRR and East of 347th Ave.
1574          HC       2
              *

1575          KK    S20b STORAGE
1576          KM    Storage Routing through UPRR bridges
1577          RS       1    STOR       0
1578          SV     0.0    0.80     3.30     8.70    18.60    34.60    57.80    92.50   142.20
1579          SE     854     855      856      857      858      859      860      861      862
1580          SQ     0.0   100.0    403.0    770.0   1325.0   2286.0   3248.0   4210.0   5170.0
              *

1581          KK    R20b   ROUTE
1582          KM    Route 20b to 20a in Wash T1S-R5W-S17
1583          RS       4    FLOW      -1
1584          RC   0.060   0.070    0.060     3435   0.0029     0.00
1585          RX    0.00   93.50   374.00   467.50   587.50   681.00   961.50  1055.00
1586          RY    4.00    2.80     1.60     0.00     0.00     1.60     2.80     4.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1587          KK     20a   BASIN
1588          KM    A Subbasin of T1S-R5W-S17 at South of Elliot Rd. and East of 347th Ave.
1589          KM    L=1.05, Lca=0.46, S=32.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.4
1590          BA   0.239
1591          LG    0.30    0.25     4.10     0.46       36
1592          UI       0      32       98      195      274      304      271      198      143      100
1593          UI      70      52       34       24       20        8        7        8        8        0
1594          UI       0       0        0        0        0        0        0        0        0        0
1595          UI       0       0        0        0        0        0        0        0        0        0
1596          UI       0       0        0        0        0        0        0        0        0        0
              *

1597          KK    C20a COMBINE
1598          KM    Combine 20a and R20b at South of Elliot Rd. and East of 347th Ave.
1599          HC       2
              *

1600          KK    R20a   ROUTE
1601          KM    Route C20a to 30c in luke Wash
1602          RS       3    FLOW      -1
1603          RC   0.060   0.045    0.060     2904   0.0048     0.00
1604          RX    0.00   71.50   286.00   357.50   397.50   469.00   683.50   755.00
1605          RY    6.00    4.20     2.40     0.00     0.00     2.40     4.20     6.00
              *

1606          KK     30c   BASIN
1607          KM    A Subbasin of Luke Wash at Narramore Rd. and 339th Ave.
1608          KM    L=1.14, Lca=0.53, S=28.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.4
1609          BA   0.243
1610          LG    0.30    0.25     4.40     0.38        9
1611          UI       0      29       73      157      227      270      270      226      170      123
1612          UI      91      67       49       36       27       19       13        8        7        7
1613          UI       7       0        0        0        0        0        0        0        0        0
1614          UI       0       0        0        0        0        0        0        0        0        0
1615          UI       0       0        0        0        0        0        0        0        0        0
              *

1616          KK    C30c COMBINE
1617          KM    Combine R20a and 30c
1618          HC       2
              *

1619          KK     32b   BASIN
1620          KM    A Subbasin of Minor Tributary at UPRR and Elliot Rd.
1621          KM    L=1.19, Lca=0.55, S=50.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.2
1622          BA   0.476
1623          LG    0.30    0.25     4.60     0.34        0
1624          UI       0      61      181      368      509      590      542      407      300      210
1625          UI     150     108       77       54       42       23       15       15       15       15
1626          UI       0       0        0        0        0        0        0        0        0        0
1627          UI       0       0        0        0        0        0        0        0        0        0
1628          UI       0       0        0        0        0        0        0        0        0        0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1629          KK    S32b STORAGE
1630          KM    Storage Routing through UPRR bridge
1631          RS       1    STOR       0
1632          SV     0.0    1.00    3.40    8.00   15.50
1633          SE     860     861     862     863     864
1634          SQ     0.0   258.0   536.0   853.0  1400.0
              *

1635          KK    R32b   ROUTE
1636          KM    Route 32b to 32a in Wash Minor Tributary
1637          RS       6    FLOW      -1
1638          RC   0.050   0.045   0.050    5658  0.0053    0.00
1639          RX    0.00   39.00  156.00  195.00  205.00  244.00  361.00  400.00
1640          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1641          KK     32a   BASIN
1642          KM    A Subbasin of Minor Tributary at Narramore Rd. and 339th Ave.
1643          KM    L=1.24, Lca=0.61, S=37.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.3
1644          BA   0.289
1645          LG    0.30    0.25    4.55    0.35       1
1646          UI       0      33      81     173     253     306     315     277     209     154
1647          UI     115      85      64      47      35      23      23       8       8       8
1648          UI       8       9       0       0       0       0       0       0       0       0
1649          UI       0       0       0       0       0       0       0       0       0       0
1650          UI       0       0       0       0       0       0       0       0       0       0
              *

1651          KK    C32a COMBINE
1652          KM    Combine 32a and R32b at Narramore Rd. and 339th Ave.
1653          HC       2
              *

1654          KK   CC30c COMBINE
1655          KM    Combine C30c and C32a at Narramore Rd. and 339th Ave.
1656          HC       2
              *

1657          KK    R30c   ROUTE
1658          KM    Route 30c to 30b in Luke Wash
1659          RS       9    FLOW      -1
1660          RC   0.075   0.070   0.075    6381  0.0047    0.00
1661          RX    0.00  158.50  634.00  792.50  822.50  981.00 1456.50 1615.00
1662          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1663          KK     30b   BASIN
1664          KM    A Subbasin of Luke Wash at Old US80 and West of 331st Ave.
1665          KM    L=1.64, Lca=0.85, S=31.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=38.1
1666          BA   0.508
1667          LG    0.29    0.25    4.60    0.34       9
1668          UI       0      45      66     166     256     341     401     426     423     370
1669          UI     297     239     190     148     120      93      75      61      48      35
1670          UI      30      27      11      11      11      11      11      11      11       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1671          UI       0       0       0       0       0       0       0       0       0       0
1672          UI       0       0       0       0       0       0       0       0       0       0
              *

1673          KK    C30b COMBINE
1674          KM    Combine 30b and R30c at Old US80 and 331st Ave.
1675          HC       2
              *

1676          KK     78b   BASIN
1677          KM    A Subbasin of East Main Trib at Broadway Rd. and 335th Ave.
1678          KM    L=1.54, Lca=0.65, S=37.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.6
1679          BA   0.479
1680          LG    0.30    0.25    4.80    0.30       2
1681          UI       0      49      97     229     335     435     464     457     394     294
1682          UI     229     175     132     101      81      56      46      34      29      12
1683          UI      12      12      12      12       0       0       0       0       0       0
1684          UI       0       0       0       0       0       0       0       0       0       0
1685          UI       0       0       0       0       0       0       0       0       0       0
              *
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1686          KK    R78b   ROUTE
1687          KM    Route 78b to 78a in East Main Trib
1688          RS       5    FLOW      -1
1689          RC   0.055   0.060   0.055    3996  0.0065    0.00
1690          RX    0.00   85.00  340.00  425.00  455.00  540.00  795.00  880.00
1691          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1692          KK     78a   BASIN
1693          KM    A Subbasin of East Main Trib at North of Southern Ave. and 335th Ave.
1694          KM    L=0.85, Lca=0.46, S=35.5, Kn=0.047, S-Graph=DESERT/RANGELAND, Tlag=24.0
1695          BA   0.151
1696          LG    0.30    0.25    5.30    0.24       2
1697          UI       0      21      73     140     189     201     167     116      82      56
1698          UI      39      28      18      14       7       5       5       5       0       0
1699          UI       0       0       0       0       0       0       0       0       0       0
1700          UI       0       0       0       0       0       0       0       0       0       0
1701          UI       0       0       0       0       0       0       0       0       0       0
              *

1702          KK    C78a COMBINE
1703          KM    Combine 78a and R78b at North of Southern Ave. and 335th Ave.
1704          HC       2
              *

1705          KK     77b   BASIN
1706          KM    A Subbasin of T1N-R5W-S28E at Broadway Rd. and East of 335th Ave.
1707          KM    L=1.50, Lca=0.63, S=35.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
1708          BA   0.442
1709          LG    0.30    0.25    4.65    0.32       1
1710          UI       0      46      93     216     321     404     442     422     357     267
1711          UI     207     159     118      91      72      50      39      31      24      11
1712          UI      11      12      11      11       0       0       0       0       0       0
1713          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1714          UI       0       0       0       0       0       0       0       0       0       0
              *

1715          KK    R77b   ROUTE
1716          KM    Route 77b to 77a in Wash T1N-R5W-S28E
1717          RS       6    FLOW      -1
1718          RC   0.055   0.060   0.055    4056  0.0069    0.00
1719          RX    0.00   80.50  322.00  402.50  442.50  523.00  764.50  845.00
1720          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1721          KK     77a   BASIN
1722          KM    A Subbasin of T1N-R5W-S28E at North of Southern Ave. and 335th Ave.
1723          KM    L=1.17, Lca=0.59, S=39.4, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=27.4
1724          BA   0.245
1725          LG    0.29    0.25    4.40    0.38       3
1726          UI       0      30      81     173     244     286     274     223     164     118
1727          UI      84      61      47      32      22      20       7       8       7       8
1728          UI       7       0       0       0       0       0       0       0       0       0
1729          UI       0       0       0       0       0       0       0       0       0       0
1730          UI       0       0       0       0       0       0       0       0       0       0
              *

1731          KK    C77a COMBINE
1732          KM    Combine 77a and R77b at North of Southern Ave. and 335th Ave.
1733          HC       2
              *

1734          KK   CC77a COMBINE
1735          KM    Combine C77a and C78a at North of Southern Ave. and 335th Ave.
1736          HC       2
              *

1737          KK    R77a   ROUTE
1738          KM    Route 77a to 70h in East Main Trib
1739          RS       4    FLOW      -1
1740          RC   0.060   0.055   0.060    3568  0.0056    0.00
1741          RX    0.00  133.40  533.60  667.00  733.00  866.40 1266.60 1400.00
1742          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1743          KK     70h   BASIN
1744          KM    A Subbasin of East Main Trib at South of Southern Ave. and 335th Ave.
1745          KM    L=1.32, Lca=0.70, S=37.9, Kn=0.044, S-Graph=DESERT/RANGELAND, Tlag=30.8
1746          BA   0.293
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1747        LG    0.29    0.25    5.00    0.28       5
1748        UI       0      32      71     157     233     289     304     284     225     168
1749        UI     128      96      70      54      41      31      23      19       8       8
1750        UI       8       7       8       0       0       0       0       0       0       0
1751        UI       0       0       0       0       0       0       0       0       0       0
1752        UI       0       0       0       0       0       0       0       0       0       0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1753        KK    C70h COMBINE
1754        KM    Combine 70h and R77a at South of Southern Ave. and 335th Ave.
1755        HC       2
            *

1756        KK     70g   BASIN
1757        KM    A Subbasin of T1N-R5W-S33N at South of Southern Ave., West of 335th Ave.
1758        KM    L=3.51, Lca=1.87, S=33.0, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=69.7
1759        BA   1.633
1760        LG    0.29    0.25    4.55    0.35       4
1761        UI       0      79      79      79     196     282     380     460     546     612
1762        UI     685     715     755     750     749     715     659     579     520     451
1763        UI     404     353     315     277     240     214     185     164     148     130
1764        UI     121      97      85      83      65      55      53      54      54      23
1765        UI      19      19      19      19      20      19      19      19      20      19
            *

1766        KK    C70g COMBINE
1767        KM    Combine 70g and C70h at South of Southern Ave. and 335th Ave.
1768        HC       2
            *

1769        KK    R70g   ROUTE
1770        KM    Route 70g to 70f in East Main Trib
1771        RS       4    FLOW      -1
1772        RC   0.060   0.055   0.060    2950  0.0041    0.00
1773        RX    0.00  120.00  480.00  600.00  640.00  760.00 1120.00 1240.00
1774        RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
            *

1775        KK     70f   BASIN
1776        KM    A Subbasin of East Main Trib at Salome Hwy. and Baseline Rd.
1777        KM    L=1.51, Lca=0.79, S=34.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.4
1778        BA   0.392
1779        LG    0.30    0.25    5.10    0.26       1
1780        UI       0      37      64     152     233     303     348     353     331     268
1781        UI     209     165     127     100      78      61      46      40      25      26
1782        UI      15       9       9       9       9      10       9       0       0       0
1783        UI       0       0       0       0       0       0       0       0       0       0
1784        UI       0       0       0       0       0       0       0       0       0       0
            *

1785        KK    C70f COMBINE
1786        KM    Combine 70f and R70g at Salome Hwy. and Baseline Rd.
1787        HC       2
            *

1788        KK     75a   BASIN
1789        KM    A Subbasin of T1N-R5W-S33E at Salome Hwy. and Baseline Rd.
1790        KM    L=1.85, Lca=0.95, S=32.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=41.4
1791        BA   0.460
1792        LG    0.30    0.25    4.80    0.30       2
1793        UI       0      37      44     124     195     260     317     347     361     340
1794        UI     292     243     191     158     127     104      80      69      56      41
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1795        UI      38      26      25      19      10       9       9       9       9       9
1796        UI       9       0       0       0       0       0       0       0       0       0
1797        UI       0       0       0       0       0       0       0       0       0       0
            *

1798        KK    C75a COMBINE
1799        KM    Combine 75a and C70f at Salome Hwy. and Baseline Rd.
1800        HC       2
            *

1801        KK    R70f   ROUTE
1802        KM    Route 70f to 74a in East Main Trib
1803        RS       2    FLOW      -1
```

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1804          RC   0.060   0.055   0.060    1071  0.0056    0.00
1805          RX    0.00  128.00  512.00  640.00  715.00  843.00 1227.00 1355.00
1806          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

1807          KK     74b   BASIN
1808          KM    A Subbasin of T1N-R5W-S33W at Salome Hwy. and 339th Ave.
1809          KM    L=1.81, Lca=0.90, S=36.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=39.4
1810          BA   0.665
1811          LG    0.30    0.25    4.45    0.37       1
1812          UI       0      57      77     201     314     419     495     536     540     494
1813          UI     403     327     260     209     167     133     107      87      65      58
1814          UI      39      38      27      14      14      14      14      14      13       0
1815          UI       0       0       0       0       0       0       0       0       0       0
1816          UI       0       0       0       0       0       0       0       0       0       0
              *

1817          KK    R74b   ROUTE
1818          KM    Route 74b to 74a in Wash T1N-R5W-S33W
1819          RS       6    FLOW      -1
1820          RC   0.050   0.045   0.050    3352  0.0054    0.00
1821          RX    0.00  147.00  588.00  735.00  805.00  952.00 1393.00 1540.00
1822          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
              *

1823          KK     74a   BASIN
1824          KM    A Subbasin of T1N-R5W-S33W at Salome Hwy. and East of 339th Ave.
1825          KM    L=1.19, Lca=0.50, S=38.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.6
1826          BA   0.309
1827          LG    0.30    0.25    4.60    0.34       0
1828          UI       0      39     112     232     322     374     353     270     197     141
1829          UI     101      72      53      38      27      18      10      10       9      10
1830          UI       0       0       0       0       0       0       0       0       0       0
1831          UI       0       0       0       0       0       0       0       0       0       0
1832          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1833          KK    C74a COMBINE
1834          KM    Combine 74a and R74b at Salome Hwy. and South of Baseline Rd.
1835          HC       2
              *

1836          KK   CC74a COMBINE
1837          KM    Combine C74a and R70f at Salome Hwy. and South of Baseline Rd.
1838          HC       2
              *

1839          KK    R74a   ROUTE
1840          KM    Route 74a to 70e in East Main Trib
1841          RS       7    FLOW      -1
1842          RC   0.050   0.045   0.050    4623  0.0043    0.00
1843          RX    0.00  168.50  674.00  842.50 1032.50 1201.00 1706.50 1875.00
1844          RY    3.00    2.10    1.20    0.00    0.00    1.20    2.10    3.00
              *

1845          KK     70e   BASIN
1846          KM    A Subbasin of East Main Trib at Dobbins Rd. and East of 339th Ave.
1847          KM    L=1.82, Lca=0.71, S=35.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.3
1848          BA   1.372
1849          LG    0.30    0.25    4.60    0.34       0
1850          UI       0     127     207     501     775    1020    1152    1219    1161     957
1851          UI     759     602     468     368     283     228     184     136     105      87
1852          UI      78      31      31      31      31      31      31       0       0       0
1853          UI       0       0       0       0       0       0       0       0       0       0
1854          UI       0       0       0       0       0       0       0       0       0       0
              *

1855          KK    C70e COMBINE
1856          KM    Combine 70e and R74a at Dobbins Rd. and East of 339th Ave.
1857          HC       2
              *

1858          KK    R70e   ROUTE
1859          KM    Route 70e to 73a in East Main Trib
1860          RS       2    FLOW      -1
1861          RC   0.050   0.045   0.050    2256  0.0044    0.00
1862          RX    0.00  118.50  474.00  592.50  722.50  841.00 1196.50 1315.00
1863          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
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1864          KK     73b   BASIN
1865          KM    A Subbasin of T1S-R5W-S09W at Dobbins Rd. and 331st Ave.
1866          KM    L=1.62, Lca=0.70, S=28.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.0
1867          BA   0.606
1868          LG    0.30    0.25    4.60    0.34       0
1869          UI       0      57      94     224     351     453     517     544     511     421
1870          UI     332     261     204     163     121      98      79      60      44      39
1871          UI      31      13      14      14      14      14      14       0       0       0
1872          UI       0       0       0       0       0       0       0       0       0       0
1873          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 48

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1874          KK    R73b   ROUTE
1875          KM    Route 73b to 73a in Wash T1S-R5W-S09W
1876          RS       7    FLOW      -1
1877          RC   0.045   0.055   0.045    4440  0.0050    0.00
1878          RX    0.00   53.00  212.00  265.00  335.00  388.00  547.00  600.00
1879          RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
              *

1880          KK     73a   BASIN
1881          KM    A Subbasin of T1S-R5W-S09W at South of Dobbins Rd., East of 339th Ave.
1882          KM    L=1.61, Lca=0.79, S=26.1, Kn=0.061, S-Graph=DESERT/RANGELAND, Tlag=51.8
1883          BA   0.508
1884          LG    0.36    0.25    4.30    0.48       0
1885          UI       0      33      33      71     126     180     223     264     297     313
1886          UI     315     305     276     236     197     167     142     123      98      86
1887          UI      71      62      51      44      35      33      22      23      22      13
1888          UI       8       8       8       8       8       8       8       8       8       0
1889          UI       0       0       0       0       0       0       0       0       0       0
              *

1890          KK    C73a COMBINE
1891          KM    Combine 73a and R73b at South of Dobbins Rd. and East of 339th Ave.
1892          HC       2
              *

1893          KK   CC70e COMBINE
1894          KM    Combine C73a and R70e at South of Dobbins Rd. and East of 339th Ave.
1895          HC       2
              *

1896          KK    R73a   ROUTE
1897          KM    Route 73a to 70d in East Main Trib
1898          RS       2    FLOW      -1
1899          RC   0.050   0.045   0.050    2646  0.0083    0.00
1900          RX    0.00  109.50  438.00  547.50  622.50  732.00 1060.50 1170.00
1901          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1902          KK     70d   BASIN
1903          KM    A Subbasin of East Main Trib at UPRR and East of 339th Ave.
1904          KM    L=1.35, Lca=0.67, S=42.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.5
1905          BA   0.486
1906          LG    0.30    0.25    4.70    0.31       0
1907          UI       0      53     121     267     392     491     508     471     369     275
1908          UI     207     158     113      88      65      49      36      29      14      13
1909          UI      13      13      13       0       0       0       0       0       0       0
1910          UI       0       0       0       0       0       0       0       0       0       0
1911          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 49

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1912          KK    C70d COMBINE
1913          KM    Combine 70d and R73a UPRR and East of 339th Ave.
1914          HC       2
              *

1915          KK    S70d STORAGE
1916          KM    Storage Routing through UPRR bridge
1917          RS       1    STOR       0
1918          SV     0.0    0.10    0.30    0.60    1.00    1.50    2.30     3.3
1919          SE     854     855     856     857     858     859     860     861
1920          SQ     0.0   130.0   412.0   695.0   978.0  1370.0  1776.0  2185.0
              *
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1921          KK    R70d   ROUTE
1922          KM    Route 70d to 70c in East Main Tributary
1923          RS       8    FLOW      -1
1924          RC   0.055   0.055   0.055    8370  0.0053    0.00
1925          RX    0.00  173.00  692.00  865.00 1030.00 1203.00 1722.00 1895.00
1926          RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
              *

1927          KK     70c   BASIN
1928          KM    A Subbasin of East Main Trib at Narramore Rd. and West of 331st Ave.
1929          KM    L=2.29, Lca=1.02, S=33.2, Kn=0.047, S-Graph=DESERT/RANGELAND, Tlag=48.0
1930          BA   0.742
1931          LG    0.30    0.25    4.60    0.34       2
1932          UI       0      52      52     131     222     310     382     444     488     495
1933          UI     483     454     373     310     265     217     182     152     123     104
1934          UI      89      78      54      56      35      36      36      18      12      13
1935          UI      13      12      13      13      12      13       0       0       0       0
1936          UI       0       0       0       0       0       0       0       0       0       0
              *

1937          KK    C70c COMBINE
1938          KM    Combine 70c and R70d at Narramore Rd. and West of 331st Ave.
1939          HC       2
              *

1940          KK     72b   BASIN
1941          KM    A Subbasin of East Sub Trib at South of Elliot Rd., West of 331st Ave.
1942          KM    L=1.67, Lca=0.68, S=46.7, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=32.8
1943          BA   1.047
1944          LG    0.30    0.25    4.20    0.43       2
1945          UI       0     107     209     487     704     888    1203     764     630     538
1946          UI     460     383     297     256     226     170     135     119      96      82
1947          UI      64      52      53      35      20      21      20      21      20      21
1948          UI      21       0       0       0       0       0       0       0       0       0
1949          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1950          KK    R72b   ROUTE
1951          KM    Route 72b to 72a in East Sub Tributary
1952          RS       5    FLOW      -1
1953          RC   0.050   0.075   0.050    3300  0.0049    0.00
1954          RX    0.00   70.00  280.00  350.00  530.00  600.00  810.00  880.00
1955          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1956          KK     72a   BASIN
1957          KM    A Subbasin of East Sub Trib at Narramore Rd. and 333rd Ave.
1958          KM    L=1.36, Lca=0.66, S=118, Kn=0.048, S-Graph=MOUNTAIN        , Tlag=26.8
1959          BA   0.443
1960          LG    0.31    0.25    4.20    0.45       1
1961          UI       0      56     156     319     436     600     374     303     253     202
1962          UI     150     128     101      72      63      45      40      28      27      16
1963          UI      11      11      10      11      11       0       0       0       0       0
1964          UI       0       0       0       0       0       0       0       0       0       0
1965          UI       0       0       0       0       0       0       0       0       0       0
              *

1966          KK    C72a COMBINE
1967          KM    Combine 72a and R72b at Narramore Rd. and 333rd Ave.
1968          HC       2
              *

1969          KK   CC70c COMBINE
1970          KM    Combine C70c and C72a at Narramore Rd. and 333rd Ave.
1971          HC       2
              *

1972          KK    R70c   ROUTE
1973          KM    Route 70c to 70b in East Main Tributary
1974          RS       3    FLOW      -1
1975          RC   0.055   0.055   0.055    2956  0.0041    0.00
1976          RX    0.00   81.50  326.00  407.50  497.50  579.00  823.50  905.00
1977          RY    4.00    2.80    1.60    0.00    0.00    1.60    2.80    4.00
              *

1978          KK     70b   BASIN
1979          KM    A Subbasin of East Main Trib at Old US80 and 331st Ave.
1980          KM    L=0.84, Lca=0.39, S=123, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=17.0
```

