Sun Valley Area Drainage Master Plan

Technical Appendices

Step 2

Proposed Alternatives
Analysis Report

Volume 6

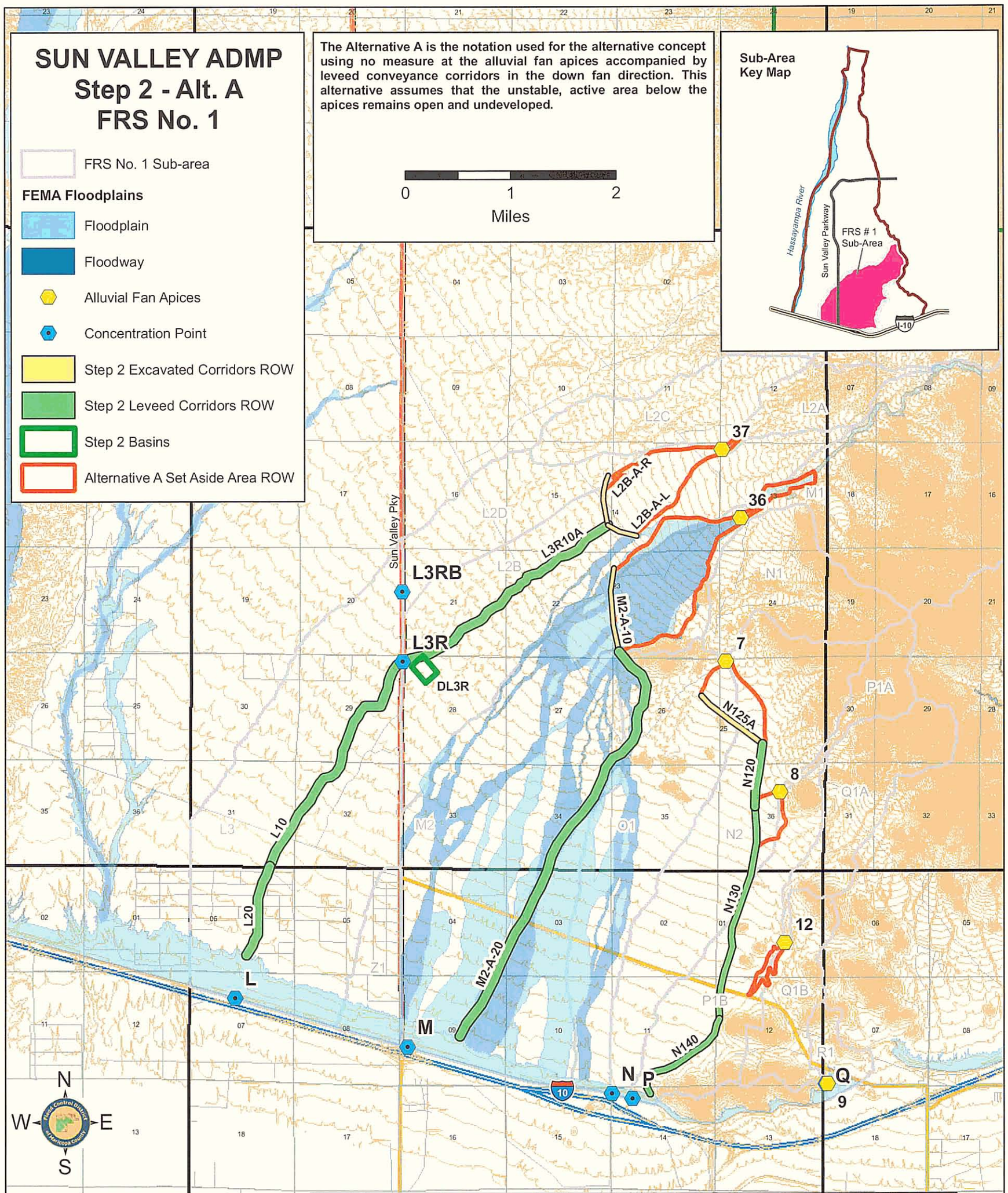
FRS 1 SUB-AREA

Flood Control District of Maricopa County

September 2006

SUN VALLEY ADMP
Step 2 - Alt. A
FRS No. 1

The Alternative A is the notation used for the alternative concept using no measure at the alluvial fan apices accompanied by leveed conveyance corridors in the down fan direction. This alternative assumes that the unstable, active area below the apices remains open and undeveloped.



						Base Design Geometry			Base Costs (in $1000)					Base Cost Percentages				
Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
L3R10A	Leveed Chl.	3204	141	0	73	2.4	482	5	$ 14,100	$ 6,424	$ 1,070	$ 2,886	$ 24,481	58%	26%	4%	12%	9%
DL3R	Offline Basin	1585	20	216	0	1100	780	6	$ 1,970	$ 1,982	$ 858	$ 816	$ 5,626	35%	35%	15%	15%	2%
L10	Leveed Chl.	3412	144	0	86	2.4	488	5	$ 14,420	$ 6,176	$ 1,184	$ 3,151	$ 24,931	58%	25%	5%	13%	9%
M2-A-20	Leveed Chl.	3930	248	0	127	4.2	482	5	$ 24,750	$ 10,775	$ 1,879	$ 5,016	$ 42,420	58%	25%	4%	12%	15%
N120	Leveed Chl.	1883	31	0	18	0.6	422	5	$ 3,060	$ 1,556	$ 265	$ 851	$ 5,732	53%	27%	5%	15%	2%
N130	Leveed Chl.	2270	153	0	62	2.1	322	5	$ 15,280	$ 4,919	$ 912	$ 2,422	$ 23,533	65%	21%	4%	10%	8%
N140	Leveed Chl.	2705	69	0	38	1.1	328	5	$ 6,880	$ 2,519	$ 521	$ 1,366	$ 11,287	61%	22%	5%	12%	4%
L2B-A-R	Excavated Chl.	3063	315	101	7	0.5	265	5	$ 31,490	$ 2,994	$ 577	$ 1,218	$ 36,279	87%	8%	2%	3%	13%
L2B-A-L	Excavated Chl.	3063	8	61	4	0.3	265	5	$ 770	$ 1,865	$ 356	$ 958	$ 3,949	19%	47%	9%	24%	1%
L20	Leveed Chl.	3069	53	0	31	0.9	488	5	$ 5,250	$ 2,230	$ 432	$ 1,246	$ 9,158	57%	24%	5%	14%	3%
M2-A-10	Excavated Chl.	3607	610	415	14	0.8	269	5	$ 61,000	$ 10,288	$ 985	$ 1,804	$ 74,077	82%	14%	1%	2%	26%
N125A	Excavated Chl.	1253	178	84	13	0.7	169	5	$ 17,760	$ 2,651	$ 528	$ 913	$ 21,852	81%	12%	2%	4%	8%
		TOTAL	1970	877	473				$ 196,730	$ 54,379	$ 9,567	$ 22,650	**$ 283,325**	69%	19%	3%	8%	100%
All Channels			1950	661	473	16.0			$ 194,760	$ 52,397	$ 8,709	$ 21,833	$ 277,699	70%	19%	3%	8%	98%
All Online Basins			0	0	0				$ -	$ -	$ -	$ -	$ -	0%	0%	0%	0%	0%
All Offline Basins			20	216	0				$ 1,970	$ 1,982	$ 858	$ 816	$ 5,626	35%	35%	15%	15%	2%

Channel Cost per mile (in $1000)	$17,356	Basins Cost per ac. ft. (in $1000)	$3.97

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	6%	16%	134%				6%	55%	86%	89%	24%
All Online Basins % increase	0%	0%	0%				0%	0%	0%	0%	0%
All Offline Basins % increase	35%	6%	0%				35%	5%	34%	34%	24%
Total % increase	6%	13%	134%				6%	53%	82%	87%	24%

SUN VALLEY ADMP
Step 2 - Alt. B2
FRS No. 1

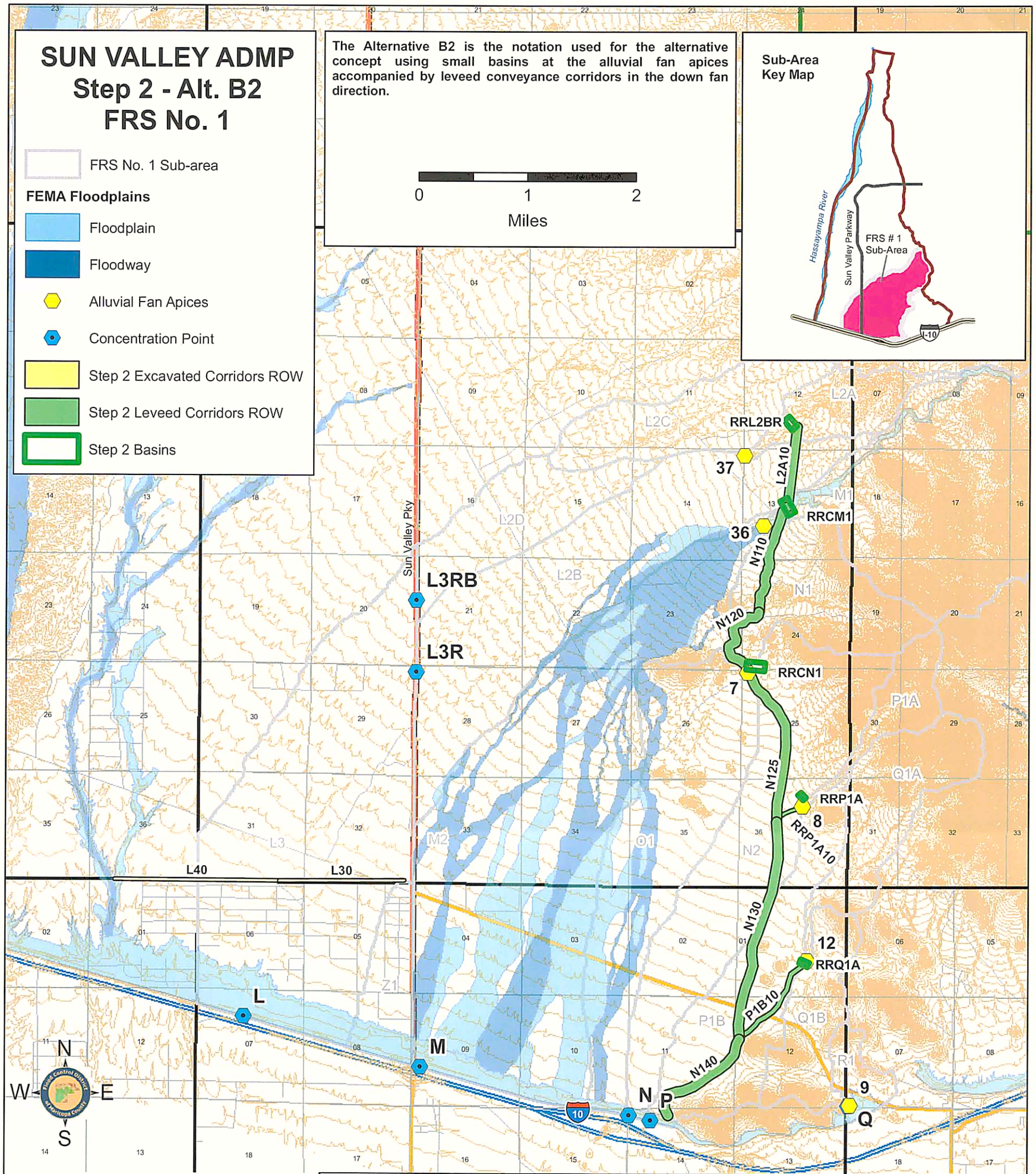
FRS No. 1 Sub-area

FEMA Floodplains

- Floodplain
- Floodway
- Alluvial Fan Apices
- Concentration Point
- Step 2 Excavated Corridors ROW
- Step 2 Leveed Corridors ROW
- Step 2 Basins

The Alternative B2 is the notation used for the alternative concept using small basins at the alluvial fan apices accompanied by leveed conveyance corridors in the down fan direction.

0 1 2
Miles



Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Base Design Geometry: Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Base Costs (in $1000): Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Base Cost Percentages: Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
RRL2BR	Online Basin	2241	5	59	0	600	350	10	$ 480	$ 636	$ 210	$ 218	$ 1,544	31%	41%	14%	14%	1%
L2A10	Leveed Chl.	2326	41	0	22	0.7	462	5	$ 4,110	$ 1,874	$ 325	$ 888	$ 7,197	57%	26%	5%	12%	7%
RRCM1	Online Basin	4579	7	102	0	800	400	11	$ 730	$ 1,007	$ 320	$ 323	$ 2,380	31%	42%	13%	14%	2%
N110	Leveed Chl.	5030	60	0	31	1	482	5	$ 6,030	$ 3,693	$ 457	$ 1,205	$ 11,386	53%	32%	4%	11%	10%
N120	Leveed Chl.	4690	47	0	28	0.8	488	5	$ 4,730	$ 2,381	$ 389	$ 1,049	$ 8,549	55%	28%	5%	12%	8%
RRCN1	Online Basin	4273	8	110	0	900	400	11	$ 830	$ 1,097	$ 360	$ 358	$ 2,645	31%	41%	14%	14%	2%
N125	Leveed Chl.	4298	91	0	54	1.5	488	5	$ 9,080	$ 4,390	$ 745	$ 1,885	$ 16,101	56%	27%	5%	12%	15%
RRP1A	Online Basin	516	2	10	0	350	200	5	$ 160	$ 162	$ 70	$ 78	$ 470	34%	34%	15%	17%	0%
N130	Leveed Chl.	4805	123	0	84	2.1	494	6	$12,310	$ 6,343	$ 1,064	$ 2,758	$ 22,474	55%	28%	5%	12%	21%
N140	Leveed Chl.	4581	64	0	38	1.1	491	5	$ 6,380	$ 2,780	$ 521	$ 1,464	$ 11,145	57%	25%	5%	13%	10%
RRQ1A	Online Basin	908	2	18	0	450	220	6	$ 230	$ 226	$ 99	$ 109	$ 664	35%	34%	15%	16%	1%
P1B10	Leveed Chl.	1105	29	0	29	1	242	5	$ 2,850	$ 1,973	$ 430	$ 1,036	$ 6,289	45%	31%	7%	16%	6%
L30	Excavated Chl.	2162	24	97	0	1.2	204	7	$ 2,360	$ 2,835	$ 940	$ 1,768	$ 7,903	30%	36%	12%	22%	7%
L40	Excavated Chl.	2162	31	121	0	1.5	204	7	$ 3,110	$ 2,896	$ 1,240	$ 1,182	$ 8,429	37%	34%	15%	14%	8%
RRP1A10	Leveed Chl.	516	6	0	7	0.3	176	4	$ 590	$ 522	$ 114	$ 285	$ 1,511	39%	35%	8%	19%	1%
		TOTAL	540	517	293				$53,980	$ 32,816	$ 7,286	$ 14,606	**$ 108,688**	50%	30%	7%	13%	100%
All Channels			516	218	293	11.2			$51,550	$ 29,688	$ 6,227	$ 13,520	$ 100,985	51%	29%	6%	13%	93%
All Online Basins			24	299	0				$ 2,430	$ 3,128	$ 1,059	$ 1,086	$ 7,703	32%	41%	14%	14%	7%
All Offline Basins			0	0	0				$ -	$ -	$ -	$ -	$ -	0%	0%	0%	0%	0%

Channel Cost per mile (in $1000)	$9,016	Basins Cost per ac. ft. (in $1000)	$3.54

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	17%	19%	132%			16%	57%	76%	89%	42%
All Online Basins % increase	88%	10%	0%			84%	8%	84%	78%	53%
All Offline Basins % increase	0%	0%	0%			0%	0%	0%	0%	0%
Total % increase	20%	14%	132%			19%	53%	77%	88%	43%

SUN VALLEY ADMP
Step 2 - Alt. B3
FRS No. 1

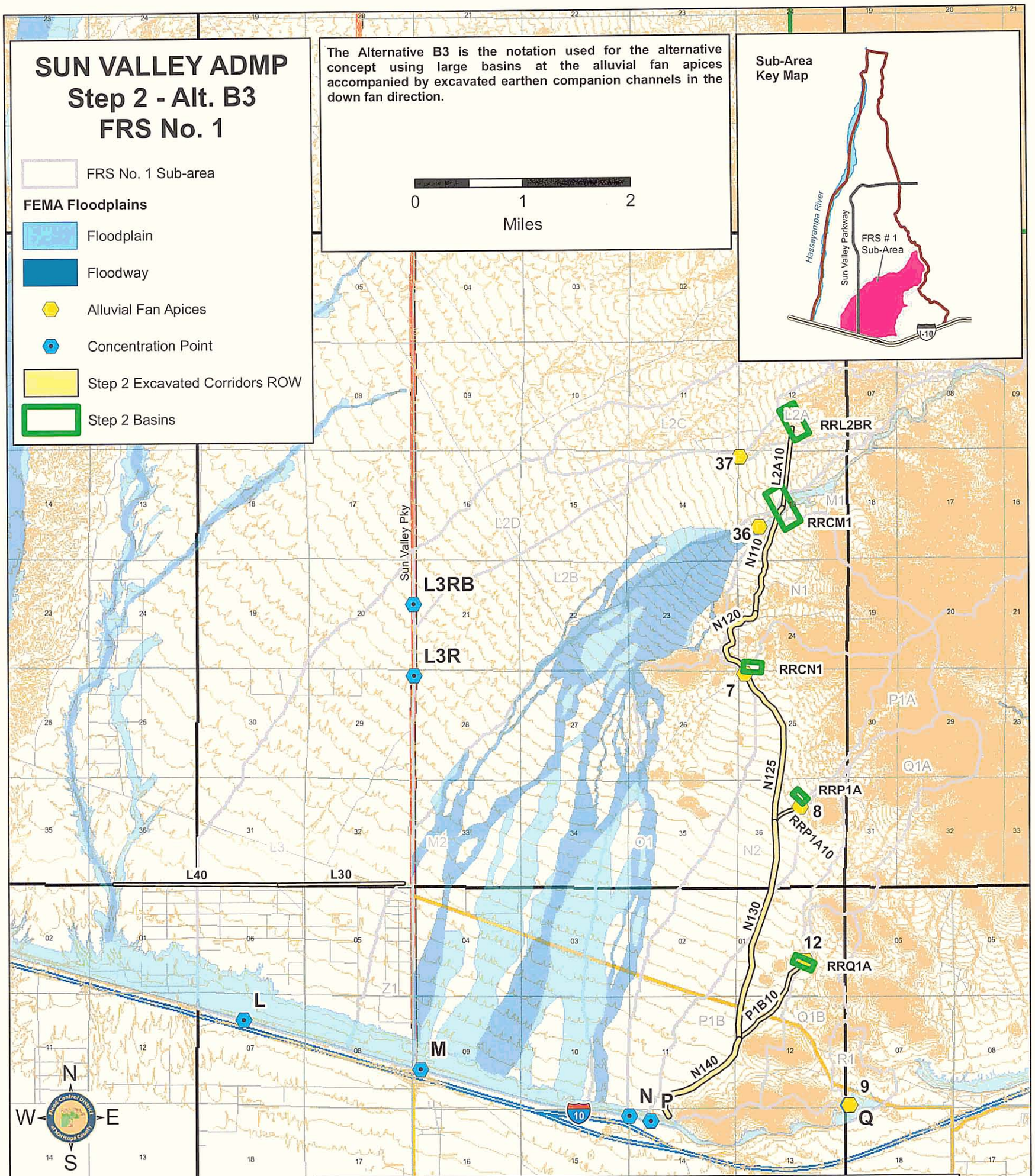
FRS No. 1 Sub-area

FEMA Floodplains

- Floodplain
- Floodway
- Alluvial Fan Apices
- Concentration Point
- Step 2 Excavated Corridors ROW
- Step 2 Basins

The Alternative B3 is the notation used for the alternative concept using large basins at the alluvial fan apices accompanied by excavated earthen companion channels in the down fan direction.

0 1 2
Miles



Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Base Design Geometry: Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Base Costs (in $1000): Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Base Cost Percentages: Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
RRL2BR	Online Basin	237	30	581	0	1650	800	11	$ 3,030	$ 5,044	$ 1,320	$ 1,260	$ 10,654	28%	47%	12%	12%	6%
L2A10	Excavated Chl.	322	17	84	0	0.7	109	4	$ 1,710	$ 1,949	$ 229	$ 257	$ 4,145	41%	47%	6%	6%	3%
RRCM1	Online Basin	424	42	877	0	2000	910	11	$ 4,180	$ 7,533	$ 1,820	$ 1,727	$ 15,260	27%	49%	12%	11%	9%
N110	Excavated Chl.	875	29	541	0	1	145	5	$ 2,860	$ 11,903	$ 517	$ 565	$ 15,845	18%	75%	3%	4%	10%
N120	Excavated Chl.	1288	25	244	0	0.8	169	7	$ 2,450	$ 5,561	$ 503	$ 615	$ 9,129	27%	61%	6%	7%	6%
RRCN1	Online Basin	420	10	141	0	900	480	11	$ 990	$ 1,366	$ 432	$ 427	$ 3,214	31%	42%	13%	13%	2%
N125	Excavated Chl.	1313	47	822	0	1.5	171	6	$ 4,740	$ 18,050	$ 980	$ 1,136	$ 24,906	19%	72%	4%	5%	15%
RRP1A	Online Basin	87	6	62	0	700	360	8	$ 580	$ 643	$ 252	$ 254	$ 1,730	34%	37%	15%	15%	1%
N130	Excavated Chl.	1678	66	1581	0	2.1	181	6	$ 6,600	$ 34,319	$ 1,422	$ 1,625	$ 43,966	15%	78%	3%	4%	27%
N140	Excavated Chl.	1977	34	221	0	1.1	181	6	$ 3,440	$ 5,081	$ 743	$ 820	$ 10,083	34%	50%	7%	8%	6%
RRQ1A	Online Basin	106	10	146	0	1000	420	11	$ 960	$ 1,358	$ 420	$ 419	$ 3,156	30%	43%	13%	13%	2%
P1B10	Excavated Chl.	303	23	112	0	1	109	4	$ 2,270	$ 2,582	$ 302	$ 369	$ 5,523	41%	47%	5%	7%	3%
L30	Excavated Chl.	2162	24	97	0	1.2	204	7	$ 2,360	$ 2,835	$ 940	$ 1,768	$ 7,903	30%	36%	12%	22%	5%
L40	Excavated Chl.	2162	31	121	0	1.5	204	7	$ 3,110	$ 2,896	$ 1,240	$ 1,182	$ 8,429	37%	34%	15%	14%	5%
RRP1A10	Excavated Chl.	87	6	10	0	0.3	80	3	$ 550	$ 262	$ 44	$ 56	$ 911	60%	29%	5%	6%	1%
		TOTAL	400	5640	0				$39,830	$101,382	$11,163	$ 12,479	**$ 164,855**	24%	61%	7%	8%	100%
All Channels			302	3833	0	11.2			$30,090	$ 85,439	$ 6,919	$ 8,393	$ 130,841	23%	65%	5%	6%	79%
All Online Basins			98	1807	0				$ 9,740	$ 15,944	$ 4,244	$ 4,087	$ 34,014	29%	47%	12%	12%	21%
All Offline Basins			0	0	0				$ -	$ -	$ -	$ -	$ -	0%	0%	0%	0%	0%

Channel Cost per mile (in $1000)	$11,682	Basins Cost per ac. ft. (in $1000)	$2.35

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	38%	28%	0%				38%	27%	29%	22%	29%
All Online Basins % increase	44%	9%	0%				45%	9%	45%	44%	28%
All Offline Basins % increase	0%	0%	0%				0%	0%	0%	0%	0%
Total % increase	39%	22%	0%				39%	24%	35%	29%	29%

SUN VALLEY ADMP
Step 2 - Alt. B4-1
FRS No. 1

FRS No. 1 Sub-area

FEMA Floodplains

- Floodplain
- Floodway
- Alluvial Fan Apices
- Concentration Point
- Step 2 Excavated Corridors ROW
- Step 2 Leveed Corridors ROW
- Step 2 Basins

The Alternative B4-1 is the notation used for the alternative concept using large basins at the alluvial fan apices accompanied by leveed conveyance corridors in the down fan direction. It is the first of three alignments considered as part of the Alternative B4 series.

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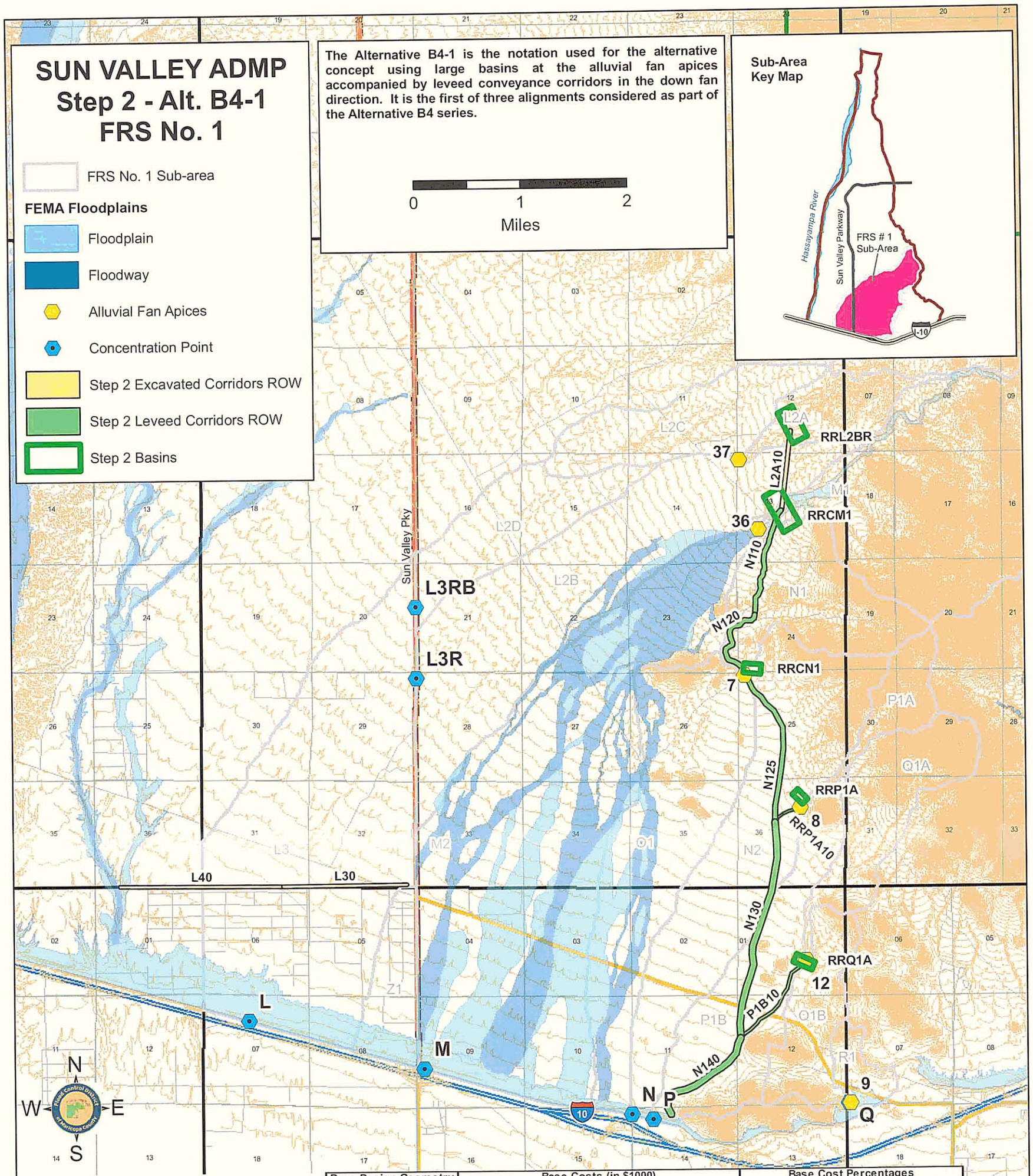
Miles



Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Base Design Geometry: Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Base Costs (in $1000): Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Base Cost Percentages: Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
RRL2BR	Online Basin	237	30	581	0	1650	800	11	$ 3,030	$ 5,044	$ 1,320	$ 1,260	$ 10,654	28%	47%	12%	12%	10%
L2A10	Excavated Chl.	322	17	85	0	0.7	111	4	$ 1,730	$ 1,978	$ 236	$ 265	$ 4,210	41%	47%	6%	6%	4%
RRCM1	Online Basin	424	42	877	0	2000	910	11	$ 4,180	$ 7,533	$ 1,820	$ 1,727	$ 15,260	27%	49%	12%	11%	14%
N110	Leveed Chl.	875	29	0	31	1	232	5	$ 2,900	$ 2,346	$ 457	$ 1,079	$ 6,782	43%	35%	7%	16%	6%
N120	Leveed Chl.	1264	23	0	24	0.8	242	5	$ 2,340	$ 1,730	$ 355	$ 916	$ 5,341	44%	32%	7%	17%	5%
RRCN1	Online Basin	419	9	126	0	850	460	11	$ 900	$ 1,232	$ 391	$ 388	$ 2,912	31%	42%	13%	13%	3%
N125	Leveed Chl.	1257	45	0	46	1.5	242	5	$ 4,500	$ 3,233	$ 680	$ 1,648	$ 10,061	45%	32%	7%	16%	9%
RRP1A	Online Basin	87	6	62	0	700	360	8	$ 580	$ 643	$ 252	$ 254	$ 1,730	34%	37%	15%	15%	2%
N130	Leveed Chl.	1519	80	0	62	2.1	322	5	$ 8,020	$ 4,723	$ 912	$ 2,333	$ 15,988	50%	30%	6%	15%	15%
N140	Leveed Chl.	1605	43	0	38	1.1	328	5	$ 4,260	$ 2,410	$ 521	$ 1,366	$ 8,558	50%	28%	6%	16%	8%
RRQ1A	Online Basin	106	10	146	0	1000	420	11	$ 960	$ 1,358	$ 420	$ 419	$ 3,156	30%	43%	13%	13%	3%
P1B10	Leveed Chl.	303	15	0	29	1	127	5	$ 1,500	$ 1,811	$ 430	$ 1,016	$ 4,757	32%	38%	9%	21%	4%
L30	Excavated Chl.	2162	24	97	0	1.2	204	7	$ 2,360	$ 2,835	$ 940	$ 1,768	$ 7,903	30%	36%	12%	22%	7%
L40	Excavated Chl.	2162	31	121	0	1.5	204	7	$ 3,110	$ 2,896	$ 1,240	$ 1,182	$ 8,429	37%	34%	15%	14%	8%
RRP1A10	Leveed Chl.	87	3	0	8	0.3	97	5	$ 320	$ 530	$ 123	$ 279	$ 1,252	26%	42%	10%	22%	1%
		TOTAL	407	2095	238				$40,690	$ 40,305	$10,099	$ 15,900	**$ 106,994**	38%	38%	9%	15%	100%
All Channels			310	303	238	11.2			$31,040	$ 24,494	$ 5,896	$ 11,852	$ 73,282	42%	33%	8%	16%	68%
All Online Basins			97	1792	0				$ 9,650	$ 15,810	$ 4,203	$ 4,048	$ 33,712	29%	47%	12%	12%	32%
All Offline Basins			0	0	0				$ -	$ -	$ -	$ -	$ -	0%	0%	0%	0%	0%

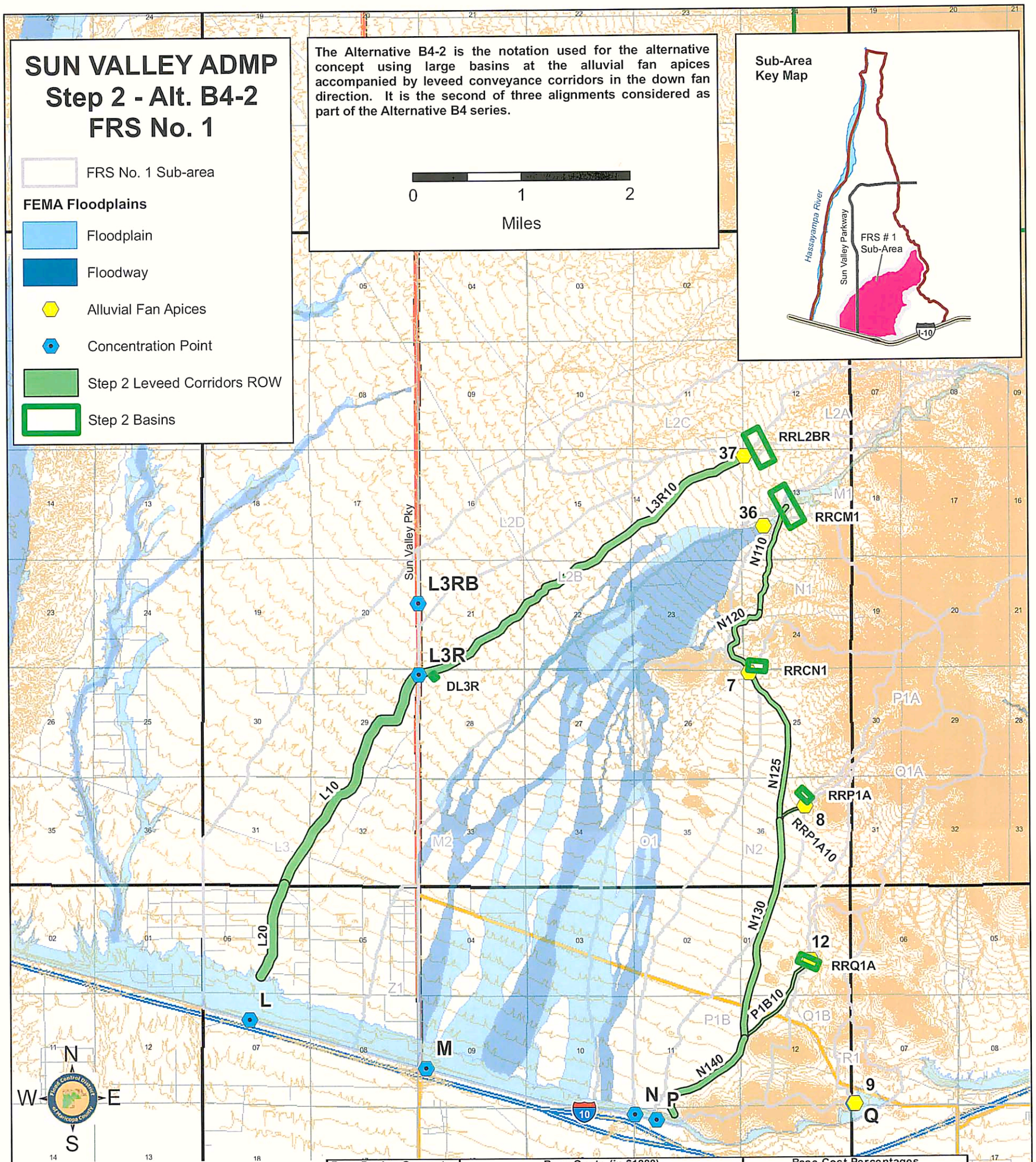
Channel Cost per mile (in $1000)	$6,543	Basins Cost per ac. ft. (in $1000)	$2.35

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	27%	23%	136%				27%	61%	74%	87%	52%
All Online Basins % increase	44%	9%	0%				45%	9%	45%	44%	28%
All Offline Basins % increase	0%	0%	0%				0%	0%	0%	0%	0%
Total % increase	31%	11%	136%				31%	40%	62%	76%	44%

SUN VALLEY ADMP
Step 2 - Alt. B4-2
FRS No. 1

The Alternative B4-2 is the notation used for the alternative concept using large basins at the alluvial fan apices accompanied by leveed conveyance corridors in the down fan direction. It is the second of three alignments considered as part of the Alternative B4 series.



Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Base Design Geometry: Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Base Costs (in $1000): Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Base Cost Percentages: Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
RRL2BR	Online Basin	278	32	584	0	1800	780	10	$ 3,220	$ 5,057	$ 1,404	$ 1,336	$ 11,017	29%	46%	13%	12%	7%
L3R10	Leveed Chl.	1703	176	0	114	3.8	382	5	$17,620	$ 8,978	$ 1,688	$ 4,273	$ 32,558	54%	28%	5%	13%	22%
DL3R	Offline Basin	1585	1	6	0	260	200	4	$ 119	$ 153	$ 52	$ 58	$ 382	31%	40%	14%	15%	0%
L10	Leveed Chl.	3270	144	0	86	2.4	488	5	$14,420	$ 6,158	$ 1,184	$ 3,151	$ 24,913	58%	25%	5%	13%	17%
RRCM1	Online Basin	422	36	712	0	1980	800	11	$ 3,640	$ 6,137	$ 1,584	$ 1,505	$ 12,866	28%	48%	12%	12%	9%
N110	Leveed Chl.	873	28	0	26	1	226	4	$ 2,820	$ 2,219	$ 425	$ 1,040	$ 6,504	43%	34%	7%	16%	4%
N120	Leveed Chl.	1264	18	0	18	0.6	242	5	$ 1,760	$ 1,312	$ 265	$ 716	$ 4,053	43%	32%	7%	18%	3%
RRCN1	Online Basin	420	10	135	0	860	480	11	$ 950	$ 1,312	$ 413	$ 409	$ 3,084	31%	43%	13%	13%	2%
N125	Leveed Chl.	1276	45	0	46	1.5	242	5	$ 4,500	$ 3,237	$ 680	$ 1,648	$ 10,066	45%	32%	7%	16%	7%
RRP1A	Online Basin	87	6	62	0	700	360	8	$ 580	$ 643	$ 252	$ 254	$ 1,730	34%	37%	15%	15%	1%
N130	Leveed Chl.	1537	80	0	62	2.1	322	5	$ 8,020	$ 4,674	$ 912	$ 2,244	$ 15,849	51%	29%	6%	14%	11%
N140	Leveed Chl.	1645	43	0	38	1.1	328	5	$ 4,260	$ 2,412	$ 521	$ 1,366	$ 8,560	50%	28%	6%	16%	6%
RRQ1A	Online Basin	106	10	146	0	1000	420	11	$ 960	$ 1,358	$ 420	$ 419	$ 3,156	30%	43%	13%	13%	2%
P1B10	Leveed Chl.	303	15	0	29	1	127	5	$ 1,500	$ 1,811	$ 430	$ 1,016	$ 4,757	32%	38%	9%	21%	3%
L20	Leveed Chl.	3021	53	0	31	0.9	488	5	$ 5,250	$ 2,228	$ 432	$ 1,246	$ 9,156	57%	24%	5%	14%	6%
RRP1A10	Leveed Chl.	87	3	0	8	0.3	97	5	$ 320	$ 467	$ 123	$ 279	$ 1,189	27%	39%	10%	23%	1%
	TOTAL	700	1645	458					$69,939	$ 48,156	$10,785	$ 20,960	**$ 149,840**	47%	32%	7%	14%	100%
All Channels		605	0	458		14.7			$60,470	$ 33,496	$ 6,661	$ 16,978	$ 117,605	51%	28%	6%	14%	78%
All Online Basins		94	1639	0					$ 9,350	$ 14,507	$ 4,073	$ 3,923	$ 31,853	29%	46%	13%	12%	21%
All Offline Basins		1	6	0					$ 119	$ 153	$ 52	$ 58	$ 382	31%	40%	14%	15%	0%

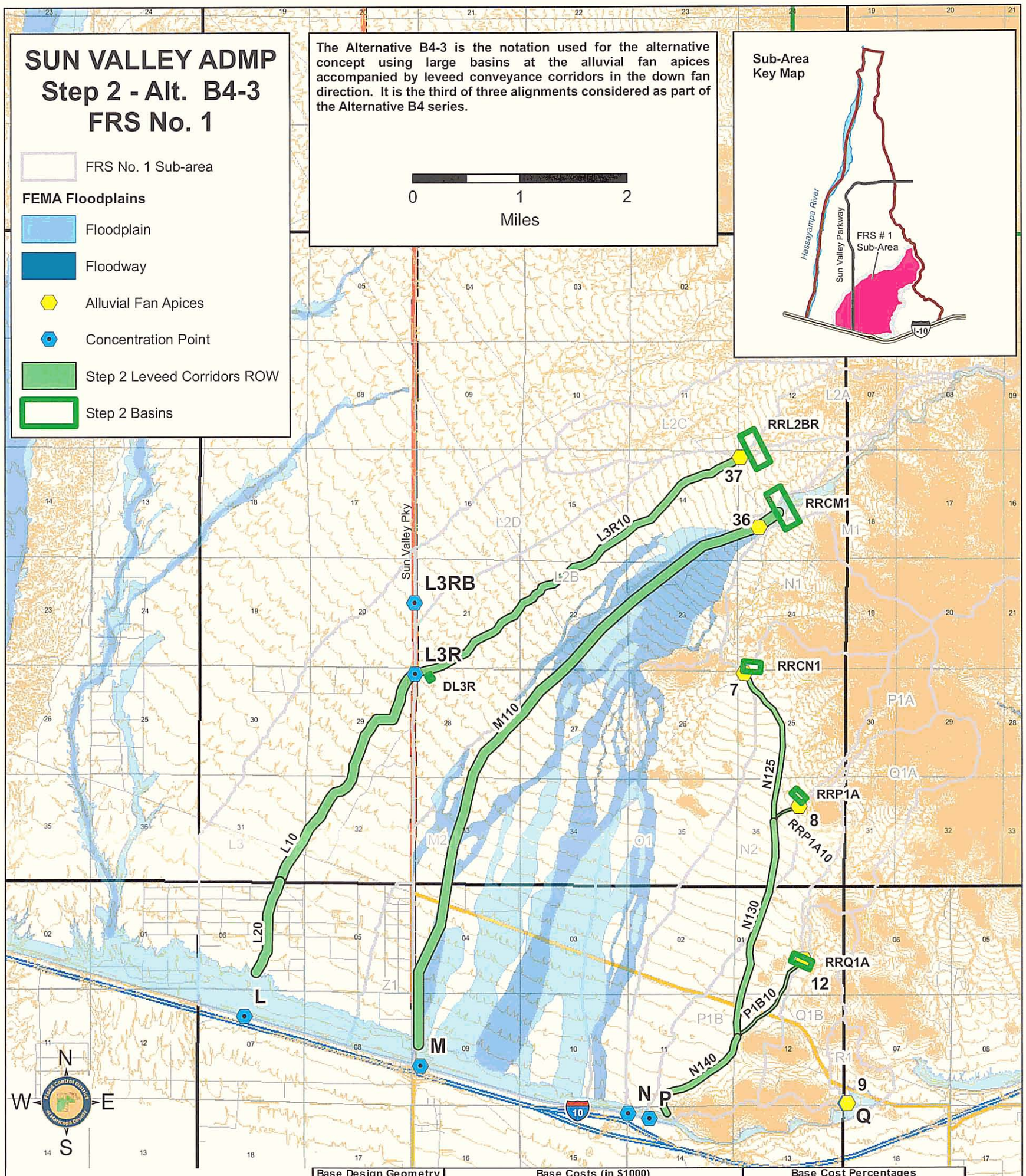
Channel Cost per mile (in $1000)	$8,000	Basins Cost per ac. ft. (in $1000)	$2.51

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	15%	0%	135%				15%	77%	106%	109%	51%
All Online Basins % increase	45%	9%	0%				46%	9%	46%	45%	29%
All Offline Basins % increase	200%	0%	0%				135%	2%	137%	116%	79%
Total % increase	19%	9%	135%				19%	56%	83%	97%	47%

SUN VALLEY ADMP
Step 2 - Alt. B4-3
FRS No. 1

The Alternative B4-3 is the notation used for the alternative concept using large basins at the alluvial fan apices accompanied by leveed conveyance corridors in the down fan direction. It is the third of three alignments considered as part of the Alternative B4 series.



Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Base Design Geometry: Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Base Costs (in $1000): Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Base Cost Percentages: Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
RRL2BR	Online Basin	278	32	584	0	1800	780	10	$ 3,220	$ 5,057	$ 1,404	$ 1,336	$ 11,017	29%	46%	13%	12%	5%
L3R10	Leveed Chl.	1703	176	0	114	3.8	382	5	$ 17,620	$ 8,978	$ 1,688	$ 4,273	$ 32,558	54%	28%	5%	13%	16%
DL3R	Offline Basin	1585	1	6	0	260	200	4	$ 119	$ 153	$ 52	$ 58	$ 382	31%	40%	14%	15%	0%
L10	Leveed Chl.	3270	144	0	86	2.4	488	5	$ 14,420	$ 6,158	$ 1,184	$ 3,151	$ 24,913	58%	25%	5%	13%	12%
RRCM1	Online Basin	422	36	712	0	1980	800	11	$ 3,640	$ 6,137	$ 1,584	$ 1,505	$ 12,866	28%	48%	12%	12%	6%
M110	Leveed Chl.	2347	373	0	192	6.4	482	5	$ 37,320	$ 16,566	$ 2,833	$ 7,401	$ 64,120	58%	26%	4%	12%	32%
RRCN1	Online Basin	187	10	135	0	860	480	11	$ 950	$ 1,312	$ 413	$ 409	$ 3,084	31%	43%	13%	13%	2%
N125	Leveed Chl.	1214	45	0	46	1.5	242	5	$ 4,500	$ 3,266	$ 680	$ 1,712	$ 10,158	44%	32%	7%	17%	5%
RRP1A	Online Basin	87	6	62	0	700	360	8	$ 580	$ 643	$ 252	$ 254	$ 1,730	34%	37%	15%	15%	1%
N130	Leveed Chl.	1394	80	0	62	2.1	322	5	$ 8,020	$ 4,292	$ 912	$ 2,244	$ 15,467	52%	28%	6%	15%	8%
N140	Leveed Chl.	1467	43	0	38	1.1	328	5	$ 4,260	$ 2,404	$ 521	$ 1,366	$ 8,552	50%	28%	6%	16%	4%
RRQ1A	Online Basin	106	10	146	0	1000	420	11	$ 960	$ 1,358	$ 420	$ 419	$ 3,156	30%	43%	13%	13%	2%
P1B10	Leveed Chl.	303	15	0	29	1	127	5	$ 1,500	$ 1,811	$ 430	$ 1,016	$ 4,757	32%	38%	9%	21%	2%
L20	Leveed Chl.	3021	53	0	31	0.9	488	5	$ 5,250	$ 2,228	$ 432	$ 1,246	$ 9,156	57%	24%	5%	14%	5%
RRP1A10	Leveed Chl.	87	3	0	8	0.3	97	5	$ 320	$ 467	$ 123	$ 279	$ 1,189	27%	39%	10%	23%	1%
	TOTAL	1027	1645	606					$ 102,679	$ 60,828	$12,928	$ 26,669	**$ 203,104**	51%	30%	6%	13%	100%
All Channels		932	0	606		19.5			$ 93,210	$ 46,169	$ 8,803	$ 22,688	$ 170,870	55%	27%	5%	13%	84%
All Online Basins		94	1639	0					$ 9,350	$ 14,507	$ 4,073	$ 3,923	$ 31,853	29%	46%	13%	12%	16%
All Offline Basins		1	6	0					$ 119	$ 153	$ 52	$ 58	$ 382	31%	40%	14%	15%	0%

Channel Cost per mile (in $1000)	$8,763	Basins Cost per ac. ft. (in $1000)	$2.51

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	13%	0%	135%				13%	74%	106%	108%	47%
All Online Basins % increase	45%	9%	0%				46%	9%	46%	45%	29%
All Offline Basins % increase	200%	0%	0%				135%	2%	137%	116%	79%
Total % increase	16%	9%	135%				16%	58%	87%	99%	44%

SUN VALLEY ADMP
Step 2 - Alt. C
FRS No. 1

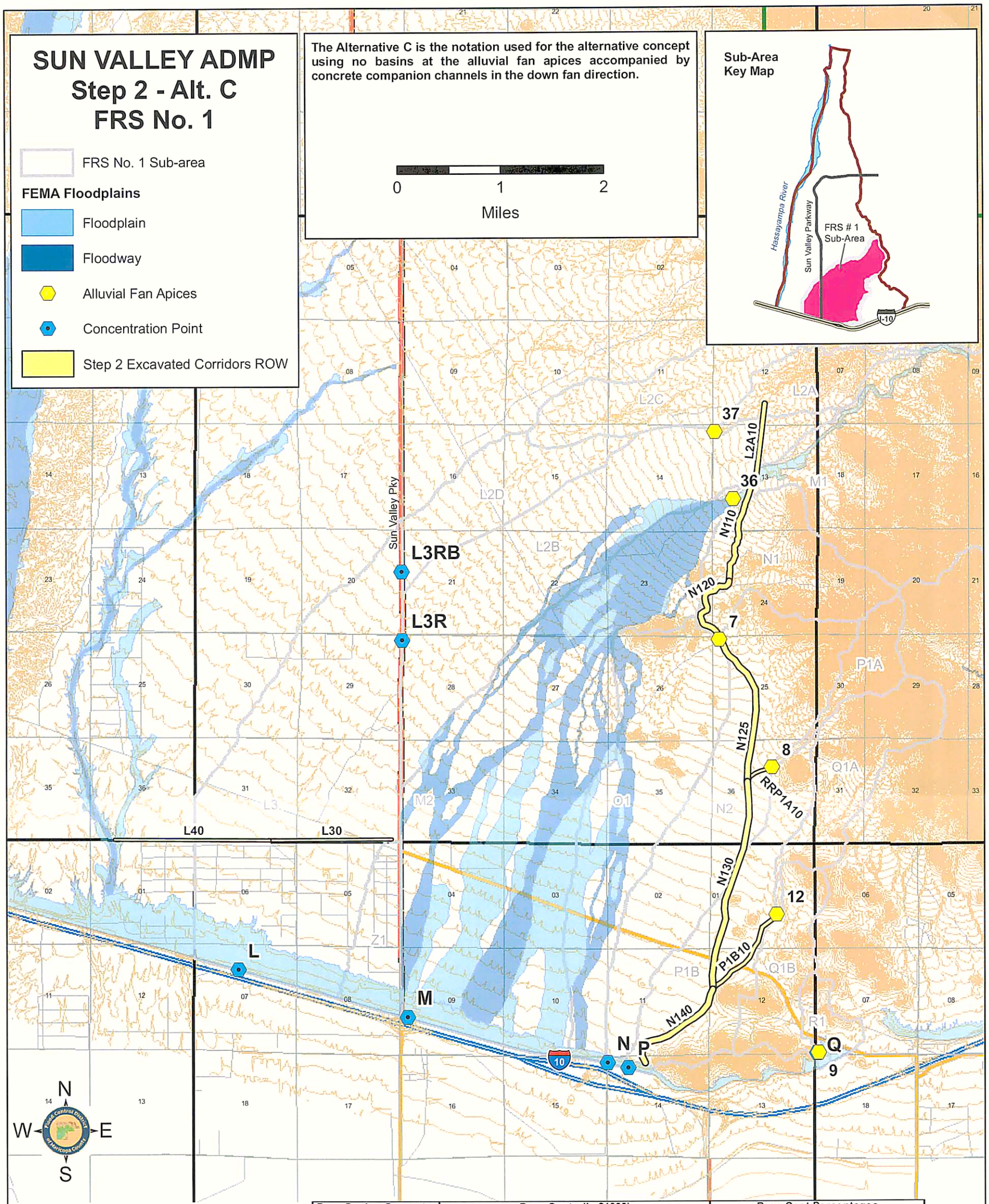
FRS No. 1 Sub-area

FEMA Floodplains

- Floodplain
- Floodway
- Alluvial Fan Apices
- Concentration Point
- Step 2 Excavated Corridors ROW

The Alternative C is the notation used for the alternative concept using no basins at the alluvial fan apices accompanied by concrete companion channels in the down fan direction.

0 1 2
Miles



Structure ID	Type	Flow Rate (cfs)	ROW Area (acres)	Exc. Vol. (ac. ft)	Fill Vol. (ac. ft)	Base Design Geometry: Length (stor-ft; chl-mi)	ROW Width (ft)	Depth (ft)	Base Costs (in $1000): Land Cost	Constr. Cost	Lndscp Cost	50 Yr Maint. Cost	Total Cost	Base Cost Percentages: Land Cost %	Constr. Cost %	Lndscp Cost %	50 Yr Maint. Cost %	% of Total Cost
L2A10	Excavated Chl.	2604	23	250	0	0.7	171	6	$ 2,270	$ 5,907	$ 469	$ 936	$ 9,582	24%	62%	5%	10%	4%
N110	Excavated Chl.	6169	37	1267	0	1	212	7	$ 3,690	$ 28,062	$ 882	$ 1,703	$ 34,336	11%	82%	3%	5%	15%
N120	Excavated Chl.	6078	29	434	0	0.8	212	7	$ 2,870	$ 10,111	$ 684	$ 1,409	$ 15,075	19%	67%	5%	9%	6%
N125	Excavated Chl.	6376	58	1621	0	1.5	228	8	$ 5,800	$ 36,078	$ 1,442	$ 2,944	$ 46,264	13%	78%	3%	6%	20%
N130	Excavated Chl.	6941	78	2841	0	2.1	228	8	$ 7,770	$ 62,500	$ 1,932	$ 3,989	$ 76,190	10%	82%	3%	5%	33%
N140	Excavated Chl.	7456	41	447	0	1.1	228	8	$ 4,060	$ 10,715	$ 1,009	$ 2,062	$ 17,847	23%	60%	6%	12%	8%
P1B10	Excavated Chl.	1187	25	214	0	1	125	5	$ 2,460	$ 5,231	$ 384	$ 1,020	$ 9,095	27%	58%	4%	11%	4%
L30	Excavated Chl.	2162	23	190	0	1.2	198	6	$ 2,270	$ 5,140	$ 903	$ 2,027	$ 10,340	22%	50%	9%	20%	4%
L40	Excavated Chl.	2162	30	204	0	1.5	198	6	$ 3,000	$ 5,737	$ 1,192	$ 2,583	$ 12,512	24%	46%	10%	21%	5%
RRP1A10	Excavated Chl.	575	6	21	0	0.3	90	5	$ 580	$ 718	$ 59	$ 339	$ 1,695	34%	42%	3%	20%	1%
		TOTAL	350	7489	0				$34,770	$170,198	$ 8,956	$ 19,012	**$ 232,936**	15%	73%	4%	8%	100%
All Channels			350	7489	0	11.2			$34,770	$170,198	$ 8,956	$ 19,012	$ 232,936	15%	73%	4%	8%	100%
All Online Basins			0	0	0				$ -	$ -	$ -	$ -	$ -	0%	0%	0%	0%	0%
All Offline Basins			0	0	0				$ -	$ -	$ -	$ -	$ -	0%	0%	0%	0%	0%

Channel Cost per mile (in $1000)	$20,798	Basins Cost per ac. ft. (in $1000)	$0.00

Cost Increase for Landscape Compatibility Enhancement over Base Costs

All Channels % increase	34%	26%	0%				35%	28%	27%	51%	31%
All Online Basins % increase	0%	0%	0%				0%	0%	0%	0%	0%
All Offline Basins % increase	0%	0%	0%				0%	0%	0%	0%	0%
Total % increase	34%	26%	0%				35%	28%	27%	51%	31%

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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   19APR06  TIME  16:56:58  *                    *          (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
        2           ID     - ALTERNATIVE A
        3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
        4           ID
        5           ID  Alternative Description
        6           ID  The main design objective of the A Alternative is to allow the
        7           ID  natural geomorphic processes to occur within a designated active
        8           ID  area downstream of the apex.  The objective then is to control
        9           ID  the flow path downstream of the region of uncertainty.  The flows
       10           ID  will be captured in the up-fan area by excavated collector channels
       11           ID  and/or diversion levees.  Once collected, the flows are routed
       12           ID  downstream using leveed corridors similar to the B alternatives.
       13           ID
       14           ID
       15           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
       16           ID   JANUARY 2006
       17           ID
       18           ID   MODEL BASED UPON:
       19           ID
       20           ID  Buckeye/Sun Valley ADMS - May 2005
       21           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
       22           ID  100-year 6-hour
       23           ID  Existing Conditions
       24           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
       25           ID  Rainfall Loss Method - Green & Ampt
       26           ID  Unit Hydrograph Method - FCDMC S-Graph
       27           ID  Channel Routing Method - Normal Depth
       28           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
       29           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
       30           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
       31           ID
       32           ID
                    *DIAGRAM
       33           IT       5 01JAN94       0    2000
       34           IO       5
       35           IN      15 01JAN94       0
       36           JD    3.23     0.01
                    * 6-hour distribution, pattern 1.0
       37           PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
       38           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
       39           PC   0.962   0.972   0.983   0.991     1.0
       40           IN      15 01JAN94       0
       41           JD   3.211     0.5
                    * 6-hour distribution, pattern 1.0
       42           PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
       43           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
       44           PC   0.962   0.972   0.983   0.991     1.0
       45           IN      15 01JAN94       0
       46           JD   3.188     1.0
                    * 6-hour distribution, pattern 1.4
       47           PC     0.0  0.0084   0.016   0.025  0.0334  0.0414  0.0504  0.0584  0.0664  0.0748
       48           PC   0.087  0.0994  0.1188   0.148  0.2304  0.4067  0.7778  0.8813  0.9186  0.9452
       49           PC  0.9572  0.9684  0.9798  0.9898     1.0
       50           IN      15 01JAN94       0
       51           JD   3.101     5.0
                    * 6-hour distribution, pattern 2.3
1                                          HEC-1 INPUT                                          PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 52           PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
 53           PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
 54           PC  0.9487   0.962  0.9743  0.9877     1.0
 55           IN      15 01JAN94       0
 56           JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
 57           PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
 58           PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
 59           PC  0.9471  0.9608  0.9735  0.9873     1.0
 60           IN      15 01JAN94       0
 61           JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
 62           PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
 63           PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
 64           PC  0.9434   0.958  0.9718  0.9863     1.0
 65           IN      15 01JAN94       0
 66           JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
 67           PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
 68           PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
 69           PC   0.939  0.9544  0.9697  0.9851     1.0
 70           IN      15 01JAN94       0
 71           JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
 72           PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
 73           PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
 74           PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

 75           KK      R1   BASIN
 76           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 77           KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
 78           KM   S-GRAPH TYPE=PHX MNT
 79           BA   0.284
 80           LG    0.35    0.35   4.358   0.374   8.387
 81           UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
 82           UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

 83           KK     Q1B   BASIN
 84           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 85           KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
 86           KM   S-GRAPH TYPE=PHX MNT
 87           KO       0       0     0.0       1      22
 88           BA   0.937
 89           LG    0.35    0.35    4.32   0.373  14.815
              * Q1B
 90           UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
 91           UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
 92           UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
 93           UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
 94           UI   13.74     0.0
              *
1                                          HEC-1 INPUT                                          PAGE  3

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

 95           KK   DUMMY COMBINE
 96           KM    DUMMY COMBINE FOR HEC-1 STACK
 97           HC       2
              *

 98           KK      L1   BASIN
 99           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
100           KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
101           KM   S-GRAPH TYPE=PHX MNT
102           BA   3.546
103           LG   0.271   0.318   4.363   0.351  16.279
104           UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
105           UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
106           UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
107           UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
108           UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
109           UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

110           KK  L1-L2A   ROUTE
111           RS       3    FLOW     0.0     0.0
112           RC   0.046   0.045   0.046 7078.75  0.0174     0.0
113           RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
114           RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

115           KK     L2A   BASIN
116           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
117           KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
118           KM   S-GRAPH TYPE=DES RNGLND
119           BA   0.693
120           LG    0.35   0.384   5.641   0.202     0.0
121           UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
122           UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
```

```
 123          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
 124          UI   12.61   12.61   12.61   12.61
              *

 125          KK    L2BR COMBINE
 126          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
 127          KM     THIS IS THE TOTAL FLOW TO APEX 37
 128          HC       2
              *

 129          KK  L2BR-A   ROUTE
 130          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF SITE 37 FAN
 131          KM    SLOPE = (1550 - 1420)/6900
 132          RS       3    FLOW      -1
 133          RC   0.045   0.045   0.045    6900   0.019     105
 134          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
 135          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *
1                                          HEC-1 INPUT                                                    PAGE  4

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

 136          KK  L2AL2B   ROUTE
 137          KM   PROPOSED CHANNEL
 138          KM    ROUTE FLOW FROM downstream end of active area of APEX 37
 139          KM    TO SUN VALLEY PARKWAY THRU SUBBASIN L2B
 140          KM    STRUCTURE ID(s): L3R10A
 141          KM    Slope=(1420.3 - 1238.5) / 12738.0
 142          RS       8    FLOW      -1
 143          RC   0.045   0.045   0.045 12738.00.014274   104.5
 144          RX     0.0    13.5    13.5    13.5   413.5   413.5   413.5   427.0
 145          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 146          KK     L2B   BASIN
 147          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 148          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 149          KM   S-GRAPH TYPE=DES RNGLND
 150          BA   4.077
 151          LG    0.35    0.35   4.179   0.399     0.0
 152          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 153          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 154          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 155          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 156          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 157          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 158          KK     L3R COMBINE
 159          KM    COMBINE ROUTED FLOW APEX 37 WITH RUNOFF FROM SUBBASIN L2B
 160          HC       2
              *

 161          KK    DL3R  DIVERT
 162          KM   Proposed Offline Detention Basin AT SUN VALLEY PARKWAY
 163          KM    STRUCTURE ID:DL3R
 164          KM    DIMENSIONS: L=1100ft, W=780ft, D=6ft, Sideslope (?H:1V)= 3,  Vol.= 90 ac-ft
 165          DT    DOUT
 166          DI     0.0   360.0   720.0  1080.0  1440.0  1585.0  1820.0  2520.0  2880.0  3240.0
 167          DI  3600.0     0.0
 168          DQ     0.0     0.0     0.0     0.0     0.0     0.0   235.0   935.0  1295.0  1655.0
 169          DQ  2015.0     0.0
              *

 170          KK   L2BL3   ROUTE
 171          KM   PROPOSED CHANNEL
 172          KM    ROUTE FLOW FROM SUN VALLEY PARKWAY THRU SUBBASIN L3 TO MCDOWELL ROAD
 173          KM    STRUCTURE ID(s): L10
 174          KM    Slope=(1238.5 - 1119.1) / 12870.8
 175          RS       6    FLOW      -1
 176          RC   0.045   0.045   0.045 12870.80.009275   105.0
 177          RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
 178          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *
1                                          HEC-1 INPUT                                                    PAGE  5

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

 179          KK     L2C   BASIN
 180          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 181          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 182          KM   S-GRAPH TYPE=DES RNGLND
 183          BA   1.328
 184          LG    0.35    0.35   4.189   0.422     0.0
 185          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 186          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 187          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 188          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 189          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 190          KK  L2C-2D   ROUTE
 191          RS       6    FLOW     0.0     0.0
```

```
192          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
193          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
194          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *

195          KK     L2D   BASIN
196          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
197          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
198          KM   S-GRAPH TYPE=DES RNGLND
199          BA   1.232
200          LG    0.35    0.35   3.578   0.544     0.0
201          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
202          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
203          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
204          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
205          UI   18.36     0.0
             *

206          KK    L3RB COMBINE
207          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
208          HC       2
             *

209          KK  L2D-L3   ROUTE
210          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
211          RS      39    FLOW     0.0     0.0
212          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
213          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
214          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

215          KK      L3   BASIN
216          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
217          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
218          KM   S-GRAPH TYPE=DES RNGLND
219          BA   5.852
220          LG   0.341   0.328    3.98   0.419    1.05
221          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
222          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

223          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
224          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
225          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
226          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
227          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

228          KK       L COMBINE
229          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
230          HC       3
             *
             * KK  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT
             *

231          KK      M1   BASIN
232          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
233          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
234          KM   S-GRAPH TYPE=PHX MNT
235          BA   5.686
236          LG    0.35    0.35   4.297    0.35  16.637
237          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
238          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
239          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
240          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
241          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
242          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
243          UI   54.77   54.77     0.0
             *

244          KK  M1-M2A   ROUTE
245          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF SITE 36 FAN
246          KM    SLOPE = (1540 - 1345)/9250
247          RS       5    FLOW      -1
248          RC   0.045   0.045   0.045    9250   0.021     105
249          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
250          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

251          KK   M1-M2   ROUTE
252          KM   PROPOSED CHANNEL
253          KM    ROUTE FLOW FROM APEX 36 THRU SUBBASIN M2 TO FRS NO. 1
254          KM    STRUCTURE ID(s): M2-A-20
255          KM    Slope=(1344.3 - 1083.2) / 22366.9
256          RS      16    FLOW      -1
257          RC   0.045   0.045   0.045 22366.90.011674   104.5
258          RX     0.0    13.5    13.5    13.5   413.5   413.5   413.5   427.0
259          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

260          KK      M2   BASIN
261          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
262          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
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 263          KM   S-GRAPH TYPE=DES RNGLND
 264          BA   7.436
 265          LG    0.35     0.35    3.959    0.445    0.291
1                                          HEC-1 INPUT                                                          PAGE  7

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

 266          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 267          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 268          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
 269          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 270          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 271          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 272          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 273          UI   60.94   60.94   60.94   60.94     0.0
              *

 274          KK       M COMBINE
 275          KM    COMBINE ROUTED FLOW FROM APEX 36 WITH RUNOFF FROM M2
 276          HC       2
              *

 277          KK      N1   BASIN
 278          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 279          KM   L=2.79     Lca=1.44     S=340.38     Kn=0.050     LAG=39.7
 280          KM   S-GRAPH TYPE=PHX MNT
 281          BA   1.524
 282          LG    0.35     0.35   4.075   0.419    8.38
 283          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 284          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 285          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 286          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 287          KK  N1-N1A   ROUTE
 288          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF FAN 7
 289          KM    SLOPE = (1385 - 1320)/4600
 290          RS       3    FLOW      -1
 291          RC   0.045   0.045   0.045    4600   0.014     105
 292          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
 293          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 294          KK  N1-P1A   ROUTE
 295          KM   PROPOSED CHANNEL
 296          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
 297          KM    STRUCTURE ID(s): N120
 298          KM    Slope=(1318.6 - 1276.4) / 3160.5
 299          RS       2    FLOW      -1
 300          RC   0.045   0.045   0.045  3160.5 0.01335   104.5
 301          RX     0.0    13.5    13.5    13.5   353.5   353.5   353.5   367.0
 302          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 303          KK     N2A   BASIN
 304          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
 305          KM   (ASSUME SAME AS N1 FOR NOW)
 306          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 307          KM   L=2.79     Lca=1.44     S=340.38     Kn=0.050     LAG=39.7
 308          KM   S-GRAPH TYPE=PHX MNT
 309          BA   1.524
 310          LG    0.35     0.35   4.075   0.419    8.38
1                                          HEC-1 INPUT                                                          PAGE  8

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

 311          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 312          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 313          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 314          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 315          KK   CN2AR COMBINE
 316          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
 317          HC       2
              *

 318          KK     P1A   BASIN
 319          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 320          KM   L=2.28     Lca=1.41     S=461.40     Kn=0.055     LAG=37.8
 321          KM   S-GRAPH TYPE=PHX MNT
 322          BA     0.5
 323          LG    0.35     0.35   3.987   0.405  16.364
 324          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
 325          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
 326          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
 327          UI    8.49    8.49    8.49    8.49    8.49    8.49
              *

 328          KK  P1A-A2   ROUTE
 329          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF FAN 8
 330          KM    SLOPE = (1310 - 1275)/1500
 331          RS       1    FLOW      -1
 332          RC   0.045   0.045   0.045    1500   0.023     105
 333          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
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 334          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 335          KK    CN2A COMBINE
 336          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
 337          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
 338          HC       2
              *

 339          KK  P1A-1B   ROUTE
 340          KM   PROPOSED CHANNEL
 341          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
 342          KM    STRUCTURE ID(s): N130, N140
 343          KM    Slope=(1276.4 - 1092.0) / 16521.3
 344          RS      11    FLOW      -1
 345          RC   0.045   0.045   0.045 16521.30.011161   105.0
 346          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
 347          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 348          KK     P1B   BASIN
 349          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 350          KM   L=4.39     Lca=2.32     S=70.84     Kn=0.055     LAG=85.3
 351          KM   S-GRAPH TYPE=PHX MNT
 352          BA   1.937
 353          LG    0.35    0.35    4.23   0.393   4.667
1                                          HEC-1 INPUT                                                    PAGE  9

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

 354          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
 355          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
 356          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
 357          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
 358          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
 359          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
 360          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
 361          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
              *

 362          KK      PR COMBINE
 363          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
 364          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
 365          HC       2
              *

 366          KK     Q1A   BASIN
 367          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 368          KM   L=3.13     Lca=1.52     S=256.86     Kn=0.055     LAG=49.3
 369          KM   S-GRAPH TYPE=PHX MNT
 370          BA   1.297
 371          LG    0.35    0.35   4.127     0.4    11.2
 372          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
 373          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
 374          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
 375          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
 376          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
              *

 377          KK   Q1A-P   ROUTE
 378          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
 379          KM    Slope=(1190.4 - 1133.0) / 5122.9
 380          RS       7    FLOW      -1
 381          RC   0.045   0.045   0.045  5122.90.011207   104.5
 382          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
 383          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 384          KK       P COMBINE
 385          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
 386          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
 387          HC       2
              *
              *  KK  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
              *

 388          KK     N2B  BASIN
 389          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
 390          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
 391          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 392          KM   L=5.64     Lca=3.27     S=170.14     Kn=0.055     LAG=90.7
 393          KM   S-GRAPH TYPE=PHX MNT
 394          BA   3.325
 395          LG    0.35    0.35   4.117   0.405    2.67
 396          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
1                                          HEC-1 INPUT                                                    PAGE 10

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

 397          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 398          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 399          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 400          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 401          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 402          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
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403          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
404          UI   23.58   23.58   23.58   23.58   23.58
             *

405          KK      01   BASIN
406          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
407          KM   L=5.20     Lca=2.79     S=64.07     Kn=0.055     LAG=99.9
408          KM   S-GRAPH TYPE=PHX MNT
409          BA   3.088
410          LG    0.35    0.35   4.191   0.393   2.105
411          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
412          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
413          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
414          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
415          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
416          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
417          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
418          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
419          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
420          UI   19.93   19.93   19.93     0.0
             *

421          KK      Z1   BASIN
422          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
423          KM   L=1.70     Lca=0.66     S=47.00     Kn=0.055     LAG=39.1
424          KM   S-GRAPH TYPE=DES RNGLND
425          BA   0.664
426          LG   0.321   0.292   4.004    0.43   2.909
427          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
428          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
429          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
430          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    75          R1
                 .
                 .
    83           .          Q1B
                 .            .
                 .            .
    95       DUMMY............
                 .
                 .
    98           .           L1
                 .            V
                 .            V
   110           .       L1-L2A
                 .            .
                 .            .
   115           .            .          L2A
                 .            .            .
                 .            .            .
   125           .        L2BR............
                 .            V
                 .            V
   129           .       L2BR-A
                 .            V
                 .            V
   136           .       L2AL2B
                 .            .
                 .            .
   146           .            .          L2B
                 .            .            .
                 .            .            .
   158           .         L3R............
                 .            .
                 .            .
   165           .            .-------->    DOUT
   161           .         DL3R
                 .            V
                 .            V
   170           .        L2BL3
                 .            .
                 .            .
   179           .            .          L2C
                 .            .            V
                 .            .            V
   190           .            .       L2C-2D
                 .            .            .
                 .            .            .
   195           .            .            .          L2D
                 .            .            .            .
                 .            .            .            .
   206           .            .         L3RB............
                 .            .            V
                 .            .            V
   209           .            .       L2D-L3
                 .            .            .
                 .            .            .
   215           .            .            .           L3
```

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                .          .          .          .
                .          .          .          .
  228           .          L.......................
                .          .
                .          .
  231           .          .          M1
                .          .           V
                .          .           V
  244           .          .      M1-M2A
                .          .           V
                .          .           V
  251           .          .       M1-M2
                .          .          .
                .          .          .
  260           .          .          .          M2
                .          .          .           .
                .          .          .           .
  274           .          .          M...........
                .          .          .
                .          .          .
  277           .          .          .          N1
                .          .          .           V
                .          .          .           V
  287           .          .          .      N1-N1A
                .          .          .           V
                .          .          .           V
  294           .          .          .      N1-P1A
                .          .          .           .
                .          .          .           .
  303           .          .          .           .          N2A
                .          .          .           .           .
                .          .          .           .           .
  315           .          .          .       CN2AR...........
                .          .          .           .
                .          .          .           .
  318           .          .          .           .          P1A
                .          .          .           .           V
                .          .          .           .           V
  328           .          .          .           .       P1A-A2
                .          .          .           .           .
                .          .          .           .           .
  335           .          .          .        CN2A...........
                .          .          .           V
                .          .          .           V
  339           .          .          .      P1A-1B
                .          .          .           .
                .          .          .           .
  348           .          .          .           .          P1B
                .          .          .           .           .
                .          .          .           .           .
  362           .          .          .          PR...........
                .          .          .           .
                .          .          .           .
  366           .          .          .           .          Q1A
                .          .          .           .           V
                .          .          .           .           V
  377           .          .          .           .       Q1A-P
                .          .          .           .           .
                .          .          .           .           .
  384           .          .          .           P...........
                .          .          .           .
                .          .          .           .
  388           .          .          .           .          N2B
                .          .          .           .           .
                .          .          .           .           .
  405           .          .          .           .           .          O1
                .          .          .           .           .           .
                .          .          .           .           .           .
  421           .          .          .           .           .           .          Z1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   19APR06  TIME  16:56:58  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*   U.S. ARMY CORPS OF ENGINEERS       *
*   HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET            *
*      DAVIS, CALIFORNIA 95616         *
*          (916) 756-1104              *
*                                      *
****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE A
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The main design objective of the A Alternative is to allow the natural geomorphic processes to occur within a designated active area downstream of the apex. The objective then is to control the flow path downstream of the region of uncertainty. The flows will be captured in the up-fan area by excavated collector channels

```
                    and/or diversion levees.  Once collected, the flows are routed
                    downstream using leveed corridors similar to the B alternatives.