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1981        BA   0.333
1982        LG    0.30    0.25    4.40    0.38       2
1983        UI       0      92     355     619     467     324     227     155     109      75
1984        UI      51      33      25      12      13      13       0       0       0       0
1985        UI       0       0       0       0       0       0       0       0       0       0
1986        UI       0       0       0       0       0       0       0       0       0       0
1987        UI       0       0       0       0       0       0       0       0       0       0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1988        KK    C70b COMBINE
1989        KM    Combine 70b and R70c at Old US80 and 331st Ave.
1990        HC       2
            *

1991        KK   CC30b COMBINE
1992        KM    Combine C70b and C30b at Old US80 and 331st Ave.
1993        KM    (total flow for the Bridge and Culvert)
1994        HC       2
            *

1995        KK     71b   BASIN
1996        KM    A Subbasin of T1S-R5W-S22N at Old US 80 and East of 331st Ave.
1997        KM    L=1.26, Lca=0.59, S=166, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=21.9
1998        BA   0.290
1999        LG    0.30    0.25    4.00    0.47       2
2000        UI       0      44     178     309     462     304     233     183     134     102
2001        UI      77      55      44      33      22      21       9       8       9       8
2002        UI       9       0       0       0       0       0       0       0       0       0
2003        UI       0       0       0       0       0       0       0       0       0       0
2004        UI       0       0       0       0       0       0       0       0       0       0
            *

2005        KK    R71b   ROUTE
2006        KM    Route 71b to 71a in Wash T1S-R5W-S22N
2007        RS       7    FLOW      -1
2008        RC   0.050   0.075   0.050    4928  0.0162    0.00
2009        RX    0.00   39.50  158.00  197.50  217.50  257.00  375.50  415.00
2010        RY    2.00    1.40    0.80    0.00    0.00    0.80    1.40    2.00
            *

2011        KK     71a   BASIN
2012        KM    A Subbasin of T1S-R5W-S22N at Old US 80 and East of 331st Ave.
2013        KM    L=0.95, Lca=0.56, S=84.6, Kn=0.045, S-Graph=MOUNTAIN        , Tlag=21.9
2014        BA   0.262
2015        LG    0.30    0.25    4.10    0.46       1
2016        UI       0      41     159     280     417     275     210     165     122      92
2017        UI      70      50      38      30      20      19       8       8       8       7
2018        UI       8       0       0       0       0       0       0       0       0       0
2019        UI       0       0       0       0       0       0       0       0       0       0
2020        UI       0       0       0       0       0       0       0       0       0       0
            *

2021        KK    C71a COMBINE
2022        KM    Combine 71a and R71b at Old US80 and East of 331st Ave.
2023        HC       2
            *

2024        KK   CC70b COMBINE
2025        KM    Combine CC30b and C71a at Old US80 and East of 331st Ave.
2026        HC       2
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2027        KK    R70b   ROUTE
2028        KM    Route CC70b to 70a in Luke Wash
2029        RS       2    FLOW      -1
2030        RC   0.055   0.055   0.055    2206  0.0027    0.00
2031        RX    0.00   55.00  220.00  275.00  315.00  370.00  535.00  590.00
2032        RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
            *

2033        KK     70a   BASIN
2034        KM    A Subbasin of East Main Trib at North of Arlington Canal and East of 331st A
2035        KM    L=0.46, Lca=0.25, S=26.0, Kn=0.056, S-Graph=DESERT/RANGELAND, Tlag=19.1
2036        BA   0.103
2037        LG    0.34    0.25    4.45    0.41       1
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2038        UI      0      22      87     148     170     138      86      55      35      22
2039        UI     13       8       5       4       5       0       0       0       0       0
2040        UI      0       0       0       0       0       0       0       0       0       0
2041        UI      0       0       0       0       0       0       0       0       0       0
2042        UI      0       0       0       0       0       0       0       0       0       0
            *

2043        KK    C70a COMBINE
2044        KM    Combine 70a and R70b at North of Arlington Canal and East of 331st Ave.
2045        HC       2
            *

2046        KK     30a   BASIN
2047        KM    A Subbasin of Luke Wash at Arlington Canal and 331st Ave.
2048        KM    L=0.35, Lca=0.19, S=28.2, Kn=0.066, S-Graph=DESERT/RANGELAND, Tlag=18.1
2049        BA   0.036
2050        LG    0.36    0.25    4.25    0.53      17
2051        UI      0       9      34      56      63      45      28      17      11       6
2052        UI      4       2       2       1       0       0       0       0       0       0
2053        UI      0       0       0       0       0       0       0       0       0       0
2054        UI      0       0       0       0       0       0       0       0       0       0
2055        UI      0       0       0       0       0       0       0       0       0       0
            *

2056        KK    C30a COMBINE
2057        KM    Combine 30a and C70a at Arlington Canal and 331st Ave.
2058        HC       2
            *

2059        KK     15a   BASIN
2060        KM    A Subbasin at Old US 80 and West of 339th Ave.
2061        KM    L=1.19, Lca=0.49, S=45.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.6
2062        BA   0.514
2063        LG    0.30    0.25    4.65    0.32       1
2064        UI      0      68     209     411     579     651     580     434     310     217
2065        UI    152     115      76      53      46      16      17      16      16       0
2066        UI      0       0       0       0       0       0       0       0       0       0
2067        UI      0       0       0       0       0       0       0       0       0       0
2068        UI      0       0       0       0       0       0       0       0       0       0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2069        KK     16a   BASIN
2070        KM    A Subbasin at Old US 80 and East of 339th Ave.
2071        KM    L=0.93, Lca=0.46, S=47.2, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=23.1
2072        BA   0.218
2073        LG    0.29    0.25    4.60    0.34       3
2074        UI      0      32     116     220     289     297     232     160     111      74
2075        UI     52      36      22      16       8       7       8       0       0       0
2076        UI      0       0       0       0       0       0       0       0       0       0
2077        UI      0       0       0       0       0       0       0       0       0       0
2078        UI      0       0       0       0       0       0       0       0       0       0
            *

2079        KK     23a   BASIN
2080        KM    A Subbasin at Old US 80 and 335th Ave.
2081        KM    L=1.10, Lca=0.49, S=34.7, Kn=0.053, S-Graph=DESERT/RANGELAND, Tlag=30.7
2082        BA   0.353
2083        LG    0.32    0.25    4.65    0.35       5
2084        UI      0      39      85     192     281     350     369     342     270     202
2085        UI    152     116      83      66      48      37      26      23      10       9
2086        UI     10       9      10       0       0       0       0       0       0       0
2087        UI      0       0       0       0       0       0       0       0       0       0
2088        UI      0       0       0       0       0       0       0       0       0       0
            *

2089        KK     33a   BASIN
2090        KM    A Subbasin at Arlington Canal and East of 331st Ave.
2091        KM    L=0.70, Lca=0.33, S=34.4, Kn=0.070, S-Graph=DESERT/RANGELAND, Tlag=29.4
2092        BA   0.167
2093        LG    0.39    0.25    4.35    0.50       0
2094        UI      0      19      46      99     146     177     181     160     121      90
2095        UI     66      50      37      28      20      14      12       5       5       5
2096        UI      4       5       0       0       0       0       0       0       0       0
2097        UI      0       0       0       0       0       0       0       0       0       0
2098        UI      0       0       0       0       0       0       0       0       0       0
            *

2099        KK     35a   BASIN
2100        KM    A Subbasin at Arlington Canal and West of 323rd Ave.
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2101        KM    L=0.38, Lca=0.17, S=52.5, Kn=0.068, S-Graph=DESERT/RANGELAND, Tlag=16.3
2102        BA   0.057
2103        LG    0.38     0.24     4.20     0.54        0
2104        UI       0       18       67      106      101       63       36       22       13        7
2105        UI       3        2        0        0        0        0        0        0        0        0
2106        UI       0        0        0        0        0        0        0        0        0        0
2107        UI       0        0        0        0        0        0        0        0        0        0
2108        UI       0        0        0        0        0        0        0        0        0        0
            *

2109        KK   DUMMY COMBINE
2110        KM    Dummy Combining
2111        HC       5
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2112        KK   DUMMY COMBINE
2113        KM    Dummy Combining
2114        HC       3
            *

2115        KK     79b   BASIN
2116        KM    A Subbasin of T1S-R5W-S22S at Narramore Rd. and 323rd Ave.
2117        KM    L=1.06, Lca=0.49,S=213.4,Kn=0.045, S-Graph=MOUNTAIN        , Tlag=18.2
2118        BA   0.362
2119        LG    0.30     0.25     3.95     0.40        1
2120        UI       0       86      335      569      565      358      268      181      136       90
2121        UI      65       47       32       22       13       13       13        0        0        0
2122        UI       0        0        0        0        0        0        0        0        0        0
2123        UI       0        0        0        0        0        0        0        0        0        0
2124        UI       0        0        0        0        0        0        0        0        0        0
            *

2125        KK    R79b   ROUTE
2126        KM    Route 79b to 79a in Wash T1S-R5W-S22S
2127        RS       3    FLOW       -1
2128        RC   0.075    0.075    0.075     4398   0.0175     0.00
2129        RX    0.00    15.00    60.00    75.00   100.00   115.00   160.00   175.00
2130        RY    8.00     5.60     3.20     0.00     0.00     3.20     5.60     8.00
            *

2131        KK     79a   BASIN
2132        KM    A Subbasin of T1S-R5W-S22S at Arlington Canal Rd. and 323rd Ave.
2133        KM    L=1.28, Lca=0.60, S=89.2, Kn=0.047, S-Graph=DESERT/RANGELAND, Tlag=26.1
2134        BA   0.515
2135        LG    0.30     0.25     4.00     0.47        0
2136        UI       0       66      197      402      558      636      587      442      319      227
2137        UI     160      117       82       58       46       23       16       17       16       16
2138        UI       0        0        0        0        0        0        0        0        0        0
2139        UI       0        0        0        0        0        0        0        0        0        0
2140        UI       0        0        0        0        0        0        0        0        0        0
            *

2141        KK    C79a COMBINE
2142        KM    Combine 79a and R79b at Arlington Canal Rd. and 323rd Ave.
2143        HC       2
            *

2144        KK     80b   BASIN
2145        KM    A Subbasin of T1N-R5W-S22 at Buckeye Rd. and East of 339th Ave.
2146        KM    L=1.04, Lca=0.46, S=44.2, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=24.4
2147        BA   0.278
2148        LG    0.30     0.25     4.50     0.36        1
2149        UI       0       38      128      249      339      365      311      219      156      106
2150        UI      76       52       36       26       15       10        9        9        0        0
2151        UI       0        0        0        0        0        0        0        0        0        0
2152        UI       0        0        0        0        0        0        0        0        0        0
2153        UI       0        0        0        0        0        0        0        0        0        0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2154        KK    R80b   ROUTE
2155        KM    Route 80b to 80a in Wash T1N-R5W-S22
2156        RS       3    FLOW       -1
2157        RC   0.065    0.050    0.065     4668   0.0069     0.00
2158        RX    0.00    27.00   108.00   135.00   165.00   192.00   273.00   300.00
2159        RY   10.00     7.00     4.00     0.00     0.00     4.00     7.00    10.00
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            *

2160        KK     80a   BASIN
2161        KM    A Subbasin of T1N-R5W-S22 at South of Buckeye Rd. and 331st Ave.
2162        KM    L=1.19, Lca=0.55, S=45.5, Kn=0.046, S-Graph=DESERT/RANGELAND, Tlag=27.3
2163        BA   0.337
2164        LG    0.30    0.25    4.45    0.37       2
2165        UI       0      41     114     238     338     393     381     307     222     161
2166        UI     115      85      63      43      31      27      10      10      10      10
2167        UI      10       0       0       0       0       0       0       0       0       0
2168        UI       0       0       0       0       0       0       0       0       0       0
2169        UI       0       0       0       0       0       0       0       0       0       0
            *

2170        KK    C80a COMBINE
2171        KM    Combine 80a and R80b at South of Buckeye Rd. and 331st Ave.
2172        HC       2
            *

2173        KK     81b   BASIN
2174        KM    A Subbasin of T1N-R5W-S15 at Buckeye Rd. and West of 331st Ave.
2175        KM    L=2.05, Lca=0.86, S=39.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=40.1
2176        BA   0.512
2177        LG    0.30    0.25    4.45    0.37       3
2178        UI       0      43      56     146     234     310     372     405     411     380
2179        UI     317     257     204     166     133     105      86      71      55      45
2180        UI      33      30      28      10      11      10      11      10      10      11
2181        UI       0       0       0       0       0       0       0       0       0       0
2182        UI       0       0       0       0       0       0       0       0       0       0
            *

2183        KK    R81b   ROUTE
2184        KM    Route 81b to 81a in Wash T1N-R5W-S15
2185        RS       2    FLOW      -1
2186        RC   0.065   0.050   0.065    2533  0.0079    0.00
2187        RX    0.00   37.00  148.00  185.00  245.00  282.00  393.00  430.00
2188        RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
            *

2189        KK     81a   BASIN
2190        KM    A Subbasin of T1N-R5W-S15 at South of Buckeye Rd. and 331st Ave.
2191        KM    L=0.52, Lca=0.29, S=61.1, Kn=0.043, S-Graph=DESERT/RANGELAND, Tlag=13.9
2192        BA   0.078
2193        LG    0.28    0.25    4.30    0.41       8
2194        UI       0      34     129     177     123      68      35      18      10       4
2195        UI       5       0       0       0       0       0       0       0       0       0
2196        UI       0       0       0       0       0       0       0       0       0       0
2197        UI       0       0       0       0       0       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2198        UI       0       0       0       0       0       0       0       0       0       0
            *

2199        KK    C81a COMBINE
2200        KM    Combine 81a and R81b at South of Buckeye Rd. and 331st Ave.
2201        HC       2
            *

2202        KK   DUMMY COMBINE
2203        KM    Dummy Combining
2204        HC       4
            *

2205        KK     82b   BASIN
2206        KM    A Subbasin at I-10 and East of 339th Ave.
2207        KM    L=1.04, Lca=0.49, S=44.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.4
2208        BA   0.265
2209        LG    0.30    0.25    4.20    0.43       0
2210        UI       0      36     122     237     324     348     296     209     149     101
2211        UI      71      50      35      25      14       9       9       9       0       0
2212        UI       0       0       0       0       0       0       0       0       0       0
2213        UI       0       0       0       0       0       0       0       0       0       0
2214        UI       0       0       0       0       0       0       0       0       0       0
            *

2215        KK    S82b STORAGE
2216        KM    Storage Routing through 2-48" CMP
2217        RS       1    STOR       0
2218        SV     0.0    0.20    0.60    1.50    3.10    5.60    9.10   13.80   20.50   41.30
2219        SE    1070    1071    1072    1073    1074    1075    1076    1077    1078    1080
2220        SQ     0.0    12.0    40.0    84.0   132.0   172.0   186.0   196.0   204.0   226.0
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                *

2221            KK    R82b   ROUTE
2222            KM    Route 82b to 82a in Wash T1N-R5W-S10
2223            RS       7    FLOW      -1
2224            RC   0.055   0.045   0.055    6741  0.0083    0.00
2225            RX    0.00   27.50  110.00  137.50  187.50  215.00  297.50  325.00
2226            RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
                *

2227            KK     82a   BASIN
2228            KM    A Subbasin of T1N-R5W-S10 at Van Buren and 331st Ave.
2229            KM    L=1.49, Lca=0.71, S=49.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.5
2230            BA   0.588
2231            LG    0.30    0.25    4.45    0.37       0
2232            UI       0      62     132     302     445     558     603     565     465     347
2233            UI     263     203     151     114      88      67      45      43      21      15
2234            UI      16      15      15      16       0       0       0       0       0       0
2235            UI       0       0       0       0       0       0       0       0       0       0
2236            UI       0       0       0       0       0       0       0       0       0       0
                *
1                                                HEC-1 INPUT                                                    PAGE 57

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2237            KK    C82a COMBINE
2238            KM    Combine 82a and R82b at Van Buren and 331st Ave.
2239            HC       2
                *

2240            KK     831   BASIN
2241            KM    A Subbasin of T3N-R5W-S32E at Northern Ave. and East of 347th Ave.
2242            KM    L=1.28, Lca=0.75, S=62.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.0
2243            BA   0.555
2244            LG    0.30    0.25    4.80    0.30       4
2245            UI       0      64     160     343     493     602     606     526     398     290
2246            UI     218     159     118      88      66      44      39      16      16      15
2247            UI      16      16       0       0       0       0       0       0       0       0
2248            UI       0       0       0       0       0       0       0       0       0       0
2249            UI       0       0       0       0       0       0       0       0       0       0
                *

2250            KK     83k   BASIN
2251            KM    A Subbasin of T2N-R5W-S33E at Northern Ave. and East of 347th Ave.
2252            KM    L=1.30, Lca=0.66, S=109, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=25.0
2253            BA   0.315
2254            LG    0.30    0.25    4.10    0.46       8
2255            UI       0      42     136     265     372     405     355     257     184     128
2256            UI      88      66      45      29      23      10      10      10      10       0
2257            UI       0       0       0       0       0       0       0       0       0       0
2258            UI       0       0       0       0       0       0       0       0       0       0
2259            UI       0       0       0       0       0       0       0       0       0       0
                *

2260            KK    C83k COMBINE
2261            KM    Combine 83k and 831 at Northern Ave. and East of 347th Ave.
2262            HC       2
                *

2263            KK    R83k   ROUTE
2264            KM    Route 83k to 83j in Wash T2N-5W-S33E
2265            RS       3    FLOW      -1
2266            RC   0.060   0.050   0.060    4228  0.0062    0.00
2267            RX    0.00   46.00  184.00  230.00  250.00  296.00  434.00  480.00
2268            RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
                *

2269            KK     83j   BASIN
2270            KM    A Subbasin of T2N-R5W-S33E at South of Northern Ave. and 339th Ave.
2271            KM    L=1.15, Lca=0.59, S=41.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.5
2272            BA   0.163
2273            LG    0.30    0.26    3.48    0.55       0
2274            UI       0      20      54     113     160     190     183     149     109      79
2275            UI      57      41      32      21      15      14       5       5       4       5
2276            UI       5       0       0       0       0       0       0       0       0       0
2277            UI       0       0       0       0       0       0       0       0       0       0
2278            UI       0       0       0       0       0       0       0       0       0       0
                *
1                                                HEC-1 INPUT                                                    PAGE 58

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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2279          KK    C83j COMBINE
2280          KM    Combine 83j and R83k at South of Northern Ave. and 339th Ave.
2281          HC       2
              *

2282          KK     89b   BASIN
2283          KM    A Subbasin of T2N-R5W-S05W at Northern Ave. and 339th Ave.
2284          KM    L=1.16, Lca=0.57, S=74.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=24.5
2285          BA   0.283
2286          LG    0.30    0.25    4.00    0.47       2
2287          UI       0      39     129     250     342     372     317     226     158     109
2288          UI      77      55      37      26      17       9      10       9      10       0
2289          UI       0       0       0       0       0       0       0       0       0       0
2290          UI       0       0       0       0       0       0       0       0       0       0
2291          UI       0       0       0       0       0       0       0       0       0       0
              *

2292          KK    R89b   ROUTE
2293          KM    Route 89b to 89a in Wash T2N-R5W-S05W
2294          RS       3    FLOW      -1
2295          RC   0.050   0.060   0.050    3054  0.0075    0.00
2296          RX    0.00   33.00  132.00  165.00  190.00  223.00  322.00  355.00
2297          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

2298          KK     89a   BASIN
2299          KM    A Subbasin of T2N-R5W-S05W at North of Glendale Ave. and 339th Ave.
2300          KM    L=1.01, Lca=0.47, S=47.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=23.4
2301          BA   0.215
2302          LG    0.30    0.27    3.29    0.63       0
2303          UI       0      30     111     210     282     289     234     160     111      75
2304          UI      53      36      24      19       7       8       7       7       0       0
2305          UI       0       0       0       0       0       0       0       0       0       0
2306          UI       0       0       0       0       0       0       0       0       0       0
2307          UI       0       0       0       0       0       0       0       0       0       0
              *

2308          KK    C89a COMBINE
2309          KM    Combine 89a and R89b at North of Glendale Ave. and 339th Ave.
2310          HC       2
              *

2311          KK   CC83j COMBINE
2312          KM    Combine C83j and C89a at North of Glendale Ave. and 339th Ave.
2313          HC       2
              *

2314          KK    R83j   ROUTE
2315          KM    Route 83j to 88a in Wash T2N-R5W-S33E
2316          RS       1    FLOW      -1
2317          RC   0.060   0.050   0.060    1430  0.0056    0.00
2318          RX    0.00   31.00  124.00  155.00  195.00  226.00  319.00  350.00
2319          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2320          KK     88a   BASIN
2321          KM    A Subbasin of T2N-R5W-S05E at North of Glendale Ave. and 339th Ave.
2322          KM    L=1.52, Lca=0.66, S=40.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.1
2323          BA   0.276
2324          LG    0.30    0.25    4.00    0.47       0
2325          UI       0      29      57     136     202     254     275     266     222     167
2326          UI     128      99      73      56      45      31      24      20      14       7
2327          UI       7       7       7       7       0       0       0       0       0       0
2328          UI       0       0       0       0       0       0       0       0       0       0
2329          UI       0       0       0       0       0       0       0       0       0       0
              *

2330          KK    C88a COMBINE
2331          KM    Combine 88a and R83j at Glendale Ave. and 339th Ave.
2332          HC       2
              *

2333          KK    R88a   ROUTE
2334          KM    Route 88a to 83i in Wash T2N-5W-S33E
2335          RS       2    FLOW      -1
2336          RC   0.060   0.050   0.060    2567  0.0047    0.00
2337          RX    0.00   27.50  110.00  137.50  167.50  195.00  277.50  305.00
2338          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
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2339            KK     83i   BASIN
2340            KM    A Subbasin of T2N-R5W-S33E at South of Glendale Ave., West of 339th Ave.
2341            KM    L=1.41, Lca=0.63, S=41.1, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=30.6
2342            BA   0.404
2343            LG    0.30     0.26     3.48     0.55        0
2344            UI       0       45       99      221      323      402      426      390      309      227
2345            UI     175      132       94       75       54       41       31       25       11       11
2346            UI      11       11       11        0        0        0        0        0        0        0
2347            UI       0        0        0        0        0        0        0        0        0        0
2348            UI       0        0        0        0        0        0        0        0        0        0
                *

2349            KK    C83i COMBINE
2350            KM    Combine 83i and R88a at South of Glendale Ave. and West of 339th Ave.
2351            HC       2
                *

2352            KK     83h   BASIN
2353            KM    A Subbasin South of Glendale Ave., West of 339th Ave.
2354            KM    L=1.64, Lca=0.81, S=37.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=36.2
2355            BA   0.289
2356            LG    0.30     0.25     3.92     0.41        0
2357            UI       0       27       44      105      165      216      246      255      245      201
2358            UI     159      126       99       77       59       48       38       28       22       19
2359            UI      16        6        7        6        7        6        7        0        0        0
2360            UI       0        0        0        0        0        0        0        0        0        0
2361            UI       0        0        0        0        0        0        0        0        0        0
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2362            KK    C83h COMBINE
2363            KM    Combine 83h and C83i at South of Glendale Ave. and West of 339th Ave.
2364            HC       2
                *

2365            KK    R83i   ROUTE
2366            KM    Route 83i to 83g in Wash T2N-5W-S33E
2367            RS       3    FLOW      -1
2368            RC   0.060   0.050   0.060    4018  0.0045    0.00
2369            RX    0.00   64.00  256.00  320.00  360.00  424.00  616.00  680.00
2370            RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
                *

2371            KK     83g   BASIN
2372            KM    A Subbasin of T2N-R5W-S33E at Bethany Home Rd. and 339th Ave.
2373            KM    L=1.60, Lca=0.75, S=41.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=34.2
2374            BA   0.619
2375            LG    0.30     0.27     3.35     0.60        0
2376            UI       0       61      110      260      397      514      568      576      520      406
2377            UI     313      248      189      145      114       91       64       52       41       34
2378            UI      15       14       15       15       15       15        0        0        0        0
2379            UI       0        0        0        0        0        0        0        0        0        0
2380            UI       0        0        0        0        0        0        0        0        0        0
                *

2381            KK    C83g COMBINE
2382            KM    Combine 83g and R83i at Bethany Home Rd. and 339th Ave.
2383            HC       2
                *

2384            KK     83f   BASIN
2385            KM    A Subbasin at Bethany Home Rd. and East of 339th Ave.
2386            KM    L=0.62, Lca=0.36, S=61.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=16.7
2387            BA   0.132
2388            LG    0.30     0.27     3.35     0.60        0
2389            UI       0       38      149      239      233      150       89       51       32       19
2390            UI       8        6        6        0        0        0        0        0        0        0
2391            UI       0        0        0        0        0        0        0        0        0        0
2392            UI       0        0        0        0        0        0        0        0        0        0
2393            UI       0        0        0        0        0        0        0        0        0        0
                *

2394            KK    C83f COMBINE
2395            KM    Combine 83f and C83g at Bethany Home Rd. and 339th Ave.
2396            HC       2
                *

2397            KK    R83g   ROUTE
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2398        KM    Route 83g to 83e in Wash T2N-5W-S33E
2399        RS       5    FLOW      -1
2400        RC   0.060   0.050   0.060    6004  0.0053    0.00
2401        RX    0.00   66.00  264.00  330.00  400.00  466.00  664.00  730.00
2402        RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2403        KK     83e   BASIN
2404        KM    A Subbasin of T2N-R5W-S33E at Camelback Rd. and 339th Ave.
2405        KM    L=1.54, Lca=0.67, S=41.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
2406        BA   0.837
2407        LG    0.30    0.27    3.38    0.59       0
2408        UI       0      88     175     410     606     767     836     800     675     507
2409        UI     390     301     225     171     139      92      74      61      44      21
2410        UI      22      21      21      22       0       0       0       0       0       0
2411        UI       0       0       0       0       0       0       0       0       0       0
2412        UI       0       0       0       0       0       0       0       0       0       0
            *

2413        KK    C83e COMBINE
2414        KM    Combine 83e and C83f at Camelback Rd. and 339th Ave.
2415        HC       2
            *

2416        KK    R83e   ROUTE
2417        KM    Route 83e to 83d in Wash T2N-5W-S33E
2418        RS       3    FLOW      -1
2419        RC   0.060   0.050   0.060    4439  0.0059    0.00
2420        RX    0.00   47.50  190.00  237.50  262.50  310.00  452.50  500.00
2421        RY    7.00    4.90    2.80    0.00    0.00    2.80    4.90    7.00
            *

2422        KK     83d   BASIN
2423        KM    A Subbasin of T2N-R5W-S33E at North of Indian School, East of 339th Ave.
2424        KM    L=1.16, Lca=0.59, S=44.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.3
2425        BA   0.230
2426        LG    0.30    0.26    3.55    0.52       0
2427        UI       0      28      78     162     231     269     259     209     151     111
2428        UI      78      59      42      30      21      18       7       7       7       6
2429        UI       7       0       0       0       0       0       0       0       0       0
2430        UI       0       0       0       0       0       0       0       0       0       0
2431        UI       0       0       0       0       0       0       0       0       0       0
            *

2432        KK    C83d COMBINE
2433        KM    Combine 83d and R83e at North of Indian School Rd. and East of 339th Ave.
2434        HC       2
            *

2435        KK     86a   BASIN
2436        KM    A Subbasin of T2N-R5W-S21 at North of Indian School, East of 339th Ave.
2437        KM    L=1.55, Lca=0.71, S=41.4, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=33.1
2438        BA   0.479
2439        LG    0.30    0.27    3.38    0.59       0
2440        UI       0      48      93     220     326     421     461     450     398     302
2441        UI     233     182     136     103      83      61      48      34      33      14
2442        UI      12      12      11      12      12       0       0       0       0       0
2443        UI       0       0       0       0       0       0       0       0       0       0
2444        UI       0       0       0       0       0       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2445        KK   CC83d COMBINE
2446        KM    Combine C83d and 86a North of Indian School Rd. and East of 339th Ave.
2447        HC       2
            *

2448        KK    R83d   ROUTE
2449        KM    Route 83d to 83c in Wash T2N-5W-S33E
2450        RS       2    FLOW      -1
2451        RC   0.060   0.050   0.060    3074  0.0052    0.00
2452        RX    0.00   54.50  218.00  272.50  297.50  352.00  515.50  570.00
2453        RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
            *

2454        KK     83c   BASIN
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2455        KM    A Subbasin of T2N-R5W-S33E at South of Indian School, East of 339th Ave.
2456        KM    L=0.98, Lca=0.47, S=53.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.7
2457        BA   0.278
2458        LG    0.30    0.25    3.92    0.41       0
2459        UI       0      41     155     291     374     388     290     198     136      92
2460        UI      64      42      28      17      10      10      10       0       0       0
2461        UI       0       0       0       0       0       0       0       0       0       0
2462        UI       0       0       0       0       0       0       0       0       0       0
2463        UI       0       0       0       0       0       0       0       0       0       0
            *

2464        KK    C83c COMBINE
2465        KM    Combine 83c and R83d at South of Indian School Rd. and East of 339th Ave.
2466        HC       2
            *

2467        KK     87b   BASIN
2468        KM    A Subbasin at Camelback Rd. and East of 339th Ave.
2469        KM    L=1.09, Lca=0.56, S=36.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=27.0
2470        BA   0.161
2471        LG    0.30    0.27    3.33    0.61       0
2472        UI       0      20      56     117     164     192     182     143     105      75
2473        UI      54      40      29      21      14      11       5       5       5       5
2474        UI       0       0       0       0       0       0       0       0       0       0
2475        UI       0       0       0       0       0       0       0       0       0       0
2476        UI       0       0       0       0       0       0       0       0       0       0
            *

2477        KK    R87b   ROUTE
2478        KM    Route 87b to 87a in Wash T2N-R5W-S28
2479        RS      10    FLOW      -1
2480        RC   0.050   0.060   0.050    6497  0.0077    0.00
2481        RX    0.00   45.50  182.00  227.50  257.50  303.00  439.50  485.00
2482        RY    6.00    4.20    2.40    0.00    0.00    2.40    4.20    6.00
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2483        KK     87a   BASIN
2484        KM    A Subbasin of T2N-R5W-S28 at South of Indian School, East of 339th Ave.
2485        KM    L=1.41, Lca=0.71, S=39.8, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=32.2
2486        BA   0.273
2487        LG    0.30    0.25    3.88    0.42       0
2488        UI       0      28      58     133     198     251     272     261     220     165
2489        UI     128      98      73      56      45      31      24      20      14       7
2490        UI       7       7       6       7       0       0       0       0       0       0
2491        UI       0       0       0       0       0       0       0       0       0       0
2492        UI       0       0       0       0       0       0       0       0       0       0
            *

2493        KK    C87a COMBINE
2494        KM    Combine 87a and R87b at South of Indian School Rd. and East of 339th Ave.
2495        HC       2
            *

2496        KK   CC83c COMBINE
2497        KM    Combine C83c and C87a at South of Indian School Rd., East of 339th Ave.
2498        HC       2
            *

2499        KK    R83c   ROUTE
2500        KM    Route 83c to 83b in Wash T2N-5W-S33E
2501        RS       3    FLOW      -1
2502        RC   0.060   0.050   0.060    5898  0.0054    0.00
2503        RX    0.00   46.00  184.00  230.00  270.00  316.00  454.00  500.00
2504        RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
            *

2505        KK     83b   BASIN
2506        KM    A Subbasin of T2N-R5W-S33E at South of Thomas Rd. and East of 339th Ave.
2507        KM    L=1.57, Lca=0.80, S=39.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=35.1
2508        BA   0.432
2509        LG    0.30    0.25    4.15    0.44       0
2510        UI       0      41      73     170     262     342     383     393     367     292
2511        UI     226     180     139     107      84      67      50      41      28      28
2512        UI      13      10      10      11      10      10       0       0       0       0
2513        UI       0       0       0       0       0       0       0       0       0       0
2514        UI       0       0       0       0       0       0       0       0       0       0
            *

2515        KK    C83b COMBINE
```

```
2516          KM    Combine 83b and R83c at South of Thomas Rd. and East of 339th Ave.
2517          HC       2
              *

2518          KK     85b   BASIN
2519          KM    A Subbasin of T2N-R5W-S33W at South of Indian School Rd. and 339th Ave.
2520          KM    L=0.98, Lca=0.41, S=42.9, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=22.4
2521          BA   0.237
2522          LG    0.30    0.25    4.10    0.46       0
2523          UI       0      36     138     252     329     328     245     165     115      74
2524          UI      52      35      24      12       9       8       9       0       0       0
1                                          HEC-1 INPUT                                          PAGE 64

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2525          UI       0       0       0       0       0       0       0       0       0       0
2526          UI       0       0       0       0       0       0       0       0       0       0
2527          UI       0       0       0       0       0       0       0       0       0       0
              *

2528          KK    R85b   ROUTE
2529          KM    Route 85b to 85a in Wash T2N-R5W-S33W
2530          RS       6    FLOW      -1
2531          RC   0.055   0.060   0.055    4836  0.0083    0.00
2532          RX    0.00   56.00  224.00  280.00  345.00  401.00  569.00  625.00
2533          RY    8.00    5.60    3.20    0.00    0.00    3.20    5.60    8.00
              *

2534          KK     85a   BASIN
2535          KM    A Subbasin of T2N-R5W-S33W at South of Thomas Rd. and East of 339th Ave.
2536          KM    L=1.21, Lca=0.64, S=44.7, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=28.5
2537          BA   0.315
2538          LG    0.30    0.25    4.15    0.44       0
2539          UI       0      37      95     201     293     346     349     295     222     160
2540          UI     120      86      65      47      35      25      19       9       9       8
2541          UI       9       0       0       0       0       0       0       0       0       0
2542          UI       0       0       0       0       0       0       0       0       0       0
2543          UI       0       0       0       0       0       0       0       0       0       0
              *

2544          KK    C85a COMBINE
2545          KM    Combine 85a and R85b at South of Thomas Rd. and East of 339th Ave.
2546          HC       2
              *

2547          KK   CC83b COMBINE
2548          KM    Combine C83b and C85a at South of Thomas Rd. and East of 339th Ave.
2549          HC       2
              *

2550          KK    R83b   ROUTE
2551          KM    Route 83b to 83a in Wash T2N-5W-S33E
2552          RS       3    FLOW      -1
2553          RC   0.060   0.050   0.060    6084  0.0063    0.00
2554          RX    0.00   51.00  204.00  255.00  320.00  371.00  524.00  575.00
2555          RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
              *

2556          KK     83a   BASIN
2557          KM    A Subbasin of T2N-R5W-S33E at I-10 and West of 331st Ave.
2558          KM    L=1.38, Lca=0.71, S=42.0, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=31.6
2559          BA   0.242
2560          LG    0.30    0.25    4.25    0.42       0
2561          UI       0      25      55     122     183     229     245     233     193     143
2562          UI     110      83      63      47      37      27      19      18      10       6
2563          UI       6       6       6       7       0       0       0       0       0       0
2564          UI       0       0       0       0       0       0       0       0       0       0
2565          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 65

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2566          KK    C83a COMBINE
2567          KM    Combine 83a and R83b at I-10 and West of 331st Ave.
2568          HC       2
              *

2569          KK     84b   BASIN
2570          KM    A Subbasin of T1N-R5W-S04 at North of McDowell Rd. and East of 339th Ave.
2571          KM    L=1.32, Lca=0.61, S=42.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=29.2
2572          BA   0.347
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2573          LG    0.30    0.25    4.15    0.44       0
2574          UI       0      40      97     210     306     373     376     332     249     185
2575          UI     137     101      76      56      42      27      26      10      10      10
2576          UI      10       9       0       0       0       0       0       0       0       0
2577          UI       0       0       0       0       0       0       0       0       0       0
2578          UI       0       0       0       0       0       0       0       0       0       0
              *

2579          KK    R84b   ROUTE
2580          KM    Route 84b to 84a in Wash T1N-R5W-S04
2581          RS       5    FLOW      -1
2582          RC   0.055   0.060   0.055    4440  0.0079    0.00
2583          RX    0.00   38.50  154.00  192.50  232.50  271.00  386.50  425.00
2584          RY   12.00    8.40    4.80    0.00    0.00    4.80    8.40   12.00
              *

2585          KK     84a   BASIN
2586          KM    A Subbasin of T1N-R5W-S04 at I-10 and West of 331st Ave.
2587          KM    L=0.71, Lca=0.38, S=36.5, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=19.9
2588          BA   0.223
2589          LG    0.30    0.25    4.30    0.41       0
2590          UI       0      44     169     301     353     307     200     127      83      52
2591          UI      34      23       9      10       9       0       0       0       0       0
2592          UI       0       0       0       0       0       0       0       0       0       0
2593          UI       0       0       0       0       0       0       0       0       0       0
2594          UI       0       0       0       0       0       0       0       0       0       0
              *

2595          KK    C84a COMBINE
2596          KM    Combine 84a and R84b at I-10 and West of 331st Ave.
2597          HC       2
              *

2598          KK   CC83a COMBINE
2599          KM    Combine C84a and C83a at I-10 and West of 331st Ave.
2600          HC       2
              *