                     JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
                    JANUARY 2006

                    MODEL BASED UPON:

                    Buckeye/Sun Valley ADMS - May 2005
                    Michael Baker Jr., Inc. - Modeler: Jacob Lesue
                    100-year 6-hour
                    Existing Conditions
                    Area 3 - Sub-basins L-R (Aluvial Fan updates)
                    Rainfall Loss Method - Green & Ampt
                    Unit Hydrograph Method - FCDMC S-Graph
                    Channel Routing Method - Normal Depth
                    Land Use - FCDMC GIS Data: mag_landuse (2000)
                    Soil Data - USDA SCS Soil Survey (1972 & 1981)
                    Units - L(mi)    Lca(mi)    S(ft/mi)    LAG(min)


34 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      1JAN94  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      7JAN94  ENDING DATE
                    NDTIME        2235  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

36 JD          INDEX STORM NO. 1
                      STRM        3.23  PRECIPITATION DEPTH
                      TRDA         .01  TRANSPOSITION DRAINAGE AREA

37 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

41 JD          INDEX STORM NO. 2
                      STRM        3.21  PRECIPITATION DEPTH
                      TRDA         .50  TRANSPOSITION DRAINAGE AREA

42 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

46 JD          INDEX STORM NO. 3
                      STRM        3.19  PRECIPITATION DEPTH
                      TRDA        1.00  TRANSPOSITION DRAINAGE AREA

47 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       .06       .06       .06       .12       .12       .12       .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. 4
                      STRM        3.10  PRECIPITATION DEPTH
                      TRDA        5.00  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      .06      .06      .06      .08      .08      .08      .05      .05
                 .05      .02      .02      .02      .01      .01      .01      .01      .01      .01
                 .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                 .00      .00

56 JD        INDEX STORM NO. 5
                STRM        3.04  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

57 PI          PRECIPITATION PATTERN
                 .00      .00      .00      .00      .00      .00      .00      .00      .00      .01
                 .01      .01      .00      .00      .00      .00      .00      .00      .00      .00
                 .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                 .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
                 .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                 .00      .00

61 JD        INDEX STORM NO. 6
                STRM        2.94  PRECIPITATION DEPTH
                TRDA       20.00  TRANSPOSITION DRAINAGE AREA

62 PI          PRECIPITATION PATTERN
                 .01      .01      .01      .00      .00      .00      .00      .00      .00      .01
                 .01      .01      .01      .01      .01      .00      .00      .00      .00      .00
                 .00      .01      .01      .01      .00      .00      .00      .01      .01      .01
                 .01      .01      .01      .01      .01      .01      .02      .02      .02      .03
                 .03      .03      .05      .05      .05      .06      .06      .06      .04      .04
                 .04      .02      .02      .02      .01      .01      .01      .01      .01      .01
                 .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                 .00      .00

66 JD        INDEX STORM NO. 7
                STRM        2.88  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

67 PI          PRECIPITATION PATTERN
                 .01      .01      .01      .00      .00      .00      .00      .00      .00      .01
                 .01      .01      .01      .01      .01      .00      .00      .00      .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      .06      .06      .06      .04      .04
                 .04      .02      .02      .02      .02      .02      .02      .01      .01      .01
                 .01      .01      .01      .01      .01      .01      .01      .01      .01      .00
                 .00      .00

71 JD        INDEX STORM NO. 8
                STRM        2.81  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

72 PI          PRECIPITATION PATTERN
                 .01      .01      .01      .00      .00      .00      .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      .02      .02      .02      .03
                 .03      .03      .05      .05      .05      .06      .06      .06      .04      .04
                 .04      .02      .02      .02      .02      .02      .02      .01      .01      .01
                 .01      .01      .01      .01      .01      .01      .01      .01      .01      .01
                 .01      .01

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
83 KK     *     Q1B    *        BASIN
          *            *
          **************

87 KO        OUTPUT CONTROL VARIABLES
                IPRNT           5  PRINT CONTROL
                IPLOT           0  PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH           1  PUNCH COMPUTED HYDROGRAPH
                 IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT        .083  TIME INTERVAL IN HOURS

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	R1	506.	4.25	47.	12.	4.	.28
+	HYDROGRAPH AT	Q1B	851.	4.50	155.	39.	13.	.94
+	2 COMBINED AT	DUMMY	1020.	4.50	192.	48.	16.	1.22
+	HYDROGRAPH AT	L1	2128.	4.75	543.	139.	46.	3.55
+	ROUTED TO	L1-L2A	2066.	4.92	543.	139.	46.	3.55
+	HYDROGRAPH AT	L2A	692.	4.58	113.	28.	9.	.69
+	2 COMBINED AT	L2BR	2391.	4.92	623.	159.	53.	4.24
+	ROUTED TO	L2BR-A	2316.	5.08	621.	159.	53.	4.24
+	ROUTED TO	L2AL2B	2101.	5.67	610.	159.	53.	4.24
+	HYDROGRAPH AT	L2B	1532.	5.08	418.	104.	35.	4.08
+	2 COMBINED AT	L3R	2718.	5.67	899.	236.	79.	8.32
+	DIVERSION TO	DOUT	1133.	5.67	113.	28.	9.	8.32
+	HYDROGRAPH AT	DL3R	1585.	5.42	786.	208.	69.	8.32
+	ROUTED TO	L2BL3	1579.	6.58	752.	208.	69.	8.32
+	HYDROGRAPH AT	L2C	754.	4.83	161.	40.	13.	1.33
+	ROUTED TO	L2C-2D	712.	5.25	161.	40.	13.	1.33
+	HYDROGRAPH AT	L2D	706.	4.75	136.	34.	11.	1.23
+	2 COMBINED AT	L3RB	1043.	5.00	260.	65.	22.	2.56
+	ROUTED TO	L2D-L3	650.	8.33	258.	65.	22.	2.56
+	HYDROGRAPH AT	L3	1832.	5.25	581.	146.	49.	5.85
+	3 COMBINED AT	L	2233.	6.25	1253.	347.	116.	16.73
+	HYDROGRAPH AT	M1	2809.	4.83	790.	203.	68.	5.69
+	ROUTED TO	M1-M2A	2736.	5.08	787.	203.	68.	5.69
+	ROUTED TO	M1-M2	2367.	6.17	749.	203.	68.	5.69
+	HYDROGRAPH AT	M2	1849.	5.42	633.	159.	53.	7.44
+	2 COMBINED AT	M	2935.	6.17	1164.	318.	106.	13.12
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52
+	ROUTED TO	N1-N1A	1156.	4.67	209.	53.	18.	1.52
+	ROUTED TO	N1-P1A	1049.	4.92	209.	53.	18.	1.52
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52
+	2 COMBINED AT	CN2AR	1586.	4.83	376.	95.	32.	3.05
	HYDROGRAPH AT							

```
+                          P1A      575.   4.42        89.       22.        7.       .50

        ROUTED TO
+                       P1A-A2      553.   4.50        89.       22.        7.       .50

        2 COMBINED AT
+                         CN2A     1822.   4.83       437.      111.       37.      3.55

        ROUTED TO
+                       P1A-1B     1635.   5.42       431.      111.       37.      3.55

        HYDROGRAPH AT
+                          P1B      852.   5.08       244.       62.       21.      1.94

        2 COMBINED AT
+                           PR     2007.   5.42       597.      156.       52.      5.49

        HYDROGRAPH AT
+                          Q1A      990.   4.58       193.       49.       16.      1.30

        ROUTED TO
+                        Q1A-P      971.   4.75       193.       49.       16.      1.30

        2 COMBINED AT
+                            P     2255.   5.42       726.      189.       63.      6.78

        HYDROGRAPH AT
+                          N2B     1193.   5.17       366.       93.       31.      3.33

        HYDROGRAPH AT
+                           O1     1057.   5.33       343.       88.       29.      3.09

        HYDROGRAPH AT
+                           Z1      694.   4.50       100.       25.        8.       .66

*** NORMAL END OF HEC-1 ***
```

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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   19APR06  TIME  16:57:00  *                    *          (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
        2           ID     - ALTERNATIVE A
        3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
        4           ID
        5           ID  Alternative Description
        6           ID  The main design objective of the A Alternative is to allow the
        7           ID  natural geomorphic processes to occur within a designated active
        8           ID  area downstream of the apex.  The objective then is to control
        9           ID  the flow path downstream of the region of uncertainty.  The flows
       10           ID  will be captured in the up-fan area by excavated collector channels
       11           ID  and/or diversion levees.  Once collected, the flows are routed
       12           ID  downstream using leveed corridors similar to the B alternatives.
       13           ID
       14           ID
       15           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
       16           ID   JANUARY 2006
       17           ID
       18           ID   MODEL BASED UPON:
       19           ID
       20           ID  Buckeye/Sun Valley ADMS - May 2005
       21           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
       22           ID  100-year 24-hour
       23           ID  Existing Conditions
       24           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
       25           ID  Rainfall Loss Method - Green & Ampt
       26           ID  Unit Hydrograph Method - FCDMC S-Graph
       27           ID  Channel Routing Method - Normal Depth
       28           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
       29           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
       30           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
       31           ID
       32           ID
                    *DIAGRAM
       33           IT       5 01JAN94       0    2000
       34           IO       5
       35           IN      15 01JAN94       0
       36           JD    4.16    0.01
                    * 24-hour distribution
       37           PC     0.0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
       38           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
       39           PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
       40           PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
       41           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       42           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       43           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       44           PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
       45           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
       46           PC   0.983   0.986   0.989   0.992   0.995   0.998     1.0
       47           JD   3.952    10.0
       48           JD   3.819    20.0
       49           JD    3.69    40.0
       50           JD   3.565    80.0
       51           JD   3.499   120.0
                    *
1                                          HEC-1 INPUT                                          PAGE  2

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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52          KK      R1   BASIN
53          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
54          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
55          KM   S-GRAPH TYPE=PHX MNT
56          BA   0.284
57          LG    0.35    0.35   4.358   0.374   8.387
58          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
59          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
            *

60          KK     Q1B   BASIN
61          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
62          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
63          KM   S-GRAPH TYPE=PHX MNT
64          KO       0       0     0.0       1      22
65          BA   0.937
66          LG    0.35    0.35    4.32   0.373  14.815
            * Q1B
67          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
68          UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
69          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
70          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
71          UI   13.74     0.0
            *

72          KK   DUMMY COMBINE
73          KM    DUMMY COMBINE FOR HEC-1 STACK
74          HC       2
            *

75          KK      L1   BASIN
76          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
77          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
78          KM   S-GRAPH TYPE=PHX MNT
79          BA   3.546
80          LG   0.271   0.318   4.363   0.351  16.279
81          UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
82          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
83          UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
84          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
85          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
86          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
            *

87          KK  L1-L2A   ROUTE
88          RS       3    FLOW     0.0     0.0
89          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
90          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
91          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
            *
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1 HEC-1 INPUT PAGE 3

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

92          KK     L2A   BASIN
93          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
94          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
95          KM   S-GRAPH TYPE=DES RNGLND
96          BA   0.693
97          LG    0.35   0.384   5.641   0.202     0.0
98          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
99          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
100         UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
101         UI   12.61   12.61   12.61   12.61
            *

102         KK    L2BR COMBINE
103         KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
104         KM     THIS IS THE TOTAL FLOW TO APEX 37
105         HC       2
            *

106         KK  L2BR-A   ROUTE
107         KM    ROUTE FLOW ACROSS ACTIVE PORTION OF SITE 37 FAN
108         KM    SLOPE = (1550 - 1420)/6900
109         RS       3    FLOW      -1
110         RC   0.045   0.045   0.045    6900   0.019     105
111         RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
112         RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
            *

113         KK  L2AL2B   ROUTE
114         KM   PROPOSED CHANNEL
115         KM    ROUTE FLOW FROM downstream end of active area of APEX 37
116         KM    TO SUN VALLEY PARKWAY THRU SUBBASIN L2B
117         KM    STRUCTURE ID(s): L3R10A
118         KM    Slope=(1420.3 - 1238.5) / 12738.0
119         RS       8    FLOW      -1
120         RC   0.045   0.045   0.045 12738.00.014274   104.5
121         RX     0.0    13.5    13.5    13.5   413.5   413.5   413.5   427.0
122         RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
            *
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 123          KK     L2B   BASIN
 124          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 125          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 126          KM   S-GRAPH TYPE=DES RNGLND
 127          BA   4.077
 128          LG    0.35     0.35    4.179    0.399      0.0
 129          UI     0.0   175.97   175.97   175.97   311.91   535.45   724.28    902.8  1071.35  1224.63
 130          UI  1376.8  1511.61  1580.95  1658.53  1686.39  1686.39  1632.48  1568.59  1460.56  1278.33
 131          UI  1172.5  1030.99   927.32   829.82   742.49    663.7   594.61   529.93   481.83    405.6
 132          UI   377.6   331.75   310.22   269.82   269.19   186.51   186.51   186.51    145.4   120.46
 133          UI  120.46   120.46   120.46     90.9    42.83    42.83    42.83    42.83    42.83    42.83
 134          UI   42.83    42.83    42.83    42.83    42.83    42.83    42.83    42.83      0.0
              *
1                                                  HEC-1 INPUT                                                    PAGE  4

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


 135          KK     L3R COMBINE
 136          KM    COMBINE ROUTED FLOW APEX 37 WITH RUNOFF FROM SUBBASIN L2B
 137          HC       2
              *

 138          KK    DL3R  DIVERT
 139          KM   Proposed Offline Detention Basin AT SUN VALLEY PARKWAY
 140          KM    STRUCTURE ID:DL3R
 141          KM    DIMENSIONS: L=1100ft, W=780ft, D=6ft, Sideslope (?H:1V)= 3,  Vol.= 90 ac-ft
 142          DT    DOUT
 143          DI     0.0    360.0    720.0   1080.0   1440.0   1585.0   1820.0   2520.0   2880.0   3240.0
 144          DI  3600.0      0.0
 145          DQ     0.0      0.0      0.0      0.0      0.0      0.0    235.0    935.0   1295.0   1655.0
 146          DQ  2015.0      0.0
              *

 147          KK   L2BL3   ROUTE
 148          KM   PROPOSED CHANNEL
 149          KM    ROUTE FLOW FROM SUN VALLEY PARKWAY THRU SUBBASIN L3 TO MCDOWELL ROAD
 150          KM    STRUCTURE ID(s): L10
 151          KM    Slope=(1238.5 - 1119.1) / 12870.8
 152          RS       6     FLOW       -1
 153          RC   0.045    0.045    0.045 12870.80.009275    105.0
 154          RX     0.0     15.0     15.0     15.0    415.0    415.0    415.0    430.0
 155          RY   105.0    100.0    100.0    100.0    100.0    100.0    100.0    105.0
              *

 156          KK     L2C   BASIN
 157          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 158          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 159          KM   S-GRAPH TYPE=DES RNGLND
 160          BA   1.328
 161          LG    0.35     0.35    4.189    0.422      0.0
 162          UI     0.0    73.31    73.31    99.98   227.13   318.43    414.0   500.47    577.1   643.23
 163          UI  678.82   702.58   699.63   666.25   621.66   533.29   468.31   402.86   351.31   303.79
 164          UI   266.7   226.83   200.74   164.03   144.98   131.86   112.41    97.97     77.7     77.7
 165          UI   56.55    50.18    50.18    50.18    28.53    17.84    17.84    17.84    17.84    17.84
 166          UI   17.84    17.84    17.84    17.84    17.84      0.0
              *

 167          KK  L2C-2D   ROUTE
 168          RS       6     FLOW      0.0      0.0
 169          RC   0.046    0.045    0.046 9752.35   0.0122      0.0
 170          RX     0.0     80.0    165.0    200.0    215.0    255.0    340.0    420.0
 171          RY    19.0     17.0     14.0     10.0     10.0     14.0     18.0     22.0
              *

 172          KK     L2D   BASIN
 173          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 174          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 175          KM   S-GRAPH TYPE=DES RNGLND
 176          BA   1.232
 177          LG    0.35     0.35    3.578    0.544      0.0
 178          UI     0.0    75.42    75.42   141.88   262.35   378.71   482.07   569.62   651.08    696.0
1                                                  HEC-1 INPUT                                                    PAGE  5

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

 179          UI  722.74   714.79   677.77   607.49   518.22   439.07    376.3   322.28   277.17   232.67
 180          UI  200.55    167.8   142.18    124.1   114.53    79.93    79.93     61.7    51.62    51.62
 181          UI   51.62    20.09    18.36    18.36    18.36    18.36    18.36    18.36    18.36    18.36
 182          UI   18.36      0.0
              *

 183          KK    L3RB COMBINE
 184          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 185          HC       2
              *

 186          KK  L2D-L3   ROUTE
 187          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 188          RS      39     FLOW      0.0      0.0
 189          RC    0.05     0.04     0.06 27374.0  0.0077      0.0
 190          RX     0.0   1093.0   1210.0   1215.0   1225.0   1232.0   1372.0   2000.0
 191          RY    18.0     11.8     11.7     10.0     10.0     11.7     11.8     18.0
              *
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192          KK      L3   BASIN
193          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
194          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
195          KM   S-GRAPH TYPE=DES RNGLND
196          BA   5.852
197          LG   0.341   0.328    3.98   0.419    1.05
198          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
199          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
200          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
201          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
202          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
203          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
204          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

205          KK       L COMBINE
206          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
207          HC       3
             *
             * KK  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT
             *

208          KK      M1   BASIN
209          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
210          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
211          KM   S-GRAPH TYPE=PHX MNT
212          BA   5.686
213          LG    0.35    0.35   4.297    0.35  16.637
214          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
215          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
216          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
217          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
218          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
219          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
220          UI   54.77   54.77     0.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

221          KK  M1-M2A   ROUTE
222          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF SITE 36 FAN
223          KM    SLOPE = (1540 - 1345)/9250
224          RS       5    FLOW      -1
225          RC   0.045   0.045   0.045    9250   0.021     105
226          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
227          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

228          KK   M1-M2   ROUTE
229          KM   PROPOSED CHANNEL
230          KM    ROUTE FLOW FROM APEX 36 THRU SUBBASIN M2 TO FRS NO. 1
231          KM    STRUCTURE ID(s): M2-A-20
232          KM    Slope=(1344.3 - 1083.2) / 22366.9
233          RS      16    FLOW      -1
234          RC   0.045   0.045   0.045 22366.90.011674   104.5
235          RX     0.0    13.5    13.5    13.5   413.5   413.5   413.5   427.0
236          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

237          KK      M2   BASIN
238          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
239          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
240          KM   S-GRAPH TYPE=DES RNGLND
241          BA   7.436
242          LG    0.35    0.35   3.959   0.445   0.291
243          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
244          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
245          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
246          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
247          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
248          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
249          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
250          UI   60.94   60.94   60.94   60.94     0.0
             *

251          KK       M COMBINE
252          KM    COMBINE ROUTED FLOW FROM APEX 36 WITH RUNOFF FROM M2
253          HC       2
             *

254          KK      N1   BASIN
255          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
256          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
257          KM   S-GRAPH TYPE=PHX MNT
258          BA   1.524
259          LG    0.35    0.35   4.075   0.419    8.38
260          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
261          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
262          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
263          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 264          KK  N1-N1A   ROUTE
 265          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF FAN 7
 266          KM    SLOPE = (1385 - 1320)/4600
 267          RS       3    FLOW      -1
 268          RC   0.045   0.045   0.045    4600   0.014     105
 269          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
 270          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 271          KK  N1-P1A   ROUTE
 272          KM   PROPOSED CHANNEL
 273          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
 274          KM    STRUCTURE ID(s): N120
 275          KM    Slope=(1318.6 - 1276.4) / 3160.5
 276          RS       2    FLOW      -1
 277          RC   0.045   0.045   0.045  3160.5 0.01335   104.5
 278          RX     0.0    13.5    13.5    13.5   353.5   353.5   353.5   367.0
 279          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 280          KK     N2A   BASIN
 281          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
 282          KM   (ASSUME SAME AS N1 FOR NOW)
 283          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 284          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 285          KM   S-GRAPH TYPE=PHX MNT
 286          BA   1.524
 287          LG    0.35    0.35   4.075   0.419    8.38
 288          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 289          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 290          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 291          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 292          KK   CN2AR COMBINE
 293          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
 294          HC       2
              *

 295          KK     P1A   BASIN
 296          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 297          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
 298          KM   S-GRAPH TYPE=PHX MNT
 299          BA     0.5
 300          LG    0.35    0.35   3.987   0.405  16.364
 301          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
 302          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
 303          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
 304          UI    8.49    8.49    8.49    8.49    8.49    8.49
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 305          KK  P1A-A2   ROUTE
 306          KM    ROUTE FLOW ACROSS ACTIVE PORTION OF FAN 8
 307          KM    SLOPE = (1310 - 1275)/1500
 308          RS       1    FLOW      -1
 309          RC   0.045   0.045   0.045    1500   0.023     105
 310          RX     0.0    15.0    15.0    15.0   265.0   265.0   265.0   280.0
 311          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 312          KK    CN2A COMBINE
 313          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
 314          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
 315          HC       2
              *

 316          KK  P1A-1B   ROUTE
 317          KM   PROPOSED CHANNEL
 318          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
 319          KM    STRUCTURE ID(s): N130, N140
 320          KM    Slope=(1276.4 - 1092.0) / 16521.3
 321          RS      11    FLOW      -1
 322          RC   0.045   0.045   0.045 16521.30.011161   105.0
 323          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
 324          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 325          KK     P1B   BASIN
 326          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 327          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
 328          KM   S-GRAPH TYPE=PHX MNT
 329          BA   1.937
 330          LG    0.35    0.35   4.23   0.393   4.667
 331          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
 332          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
 333          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
 334          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
```

```
335          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
336          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
337          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
338          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

339          KK      PR COMBINE
340          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
341          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
342          HC       2
             *

343          KK     Q1A   BASIN
344          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
345          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
346          KM   S-GRAPH TYPE=PHX MNT
347          BA   1.297
348          LG    0.35    0.35   4.127     0.4    11.2
1                                          HEC-1 INPUT                                                    PAGE  9

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

349          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
350          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
351          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
352          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
353          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *

354          KK   Q1A-P   ROUTE
355          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
356          KM    Slope=(1190.4 - 1133.0) / 5122.9
357          RS       7    FLOW      -1
358          RC   0.045   0.045   0.045  5122.90.011207   104.5
359          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
360          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

361          KK       P COMBINE
362          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
363          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
364          HC       2
             *
             *  KK  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
             *

365          KK     N2B  BASIN
366          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
367          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
368          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
369          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
370          KM   S-GRAPH TYPE=PHX MNT
371          BA   3.325
372          LG    0.35    0.35   4.117   0.405    2.67
373          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
374          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
375          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
376          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
377          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
378          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
379          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
380          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
381          UI   23.58   23.58   23.58   23.58   23.58
             *

382          KK      O1   BASIN
383          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
384          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
385          KM   S-GRAPH TYPE=PHX MNT
386          BA   3.088
387          LG    0.35    0.35   4.191   0.393   2.105
388          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
389          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
390          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
391          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
392          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
393          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
1                                          HEC-1 INPUT                                                    PAGE 10

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

394          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
395          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
396          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
397          UI   19.93   19.93   19.93     0.0
             *

398          KK      Z1   BASIN
399          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
400          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
401          KM   S-GRAPH TYPE=DES RNGLND
402          BA   0.664
403          LG   0.321   0.292   4.004    0.43   2.909
404          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
405          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
```

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          406          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
          407          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    52          R1
                 .
                 .
    60           .         Q1B
                 .           .
                 .           .
    72       DUMMY...........
                 .
                 .
    75           .          L1
                 .           V
                 .           V
    87           .      L1-L2A
                 .           .
                 .           .
    92           .           .         L2A
                 .           .           .
                 .           .           .
   102           .        L2BR...........
                 .           V
                 .           V
   106           .      L2BR-A
                 .           V
                 .           V
   113           .      L2AL2B
                 .           .
                 .           .
   123           .           .         L2B
                 .           .           .
                 .           .           .
   135           .         L3R...........
                 .           .
                 .           .
   142           .           .-------->    DOUT
   138           .        DL3R
                 .           V
                 .           V
   147           .       L2BL3
                 .           .
                 .           .
   156           .           .         L2C
                 .           .           V
                 .           .           V
   167           .           .      L2C-2D
                 .           .           .
                 .           .           .
   172           .           .           .         L2D
                 .           .           .           .
                 .           .           .           .
   183           .           .        L3RB...........
                 .           .           V
                 .           .           V
   186           .           .      L2D-L3
                 .           .           .
                 .           .           .
   192           .           .           .          L3
                 .           .           .           .
                 .           .           .           .
   205           .           L........................
                 .           .
                 .           .
   208           .           .          M1
                 .           .           V
                 .           .           V
   221           .           .      M1-M2A
                 .           .           V
                 .           .           V
   228           .           .       M1-M2
                 .           .           .
                 .           .           .
   237           .           .           .          M2
                 .           .           .           .
                 .           .           .           .
   251           .           .           M............
                 .           .           .
                 .           .           .
   254           .           .           .          N1
                 .           .           .           V
                 .           .           .           V
   264           .           .           .      N1-N1A
                 .           .           .           V
                 .           .           .           V
   271           .           .           .      N1-P1A
                 .           .           .           .
                 .           .           .           .
   280           .           .           .           .         N2A
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  292           .          .          .     CN2AR...........
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                .          .          .          .
  295           .          .          .          .        P1A
                .          .          .          .          V
                .          .          .          .          V
  305           .          .          .          .     P1A-A2
                .          .          .          .          .
                .          .          .          .          .
  312           .          .          .     CN2A...........
                .          .          .        V
                .          .          .        V
  316           .          .          .   P1A-1B
                .          .          .          .
                .          .          .          .
  325           .          .          .          .        P1B
                .          .          .          .          .
                .          .          .          .          .
  339           .          .          .       PR...........
                .          .          .          .
                .          .          .          .
  343           .          .          .          .        Q1A
                .          .          .          .          V
                .          .          .          .          V
  354           .          .          .          .     Q1A-P
                .          .          .          .          .
                .          .          .          .          .
  361           .          .          .          P...........
                .          .          .          .
                .          .          .          .
  365           .          .          .          .        N2B
                .          .          .          .          .
                .          .          .          .          .
  382           .          .          .          .          .          O1
                .          .          .          .          .           .
                .          .          .          .          .           .
  398           .          .          .          .          .           .          Z1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998               *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   19APR06  TIME  16:57:00   *
 *                                       *
 *****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE A
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The main design objective of the A Alternative is to allow the natural geomorphic processes to occur within a designated active area downstream of the apex. The objective then is to control the flow path downstream of the region of uncertainty. The flows will be captured in the up-fan area by excavated collector channels and/or diversion levees. Once collected, the flows are routed downstream using leveed corridors similar to the B alternatives.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 24-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi) Lca(mi) S(ft/mi) LAG(min)

```
  34 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      1JAN94  STARTING DATE
                    ITIME        0000  STARTING TIME
                       NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      7JAN94  ENDING DATE
                   NDTIME        2235  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

 36 JD           INDEX STORM NO. 1
                       STRM       4.16  PRECIPITATION DEPTH
                       TRDA        .01  TRANSPOSITION DRAINAGE AREA

 37 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       .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       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .00       .00       .00       .00       .00       .00       .00       .00

 47 JD           INDEX STORM NO. 2
                       STRM       3.95  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
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                    .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

 48 JD           INDEX STORM NO. 3
                       STRM       3.82  PRECIPITATION DEPTH
                       TRDA      20.00  TRANSPOSITION DRAINAGE AREA

  0 PI             PRECIPITATION PATTERN
                    .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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.00   .00   .00   .00   .00   .00   .00   .00
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49 JD        INDEX STORM NO. 4
                STRM        3.69  PRECIPITATION DEPTH
                TRDA       40.00  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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50 JD        INDEX STORM NO. 5
                STRM        3.57  PRECIPITATION DEPTH
                TRDA       80.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
.00   .00   .00   .00   .00   .00   .00   .00   .00   .00
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.03   .09   .09   .09   .01   .01   .01   .01   .01   .01
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 51 JD          INDEX STORM NO. 6
                     STRM        3.50  PRECIPITATION DEPTH
                     TRDA      120.00  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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                    .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 60 KK      *     Q1B    *        BASIN
            *            *
            **************

 64 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           1  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT        .083  TIME INTERVAL IN HOURS

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
+                            R1       387.   12.25          37.         10.          3.        .28

          HYDROGRAPH AT
+                           Q1B       740.   12.50         134.         38.         13.        .94

          2 COMBINED AT
+                          DUMMY      902.   12.50         170.         48.         16.       1.22

          HYDROGRAPH AT
+                            L1      2267.   12.75         527.        150.         50.       3.55

          ROUTED TO
+                        L1-L2A      2154.   12.92         527.        150.         50.       3.55

          HYDROGRAPH AT
+                           L2A       570.   12.58          92.         23.          8.        .69

          2 COMBINED AT
+                          L2BR      2519.   12.92         616.        172.         57.       4.24

          ROUTED TO
+                        L2BR-A      2418.   13.08         614.        172.         57.       4.24

          ROUTED TO
+                       L2AL2B       2138.   13.67         601.        172.         57.       4.24
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+	HYDROGRAPH AT	L2B	1700.	13.08	449.	112.	37.	4.08
+	2 COMBINED AT	L3R	3204.	13.58	1020.	282.	94.	8.32
+	DIVERSION TO	DOUT	1619.	13.58	179.	45.	15.	8.32
+	HYDROGRAPH AT	DL3R	1585.	12.92	842.	237.	79.	8.32
+	ROUTED TO	L2BL3	1585.	14.50	811.	237.	79.	8.32
+	HYDROGRAPH AT	L2C	692.	12.83	145.	36.	12.	1.33
+	ROUTED TO	L2C-2D	651.	13.25	145.	36.	12.	1.33
+	HYDROGRAPH AT	L2D	655.	12.75	124.	31.	10.	1.23
+	2 COMBINED AT	L3RB	1104.	13.00	266.	66.	22.	2.56
+	ROUTED TO	L2D-L3	705.	16.17	263.	66.	22.	2.56
+	HYDROGRAPH AT	L3	2129.	13.25	658.	166.	56.	5.85
+	3 COMBINED AT	L	3069.	13.58	1609.	452.	151.	16.73
+	HYDROGRAPH AT	M1	3301.	12.83	825.	236.	79.	5.69
+	ROUTED TO	M1-M2A	3126.	13.08	822.	236.	79.	5.69
+	ROUTED TO	M1-M2	2537.	14.08	787.	235.	79.	5.69
+	HYDROGRAPH AT	M2	2347.	13.42	786.	198.	66.	7.44
+	2 COMBINED AT	M	3930.	14.08	1489.	422.	141.	13.12
+	HYDROGRAPH AT	N1	1211.	12.50	192.	52.	17.	1.52
+	ROUTED TO	N1-N1A	1091.	12.67	192.	52.	17.	1.52
+	ROUTED TO	N1-P1A	974.	12.92	192.	52.	17.	1.52
+	HYDROGRAPH AT	N2A	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN2AR	1614.	12.83	380.	103.	34.	3.05
+	HYDROGRAPH AT	P1A	441.	12.42	73.	21.	7.	.50
+	ROUTED TO	P1A-A2	414.	12.58	73.	21.	7.	.50
+	2 COMBINED AT	CN2A	1883.	12.83	450.	123.	41.	3.55
+	ROUTED TO	P1A-1B	1727.	13.42	442.	123.	41.	3.55
+	HYDROGRAPH AT	P1B	842.	13.08	231.	61.	20.	1.94
+	2 COMBINED AT	PR	2296.	13.33	659.	183.	61.	5.49
+	HYDROGRAPH AT	Q1A	915.	12.58	173.	48.	16.	1.30
+	ROUTED TO	Q1A-P	888.	12.75	173.	48.	16.	1.30
+	2 COMBINED AT	P	2705.	13.33	826.	229.	77.	6.78
	HYDROGRAPH AT							

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+                          N2B     1331.   13.17        378.        99.        33.      3.33
          HYDROGRAPH AT
+                           O1     1163.   13.33        349.        91.        30.      3.09
          HYDROGRAPH AT
+                           Z1      558.   12.50         80.        21.         7.       .66

*** NORMAL END OF HEC-1 ***
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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   19APR06  TIME  17:02:18  *                    *           (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
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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

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1                                          HEC-1 INPUT                                                    PAGE  1

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

  1           ID    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
  2           ID     - ALTERNATIVE B2
  3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
  4           ID
  5           ID   Alternative Description
  6           ID   The purpose of Alternative B is to capture the upstream flow at the
  7           ID   apex using online detention basins.  The presence of the detention
  8           ID   basins eliminates the downstream alluvial fan uncertainties by
  9           ID   controlling the flow from the apices to the outfall.  Alternative B2
 10           ID   is based on using a relatively smaller on-line detention basin at the
 11           ID   apex accompanied by larger leveed channel sections in the down fan
 12           ID   direction.
 13           ID
 14           ID
 15           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
 16           ID   JANUARY 2006
 17           ID
 18           ID   MODEL BASED UPON:
 19           ID
 20           ID  Buckeye/Sun Valley ADMS - May 2005
 21           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
 22           ID  100-year 6-hour
 23           ID  Existing Conditions
 24           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
 25           ID  Rainfall Loss Method - Green & Ampt
 26           ID  Unit Hydrograph Method - FCDMC S-Graph
 27           ID  Channel Routing Method - Normal Depth
 28           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
 29           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
 30           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
              *DIAGRAM
 31           IT       5 01JAN94       0    2000
 32           IO       5
 33           IN      15 01JAN94       0
 34           JD    3.23    0.01
              * 6-hour distribution, pattern 1.0
 35           PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
 36           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
 37           PC   0.962   0.972   0.983   0.991     1.0
 38           IN      15 01JAN94       0
 39           JD   3.211     0.5
              * 6-hour distribution, pattern 1.0
 40           PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
 41           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
 42           PC   0.962   0.972   0.983   0.991     1.0
 43           IN      15 01JAN94       0
 44           JD   3.188     1.0
              * 6-hour distribution, pattern 1.4
 45           PC     0.0  0.0084   0.016   0.025  0.0334  0.0414  0.0504  0.0584  0.0664  0.0748
 46           PC   0.087  0.0994  0.1188   0.148  0.2304  0.4067  0.7778  0.8813  0.9186  0.9452
 47           PC  0.9572  0.9684  0.9798  0.9898     1.0
 48           IN      15 01JAN94       0
 49           JD   3.101     5.0
              * 6-hour distribution, pattern 2.3
 50           PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
1                                          HEC-1 INPUT                                                    PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  51          PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
  52          PC  0.9487   0.962  0.9743  0.9877     1.0
  53          IN      15 01JAN94       0
  54          JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
  55          PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
  56          PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
  57          PC  0.9471  0.9608  0.9735  0.9873     1.0
  58          IN      15 01JAN94       0
  59          JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
  60          PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
  61          PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
  62          PC  0.9434   0.958  0.9718  0.9863     1.0
  63          IN      15 01JAN94       0
  64          JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
  65          PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
  66          PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
  67          PC   0.939  0.9544  0.9697  0.9851     1.0
  68          IN      15 01JAN94       0
  69          JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
  70          PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
  71          PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
  72          PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

  73          KK      R1   BASIN
  74          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  75          KM   L=1.01     Lca=0.46     S=213.31     Kn=0.050     LAG=18.8
  76          KM   S-GRAPH TYPE=PHX MNT
  77          BA   0.284
  78          LG    0.35     0.35   4.358   0.374   8.387
  79          UI     0.0    62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
  80          UI   57.55    39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

  81          KK     Q1B   BASIN
  82          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  83          KM   L=2.35     Lca=1.14     S=141.40     Kn=0.055     LAG=44.3
  84          KM   S-GRAPH TYPE=PHX MNT
  85          KO       0        0     0.0        1       22
  86          BA   0.937
  87          LG    0.35     0.35    4.32   0.373  14.815
              * Q1B
  88          UI     0.0    71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
  89          UI  443.72   398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
  90          UI  114.82    91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
  91          UI   35.07    15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
  92          UI   13.74      0.0
              *
1                                          HEC-1 INPUT                                          PAGE  3

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

  93          KK   DUMMY COMBINE
  94          KM    DUMMY COMBINE FOR HEC-1 STACK
  95          HC       2
              *

  96          KK      L1   BASIN
  97          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  98          KM   L=4.93     Lca=2.29     S=308.27     Kn=0.050     LAG=60.6
  99          KM   S-GRAPH TYPE=PHX MNT
 100          BA   3.546
 101          LG   0.271    0.318   4.363   0.351  16.279
 102          UI     0.0   195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 103          UI  1991.3  2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 104          UI  701.22   620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 105          UI  241.82   214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 106          UI   95.79    95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 107          UI   37.52    37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