2601          KK    S83a STORAGE
2602          KM    Storage Routing through 4-10'x4' CBC
2603          RS       1    STOR       0
2604          SV     0.0    0.02    0.10    0.40    1.00    2.20    4.40    7.30   10.90   15.50
2605          SE    1037    1038    1039    1040    1041    1042    1043    1044    1045    1046
2606          SQ     0.0   177.0   473.0   769.0  1060.0  1261.0  1462.0  1663.0  1863.0  2071.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2607          KK     91b   BASIN
2608          KM    A Subbasin of T2N-R5W-S27S at Indian School Rd. and West of 331st Ave.
2609          KM    L=2.53, Lca=1.34, S=43.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=50.3
2610          BA   0.561
2611          LG    0.30    0.25    4.20    0.43       0
2612          UI       0      37      38      86     151     209     261     312     342     359
2613          UI     356     339     296     252     211     177     149     126     107      86
2614          UI      74      63      56      40      40      27      25      26      17       9
2615          UI       9       9       9       9      10       9       9       9       0       0
2616          UI       0       0       0       0       0       0       0       0       0       0
              *

2617          KK    R91b   ROUTE
2618          KM    Route 91b to 91a in Wash T2N-R5W-S27S
2619          RS       4    FLOW      -1
2620          RC   0.050   0.060   0.050    4978  0.0084    0.00
2621          RX    0.00   40.00  160.00  200.00  230.00  270.00  390.00  430.00
2622          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2623          KK     91a   BASIN
2624          KM    A Subbasin of T2N-R5W-S27S at North of Thomas Rd. and East of 331st Ave.
2625          KM    L=1.20, Lca=0.60, S=56.6, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=26.6
2626          BA   0.434
2627          LG    0.30    0.25    4.15    0.44       0
2628          UI       0      55     157     326     452     526     495     379     278     196
2629          UI     143     102      74      53      38      26      14      13      13      13
2630          UI       0       0       0       0       0       0       0       0       0       0
2631          UI       0       0       0       0       0       0       0       0       0       0
2632          UI       0       0       0       0       0       0       0       0       0       0
              *

2633          KK    C91a COMBINE
```

```
2634          KM    Combine 91a and R91b at North of Thomas Rd. and East of 331st Ave.
2635          HC       2
              *

2636          KK  JACKRB  INFLOW
2637          KM    Inflow from Jackrabbit Wash Split.
2638          KM    Maximum flow 2,835 cfs (West Consultants, Inc. HEC-RAS Model, and Burgess an
2639          KM    Niple's HEC-1 Models).
2640          IN      30
2641          BA    32.0
2642          QI       0       0       0       0       0       0       0       0       0       0
2643          QI       0       0       0       0       0       0       0       0       0       0
2644          QI       0       0       0       0       0       0       0       0       0       0
2645          QI     403    1708    2622    2835    2587    1893    1001     273       3       0
2646          QI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2647          KK  R-JACK   ROUTE
2648          KM    Route JACKRB to 92b in Wash T2N-R5W-S27N
2649          RS       3    FLOW      -1
2650          RC   0.060   0.050   0.060    6600  0.0067    0.00
2651          RX    0.00   63.50  254.00  317.50  362.50  426.00  616.50  680.00
2652          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2653          KK     92b   BASIN
2654          KM    A Subbasin of T2N-R5W-S27N at South of Camelback Rd., East of 331st Ave.
2655          KM    L=1.83, Lca=0.79, S=61.3, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=34.1
2656          BA   0.700
2657          LG    0.30    0.25    4.50    0.36       0
2658          UI       0      68     127     298     447     586     642     651     593     457
2659          UI     355     276     213     164     128     101      73      56      47      36
2660          UI      17      17      17      17      17      17       0       0       0       0
2661          UI       0       0       0       0       0       0       0       0       0       0
2662          UI       0       0       0       0       0       0       0       0       0       0
              *

2663          KK    C92b COMBINE
2664          KM    Combine 92b and R-JACK at South of Camelback Rd. and East of 331st Ave.
2665          HC       2
              *

2666          KK    R92b   ROUTE
2667          KM    Route 92b to 92a in Wash T2N-R5W-S27N
2668          RS       4    FLOW      -1
2669          RC   0.060   0.050   0.060    7166  0.0067    0.00
2670          RX    0.00   63.50  254.00  317.50  362.50  426.00  616.50  680.00
2671          RY   10.00    7.00    4.00    0.00    0.00    4.00    7.00   10.00
              *

2672          KK     92a   BASIN
2673          KM    A Subbasin of T2N-R5W-S27N at South of Indian School, East of 331st Ave.
2674          KM    L=2.35, Lca=1.08, S=45.2, Kn=0.045, S-Graph=DESERT/RANGELAND, Tlag=44.7
2675          BA   0.785
2676          LG    0.30    0.25    4.60    0.34       0
2677          UI       0      59      60     177     277     385     460     527     568     559
2678          UI     521     448     366     299     251     202     170     136     112      93
2679          UI      77      63      49      41      40      25      15      14      15      14
2680          UI      15      14      15       0       0       0       0       0       0       0
2681          UI       0       0       0       0       0       0       0       0       0       0
              *