 108          KK  L1-L2A   ROUTE
 109          RS       3    FLOW     0.0     0.0
 110          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 111          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 112          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 113          KK     L2A   BASIN
 114          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 115          KM   L=2.46     Lca=1.12     S=136.18     Kn=0.055     LAG=45.0
 116          KM   S-GRAPH TYPE=DES RNGLND
 117          BA   0.693
 118          LG    0.35    0.384   5.641   0.202     0.0
 119          UI     0.0    51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 120          UI  461.36   394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 121          UI   69.92    54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
 122          UI   12.61    12.61   12.61   12.61
```

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                *
 123            KK    L2BR COMBINE
 124            KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
 125            KM     THIS IS THE TOTAL FLOW TO APEX 37
 126            HC       2
                *

 127            KK  RRL2BR STORAGE
 128            KM   PROPOSED DETENTION BASIN
 129            KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 37
 130            KM    STRUCTURE ID:RRL2BR
 131            KM    DIMENSIONS: L=600ft, W=350ft, D=10ft, Sideslope (?H:1V)= 3,  Vol.= 34.3 ac-f
 132            RS       1    STOR       0
 133            SV     0.0     6.8    14.0    17.8    21.8    30.0    34.3    38.7    43.2    47.9
 134            SE     0.0     2.0     4.0     5.0     6.0     8.0     9.0    10.0    11.0    12.0
 135            SQ     0.0  1203.3  1701.8  1902.6  2084.2  2406.6  2552.6  2690.7  2822.0  2947.5
                *
1                                          HEC-1 INPUT                                          PAGE  4

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

 136            KK  L2A-M1   ROUTE
 137            KM   PROPOSED CHANNEL
 138            KM    ROUTE FLOW FROM APEX 37 TO APEX 36
 139            KM    STRUCTURE ID(s): L2A10
 140            KM    Slope=(1616.0 - 1566.2) / 3875.0
 141            RS       3    FLOW      -1
 142            RC   0.045   0.045   0.045  3875.00.012845   104.5
 143            RX     0.0    13.5    13.5    13.5   393.5   393.5   393.5   407.0
 144            RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
                *

 145            KK      M1   BASIN
 146            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 147            KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
 148            KM   S-GRAPH TYPE=PHX MNT
 149            BA   5.686
 150            LG    0.35    0.35   4.297    0.35  16.637
 151            UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
 152            UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
 153            UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
 154            UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
 155            UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
 156            UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
 157            UI   54.77   54.77     0.0
                *

 158            KK     CM1 COMBINE
 159            KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
 160            HC       2
                *

 161            KK   RRCM1 STORAGE
 162            KM   PROPOSED DETENTION BASIN
 163            KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
 164            KM    STRUCTURE ID:RRCM1
 165            KM    DIMENSIONS: L=800ft, W=400ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 58.6 ac-f
 166            RS       1    STOR       0
 167            SV     0.0    10.5    21.7    33.4    45.7    52.1    58.6    65.4    72.2    79.3
 168            SE     0.0     2.0     4.0     6.0     8.0     9.0    10.0    11.0    12.0    13.0
 169            SQ     0.0  2406.6  3403.5  4168.4  4813.3  5105.3  5381.4  5644.1  5895.0  6135.8
                *

 170            KK   M1-N1   ROUTE
 171            KM   PROPOSED CHANNEL
 172            KM    ROUTE FLOW FROM APEX 36 TO APEX 7
 173            KM    STRUCTURE ID(s): N110, N120
 174            KM    Slope=(1565.0 - 1382.8) / 9668.2
 175            RS       4    FLOW      -1
 176            RC   0.045   0.045   0.045  9668.20.018844   105.0
 177            RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
 178            RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
                *
1                                          HEC-1 INPUT                                          PAGE  5

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

 179            KK      N1   BASIN
 180            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 181            KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 182            KM   S-GRAPH TYPE=PHX MNT
 183            BA   1.524
 184            LG    0.35    0.35   4.075   0.419    8.38
 185            UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 186            UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 187            UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 188            UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
                *

 189            KK     CN1 COMBINE
 190            KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
 191            HC       2
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                *

192             KK   RRCN1 STORAGE
193             KM   PROPOSED DETENTION BASIN
194             KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
195             KM    STRUCTURE ID:RRCN1
196             KM    DIMENSIONS: L=900ft, W=400ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 67.3 ac-f
197             RS       1    STOR       0
198             SV     0.0    12.1    24.9    38.4    52.5    59.8    67.3    75.0    99.0   115.9
199             SE     0.0     2.0     4.0     6.0     8.0     9.0    10.0    11.0    14.0    16.0
200             SQ     0.0  2005.5  2836.3  3473.7  4011.1  4254.4  4484.5  4703.4  5306.1  5672.5
                *

201             KK  N1-P1A   ROUTE
202             KM   PROPOSED CHANNEL
203             KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
204             KM    STRUCTURE ID(s): N125
205             KM    Slope=(1382.8 - 1276.4) / 8101.2
206             RS       4    FLOW      -1
207             RC   0.045   0.045   0.045  8101.20.013128   105.0
208             RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
209             RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
                *

210             KK     N2A   BASIN
211             KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
212             KM   (ASSUME SAME AS N1 FOR NOW)
213             KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
214             KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
215             KM   S-GRAPH TYPE=PHX MNT
216             BA   1.524
217             LG    0.35    0.35   4.075   0.419    8.38
218             UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
219             UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
220             UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
221             UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
                *
1                                          HEC-1 INPUT                                          PAGE  6

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

222             KK   CN2AR COMBINE
223             KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
224             HC       2
                *

225             KK     P1A   BASIN
226             KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
227             KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
228             KM   S-GRAPH TYPE=PHX MNT
229             BA     0.5
230             LG    0.35    0.35   3.987   0.405  16.364
231             UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
232             UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
233             UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
234             UI    8.49    8.49    8.49    8.49    8.49    8.49
                *

235             KK   RRP1A STORAGE
236             KM   PROPOSED DETENTION BASIN
237             KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
238             KM    STRUCTURE ID:RRP1A
239             KM    DIMENSIONS: L=350ft, W=200ft, D=5ft, Sideslope (?H:1V)= 3,  Vol.= 5.2 ac-ft
240             RS       1    STOR       0
241             SV     0.0     0.6     1.2     1.8     2.4     3.8     5.2     6.6     8.2     9.8
242             SE     0.0     0.5     1.0     1.5     2.0     3.0     4.0     5.0     6.0     7.0
243             SQ     0.0   213.9   302.5   370.5   427.8   524.0   605.1   676.5   741.1   800.4
                *

244             KK    CN2A COMBINE
245             KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
246             KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
247             HC       2
                *

248             KK  P1A-1B   ROUTE
249             KM   PROPOSED CHANNEL
250             KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
251             KM    STRUCTURE ID(s): N130, N140
252             KM    Slope=(1276.4 - 1092.0) / 16521.3
253             RS      11    FLOW      -1
254             RC   0.045   0.045   0.045 16521.30.011161   105.0
255             RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
256             RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
                *

257             KK     P1B   BASIN
258             KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
259             KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
260             KM   S-GRAPH TYPE=PHX MNT
261             BA   1.937
262             LG    0.35    0.35    4.23   0.393   4.667
263             UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
264             UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
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265   UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
1                                   HEC-1 INPUT                                                PAGE  7

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

266   UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
267   UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
268   UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
269   UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
270   UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
      *

271   KK      PR COMBINE
272   KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
273   KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
274   HC       2
      *

275   KK     Q1A   BASIN
276   KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
277   KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
278   KM   S-GRAPH TYPE=PHX MNT
279   BA   1.297
280   LG    0.35    0.35   4.127     0.4    11.2
281   UI     0.0   89.12   89.12  213.78  363.94  517.41  613.08  697.52  873.62 1020.97
282   UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
283   UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
284   UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
285   UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
      *

286   KK   RRQ1A STORAGE
287   KM   PROPOSED DETENTION BASIN
288   KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
289   KM    STRUCTURE ID:RRQ1A
290   KM    DIMENSIONS: L=450ft, W=220ft, D=6ft, Sideslope (?H:1V)= 3,  Vol.= 8.8 ac-ft
291   RS       1    STOR       0
292   SV     0.0     1.6     2.4     3.3     4.1     5.0     6.9     8.8    10.8    13.0
293   SE     0.0     1.0     1.5     2.0     2.5     3.0     4.0     5.0     6.0     7.0
294   SQ     0.0   472.7   578.9   668.5   747.4   818.8   945.4  1057.0  1157.9  1250.7
      *

295   KK   Q1A-P   ROUTE
296   KM   PROPOSED CHANNEL
297   KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
298   KM    IN NEW CHANNEL
299   KM    STRUCTURE ID(s): P1B10
300   KM    Slope=(1190.4 - 1133.0) / 5122.9
301   RS       7    FLOW      -1
302   RC   0.045   0.045   0.045  5122.90.011207   104.5
303   RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
304   RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
      *

305   KK       P COMBINE
306   KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
307   KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
308   HC       2
      *
      *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
      *
1                                   HEC-1 INPUT                                                PAGE  8

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

309   KK     N2B   BASIN
310   KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
311   KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
312   KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
313   KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
314   KM   S-GRAPH TYPE=PHX MNT
315   BA   3.325
316   LG    0.35    0.35   4.117   0.405    2.67
317   UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
318   UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
319   UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
320   UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
321   UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
322   UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
323   UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
324   UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
325   UI   23.58   23.58   23.58   23.58   23.58
      *

326   KK      Q1   BASIN
327   KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
328   KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
329   KM   S-GRAPH TYPE=PHX MNT
330   BA   3.088
331   LG    0.35    0.35   4.191   0.393   2.105
332   UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
333   UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77 1242.7  887.05
334   UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
335   UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
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 336          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
 337          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
 338          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
 339          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 340          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 341          UI   19.93   19.93   19.93     0.0
              *

 342          KK      M2   BASIN
 343          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 344          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
 345          KM   S-GRAPH TYPE=DES RNGLND
 346          BA   7.436
 347          LG    0.35    0.35   3.959   0.445   0.291
 348          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 349          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 350          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
 351          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 352          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 353          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 354          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 355          UI   60.94   60.94   60.94   60.94     0.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 356          KK      Z1   BASIN
 357          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 358          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
 359          KM   S-GRAPH TYPE=DES RNGLND
 360          BA   0.664
 361          LG   0.321   0.292   4.004    0.43   2.909
 362          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
 363          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
 364          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
              *

 365          KK     L2B   BASIN
 366          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 367          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 368          KM   S-GRAPH TYPE=DES RNGLND
 369          BA   4.077
 370          LG    0.35    0.35   4.179   0.399     0.0
 371          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 372          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 373          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 374          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 375          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 376          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 377          KK  L2B-L3   ROUTE
 378          RS      18    FLOW     0.0     0.0
 379          RC    0.05    0.04    0.06 19942.62  0.0089     0.0
 380          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 381          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 382          KK     L2C   BASIN
 383          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 384          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 385          KM   S-GRAPH TYPE=DES RNGLND
 386          BA   1.328
 387          LG    0.35    0.35   4.189   0.422     0.0
 388          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 389          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 390          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 391          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 392          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 393          KK  L2C-2D   ROUTE
 394          RS       6    FLOW     0.0     0.0
 395          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 396          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 397          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 398          KK     L2D   BASIN
 399          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 400          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 401          KM   S-GRAPH TYPE=DES RNGLND
 402          BA   1.232
 403          LG    0.35    0.35   3.578   0.544     0.0
 404          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
 405          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 406          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 407          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
 408          UI   18.36     0.0
```

```
                    *

409                 KK    L3RB COMBINE
410                 KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
411                 HC       2
                    *

412                 KK  L2D-L3   ROUTE
413                 KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
414                 RS      39    FLOW     0.0     0.0
415                 RC    0.05    0.04    0.06 27374.0  0.0077     0.0
416                 RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
417                 RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
                    *

418                 KK      L3   BASIN
419                 KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
420                 KM   L=4.75     Lca=2.00     S=44.27     Kn=0.055     LAG=91.0
421                 KM   S-GRAPH TYPE=DES RNGLND
422                 BA   5.852
423                 LG   0.341   0.328    3.98   0.419    1.05
424                 UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
425                 UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
426                 UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
427                 UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
428                 UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
429                 UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
430                 UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
                    *

431                 KK       L COMBINE
432                 KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
433                 HC       3
                    *
                    *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
                    *
434                 ZZ
1
            SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    73          R1
                 .
                 .
    81           .         Q1B
                 .           .
                 .           .
    93       DUMMY...........
                 .
                 .
    96           .          L1
                 .           V
                 .           V
   108           .      L1-L2A
                 .           .
                 .           .
   113           .           .         L2A
                 .           .           .
                 .           .           .
   123           .        L2BR...........
                 .           V
                 .           V
   127           .      RRL2BR
                 .           V
                 .           V
   136           .      L2A-M1
                 .           .
                 .           .
   145           .           .          M1
                 .           .           .
                 .           .           .
   158           .         CM1...........
                 .           V
                 .           V
   161           .       RRCM1
                 .           V
                 .           V
   170           .       M1-N1
                 .           .
                 .           .
   179           .           .          N1
                 .           .           .
                 .           .           .
   189           .         CN1...........
                 .           V
                 .           V
   192           .       RRCN1
                 .           V
                 .           V
   201           .      N1-P1A
                 .           .
                 .           .
```

```
  210          .          .        N2A
               .          .          .
               .          .          .
  222          .     CN2AR...........
               .          .
               .          .
  225          .          .        P1A
               .          .          V
               .          .          V
  235          .          .      RRP1A
               .          .          .
               .          .          .
  244          .      CN2A...........
               .        V
               .        V
  248          .    P1A-1B
               .          .
               .          .
  257          .          .        P1B
               .          .          .
               .          .          .
  271          .        PR...........
               .          .
               .          .
  275          .          .        Q1A
               .          .          V
               .          .          V
  286          .          .      RRQ1A
               .          .          V
               .          .          V
  295          .          .      Q1A-P
               .          .          .
               .          .          .
  305          .        P...........
               .          .
               .          .
  309          .          .        N2B
               .          .          .
               .          .          .
  326          .          .          .        O1
               .          .          .         .
               .          .          .         .
  342          .          .          .         .        M2
               .          .          .         .         .
               .          .          .         .         .
  356          .          .          .         .         .        Z1
               .          .          .         .         .         .
               .          .          .         .         .         .
  365          .          .          .         .         .         .      L2B
               .          .          .         .         .         .        V
               .          .          .         .         .         .        V
  377          .          .          .         .         .         .    L2B-L3
               .          .          .         .         .         .         .
               .          .          .         .         .         .         .
  382          .          .          .         .         .         .         .      L2C
               .          .          .         .         .         .         .        V
               .          .          .         .         .         .         .        V
  393          .          .          .         .         .         .         .    L2C-2D
               .          .          .         .         .         .         .         .
               .          .          .         .         .         .         .         .
  398          .          .          .         .         .         .         .         .         L2D
               .          .          .         .         .         .         .         .           .
               .          .          .         .         .         .         .         .           .
  409          .          .          .         .         .         .         .      L3RB...........
               .          .          .         .         .         .         .         V
               .          .          .         .         .         .         .         V
  412          .          .          .         .         .         .         .    L2D-L3
               .          .          .         .         .         .         .         .
               .          .          .         .         .         .         .         .
  418          .          .          .         .         .         .         .         .         L3
               .          .          .         .         .         .         .         .           .
               .          .          .         .         .         .         .         .           .
  431          .          .          .         .         .         .         .         L.......................
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 (***) 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   19APR06  TIME  17:02:18  *                                    *          (916) 756-1104          *
 *                                      *                                    *                                  *
 ****************************************                                    ************************************
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STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B2
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the

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                    apex using online detention basins.  The presence of the detention
                    basins eliminates the downstream alluvial fan uncertainties by
                    controlling the flow from the apices to the outfall.  Alternative B2
                    is based on using a relatively smaller on-line detention basin at the
                    apex accompanied by larger leveed channel sections in the down fan
                    direction.

                     JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
                    JANUARY 2006

                    MODEL BASED UPON:

                   Buckeye/Sun Valley ADMS - May 2005
                   Michael Baker Jr., Inc. - Modeler: Jacob Lesue
                   100-year 6-hour
                   Existing Conditions
                   Area 3 - Sub-basins L-R (Aluvial Fan updates)
                   Rainfall Loss Method - Green & Ampt
                   Unit Hydrograph Method - FCDMC S-Graph
                   Channel Routing Method - Normal Depth
                   Land Use - FCDMC GIS Data: mag_landuse (2000)
                   Soil Data - USDA SCS Soil Survey (1972 & 1981)
                   Units - L(mi)    Lca(mi)    S(ft/mi)    LAG(min)

32 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     1JAN94  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     7JAN94  ENDING DATE
                    NDTIME       2235  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

34 JD          INDEX STORM NO. 1
                      STRM       3.23  PRECIPITATION DEPTH
                      TRDA        .01  TRANSPOSITION DRAINAGE AREA

35 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

39 JD          INDEX STORM NO. 2
                      STRM       3.21  PRECIPITATION DEPTH
                      TRDA        .50  TRANSPOSITION DRAINAGE AREA

40 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

44 JD          INDEX STORM NO. 3
                      STRM       3.19  PRECIPITATION DEPTH
                      TRDA       1.00  TRANSPOSITION DRAINAGE AREA

45 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       .06       .06       .06       .12       .12       .12       .03       .03
                    .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00

49 JD          INDEX STORM NO. 4
                      STRM       3.10  PRECIPITATION DEPTH
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```
                    TRDA        5.00  TRANSPOSITION DRAINAGE AREA

50 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       .06       .06       .06       .08       .08       .08       .05       .05
                  .05       .02       .02       .02       .01       .01       .01       .01       .01       .01
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

54 JD          INDEX STORM NO. 5
                    STRM        3.04  PRECIPITATION DEPTH
                    TRDA       10.00  TRANSPOSITION DRAINAGE AREA

55 PI            PRECIPITATION PATTERN
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .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
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

59 JD          INDEX STORM NO. 6
                    STRM        2.94  PRECIPITATION DEPTH
                    TRDA       20.00  TRANSPOSITION DRAINAGE AREA

60 PI            PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .01       .01       .01       .00       .00       .00       .00       .00
                  .00       .01       .01       .01       .00       .00       .00       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                  .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

64 JD          INDEX STORM NO. 7
                    STRM        2.88  PRECIPITATION DEPTH
                    TRDA       30.00  TRANSPOSITION DRAINAGE AREA

65 PI            PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .01       .01       .01       .00       .00       .00       .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       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .01       .01       .01       .00
                  .00       .00

69 JD          INDEX STORM NO. 8
                    STRM        2.81  PRECIPITATION DEPTH
                    TRDA       40.00  TRANSPOSITION DRAINAGE AREA

70 PI            PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .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       .02       .02       .02       .03
                  .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                  .01       .01

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
81 KK     *     Q1B    *        BASIN
          *            *
          **************

85 KO          OUTPUT CONTROL VARIABLES
                  IPRNT           5  PRINT CONTROL
                  IPLOT           0  PLOT CONTROL
                  QSCAL          0.  HYDROGRAPH PLOT SCALE
                  IPNCH           1  PUNCH COMPUTED HYDROGRAPH
                   IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                  ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                  ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                 TIMINT        .083  TIME INTERVAL IN HOURS

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	6-HOUR	24-HOUR	72-HOUR	AREA	STAGE	MAX STAGE
+	HYDROGRAPH AT	R1	506.	4.25	47.	12.	4.	.28		
+	HYDROGRAPH AT	Q1B	851.	4.50	155.	39.	13.	.94		
+	2 COMBINED AT	DUMMY	1020.	4.50	192.	48.	16.	1.22		
+	HYDROGRAPH AT	L1	2128.	4.75	543.	139.	46.	3.55		
+	ROUTED TO	L1-L2A	2066.	4.92	543.	139.	46.	3.55		
+	HYDROGRAPH AT	L2A	692.	4.58	113.	28.	9.	.69		
+	2 COMBINED AT	L2BR	2391.	4.92	623.	159.	53.	4.24		
+	ROUTED TO	RRL2BR	2172.	5.08	623.	159.	53.	4.24		
+	ROUTED TO	L2A-M1	2153.	5.25	622.	159.	53.	4.24		
+	HYDROGRAPH AT	M1	2809.	4.83	790.	203.	68.	5.69		
+	2 COMBINED AT	CM1	4159.	5.00	1286.	332.	111.	9.92		
+	ROUTED TO	RRCM1	3976.	5.17	1286.	332.	111.	9.92		
+	ROUTED TO	M1-N1	3898.	5.50	1279.	332.	111.	9.92		
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN1	3998.	5.42	1391.	362.	121.	11.45		
+	ROUTED TO	RRCN1	3757.	5.67	1391.	362.	121.	11.45		
+	ROUTED TO	N1-P1A	3713.	6.00	1379.	362.	121.	11.45		
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN2AR	3722.	5.92	1476.	392.	131.	12.97		
+	HYDROGRAPH AT	P1A	575.	4.42	89.	22.	7.	.50		
+	ROUTED TO	RRP1A	516.	4.58	89.	22.	7.	.50		
+	2 COMBINED AT	CN2A	3734.	5.92	1519.	404.	135.	13.47		
+	ROUTED TO	P1A-1B	3660.	6.50	1485.	404.	135.	13.47		
+	HYDROGRAPH AT	P1B	852.	5.08	244.	62.	21.	1.94		
+	2 COMBINED AT	PR	3743.	6.50	1567.	437.	146.	15.41		
+	HYDROGRAPH AT	Q1A	990.	4.58	193.	49.	16.	1.30		
+	ROUTED TO	RRQ1A	908.	4.75	193.	49.	16.	1.30		
+	ROUTED TO	Q1A-P	883.	4.92	193.	49.	16.	1.30		
+	2 COMBINED AT	P	3809.	6.42	1664.	464.	155.	16.71		
+	HYDROGRAPH AT	N2B	1193.	5.17	366.	93.	31.	3.33		
+	HYDROGRAPH AT	O1	1057.	5.33	343.	88.	29.	3.09		

+	HYDROGRAPH AT	M2	1849.	5.42	633.	159.	53.	7.44
+	HYDROGRAPH AT	Z1	694.	4.50	100.	25.	8.	.66
+	HYDROGRAPH AT	L2B	1532.	5.08	418.	104.	35.	4.08
+	ROUTED TO	L2B-L3	1196.	6.92	416.	104.	35.	4.08
+	HYDROGRAPH AT	L2C	754.	4.83	161.	40.	13.	1.33
+	ROUTED TO	L2C-2D	712.	5.25	161.	40.	13.	1.33
+	HYDROGRAPH AT	L2D	706.	4.75	136.	34.	11.	1.23
+	2 COMBINED AT	L3RB	1043.	5.00	260.	65.	22.	2.56
+	ROUTED TO	L2D-L3	650.	8.33	258.	65.	22.	2.56
+	HYDROGRAPH AT	L3	1832.	5.25	581.	146.	49.	5.85
+	3 COMBINED AT	L	1638.	5.33	963.	250.	83.	12.49

*** NORMAL END OF HEC-1 ***

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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   19APR06  TIME  17:02:20  *                    *           (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
          2           ID     - ALTERNATIVE B2
          3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
          4           ID
          5           ID   Alternative Description
          6           ID   The purpose of Alternative B is to capture the upstream flow at the
          7           ID   apex using online detention basins.  The presence of the detention
          8           ID   basins eliminates the downstream alluvial fan uncertainties by
          9           ID   controlling the flow from the apices to the outfall.  Alternative B2
         10           ID   is based on using a relatively smaller on-line detention basin at the
         11           ID   apex accompanied by larger leveed channel sections in the down fan
         12           ID   direction.
         13           ID
         14           ID
         15           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
         16           ID   JANUARY 2006
         17           ID
         18           ID   MODEL BASED UPON:
         19           ID
         20           ID  Buckeye/Sun Valley ADMS - May 2005
         21           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
         22           ID  100-year 24-hour
         23           ID  Existing Conditions
         24           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
         25           ID  Rainfall Loss Method - Green & Ampt
         26           ID  Unit Hydrograph Method - FCDMC S-Graph
         27           ID  Channel Routing Method - Normal Depth
         28           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
         29           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
         30           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
                      *DIAGRAM
         31           IT       5 01JAN94       0    2000
         32           IO       5
         33           IN      15 01JAN94       0
         34           JD    4.16    0.01
                      * 24-hour distribution
         35           PC     0.0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
         36           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
         37           PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
         38           PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
         39           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
         40           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
         41           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
         42           PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
         43           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
         44           PC   0.983   0.986   0.989   0.992   0.995   0.998     1.0
         45           JD   3.952    10.0
         46           JD   3.819    20.0
         47           JD    3.69    40.0
         48           JD   3.565    80.0
         49           JD   3.499   120.0
                      *
1                                                   HEC-1 INPUT                                                    PAGE  2

        LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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KK      R1   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=1.01     Lca=0.46     S=213.31     Kn=0.050     LAG=18.8
KM   S-GRAPH TYPE=PHX MNT
BA   0.284
LG    0.35    0.35   4.358   0.374   8.387
UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
*

KK     Q1B   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=2.35     Lca=1.14     S=141.40     Kn=0.055     LAG=44.3
KM   S-GRAPH TYPE=PHX MNT
KO       0       0     0.0       1      22
BA   0.937
LG    0.35    0.35    4.32   0.373  14.815
* Q1B
UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
UI   13.74     0.0
*

KK   DUMMY COMBINE
KM    DUMMY COMBINE FOR HEC-1 STACK
HC       2
*

KK      L1   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=4.93     Lca=2.29     S=308.27     Kn=0.050     LAG=60.6
KM   S-GRAPH TYPE=PHX MNT
BA   3.546
LG   0.271   0.318   4.363   0.351  16.279
UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
*

KK  L1-L2A   ROUTE
RS       3    FLOW     0.0     0.0
RC   0.046   0.045   0.046 7078.75  0.0174     0.0
RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
*
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1 HEC-1 INPUT PAGE 3

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

KK     L2A   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=2.46     Lca=1.12     S=136.18     Kn=0.055     LAG=45.0
KM   S-GRAPH TYPE=DES RNGLND
BA   0.693
LG    0.35   0.384   5.641   0.202     0.0
UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
UI   12.61   12.61   12.61   12.61
*

KK    L2BR COMBINE
KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
KM     THIS IS THE TOTAL FLOW TO APEX 37
HC       2
*

KK  RRL2BR STORAGE
KM   PROPOSED DETENTION BASIN
KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 37
KM    STRUCTURE ID:RRL2BR
KM    DIMENSIONS: L=600ft, W=350ft, D=10ft, Sideslope (?H:1V)= 3,  Vol.= 34.3 ac-f
RS       1    STOR       0
SV     0.0     6.8    14.0    17.8    21.8    30.0    34.3    38.7    43.2    47.9
SE     0.0     2.0     4.0     5.0     6.0     8.0     9.0    10.0    11.0    12.0
SQ     0.0  1203.3  1701.8  1902.6  2084.2  2406.6  2552.6  2690.7  2822.0  2947.5
*

KK  L2A-M1   ROUTE
KM   PROPOSED CHANNEL
KM    ROUTE FLOW FROM APEX 37 TO APEX 36
KM    STRUCTURE ID(s): L2A10
KM    Slope=(1616.0 - 1566.2) / 3875.0
RS       3    FLOW      -1
RC   0.045   0.045   0.045  3875.00.012845   104.5
RX     0.0    13.5    13.5    13.5   393.5   393.5   393.5   407.0
RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
*
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122        KK      M1   BASIN
123        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
124        KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
125        KM   S-GRAPH TYPE=PHX MNT
126        BA   5.686
127        LG    0.35    0.35   4.297    0.35  16.637
128        UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
129        UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
130        UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
131        UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
132        UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
133        UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
134        UI   54.77   54.77     0.0
           *
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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

135        KK     CM1 COMBINE
136        KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
137        HC       2
           *

138        KK   RRCM1 STORAGE
139        KM   PROPOSED DETENTION BASIN
140        KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
141        KM    STRUCTURE ID:RRCM1
142        KM    DIMENSIONS: L=800ft, W=400ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 58.6 ac-f
143        RS       1     STOR       0
144        SV     0.0    10.5    21.7    33.4    45.7    52.1    58.6    65.4    72.2    79.3
145        SE     0.0     2.0     4.0     6.0     8.0     9.0    10.0    11.0    12.0    13.0
146        SQ     0.0  2406.6  3403.5  4168.4  4813.3  5105.3  5381.4  5644.1  5895.0  6135.8
           *

147        KK   M1-N1   ROUTE
148        KM   PROPOSED CHANNEL
149        KM    ROUTE FLOW FROM APEX 36 TO APEX 7
150        KM    STRUCTURE ID(s): N110, N120
151        KM    Slope=(1565.0 - 1382.8) / 9668.2
152        RS       4     FLOW      -1
153        RC   0.045   0.045   0.045  9668.20.018844   105.0
154        RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
155        RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
           *

156        KK      N1   BASIN
157        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
158        KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
159        KM   S-GRAPH TYPE=PHX MNT
160        BA   1.524
161        LG    0.35    0.35   4.075   0.419    8.38
162        UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
163        UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
164        UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
165        UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
           *

166        KK     CN1 COMBINE
167        KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
168        HC       2
           *

169        KK   RRCN1 STORAGE
170        KM   PROPOSED DETENTION BASIN
171        KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
172        KM    STRUCTURE ID:RRCN1
173        KM    DIMENSIONS: L=900ft, W=400ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 67.3 ac-f
174        RS       1     STOR       0
175        SV     0.0    12.1    24.9    38.4    52.5    59.8    67.3    75.0    99.0   115.9
176        SE     0.0     2.0     4.0     6.0     8.0     9.0    10.0    11.0    14.0    16.0
177        SQ     0.0  2005.5  2836.3  3473.7  4011.1  4254.4  4484.5  4703.4  5306.1  5672.5
           *
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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

178        KK  N1-P1A   ROUTE
179        KM   PROPOSED CHANNEL
180        KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
181        KM    STRUCTURE ID(s): N125
182        KM    Slope=(1382.8 - 1276.4) / 8101.2
183        RS       4     FLOW      -1
184        RC   0.045   0.045   0.045  8101.20.013128   105.0
185        RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
186        RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
           *

187        KK     N2A   BASIN
188        KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
189        KM   (ASSUME SAME AS N1 FOR NOW)
190        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
191        KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
192        KM   S-GRAPH TYPE=PHX MNT
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193          BA   1.524
194          LG    0.35    0.35   4.075   0.419    8.38
195          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
196          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
197          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
198          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *

199          KK   CN2AR COMBINE
200          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
201          HC       2
             *

202          KK     P1A   BASIN
203          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
204          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
205          KM   S-GRAPH TYPE=PHX MNT
206          BA     0.5
207          LG    0.35    0.35   3.987   0.405  16.364
208          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
209          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
210          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
211          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *

212          KK   RRP1A STORAGE
213          KM   PROPOSED DETENTION BASIN
214          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
215          KM    outlet pipe 2 ft diameter assumed
216          KM    STRUCTURE ID:RRP1A
217          KM    DIMENSIONS: L=350ft, W=200ft, D=5ft, Sideslope (?H:1V)= 3,  Vol.= 5.2 ac-ft
218          RS       1     STOR       0
219          SV     0.0     0.6     1.2     1.8     2.4     3.8     5.2     6.6     8.2     9.8
220          SE     0.0     0.5     1.0     1.5     2.0     3.0     4.0     5.0     6.0     7.0
221          SQ     0.0   213.9   302.5   370.5   427.8   524.0   605.1   676.5   741.1   800.4
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

222          KK    CN2A COMBINE
223          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
224          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
225          HC       2
             *

226          KK  P1A-1B   ROUTE
227          KM   PROPOSED CHANNEL
228          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
229          KM    STRUCTURE ID(s): N130, N140
230          KM    Slope=(1276.4 - 1092.0) / 16521.3
231          RS      11     FLOW      -1
232          RC   0.045   0.045   0.045 16521.30.011161   105.0
233          RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
234          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

235          KK     P1B   BASIN
236          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
237          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
238          KM   S-GRAPH TYPE=PHX MNT
239          BA   1.937
240          LG    0.35    0.35    4.23   0.393   4.667
241          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
242          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
243          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
244          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
245          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
246          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
247          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
248          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

249          KK      PR COMBINE
250          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
251          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
252          HC       2
             *

253          KK     Q1A   BASIN
254          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
255          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
256          KM   S-GRAPH TYPE=PHX MNT
257          BA   1.297
258          LG    0.35    0.35   4.127     0.4    11.2
259          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
260          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
261          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
262          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
263          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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264          KK   RRQ1A STORAGE
265          KM   PROPOSED DETENTION BASIN
266          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
267          KM    STRUCTURE ID:RRQ1A
268          KM    DIMENSIONS: L=450ft, W=220ft, D=6ft, Sideslope (?H:1V)= 3,  Vol.= 8.8 ac-ft
269          RS       1    STOR       0
270          SV     0.0     1.6     2.4     3.3     4.1     5.0     6.9     8.8    10.8    13.0
271          SE     0.0     1.0     1.5     2.0     2.5     3.0     4.0     5.0     6.0     7.0
272          SQ     0.0   472.7   578.9   668.5   747.4   818.8   945.4  1057.0  1157.9  1250.7
             *

273          KK   Q1A-P   ROUTE
274          KM   PROPOSED CHANNEL
275          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
276          KM    IN NEW CHANNEL
277          KM    STRUCTURE ID(s): P1B10
278          KM    Slope=(1190.4 - 1133.0) / 5122.9
279          RS       7    FLOW      -1
280          RC   0.045   0.045   0.045  5122.90.011207   104.5
281          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
282          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

283          KK       P COMBINE
284          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
285          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
286          HC       2
             *
             *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
             *

287          KK     N2B   BASIN
288          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
289          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
290          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
291          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
292          KM   S-GRAPH TYPE=PHX MNT
293          BA   3.325
294          LG    0.35    0.35   4.117   0.405    2.67
295          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
296          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
297          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
298          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
299          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
300          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
301          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
302          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
303          UI   23.58   23.58   23.58   23.58   23.58
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

304          KK      O1   BASIN
305          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
306          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
307          KM   S-GRAPH TYPE=PHX MNT
308          BA   3.088
309          LG    0.35    0.35   4.191   0.393   2.105
310          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
311          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
312          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
313          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
314          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
315          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
316          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
317          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
318          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
319          UI   19.93   19.93   19.93     0.0
             *

320          KK      M2   BASIN
321          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
322          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
323          KM   S-GRAPH TYPE=DES RNGLND
324          BA   7.436
325          LG    0.35    0.35   3.959   0.445   0.291
326          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
327          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
328          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
329          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
330          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
331          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
332          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
333          UI   60.94   60.94   60.94   60.94     0.0
             *

334          KK      Z1   BASIN
335          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
336          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
337          KM   S-GRAPH TYPE=DES RNGLND
338          BA   0.664
```

```
 339          LG   0.321   0.292   4.004    0.43   2.909
 340          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
 341          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
 342          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
              *

 343          KK     L2B   BASIN
 344          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 345          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 346          KM   S-GRAPH TYPE=DES RNGLND
 347          BA   4.077
 348          LG    0.35    0.35   4.179   0.399     0.0
 349          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 350          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 351          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
1                                                HEC-1 INPUT                                          PAGE  9

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

 352          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 353          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 354          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 355          KK  L2B-L3   ROUTE
 356          RS      18    FLOW     0.0     0.0
 357          RC    0.05    0.04    0.0619942.62  0.0089     0.0
 358          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 359          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 360          KK     L2C   BASIN
 361          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 362          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 363          KM   S-GRAPH TYPE=DES RNGLND
 364          BA   1.328
 365          LG    0.35    0.35   4.189   0.422     0.0
 366          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 367          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 368          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 369          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 370          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 371          KK  L2C-2D   ROUTE
 372          RS       6    FLOW     0.0     0.0
 373          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 374          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 375          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 376          KK     L2D   BASIN
 377          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 378          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 379          KM   S-GRAPH TYPE=DES RNGLND
 380          BA   1.232
 381          LG    0.35    0.35   3.578   0.544     0.0
 382          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
 383          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 384          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 385          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
 386          UI   18.36     0.0
              *

 387          KK    L3RB COMBINE
 388          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 389          HC       2
              *
1                                                HEC-1 INPUT                                          PAGE 10

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

 390          KK  L2D-L3   ROUTE
 391          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 392          RS      39    FLOW     0.0     0.0
 393          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
 394          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 395          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 396          KK      L3   BASIN
 397          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 398          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
 399          KM   S-GRAPH TYPE=DES RNGLND
 400          BA   5.852
 401          LG   0.341   0.328    3.98   0.419    1.05
 402          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
 403          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
 404          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
 405          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
 406          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
 407          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
 408          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
              *
```

```
409          KK       L COMBINE
410          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
411          HC       3
             *
             *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
             *
412          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     {V} ROUTING          {--->} DIVERSION OR PUMP FLOW

   NO.     {.} CONNECTOR        {<---} RETURN OF DIVERTED OR PUMPED FLOW

    50        R1
               .
               .
    58         .         Q1B
               .           .
               .           .
    70     DUMMY............
               .
               .
    73         .          L1
               .           V
               .           V
    85         .      L1-L2A
               .           .
               .           .
    90         .           .         L2A
               .           .           .
               .           .           .
   100         .       L2BR............
               .           V
               .           V
   104         .     RRL2BR
               .           V
               .           V
   113         .     L2A-M1
               .           .
               .           .
   122         .           .          M1
               .           .           .
               .           .           .
   135         .        CM1............
               .           V
               .           V
   138         .      RRCM1
               .           V
               .           V
   147         .      M1-N1
               .           .
               .           .
   156         .           .          N1
               .           .           .
               .           .           .
   166         .        CN1............
               .           V
               .           V
   169         .      RRCN1
               .           V
               .           V
   178         .     N1-P1A
               .           .
               .           .
   187         .           .         N2A
               .           .           .
               .           .           .
   199         .      CN2AR............
               .           .
               .           .
   202         .           .         P1A
               .           .           V
               .           .           V
   212         .           .       RRP1A
               .           .           .
               .           .           .
   222         .       CN2A............
               .           V
               .           V
   226         .     P1A-1B
               .           .
               .           .
   235         .           .         P1B
               .           .           .
               .           .           .
   249         .          PR............
               .           .
               .           .
   253         .           .         Q1A
               .           .           V
               .           .           V
   264         .           .       RRQ1A
               .           .           V
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                 .           .           V
  273            .           .       Q1A-P
                 .           .           .
                 .           .           .
  283            .           P...........
                 .           .
                 .           .
  287            .           .         N2B
                 .           .           .
                 .           .           .
  304            .           .           .          O1
                 .           .           .           .
                 .           .           .           .
  320            .           .           .           .          M2
                 .           .           .           .           .
                 .           .           .           .           .
  334            .           .           .           .           .          Z1
                 .           .           .           .           .           .
                 .           .           .           .           .           .
  343            .           .           .           .           .           .         L2B
                 .           .           .           .           .           .           V
                 .           .           .           .           .           .           V
  355            .           .           .           .           .           .       L2B-L3
                 .           .           .           .           .           .           .
                 .           .           .           .           .           .           .
  360            .           .           .           .           .           .           .         L2C
                 .           .           .           .           .           .           .           V
                 .           .           .           .           .           .           .           V
  371            .           .           .           .           .           .           .      L2C-2D
                 .           .           .           .           .           .           .           .
                 .           .           .           .           .           .           .           .
  376            .           .           .           .           .           .           .           .         L2D
                 .           .           .           .           .           .           .           .           .
                 .           .           .           .           .           .           .           .           .
  387            .           .           .           .           .           .           .        L3RB...........
                 .           .           .           .           .           .           .           V
                 .           .           .           .           .           .           .           V
  390            .           .           .           .           .           .           .      L2D-L3
                 .           .           .           .           .           .           .           .
                 .           .           .           .           .           .           .           .
  396            .           .           .           .           .           .           .           .           L3
                 .           .           .           .           .           .           .           .           .
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  409            .           .           .           .           .           .           .           L.......................
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   19APR06  TIME  17:02:20  *
 *                                      *
 ****************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 756-1104           *
*                                   *
*************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B2
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B2 is based on using a relatively smaller on-line detention basin at the apex accompanied by larger leveed channel sections in the down fan direction.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 24-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi) Lca(mi) S(ft/mi) LAG(min)

```
  32 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     1JAN94  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE     7JAN94  ENDING DATE
              NDTIME       2235  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

34 JD       INDEX STORM NO. 1
                 STRM        4.16  PRECIPITATION DEPTH
                 TRDA         .01  TRANSPOSITION DRAINAGE AREA

35 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       .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
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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
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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       .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
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00
```

```
45 JD       INDEX STORM NO. 2
                 STRM        3.95  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
                .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       .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       .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       .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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46 JD       INDEX STORM NO. 3
                 STRM        3.82  PRECIPITATION DEPTH
                 TRDA       20.00  TRANSPOSITION DRAINAGE AREA
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 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
                    .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
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                    .00      .00      .00      .00      .00      .00      .00      .00

47 JD           INDEX STORM NO. 4
                  STRM       3.69  PRECIPITATION DEPTH
                  TRDA      40.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                    .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
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                    .03      .09      .09      .09      .01      .01      .01      .01      .01      .01
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                    .00      .00      .00      .00      .00      .00      .00      .00

48 JD           INDEX STORM NO. 5
                  STRM       3.57  PRECIPITATION DEPTH
                  TRDA      80.00  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
                    .01      .01      .01      .01      .01      .01      .00      .00      .00      .00
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 49 JD          INDEX STORM NO. 6
                     STRM        3.50  PRECIPITATION DEPTH
                     TRDA      120.00  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
                    .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
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            **************
            *            *
 58 KK      *      Q1B   *        BASIN
            *            *
            **************

 62 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           5  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           1  PUNCH COMPUTED HYDROGRAPH
                      IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT        .083  TIME INTERVAL IN HOURS

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
+                             R1      387.   12.25          37.         10.          3.       .28

          HYDROGRAPH AT
+                            Q1B      740.   12.50         134.         38.         13.       .94

          2 COMBINED AT
+                          DUMMY      902.   12.50         170.         48.         16.      1.22

          HYDROGRAPH AT
+                             L1     2267.   12.75         527.        150.         50.      3.55

          ROUTED TO
+                         L1-L2A     2154.   12.92         527.        150.         50.      3.55

          HYDROGRAPH AT
+                            L2A      570.   12.58          92.         23.          8.       .69

          2 COMBINED AT
+                           L2BR     2519.   12.92         616.        172.         57.      4.24

          ROUTED TO
+                         RRL2BR     2241.   13.08         616.        172.         57.      4.24
```

	ROUTED TO							
+		L2A-M1	2205.	13.25	615.	172.	57.	4.24
	HYDROGRAPH AT							
+		M1	3301.	12.83	825.	236.	79.	5.69
	2 COMBINED AT							
+		CM1	5070.	12.92	1425.	404.	135.	9.92
	ROUTED TO							
+		RRCM1	4579.	13.08	1425.	404.	135.	9.92
	ROUTED TO							
+		M1-N1	4462.	13.42	1417.	404.	135.	9.92
	HYDROGRAPH AT							
+		N1	1211.	12.50	192.	52.	17.	1.52
	2 COMBINED AT							
+		CN1	4690.	13.33	1581.	450.	151.	11.45
	ROUTED TO							
+		RRCN1	4273.	13.67	1581.	450.	151.	11.45
	ROUTED TO							
+		N1-P1A	4230.	13.92	1571.	450.	151.	11.45
	HYDROGRAPH AT							
+		N2A	1211.	12.50	192.	52.	17.	1.52
	2 COMBINED AT							
+		CN2AR	4298.	13.92	1724.	496.	166.	12.97
	HYDROGRAPH AT							
+		P1A	441.	12.42	73.	21.	7.	.50
	ROUTED TO							
+		RRP1A	410.	12.58	73.	21.	7.	.50
	2 COMBINED AT							
+		CN2A	4326.	13.92	1786.	514.	172.	13.47
	ROUTED TO							
+		P1A-1B	4260.	14.42	1757.	513.	172.	13.47
	HYDROGRAPH AT							
+		P1B	842.	13.08	231.	61.	20.	1.94
	2 COMBINED AT							
+		PR	4454.	14.33	1913.	565.	190.	15.41
	HYDROGRAPH AT							
+		Q1A	915.	12.58	173.	48.	16.	1.30
	ROUTED TO							
+		RRQ1A	836.	12.75	173.	48.	16.	1.30
	ROUTED TO							
+		Q1A-P	816.	12.92	173.	48.	16.	1.30
	2 COMBINED AT							
+		P	4581.	14.33	2062.	606.	204.	16.71
	HYDROGRAPH AT							
+		N2B	1331.	13.17	378.	99.	33.	3.33
	HYDROGRAPH AT							
+		O1	1163.	13.33	349.	91.	30.	3.09
	HYDROGRAPH AT							
+		M2	2347.	13.42	786.	198.	66.	7.44
	HYDROGRAPH AT							
+		Z1	558.	12.50	80.	21.	7.	.66
	HYDROGRAPH AT							
+		L2B	1700.	13.08	449.	112.	37.	4.08
	ROUTED TO							
+		L2B-L3	1323.	14.83	447.	112.	37.	4.08
	HYDROGRAPH AT							
+		L2C	692.	12.83	145.	36.	12.	1.33
	ROUTED TO							
+		L2C-2D	651.	13.25	145.	36.	12.	1.33
	HYDROGRAPH AT							
+		L2D	655.	12.75	124.	31.	10.	1.23
	2 COMBINED AT							
+		L3RB	1104.	13.00	266.	66.	22.	2.56
	ROUTED TO							

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+                        L2D-L3      705.  16.17       263.       66.       22.      2.56

         HYDROGRAPH AT
+                           L3     2129.  13.25       658.      166.       56.      5.85

         3 COMBINED AT
+                           L      2162.  13.33      1287.      335.      112.     12.49


 *** NORMAL END OF HEC-1 ***
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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   19APR06  TIME  17:07:34  *                    *          (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
    2           ID     - ALTERNATIVE B3
    3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
    4           ID
    5           ID   Alternative Description
    6           ID   The purpose of Alternative B is to capture the upstream flow at the
    7           ID   apex using online detention basins.  The presence of the detention
    8           ID   basins eliminates the downstream alluvial fan uncertainties by
    9           ID   controlling the flow from the apices to the outfall.  Alternative B3
   10           ID   is based on using a relatively larger on-line detention basin at the
   11           ID   apex accompanied by smaller excavated channel sections in the down fan
   12           ID   direction.  The excavated earthen channels are complemented with a
   13           ID   120-foot wide adjacent riparian preservation corridor.
   14           ID
   15           ID
   16           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
   17           ID   JANUARY 2006
   18           ID
   19           ID   MODEL BASED UPON:
   20           ID
   21           ID  Buckeye/Sun Valley ADMS - May 2005
   22           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
   23           ID  100-year 6-hour
   24           ID  Existing Conditions
   25           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
   26           ID  Rainfall Loss Method - Green & Ampt
   27           ID  Unit Hydrograph Method - FCDMC S-Graph
   28           ID  Channel Routing Method - Normal Depth
   29           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
   30           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
   31           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
                *DIAGRAM
   32           IT       5 01JAN94       0    2000
   33           IO       5
   34           IN      15 01JAN94       0
   35           JD    3.23     0.01
                * 6-hour distribution, pattern 1.0
   36           PC     0.0    0.008    0.016    0.025    0.033    0.041     0.05    0.058    0.066    0.074
   37           PC   0.087    0.099    0.118    0.138    0.216    0.377    0.834    0.911    0.931     0.95
   38           PC   0.962    0.972    0.983    0.991      1.0
   39           IN      15 01JAN94       0
   40           JD   3.211      0.5
                * 6-hour distribution, pattern 1.0
   41           PC     0.0    0.008    0.016    0.025    0.033    0.041     0.05    0.058    0.066    0.074
   42           PC   0.087    0.099    0.118    0.138    0.216    0.377    0.834    0.911    0.931     0.95
   43           PC   0.962    0.972    0.983    0.991      1.0
   44           IN      15 01JAN94       0
   45           JD   3.188      1.0
                * 6-hour distribution, pattern 1.4
   46           PC     0.0   0.0084    0.016    0.025   0.0334   0.0414   0.0504   0.0584   0.0664   0.0748
   47           PC   0.087   0.0994   0.1188    0.148   0.2304   0.4067   0.7778   0.8813   0.9186   0.9452
   48           PC  0.9572   0.9684   0.9798   0.9898      1.0
   49           IN      15 01JAN94       0
   50           JD   3.101      5.0
                * 6-hour distribution, pattern 2.3
1                                          HEC-1 INPUT                                          PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 51           PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
 52           PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
 53           PC  0.9487   0.962  0.9743  0.9877     1.0
 54           IN      15 01JAN94       0
 55           JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
 56           PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
 57           PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
 58           PC  0.9471  0.9608  0.9735  0.9873     1.0
 59           IN      15 01JAN94       0
 60           JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
 61           PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
 62           PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
 63           PC  0.9434   0.958  0.9718  0.9863     1.0
 64           IN      15 01JAN94       0
 65           JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
 66           PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
 67           PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
 68           PC   0.939  0.9544  0.9697  0.9851     1.0
 69           IN      15 01JAN94       0
 70           JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
 71           PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
 72           PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
 73           PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

 74           KK      R1    BASIN
 75           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 76           KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
 77           KM   S-GRAPH TYPE=PHX MNT
 78           BA   0.284
 79           LG    0.35    0.35   4.358   0.374   8.387
 80           UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
 81           UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

 82           KK     Q1B    BASIN
 83           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 84           KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
 85           KM   S-GRAPH TYPE=PHX MNT
 86           KO       0       0     0.0       1      22
 87           BA   0.937
 88           LG    0.35    0.35    4.32   0.373  14.815
              * Q1B
 89           UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
 90           UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
 91           UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
 92           UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
 93           UI   13.74     0.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 94           KK   DUMMY COMBINE
 95           KM    DUMMY COMBINE FOR HEC-1 STACK
 96           HC       2
              *

 97           KK      L1    BASIN
 98           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 99           KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
100           KM   S-GRAPH TYPE=PHX MNT
101           BA   3.546
102           LG   0.271   0.318   4.363   0.351  16.279
103           UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
104           UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
105           UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
106           UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
107           UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
108           UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

109           KK  L1-L2A    ROUTE
110           RS       3     FLOW     0.0     0.0
111           RC   0.046   0.045   0.046 7078.75  0.0174     0.0
112           RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
113           RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

114           KK     L2A    BASIN
115           KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
116           KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
117           KM   S-GRAPH TYPE=DES RNGLND
118           BA   0.693
119           LG    0.35   0.384   5.641   0.202     0.0
120           UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
121           UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
122           UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
```

```
 123          UI   12.61   12.61   12.61   12.61
              *

 124          KK    L2BR COMBINE
 125          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
 126          KM     THIS IS THE TOTAL FLOW TO APEX 37
 127          HC       2
              *

 128          KK  RRL2BR STORAGE
 129          KM   PROPOSED DETENTION BASIN
 130          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 37
 131          KM    STRUCTURE ID:RRL2BR
 132          KM    DIMENSIONS: L=1650ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 261.7 ac
 133          RS       1    STOR       0
 134          SV     0.0    49.8   100.8   153.2   179.8   206.8   234.0   261.7   289.6   346.5
 135          SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
 136          SQ     0.0   108.3   153.2   187.6   202.6   216.6   229.7   242.2   254.0   276.1
              *
1                                          HEC-1 INPUT                                          PAGE  4

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

 137          KK  L2A-M1   ROUTE
 138          KM   PROPOSED CHANNEL
 139          KM    ROUTE FLOW FROM APEX 37 TO APEX 36
 140          KM    STRUCTURE ID(s): L2A10
 141          KM    Slope=(1616.0 - 1566.2) / 3875.0
 142          RS       3    FLOW      -1
 143          RC   0.045   0.045   0.045  3875.00.012845   102.5
 144          RX     0.0     7.5    17.5    22.0    37.0    41.5    51.5    59.0
 145          RY   102.5   100.0   100.0    98.5    98.5   100.0   100.0   102.5
              *

 146          KK      M1   BASIN
 147          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 148          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
 149          KM   S-GRAPH TYPE=PHX MNT
 150          BA   5.686
 151          LG    0.35    0.35   4.297    0.35  16.637
 152          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
 153          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
 154          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
 155          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
 156          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
 157          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
 158          UI   54.77   54.77     0.0
              *

 159          KK     CM1 COMBINE
 160          KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
 161          HC       2
              *

 162          KK   RRCM1 STORAGE
 163          KM   PROPOSED DETENTION BASIN
 164          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
 165          KM    STRUCTURE ID:RRCM1
 166          KM    DIMENSIONS: L=2000ft, W=910ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 363.5 ac
 167          RS       1    STOR       0
 168          SV     0.0    34.6   105.0   177.0   213.5   250.4   287.7   363.5   440.8   519.7
 169          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
 170          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
              *

 171          KK   M1-N1   ROUTE
 172          KM   PROPOSED CHANNEL
 173          KM    ROUTE FLOW FROM APEX 36 TO APEX 7
 174          KM    STRUCTURE ID(s): N110, N120
 175          KM    Slope=(1565.0 - 1382.8) / 9668.2
 176          RS       4    FLOW      -1
 177          RC   0.045   0.045   0.045  9668.20.018844   104.0
 178          RX     0.0    12.0    37.0    44.5    74.5    82.0   107.0   119.0
 179          RY   104.0   100.0   100.0    97.5    97.5   100.0   100.0   104.0
              *
1                                          HEC-1 INPUT                                          PAGE  5

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

 180          KK      N1   BASIN
 181          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 182          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 183          KM   S-GRAPH TYPE=PHX MNT
 184          BA   1.524
 185          LG    0.35    0.35   4.075   0.419    8.38
 186          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 187          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 188          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 189          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 190          KK     CN1 COMBINE
 191          KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
```

```
192          HC       2
             *

193          KK   RRCN1 STORAGE
194          KM   PROPOSED DETENTION BASIN
195          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
196          KM    STRUCTURE ID:RRCN1
197          KM    DIMENSIONS: L=900ft, W=480ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 82.2 ac-f
198          RS       1    STOR       0
199          SV     0.0     7.4    22.8    38.9    47.2    55.7    64.3    73.2    91.4   110.4
200          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
201          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   408.4   451.5   490.9
             *

202          KK  N1-P1A   ROUTE
203          KM   PROPOSED CHANNEL
204          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
205          KM    STRUCTURE ID(s): N125
206          KM    Slope=(1382.8 - 1276.4) / 8101.2
207          RS       4    FLOW      -1
208          RC   0.045   0.045   0.045  8101.20.013128   103.0
209          RX     0.0     9.0    39.0    48.0    73.0    82.0   112.0   121.0
210          RY   103.0   100.0   100.0    97.0    97.0   100.0   100.0   103.0
             *

211          KK     N2A   BASIN
212          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
213          KM   (ASSUME SAME AS N1 FOR NOW)
214          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
215          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
216          KM   S-GRAPH TYPE=PHX MNT
217          BA   1.524
218          LG    0.35    0.35   4.075   0.419    8.38
219          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
220          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
221          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
222          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

223          KK   CN2AR COMBINE
224          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
225          HC       2
             *

226          KK     P1A   BASIN
227          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
228          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
229          KM   S-GRAPH TYPE=PHX MNT
230          BA     0.5
231          LG    0.35    0.35   3.987   0.405  16.364
232          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
233          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
234          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
235          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *

236          KK   RRP1A STORAGE
237          KM   PROPOSED DETENTION BASIN
238          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
239          KM    STRUCTURE ID:RRP1A
240          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
241          RS       1    STOR       0
242          SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    41.5    49.9
243          SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.5    10.0
244          SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    99.2   107.6
             *

245          KK    CN2A COMBINE
246          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
247          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
248          HC       2
             *

249          KK  P1A-1B   ROUTE
250          KM   PROPOSED CHANNEL
251          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
252          KM    STRUCTURE ID(s): N130, N140
253          KM    Slope=(1276.4 - 1092.0) / 16521.3
254          RS      11    FLOW      -1
255          RC   0.045   0.045   0.045 16521.30.011161   103.5
256          RX     0.0    10.5    45.5    53.0    78.0    85.5   120.5   131.0
257          RY   103.5   100.0   100.0    97.5    97.5   100.0   100.0   103.5
             *

258          KK     P1B   BASIN
259          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
260          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
261          KM   S-GRAPH TYPE=PHX MNT
262          BA   1.937
263          LG    0.35    0.35   4.23   0.393   4.667
264          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
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 265          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
 266          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
1                                          HEC-1 INPUT                                          PAGE  7

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

 267          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
 268          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
 269          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
 270          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
 271          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
              *

 272          KK      PR COMBINE
 273          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
 274          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
 275          HC       2
              *

 276          KK     Q1A   BASIN
 277          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 278          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
 279          KM   S-GRAPH TYPE=PHX MNT
 280          BA   1.297
 281          LG    0.35    0.35   4.127     0.4    11.2
 282          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
 283          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
 284          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
 285          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
 286          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
              *

 287          KK   RRQ1A STORAGE
 288          KM   PROPOSED DETENTION BASIN
 289          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
 290          KM    STRUCTURE ID:RRQ1A
 291          KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
 292          RS       1    STOR       0
 293          SV     0.0    10.4    21.1    32.3    43.8    51.7    59.9    68.2    76.6    94.2
 294          SE     0.0     1.5     3.0     4.5     6.0     7.0     8.0     9.0    10.0    12.0
 295          SQ     0.0    41.7    59.0    72.2    83.4    90.0    96.3   102.1   107.6   117.9
              *

 296          KK   Q1A-P   ROUTE
 297          KM   PROPOSED CHANNEL
 298          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
 299          KM    IN NEW CHANNEL
 300          KM    STRUCTURE ID(s): P1B10
 301          KM    Slope=(1190.4 - 1133.0) / 5122.9
 302          RS       7    FLOW      -1
 303          RC   0.045   0.045   0.045  5122.90.011207   103.0
 304          RX     0.0     9.0    19.0    22.0    37.0    40.0    50.0    59.0
 305          RY   103.0   100.0   100.0    99.0    99.0   100.0   100.0   103.0
              *

 306          KK       P COMBINE
 307          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
 308          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
 309          HC       2
              *
              *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 310          KK     N2B   BASIN
 311          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
 312          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
 313          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 314          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
 315          KM   S-GRAPH TYPE=PHX MNT
 316          BA   3.325
 317          LG    0.35    0.35   4.117   0.405    2.67
 318          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
 319          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 320          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 321          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 322          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 323          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 324          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
 325          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
 326          UI   23.58   23.58   23.58   23.58   23.58
              *

 327          KK      O1   BASIN
 328          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 329          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
 330          KM   S-GRAPH TYPE=PHX MNT
 331          BA   3.088
 332          LG    0.35    0.35   4.191   0.393   2.105
 333          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
 334          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
 335          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
```

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336          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
337          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
338          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
339          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
340          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
341          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
342          UI   19.93   19.93   19.93     0.0
             *

343          KK      M2   BASIN
344          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
345          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
346          KM   S-GRAPH TYPE=DES RNGLND
347          BA   7.436
348          LG    0.35    0.35   3.959   0.445   0.291
349          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
350          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
351          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
352          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
353          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
354          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
355          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
356          UI   60.94   60.94   60.94   60.94     0.0
             *
```



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

357          KK      Z1   BASIN
358          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
359          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
360          KM   S-GRAPH TYPE=DES RNGLND
361          BA   0.664
362          LG   0.321   0.292   4.004    0.43   2.909
363          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
364          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
365          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
             *

366          KK     L2B   BASIN
367          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
368          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
369          KM   S-GRAPH TYPE=DES RNGLND
370          BA   4.077
371          LG    0.35    0.35   4.179   0.399     0.0
372          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
373          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
374          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
375          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
376          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
377          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
             *

378          KK  L2B-L3   ROUTE
379          RS      18    FLOW     0.0     0.0
380          RC    0.05    0.04    0.06199 42.62  0.0089     0.0
381          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
382          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

383          KK     L2C   BASIN
384          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
385          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
386          KM   S-GRAPH TYPE=DES RNGLND
387          BA   1.328
388          LG    0.35    0.35   4.189   0.422     0.0
389          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
390          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
391          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
392          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
393          UI   17.84   17.84   17.84   17.84   17.84     0.0
             *

394          KK  L2C-2D   ROUTE
395          RS       6    FLOW     0.0     0.0
396          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
397          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
398          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

399          KK     L2D   BASIN
400          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
401          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
402          KM   S-GRAPH TYPE=DES RNGLND
403          BA   1.232
404          LG    0.35    0.35   3.578   0.544     0.0
405          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
406          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
407          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
408          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
```

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409          UI   18.36     0.0
             *

410          KK    L3RB COMBINE
411          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
412          HC       2
             *

413          KK  L2D-L3   ROUTE
414          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
415          RS      39    FLOW     0.0     0.0
416          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
417          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
418          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

419          KK      L3   BASIN
420          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
421          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
422          KM   S-GRAPH TYPE=DES RNGLND
423          BA   5.852
424          LG   0.341   0.328    3.98   0.419    1.05
425          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
426          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
427          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
428          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
429          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
430          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
431          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

432          KK       L COMBINE
433          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
434          HC       3
             *
             *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
             *
435          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    74        R1
               .
               .
    82         .         Q1B
               .           .
               .           .
    94     DUMMY...........
               .
               .
    97         .          L1
               .           V
               .           V
   109         .      L1-L2A
               .           .
               .           .
   114         .           .         L2A
               .           .           .
               .           .           .
   124         .       L2BR............
               .           V
               .           V
   128         .      RRL2BR
               .           V
               .           V
   137         .      L2A-M1
               .           .
               .           .
   146         .           .          M1
               .           .           .
               .           .           .
   159         .        CM1............
               .           V
               .           V
   162         .       RRCM1
               .           V
               .           V
   171         .       M1-N1
               .           .
               .           .
   180         .           .          N1
               .           .           .
               .           .           .
   190         .        CN1............
               .           V
               .           V
   193         .       RRCN1
               .           V
               .           V
   202         .      N1-P1A
               .           .
```

```
211                N2A
                    .
                    .
223          CN2AR...........
                    .
                    .
226                P1A
                    V
                    V
236               RRP1A
                    .
                    .
245           CN2A...........
                 V
                 V
249          P1A-1B
                    .
                    .
258                P1B
                    .
                    .
272             PR...........
                    .
                    .
276                Q1A
                    V
                    V
287               RRQ1A
                    V
                    V
296               Q1A-P
                    .
                    .
306              P...........
                    .
                    .
310                N2B
                    .
                    .
327                         O1
                            .
                            .
343                         .          M2
                            .           .
                            .           .
357                         .           .          Z1
                            .           .           .
                            .           .           .
366                         .           .           .       L2B
                            .           .           .         V
                            .           .           .         V
378                         .           .           .     L2B-L3
                            .           .           .         .
                            .           .           .         .
383                         .           .           .         .        L2C
                            .           .           .         .          V
                            .           .           .         .          V
394                         .           .           .         .      L2C-2D
                            .           .           .         .         .
                            .           .           .         .         .
399                         .           .           .         .         .          L2D
                            .           .           .         .         .           .
                            .           .           .         .         .           .
410                         .           .           .         .       L3RB...........
                            .           .           .         .         V
                            .           .           .         .         V
413                         .           .           .         .      L2D-L3
                            .           .           .         .         .
                            .           .           .         .         .
419                         .           .           .         .         .           L3
                            .           .           .         .         .            .
                            .           .           .         .         .            .
432                         .           .           .         .         L........................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   19APR06  TIME  17:07:34  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B3
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description

```
                    The purpose of Alternative B is to capture the upstream flow at the
                    apex using online detention basins.  The presence of the detention
                    basins eliminates the downstream alluvial fan uncertainties by
                    controlling the flow from the apices to the outfall.  Alternative B3
                    is based on using a relatively larger on-line detention basin at the
                    apex accompanied by smaller excavated channel sections in the down fan
                    direction.  The excavated earthen channels are complemented with a
                    120-foot wide adjacent riparian preservation corridor.


                     JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
                    JANUARY 2006

                    MODEL BASED UPON:

                   Buckeye/Sun Valley ADMS - May 2005
                   Michael Baker Jr., Inc. - Modeler: Jacob Lesue
                   100-year 6-hour
                   Existing Conditions
                   Area 3 - Sub-basins L-R (Aluvial Fan updates)
                   Rainfall Loss Method - Green & Ampt
                   Unit Hydrograph Method - FCDMC S-Graph
                   Channel Routing Method - Normal Depth
                   Land Use - FCDMC GIS Data: mag_landuse (2000)
                   Soil Data - USDA SCS Soil Survey (1972 & 1981)
                   Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)

33 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     1JAN94  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     7JAN94  ENDING DATE
                    NDTIME       2235  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

35 JD          INDEX STORM NO. 1
                     STRM        3.23  PRECIPITATION DEPTH
                     TRDA         .01  TRANSPOSITION DRAINAGE AREA

36 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

40 JD          INDEX STORM NO. 2
                     STRM        3.21  PRECIPITATION DEPTH
                     TRDA         .50  TRANSPOSITION DRAINAGE AREA

41 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

45 JD          INDEX STORM NO. 3
                     STRM        3.19  PRECIPITATION DEPTH
                     TRDA        1.00  TRANSPOSITION DRAINAGE AREA

46 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       .06       .06       .06       .12       .12       .12       .03       .03
                    .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                    .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                    .00       .00
```

```
50 JD          INDEX STORM NO. 4
                    STRM        3.10  PRECIPITATION DEPTH
                    TRDA        5.00  TRANSPOSITION DRAINAGE AREA

51 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       .06       .06       .06       .08       .08       .08       .05       .05
                  .05       .02       .02       .02       .01       .01       .01       .01       .01       .01
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

55 JD          INDEX STORM NO. 5
                    STRM        3.04  PRECIPITATION DEPTH
                    TRDA       10.00  TRANSPOSITION DRAINAGE AREA

56 PI            PRECIPITATION PATTERN
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .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
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

60 JD          INDEX STORM NO. 6
                    STRM        2.94  PRECIPITATION DEPTH
                    TRDA       20.00  TRANSPOSITION DRAINAGE AREA

61 PI            PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .01       .01       .01       .00       .00       .00       .00       .00
                  .00       .01       .01       .01       .00       .00       .00       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                  .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

65 JD          INDEX STORM NO. 7
                    STRM        2.88  PRECIPITATION DEPTH
                    TRDA       30.00  TRANSPOSITION DRAINAGE AREA

66 PI            PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .01       .01       .01       .00       .00       .00       .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       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .01       .01       .01       .00
                  .00       .00

70 JD          INDEX STORM NO. 8
                    STRM        2.81  PRECIPITATION DEPTH
                    TRDA       40.00  TRANSPOSITION DRAINAGE AREA

71 PI            PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .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       .02       .02       .02       .03
                  .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                  .01       .01

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
82 KK       *     Q1B    *        BASIN
            *            *
            **************

86 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
                    IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                     IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                    ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                    ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                   TIMINT       .083  TIME INTERVAL IN HOURS

1
                                    RUNOFF SUMMARY
                              FLOW IN CUBIC FEET PER SECOND
                          TIME IN HOURS,  AREA IN SQUARE MILES
```

	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	R1	506.	4.25	47.	12.	4.	.28		
+	HYDROGRAPH AT	Q1B	851.	4.50	155.	39.	13.	.94		
+	2 COMBINED AT	DUMMY	1020.	4.50	192.	48.	16.	1.22		
+	HYDROGRAPH AT	L1	2128.	4.75	543.	139.	46.	3.55		
+	ROUTED TO	L1-L2A	2066.	4.92	543.	139.	46.	3.55		
+	HYDROGRAPH AT	L2A	692.	4.58	113.	28.	9.	.69		
+	2 COMBINED AT	L2BR	2391.	4.92	623.	159.	53.	4.24		
+	ROUTED TO	RRL2BR	237.	7.17	225.	149.	53.	4.24		
+	ROUTED TO	L2A-M1	237.	7.33	225.	149.	53.	4.24		
+	HYDROGRAPH AT	M1	2809.	4.83	790.	203.	68.	5.69		
+	2 COMBINED AT	CM1	2664.	4.92	894.	320.	111.	9.92		
+	ROUTED TO	RRCM1	399.	7.58	388.	299.	111.	9.92		
+	ROUTED TO	M1-N1	399.	7.83	387.	298.	111.	9.92		
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN1	870.	4.58	465.	326.	121.	11.45		
+	ROUTED TO	RRCN1	382.	10.00	379.	321.	121.	11.45		
+	ROUTED TO	N1-P1A	382.	10.33	379.	321.	121.	11.45		
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN2AR	883.	4.58	458.	347.	131.	12.97		
+	HYDROGRAPH AT	P1A	575.	4.42	89.	22.	7.	.50		
+	ROUTED TO	RRP1A	87.	5.50	70.	22.	7.	.50		
+	2 COMBINED AT	CN2A	929.	4.58	507.	359.	135.	13.47		
+	ROUTED TO	P1A-1B	825.	5.42	503.	358.	135.	13.47		
+	HYDROGRAPH AT	P1B	852.	5.08	244.	62.	21.	1.94		
+	2 COMBINED AT	PR	1258.	5.33	638.	390.	146.	15.41		
+	HYDROGRAPH AT	Q1A	990.	4.58	193.	49.	16.	1.30		
+	ROUTED TO	RRQ1A	106.	6.25	97.	48.	16.	1.30		
+	ROUTED TO	Q1A-P	106.	6.50	97.	48.	16.	1.30		
+	2 COMBINED AT	P	1303.	5.33	704.	418.	155.	16.71		
+	HYDROGRAPH AT	N2B	1193.	5.17	366.	93.	31.	3.33		

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          HYDROGRAPH AT
+                          O1     1057.   5.33        343.        88.        29.       3.09

          HYDROGRAPH AT
+                          M2     1849.   5.42        633.       159.        53.       7.44

          HYDROGRAPH AT
+                          Z1      694.   4.50        100.        25.         8.        .66

          HYDROGRAPH AT
+                         L2B     1532.   5.08        418.       104.        35.       4.08

          ROUTED TO
+                       L2B-L3     1196.   6.92        416.       104.        35.       4.08

          HYDROGRAPH AT
+                         L2C      754.   4.83        161.        40.        13.       1.33

          ROUTED TO
+                       L2C-2D      712.   5.25        161.        40.        13.       1.33

          HYDROGRAPH AT
+                         L2D      706.   4.75        136.        34.        11.       1.23

          2 COMBINED AT
+                        L3RB     1043.   5.00        260.        65.        22.       2.56

          ROUTED TO
+                       L2D-L3      650.   8.33        258.        65.        22.       2.56

          HYDROGRAPH AT
+                          L3     1832.   5.25        581.       146.        49.       5.85

          3 COMBINED AT
+                           L     1638.   5.33        963.       250.        83.      12.49

 *** NORMAL END OF HEC-1 ***
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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   19APR06  TIME  17:07:35  *                    *          (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
    2           ID     - ALTERNATIVE B3
    3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
    4           ID
    5           ID   Alternative Description
    6           ID   The purpose of Alternative B is to capture the upstream flow at the
    7           ID   apex using online detention basins.  The presence of the detention
    8           ID   basins eliminates the downstream alluvial fan uncertainties by
    9           ID   controlling the flow from the apices to the outfall.  Alternative B3
   10           ID   is based on using a relatively larger on-line detention basin at the
   11           ID   apex accompanied by smaller excavated channel sections in the down fan
   12           ID   direction.  The excavated earthen channels are complemented with a
   13           ID   120-foot wide adjacent riparian preservation corridor.
   14           ID
   15           ID
   16           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
   17           ID   JANUARY 2006
   18           ID
   19           ID   MODEL BASED UPON:
   20           ID
   21           ID  Buckeye/Sun Valley ADMS - May 2005
   22           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
   23           ID  100-year 24-hour
   24           ID  Existing Conditions
   25           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
   26           ID  Rainfall Loss Method - Green & Ampt
   27           ID  Unit Hydrograph Method - FCDMC S-Graph
   28           ID  Channel Routing Method - Normal Depth
   29           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
   30           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
   31           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
                *DIAGRAM
   32           IT       5 01JAN94       0    2000
   33           IO       5
   34           IN      15 01JAN94       0
   35           JD    4.16    0.01
                * 24-hour distribution
   36           PC     0.0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
   37           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
   38           PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
   39           PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
   40           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   41           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   42           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   43           PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
   44           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
   45           PC   0.983   0.986   0.989   0.992   0.995   0.998     1.0
   46           JD   3.952    10.0
   47           JD   3.819    20.0
   48           JD    3.69    40.0
   49           JD   3.565    80.0
   50           JD   3.499   120.0
                *

1                                          HEC-1 INPUT                                          PAGE  2

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 51          KK      R1    BASIN
 52          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 53          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
 54          KM   S-GRAPH TYPE=PHX MNT
 55          BA   0.284
 56          LG    0.35     0.35    4.358    0.374    8.387
 57          UI     0.0    62.14   236.01   401.85   464.97   281.72    216.1   150.63   113.71    76.28
 58          UI   57.55    39.69    27.53    24.54     9.63     9.63     9.63     9.63      0.0
             *

 59          KK     Q1B    BASIN
 60          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 61          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
 62          KM   S-GRAPH TYPE=PHX MNT
 63          KO       0        0      0.0        1       22
 64          BA   0.937
 65          LG    0.35     0.35     4.32    0.373   14.815
             * Q1B
 66          UI     0.0    71.67    71.67   221.51   340.68   455.79    538.5   651.95   833.61   538.15
 67          UI  443.72   398.92   355.79   316.26   280.46   235.89   196.37   173.35   160.17   138.81
 68          UI  114.82    91.58    84.67     78.5    62.48    54.95    54.15    35.07    35.07    35.07
 69          UI   35.07    15.79    13.74    13.74    13.74    13.74    13.74    13.74    13.74    13.74
 70          UI   13.74      0.0
             *

 71          KK   DUMMY COMBINE
 72          KM    DUMMY COMBINE FOR HEC-1 STACK
 73          HC       2
             *

 74          KK      L1    BASIN
 75          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 76          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
 77          KM   S-GRAPH TYPE=PHX MNT
 78          BA   3.546
 79          LG   0.271    0.318    4.363    0.351   16.279
 80          UI     0.0   195.74   195.74   266.93   603.63   823.25  1120.55  1287.08  1452.32  1611.07
 81          UI  1991.3  2326.76  1575.06  1312.31  1173.43  1097.39  1002.28   929.54    850.5   775.66
 82          UI  701.22   620.51   525.99   484.91   458.87   430.63   397.34   321.57   290.98   250.11
 83          UI  241.82   214.38   214.38   171.29   150.06   150.06   149.52    95.79    95.79    95.79
 84          UI   95.79    95.79     79.7    37.52    37.52    37.52    37.52    37.52    37.52    37.52
 85          UI   37.52    37.52    37.52    37.52    37.52    37.52    37.52      0.0
             *

 86          KK  L1-L2A    ROUTE
 87          RS       3     FLOW      0.0      0.0
 88          RC   0.046    0.045    0.046  7078.75   0.0174      0.0
 89          RX     0.0     80.0    165.0    200.0    215.0    255.0    340.0    420.0
 90          RY    19.0     17.0     14.0     10.0     10.0     14.0     18.0     22.0
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 91          KK     L2A    BASIN
 92          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 93          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
 94          KM   S-GRAPH TYPE=DES RNGLND
 95          BA   0.693
 96          LG    0.35    0.384    5.641    0.202      0.0
 97          UI     0.0    51.83    51.83   153.34   242.24   330.72   404.46   460.56   494.88   492.21
 98          UI  461.36   394.37   327.78   266.87   221.69   182.72   150.08   121.91   100.64    84.23
 99          UI   69.92    54.93    46.45    35.48    35.48    26.06    12.61    12.61    12.61    12.61
100          UI   12.61    12.61    12.61    12.61
             *

101          KK    L2BR COMBINE
102          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
103          KM     THIS IS THE TOTAL FLOW TO APEX 37
104          HC       2
             *

105          KK  RRL2BR STORAGE
106          KM   PROPOSED DETENTION BASIN
107          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 37
108          KM    STRUCTURE ID:RRL2BR
109          KM    DIMENSIONS: L=1650ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 261.7 ac
110          RS       1    STOR       0
111          SV     0.0     49.8    100.8    153.2    179.8    206.8    234.0    261.7    289.6    346.5
112          SE     0.0      2.0      4.0      6.0      7.0      8.0      9.0     10.0     11.0     13.0
113          SQ     0.0    108.3    153.2    187.6    202.6    216.6    229.7    242.2    254.0    276.1
             *

114          KK  L2A-M1    ROUTE
115          KM   PROPOSED CHANNEL
116          KM    ROUTE FLOW FROM APEX 37 TO APEX 36
117          KM    STRUCTURE ID(s): L2A10
118          KM    Slope=(1616.0 - 1566.2) / 3875.0
119          RS       3     FLOW      -1
120          RC   0.045    0.045    0.045  3875.00.012845   102.5
121          RX     0.0      7.5     17.5     22.0     37.0     41.5     51.5     59.0
122          RY   102.5    100.0    100.0     98.5     98.5    100.0    100.0    102.5
             *
```