2682          KK    C92a COMBINE
2683          KM    Combine 92a and R92b at South of Indian School Rd. and East of 331st Ave.
2684          HC       2
              *
2685          ZZ
```

1

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              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   58         14e
                V
                V
   68        R14e
                .
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                .
 74             .         14d
                .           .
                .           .
 84         C14d............
                V
                V
 87         R14d
                .
                .
 93             .         14c
                .           .
                .           .
103         C14c............
                V
                V
106         S14c
                V
                V
112         R14c
                .
                .
118             .         14b
                .           .
                .           .
128         C14b............
                V
                V
131         R14b
                .
                .
137             .         14a
                .           .
                .           .
147         C14a............
                .
                .
150             .         12b
                .           V
                .           V
160             .        R12b
                .           .
                .           .
166             .           .         12a
                .           .           .
                .           .           .
176             .        C12a............
                .           .
                .           .
179        CC12a............
                .
                .
182             .         10b
                .           .
                .           .
192         C10b............
                V
                V
195         R10b
                .
                .
201             .         10a
                .           .
                .           .
211         C10a............
                .
                .
214             .         21d
                .           V
                .           V
224             .        R21d
                .           .
                .           .
230             .           .         21c
                .           .           .
                .           .           .
240             .        C21c............
                .           V
                .           V
243             .        R21c
                .           .
                .           .
249             .           .         21b
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                .          .          .
                .          .          .
259             .       C21b...........
                .          .
                .          .
262             .          .        24b
                .          .          V
                .          .          V
272             .          .       R24b
                .          .          .
                .          .          .
278             .          .          .        24a
                .          .          .          .
                .          .          .          .
288             .          .       C24a...........
                .          .          .
                .          .          .
291             .      CC24a...........
                .          V
                .          V
294             .       R21b
                .          .
                .          .
300             .          .        21a
                .          .          .
                .          .          .
310             .       C21a...........
                .          V
                .          V
313             .       S21a
                .          V
                .          V
319             .       R21a
                .          .
                .          .
325             .          .        20l
                .          .          .
                .          .          .
335             .       C20l...........
                .          .
                .          .
338             .          .        20K
                .          .          V
                .          .          V
348             .          .       S20k
                .          .          V
                .          .          V
354             .          .       R20k
                .          .          .
                .          .          .
360             .          .          .        20j
                .          .          .          .
                .          .          .          .
370             .          .       C20j...........
                .          .          .
                .          .          .
373             .      CC20j...........
                .          V
                .          V
376             .       R20l
                .          .
                .          .
382             .          .        20i
                .          .          .
                .          .          .
392             .       C20i...........
                .          .
                .          .
395             .          .        22c
                .          .          .
                .          .          .
405             .          .          .        22d
                .          .          .          V
                .          .          .          V
415             .          .          .       S22d
                .          .          .          V
                .          .          .          V
421             .          .          .       R22d
                .          .          .          .
                .          .          .          .
427             .          .          .          .        22b
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437          .          .          .       C22b............
             .          .          .          .
             .          .          .          .
440          .          .      CC22b............
             .          .          V
             .          .          V
443          .          .       R22b
             .          .          .
             .          .          .
449          .          .          .        22a
             .          .          .          .
             .          .          .          .
459          .          .       C22a............
             .          .          .
             .          .          .
462          .     CC20i............
             .        V
             .        V
465          .      R20i
             .          .
             .          .
471          .          .        20h
             .          .          .
             .          .          .
481          .      C20h............
             .        V
             .        V
484          .      R20h
             .          .
             .          .
490          .          .        20g
             .          .          .
             .          .          .
500          .      C20g............
             .        V
             .        V
503          .      R20g
             .          .
             .          .
509          .          .        20f
             .          .          .
             .          .          .
519          .      C20f............
             .        V
             .        V
522          .      R20f
             .          .
             .          .
528          .          .        20e
             .          .          .
             .          .          .
538          .      C20e............
             .        V
             .        V
541          .      R20e
             .          .
             .          .
547          .          .        20d
             .          .          .
             .          .          .
557          .      C20d............
             .        V
             .        V
560          .      R20d
             .          .
             .          .
566          .          .        20c
             .          .          .
             .          .          .
576          .      C20c............
             .        V
             .        V
579          .      R20c
             .          .
             .          .
585          .          .        20b
             .          .          .
             .          .          .
595          .      C20b............
             .          .
             .          .
598          .          .        46k
             .          .          .
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610                 .-------> D46kW
608             D46kE
                    V
                    V
613             R46kE
                    .
                    .
619                 .        46j
                    .          .
                    .          .
629              C46j............
                    .
                    .
634                 .          .<-------  D46kW
632                 .     BD46kW
                    .          V
                    .          V
635                 .      R46kW
                    .          .
                    .          .
641                 .          .        46i
                    .          .          .
                    .          .          .
651                 .       C46i............
                    .          .
                    .          .
654             CC46i............
                    V
                    V
657              R46i
                    .
                    .
663                 .        46h
                    .          .
                    .          .
673              C46h............
                    .
                    .
676                 .        54b
                    .          V
                    .          V
686                 .       R54b
                    .          .
                    .          .
692                 .          .        54a
                    .          .          .
                    .          .          .
702                 .       C54a............
                    .          V
                    .          V
705                 .       R54a
                    .          .
                    .          .
711                 .          .        52a
                    .          .          .
                    .          .          .
721                 .       C52a............
                    .          .
                    .          .
724             CC46h............
                    V
                    V
727              R46h
                    .
                    .
733                 .        46g
                    .          .
                    .          .
743              C46g............
                    .
                    .
746                 .        46f
                    .          .
                    .          .
756              C46f............
                    V
                    V
759              R46f
                    .
                    .
765                 .        46e
                    .          .
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775          .          .          .          .
             .          .       C46e...........
             .          .          .
             .          .          .
778          .          .          .        56a
             .          .          .          .
             .          .          .          .
788          .          .     CC46e...........
             .          .       V
             .          .       V
791          .          .      R46e
             .          .          .
             .          .          .
797          .          .          .        46d
             .          .          .          .
             .          .          .          .
807          .          .      C46d...........
             .          .          .
             .          .          .
810          .          .          .        46c
             .          .          .          .
             .          .          .          .
820          .          .      C46c...........
             .          .       V
             .          .       V
823          .          .      R46c
             .          .          .
             .          .          .
829          .          .          .        46b
             .          .          .          .
             .          .          .          .
839          .          .      C46b...........
             .          .          .
             .          .          .
842          .          .          .        50g
             .          .          .          V
             .          .          .          V
852          .          .          .       R50g
             .          .          .          .
             .          .          .          .
858          .          .          .          .        50f
             .          .          .          .          .
             .          .          .          .          .
868          .          .          .       C50f...........
             .          .          .          V
             .          .          .          V
871          .          .          .       R50f
             .          .          .          .
             .          .          .          .
877          .          .          .          .        50e
             .          .          .          .          .
             .          .          .          .          .
887          .          .          .       C50e...........
             .          .          .          V
             .          .          .          V
890          .          .          .       R50e
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896          .          .          .          .        50d
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906          .          .          .       C50d...........
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909          .          .          .          .        50c
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919          .          .          .       C50c...........
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             .          .          .          V
922          .          .          .       R50d
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928          .          .          .          .        50b
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938          .          .          .       C50b...........
             .          .          .          V
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941          .          .          .       R50b
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947          .          .          .          .        50a
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957              .         .         .       C50a.........
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960              .         .      CC46b........
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                 .         .         V
963              .         .      R46b
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969              .         .         .       46a
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979              .         .      C46a........
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982              .         .         .       48b
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                 .         .         .         V
992              .         .         .      R48b
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998              .         .         .         .         48a
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1008             .         .         .      C48a........
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1011             .         .      CC48a........
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1014             .         .      S46a
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1020             .         .      R46a
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1036             .         .         .         .         44e
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1046             .         .         .      C44e........
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1049             .         .         .      R44e
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1065             .         .         .      C44d........
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1068             .         .         .      R44d
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1074             .         .         .         .         44c
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1084             .         .         .      C44c........
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                 .         .         .         V
1087             .         .         .      R44c
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1093             .         .         .         .         44b
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1103             .         .         .      C44b........
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1106             .         .         .      R44b
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1122             .         .         .      C44a........
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1191          .          .       R40d
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1239          .          .          .        R64d
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1245          .          .          .          .         64c
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1255          .          .          .        C64c............
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1258          .          .          .        R64c
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1264          .          .          .          .         64b
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1274          .          .          .        C64b............
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1277          .          .          .        R64b
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1283          .          .          .          .         64a
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1293          .          .          .        C64a............
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1296          .          .          .          .         62b
              .          .          .          .           V
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1306                                            R62b
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1312                                                .          62a
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1322                                            C62a............
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1325                                   CC64a............
                                           V
                                           V
1328                                    S64a
                                           V
                                           V
1334                                    R62a
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1340                                                .         60c
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1350                                    C60c............
                                           V
                                           V
1353                                    R60c
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1359                                                .         60b
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1369                                    C60b............
                                           V
                                           V
1372                                    R60b
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1378                                                .         60a
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1388                                    C60a............
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1391                                CC40b............
                                       V
                                       V
1394                                 R40b
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1400                                          40a