```
KK      M1   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
KM   S-GRAPH TYPE=PHX MNT
BA   5.686
LG    0.35    0.35   4.297    0.35  16.637
UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
UI   54.77   54.77     0.0
*
```

1 HEC-1 INPUT PAGE 4

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

KK     CM1 COMBINE
KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
HC       2
*

KK   RRCM1 STORAGE
KM   PROPOSED DETENTION BASIN
KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
KM    STRUCTURE ID:RRCM1
KM    DIMENSIONS: L=2000ft, W=910ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 363.5 ac
RS       1     STOR       0
SV     0.0    34.6   105.0   177.0   213.5   250.4   287.7   363.5   440.8   519.7
SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
*

KK   M1-N1   ROUTE
KM   PROPOSED CHANNEL
KM    ROUTE FLOW FROM APEX 36 TO APEX 7
KM    STRUCTURE ID(s): N110, N120
KM    Slope=(1565.0 - 1382.8) / 9668.2
RS       4     FLOW      -1
RC   0.045   0.045   0.045  9668.20.018844   104.0
RX     0.0    12.0    37.0    44.5    74.5    82.0   107.0   119.0
RY   104.0   100.0   100.0    97.5    97.5   100.0   100.0   104.0
*

KK      N1   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
KM   S-GRAPH TYPE=PHX MNT
BA   1.524
LG    0.35    0.35   4.075   0.419    8.38
UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
*

KK     CN1 COMBINE
KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
HC       2
*

KK   RRCN1 STORAGE
KM   PROPOSED DETENTION BASIN
KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
KM    STRUCTURE ID:RRCN1
KM    DIMENSIONS: L=900ft, W=480ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 82.2 ac-f
RS       1     STOR       0
SV     0.0     7.4    22.8    38.9    47.2    55.7    64.3    73.2    91.4   110.4
SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   408.4   451.5   490.9
*
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1 HEC-1 INPUT PAGE 5

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

KK  N1-P1A   ROUTE
KM   PROPOSED CHANNEL
KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
KM    STRUCTURE ID(s): N125
KM    Slope=(1382.8 - 1276.4) / 8101.2
RS       4     FLOW      -1
RC   0.045   0.045   0.045  8101.20.013128   103.0
RX     0.0     9.0    39.0    48.0    73.0    82.0   112.0   121.0
RY   103.0   100.0   100.0    97.0    97.0   100.0   100.0   103.0
*

KK      N2A   BASIN
KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
KM   (ASSUME SAME AS N1 FOR NOW)
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
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193          KM   S-GRAPH TYPE=PHX MNT
194          BA   1.524
195          LG    0.35    0.35   4.075   0.419    8.38
196          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
197          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
198          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
199          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *

200          KK   CN2AR COMBINE
201          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
202          HC       2
             *

203          KK     P1A   BASIN
204          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
205          KM   L=2.28     Lca=1.41     S=461.40     Kn=0.055     LAG=37.8
206          KM   S-GRAPH TYPE=PHX MNT
207          BA     0.5
208          LG    0.35    0.35   3.987   0.405  16.364
209          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
210          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
211          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
212          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *

213          KK   RRP1A STORAGE
214          KM   PROPOSED DETENTION BASIN
215          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
216          KM    outlet pipe 2 ft diameter assumed
217          KM    STRUCTURE ID:RRP1A
218          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
219          RS       1    STOR       0
220          SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    41.5    49.9
221          SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.5    10.0
222          SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    99.2   107.6
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

223          KK    CN2A COMBINE
224          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
225          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
226          HC       2
             *

227          KK  P1A-1B   ROUTE
228          KM   PROPOSED CHANNEL
229          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
230          KM    STRUCTURE ID(s): N130, N140
231          KM    Slope=(1276.4 - 1092.0) / 16521.3
232          RS      11    FLOW      -1
233          RC   0.045   0.045   0.045 16521.30.011161   103.5
234          RX     0.0    10.5    45.5    53.0    78.0    85.5   120.5   131.0
235          RY   103.5   100.0   100.0    97.5    97.5   100.0   100.0   103.5
             *

236          KK     P1B   BASIN
237          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
238          KM   L=4.39     Lca=2.32     S=70.84     Kn=0.055     LAG=85.3
239          KM   S-GRAPH TYPE=PHX MNT
240          BA   1.937
241          LG    0.35    0.35    4.23   0.393   4.667
242          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
243          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
244          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
245          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
246          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
247          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
248          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
249          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

250          KK      PR COMBINE
251          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
252          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
253          HC       2
             *

254          KK     Q1A   BASIN
255          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
256          KM   L=3.13     Lca=1.52     S=256.86     Kn=0.055     LAG=49.3
257          KM   S-GRAPH TYPE=PHX MNT
258          BA   1.297
259          LG    0.35    0.35   4.127     0.4    11.2
260          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
261          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
262          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
263          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
264          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *
```

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

  265         KK   RRQ1A STORAGE
  266         KM   PROPOSED DETENTION BASIN
  267         KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
  268         KM    STRUCTURE ID:RRQ1A
  269         KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
  270         RS       1    STOR        0
  271         SV     0.0    10.4    21.1    32.3    43.8    51.7    59.9    68.2    76.6    94.2
  272         SE     0.0     1.5     3.0     4.5     6.0     7.0     8.0     9.0    10.0    12.0
  273         SQ     0.0    41.7    59.0    72.2    83.4    90.0    96.3   102.1   107.6   117.9
              *

  274         KK   Q1A-P   ROUTE
  275         KM   PROPOSED CHANNEL
  276         KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
  277         KM    IN NEW CHANNEL
  278         KM    STRUCTURE ID(s): P1B10
  279         KM    Slope=(1190.4 - 1133.0) / 5122.9
  280         RS       7    FLOW       -1
  281         RC   0.045   0.045   0.045  5122.90.011207   103.0
  282         RX     0.0     9.0    19.0    22.0    37.0    40.0    50.0    59.0
  283         RY   103.0   100.0   100.0    99.0    99.0   100.0   100.0   103.0
              *

  284         KK       P COMBINE
  285         KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
  286         KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
  287         HC       2
              *
              *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
              *

  288         KK     N2B   BASIN
  289         KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
  290         KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
  291         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  292         KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
  293         KM   S-GRAPH TYPE=PHX MNT
  294         BA   3.325
  295         LG    0.35    0.35   4.117   0.405    2.67
  296         UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
  297         UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
  298         UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
  299         UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
  300         UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
  301         UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
  302         UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
  303         UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
  304         UI   23.58   23.58   23.58   23.58   23.58
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

  305         KK      O1   BASIN
  306         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  307         KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
  308         KM   S-GRAPH TYPE=PHX MNT
  309         BA   3.088
  310         LG    0.35    0.35   4.191   0.393   2.105
  311         UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
  312         UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
  313         UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
  314         UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
  315         UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
  316         UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
  317         UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
  318         UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
  319         UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
  320         UI   19.93   19.93   19.93     0.0
              *

  321         KK      M2   BASIN
  322         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  323         KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
  324         KM   S-GRAPH TYPE=DES RNGLND
  325         BA   7.436
  326         LG    0.35    0.35   3.959   0.445   0.291
  327         UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
  328         UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
  329         UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
  330         UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
  331         UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
  332         UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
  333         UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
  334         UI   60.94   60.94   60.94   60.94     0.0
              *

  335         KK      Z1   BASIN
  336         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  337         KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
  338         KM   S-GRAPH TYPE=DES RNGLND
```

```
339          BA   0.664
340          LG   0.321   0.292   4.004    0.43   2.909
341          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
342          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
343          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
             *

344          KK     L2B   BASIN
345          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
346          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
347          KM   S-GRAPH TYPE=DES RNGLND
348          BA   4.077
349          LG    0.35    0.35   4.179   0.399     0.0
350          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
351          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.86 1278.33
352          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
1                                                HEC-1 INPUT                                                PAGE  9

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

353          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
354          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
355          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
             *

356          KK  L2B-L3   ROUTE
357          RS      18    FLOW     0.0     0.0
358          RC    0.05    0.04    0.06 19942.62  0.0089     0.0
359          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
360          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

361          KK     L2C   BASIN
362          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
363          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
364          KM   S-GRAPH TYPE=DES RNGLND
365          BA   1.328
366          LG    0.35    0.35   4.189   0.422     0.0
367          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
368          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
369          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
370          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
371          UI   17.84   17.84   17.84   17.84   17.84     0.0
             *

372          KK  L2C-2D   ROUTE
373          RS       6    FLOW     0.0     0.0
374          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
375          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
376          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *

377          KK     L2D   BASIN
378          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
379          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
380          KM   S-GRAPH TYPE=DES RNGLND
381          BA   1.232
382          LG    0.35    0.35   3.578   0.544     0.0
383          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
384          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
385          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
386          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
387          UI   18.36     0.0
             *

388          KK    L3RB COMBINE
389          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
390          HC       2
             *
1                                                HEC-1 INPUT                                                PAGE 10

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

391          KK  L2D-L3   ROUTE
392          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
393          RS      39    FLOW     0.0     0.0
394          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
395          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
396          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

397          KK      L3   BASIN
398          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
399          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
400          KM   S-GRAPH TYPE=DES RNGLND
401          BA   5.852
402          LG   0.341   0.328    3.98   0.419    1.05
403          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
404          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
405          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
406          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
407          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
408          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
409          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
```

```
                    *
410                 KK       L COMBINE
411                 KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
412                 HC       3
                    *
                    *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
                    *
413                 ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    51          R1
                 .
                 .
    59           .         Q1B
                 .           .
                 .           .
    71       DUMMY............
                 .
                 .
    74           .          L1
                 .           V
                 .           V
    86           .      L1-L2A
                 .           .
                 .           .
    91           .           .         L2A
                 .           .           .
                 .           .           .
   101           .        L2BR............
                 .           V
                 .           V
   105           .      RRL2BR
                 .           V
                 .           V
   114           .      L2A-M1
                 .           .
                 .           .
   123           .           .          M1
                 .           .           .
                 .           .           .
   136           .         CM1............
                 .           V
                 .           V
   139           .       RRCM1
                 .           V
                 .           V
   148           .       M1-N1
                 .           .
                 .           .
   157           .           .          N1
                 .           .           .
                 .           .           .
   167           .         CN1............
                 .           V
                 .           V
   170           .       RRCN1
                 .           V
                 .           V
   179           .      N1-P1A
                 .           .
                 .           .
   188           .           .         N2A
                 .           .           .
                 .           .           .
   200           .       CN2AR............
                 .           .
                 .           .
   203           .           .         P1A
                 .           .           V
                 .           .           V
   213           .           .       RRP1A
                 .           .           .
                 .           .           .
   223           .        CN2A............
                 .           V
                 .           V
   227           .      P1A-1B
                 .           .
                 .           .
   236           .           .         P1B
                 .           .           .
                 .           .           .
   250           .          PR............
                 .           .
                 .           .
   254           .           .         Q1A
                 .           .           V
                 .           .           V
   265           .           .       RRQ1A
```

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                .          .          V
                .          .          V
  274           .          .       Q1A-P
                .          .          .
                .          .          .
  284           .          P...........
                .          .
                .          .
  288           .          .        N2B
                .          .          .
                .          .          .
  305           .          .          .          O1
                .          .          .          .
                .          .          .          .
  321           .          .          .          .          M2
                .          .          .          .          .
                .          .          .          .          .
  335           .          .          .          .          .          Z1
                .          .          .          .          .          .
                .          .          .          .          .          .
  344           .          .          .          .          .          .        L2B
                .          .          .          .          .          .          V
                .          .          .          .          .          .          V
  356           .          .          .          .          .          .     L2B-L3
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
  361           .          .          .          .          .          .          .        L2C
                .          .          .          .          .          .          .          V
                .          .          .          .          .          .          .          V
  372           .          .          .          .          .          .          .     L2C-2D
                .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .
  377           .          .          .          .          .          .          .          .          L2D
                .          .          .          .          .          .          .          .            .
                .          .          .          .          .          .          .          .            .
  388           .          .          .          .          .          .          .       L3RB............
                .          .          .          .          .          .          .          V
                .          .          .          .          .          .          .          V
  391           .          .          .          .          .          .          .     L2D-L3
                .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .
  397           .          .          .          .          .          .          .          .          L3
                .          .          .          .          .          .          .          .            .
                .          .          .          .          .          .          .          .            .
  410           .          .          .          .          .          .          .          L........................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   19APR06  TIME  17:07:35  *
*                                      *
****************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B3
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B3 is based on using a relatively larger on-line detention basin at the apex accompanied by smaller excavated channel sections in the down fan direction. The excavated earthen channels are complemented with a 120-foot wide adjacent riparian preservation corridor.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 24-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi) Lca(mi) S(ft/mi) LAG(min)

```
  33 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     1JAN94  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE     7JAN94  ENDING DATE
              NDTIME       2235  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

35 JD       INDEX STORM NO. 1
                 STRM        4.16  PRECIPITATION DEPTH
                 TRDA         .01  TRANSPOSITION DRAINAGE AREA

36 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    .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
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              .00    .00    .00    .00    .00    .00    .00    .00

46 JD       INDEX STORM NO. 2
                 STRM        3.95  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
              .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    .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
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              .00    .00    .00    .00    .00    .00    .00    .00

47 JD       INDEX STORM NO. 3
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                STRM        3.82  PRECIPITATION DEPTH
                TRDA       20.00  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        .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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48 JD         INDEX STORM NO. 4
                STRM        3.69  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

0 PI          PRECIPITATION PATTERN
                .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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49 JD         INDEX STORM NO. 5
                STRM        3.57  PRECIPITATION DEPTH
                TRDA       80.00  TRANSPOSITION DRAINAGE AREA

0 PI          PRECIPITATION PATTERN
                .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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 50 JD        INDEX STORM NO. 6
                STRM        3.50  PRECIPITATION DEPTH
                TRDA      120.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                .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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            *            *
 59 KK      *     Q1B    *        BASIN
            *            *
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 63 KO        OUTPUT CONTROL VARIABLES
                IPRNT           5  PRINT CONTROL
                IPLOT           0  PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH           1  PUNCH COMPUTED HYDROGRAPH
                 IOUT          22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2        2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT        .083  TIME INTERVAL IN HOURS

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
+                            R1      387.   12.25          37.         10.          3.       .28

          HYDROGRAPH AT
+                           Q1B      740.   12.50         134.         38.         13.       .94

          2 COMBINED AT
+                          DUMMY     902.   12.50         170.         48.         16.      1.22

          HYDROGRAPH AT
+                            L1     2267.   12.75         527.        150.         50.      3.55

          ROUTED TO
+                         L1-L2A    2154.   12.92         527.        150.         50.      3.55

          HYDROGRAPH AT
+                           L2A      570.   12.58          92.         23.          8.       .69

          2 COMBINED AT
+                          L2BR     2519.   12.92         616.        172.         57.      4.24
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+	ROUTED TO	RRL2BR	236.	15.17	226.	157.	57.	4.24
+	ROUTED TO	L2A-M1	236.	15.33	226.	157.	57.	4.24
+	HYDROGRAPH AT	M1	3301.	12.83	825.	236.	79.	5.69
+	2 COMBINED AT	CM1	3400.	12.83	1003.	374.	135.	9.92
+	ROUTED TO	RRCM1	424.	15.75	415.	339.	135.	9.92
+	ROUTED TO	M1-N1	424.	16.08	415.	339.	135.	9.92
+	HYDROGRAPH AT	N1	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN1	1288.	12.50	532.	380.	151.	11.45
+	ROUTED TO	RRCN1	420.	18.17	418.	370.	151.	11.45
+	ROUTED TO	N1-P1A	420.	18.42	418.	370.	151.	11.45
+	HYDROGRAPH AT	N2A	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN2AR	1313.	12.50	545.	410.	166.	12.97
+	HYDROGRAPH AT	P1A	441.	12.42	73.	21.	7.	.50
+	ROUTED TO	RRP1A	77.	13.50	61.	21.	7.	.50
+	2 COMBINED AT	CN2A	1366.	12.50	602.	427.	172.	13.47
+	ROUTED TO	P1A-1B	1135.	13.17	597.	426.	172.	13.47
+	HYDROGRAPH AT	P1B	842.	13.08	231.	61.	20.	1.94
+	2 COMBINED AT	PR	1914.	13.17	789.	476.	190.	15.41
+	HYDROGRAPH AT	Q1A	915.	12.58	173.	48.	16.	1.30
+	ROUTED TO	RRQ1A	100.	14.17	92.	47.	16.	1.30
+	ROUTED TO	Q1A-P	100.	14.50	92.	47.	16.	1.30
+	2 COMBINED AT	P	1977.	13.17	871.	517.	204.	16.71
+	HYDROGRAPH AT	N2B	1331.	13.17	378.	99.	33.	3.33
+	HYDROGRAPH AT	O1	1163.	13.33	349.	91.	30.	3.09
+	HYDROGRAPH AT	M2	2347.	13.42	786.	198.	66.	7.44
+	HYDROGRAPH AT	Z1	558.	12.50	80.	21.	7.	.66
+	HYDROGRAPH AT	L2B	1700.	13.08	449.	112.	37.	4.08
+	ROUTED TO	L2B-L3	1323.	14.83	447.	112.	37.	4.08
+	HYDROGRAPH AT	L2C	692.	12.83	145.	36.	12.	1.33
+	ROUTED TO	L2C-2D	651.	13.25	145.	36.	12.	1.33
+	HYDROGRAPH AT	L2D	655.	12.75	124.	31.	10.	1.23
+	2 COMBINED AT	L3RB	1104.	13.00	266.	66.	22.	2.56

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          ROUTED TO
+                        L2D-L3      705.   16.17       263.       66.       22.      2.56

          HYDROGRAPH AT
+                           L3     2129.   13.25       658.      166.       56.      5.85

          3 COMBINED AT
+                            L     2162.   13.33      1287.      335.      112.     12.49

 *** NORMAL END OF HEC-1 ***
```

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *             JUN   1998               *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   19APR06  TIME  17:12:49  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

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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

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

  1           ID    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
  2           ID      - ALTERNATIVE B41
  3           ID      - BUCKEYE FRS NO. 1 SUB-AREA
  4           ID
  5           ID   Alternative Description
  6           ID   The purpose of Alternative B is to capture the upstream flow at the
  7           ID   apex using online detention basins.  The presence of the detention basins
  8           ID   eliminates the downstream alluvial fan uncertainties by controlling the
  9           ID   flow from the apices to the outfall.  Alternative B4-1 is based on using a
 10           ID   relatively larger on-line detention basin at the apex accompanied by smaller
 11           ID   leveed channel sections in the down fan direction.  It is the first of three
 12           ID   corridor alignments considered as part of the Alternative B4 series.
 13           ID
 14           ID
 15           ID
 16           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
 17           ID   JANUARY 2006
 18           ID
 19           ID   MODEL BASED UPON:
 20           ID
 21           ID  Buckeye/Sun Valley ADMS - May 2005
 22           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
 23           ID  100-year 6-hour
 24           ID  Existing Conditions
 25           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
 26           ID  Rainfall Loss Method - Green & Ampt
 27           ID  Unit Hydrograph Method - FCDMC S-Graph
 28           ID  Channel Routing Method - Normal Depth
 29           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
 30           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
 31           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
              *DIAGRAM
 32           IT       5 01JAN94        0     2000
 33           IO       5
 34           IN      15 01JAN94        0
 35           JD    3.23     0.01
              * 6-hour distribution, pattern 1.0
 36           PC     0.0    0.008    0.016    0.025    0.033    0.041     0.05    0.058    0.066    0.074
 37           PC   0.087    0.099    0.118    0.138    0.216    0.377    0.834    0.911    0.931     0.95
 38           PC   0.962    0.972    0.983    0.991      1.0
 39           IN      15 01JAN94        0
 40           JD   3.211      0.5
              * 6-hour distribution, pattern 1.0
 41           PC     0.0    0.008    0.016    0.025    0.033    0.041     0.05    0.058    0.066    0.074
 42           PC   0.087    0.099    0.118    0.138    0.216    0.377    0.834    0.911    0.931     0.95
 43           PC   0.962    0.972    0.983    0.991      1.0
 44           IN      15 01JAN94        0
 45           JD   3.188      1.0
              * 6-hour distribution, pattern 1.4
 46           PC     0.0   0.0084    0.016    0.025   0.0334   0.0414   0.0504   0.0584   0.0664   0.0748
 47           PC   0.087   0.0994   0.1188    0.148   0.2304   0.4067   0.7778   0.8813   0.9186   0.9452
 48           PC  0.9572   0.9684   0.9798   0.9898      1.0
 49           IN      15 01JAN94        0
 50           JD   3.101      5.0
              * 6-hour distribution, pattern 2.3
```

1 HEC-1 INPUT PAGE 2

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

  51          PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
  52          PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
  53          PC  0.9487   0.962  0.9743  0.9877     1.0
  54          IN      15 01JAN94       0
  55          JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
  56          PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
  57          PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
  58          PC  0.9471  0.9608  0.9735  0.9873     1.0
  59          IN      15 01JAN94       0
  60          JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
  61          PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
  62          PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
  63          PC  0.9434   0.958  0.9718  0.9863     1.0
  64          IN      15 01JAN94       0
  65          JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
  66          PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
  67          PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
  68          PC   0.939  0.9544  0.9697  0.9851     1.0
  69          IN      15 01JAN94       0
  70          JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
  71          PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
  72          PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
  73          PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

  74          KK      R1   BASIN
  75          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  76          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
  77          KM   S-GRAPH TYPE=PHX MNT
  78          BA   0.284
  79          LG    0.35    0.35   4.358   0.374   8.387
  80          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
  81          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

  82          KK     Q1B   BASIN
  83          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  84          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
  85          KM   S-GRAPH TYPE=PHX MNT
  86          KO       0       0     0.0       1      22
  87          BA   0.937
  88          LG    0.35    0.35    4.32   0.373  14.815
              * Q1B
  89          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
  90          UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
  91          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
  92          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
  93          UI   13.74     0.0
              *
1                                          HEC-1 INPUT                                          PAGE  3

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

  94          KK   DUMMY COMBINE
  95          KM    DUMMY COMBINE FOR HEC-1 STACK
  96          HC       2
              *

  97          KK      L1   BASIN
  98          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  99          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
 100          KM   S-GRAPH TYPE=PHX MNT
 101          BA   3.546
 102          LG   0.271   0.318   4.363   0.351  16.279
 103          UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 104          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 105          UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 106          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 107          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 108          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

 109          KK  L1-L2A   ROUTE
 110          RS       3    FLOW     0.0     0.0
 111          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 112          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 113          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 114          KK     L2A   BASIN
 115          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 116          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
 117          KM   S-GRAPH TYPE=DES RNGLND
 118          BA   0.693
 119          LG    0.35   0.384   5.641   0.202     0.0
 120          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 121          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 122          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
```

```
123          UI   12.61   12.61   12.61   12.61
             *

124          KK    L2BR COMBINE
125          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
126          KM     THIS IS THE TOTAL FLOW TO APEX 37
127          HC       2
             *

128          KK  RRL2BR STORAGE
129          KM   PROPOSED DETENTION BASIN
130          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 37
131          KM    STRUCTURE ID:RRL2BR
132          KM    DIMENSIONS: L=1680ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 261.7 ac
133          RS       1    STOR       0
134          SV     0.0    49.8   100.8   153.2   179.8   206.8   234.0   261.7   289.6   346.5
135          SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
136          SQ     0.0   108.3   183.2   187.6   202.6   216.6   229.7   242.2   254.0   276.1
             *
1                                          HEC-1 INPUT                                          PAGE  4

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

137          KK  L2A-M1   ROUTE
138          KM   PROPOSED CHANNEL
139          KM    ROUTE FLOW FROM APEX 37 TO APEX 36
140          KM    STRUCTURE ID(s): L2A10
141          KM    Slope=(1616.0 - 1566.2) / 3875.0
142          RS       3    FLOW      -1
143          RC   0.045   0.045   0.045  3875.00.012845   102.0
144          RX     0.0     6.0    16.0    20.5    40.5    45.0    55.0    61.0
145          RY   102.0   100.0   100.0    98.5    98.5   100.0   100.0   102.0
             *

146          KK      M1   BASIN
147          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
148          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
149          KM   S-GRAPH TYPE=PHX MNT
150          BA   5.686
151          LG    0.35    0.35   4.297    0.35  16.637
152          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
153          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
154          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
155          UI  469.43  394.74  369.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
156          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
157          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
158          UI   54.77   54.77     0.0
             *

159          KK     CM1 COMBINE
160          KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
161          HC       2
             *

162          KK   RRCM1 STORAGE
163          KM   PROPOSED DETENTION BASIN
164          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
165          KM    STRUCTURE ID:RRCM1
166          KM    DIMENSIONS: L=2000ft, W=910ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 363.5 ac
167          RS       1    STOR       0
168          SV     0.0    34.6   105.0   177.0   213.5   250.4   287.7   363.5   440.8   519.7
169          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
170          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
             *

171          KK   M1-N1   ROUTE
172          KM   PROPOSED CHANNEL
173          KM    ROUTE FLOW FROM APEX 36 TO APEX 7
174          KM    STRUCTURE ID(s): N110, N120
175          KM    Slope=(1565.0 - 1382.8) / 9668.2
176          RS       4    FLOW      -1
177          RC   0.045   0.045   0.045  9668.20.018844   104.5
178          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
179          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *
1                                          HEC-1 INPUT                                          PAGE  5

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

180          KK      N1   BASIN
181          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
182          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
183          KM   S-GRAPH TYPE=PHX MNT
184          BA   1.524
185          LG    0.35    0.35   4.075   0.419    8.38
186          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
187          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
188          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
189          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *

190          KK     CN1 COMBINE
191          KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
```

```
192          HC       2
             *

193          KK   RRCN1 STORAGE
194          KM   PROPOSED DETENTION BASIN
195          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
196          KM    STRUCTURE ID:RRCN1
197          KM    DIMENSIONS: L=850ft, W=460ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 73.9 ac-f
198          RS       1     STOR        0
199          SV     0.0     6.6    20.4    34.9    42.3    50.0    57.8    65.7    82.2    99.4
200          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
201          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   408.4   451.5   490.9
             *

202          KK  N1-P1A   ROUTE
203          KM   PROPOSED CHANNEL
204          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
205          KM    STRUCTURE ID(s): N125
206          KM    Slope=(1382.8 - 1276.4) / 8101.2
207          RS       4     FLOW       -1
208          RC   0.045   0.045   0.045  8101.20.013128   104.5
209          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
210          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

211          KK     N2A   BASIN
212          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
213          KM    (ASSUME SAME AS N1 FOR NOW)
214          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
215          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
216          KM   S-GRAPH TYPE=PHX MNT
217          BA   1.524
218          LG    0.35    0.35   4.075   0.419    8.38
219          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
220          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
221          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
222          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

223          KK   CN2AR COMBINE
224          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
225          HC       2
             *

226          KK     P1A   BASIN
227          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
228          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
229          KM   S-GRAPH TYPE=PHX MNT
230          BA     0.5
231          LG    0.35    0.35   3.987   0.405  16.364
232          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
233          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
234          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
235          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *

236          KK   RRP1A STORAGE
237          KM   PROPOSED DETENTION BASIN
238          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
239          KM    STRUCTURE ID:RRP1A
240          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
241          RS       1     STOR        0
242          SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    41.5    49.9
243          SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.5    10.0
244          SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    99.2   107.6
             *

245          KK    CN2A COMBINE
246          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
247          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
248          HC       2
             *

249          KK  P1A-1B   ROUTE
250          KM   PROPOSED CHANNEL
251          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
252          KM    STRUCTURE ID(s): N130, N140
253          KM    Slope=(1276.4 - 1092.0) / 16521.3
254          RS      11     FLOW       -1
255          RC   0.045   0.045   0.045 16521.30.011161   105.0
256          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
257          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

258          KK     P1B   BASIN
259          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
260          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
261          KM   S-GRAPH TYPE=PHX MNT
262          BA   1.937
263          LG    0.35    0.35   4.23   0.393   4.667
264          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
```

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 265          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
 266          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
1                                          HEC-1 INPUT                                                PAGE  7

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

 267          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
 268          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
 269          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
 270          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
 271          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
              *

 272          KK      PR COMBINE
 273          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
 274          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
 275          HC       2
              *

 276          KK     Q1A   BASIN
 277          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 278          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
 279          KM   S-GRAPH TYPE=PHX MNT
 280          BA   1.297
 281          LG    0.35    0.35   4.127     0.4    11.2
 282          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
 283          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
 284          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
 285          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
 286          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
              *

 287          KK   RRQ1A STORAGE
 288          KM   PROPOSED DETENTION BASIN
 289          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
 290          KM    STRUCTURE ID:RRQ1A
 291          KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
 292          RS       1    STOR       0
 293          SV     0.0    10.4    21.1    32.3    43.8    51.7    59.9    68.2    76.6    94.2
 294          SE     0.0     1.5     3.0     4.5     6.0     7.0     8.0     9.0    10.0    12.0
 295          SQ     0.0    41.7    59.0    72.2    83.4    90.0    96.3   102.1   107.6   117.9
              *

 296          KK   Q1A-P   ROUTE
 297          KM   PROPOSED CHANNEL
 298          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
 299          KM    IN NEW CHANNEL
 300          KM    STRUCTURE ID(s): P1B10
 301          KM    Slope=(1190.4 - 1133.0) / 5122.9
 302          RS       7    FLOW      -1
 303          RC   0.045   0.045   0.045  5122.90.011207   104.5
 304          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
 305          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 306          KK       P COMBINE
 307          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
 308          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
 309          HC       2
              *
              *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
              *
1                                          HEC-1 INPUT                                                PAGE  8

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

 310          KK     N2B   BASIN
 311          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
 312          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
 313          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 314          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
 315          KM   S-GRAPH TYPE=PHX MNT
 316          BA   3.325
 317          LG    0.35    0.35   4.117   0.405    2.67
 318          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
 319          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 320          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 321          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 322          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 323          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 324          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
 325          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
 326          UI   23.58   23.58   23.58   23.58   23.58
              *

 327          KK      O1   BASIN
 328          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 329          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
 330          KM   S-GRAPH TYPE=PHX MNT
 331          BA   3.088
 332          LG    0.35    0.35   4.191   0.393   2.105
 333          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
 334          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
 335          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
```

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 336          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
 337          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
 338          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
 339          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
 340          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 341          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 342          UI   19.93   19.93   19.93     0.0
              *

 343          KK      M2   BASIN
 344          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 345          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
 346          KM   S-GRAPH TYPE=DES RNGLND
 347          BA   7.436
 348          LG    0.35    0.35   3.959   0.445   0.291
 349          UI     0.0   250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 350          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 351          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
 352          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 353          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 354          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 355          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 356          UI   60.94   60.94   60.94   60.94     0.0
              *
1                                          HEC-1 INPUT                                          PAGE  9

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

 357          KK      Z1   BASIN
 358          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 359          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
 360          KM   S-GRAPH TYPE=DES RNGLND
 361          BA   0.664
 362          LG   0.321   0.292   4.004    0.43   2.909
 363          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
 364          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
 365          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
              *

 366          KK     L2B   BASIN
 367          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 368          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 369          KM   S-GRAPH TYPE=DES RNGLND
 370          BA   4.077
 371          LG    0.35    0.35   4.179   0.399     0.0
 372          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 373          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 374          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 375          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 376          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 377          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 378          KK  L2B-L3   ROUTE
 379          RS      18    FLOW     0.0     0.0
 380          RC    0.05    0.04   0.0619942.62  0.0089     0.0
 381          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 382          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 383          KK     L2C   BASIN
 384          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 385          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 386          KM   S-GRAPH TYPE=DES RNGLND
 387          BA   1.328
 388          LG    0.35    0.35   4.189   0.422     0.0
 389          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 390          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 391          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 392          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 393          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 394          KK  L2C-2D   ROUTE
 395          RS       6    FLOW     0.0     0.0
 396          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 397          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 398          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 399          KK     L2D   BASIN
 400          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 401          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 402          KM   S-GRAPH TYPE=DES RNGLND
 403          BA   1.232
 404          LG    0.35    0.35   3.578   0.544     0.0
 405          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
 406          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 407          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 408          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
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409          UI   18.36      0.0
             *

410          KK    L3RB COMBINE
411          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
412          HC       2
             *

413          KK  L2D-L3   ROUTE
414          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
415          RS      39    FLOW     0.0     0.0
416          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
417          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
418          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

419          KK      L3   BASIN
420          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
421          KM   L=4.75     Lca=2.00     S=44.27     Kn=0.055     LAG=91.0
422          KM   S-GRAPH TYPE=DES RNGLND
423          BA   5.852
424          LG   0.341   0.328    3.98   0.419    1.05
425          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
426          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
427          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
428          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
429          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
430          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
431          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

432          KK       L COMBINE
433          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
434          HC       3
             *
             *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
             *
435          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

 NO.       (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  74          R1
               .
               .
  82           .         Q1B
               .           .
               .           .
  94       DUMMY...........
               .
               .
  97           .          L1
               .           V
               .           V
 109           .      L1-L2A
               .           .
               .           .
 114           .           .         L2A
               .           .           .
               .           .           .
 124           .       L2BR............
               .           V
               .           V
 128           .      RRL2BR
               .           V
               .           V
 137           .      L2A-M1
               .           .
               .           .
 146           .           .          M1
               .           .           .
               .           .           .
 159           .         CM1............
               .           V
               .           V
 162           .       RRCM1
               .           V
               .           V
 171           .       M1-N1
               .           .
               .           .
 180           .           .          N1
               .           .           .
               .           .           .
 190           .         CN1............
               .           V
               .           V
 193           .       RRCN1
               .           V
               .           V
 202           .      N1-P1A
               .           .
```