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1410                                 C40a............
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1413                                          36c
                                               V
                                               V
1423                                    R36c
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1429                                                .         36b
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1439                                    C36b............
                                           V
                                           V
1442                                    R36b
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1448                                                .         36a
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1458                                    C36a............
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1461                                CC36a............
                                       V
                                       V
1464                                 R36a
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1470                                          30g
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1480            .          .       C30g...........
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1483            .          .          .        34b
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                .          .          .          V
1493            .          .          .       R34b
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1499            .          .          .          .        34a
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1509            .          .          .       C34a...........
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1515            .          .       R30g
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1521            .          .          .        30f
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1531            .          .       C30f...........
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1534            .          .       R30f
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1540            .          .          .        30e
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1550            .          .       C30e...........
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1553            .          .       R30e
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1559            .          .          .        30d
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1569            .          .       C30d...........
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1575            .       S20b
                .          V
                .          V
1581            .       R20b
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1600            .       R20a
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1606            .          .        30c
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1616            .       C30c...........
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1629            .          .       S32b
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1635            .          .       R32b
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1641            .          .          .        32a
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1651          .           .        C32a............
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1657          .       R30c
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1686          .           .        R78b
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1715          .           .           .        R77b
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1721          .           .           .           .         77a
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1731          .           .           .        C77a............
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1734          .           .       CC77a............
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1737          .           .        R77a
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1743          .           .           .         70h
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              .           .           .           .
1753          .           .        C70h............
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1756          .           .           .         70g
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1766          .           .        C70g............
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1769          .           .        R70g
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1775          .           .           .         70f
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1785          .           .        C70f............
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1788          .           .           .         75a
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1798          .           .        C75a............
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1801          .           .        R70f
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1807          .           .           .         74b
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              .           .           .           V
1817          .           .           .        R74b
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1823          .           .           .           .         74a
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1833                                  C74a............
1836                        CC74a............
                                V
                                V
1839                         R74a
1845                                     70e
1855                         C70e............
                                V
                                V
1858                         R70e
1864                                     73b
                                           V
                                           V
1874                                    R73b
1880                                                        73a
1890                                    C73a............
1893                        CC70e............
                                V
                                V
1896                         R73a
1902                                     70d
1912                         C70d............
                                V
                                V
1915                         S70d
                                V
                                V
1921                         R70d
1927                                     70c
1937                         C70c............
1940                                     72b
                                           V
                                           V
1950                                    R72b
1956                                                        72a
1966                                    C72a............
1969                        CC70c............
                                V
                                V
1972                         R70c
1978                                     70b
1988                         C70b............
1991                    CC30b............
1995                         71b
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2005             .          .       R71b
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2011             .          .          .        71a
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2021             .          .       C71a............
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2024             .      CC70b............
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2027             .       R70b
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2043             .       C70a............
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2056             .       C30a............
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2089             .          .          .          .         .       33a
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2099             .          .          .          .         .         .       35a
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2109             .          .      DUMMY.......................................................
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2112         DUMMY........................
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2125             .      R79b
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2141             .      C79a............
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2189             .          .          .          .       81a
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2202      DUMMY.................................
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2205          .        82b
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2221          .       R82b
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2499          .          .       R83c
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                .          .          .           .           .           .
  2682          .          .          .           .        C92a............

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 *              JUN   1998              *                                                  *    HYDROLOGIC ENGINEERING CENTER
*
 *           VERSION 4.1                *                                                  *          609 SECOND STREET
*
 *                                      *                                                  *       DAVIS, CALIFORNIA 95616
*
 *  RUN DATE   11JUL08  TIME  16:35:49  *                                                  *           (916) 756-1104
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 *                                      *                                                  *
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LUKE WASH FDS - Luke Wash Watershed Zone AE FDS

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                    Flood Control District of Maricopa County
                    Contract FCD 2007C020
                    100-Year 24-Hour Storm
                    NOAA 14 Rainfall Data
                    DDMSW Version 3.5.2
                    Multiple Storms
                    SCS Type II Precipitation Distribution
                    Green and Ampt Loss Method
                    S-Graph Unit Hydrograph
                    Existing Land Use Conditions
                    "With Structure" Conditions Model (I-10 and UPRR are assumed to exist)
                    Model Name: EC24DIKE.DAT, Wood/Patel,June 2008

                  ****************************************************************************
                    HEC-1 ELEMENT NOMENCLATURE

                    SUB-BASIN HYDROGRAPH:
                       Example: "20a" is the hydrograph from subbasin 20a

                    SUB-BASIN FLOW DIVERSION:
                       Example: "D20aE" is the East component of diversion in Subbasin 20a

                    CHANNEL ROUTE:
                       Example: "R20a" is the surface flow routing from 20a

                    STORAGE ROUTE:
                       Example: "S20a" is the storage routing in Subbasin 20a

                    HYDROGRAPH COMBINE:
                       Example: "C20a" is the combined flow in Subbasin 20a

                    HYDROGRAPH RETRIEVAL:
                       Example: "B20a" is the retrieved flow from Subbasin 20a

                    "DUMMY" COMBINE:
                       Example: "DUMMY" is the dummy hydrograph combining to free up a HEC-1
                                computational path.
                  ****************************************************************************

42 IO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                      NMIN           5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1JAN99  STARTING DATE
                     ITIME        1200  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      8JAN99  ENDING DATE
                    NDTIME        1035  ENDING TIME
                     ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL     .08 HOURS
                      TOTAL TIME BASE  166.58 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

43 JD          INDEX STORM NO. 1
                      STRM        3.69  PRECIPITATION DEPTH
                      TRDA         .00  TRANSPOSITION DRAINAGE AREA

44 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .00       .00       .00       .00       .00       .00       .00       .00
54 JD         INDEX STORM NO. 2
                STRM        3.51  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00
55 JD         INDEX STORM NO. 3
                STRM        3.32  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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 56 JD        INDEX STORM NO. 4
                 STRM        3.21  PRECIPITATION DEPTH
                 TRDA       60.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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                .00       .00       .00       .00       .00       .00       .00       .00

 57 JD        INDEX STORM NO. 5
                 STRM        3.15  PRECIPITATION DEPTH
                 TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .01       .00       .01
                .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1

                                        RUNOFF SUMMARY
                                    FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES
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	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	14e	805.	12.50	117.	30.	10.	1.10		
+	ROUTED TO	R14e	716.	12.83	117.	30.	10.	1.10		
+	HYDROGRAPH AT	14d	482.	12.42	58.	15.	5.	.50		
+	2 COMBINED AT	C14d	901.	12.67	174.	44.	15.	1.61		
+	ROUTED TO	R14d	856.	13.08	174.	44.	15.	1.61		
+	HYDROGRAPH AT	14c	876.	12.50	118.	29.	10.	1.10		
+	2 COMBINED AT	C14c	1241.	12.67	290.	74.	25.	2.70		
+	ROUTED TO	S14c	1159.	12.92	290.	74.	25.	2.70		
+	ROUTED TO	R14c	1131.	13.17	290.	73.	25.	2.70		
+	HYDROGRAPH AT	14b	299.	12.25	27.	7.	2.	.26		
+	2 COMBINED AT	C14b	1138.	13.17	315.	80.	27.	2.96		
+	ROUTED TO	R14b	1087.	13.67	313.	80.	27.	2.96		
+	HYDROGRAPH AT	14a	312.	12.50	44.	11.	4.	.37		
+	2 COMBINED AT	C14a	1104.	13.67	355.	91.	30.	3.33		
+	HYDROGRAPH AT	12b	397.	12.50	54.	14.	5.	.45		
+	ROUTED TO	R12b	315.	13.08	54.	14.	5.	.45		
+	HYDROGRAPH AT	12a	649.	12.58	108.	27.	9.	.83		
+	2 COMBINED AT	C12a	760.	12.83	161.	40.	13.	1.28		
+	2 COMBINED AT	CC12a	1439.	13.08	514.	131.	44.	4.61		
+	HYDROGRAPH AT	10b	583.	12.58	105.	29.	10.	.86		
+	2 COMBINED AT	C10b	1786.	12.92	615.	159.	53.	5.46		
+	ROUTED TO	R10b	1725.	13.42	612.	159.	53.	5.46		
+	HYDROGRAPH AT	10a	812.	12.42	98.	24.	8.	.84		
+	2 COMBINED AT	C10a	1771.	13.33	703.	183.	61.	6.30		
+	HYDROGRAPH AT	21d	372.	12.58	60.	15.	5.	.49		
+	ROUTED TO	R21d	300.	13.33	60.	15.	5.	.49		

+	HYDROGRAPH AT 21c	192.	12.42	25.	6.	2.	.23
+	2 COMBINED AT C21c	320.	13.33	84.	21.	7.	.73
+	ROUTED TO R21c	261.	14.33	83.	21.	7.	.73
+	HYDROGRAPH AT 21b	368.	12.58	62.	16.	5.	.55
+	2 COMBINED AT C21b	366.	12.58	141.	37.	12.	1.27
+	HYDROGRAPH AT 24b	274.	12.50	38.	9.	3.	.34
+	ROUTED TO R24b	201.	13.42	38.	9.	3.	.34
+	HYDROGRAPH AT 24a	367.	12.42	44.	11.	4.	.41
+	2 COMBINED AT C24a	365.	12.42	81.	21.	7.	.74
+	2 COMBINED AT CC24a	690.	12.50	221.	57.	19.	2.02
+	ROUTED TO R21b	560.	13.17	217.	57.	19.	2.02
+	HYDROGRAPH AT 21a	627.	12.50	95.	24.	8.	.88
+	2 COMBINED AT C21a	791.	13.00	307.	81.	27.	2.90
+	ROUTED TO S21a	675.	13.25	307.	81.	27.	2.90
+	ROUTED TO R21a	661.	13.67	304.	81.	27.	2.90
+	HYDROGRAPH AT 20l	153.	12.25	14.	3.	1.	.13
+	2 COMBINED AT C20l	661.	13.67	314.	84.	28.	3.03
+	HYDROGRAPH AT 20K	200.	12.25	19.	5.	2.	.18
+	ROUTED TO S20k	30.	12.83	15.	5.	2.	.18
+	ROUTED TO R20k	29.	13.67	15.	5.	2.	.18
+	HYDROGRAPH AT 20j	233.	12.25	21.	5.	2.	.20
+	2 COMBINED AT C20j	233.	12.25	34.	10.	3.	.38
+	2 COMBINED AT CC20j	688.	13.67	346.	94.	31.	3.41
+	ROUTED TO R20l	675.	14.08	340.	94.	31.	3.41
+	HYDROGRAPH AT 20i	277.	12.33	31.	8.	3.	.29
+	2 COMBINED AT C20i	675.	14.08	362.	101.	34.	3.70
+	HYDROGRAPH AT 22c	215.	12.33	24.	6.	2.	.22
+	HYDROGRAPH AT 22d	227.	12.42	26.	7.	2.	.24

	ROUTED TO							
+		S22d	141.	12.67	26.	7.	2.	.24
	ROUTED TO							
+		R22d	133.	13.08	26.	7.	2.	.24
	HYDROGRAPH AT							
+		22b	212.	12.25	18.	4.	1.	.16
	2 COMBINED AT							
+		C22b	211.	12.25	44.	11.	4.	.41
	2 COMBINED AT							
+		CC22b	404.	12.25	67.	17.	6.	.63
	ROUTED TO							
+		R22b	285.	13.08	67.	17.	6.	.63
	HYDROGRAPH AT							
+		22a	367.	12.50	50.	13.	4.	.45
	2 COMBINED AT							
+		C22a	398.	13.00	116.	29.	10.	1.08
	2 COMBINED AT							
+		CC20i	823.	13.92	475.	130.	43.	4.78
	ROUTED TO							
+		R20i	808.	14.42	466.	130.	43.	4.78
	HYDROGRAPH AT							
+		20h	885.	12.50	136.	35.	12.	1.25
	2 COMBINED AT							
+		C20h	1005.	12.75	585.	164.	55.	6.03
	ROUTED TO							
+		R20h	956.	13.33	575.	164.	55.	6.03
	HYDROGRAPH AT							
+		20g	915.	12.50	131.	34.	11.	1.18
	2 COMBINED AT							
+		C20g	1139.	13.08	679.	196.	66.	7.21
	ROUTED TO							
+		R20g	1080.	14.00	667.	196.	66.	7.21
	HYDROGRAPH AT							
+		20f	1005.	12.50	147.	37.	12.	1.35
	2 COMBINED AT							
+		C20f	1107.	14.00	767.	232.	78.	8.55
	ROUTED TO							
+		R20f	1083.	14.50	750.	232.	78.	8.55
	HYDROGRAPH AT							
+		20e	1198.	12.50	182.	47.	16.	1.53
	2 COMBINED AT							
+		C20e	1190.	12.50	877.	276.	93.	10.09
	ROUTED TO							
+		R20e	1153.	13.42	867.	276.	93.	10.09
	HYDROGRAPH AT							
+		20d	660.	12.33	69.	17.	6.	.62
	2 COMBINED AT							
+		C20d	1175.	13.17	878.	291.	98.	10.71
	ROUTED TO							
+		R20d	1150.	13.92	874.	291.	98.	10.71
	HYDROGRAPH AT							
+		20c	1052.	12.58	173.	45.	15.	1.42
	2 COMBINED AT							
+		C20c	1209.	13.83	960.	330.	112.	12.13
	ROUTED TO							

+	R20c	1156.	14.75	941.	329.	112.	12.13
HYDROGRAPH AT +	20b	871.	12.58	141.	36.	12.	1.27
2 COMBINED AT +	C20b	1156.	14.75	955.	362.	123.	13.41
HYDROGRAPH AT +	46k	510.	12.33	51.	13.	4.	.44
DIVERSION TO +	D46kW	153.	12.33	15.	4.	1.	.44
HYDROGRAPH AT +	D46kE	357.	12.33	35.	9.	3.	.44
ROUTED TO +	R46kE	274.	12.67	35.	9.	3.	.44
HYDROGRAPH AT +	46j	296.	12.33	34.	8.	3.	.29
2 COMBINED AT +	C46j	469.	12.50	69.	17.	6.	.74
HYDROGRAPH AT +	BD46kW	153.	12.33	15.	4.	1.	.44
ROUTED TO +	R46kW	111.	12.67	15.	4.	1.	.44
HYDROGRAPH AT +	46i	290.	12.33	30.	7.	2.	.27
2 COMBINED AT +	C46i	307.	12.42	45.	11.	4.	.27
2 COMBINED AT +	CC46i	753.	12.50	113.	28.	9.	1.01
ROUTED TO +	R46i	675.	12.83	113.	28.	9.	1.01
HYDROGRAPH AT +	46h	351.	12.42	44.	11.	4.	.38
2 COMBINED AT +	C46h	867.	12.67	156.	39.	13.	1.39
HYDROGRAPH AT +	54b	262.	12.33	27.	7.	2.	.23
ROUTED TO +	R54b	213.	12.50	27.	7.	2.	.23
HYDROGRAPH AT +	54a	346.	12.42	42.	11.	4.	.36
2 COMBINED AT +	C54a	538.	12.42	69.	18.	6.	.60
ROUTED TO +	R54a	506.	12.58	69.	18.	6.	.60
HYDROGRAPH AT +	52a	518.	12.42	73.	21.	7.	.58
2 COMBINED AT +	C52a	981.	12.50	141.	39.	13.	1.17
2 COMBINED AT +	CC46h	1733.	12.58	295.	78.	26.	2.56
ROUTED TO +	R46h	1401.	13.25	294.	78.	26.	2.56
HYDROGRAPH AT +	46g	277.	12.67	51.	13.	4.	.45
2 COMBINED AT +	C46g	1523.	13.25	342.	90.	30.	3.01

	HYDROGRAPH AT						
+	46f	415.	12.58	65.	16.	5.	.58
	2 COMBINED AT						
+	C46f	1636.	13.25	406.	106.	35.	3.59
	ROUTED TO						
+	R46f	1524.	13.58	405.	106.	35.	3.59
	HYDROGRAPH AT						
+	46e	248.	12.33	25.	6.	2.	.22
	2 COMBINED AT						
+	C46e	1524.	13.58	428.	112.	37.	3.81
	HYDROGRAPH AT						
+	56a	274.	12.42	31.	8.	3.	.30
	2 COMBINED AT						
+	CC46e	1529.	13.58	458.	120.	40.	4.11
	ROUTED TO						
+	R46e	1395.	14.08	454.	120.	40.	4.11
	HYDROGRAPH AT						
+	46d	332.	12.50	46.	12.	4.	.43
	2 COMBINED AT						
+	C46d	1401.	14.08	495.	131.	44.	4.54
	HYDROGRAPH AT						
+	46c	186.	12.50	25.	6.	2.	.23
	2 COMBINED AT						
+	C46c	1404.	14.08	519.	137.	46.	4.76
	ROUTED TO						
+	R46c	1361.	14.33	515.	137.	46.	4.76
	HYDROGRAPH AT						
+	46b	316.	12.50	43.	11.	4.	.40
	2 COMBINED AT						
+	C46b	1361.	14.33	554.	147.	49.	5.16
	HYDROGRAPH AT						
+	50g	168.	12.33	17.	4.	1.	.15
	ROUTED TO						
+	R50g	99.	13.17	17.	4.	1.	.15
	HYDROGRAPH AT						
+	50f	268.	12.42	33.	8.	3.	.29
	2 COMBINED AT						
+	C50f	267.	12.42	49.	12.	4.	.44
	ROUTED TO						
+	R50f	209.	12.92	49.	12.	4.	.44
	HYDROGRAPH AT						
+	50e	196.	12.25	19.	5.	2.	.17
	2 COMBINED AT						
+	C50e	228.	12.92	67.	17.	6.	.61
	ROUTED TO						
+	R50e	199.	13.33	66.	17.	6.	.61
	HYDROGRAPH AT						
+	50d	197.	12.33	20.	5.	2.	.18
	2 COMBINED AT						