```
211          .          .        N2A
             .          .          .
             .          .          .
223          .     CN2AR...........
             .          .
             .          .
226          .          .        P1A
             .          .          V
             .          .          V
236          .          .      RRP1A
             .          .          .
             .          .          .
245          .      CN2A...........
             .        V
             .        V
249          .    P1A-1B
             .          .
             .          .
258          .          .        P1B
             .          .          .
             .          .          .
272          .        PR...........
             .          .
             .          .
276          .          .        Q1A
             .          .          V
             .          .          V
287          .          .      RRQ1A
             .          .          V
             .          .          V
296          .          .      Q1A-P
             .          .          .
             .          .          .
306          .        P...........
             .          .
             .          .
310          .          .        N2B
             .          .          .
             .          .          .
327          .          .          .        O1
             .          .          .         .
             .          .          .         .
343          .          .          .         .        M2
             .          .          .         .         .
             .          .          .         .         .
357          .          .          .         .         .        Z1
             .          .          .         .         .         .
             .          .          .         .         .         .
366          .          .          .         .         .         .      L2B
             .          .          .         .         .         .        V
             .          .          .         .         .         .        V
378          .          .          .         .         .         .    L2B-L3
             .          .          .         .         .         .         .
             .          .          .         .         .         .         .
383          .          .          .         .         .         .         .      L2C
             .          .          .         .         .         .         .        V
             .          .          .         .         .         .         .        V
394          .          .          .         .         .         .         .    L2C-2D
             .          .          .         .         .         .         .         .
             .          .          .         .         .         .         .         .
399          .          .          .         .         .         .         .         .         L2D
             .          .          .         .         .         .         .         .           .
             .          .          .         .         .         .         .         .           .
410          .          .          .         .         .         .         .      L3RB...........
             .          .          .         .         .         .         .        V
             .          .          .         .         .         .         .        V
413          .          .          .         .         .         .         .    L2D-L3
             .          .          .         .         .         .         .         .
             .          .          .         .         .         .         .         .
419          .          .          .         .         .         .         .         .           L3
             .          .          .         .         .         .         .         .           .
             .          .          .         .         .         .         .         .           .
432          .          .          .         .         .         .         .         L.......................
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   19APR06  TIME  17:12:49  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B41
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description

```
The purpose of Alternative B is to capture the upstream flow at the
apex using online detention basins.  The presence of the detention basins
eliminates the downstream alluvial fan uncertainties by controlling the
flow from the apices to the outfall.  Alternative B4-1 is based on using a
relatively larger on-line detention basin at the apex accompanied by smaller
leveed channel sections in the down fan direction.  It is the first of three
corridor alignments considered as part of the Alternative B4 series.


 JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 6-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)

33 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     1JAN94  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE     7JAN94  ENDING DATE
              NDTIME       2235  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

35 JD        INDEX STORM NO. 1
                STRM        3.23  PRECIPITATION DEPTH
                TRDA         .01  TRANSPOSITION DRAINAGE AREA

36 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

40 JD        INDEX STORM NO. 2
                STRM        3.21  PRECIPITATION DEPTH
                TRDA         .50  TRANSPOSITION DRAINAGE AREA

41 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

45 JD        INDEX STORM NO. 3
                STRM        3.19  PRECIPITATION DEPTH
                TRDA        1.00  TRANSPOSITION DRAINAGE AREA

46 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       .06       .06       .06       .12       .12       .12       .03       .03
                .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00
```

```
 50 JD          INDEX STORM NO. 4
                      STRM        3.10  PRECIPITATION DEPTH
                      TRDA        5.00  TRANSPOSITION DRAINAGE AREA

 51 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       .06       .06       .06       .08       .08       .08       .05       .05
                     .05       .02       .02       .02       .01       .01       .01       .01       .01       .01
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00

 55 JD          INDEX STORM NO. 5
                      STRM        3.04  PRECIPITATION DEPTH
                      TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 56 PI            PRECIPITATION PATTERN
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .01
                     .01       .01       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .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
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00

 60 JD          INDEX STORM NO. 6
                      STRM        2.94  PRECIPITATION DEPTH
                      TRDA       20.00  TRANSPOSITION DRAINAGE AREA

 61 PI            PRECIPITATION PATTERN
                     .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                     .01       .01       .01       .01       .01       .00       .00       .00       .00       .00
                     .00       .01       .01       .01       .00       .00       .00       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                     .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                     .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                     .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                     .00       .00

 65 JD          INDEX STORM NO. 7
                      STRM        2.88  PRECIPITATION DEPTH
                      TRDA       30.00  TRANSPOSITION DRAINAGE AREA

 66 PI            PRECIPITATION PATTERN
                     .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                     .01       .01       .01       .01       .01       .00       .00       .00       .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       .06       .06       .06       .04       .04
                     .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .01       .01       .01       .00
                     .00       .00

 70 JD          INDEX STORM NO. 8
                      STRM        2.81  PRECIPITATION DEPTH
                      TRDA       40.00  TRANSPOSITION DRAINAGE AREA

 71 PI            PRECIPITATION PATTERN
                     .01       .01       .01       .00       .00       .00       .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       .02       .02       .02       .03
                     .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                     .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                     .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                     .01       .01

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
 82 KK      *     Q1B    *        BASIN
            *            *
            **************

 86 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE
                     IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                      IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT       .083  TIME INTERVAL IN HOURS

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	R1	506.	4.25	47.	12.	4.	.28		
+	HYDROGRAPH AT	Q1B	851.	4.50	155.	39.	13.	.94		
+	2 COMBINED AT	DUMMY	1020.	4.50	192.	48.	16.	1.22		
+	HYDROGRAPH AT	L1	2128.	4.75	543.	139.	46.	3.55		
+	ROUTED TO	L1-L2A	2066.	4.92	543.	139.	46.	3.55		
+	HYDROGRAPH AT	L2A	692.	4.58	113.	28.	9.	.69		
+	2 COMBINED AT	L2BR	2391.	4.92	623.	159.	53.	4.24		
+	ROUTED TO	RRL2BR	237.	7.17	225.	149.	53.	4.24		
+	ROUTED TO	L2A-M1	237.	7.33	225.	149.	53.	4.24		
+	HYDROGRAPH AT	M1	2809.	4.83	790.	203.	68.	5.69		
+	2 COMBINED AT	CM1	2665.	4.92	894.	320.	111.	9.92		
+	ROUTED TO	RRCM1	399.	7.58	387.	298.	111.	9.92		
+	ROUTED TO	M1-N1	399.	8.08	387.	298.	111.	9.92		
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN1	812.	4.50	447.	323.	121.	11.45		
+	ROUTED TO	RRCN1	380.	10.50	376.	319.	121.	11.45		
+	ROUTED TO	N1-P1A	380.	10.92	376.	318.	121.	11.45		
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN2AR	777.	4.50	434.	341.	131.	12.97		
+	HYDROGRAPH AT	P1A	575.	4.42	89.	22.	7.	.50		
+	ROUTED TO	RRP1A	87.	5.50	70.	22.	7.	.50		
+	2 COMBINED AT	CN2A	821.	4.58	482.	354.	135.	13.47		
+	ROUTED TO	P1A-1B	672.	5.67	461.	348.	135.	13.47		
+	HYDROGRAPH AT	P1B	852.	5.08	244.	62.	21.	1.94		
+	2 COMBINED AT	PR	990.	5.58	559.	375.	146.	15.41		
+	HYDROGRAPH AT	Q1A	990.	4.58	193.	49.	16.	1.30		
+	ROUTED TO	RRQ1A	106.	6.25	97.	48.	16.	1.30		
+	ROUTED TO	Q1A-P	106.	6.50	97.	48.	16.	1.30		
+	2 COMBINED AT	P	1049.	5.67	626.	403.	155.	16.71		
+	HYDROGRAPH AT	N2B	1193.	5.17	366.	93.	31.	3.33		

+	HYDROGRAPH AT	O1	1057.	5.33	343.	88.	29.	3.09
+	HYDROGRAPH AT	M2	1849.	5.42	633.	159.	53.	7.44
+	HYDROGRAPH AT	Z1	694.	4.50	100.	25.	8.	.66
+	HYDROGRAPH AT	L2B	1532.	5.08	418.	104.	35.	4.08
+	ROUTED TO	L2B-L3	1196.	6.92	416.	104.	35.	4.08
+	HYDROGRAPH AT	L2C	754.	4.83	161.	40.	13.	1.33
+	ROUTED TO	L2C-2D	712.	5.25	161.	40.	13.	1.33
+	HYDROGRAPH AT	L2D	706.	4.75	136.	34.	11.	1.23
+	2 COMBINED AT	L3RB	1043.	5.00	260.	65.	22.	2.56
+	ROUTED TO	L2D-L3	650.	8.33	258.	65.	22.	2.56
+	HYDROGRAPH AT	L3	1832.	5.25	581.	146.	49.	5.85
+	3 COMBINED AT	L	1638.	5.33	963.	250.	83.	12.49

*** NORMAL END OF HEC-1 ***

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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   19APR06   TIME  17:12:50 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
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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
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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

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

   1          ID    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
   2          ID     - ALTERNATIVE B41
   3          ID     - BUCKEYE FRS NO. 1 SUB-AREA
   4          ID
   5          ID  Alternative Description
   6          ID  The purpose of Alternative B is to capture the upstream flow at the
   7          ID  apex using online detention basins.  The presence of the detention basins
   8          ID  eliminates the downstream alluvial fan uncertainties by controlling the
   9          ID  flow from the apices to the outfall.  Alternative B4-1 is based on using a
  10          ID  relatively larger on-line detention basin at the apex accompanied by smaller
  11          ID  leveed channel sections in the down fan direction.  It is the first of three
  12          ID  corridor alignments considered as part of the Alternative B4 series.
  13          ID
  14          ID
  15          ID
  16          ID   JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
  17          ID  JANUARY 2006
  18          ID
  19          ID  MODEL BASED UPON:
  20          ID
  21          ID  Buckeye/Sun Valley ADMS - May 2005
  22          ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
  23          ID  100-year 24-hour
  24          ID  Existing Conditions
  25          ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
  26          ID  Rainfall Loss Method - Green & Ampt
  27          ID  Unit Hydrograph Method - FCDMC S-Graph
  28          ID  Channel Routing Method - Normal Depth
  29          ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
  30          ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
  31          ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
              *DIAGRAM
  32          IT       5 01JAN94       0    2000
  33          IO       5
  34          IN      15 01JAN94       0
  35          JD    4.16    0.01
              * 24-hour distribution
  36          PC     0.0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
  37          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
  38          PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
  39          PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
  40          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
  41          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
  42          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
  43          PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
  44          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
  45          PC   0.983   0.986   0.989   0.992   0.995   0.998     1.0
  46          JD   3.952    10.0
  47          JD   3.819    20.0
  48          JD    3.69    40.0
  49          JD   3.565    80.0
  50          JD   3.499   120.0
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1 HEC-1 INPUT PAGE 2

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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KK      R1   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
KM   S-GRAPH TYPE=PHX MNT
BA   0.284
LG    0.35    0.35   4.358   0.374   8.387
UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
*

KK     Q1B   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
KM   S-GRAPH TYPE=PHX MNT
KO       0       0     0.0       1      22
BA   0.937
LG    0.35    0.35    4.32   0.373  14.815
* Q1B
UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
UI   13.74     0.0
*

KK   DUMMY COMBINE
KM    DUMMY COMBINE FOR HEC-1 STACK
HC       2
*

KK      L1   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
KM   S-GRAPH TYPE=PHX MNT
BA   3.546
LG   0.271   0.318   4.363   0.351  16.279
UI     0.0  195.74  196.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
*

KK  L1-L2A   ROUTE
RS       3    FLOW     0.0     0.0
RC   0.046   0.045   0.046 7078.75  0.0174     0.0
RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
*
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1 HEC-1 INPUT PAGE 3

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

KK     L2A   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
KM   S-GRAPH TYPE=DES RNGLND
BA   0.693
LG    0.35   0.384   5.641   0.202     0.0
UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
UI   12.61   12.61   12.61   12.61
*

KK    L2BR COMBINE
KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
KM     THIS IS THE TOTAL FLOW TO APEX 37
HC       2
*

KK  RRL2BR STORAGE
KM   PROPOSED DETENTION BASIN
KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 37
KM    STRUCTURE ID:RRL2BR
KM    DIMENSIONS: L=1650ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 261.7 ac
RS       1    STOR       0
SV     0.0    49.8   100.8   153.2   179.8   206.8   234.0   261.7   289.6   346.5
SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
SQ     0.0   108.3   153.2   187.6   202.6   216.6   229.7   242.2   254.0   276.1
*

KK  L2A-M1   ROUTE
KM   PROPOSED CHANNEL
KM    ROUTE FLOW FROM APEX 37 TO APEX 36
KM    STRUCTURE ID(s): L2A10
KM    Slope=(1616.0 - 1566.2) / 3875.0
RS       3    FLOW      -1
RC   0.045   0.045   0.045  3875.00.012845   102.0
RX     0.0     6.0    16.0    20.5    40.5    45.0    55.0    61.0
RY   102.0   100.0   100.0    98.5    98.5   100.0   100.0   102.0
*
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```
123        KK      M1   BASIN
124        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
125        KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
126        KM   S-GRAPH TYPE=PHX MNT
127        BA   5.686
128        LG    0.35    0.35   4.297    0.35  16.637
129        UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
130        UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
131        UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
132        UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
133        UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
134        UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
135        UI   54.77   54.77     0.0
           *
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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

136        KK     CM1 COMBINE
137        KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
138        HC       2
           *

139        KK   RRCM1 STORAGE
140        KM   PROPOSED DETENTION BASIN
141        KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
142        KM    STRUCTURE ID:RRCM1
143        KM    DIMENSIONS: L=2000ft, W=910ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 363.5 ac
144        RS       1    STOR       0
145        SV     0.0    34.6   105.0   177.0   213.5   250.4   287.7   363.5   440.8   519.7
146        SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
147        SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
           *

148        KK   M1-N1   ROUTE
149        KM   PROPOSED CHANNEL
150        KM    ROUTE FLOW FROM APEX 36 TO APEX 7
151        KM    STRUCTURE ID(s): N110, N120
152        KM    Slope=(1565.0 - 1382.8) / 9668.2
153        RS       4    FLOW      -1
154        RC   0.045   0.045   0.045  9668.20.018844   104.5
155        RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
156        RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
           *

157        KK      N1   BASIN
158        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
159        KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
160        KM   S-GRAPH TYPE=PHX MNT
161        BA   1.524
162        LG    0.35    0.35   4.075   0.419    8.38
163        UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
164        UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
165        UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
166        UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
           *

167        KK     CN1 COMBINE
168        KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
169        HC       2
           *

170        KK   RRCN1 STORAGE
171        KM   PROPOSED DETENTION BASIN
172        KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
173        KM    STRUCTURE ID:RRCN1
174        KM    DIMENSIONS: L=850ft, W=460ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 73.9 ac-f
175        RS       1    STOR       0
176        SV     0.0     6.6    20.4    34.9    42.3    50.0    57.8    65.7    82.2    99.4
177        SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
178        SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   408.4   451.5   490.9
           *
```



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

179        KK  N1-P1A   ROUTE
180        KM   PROPOSED CHANNEL
181        KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
182        KM    STRUCTURE ID(s): N125
183        KM    Slope=(1382.8 - 1276.4) / 8101.2
184        RS       4    FLOW      -1
185        RC   0.045   0.045   0.045  8101.20.013128   104.5
186        RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
187        RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
           *

188        KK     N2A   BASIN
189        KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
190        KM   (ASSUME SAME AS N1 FOR NOW)
191        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
192        KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
```

```
193          KM   S-GRAPH TYPE=PHX MNT
194          BA   1.524
195          LG    0.35    0.35   4.075   0.419    8.38
196          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
197          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
198          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
199          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *

200          KK   CN2AR COMBINE
201          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
202          HC       2
             *

203          KK     P1A   BASIN
204          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
205          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
206          KM   S-GRAPH TYPE=PHX MNT
207          BA     0.5
208          LG    0.35    0.35   3.987   0.405  16.364
209          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
210          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
211          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
212          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *

213          KK   RRP1A STORAGE
214          KM   PROPOSED DETENTION BASIN
215          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
216          KM    outlet pipe 2 ft diameter assumed
217          KM    STRUCTURE ID:RRP1A
218          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
219          RS       1     STOR       0
220          SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    41.5    49.9
221          SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.5    10.0
222          SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    99.2   107.6
             *
```



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

223          KK    CN2A COMBINE
224          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
225          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
226          HC       2
             *

227          KK  P1A-1B   ROUTE
228          KM   PROPOSED CHANNEL
229          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
230          KM    STRUCTURE ID(s): N130, N140
231          KM    Slope=(1276.4 - 1092.0) / 16521.3
232          RS      11     FLOW      -1
233          RC   0.045   0.045   0.045 16521.30.011161   105.0
234          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
235          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

236          KK     P1B   BASIN
237          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
238          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
239          KM   S-GRAPH TYPE=PHX MNT
240          BA   1.937
241          LG    0.35    0.35    4.23   0.393   4.667
242          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
243          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
244          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
245          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
246          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
247          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
248          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
249          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

250          KK      PR COMBINE
251          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
252          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
253          HC       2
             *

254          KK     Q1A   BASIN
255          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
256          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
257          KM   S-GRAPH TYPE=PHX MNT
258          BA   1.297
259          LG    0.35    0.35   4.127     0.4    11.2
260          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
261          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
262          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
263          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
264          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *
```

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

 265          KK   RRQ1A STORAGE
 266          KM   PROPOSED DETENTION BASIN
 267          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
 268          KM    STRUCTURE ID:RRQ1A
 269          KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
 270          RS       1    STOR       0
 271          SV     0.0    10.4    21.1    32.3    43.8    51.7    59.9    68.2    76.6    94.2
 272          SE     0.0     1.5     3.0     4.5     6.0     7.0     8.0     9.0    10.0    12.0
 273          SQ     0.0    41.7    59.0    72.2    83.4    90.0    96.3   102.1   107.6   117.9
              *

 274          KK   Q1A-P   ROUTE
 275          KM   PROPOSED CHANNEL
 276          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
 277          KM    IN NEW CHANNEL
 278          KM    STRUCTURE ID(s): P1B10
 279          KM    Slope=(1190.4 - 1133.0) / 5122.9
 280          RS       7    FLOW      -1
 281          RC   0.045   0.045   0.045  5122.90.011207   104.5
 282          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
 283          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 284          KK       P COMBINE
 285          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
 286          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
 287          HC       2
              *
              *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
              *

 288          KK     N2B   BASIN
 289          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
 290          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
 291          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 292          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
 293          KM   S-GRAPH TYPE=PHX MNT
 294          BA   3.325
 295          LG    0.35    0.35   4.117   0.405    2.67
 296          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
 297          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 298          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 299          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 300          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 301          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 302          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
 303          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
 304          UI   23.58   23.58   23.58   23.58   23.58
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 305          KK      O1   BASIN
 306          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 307          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
 308          KM   S-GRAPH TYPE=PHX MNT
 309          BA   3.088
 310          LG    0.35    0.35   4.191   0.393   2.105
 311          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
 312          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
 313          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
 314          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
 315          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
 316          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
 317          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
 318          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 319          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 320          UI   19.93   19.93   19.93     0.0
              *

 321          KK      M2   BASIN
 322          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 323          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
 324          KM   S-GRAPH TYPE=DES RNGLND
 325          BA   7.436
 326          LG    0.35    0.35   3.959   0.445   0.291
 327          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 328          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 329          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
 330          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 331          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 332          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 333          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 334          UI   60.94   60.94   60.94   60.94     0.0
              *

 335          KK      Z1   BASIN
 336          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 337          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
 338          KM   S-GRAPH TYPE=DES RNGLND
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 339          BA   0.664
 340          LG   0.321   0.292   4.004    0.43   2.909
 341          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
 342          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
 343          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
              *

 344          KK     L2B   BASIN
 345          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 346          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 347          KM   S-GRAPH TYPE=DES RNGLND
 348          BA   4.077
 349          LG    0.35    0.35   4.179   0.399     0.0
 350          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 351          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 352          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
1                                                HEC-1 INPUT                                          PAGE  9

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

 353          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 354          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 355          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 356          KK  L2B-L3   ROUTE
 357          RS      18    FLOW     0.0     0.0
 358          RC    0.05    0.04  0.0619942.62  0.0089     0.0
 359          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 360          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 361          KK     L2C   BASIN
 362          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 363          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 364          KM   S-GRAPH TYPE=DES RNGLND
 365          BA   1.328
 366          LG    0.35    0.35   4.189   0.422     0.0
 367          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 368          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 369          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 370          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 371          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 372          KK  L2C-2D   ROUTE
 373          RS       6    FLOW     0.0     0.0
 374          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 375          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 376          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 377          KK     L2D   BASIN
 378          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 379          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 380          KM   S-GRAPH TYPE=DES RNGLND
 381          BA   1.232
 382          LG    0.35    0.35   3.578   0.544     0.0
 383          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
 384          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 385          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 386          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
 387          UI   18.36     0.0
              *

 388          KK    L3RB COMBINE
 389          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 390          HC       2
              *
1                                                HEC-1 INPUT                                          PAGE 10

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

 391          KK  L2D-L3   ROUTE
 392          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 393          RS      39    FLOW     0.0     0.0
 394          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
 395          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 396          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 397          KK      L3   BASIN
 398          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 399          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
 400          KM   S-GRAPH TYPE=DES RNGLND
 401          BA   5.852
 402          LG   0.341   0.328    3.98   0.419    1.05
 403          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
 404          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
 405          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
 406          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
 407          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
 408          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
 409          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
```

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                    *
410                 KK        L COMBINE
411                 KM     COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
412                 HC        3
                    *
                    *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
                    *
413                 ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   51         R1
               .
               .
   59          .         Q1B
               .           .
               .           .
   71      DUMMY...........
               .
               .
   74          .          L1
               .           V
               .           V
   86          .      L1-L2A
               .           .
               .           .
   91          .           .          L2A
               .           .            .
               .           .            .
  101          .       L2BR............
               .           V
               .           V
  105          .      RRL2BR
               .           V
               .           V
  114          .      L2A-M1
               .           .
               .           .
  123          .           .           M1
               .           .            .
               .           .            .
  136          .         CM1............
               .           V
               .           V
  139          .       RRCM1
               .           V
               .           V
  148          .       M1-N1
               .           .
               .           .
  157          .           .           N1
               .           .            .
               .           .            .
  167          .         CN1............
               .           V
               .           V
  170          .       RRCN1
               .           V
               .           V
  179          .      N1-P1A
               .           .
               .           .
  188          .           .          N2A
               .           .            .
               .           .            .
  200          .       CN2AR............
               .           .
               .           .
  203          .           .          P1A
               .           .            V
               .           .            V
  213          .           .        RRP1A
               .           .            .
               .           .            .
  223          .        CN2A............
               .           V
               .           V
  227          .      P1A-1B
               .           .
               .           .
  236          .           .          P1B
               .           .            .
               .           .            .
  250          .          PR............
               .           .
               .           .
  254          .           .          Q1A
               .           .            V
               .           .            V
  265          .           .        RRQ1A
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                .           .           V
                .           .           V
  274           .           .       Q1A-P
                .           .           .
                .           .           .
  284           .           P............
                .           .
                .           .
  288           .           .         N2B
                .           .           .
                .           .           .
  305           .           .           .          O1
                .           .           .           .
                .           .           .           .
  321           .           .           .           .          M2
                .           .           .           .           .
                .           .           .           .           .
  335           .           .           .           .           .          Z1
                .           .           .           .           .           .
                .           .           .           .           .           .
  344           .           .           .           .           .           .        L2B
                .           .           .           .           .           .          V
                .           .           .           .           .           .          V
  356           .           .           .           .           .           .      L2B-L3
                .           .           .           .           .           .           .
                .           .           .           .           .           .           .
  361           .           .           .           .           .           .           .        L2C
                .           .           .           .           .           .           .          V
                .           .           .           .           .           .           .          V
  372           .           .           .           .           .           .           .      L2C-2D
                .           .           .           .           .           .           .           .
                .           .           .           .           .           .           .           .
  377           .           .           .           .           .           .           .           .         L2D
                .           .           .           .           .           .           .           .           .
                .           .           .           .           .           .           .           .           .
  388           .           .           .           .           .           .           .        L3RB............
                .           .           .           .           .           .           .          V
                .           .           .           .           .           .           .          V
  391           .           .           .           .           .           .           .      L2D-L3
                .           .           .           .           .           .           .           .
                .           .           .           .           .           .           .           .
  397           .           .           .           .           .           .           .           .          L3
                .           .           .           .           .           .           .           .           .
                .           .           .           .           .           .           .           .           .
  410           .           .           .           .           .           .           .        L.......................
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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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   19APR06  TIME  17:12:50    *                                    *          (916) 756-1104              *
*                                        *                                    *                                      *
****************************************                                    ****************************************
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STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B41
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B4-1 is based on using a relatively larger on-line detention basin at the apex accompanied by smaller leveed channel sections in the down fan direction. It is the first of three corridor alignments considered as part of the Alternative B4 series.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 24-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi) Lca(mi) S(ft/mi) LAG(min)

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  33 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
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                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE

  IT         HYDROGRAPH TIME DATA
                 NMIN          5  MINUTES IN COMPUTATION INTERVAL
                IDATE     1JAN94  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE     7JAN94  ENDING DATE
               NDTIME       2235  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

 35 JD       INDEX STORM NO. 1
                 STRM       4.16  PRECIPITATION DEPTH
                 TRDA        .01  TRANSPOSITION DRAINAGE AREA

 36 PI         PRECIPITATION PATTERN
                .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
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                .03      .09      .09      .09      .01      .01      .01      .01      .01      .01
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 46 JD       INDEX STORM NO. 2
                 STRM       3.95  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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                .03      .09      .09      .09      .01      .01      .01      .01      .01      .01
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 47 JD       INDEX STORM NO. 3
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                STRM        3.82  PRECIPITATION DEPTH
                TRDA       20.00  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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                .03        .09        .09        .09        .01        .01        .01        .01        .01        .01
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                .00        .00        .00        .00        .00        .00        .00        .00
48 JD       INDEX STORM NO. 4
                STRM        3.69  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

 0 PI        PRECIPITATION PATTERN
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
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49 JD       INDEX STORM NO. 5
                STRM        3.57  PRECIPITATION DEPTH
                TRDA       80.00  TRANSPOSITION DRAINAGE AREA

 0 PI        PRECIPITATION PATTERN
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
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 50 JD        INDEX STORM NO. 6
                STRM        3.50  PRECIPITATION DEPTH
                TRDA      120.00  TRANSPOSITION DRAINAGE AREA

  0 PI         PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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          *            *
 59 KK    *     Q1B    *        BASIN
          *            *
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 63 KO        OUTPUT CONTROL VARIABLES
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE
                IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
               TIMINT       .083  TIME INTERVAL IN HOURS

1
                                        RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

                                                  AVERAGE FLOW FOR MAXIMUM PERIOD
                                   PEAK   TIME OF                                  BASIN    MAXIMUM   TIME OF
        OPERATION        STATION   FLOW    PEAK     6-HOUR    24-HOUR    72-HOUR   AREA     STAGE    MAX STAGE
+
        HYDROGRAPH AT
+                          R1      387.   12.25      37.       10.        3.       .28
        HYDROGRAPH AT
+                          Q1B     740.   12.50     134.       38.       13.       .94
        2 COMBINED AT
+                         DUMMY    902.   12.50     170.       48.       16.      1.22
        HYDROGRAPH AT
+                          L1     2267.   12.75     527.      150.       50.      3.55
        ROUTED TO
+                        L1-L2A   2154.   12.92     527.      150.       50.      3.55
        HYDROGRAPH AT
+                          L2A     570.   12.58      92.       23.        8.       .69
        2 COMBINED AT
+                         L2BR    2519.   12.92     616.      172.       57.      4.24
```

+	ROUTED TO	RRL2BR	236.	15.17	226.	157.	57.	4.24
+	ROUTED TO	L2A-M1	236.	15.33	226.	157.	57.	4.24
+	HYDROGRAPH AT	M1	3301.	12.83	825.	236.	79.	5.69
+	2 COMBINED AT	CM1	3400.	12.83	1003.	374.	135.	9.92
+	ROUTED TO	RRCM1	424.	15.75	415.	339.	135.	9.92
+	ROUTED TO	M1-N1	424.	16.17	415.	339.	135.	9.92
+	HYDROGRAPH AT	N1	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN1	1264.	12.50	518.	378.	151.	11.45
+	ROUTED TO	RRCN1	419.	18.33	417.	369.	151.	11.45
+	ROUTED TO	N1-P1A	419.	18.75	417.	369.	151.	11.45
+	HYDROGRAPH AT	N2A	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN2AR	1257.	12.50	531.	407.	166.	12.97
+	HYDROGRAPH AT	P1A	441.	12.42	73.	21.	7.	.50
+	ROUTED TO	RRP1A	77.	13.50	61.	21.	7.	.50
+	2 COMBINED AT	CN2A	1309.	12.50	588.	424.	172.	13.47
+	ROUTED TO	P1A-1B	976.	13.42	564.	418.	172.	13.47
+	HYDROGRAPH AT	P1B	842.	13.08	231.	61.	20.	1.94
+	2 COMBINED AT	PR	1540.	13.25	726.	463.	190.	15.41
+	HYDROGRAPH AT	Q1A	915.	12.58	173.	48.	16.	1.30
+	ROUTED TO	RRQ1A	100.	14.17	92.	47.	16.	1.30
+	ROUTED TO	Q1A-P	100.	14.50	92.	47.	16.	1.30
+	2 COMBINED AT	P	1605.	13.25	808.	504.	204.	16.71
+	HYDROGRAPH AT	N2B	1331.	13.17	378.	99.	33.	3.33
+	HYDROGRAPH AT	O1	1163.	13.33	349.	91.	30.	3.09
+	HYDROGRAPH AT	M2	2347.	13.42	786.	198.	66.	7.44
+	HYDROGRAPH AT	Z1	558.	12.50	80.	21.	7.	.66
+	HYDROGRAPH AT	L2B	1700.	13.08	449.	112.	37.	4.08
+	ROUTED TO	L2B-L3	1323.	14.83	447.	112.	37.	4.08
+	HYDROGRAPH AT	L2C	692.	12.83	145.	36.	12.	1.33
+	ROUTED TO	L2C-2D	651.	13.25	145.	36.	12.	1.33
+	HYDROGRAPH AT	L2D	655.	12.75	124.	31.	10.	1.23
+	2 COMBINED AT	L3RB	1104.	13.00	266.	66.	22.	2.56

```
+          ROUTED TO
                          L2D-L3     705.   16.17      263.      66.      22.     2.56
+          HYDROGRAPH AT
                             L3    2129.   13.25      658.     166.      56.     5.85
+          3 COMBINED AT
                              L    2162.   13.33     1287.     335.     112.    12.49

 *** NORMAL END OF HEC-1 ***
```

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUN   1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   19APR06  TIME  17:18:04  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
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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

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1                                    HEC-1 INPUT                                    PAGE  1

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

   1          ID    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
   2          ID     - ALTERNATIVE B42
   3          ID     - BUCKEYE FRS NO. 1 SUB-AREA
   4          ID
   5          ID   Alternative Description
   6          ID   The purpose of Alternative B is to capture the upstream flow at the
   7          ID   apex using online detention basins.  The presence of the detention
   8          ID   basins eliminates the downstream alluvial fan uncertainties by controlling
   9          ID   the flow from the apices to the outfall.  Alternative B4-2 is based on
  10          ID   using a relatively larger on-line detention basin at the apex accompanied
  11          ID   by smaller leveed channel sections in the down fan direction.  It is the
  12          ID   second of three corridor alignments considered as part of the Alternative B4
  13          ID   series.
  14          ID
  15          ID
  16          ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
  17          ID   JANUARY 2006
  18          ID
  19          ID   MODEL BASED UPON:
  20          ID
  21          ID  Buckeye/Sun Valley ADMS - May 2005
  22          ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
  23          ID  100-year 6-hour
  24          ID  Existing Conditions
  25          ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
  26          ID  Rainfall Loss Method - Green & Ampt
  27          ID  Unit Hydrograph Method - FCDMC S-Graph
  28          ID  Channel Routing Method - Normal Depth
  29          ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
  30          ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
  31          ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
              *DIAGRAM
  32          IT       5 01JAN94       0    2000
  33          IO       5
  34          IN      15 01JAN94       0
  35          JD    3.23     0.01
              * 6-hour distribution, pattern 1.0
  36          PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
  37          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
  38          PC   0.962   0.972   0.983   0.991     1.0
  39          IN      15 01JAN94       0
  40          JD   3.211     0.5
              * 6-hour distribution, pattern 1.0
  41          PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
  42          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
  43          PC   0.962   0.972   0.983   0.991     1.0
  44          IN      15 01JAN94       0
  45          JD   3.188     1.0
              * 6-hour distribution, pattern 1.4
  46          PC     0.0  0.0084   0.016   0.025  0.0334  0.0414  0.0504  0.0584  0.0664  0.0748
  47          PC   0.087  0.0994  0.1188   0.148  0.2304  0.4067  0.7778  0.8813  0.9186  0.9452
  48          PC  0.9572  0.9684  0.9798  0.9898     1.0
  49          IN      15 01JAN94       0
  50          JD   3.101     5.0
              * 6-hour distribution, pattern 2.3
1                                    HEC-1 INPUT                                    PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  51          PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
  52          PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
  53          PC  0.9487   0.962  0.9743  0.9877     1.0
  54          IN      15 01JAN94       0
  55          JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
  56          PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
  57          PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
  58          PC  0.9471  0.9608  0.9735  0.9873     1.0
  59          IN      15 01JAN94       0
  60          JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
  61          PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
  62          PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
  63          PC  0.9434   0.958  0.9718  0.9863     1.0
  64          IN      15 01JAN94       0
  65          JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
  66          PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
  67          PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
  68          PC   0.939  0.9544  0.9697  0.9851     1.0
  69          IN      15 01JAN94       0
  70          JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
  71          PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
  72          PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
  73          PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

  74          KK      R1    BASIN
  75          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  76          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
  77          KM   S-GRAPH TYPE=PHX MNT
  78          BA   0.284
  79          LG    0.35    0.35   4.358   0.374   8.387
  80          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
  81          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

  82          KK     Q1B    BASIN
  83          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  84          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
  85          KM   S-GRAPH TYPE=PHX MNT
  86          KO       0       0     0.0       1      22
  87          BA   0.937
  88          LG    0.35    0.35    4.32   0.373  14.815
              * Q1B
  89          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
  90          UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
  91          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
  92          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
  93          UI   13.74     0.0
              *
1                                          HEC-1 INPUT                                          PAGE  3
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  94          KK   DUMMY COMBINE
  95          KM    DUMMY COMBINE FOR HEC-1 STACK
  96          HC       2
              *

  97          KK      L1    BASIN
  98          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  99          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
 100          KM   S-GRAPH TYPE=PHX MNT
 101          BA   3.546
 102          LG   0.271   0.318   4.363   0.351  16.279
 103          UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 104          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 105          UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 106          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 107          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 108          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

 109          KK  L1-L2A    ROUTE
 110          RS       3     FLOW     0.0     0.0
 111          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 112          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 113          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 114          KK     L2A    BASIN
 115          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 116          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
 117          KM   S-GRAPH TYPE=DES RNGLND
 118          BA   0.693
 119          LG    0.35   0.384   5.641   0.202     0.0
 120          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 121          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 122          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
```

```
 123          UI   12.61   12.61   12.61   12.61
              *

 124          KK    L2BR COMBINE
 125          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
 126          KM     THIS IS THE TOTAL FLOW TO APEX 37
 127          HC       2
              *

 128          KK  RRL2BR STORAGE
 129          KM   PROPOSED DETENTION BASIN
 130          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN AT APEX 37
 131          KM    outlet pipe of 4 ft diameter assumed
 132          KM    STRUCTURE ID:RRL2BR
 133          KM    DIMENSIONS: L=1800ft, W=780ft, D=10ft, Sideslope (?H:1V)= 3,  Vol.= 252.3 ac
 134          RS       1    STOR       0
 135          SV     0.0    53.7   108.8   165.2   193.9   222.9   252.3   282.1   312.2   373.4
 136          SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
 137          SQ     0.0   133.7   189.1   231.6   250.1   267.4   283.6   299.0   313.6   340.9
              *
1                                          HEC-1 INPUT                                          PAGE  4

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

 138          KK  L2AL2B   ROUTE
 139          KM   PROPOSED CHANNEL
 140          KM    ROUTE FLOW FROM APEX 37 TO SUN VALLEY PARKWAY THRU SUBBASIN L2B
 141          KM    STRUCTURE ID(s): L3R10
 142          KM    Slope=(1548.0 - 1238.5) / 20092.5
 143          RS       8    FLOW      -1
 144          RC   0.045   0.045   0.045 20092.50.015405   104.5
 145          RX     0.0    13.5    13.5    13.5   313.5   313.5   313.5   327.0
 146          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 147          KK     L2B   BASIN
 148          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 149          KM   L=5.13     Lca=1.82     S=93.37     Kn=0.055     LAG=78.1
 150          KM   S-GRAPH TYPE=DES RNGLND
 151          BA   4.077
 152          LG    0.35    0.35   4.179   0.399     0.0
 153          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 154          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 155          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 156          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 157          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 158          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 159          KK     L3R COMBINE
 160          KM    COMBINE ROUTED FLOW APEX 37 WITH RUNOFF FROM SUBBASIN L2B
 161          HC       2
              *

 162          KK    DL3R  DIVERT
 163          KM   Proposed Offline Detention Basin AT SUN VALLEY PARKWAY
 164          KM    STRUCTURE ID:DL3R
 165          KM    DIMENSIONS: L=260ft, W=200ft, D=4ft, Sideslope (?H:1V)= 3,  Vol.= 3 ac-ft
 166          DT    DOUT
 167          DI     0.0   360.0   720.0  1080.0  1440.0  1585.0  1820.0  2520.0  2880.0  3240.0
 168          DI  3600.0     0.0
 169          DQ     0.0     0.0     0.0     0.0     0.0     0.0   235.0   935.0  1295.0  1655.0
 170          DQ  2015.0     0.0
              *

 171          KK   L2BL3   ROUTE
 172          KM   PROPOSED CHANNEL
 173          KM    ROUTE FLOW FROM SUN VALLEY PARKWAY THRU SUBBASIN L3 TO MCDOWELL ROAD
 174          KM    STRUCTURE ID(s): L10
 175          KM    Slope=(1238.5 - 1119.1) / 12870.8
 176          RS       6    FLOW      -1
 177          RC   0.045   0.045   0.045 12870.80.009275   105.0
 178          RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
 179          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *
1                                          HEC-1 INPUT                                          PAGE  5

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

 180          KK     L2C   BASIN
 181          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 182          KM   L=3.20     Lca=1.55     S=91.31     Kn=0.055     LAG=61.2
 183          KM   S-GRAPH TYPE=DES RNGLND
 184          BA   1.328
 185          LG    0.35    0.35   4.189   0.422     0.0
 186          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 187          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 188          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 189          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 190          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 191          KK  L2C-2D   ROUTE
```

```
192          RS       6    FLOW     0.0     0.0
193          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
194          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
195          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *

196          KK     L2D   BASIN
197          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
198          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
199          KM   S-GRAPH TYPE=DES RNGLND
200          BA   1.232
201          LG    0.35    0.35   3.578   0.544     0.0
202          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
203          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
204          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
205          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
206          UI   18.36     0.0
             *

207          KK    L3RB COMBINE
208          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
209          HC       2
             *

210          KK  L2D-L3   ROUTE
211          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
212          RS      39    FLOW     0.0     0.0
213          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
214          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
215          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

216          KK      L3   BASIN
217          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
218          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
219          KM   S-GRAPH TYPE=DES RNGLND
220          BA   5.852
221          LG   0.341   0.328    3.98   0.419    1.05
222          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
223          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
```



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

224          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
225          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
226          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
227          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
228          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

229          KK       L COMBINE
230          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
231          HC       3
             *
             * KK  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT
             *

232          KK      M1   BASIN
233          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
234          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
235          KM   S-GRAPH TYPE=PHX MNT
236          BA   5.686
237          LG    0.35    0.35   4.297    0.35  16.637
238          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
239          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
240          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
241          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
242          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
243          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
244          UI   54.77   54.77     0.0
             *

245          KK   RRCM1 STORAGE
246          KM   PROPOSED DETENTION BASIN
247          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
248          KM    outlet pipe 5 ft diameter assumed
249          KM    STRUCTURE ID:RRCM1
250          KM    DIMENSIONS: L=1980ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 314.3 ac
251          RS       1    STOR       0
252          SV     0.0    29.8    90.5   152.6   184.2   216.1   248.5   314.3   381.5   450.3
253          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
254          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
             *

255          KK   M1-N1   ROUTE
256          KM   PROPOSED CHANNEL
257          KM    ROUTE FLOW FROM APEX 36 TO APEX 7
258          KM    STRUCTURE ID(s): N110, N120
259          KM    Slope=(1565.0 - 1276.4) / 8604.6
260          RS       4    FLOW      -1
261          RC   0.045   0.045   0.045 8604.60.033533   104.5
262          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
263          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *
```

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1                                    HEC-1 INPUT                                                    PAGE  7

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

   264          KK      N1   BASIN
   265          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   266          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
   267          KM   S-GRAPH TYPE=PHX MNT
   268          BA   1.524
   269          LG    0.35    0.35   4.075   0.419    8.38
   270          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
   271          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
   272          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
   273          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
                *

   274          KK     CN1 COMBINE
   275          KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
   276          HC       2
                *

   277          KK   RRCN1 STORAGE
   278          KM   PROPOSED DETENTION BASIN
   279          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
   280          KM    outlet pipe 5 ft diameter assumed
   281          KM    STRUCTURE ID:RRCN1
   282          KM    DIMENSIONS: L=860ft, W=480ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 78.4 ac-f
   283          RS       1     STOR       0
   284          SV     0.0      7.1    21.7    37.1    45.0    53.1    61.3    69.8    87.2   105.3
   285          SE     0.0      1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
   286          SQ     0.0    136.1   235.8   304.4   333.5   360.2   385.1   408.4   451.5   490.9
                *