+	C50d	206.	12.33	85.	22.	7.	.79
	HYDROGRAPH AT						
+	50c	325.	12.67	60.	15.	5.	.55
	2 COMBINED AT						
+	C50c	520.	12.67	144.	37.	12.	1.33
	ROUTED TO						
+	R50d	501.	12.75	144.	37.	12.	1.33

+	HYDROGRAPH AT	50b	216.	12.33	23.	6.	2.	.20
+	2 COMBINED AT	C50b	582.	12.58	166.	42.	14.	1.54
+	ROUTED TO	R50b	526.	13.33	163.	42.	14.	1.54
+	HYDROGRAPH AT	50a	522.	12.67	97.	24.	8.	.89
+	2 COMBINED AT	C50a	752.	13.17	256.	66.	22.	2.43
+	2 COMBINED AT	CC46b	1689.	14.25	805.	212.	71.	7.60
+	ROUTED TO	R46b	1617.	14.75	793.	212.	71.	7.60
+	HYDROGRAPH AT	46a	481.	12.58	75.	19.	6.	.81
+	2 COMBINED AT	C46a	1617.	14.75	849.	231.	77.	8.40
+	HYDROGRAPH AT	48b	187.	12.33	20.	5.	2.	.20
+	ROUTED TO	R48b	111.	13.42	20.	5.	2.	.20
+	HYDROGRAPH AT	48a	213.	12.50	28.	7.	2.	.28
+	2 COMBINED AT	C48a	212.	12.50	48.	12.	4.	.49
+	2 COMBINED AT	CC48a	1632.	14.75	893.	242.	81.	8.89
+	ROUTED TO	S46a	1564.	15.00	893.	242.	81.	8.89
+	ROUTED TO	R46a	1557.	15.17	890.	242.	81.	8.89
+	HYDROGRAPH AT	44f	227.	12.50	31.	8.	3.	.27
+	HYDROGRAPH AT	44e	329.	12.58	54.	13.	4.	.46
+	2 COMBINED AT	C44e	542.	12.50	84.	21.	7.	.73
+	ROUTED TO	R44e	429.	13.33	84.	21.	7.	.73
+	HYDROGRAPH AT	44d	522.	12.75	100.	25.	8.	.82
+	2 COMBINED AT	C44d	672.	13.25	183.	46.	15.	1.55
+	ROUTED TO	R44d	622.	13.58	181.	46.	15.	1.55
+	HYDROGRAPH AT	44c	301.	12.42	40.	10.	3.	.34
+	2 COMBINED AT	C44c	635.	13.58	219.	55.	18.	1.89
+	ROUTED TO	R44c	612.	13.92	217.	55.	18.	1.89
+	HYDROGRAPH AT	44b	268.	12.42	33.	8.	3.	.28
	2 COMBINED AT							

+		C44b	614.	13.92	247.	64.	21.	2.17
	ROUTED TO							
+		R44b	586.	14.58	241.	64.	21.	2.17
	HYDROGRAPH AT							
+		44a	452.	12.75	94.	24.	8.	.83
	2 COMBINED AT							
+		C44a	615.	14.50	326.	87.	29.	3.00
	ROUTED TO							
+		S44a	574.	14.83	325.	87.	29.	3.00
	ROUTED TO							
+		R44a	571.	15.00	324.	87.	29.	3.00
	2 COMBINED AT							
+		CC46a	2085.	15.08	1193.	324.	108.	11.89
	ROUTED TO							
+		R44a-d	2064.	15.50	1181.	324.	108.	11.89
	HYDROGRAPH AT							
+		40d	463.	12.58	74.	19.	6.	.73
	2 COMBINED AT							
+		C40d	2064.	15.50	1216.	341.	114.	12.62
	HYDROGRAPH AT							
+		42b	278.	12.42	34.	8.	3.	.31
	ROUTED TO							
+		R42b	207.	12.92	34.	8.	3.	.31
	HYDROGRAPH AT							
+		42a	360.	12.33	39.	10.	3.	.36
	2 COMBINED AT							
+		C42a	361.	12.33	72.	18.	6.	.67
	2 COMBINED AT							
+		CC40d	2064.	15.50	1273.	358.	120.	13.29
	ROUTED TO							
+		R40d	2035.	15.83	1255.	356.	119.	13.29
	HYDROGRAPH AT							
+		40c	520.	12.33	53.	13.	4.	.50
	2 COMBINED AT							
+		C40c	2035.	15.83	1272.	368.	123.	13.79
	ROUTED TO							
+		R40c	2013.	16.33	1258.	367.	123.	13.79
	HYDROGRAPH AT							
+		40b	273.	12.58	46.	12.	4.	.42
	2 COMBINED AT							
+		C40b	2013.	16.33	1267.	378.	127.	14.20
	HYDROGRAPH AT							
+		64d	141.	12.25	12.	3.	1.	.14
	ROUTED TO							
+		R64d	62.	13.50	12.	3.	1.	.14
	HYDROGRAPH AT							
+		64c	423.	12.50	63.	16.	5.	.64
	2 COMBINED AT							
+		C64c	422.	12.50	75.	19.	6.	.78
	ROUTED TO							
+		R64c	376.	12.92	75.	19.	6.	.78
	HYDROGRAPH AT							
+		64b	525.	12.58	83.	21.	7.	.84
	2 COMBINED AT							
+		C64b	779.	12.75	156.	39.	13.	1.62

+	ROUTED TO R64b	719.	13.08	156.	39.	13.	1.62
+	HYDROGRAPH AT 64a	323.	12.42	36.	9.	3.	.38
+	2 COMBINED AT C64a	761.	13.00	190.	48.	16.	1.99
+	HYDROGRAPH AT 62b	241.	12.33	23.	6.	2.	.25
+	ROUTED TO R62b	172.	12.75	23.	6.	2.	.25
+	HYDROGRAPH AT 62a	498.	12.42	56.	14.	5.	.59
+	2 COMBINED AT C62a	529.	12.42	79.	20.	7.	.83
+	2 COMBINED AT CC64a	1002.	12.83	268.	67.	22.	2.83
+	ROUTED TO S64a	834.	13.17	268.	67.	22.	2.83
+	ROUTED TO R62a	827.	13.58	266.	67.	22.	2.83
+	HYDROGRAPH AT 60c	678.	12.58	104.	26.	9.	1.04
+	2 COMBINED AT C60c	1065.	12.83	366.	93.	31.	3.87
+	ROUTED TO R60c	1025.	13.25	363.	93.	31.	3.87
+	HYDROGRAPH AT 60b	702.	12.58	121.	31.	10.	1.11
+	2 COMBINED AT C60b	1313.	13.08	479.	124.	41.	4.98
+	ROUTED TO R60b	1237.	13.67	474.	124.	41.	4.98
+	HYDROGRAPH AT 60a	603.	12.50	88.	23.	8.	.77
+	2 COMBINED AT C60a	1276.	13.67	553.	147.	49.	5.75
+	2 COMBINED AT CC40b	2197.	15.83	1695.	504.	169.	19.95
+	ROUTED TO R40b	2192.	16.08	1692.	503.	169.	19.95
+	HYDROGRAPH AT 40a	242.	12.42	28.	7.	2.	.27
+	2 COMBINED AT C40a	2190.	16.08	1693.	509.	171.	20.22
+	HYDROGRAPH AT 36c	590.	12.75	112.	29.	10.	1.09
+	ROUTED TO R36c	531.	13.17	112.	29.	10.	1.09
+	HYDROGRAPH AT 36b	839.	12.50	114.	29.	10.	1.06
+	2 COMBINED AT C36b	866.	12.50	225.	58.	19.	2.14
+	ROUTED TO R36b	800.	13.00	224.	58.	19.	2.14
+	HYDROGRAPH AT 36a	613.	12.42	75.	19.	6.	.68

+	2 COMBINED AT	C36a	988.	12.83	298.	77.	26.	2.82
+	2 COMBINED AT	CC36a	2291.	13.92	1901.	574.	193.	23.04
+	ROUTED TO	R36a	2256.	14.50	1893.	574.	193.	23.04
+	HYDROGRAPH AT	30g	628.	12.50	91.	24.	8.	.84
+	2 COMBINED AT	C30g	2256.	14.50	1911.	594.	200.	23.89
+	HYDROGRAPH AT	34b	365.	12.67	68.	17.	6.	.63
+	ROUTED TO	R34b	297.	13.50	68.	17.	6.	.63
+	HYDROGRAPH AT	34a	294.	12.58	51.	13.	4.	.45
+	2 COMBINED AT	C34a	356.	13.50	117.	31.	10.	1.08
+	2 COMBINED AT	CC30g	2364.	14.42	1983.	619.	208.	24.96
+	ROUTED TO	R30g	2332.	14.92	1976.	619.	208.	24.96
+	HYDROGRAPH AT	30f	880.	12.83	183.	46.	15.	1.77
+	2 COMBINED AT	C30f	2339.	14.92	2029.	657.	221.	26.74
+	ROUTED TO	R30f	2324.	15.33	2024.	657.	221.	26.74
+	HYDROGRAPH AT	30e	404.	12.33	47.	12.	4.	.40
+	2 COMBINED AT	C30e	2324.	15.33	2025.	667.	224.	27.14
+	ROUTED TO	R30e	2308.	15.67	2016.	666.	224.	27.14
+	HYDROGRAPH AT	30d	406.	12.58	62.	16.	5.	.62
+	2 COMBINED AT	C30d	2307.	15.67	2018.	680.	229.	27.75
+	2 COMBINED AT	CC20b	3106.	15.33	2780.	984.	333.	41.16
+	ROUTED TO	S20b	3089.	15.75	2770.	984.	333.	41.16
+	ROUTED TO	R20b	3084.	16.08	2757.	983.	333.	41.16
+	HYDROGRAPH AT	20a	277.	12.33	38.	12.	4.	.24
+	2 COMBINED AT	C20a	3087.	16.08	2760.	991.	336.	41.40
+	ROUTED TO	R20a	3085.	16.33	2757.	991.	336.	41.40
+	HYDROGRAPH AT	30c	237.	12.33	28.	8.	3.	.24
+	2 COMBINED AT	C30c	3084.	16.33	2757.	996.	338.	41.64
	HYDROGRAPH AT							

+		32b	488.	12.33	49.	12.	4.	.48
+	ROUTED TO	S32b	449.	12.42	49.	12.	4.	.48
+	ROUTED TO	R32b	344.	12.92	49.	12.	4.	.48
+	HYDROGRAPH AT	32a	268.	12.33	30.	8.	3.	.29
+	2 COMBINED AT	C32a	406.	12.83	79.	20.	7.	.76
+	2 COMBINED AT	CC30c	3084.	16.33	2758.	1013.	344.	42.40
+	ROUTED TO	R30c	3071.	17.08	2742.	1011.	344.	42.40
+	HYDROGRAPH AT	30b	402.	12.50	60.	16.	5.	.51
+	2 COMBINED AT	C30b	3071.	17.08	2742.	1022.	348.	42.91
+	HYDROGRAPH AT	78b	429.	12.42	53.	13.	4.	.48
+	ROUTED TO	R78b	332.	12.83	53.	13.	4.	.48
+	HYDROGRAPH AT	78a	177.	12.33	18.	5.	2.	.15
+	2 COMBINED AT	C78a	360.	12.83	70.	18.	6.	.63
+	HYDROGRAPH AT	77b	392.	12.42	47.	12.	4.	.44
+	ROUTED TO	R77b	309.	12.92	47.	12.	4.	.44
+	HYDROGRAPH AT	77a	240.	12.33	26.	7.	2.	.25
+	2 COMBINED AT	C77a	364.	12.83	73.	19.	6.	.69
+	2 COMBINED AT	CC77a	719.	12.83	143.	36.	12.	1.32
+	ROUTED TO	R77a	635.	13.17	142.	36.	12.	1.32
+	HYDROGRAPH AT	70h	281.	12.42	35.	9.	3.	.29
+	2 COMBINED AT	C70h	666.	13.17	176.	45.	15.	1.61
+	HYDROGRAPH AT	70g	719.	13.00	177.	46.	15.	1.63
+	2 COMBINED AT	C70g	1343.	13.08	350.	91.	30.	3.24
+	ROUTED TO	R70g	1268.	13.42	350.	91.	30.	3.24
+	HYDROGRAPH AT	70f	336.	12.42	45.	11.	4.	.39
+	2 COMBINED AT	C70f	1296.	13.42	393.	102.	34.	3.63
+	HYDROGRAPH AT	75a	336.	12.50	51.	13.	4.	.46
+	2 COMBINED AT	C75a	1352.	13.33	443.	114.	38.	4.09

+	ROUTED TO R70f	1340.	13.50	443.	114.	38.	4.09
+	HYDROGRAPH AT 74b	477.	12.50	68.	17.	6.	.67
+	ROUTED TO R74b	406.	13.00	68.	17.	6.	.67
+	HYDROGRAPH AT 74a	314.	12.33	32.	8.	3.	.31
+	2 COMBINED AT C74a	450.	12.92	99.	25.	8.	.97
+	2 COMBINED AT CC74a	1623.	13.08	540.	139.	46.	5.07
+	ROUTED TO R74a	1589.	13.67	536.	139.	46.	5.07
+	HYDROGRAPH AT 70e	1061.	12.50	141.	35.	12.	1.37
+	2 COMBINED AT C70e	1648.	13.50	671.	173.	58.	6.44
+	ROUTED TO R70e	1637.	13.67	668.	173.	58.	6.44
+	HYDROGRAPH AT 73b	474.	12.50	63.	16.	5.	.61
+	ROUTED TO R73b	364.	13.08	62.	16.	5.	.61
+	HYDROGRAPH AT 73a	251.	12.67	45.	11.	4.	.51
+	2 COMBINED AT C73a	535.	13.00	107.	27.	9.	1.11
+	2 COMBINED AT CC70e	1901.	13.42	771.	200.	67.	7.56
+	ROUTED TO R73a	1881.	13.58	769.	200.	67.	7.56
+	HYDROGRAPH AT 70d	449.	12.42	52.	13.	4.	.49
+	2 COMBINED AT C70d	1892.	13.58	816.	212.	71.	8.04
+	ROUTED TO S70d	1890.	13.67	816.	212.	71.	8.04
+	ROUTED TO R70d	1835.	14.33	800.	212.	71.	8.04
+	HYDROGRAPH AT 70c	457.	12.67	79.	20.	7.	.74
+	2 COMBINED AT C70c	1847.	14.33	855.	232.	77.	8.78
+	HYDROGRAPH AT 72b	804.	12.42	104.	26.	9.	1.05
+	ROUTED TO R72b	614.	12.83	103.	26.	9.	1.05
+	HYDROGRAPH AT 72a	388.	12.33	42.	11.	4.	.44
+	2 COMBINED AT C72a	718.	12.75	145.	37.	12.	1.49
+	2 COMBINED AT CC70c	1915.	14.25	992.	267.	89.	10.27
+	ROUTED TO R70c	1895.	14.58	985.	267.	89.	10.27

	HYDROGRAPH AT							
+		70b	416.	12.17	34.	9.	3.	.33
	2 COMBINED AT							
+		C70b	1895.	14.58	1005.	275.	92.	10.61
	2 COMBINED AT							
+		CC30b	3685.	15.83	3185.	1242.	422.	53.52
	HYDROGRAPH AT							
+		71b	296.	12.25	28.	7.	2.	.29
	ROUTED TO							
+		R71b	190.	12.83	28.	7.	2.	.29
	HYDROGRAPH AT							
+		71a	267.	12.25	25.	6.	2.	.26
	2 COMBINED AT							
+		C71a	266.	12.25	53.	13.	4.	.55
	2 COMBINED AT							
+		CC70b	3685.	15.83	3186.	1252.	425.	54.07
	ROUTED TO							
+		R70b	3676.	16.00	3182.	1252.	425.	54.07
	HYDROGRAPH AT							
+		70a	126.	12.25	10.	3.	1.	.10
	2 COMBINED AT							
+		C70a	3676.	16.00	3182.	1254.	426.	54.17
	HYDROGRAPH AT							
+		30a	45.	12.25	4.	1.	0.	.04
	2 COMBINED AT							
+		C30a	3676.	16.00	3182.	1254.	426.	54.21
	HYDROGRAPH AT							
+		15a	546.	12.33	55.	14.	5.	.51
	HYDROGRAPH AT							
+		16a	247.	12.25	24.	6.	2.	.22
	HYDROGRAPH AT							
+		23a	321.	12.42	39.	10.	3.	.35
	HYDROGRAPH AT							
+		33a	133.	12.42	14.	4.	1.	.17
	HYDROGRAPH AT							
+		35a	69.	12.17	5.	1.	0.	.06
	5 COMBINED AT							
+		DUMMY	1271.	12.33	135.	35.	12.	1.31
	3 COMBINED AT							
+		DUMMY	3834.	15.83	3399.	1425.	484.	61.82
	HYDROGRAPH AT							
+		79b	427.	12.17	37.	9.	3.	.36
	ROUTED TO							
+		R79b	337.	12.42	37.	9.	3.	.36
	HYDROGRAPH AT							
+		79a	486.	12.33	48.	12.	4.	.51
	2 COMBINED AT							
+		C79a	779.	12.42	84.	21.	7.	.88
	HYDROGRAPH AT							
+		80b	296.	12.33	29.	7.	2.	.28
	ROUTED TO							
+		R80b	220.	12.58	29.	7.	2.	.28
	HYDROGRAPH AT							
+		80a	331.	12.33	35.	9.	3.	.34
	2 COMBINED AT							

+		C80a	453.	12.42	64.	16.	5.	.62
	HYDROGRAPH AT							
+		81b	367.	12.50	54.	14.	5.	.51
	ROUTED TO							
+		R81b	339.	12.67	54.	14.	5.	.51
	HYDROGRAPH AT							
+		81a	121.	12.17	9.	2.	1.	.08
	2 COMBINED AT							
+		C81a	345.	12.67	63.	16.	5.	.59
	4 COMBINED AT							
+		DUMMY	3834.	15.83	3454.	1468.	498.	63.90
	HYDROGRAPH AT							
+		82b	268.	12.33	25.	6.	2.	.26
	ROUTED TO							
+		S82b	156.	12.50	25.	6.	2.	.26
	ROUTED TO							
+		R82b	141.	13.08	25.	6.	2.	.26
	HYDROGRAPH AT							
+		82a	508.	12.42	59.	15.	5.	.59
	2 COMBINED AT							
+		C82a	510.	12.42	84.	21.	7.	.85
	HYDROGRAPH AT							
+		831	545.	12.33	63.	16.	5.	.56
	HYDROGRAPH AT							
+		83k	322.	12.33	34.	9.	3.	.31
	2 COMBINED AT							
+		C83k	863.	12.33	97.	25.	8.	.87
	ROUTED TO							
+		R83k	726.	12.58	97.	25.	8.	.87
	HYDROGRAPH AT							
+		83j	141.	12.33	14.	4.	1.	.16
	2 COMBINED AT							
+		C83j	811.	12.58	111.	29.	10.	1.03
	HYDROGRAPH AT							
+		89b	282.	12.33	27.	7.	2.	.28
	ROUTED TO							
+		R89b	230.	12.58	27.	7.	2.	.28
	HYDROGRAPH AT							
+		89a	197.	12.33	18.	4.	1.	.22
	2 COMBINED AT							
+		C89a	349.	12.42	45.	11.	4.	.50
	2 COMBINED AT							
+		CC83j	1119.	12.50	155.	40.	13.	1.53
	ROUTED TO							
+		R83j	1088.	12.58	155.	40.	13.	1.53
	HYDROGRAPH AT							
+		88a	221.	12.42	26.	6.	2.	.28
	2 COMBINED AT							
+		C88a	1261.	12.58	180.	46.	15.	1.81
	ROUTED TO							
+		R88a	1176.	12.75	180.	46.	15.	1.81
	HYDROGRAPH AT							
+		83i	319.	12.42	36.	9.	3.	.40
	2 COMBINED AT							
+		C83i	1320.	12.67	215.	55.	18.	2.21

+	HYDROGRAPH AT 83h	219.	12.50	29.	7.	2.	.29
+	2 COMBINED AT C83h	1489.	12.67	243.	62.	21.	2.50
+	ROUTED TO R83i	1377.	12.92	243.	62.	21.	2.50
+	HYDROGRAPH AT 83g	420.	12.42	51.	13.	4.	.62
+	2 COMBINED AT C83g	1516.	12.92	293.	75.	25.	3.12
+	HYDROGRAPH AT 83f	156.	12.17	11.	3.	1.	.13
+	2 COMBINED AT C83f	1519.	12.83	303.	77.	26.	3.25
+	ROUTED TO R83g	1403.	13.25	302.	77.	26.	3.25
+	HYDROGRAPH AT 83e	607.	12.42	70.	17.	6.	.84
+	2 COMBINED AT C83e	1457.	13.17	369.	94.	31.	4.09
+	ROUTED TO R83e	1367.	13.50	367.	94.	31.	4.09
+	HYDROGRAPH AT 83d	205.	12.33	21.	5.	2.	.23
+	2 COMBINED AT C83d	1371.	13.50	386.	99.	33.	4.32
+	HYDROGRAPH AT 86a	339.	12.42	40.	10.	3.	.48
+	2 COMBINED AT CC83d	1384.	13.50	425.	109.	36.	4.80
+	ROUTED TO R83d	1342.	13.67	423.	109.	36.	4.80
+	HYDROGRAPH AT 83c	306.	12.25	28.	7.	2.	.28
+	2 COMBINED AT C83c	1342.	13.67	449.	116.	39.	5.07
+	HYDROGRAPH AT 87b	135.	12.33	13.	3.	1.	.16
+	ROUTED TO R87b	81.	13.17	13.	3.	1.	.16
+	HYDROGRAPH AT 87a	229.	12.42	27.	7.	2.	.27
+	2 COMBINED AT C87a	228.	12.42	40.	10.	3.	.43
+	2 COMBINED AT CC83c	1387.	13.67	488.	126.	42.	5.51
+	ROUTED TO R83c	1328.	13.92	483.	126.	42.	5.51
+	HYDROGRAPH AT 83b	322.	12.42	41.	10.	3.	.43
+	2 COMBINED AT C83b	1335.	13.92	521.	136.	45.	5.94
+	HYDROGRAPH AT 85b	251.	12.25	22.	6.	2.	.24
+	ROUTED TO R85b	165.	12.75	22.	6.	2.	.24

	HYDROGRAPH AT							
+		85a	281.	12.33	30.	8.	3.	.31
	2 COMBINED AT							
+		C85a	287.	12.42	52.	13.	4.	.55
	2 COMBINED AT							
+		CC83b	1359.	13.92	571.	148.	49.	6.49
	ROUTED TO							
+		R83b	1318.	14.17	564.	148.	49.	6.49
	HYDROGRAPH AT							
+		83a	202.	12.42	24.	6.	2.	.24
	2 COMBINED AT							
+		C83a	1318.	14.17	584.	154.	51.	6.74
	HYDROGRAPH AT							
+		84b	301.	12.33	33.	8.	3.	.35
	ROUTED TO							
+		R84b	251.	12.75	33.	8.	3.	.35
	HYDROGRAPH AT							
+		84a	268.	12.25	22.	5.	2.	.22
	2 COMBINED AT							
+		C84a	292.	12.67	55.	14.	5.	.57
	2 COMBINED AT							
+		CC83a	1334.	14.17	635.	167.	56.	7.31
	ROUTED TO							
+		S83a	1318.	14.25	635.	167.	56.	7.31
	HYDROGRAPH AT							
+		91b	307.	12.67	54.	13.	4.	.56
	ROUTED TO							
+		R91b	274.	13.00	54.	13.	4.	.56
	HYDROGRAPH AT							
+		91a	411.	12.33	41.	10.	3.	.43
	2 COMBINED AT							
+		C91a	415.	12.33	95.	24.	8.	1.00
	HYDROGRAPH AT							
+		JACKRB	2835.	16.50	1110.	278.	93.	32.00
	ROUTED TO							
+		R-JACK	2778.	16.75	1109.	278.	93.	32.00
	HYDROGRAPH AT							
+		92b	568.	12.42	71.	18.	6.	.70
	2 COMBINED AT							
+		C92b	2778.	16.75	1109.	295.	98.	32.70
	ROUTED TO							
+		R92b	2751.	17.08	1106.	293.	98.	32.70
	HYDROGRAPH AT							
+		92a	512.	12.58	81.	20.	7.	.79
	2 COMBINED AT							
+		C92a	2751.	17.08	1106.	311.	104.	33.49

*** NORMAL END OF HEC-1 ***

APPENDIX E

Hydraulic Analysis Supporting Documentation

Appendix E1 **Roughness Coefficient Estimation**

Appendix E2 **Cross Section Plots (PDF file on CD)**

Appendix E3 **Expansion and Contraction Coefficients**

Appendix E4 **Analysis of Structures**

Appendix E5 **Hydraulic Modeling Results**

APPENDIX E1

Roughness Coefficient Estimation

LUKE WASH WATERSHED
ZONE AE FLOODPLAIN DELINEATION STUDY
FCD 2007C020

FIELD RECONNAISSANCE REPORT

July 2008

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LUKE WASH ZONE AE FLOODPLAIN DELINEATION STUDY
FCD 2007C020

TASK 6.4 FIELD RECONNAISSANCE REPORT

Introduction

Wood, Patel & Associates, Inc. (Wood/Patel) performed field reconnaissance of Luke Wash, its tributaries, and tributaries to the Hassayampa River. The reconnaissance was performed to document channel and overbank conditions for the purpose of determining Manning's Roughness Coefficient for typical reaches throughout the study area. The reconnaissance was performed in January 2008 by Wood/Patel and Flood Control District of Maricopa County staff.

Methodology of Manning's "n" Values Estimation

Manning's "n" values were determined using the methodology outlined in the USGS report titled, "Estimated Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona" by B.W. Thomsen and H.W. Hjalmarson, (April, 1991). Reach designations were assigned based on distinctions in general channel morphology, vegetation, and channel and overbank soil characteristics.

On the following pages, photographs showing typical reach conditions are followed by the worksheet used to determine the reach-average Manning's "n" values for the reach depicted in the photographs. Figure 1 illustrates the field reconnaissance site locations as well as the study reaches.

Significant Hydraulic Structures

Significant hydraulic structures were found mostly along Interstate 10 and the Union Pacific Railroad. The location and sizes of these structures are summarized in the Appendix A, Summary Report for Data Collection.

General Wash Characteristics

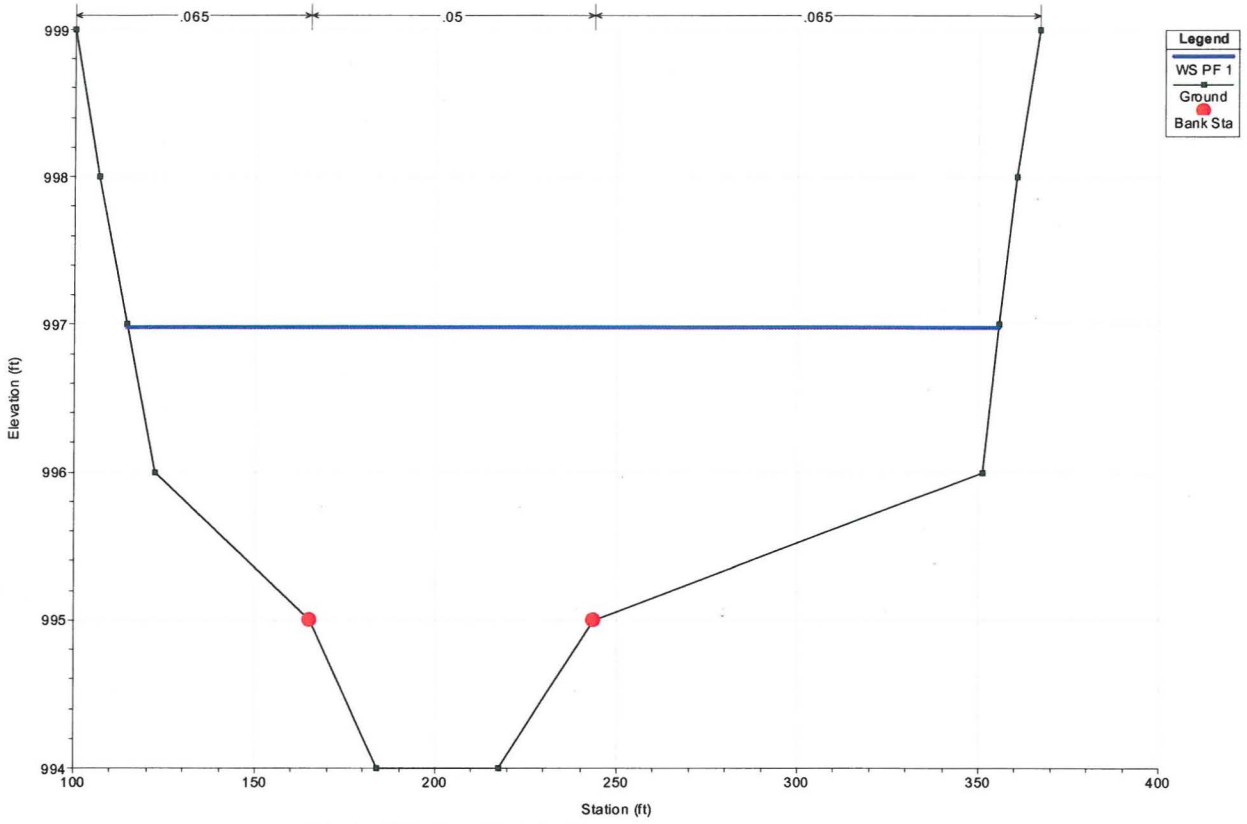
This study area has a wide variety of channel and overbank characteristics, varying from well-defined sand-bed and bedrock channels with high percentages of the estimated 100-year flow expected to be contained within the incised washes to undefined channels with sheet flow areas. Flows occur in the study area only in response to significant rainfall events.

The majority of the study washes are tributary and shallow flooding areas. The most well defined channels tend to occur in the mountainous and foothill regions of the watershed. Channel bed parent material varies across the study area; however, the grain sizes tend to be course and fine sands with firm soil. Gravel material occurs for short reaches, but the dominant channel bed material is sand.

In general, the study area is covered by the Upper Sonoran plant community with a heavy emphasis toward creosote. Other vegetation throughout the study reaches include trees such as mesquite, little leaf palo verde, ocotillo; cacti including saguaro, barrel, staghorn, and teddy bear cholla; various shrubs such as desert broom, jojoba, mormon tea, brittle bush and hackberry.

Bank Stations for Typical Cross-Sections

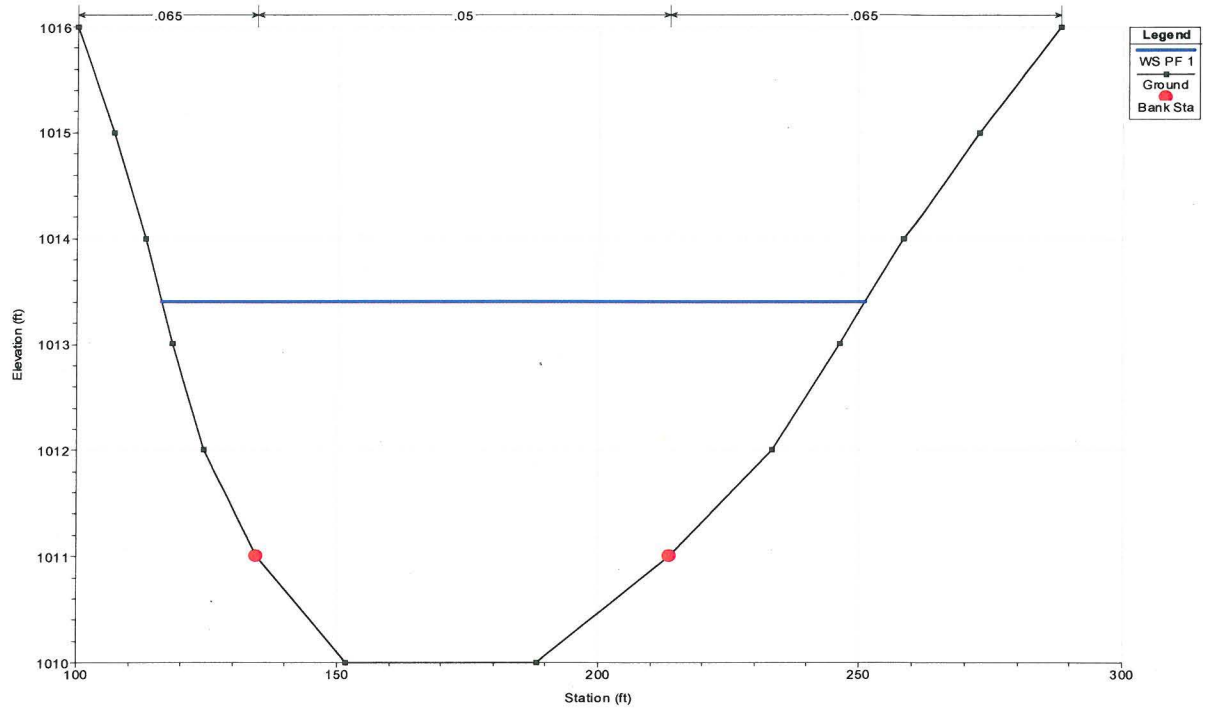
Bank station locations are important to hydraulic modeling as well as Manning's "n" value estimation. Three representative cross-sections were identified within the study area: defined and uncontained channel, well defined and contained channel, and a shallow wide floodplain with small or no defined channel. These three types of representative cross-sections are illustrated and discussed below.



Typical Defined Main Channel with Uncontained Flow

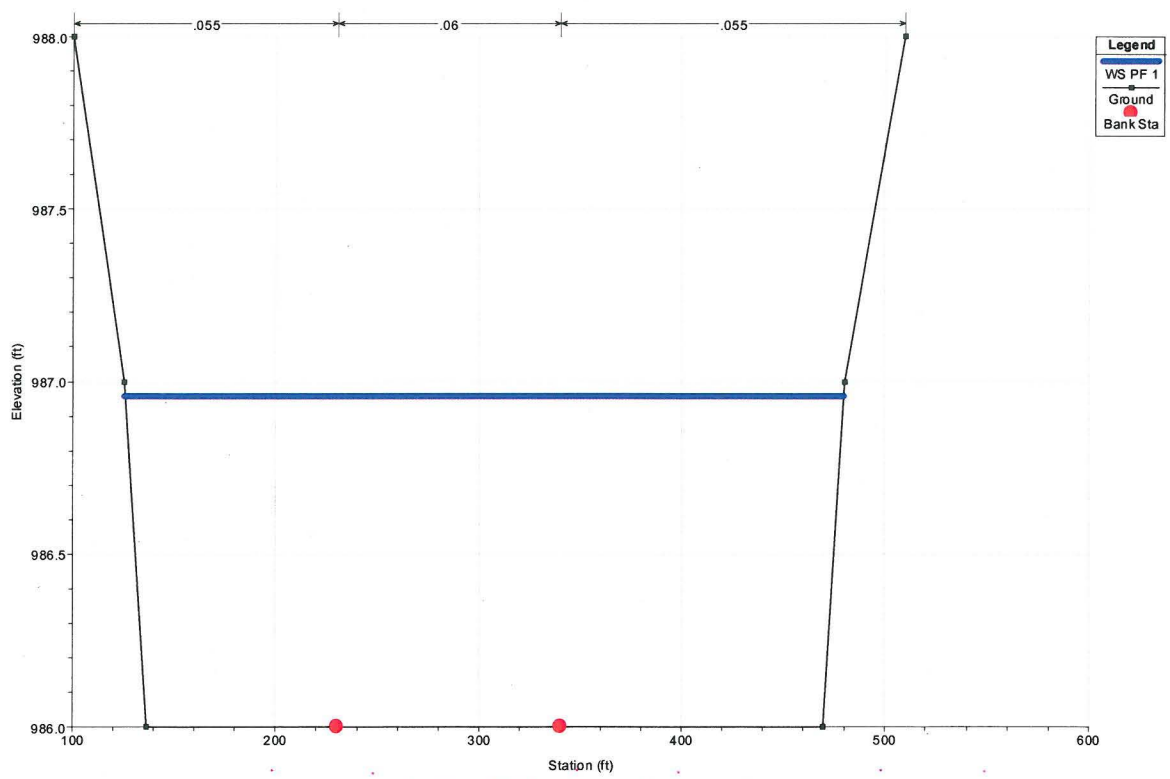
In the above case, the cross-section illustrates a well defined channel with uncontained flow. The banks stations are defined at the bank or terrace edge which typically varies in depth from 1 to 3 feet. The main channel bed normally consists of course and fine sands. The main channel side slopes typically contain vegetation which influences the "n" value estimation. Vegetation is also typically found in the overbanks varying in size and density. Aerial photography is used to validate that the bank stations which encompass the main channel.

The second typical case (following cross-section) is a well incised channel with flow containment within the main channel. The bank stations are typically applied a foot above the channel bottom encompassing the main channel bed. The "n" value for this case is mostly influenced by the channel bed material. The overbanks typically contain vegetation which varies in density. Aerial photography is used to validate the bank stations which define the main channel.



Typical Channel Section with Contained Flow

The third typical case (below) is a wide and shallow floodplain with no defined or with a small channel. In this case, the bank stations are applied within the bottom of the cross-section. The locations and distance between the bank stations vary. Aerial photography, flow rate, and field reconnaissance information is used in define the bank stations. In some cases, the bank stations encompass significant vegetation resulting in a higher "n" value than the overbanks. The overbanks typically contain vegetation but in some cases the vegetation is smaller and less dense.



Shallow Wide Typical Channel Section

Manning's "n" Value Determination for Non-Sampling Locations

Due to the large study area, field reconnaissance locations do not include every study wash. Additionally, significant distances occur between field locations. In defining Manning's "n" values for washes with no field sample, the "n" values are used from a similar location based on aerial photography and field observations. In cases where there are significant "n" value differences between locations on the same wash, a transition area is implemented in the channel hydraulic modeling. This transition area changes the Manning's "n" values in a step like manner and is based on field observations and the aerial photo. For a more detailed explanation of these concepts, please refer to the Hydraulics section in the Technical Data Notebook.

Wash Name: T1S-R5W-S17
Location No.: 1

Looking upstream in main channel

Right overbank, looking upstream

Looking downstream and toward right overbank

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S17
Location No.: 1, (N 894375, E 418734)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.027	0.028	0.027
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.005	0.005	0.005
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.015		0.015
	Large		0.025 - 0.050		0.027	
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.049	0.062	0.049
Assigned Manning's n value				0.050	0.065	0.050

Wash Name: T1N-R6W-S11
Location No.: 2

Looking upstream in main channel

Looking downstream in main channel

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1N-R6W-S11
Location No.: 2, (N 898924, E 422223)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.027	0.027	0.027
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.005	0.005	0.005
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0	0	0
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.02	0.025	0.02
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.052	0.057	0.052
Assigned Manning's n value				0.055	0.060	0.055

Wash Name: Phillips Wash
Location No.: 3

Looking upstream in main channel

Looking downstream in main channel

Debris accumulation along the channel bank

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Phillips Wash
Location No.: 3, (N 897419, E 425366)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.025		0.025
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035		0.030	
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0	0		0
	Minor		0.001 - 0.005		0.002	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002		0.002
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.01	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0		0	
	Occasionally Alt.		0.001 - 0.005	0.005		0.005
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.057	0.047	0.057
Assigned Manning's n value				0.060	0.050	0.060

Wash Name: Dickey Wash
Location No.: 4

Looking upstream in main channel

Looking downstream in main channel

Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Dickey Wash
Location No.: 4, (N 896955, E 431356)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.025	0.025	0.025
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.005		0.005
	Moderate		0.006 - 0.010		0.01	
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.005	0.005	0.005
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.020	0.010	0.020
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.005	0.001	0.005
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.060	0.051	0.060
Assigned Manning's n value				0.060	0.050	0.060

Wash Name: T1N-R5W-S10
Location No.: 5

Looking upstream in main channel

Looking downstream in main channel

Right overbank and looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1N-R5W-S10
Location No.: 5, (N 894036, E 439541)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.025		0.025
	Coarse Sand		.026-.035		0.028	
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.004		0.004
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.01	
	Medium		0.010 - 0.025	0.020		0.020
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0		0	
	Occasionally Alt.		0.001 - 0.005	0.002		0.002
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.052	0.044	0.052
Assigned Manning's n value				0.055	0.045	0.055

Wash Name: T1S-R5W-S17
Location No.: 6

Looking downstream in the main channel

Left overbank, looking downstream

Looking upstream and toward right overbank

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S17
Location No.: 6 (N 887026, E 420517)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.028	0.028	0.028
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002	0.002	0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.015	0.010	0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.001	0.001	0.001
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.048	0.043	0.048
Assigned Manning's n value				0.050	0.045	0.050

Wash Name: Phillips Wash
Location No.: 7

Looking upstream in main channel

Looking downstream in main channel

Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Phillips Wash
Location No.: 7 (N 885990, E 425868)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035	0.030	0.030	0.030
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.003	0.003	0.003
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002	0.002	0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.005	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050	0.025		0.025
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.001	0.001	0.001
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.061	0.041	0.061
Assigned Manning's n value				0.060	0.045	0.060

Wash Name: Luke Wash
Location No.: 8

Looking upstream over Buckeye Rd., main channel

Looking downstream in main channel

Left overbank, looking downstream

Right overbank, looking downstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Luke Wash
Location No.: 8 (N 886944, E 432810)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.028		0.028
	Fine Sand		.023-.036		0.028	
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002	0.002	0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.01	
	Medium		0.010 - 0.025	0.015		0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.047	0.042	0.047
Assigned Manning's n value				0.050	0.045	0.050

Wash Name: T1N-R5W-S22
Location No.: 9

Looking upstream in main channel

Looking downstream in main channel

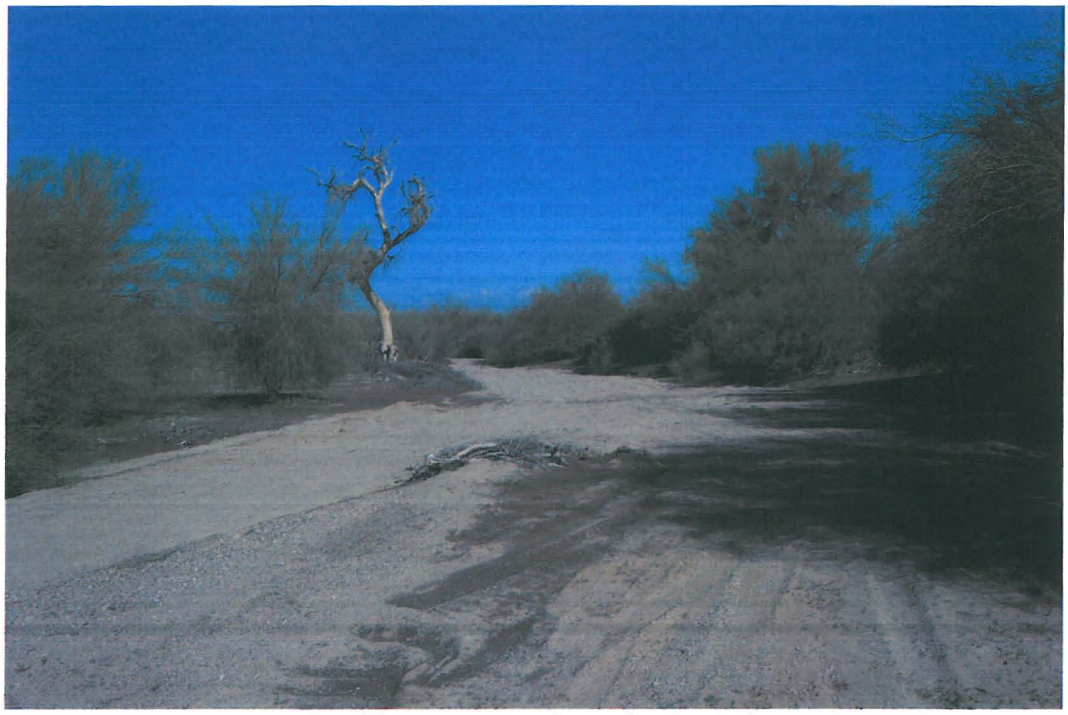
Right Overbank

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1N-R5W-S22
Location No.: 9 (N 886914, E 438534)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.028	0.028	0.028
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004		0.004	
	Minor		0.005 - 0.015	0.008		0.008
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.025	0.015	0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.002	0.002	0.002
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.064	0.050	0.064
Assigned Manning's n value				0.065	0.050	0.065

Wash Name: Luke Wash
Location No.: 10



Looking upstream in main channel

Looking downstream in main channel

Right Overbank

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Luke Wash
Location No.: 10 (N 870866, E 430982)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.028	0.028	0.028
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.003	0.003	0.003
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.01	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.002	0.002	0.002
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.060	0.045	0.060
Assigned Manning's n value				0.060	0.045	0.060

Wash Name: East Main Tributary
Location No.: 11

Looking upstream in main channel

Looking downstream in main channel

Left overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

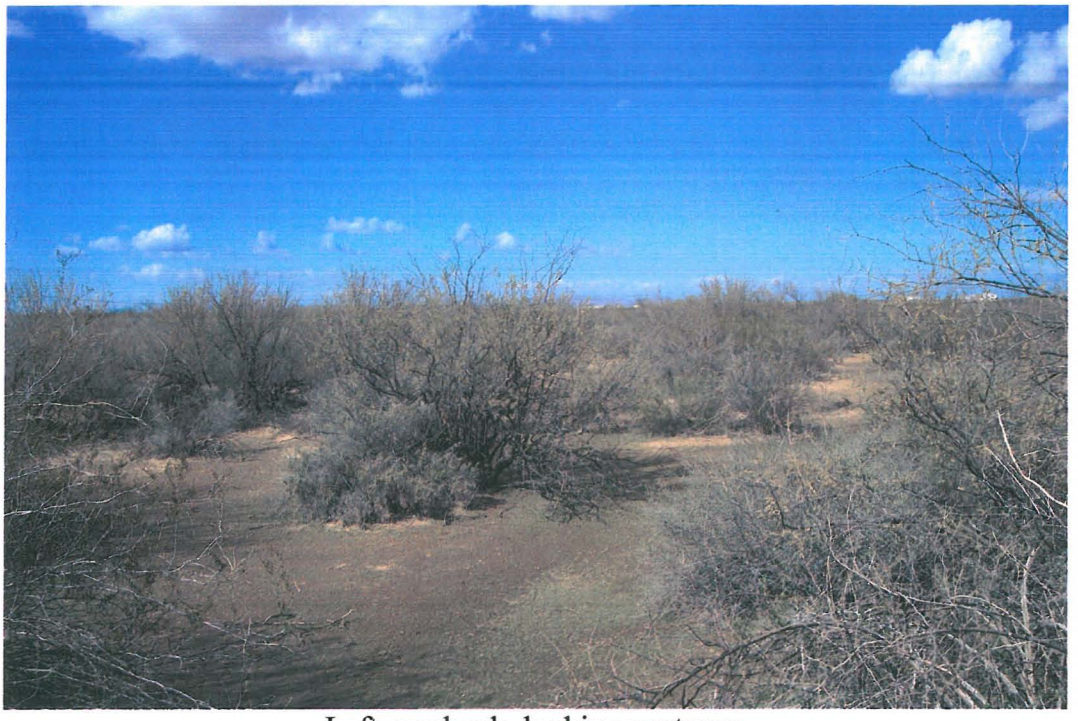
Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: East Main Tributary
Location No.: 11 (N 871054, E 439020)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.026		0.026
	Fine Sand		.023-.036		0.026	
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004		0.002	
	Minor		0.005 - 0.015	0.005		0.005
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.025	0.025	0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.002	0.002	0.002
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.059	0.056	0.059
Assigned Manning's n value				0.060	0.055	0.060

Wash Name: T1S-R5W-S17
Location No.: 12

Looking downstream in main channel

Looking upstream in main channel



Left overbank, looking upstream

Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

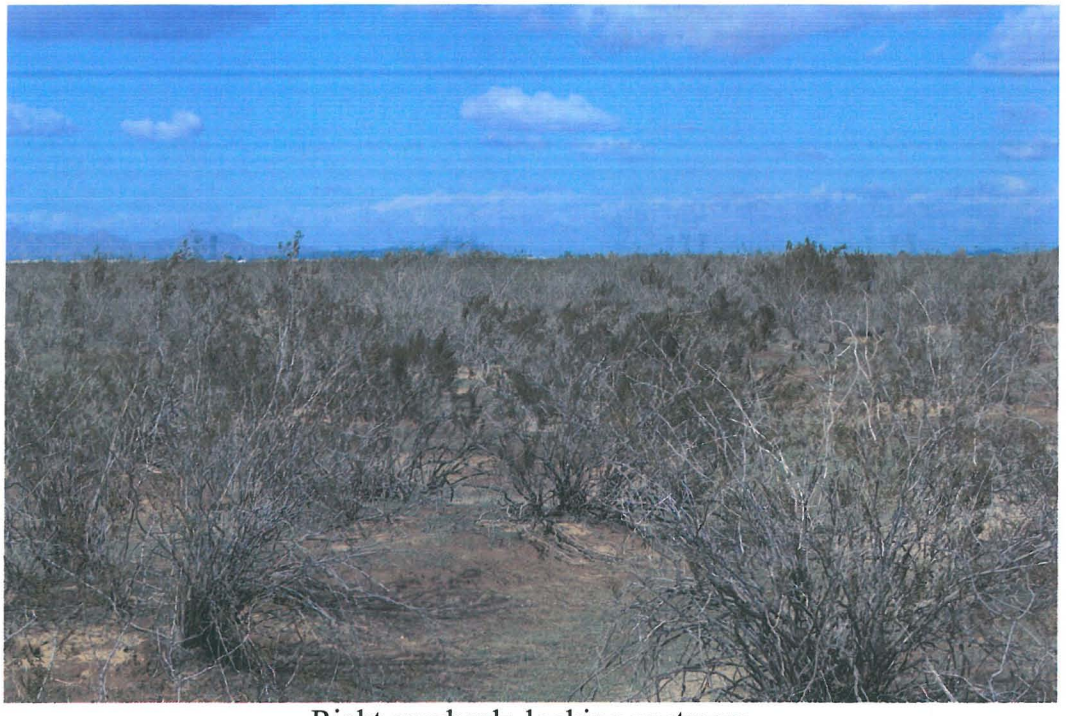
Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S17
Location No.: 12 (N 864963, E 427843)

Channel Conditions		Manning's Adjustment		Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.025	0.025	0.025
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.001	0.001	0.001
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.020	0.020	0.020
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.001	0.001	0.001
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.048	0.048	0.048
Assigned Manning's n value				0.050	0.050	0.050

Wash Name: East Main Tributary
Location No.: 13

Looking upstream in main channel

Looking downstream in main channel



Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: East Main Tributary
Location No.: 13 (N 860936, E 437985)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.025	0.025	0.025
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.001	0.001	0.001
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010	0.02	0.015	0.02
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.001	0.001	0.001
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.048	0.043	0.048
Assigned Manning's n value				0.050	0.045	0.050

Wash Name: Luke Wash
Location No.: 14

Looking upstream in main channel

Looking downstream in main channel

Left overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Luke Wash
Location No.: 14 (N 860381, E 431604)

Channel Conditions		Manning's Adjustment		Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.03	0.03	0.03
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002	0.002	0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.01	
	Medium		0.010 - 0.025	0.020		0.020
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.003	0.003	0.003
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.057	0.047	0.057
Assigned Manning's n value				0.060	0.045	0.060

Wash Name: T1S-R5W-S09W
Location No.: 15

Looking upstream to east of 331st Ave.

Looking downstream to west of 331st Ave.

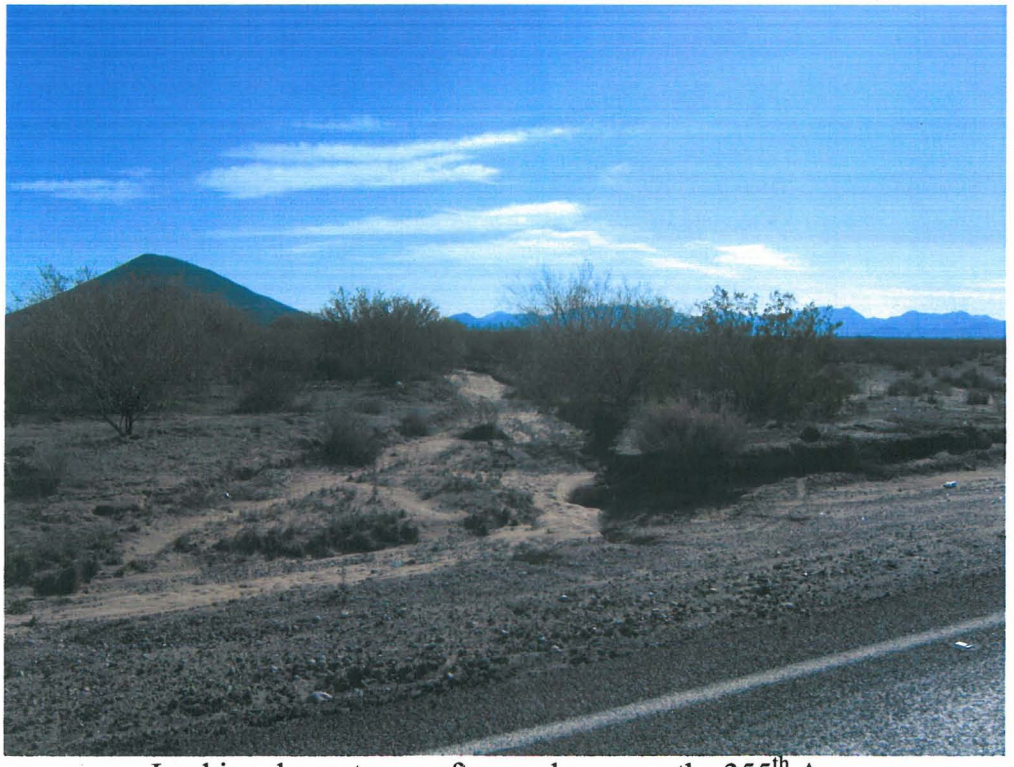
DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S09W
Location No.: 15 (N 859431, E 441120)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036		0.028	
	Coarse Sand		.026-.035	0.030		0.030
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002	0.002	0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010	0.01		0.01
	Medium		0.010 - 0.025		0.02	
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.044	0.052	0.044
Assigned Manning's n value				0.045	0.055	0.045

Wash Name: T1S-R5W-S29
Location No.: 16

Looking upstream of the wash, on north side of 355th Ave.



Looking downstream after wash crosses the 355th Ave.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S29
Location No.: 16 (N 854083, E 425622)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.028	0.028	0.028
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002	0.002	0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010		0.005	
	Medium		0.010 - 0.025	0.015		0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.047	0.037	0.047
Assigned Manning's n value				0.050	0.040	0.050

Wash Name: T1S-R5W-S17
Location No.: 17

Looking upstream in main channel

Looking downstream through the railroad bridge

Left overbank, north of railroad

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S17
Location No.: 17 (N 855048, E 431185)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.028	0.028	0.028
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010	0.006	0.006	0.006
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.01	0.015	0.01
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.015	0.015	0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0			
	Occasionally Alt.		0.001 - 0.005	0.002	0.002	0.002
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.061	0.066	0.061
Assigned Manning's n value				0.060	0.065	0.060

Wash Name: East Main Tributary
Location No.: 18

Looking upstream, in main channel

Looking downstream, in main channel

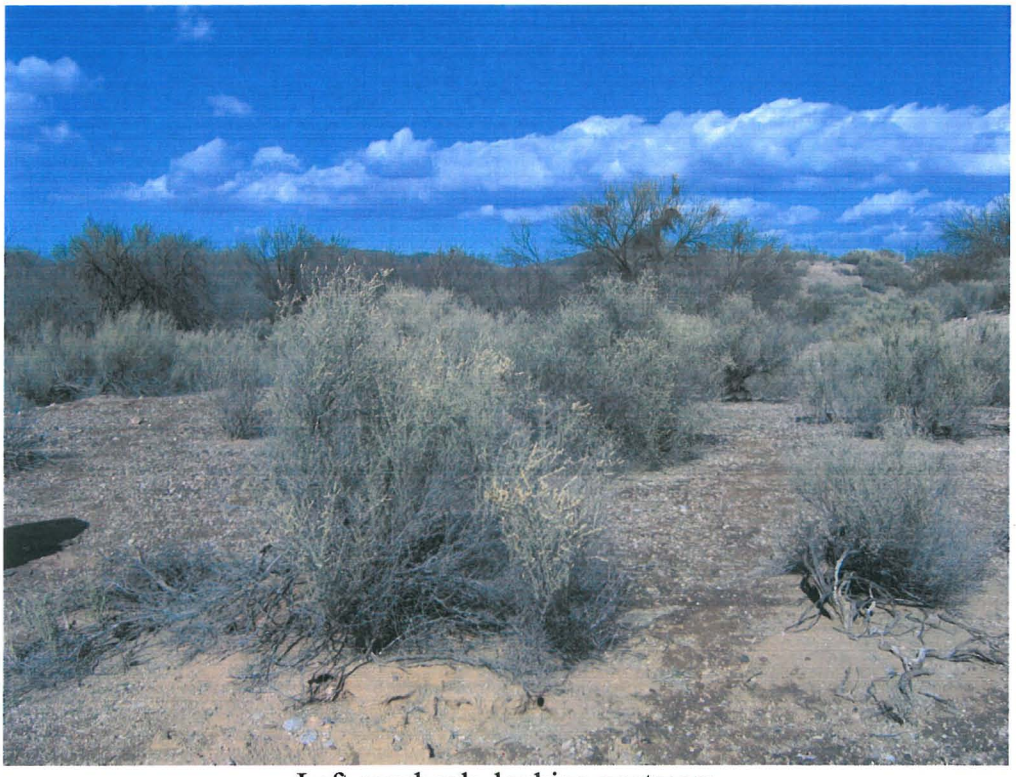
DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: East Main Tributary
Location No.: 18 (N 851268, E 438627)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035	0.026	0.026	0.026
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.005	0.005	0.005
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.025	0.010	0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.057	0.042	0.057
Assigned Manning's n value				0.060	0.045	0.060

Wash Name: T1S-R5W-S29
Location No.: 19

Looking downstream, in main channel



Left overbank, looking upstream

Looking upstream in main channel

Right overbank, looking downstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S29
Location No.: 19 (N 841662, E 432746)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036		0.028	
	Coarse Sand		.026-.035	0.030		0.030
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.01		0.01
	Appreciable		0.020 - 0.030		0.025	
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.020		0.020
	Large		0.025 - 0.050		0.025	
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.062	0.080	0.062
Assigned Manning's n value				0.065	0.080	0.065

Wash Name: Luke Wash
Location No.: 20

Looking upstream in main channel

Looking downstream in main channel

Left overbank, looking downstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Luke Wash
Location No.: 20 (N 847038, E 440677)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035	0.026	0.028	0.026
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.003		0.003
	Moderate		0.006 - 0.010		0.006	
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030	0.02	0.02	0.02
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025		0.010	
	Large		0.025 - 0.050	0.025		0.025
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.074	0.064	0.074
Assigned Manning's n value				0.075	0.065	0.075

Wash Name: T1S-R5W-S22N
Location No.: 21

Looking upstream in main channel

Looking downstream in main channel

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S22N
Location No.: 21 (N 849203, E 444599)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.026	0.026	0.026
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.005	0.005	0.005
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.002		0.002
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030		0.025	
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.015	0.020	0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.048	0.076	0.048
Assigned Manning's n value				0.050	0.075	0.050

Wash Name: T1S-R5W-S22S
Location No.: 22

Looking upstream in main channel

Looking downstream, over the US 80

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T1S-R5W-S22S
Location No.: 22 (N 846789, E 446748)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.026	0.026	0.026
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030	0.02	0.02	0.02
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050	0.025	0.025	0.025
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.073	0.073	0.073
Assigned Manning's n value				0.075	0.075	0.075

Wash Name: Phillips Wash
Location No.: 23

Looking upstream in main channel

Looking downstream in the main channel

Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Phillips Wash
Location No.: 23, (N 1022730.648, E 464510.032)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.025		0.025
	Fine Sand		.023-.036		0.026	
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.002	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.001	0.001	0.001
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025		0.010	
	Large		0.025 - 0.050	0.03		0.03
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.057	0.039	0.057
Assigned Manning's n value				0.060	0.040	0.060

Wash Name: Dickey Wash
Location No.: 24

Looking upstream in main channel

Looking downstream in main channel

Left overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Dickey Wash
Location No.: 24, (N 908084, E 431285)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.026		0.026
	Fine Sand		.023-.036		0.028	
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.005	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.001		0.001
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.017	0.01	0.017
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0		0
	Occasionally Alt.		0.001 - 0.005		0.001	
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.045	0.049	0.045
Assigned Manning's n value				0.045	0.050	0.045

Wash Name: T2N-R5W-S33W
Location No.: 25

Looking upstream in main channel

Looking downstream in main channel

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T2N-R5W-S33W
Location No.: 25, (N 908109, E 434381)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.025	0.028	0.025
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.003	0.003	0.003
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.005	0.005	0.005
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.015	0.020	0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0.005	0.005	0.005
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.053	0.061	0.053
Assigned Manning's n value				0.055	0.060	0.055

Wash Name: T2N-R5W-S27N
Location No.: 26

Looking upstream in main channel

Left overbank, looking upstream

Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T2N-R5W-S27N
Location No.: 26, (N 908233, E 442622)

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.025		0.025
	Coarse Sand		.026-.035		0.028	
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.001	0.001	0.001
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.004		0.004
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.020	0.025	0.020
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.050	0.059	0.050
Assigned Manning's n value				0.050	0.060	0.050

Wash Name: T2N-R5W-S27S
Location No.: 27

Looking upstream in main channel

Right overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: T2N-R5W-S27S
Location No.: 27, (N 909750, E 440018)

Channel Conditions		Manning's Adjustment		Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032	0.028	0.028	0.028
	Fine Sand		.023-.036			
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.005		0.005
	Moderate		0.006 - 0.010		0.006	
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004	0.001		0.001
	Minor		0.005 - 0.015		0.01	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.015	0.02	0.015
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.049	0.064	0.049
Assigned Manning's n value				0.050	0.065	0.050

Wash Name: Luke Wash
Location No.: 28

Looking upstream in main channel

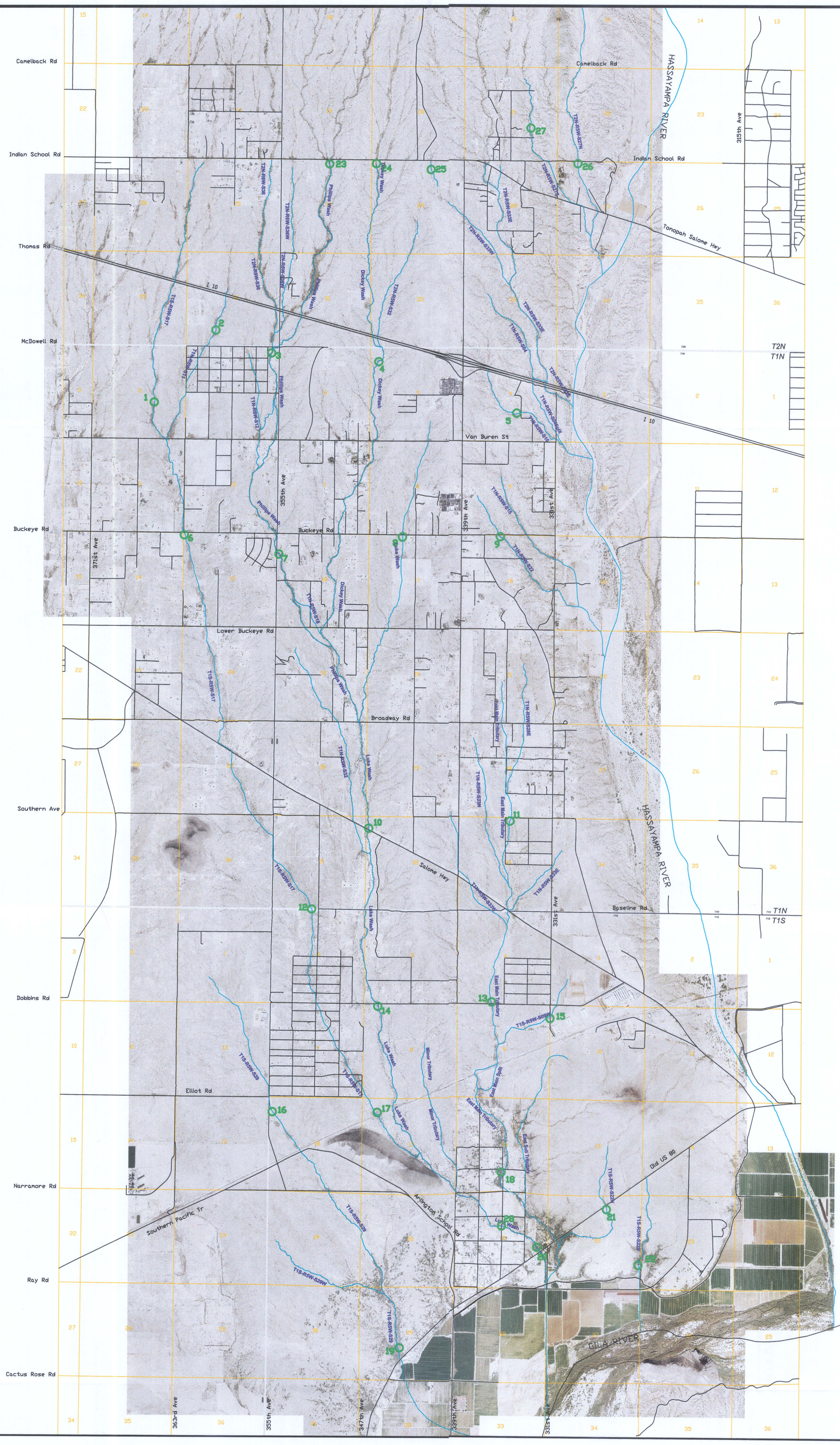
Looking downstream in main channel

Left overbank, looking upstream

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Luke Wash Watershed Zone AE Floodplain Delineation Study, FCD 2007C020
Watercourse: Luke Wash
Location No.: 28

Channel Conditions			Manning's Adjustment	Left Overbank	Channel	Right Overbank
Channel Material	Concrete	nb	.012-.018			
	Rock Cut		0.025			
	Firm Soil		.025-.032			
	Fine Sand		.023-.036	0.026	0.026	0.026
	Coarse Sand		.026-.035			
	Gravel		.028-.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n1	0			
	Minor		0.001 - 0.005	0.002	0.002	0.002
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstruction	Negligible	n2	0 - 0.004			
	Minor		0.005 - 0.015	0.01		0.01
	Appreciable		0.020 - 0.030		0.02	
	Severe		0.040 - 0.060			
Vegetation	Small	n3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.02	0.01	0.02
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section.	Gradual	n4	0	0	0	0
	Occasionally Alt.		0.001 - 0.005			
	Frequently Alt.		0.010 -0.015			
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4)m				0.058	0.058	0.058
Assigned Manning's n value				0.060	0.060	0.060



LEGEND

- "n" Value Sampling Location
- Hydraulic Baseline
- T1S-R5W-S29W Wash Name
- Section Boundary
- Section Number

3000' 0' 3000' 6000'

SCALE: 1"= 3000' FEET

CONTOUR INTERVAL = 2 FEET

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

LUKE WASH WATERSHED FDS

FIELD RECONNAISSANCE LOCATION MAP

FCD 2007C020

JULY 2008

WOOD/PATEL

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CONSTRUCTION MANAGEMENT

(602) 335-8500

PHOENIX · MESA · TUCSON · GOODYEAR

WP# 073087 FIGURE 1

W:\2007Projects\073087_Luke Wash\Project Support\Reports\TDN_All\Appendix\AppendixE\Appendix E1\ Field Reconnaissance Location Map.dwg - Mar 30,2009 4:02pm

APPENDIX E2

Cross Section Plots

See CD in Exhibit E (Volume 1)

APPENDIX E3

Expansion and Contraction Coefficients

Contraction or expansion of flow due to changes in the cross section is a common cause of energy losses within a reach (between two cross sections). Whenever this occurs, the loss is computed using the contraction and expansion coefficients specified on the cross-section editor. Typical values of 0.1 and 0.3, respectively, are applied for most of the cross sections where changes in cross sections are small and flow is subcritical (typical case for this study). When the change in effective cross section area is abrupt, contraction and expansion coefficients of 0.3 and 0.5 are often used.

APPENDIX E4

Analysis of Structures

The Luke Wash Watershed Zone AE Floodplain Delineation Study modeled 13 culverts and 5 bridges using HEC-RAS river analysis system, version 3.1.3. The structures modeling results for the floodplain and floodway are found in Table 5.4.

APPENDIX E5

Hydraulic Modeling Results

The hydraulic modeling results for floodplain and floodway are found in Table 5.4. The floodplain profile results are in Exhibit D. The floodway results in FIS format is in Table 7.2.

CheckRAS results and comment responses are found on the CD in Exhibit E.