   287          KK  N1-P1A   ROUTE
   288          KM   PROPOSED CHANNEL
   289          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
   290          KM    STRUCTURE ID(s): N125
   291          KM    Slope=(1382.8 - 1276.4) / 8101.2
   292          RS       4     FLOW      -1
   293          RC   0.045   0.045   0.045  8101.20.013128   104.5
   294          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
   295          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
                *

   296          KK     N2A   BASIN
   297          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
   298          KM   (ASSUME SAME AS N1 FOR NOW)
   299          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   300          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
   301          KM   S-GRAPH TYPE=PHX MNT
   302          BA   1.524
   303          LG    0.35    0.35   4.075   0.419    8.38
   304          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
   305          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
   306          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
   307          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
                *
1                                    HEC-1 INPUT                                                    PAGE  8

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

   308          KK   CN2AR COMBINE
   309          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
   310          HC       2
                *

   311          KK     P1A   BASIN
   312          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
   313          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
   314          KM   S-GRAPH TYPE=PHX MNT
   315          BA     0.5
   316          LG    0.35    0.35   3.987   0.405  16.364
   317          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
   318          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
   319          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
   320          UI    8.49    8.49    8.49    8.49    8.49    8.49
                *

   321          KK   RRP1A STORAGE
   322          KM   PROPOSED DETENTION BASIN
   323          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
   324          KM    outlet pipe 2 ft diameter assumed
   325          KM    STRUCTURE ID:RRP1A
   326          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
   327          RS       1     STOR       0
   328          SV     0.0      4.4     8.9    13.5    18.3    23.2    28.3    33.4    38.8    49.9
   329          SE     0.0      1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0    10.0
   330          SQ     0.0     34.0    48.1    59.0    68.1    76.1    83.4    90.0    96.3   107.6
                *

   331          KK    CN2A COMBINE
   332          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
   333          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
```

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334          HC       2
             *

335          KK  P1A-1B   ROUTE
336          KM   PROPOSED CHANNEL
337          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
338          KM    STRUCTURE ID(s): N130, N140
339          KM    Slope=(1276.4 - 1092.0) / 16521.3
340          RS      11    FLOW      -1
341          RC   0.045   0.045   0.045 16521.30.011161   105.0
342          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
343          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

344          KK    P1B   BASIN
345          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
346          KM   L=4.39     Lca=2.32     S=70.84     Kn=0.055     LAG=85.3
347          KM   S-GRAPH TYPE=PHX MNT
348          BA   1.937
349          LG    0.35    0.35    4.23   0.393   4.667
350          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
351          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
1                                          HEC-1 INPUT                                          PAGE  9

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

352          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
353          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
354          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
355          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
356          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
357          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

358          KK      PR COMBINE
359          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
360          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
361          HC       2
             *

362          KK     Q1A   BASIN
363          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
364          KM   L=3.13     Lca=1.52     S=256.86     Kn=0.055     LAG=49.3
365          KM   S-GRAPH TYPE=PHX MNT
366          BA   1.297
367          LG    0.35    0.35   4.127     0.4    11.2
368          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
369          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
370          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
371          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
372          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *

373          KK   RRQ1A STORAGE
374          KM   PROPOSED DETENTION BASIN
375          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
376          KM    outlet pipe of 2.5 ft diameter assumed
377          KM    STRUCTURE ID:RRQ1A
378          KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
379          RS       1    STOR       0
380          SV     0.0     6.9    21.1    36.1    51.7    59.9    68.2    76.6    85.3   103.2
381          SE     0.0     1.0     3.0     5.0     7.0     8.0     9.0    10.0    11.0    13.0
382          SQ     0.0    34.0    59.0    76.1    90.0    96.3   102.1   107.6   112.9   122.7
             *

383          KK   Q1A-P   ROUTE
384          KM   PROPOSED CHANNEL
385          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
386          KM    IN NEW CHANNEL
387          KM    STRUCTURE ID(s): P1B10
388          KM    Slope=(1190.4 - 1133.0) / 5122.9
389          RS       7    FLOW      -1
390          RC   0.045   0.045   0.045  5122.90.011207   104.5
391          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
392          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *
1                                          HEC-1 INPUT                                          PAGE 10

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

393          KK       P COMBINE
394          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
395          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
396          HC       2
             *
             *  KK  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
             *

397          KK     N2B   BASIN
398          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
399          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
400          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
401          KM   L=5.64     Lca=3.27     S=170.14     Kn=0.055     LAG=90.7
402          KM   S-GRAPH TYPE=PHX MNT
```

```
 403          BA   3.325
 404          LG    0.35    0.35   4.117   0.405    2.67
 405          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
 406          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 407          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 408          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 409          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 410          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 411          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
 412          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
 413          UI   23.58   23.58   23.58   23.58   23.58
              *

 414          KK      O1   BASIN
 415          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 416          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
 417          KM   S-GRAPH TYPE=PHX MNT
 418          BA   3.088
 419          LG    0.35    0.35   4.191   0.393   2.105
 420          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
 421          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
 422          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
 423          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
 424          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
 425          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
 426          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
 427          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 428          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 429          UI   19.93   19.93   19.93     0.0
              *

 430          KK      M2   BASIN
 431          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 432          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
 433          KM   S-GRAPH TYPE=DES RNGLND
 434          BA   7.436
 435          LG    0.35    0.35   3.959   0.445   0.291
 436          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 437          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 438          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
1                                                HEC-1 INPUT                                          PAGE 11

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

 439          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 440          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 441          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 442          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 443          UI   60.94   60.94   60.94   60.94     0.0
              *

 444          KK      Z1   BASIN
 445          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 446          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
 447          KM   S-GRAPH TYPE=DES RNGLND
 448          BA   0.664
 449          LG   0.321   0.292   4.004    0.43   2.909
 450          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
 451          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
 452          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
 453          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    74        R1
              .
              .
    82        .         Q1B
              .           .
              .           .
    94     DUMMY...........
              .
              .
    97        .          L1
              .           V
              .           V
   109        .      L1-L2A
              .           .
              .           .
   114        .           .         L2A
              .           .           .
              .           .           .
   124        .        L2BR...........
              .           V
              .           V
   128        .      RRL2BR
              .           V
              .           V
   138        .      L2AL2B
              .           .
              .           .
```

```
147          .            .          L2B
             .            .            .
             .            .            .
159          .         L3R............
             .            .
             .            .
166          .            .-------->    DOUT
162          .        DL3R
             .           V
             .           V
171          .       L2BL3
             .            .
             .            .
180          .            .          L2C
             .            .            V
             .            .            V
191          .            .       L2C-2D
             .            .            .
             .            .            .
196          .            .            .          L2D
             .            .            .            .
             .            .            .            .
207          .            .        L3RB............
             .            .            V
             .            .            V
210          .            .       L2D-L3
             .            .            .
             .            .            .
216          .            .            .           L3
             .            .            .            .
             .            .            .            .
229          .            L........................
             .            .
             .            .
232          .            .           M1
             .            .            V
             .            .            V
245          .            .        RRCM1
             .            .            V
             .            .            V
255          .            .        M1-N1
             .            .            .
             .            .            .
264          .            .            .           N1
             .            .            .            .
             .            .            .            .
274          .            .          CN1............
             .            .            V
             .            .            V
277          .            .        RRCN1
             .            .            V
             .            .            V
287          .            .       N1-P1A
             .            .            .
             .            .            .
296          .            .            .          N2A
             .            .            .            .
             .            .            .            .
308          .            .        CN2AR............
             .            .            .
             .            .            .
311          .            .            .          P1A
             .            .            .            V
             .            .            .            V
321          .            .            .        RRP1A
             .            .            .            .
             .            .            .            .
331          .            .        CN2A............
             .            .            V
             .            .            V
335          .            .       P1A-1B
             .            .            .
             .            .            .
344          .            .            .          P1B
             .            .            .            .
             .            .            .            .
358          .            .           PR............
             .            .            .
             .            .            .
362          .            .            .          Q1A
             .            .            .            V
             .            .            .            V
373          .            .            .        RRQ1A
             .            .            .            V
             .            .            .            V
383          .            .            .        Q1A-P
             .            .            .            .
             .            .            .            .
393          .            .            P............
             .            .            .
             .            .            .
397          .            .            .          N2B
             .            .            .            .
             .            .            .            .
414          .            .            .            .          O1
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                .          .          .          .          .
                .          .          .          .          .
  430           .          .          .          .          .          M2
                .          .          .          .          .           .
                .          .          .          .          .           .
  444           .          .          .          .          .           .          Z1

 (***) 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   19APR06  TIME  17:18:04   *                                    *           (916) 756-1104              *
 *                                       *                                    *                                       *
 *****************************************                                    *****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B42
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B4-2 is based on using a relatively larger on-line detention basin at the apex accompanied by smaller leveed channel sections in the down fan direction. It is the second of three corridor alignments considered as part of the Alternative B4 series.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 6-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi) Lca(mi) S(ft/mi) LAG(min)

```
33 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      1JAN94  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      7JAN94  ENDING DATE
                    NDTIME        2235  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

35 JD          INDEX STORM NO. 1
                      STRM       3.23  PRECIPITATION DEPTH
                      TRDA        .01  TRANSPOSITION DRAINAGE AREA

36 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

40 JD          INDEX STORM NO. 2
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                STRM        3.21  PRECIPITATION DEPTH
                TRDA         .50  TRANSPOSITION DRAINAGE AREA

41 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

45 JD        INDEX STORM NO. 3
                STRM        3.19  PRECIPITATION DEPTH
                TRDA        1.00  TRANSPOSITION DRAINAGE AREA

46 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        .06        .06        .06        .12        .12        .12        .03        .03
                .03        .01        .01        .01        .01        .01        .01        .00        .00        .00
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                .00        .00

50 JD        INDEX STORM NO. 4
                STRM        3.10  PRECIPITATION DEPTH
                TRDA        5.00  TRANSPOSITION DRAINAGE AREA

51 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        .06        .06        .06        .08        .08        .08        .05        .05
                .05        .02        .02        .02        .01        .01        .01        .01        .01        .01
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                .00        .00

55 JD        INDEX STORM NO. 5
                STRM        3.04  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

56 PI        PRECIPITATION PATTERN
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .01
                .01        .01        .00        .00        .00        .00        .00        .00        .00        .00
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                .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
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                .00        .00

60 JD        INDEX STORM NO. 6
                STRM        2.94  PRECIPITATION DEPTH
                TRDA       20.00  TRANSPOSITION DRAINAGE AREA

61 PI        PRECIPITATION PATTERN
                .01        .01        .01        .00        .00        .00        .00        .00        .00        .01
                .01        .01        .01        .01        .01        .00        .00        .00        .00        .00
                .00        .01        .01        .01        .00        .00        .00        .01        .01        .01
                .01        .01        .01        .01        .01        .01        .02        .02        .02        .03
                .03        .03        .05        .05        .05        .06        .06        .06        .04        .04
                .04        .02        .02        .02        .01        .01        .01        .01        .01        .01
                .00        .00        .00        .00        .00        .00        .00        .00        .00        .00
                .00        .00

65 JD        INDEX STORM NO. 7
                STRM        2.88  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

66 PI        PRECIPITATION PATTERN
                .01        .01        .01        .00        .00        .00        .00        .00        .00        .01
                .01        .01        .01        .01        .01        .00        .00        .00        .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        .06        .06        .06        .04        .04
                .04        .02        .02        .02        .02        .02        .02        .01        .01        .01
                .01        .01        .01        .01        .01        .01        .01        .01        .01        .00
                .00        .00

70 JD        INDEX STORM NO. 8
                STRM        2.81  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

71 PI        PRECIPITATION PATTERN
                .01        .01        .01        .00        .00        .00        .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        .02        .02        .02        .03
                .03        .03        .05        .05        .05        .06        .06        .06        .04        .04
                .04        .02        .02        .02        .02        .02        .02        .01        .01        .01
                .01        .01        .01        .01        .01        .01        .01        .01        .01        .01
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                    .01       .01

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
  82 KK   *     Q1B    *        BASIN
          *            *
          **************

  86 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .083  TIME INTERVAL IN HOURS

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
+                            R1      506.   4.25          47.         12.          4.        .28

        HYDROGRAPH AT
+                           Q1B      851.   4.50         155.         39.         13.        .94

        2 COMBINED AT
+                         DUMMY     1020.   4.50         192.         48.         16.       1.22

        HYDROGRAPH AT
+                            L1     2128.   4.75         543.        139.         46.       3.55

        ROUTED TO
+                        L1-L2A     2066.   4.92         543.        139.         46.       3.55

        HYDROGRAPH AT
+                           L2A      692.   4.58         113.         28.          9.        .69

        2 COMBINED AT
+                          L2BR     2391.   4.92         623.        159.         53.       4.24

        ROUTED TO
+                        RRL2BR      278.   7.00         261.        153.         53.       4.24

        ROUTED TO
+                        L2AL2B      275.   8.92         256.        152.         53.       4.24

        HYDROGRAPH AT
+                           L2B     1532.   5.08         418.        104.         35.       4.08

        2 COMBINED AT
+                           L3R     1321.   5.08         486.        228.         79.       8.32

        DIVERSION TO
+                          DOUT        0.    .00          0.          0.          0.       8.32

        HYDROGRAPH AT
+                          DL3R     1321.   5.08         486.        228.         79.       8.32

        ROUTED TO
+                         L2BL3     1127.   5.92         451.        225.         79.       8.32

        HYDROGRAPH AT
+                           L2C      754.   4.83         161.         40.         13.       1.33

        ROUTED TO
+                        L2C-2D      712.   5.25         161.         40.         13.       1.33

        HYDROGRAPH AT
+                           L2D      706.   4.75         136.         34.         11.       1.23

        2 COMBINED AT
+                          L3RB     1043.   5.00         260.         65.         22.       2.56

        ROUTED TO
+                        L2D-L3      650.   8.33         258.         65.         22.       2.56

        HYDROGRAPH AT
+                            L3     1832.   5.25         581.        146.         49.       5.85

        3 COMBINED AT
+                             L     1916.   5.75         932.        350.        120.      16.73
```

+	HYDROGRAPH AT	M1	2809.	4.83	790.	203.	68.	5.69
+	ROUTED TO	RRCM1	414.	6.83	384.	201.	68.	5.69
+	ROUTED TO	M1-N1	414.	7.25	384.	201.	68.	5.69
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52
+	2 COMBINED AT	CN1	914.	4.50	479.	236.	79.	7.21
+	ROUTED TO	RRCN1	395.	8.42	388.	236.	79.	7.21
+	ROUTED TO	N1-P1A	395.	8.83	388.	236.	79.	7.21
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52
+	2 COMBINED AT	CN2AR	856.	4.50	465.	269.	91.	8.73
+	HYDROGRAPH AT	P1A	575.	4.42	89.	22.	7.	.50
+	ROUTED TO	RRP1A	87.	5.50	70.	22.	7.	.50
+	2 COMBINED AT	CN2A	900.	4.58	516.	282.	95.	9.23
+	ROUTED TO	P1A-1B	748.	5.67	493.	281.	95.	9.23
+	HYDROGRAPH AT	P1B	852.	5.08	244.	62.	21.	1.94
+	2 COMBINED AT	PR	1106.	5.58	600.	317.	108.	11.17
+	HYDROGRAPH AT	Q1A	990.	4.58	193.	49.	16.	1.30
+	ROUTED TO	RRQ1A	106.	6.25	97.	48.	16.	1.30
+	ROUTED TO	Q1A-P	106.	6.50	97.	48.	16.	1.30
+	2 COMBINED AT	P	1153.	5.58	667.	346.	117.	12.47
+	HYDROGRAPH AT	N2B	1193.	5.17	366.	93.	31.	3.33
+	HYDROGRAPH AT	O1	1057.	5.33	343.	88.	29.	3.09
+	HYDROGRAPH AT	M2	1849.	5.42	633.	159.	53.	7.44
+	HYDROGRAPH AT	Z1	694.	4.50	100.	25.	8.	.66

*** NORMAL END OF HEC-1 ***

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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   19APR06  TIME  17:18:05  *                    *           (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
  2           ID     - ALTERNATIVE B42
  3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
  4           ID
  5           ID   Alternative Description
  6           ID   The purpose of Alternative B is to capture the upstream flow at the
  7           ID   apex using online detention basins.  The presence of the detention
  8           ID   basins eliminates the downstream alluvial fan uncertainties by controlling
  9           ID   the flow from the apices to the outfall.  Alternative B4-2 is based on
 10           ID   using a relatively larger on-line detention basin at the apex accompanied
 11           ID   by smaller leveed channel sections in the down fan direction.  It is the
 12           ID   second of three corridor alignments considered as part of the Alternative B4
 13           ID   series.
 14           ID
 15           ID
 16           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
 17           ID   JANUARY 2006
 18           ID
 19           ID   MODEL BASED UPON:
 20           ID
 21           ID  Buckeye/Sun Valley ADMS - May 2005
 22           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
 23           ID  100-year 24-hour
 24           ID  Existing Conditions
 25           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
 26           ID  Rainfall Loss Method - Green & Ampt
 27           ID  Unit Hydrograph Method - FCDMC S-Graph
 28           ID  Channel Routing Method - Normal Depth
 29           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
 30           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
 31           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
              *DIAGRAM
 32           IT       5 01JAN94       0    2000
 33           IO       5
 34           IN      15 01JAN94       0
 35           JD    4.16    0.01
              * 24-hour distribution
 36           PC     0.0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
 37           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
 38           PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
 39           PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
 40           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 41           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 42           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
 43           PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
 44           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
 45           PC   0.983   0.986   0.989   0.992   0.995   0.998     1.0
 46           JD   3.952    10.0
 47           JD   3.819    20.0
 48           JD    3.69    40.0
 49           JD   3.565    80.0
 50           JD   3.499   120.0
              *

1                                          HEC-1 INPUT                                          PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
51          KK      R1   BASIN
52          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
53          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
54          KM   S-GRAPH TYPE=PHX MNT
55          BA   0.284
56          LG    0.35    0.35   4.358   0.374   8.387
57          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
58          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
            *

59          KK     Q1B   BASIN
60          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
61          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
62          KM   S-GRAPH TYPE=PHX MNT
63          KO       0       0     0.0       1      22
64          BA   0.937
65          LG    0.35    0.35    4.32   0.373  14.815
            * Q1B
66          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
67          UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
68          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
69          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
70          UI   13.74     0.0
            *

71          KK   DUMMY COMBINE
72          KM    DUMMY COMBINE FOR HEC-1 STACK
73          HC       2
            *

74          KK      L1   BASIN
75          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
76          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
77          KM   S-GRAPH TYPE=PHX MNT
78          BA   3.546
79          LG   0.271   0.318   4.363   0.351  16.279
80          UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
81          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
82          UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
83          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
84          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
85          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
            *

86          KK  L1-L2A   ROUTE
87          RS       3    FLOW     0.0     0.0
88          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
89          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
90          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
            *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

91          KK     L2A   BASIN
92          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
93          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
94          KM   S-GRAPH TYPE=DES RNGLND
95          BA   0.693
96          LG    0.35   0.384   5.641   0.202     0.0
97          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
98          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
99          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
100         UI   12.61   12.61   12.61   12.61
            *

101         KK    L2BR COMBINE
102         KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
103         KM     THIS IS THE TOTAL FLOW TO APEX 37
104         HC       2
            *

105         KK  RRL2BR STORAGE
106         KM   PROPOSED DETENTION BASIN
107         KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN AT APEX 37
108         KM    outlet pipe of 4 ft diameter assumed
109         KM    STRUCTURE ID:RRL2BR
110         KM    DIMENSIONS: L=1800ft, W=780ft, D=10ft, Sideslope (?H:1V)= 3,  Vol.= 252.3 ac
111         RS       1    STOR       0
112         SV     0.0    53.7   108.8   165.2   193.9   222.9   252.3   282.1   312.2   373.4
113         SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
114         SQ     0.0   133.7   189.1   231.6   250.1   267.4   283.6   299.0   313.6   340.9
            *

115         KK  L2AL2B   ROUTE
116         KM   PROPOSED CHANNEL
117         KM    ROUTE FLOW FROM APEX 37 TO SUN VALLEY PARKWAY THRU SUBBASIN L2B
118         KM    STRUCTURE ID(s): L3R10
119         KM    Slope=(1548.0 - 1238.5) / 20092.5
120         RS       8    FLOW      -1
121         RC   0.045   0.045   0.045 20092.50.015405   104.5
122         RX     0.0    13.5    13.5    13.5   313.5   313.5   313.5   327.0
123         RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
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                *
 124            KK     L2B   BASIN
 125            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 126            KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 127            KM   S-GRAPH TYPE=DES RNGLND
 128            BA   4.077
 129            LG    0.35     0.35   4.179   0.399     0.0
 130            UI     0.0   175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 131            UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 132            UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 133            UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 134            UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 135            UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
                *
1                                          HEC-1 INPUT                                                    PAGE  4

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

 136            KK     L3R COMBINE
 137            KM    COMBINE ROUTED FLOW APEX 37 WITH RUNOFF FROM SUBBASIN L2B
 138            HC       2
                *

 139            KK    DL3R  DIVERT
 140            KM   Proposed Offline Detention Basin AT SUN VALLEY PARKWAY
 141            KM    STRUCTURE ID:DL3R
 142            KM    DIMENSIONS: L=260ft, W=200ft, D=4ft, Sideslope (?H:1V)= 3,  Vol.= 3 ac-ft
 143            DT    DOUT
 144            DI     0.0   360.0   720.0  1080.0  1440.0  1585.0  1820.0  2520.0  2880.0  3240.0
 145            DI  3600.0     0.0
 146            DQ     0.0     0.0     0.0     0.0     0.0     0.0   235.0   935.0  1295.0  1655.0
 147            DQ  2015.0     0.0
                *

 148            KK   L2BL3   ROUTE
 149            KM   PROPOSED CHANNEL
 150            KM    ROUTE FLOW FROM SUN VALLEY PARKWAY THRU SUBBASIN L3 TO MCDOWELL ROAD
 151            KM    STRUCTURE ID(s): L10
 152            KM    Slope=(1238.5 - 1119.1) / 12870.8
 153            RS       6    FLOW      -1
 154            RC   0.045   0.045   0.045 12870.80.009275   105.0
 155            RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
 156            RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
                *

 157            KK     L2C   BASIN
 158            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 159            KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 160            KM   S-GRAPH TYPE=DES RNGLND
 161            BA   1.328
 162            LG    0.35     0.35   4.189   0.422     0.0
 163            UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 164            UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 165            UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 166            UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 167            UI   17.84   17.84   17.84   17.84   17.84     0.0
                *

 168            KK  L2C-2D   ROUTE
 169            RS       6    FLOW     0.0     0.0
 170            RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 171            RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 172            RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
                *

 173            KK     L2D   BASIN
 174            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 175            KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 176            KM   S-GRAPH TYPE=DES RNGLND
 177            BA   1.232
 178            LG    0.35     0.35   3.578   0.544     0.0
 179            UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
1                                          HEC-1 INPUT                                                    PAGE  5

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

 180            UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 181            UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 182            UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
 183            UI   18.36     0.0
                *

 184            KK    L3RB COMBINE
 185            KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 186            HC       2
                *

 187            KK  L2D-L3   ROUTE
 188            KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 189            RS      39    FLOW     0.0     0.0
 190            RC    0.05    0.04    0.06 27374.0  0.0077     0.0
 191            RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 192            RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
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193             KK      L3   BASIN
194             KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
195             KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
196             KM   S-GRAPH TYPE=DES RNGLND
197             BA   5.852
198             LG   0.341   0.328    3.98   0.419    1.05
199             UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
200             UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
201             UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
202             UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
203             UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
204             UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
205             UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
                *

206             KK       L COMBINE
207             KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
208             HC       3
                *
                * KK  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT
                *

209             KK      M1   BASIN
210             KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
211             KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
212             KM   S-GRAPH TYPE=PHX MNT
213             BA   5.686
214             LG    0.35    0.35   4.297    0.35  16.637
215             UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
216             UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
217             UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
218             UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
219             UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
220             UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
221             UI   54.77   54.77     0.0
                *
1                                          HEC-1 INPUT                                                PAGE  6

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

222             KK   RRCM1 STORAGE
223             KM   PROPOSED DETENTION BASIN
224             KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
225             KM    outlet pipe 5 ft diameter assumed
226             KM    STRUCTURE ID:RRCM1
227             KM    DIMENSIONS: L=1980ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 314.3 ac
228             RS       1    STOR       0
229             SV     0.0    29.8    90.5   152.6   184.2   216.1   248.5   314.3   381.5   450.3
230             SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
231             SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
                *

232             KK   M1-N1   ROUTE
233             KM   PROPOSED CHANNEL
234             KM    ROUTE FLOW FROM APEX 36 TO APEX 7
235             KM    STRUCTURE ID(s): N110, N120
236             KM    Slope=(1565.0 - 1276.4) / 8604.6
237             RS       4    FLOW      -1
238             RC   0.045   0.045   0.045  8604.60.033533   104.5
239             RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
240             RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
                *

241             KK      N1   BASIN
242             KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
243             KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
244             KM   S-GRAPH TYPE=PHX MNT
245             BA   1.524
246             LG    0.35    0.35   4.075   0.419    8.38
247             UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
248             UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
249             UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
250             UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
                *

251             KK     CN1 COMBINE
252             KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
253             HC       2
                *

254             KK   RRCN1 STORAGE
255             KM   PROPOSED DETENTION BASIN
256             KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
257             KM    outlet pipe 5 ft diameter assumed
258             KM    STRUCTURE ID:RRCN1
259             KM    DIMENSIONS: L=860ft, W=480ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 78.4 ac-f
260             RS       1    STOR       0
261             SV     0.0     7.1    21.7    37.1    45.0    53.1    61.3    69.8    87.2   105.3
262             SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
263             SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   408.4   451.5   490.9
                *
1                                          HEC-1 INPUT                                                PAGE  7
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 264          KK  N1-P1A   ROUTE
 265          KM   PROPOSED CHANNEL
 266          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
 267          KM    STRUCTURE ID(s): N125
 268          KM    Slope=(1382.8 - 1276.4) / 8101.2
 269          RS       4    FLOW      -1
 270          RC   0.045   0.045   0.045  8101.20.013128   104.5
 271          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
 272          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *

 273          KK     N2A   BASIN
 274          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
 275          KM   (ASSUME SAME AS N1 FOR NOW)
 276          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 277          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 278          KM   S-GRAPH TYPE=PHX MNT
 279          BA   1.524
 280          LG    0.35    0.35   4.075   0.419    8.38
 281          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 282          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 283          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 284          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 285          KK   CN2AR COMBINE
 286          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
 287          HC       2
              *

 288          KK     P1A   BASIN
 289          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 290          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
 291          KM   S-GRAPH TYPE=PHX MNT
 292          BA     0.5
 293          LG    0.35    0.35   3.987   0.405  16.364
 294          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
 295          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
 296          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
 297          UI    8.49    8.49    8.49    8.49    8.49    8.49
              *

 298          KK   RRP1A STORAGE
 299          KM   PROPOSED DETENTION BASIN
 300          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
 301          KM    outlet pipe 2 ft diameter assumed
 302          KM    STRUCTURE ID:RRP1A
 303          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
 304          RS       1    STOR       0
 305          SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    38.8    49.9
 306          SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0    10.0
 307          SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    96.3   107.6
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 308          KK    CN2A COMBINE
 309          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
 310          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
 311          HC       2
              *

 312          KK  P1A-1B   ROUTE
 313          KM   PROPOSED CHANNEL
 314          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
 315          KM    STRUCTURE ID(s): N130, N140
 316          KM    Slope=(1276.4 - 1092.0) / 16521.3
 317          RS      11    FLOW      -1
 318          RC   0.045   0.045   0.045 16521.30.011161   105.0
 319          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
 320          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 321          KK     P1B   BASIN
 322          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 323          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
 324          KM   S-GRAPH TYPE=PHX MNT
 325          BA   1.937
 326          LG    0.35    0.35    4.23   0.393   4.667
 327          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
 328          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
 329          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
 330          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
 331          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
 332          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
 333          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
 334          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
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335          KK      PR COMBINE
336          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
337          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
338          HC       2
             *

339          KK     Q1A   BASIN
340          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
341          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
342          KM   S-GRAPH TYPE=PHX MNT
343          BA   1.297
344          LG    0.35    0.35   4.127     0.4    11.2
345          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
346          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
347          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
348          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
349          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *
1                                          HEC-1 INPUT                                                    PAGE  9

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

350          KK   RRQ1A STORAGE
351          KM   PROPOSED DETENTION BASIN
352          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
353          KM    outlet pipe of 2.5 ft diameter assumed
354          KM    STRUCTURE ID:RRQ1A
355          KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
356          RS       1    STOR       0
357          SV     0.0     6.9    21.1    36.1    51.7    59.9    68.2    76.6    85.3   103.2
358          SE     0.0     1.0     3.0     5.0     7.0     8.0     9.0    10.0    11.0    13.0
359          SQ     0.0    34.0    59.0    76.1    90.0    96.3   102.1   107.6   112.9   122.7
             *

360          KK   Q1A-P   ROUTE
361          KM   PROPOSED CHANNEL
362          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
363          KM    IN NEW CHANNEL
364          KM    STRUCTURE ID(s): P1B10
365          KM    Slope=(1190.4 - 1133.0) / 5122.9
366          RS       7    FLOW      -1
367          RC   0.045   0.045   0.045  5122.90.011207   104.5
368          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
369          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

370          KK       P COMBINE
371          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
372          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
373          HC       2
             *
             *  KK  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
             *

374          KK     N2B   BASIN
375          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
376          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
377          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
378          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
379          KM   S-GRAPH TYPE=PHX MNT
380          BA   3.325
381          LG    0.35    0.35   4.117   0.405    2.67
382          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
383          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
384          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
385          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
386          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
387          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
388          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
389          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
390          UI   23.58   23.58   23.58   23.58   23.58
             *
1                                          HEC-1 INPUT                                                    PAGE 10

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

391          KK      O1   BASIN
392          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
393          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
394          KM   S-GRAPH TYPE=PHX MNT
395          BA   3.088
396          LG    0.35    0.35   4.191   0.393   2.105
397          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
398          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
399          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
400          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
401          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
402          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
403          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
404          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
405          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
406          UI   19.93   19.93   19.93     0.0
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407          KK      M2   BASIN
408          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
409          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
410          KM   S-GRAPH TYPE=DES RNGLND
411          BA   7.436
412          LG    0.35     0.35   3.959   0.445   0.291
413          UI     0.0   250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
414          UI  1497.2   1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
415          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
416          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
417          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
418          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
419          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
420          UI   60.94   60.94   60.94   60.94     0.0
             *

421          KK      Z1   BASIN
422          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
423          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
424          KM   S-GRAPH TYPE=DES RNGLND
425          BA   0.664
426          LG   0.321   0.292   4.004    0.43   2.909
427          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
428          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
429          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
430          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    51        R1
              .
              .
    59        .         Q1B
              .           .
              .           .
    71     DUMMY...........
              .
              .
    74        .          L1
              .           V
              .           V
    86        .      L1-L2A
              .           .
              .           .
    91        .           .         L2A
              .           .           .
              .           .           .
   101        .        L2BR...........
              .           V
              .           V
   105        .      RRL2BR
              .           V
              .           V
   115        .      L2AL2B
              .           .
              .           .
   124        .           .         L2B
              .           .           .
              .           .           .
   136        .         L3R...........
              .           .
              .           .
   143        .           .-------->    DOUT
   139        .        DL3R
              .           V
              .           V
   148        .       L2BL3
              .           .
              .           .
   157        .           .         L2C
              .           .           V
              .           .           V
   168        .           .      L2C-2D
              .           .           .
              .           .           .
   173        .           .           .         L2D
              .           .           .           .
              .           .           .           .
   184        .           .       L3RB...........
              .           .           V
              .           .           V
   187        .           .      L2D-L3
              .           .           .
              .           .           .
   193        .           .           .          L3
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   206        .           L.......................
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  209          .          .          M1
               .          .           V
               .          .           V
  222          .          .       RRCM1
               .          .           V
               .          .           V
  232          .          .       M1-N1
               .          .           .
               .          .           .
  241          .          .           .          N1
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               .          .           .           .
  251          .          .         CN1............
               .          .           V
               .          .           V
  254          .          .       RRCN1
               .          .           V
               .          .           V
  264          .          .      N1-P1A
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               .          .           .
  273          .          .           .         N2A
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  285          .          .       CN2AR...........
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  288          .          .           .         P1A
               .          .           .           V
               .          .           .           V
  298          .          .           .       RRP1A
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               .          .           .           .
  308          .          .        CN2A...........
               .          .           V
               .          .           V
  312          .          .      P1A-1B
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  321          .          .           .         P1B
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  335          .          .          PR...........
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  339          .          .           .         Q1A
               .          .           .           V
               .          .           .           V
  350          .          .           .       RRQ1A
               .          .           .           V
               .          .           .           V
  360          .          .           .       Q1A-P
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  370          .          .           P...........
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  374          .          .           .         N2B
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  391          .          .           .           .          O1
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  407          .          .           .           .           .          M2
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  421          .          .           .           .           .           .          Z1
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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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   19APR06  TIME  17:18:05    *                                    *          (916) 756-1104              *
*                                        *                                    *                                      *
****************************************                                    ****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B42
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B4-2 is based on using a relatively larger on-line detention basin at the apex accompanied by smaller leveed channel sections in the down fan direction. It is the second of three corridor alignments considered as part of the Alternative B4

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                    series.

                     JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
                    JANUARY 2006

                    MODEL BASED UPON:

                   Buckeye/Sun Valley ADMS - May 2005
                   Michael Baker Jr., Inc. - Modeler: Jacob Lesue
                   100-year 24-hour
                   Existing Conditions
                   Area 3 - Sub-basins L-R (Aluvial Fan updates)
                   Rainfall Loss Method - Green & Ampt
                   Unit Hydrograph Method - FCDMC S-Graph
                   Channel Routing Method - Normal Depth
                   Land Use - FCDMC GIS Data: mag_landuse (2000)
                   Soil Data - USDA SCS Soil Survey (1972 & 1981)
                   Units - L(mi)    Lca(mi)    S(ft/mi)    LAG(min)

33 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     1JAN94  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE     7JAN94  ENDING DATE
                    NDTIME       2235  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

35 JD          INDEX STORM NO. 1
                     STRM        4.16  PRECIPITATION DEPTH
                     TRDA         .01  TRANSPOSITION DRAINAGE AREA

36 PI            PRECIPITATION PATTERN
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46 JD          INDEX STORM NO. 2
                     STRM        3.95  PRECIPITATION DEPTH
                     TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
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47 JD INDEX STORM NO. 3
STRM 3.82 PRECIPITATION DEPTH
TRDA 20.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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48 JD INDEX STORM NO. 4
STRM 3.69 PRECIPITATION DEPTH
TRDA 40.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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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
.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	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00		

49 JD INDEX STORM NO. 5
STRM 3.57 PRECIPITATION DEPTH
TRDA 80.00 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
                        .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       .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       .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       .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
                        .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       .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       .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       .00
                        .00       .00       .00       .00       .00       .00       .00       .00

 50 JD            INDEX STORM NO. 6
                       STRM       3.50   PRECIPITATION DEPTH
                       TRDA     120.00   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
                        .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       .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       .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       .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
                        .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       .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       .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       .00
                        .00       .00       .00       .00       .00       .00       .00       .00


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 59 KK         *     Q1B    *         BASIN
               *            *
               **************

 63 KO            OUTPUT CONTROL VARIABLES
                      IPRNT          5   PRINT CONTROL
                      IPLOT          0   PLOT CONTROL
                      QSCAL         0.   HYDROGRAPH PLOT SCALE
                      IPNCH          1   PUNCH COMPUTED HYDROGRAPH
                       IOUT         22   SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1   FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000   LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .083   TIME INTERVAL IN HOURS

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	R1	387.	12.25	37.	10.	3.	.28
+	HYDROGRAPH AT	Q1B	740.	12.50	134.	38.	13.	.94
+	2 COMBINED AT	DUMMY	902.	12.50	170.	48.	16.	1.22
+	HYDROGRAPH AT	L1	2267.	12.75	527.	150.	50.	3.55
+	ROUTED TO	L1-L2A	2154.	12.92	527.	150.	50.	3.55
+	HYDROGRAPH AT	L2A	570.	12.58	92.	23.	8.	.69
+	2 COMBINED AT	L2BR	2519.	12.92	616.	172.	57.	4.24
+	ROUTED TO	RRL2BR	276.	15.00	262.	162.	57.	4.24
+	ROUTED TO	L2AL2B	274.	16.92	258.	161.	57.	4.24
+	HYDROGRAPH AT	L2B	1700.	13.08	449.	112.	37.	4.08
+	2 COMBINED AT	L3R	1703.	13.08	585.	269.	94.	8.32
+	DIVERSION TO	DOUT	118.	13.08	6.	1.	0.	8.32
+	HYDROGRAPH AT	DL3R	1585.	12.92	580.	267.	94.	8.32
+	ROUTED TO	L2BL3	1443.	13.83	544.	263.	94.	8.32
+	HYDROGRAPH AT	L2C	692.	12.83	145.	36.	12.	1.33
+	ROUTED TO	L2C-2D	651.	13.25	145.	36.	12.	1.33
+	HYDROGRAPH AT	L2D	655.	12.75	124.	31.	10.	1.23
+	2 COMBINED AT	L3RB	1104.	13.00	266.	66.	22.	2.56
+	ROUTED TO	L2D-L3	705.	16.17	263.	66.	22.	2.56
+	HYDROGRAPH AT	L3	2129.	13.25	658.	166.	56.	5.85
+	3 COMBINED AT	L	3021.	13.58	1321.	470.	164.	16.73
+	HYDROGRAPH AT	M1	3301.	12.83	825.	236.	79.	5.69
+	ROUTED TO	RRCM1	422.	14.92	396.	227.	79.	5.69
+	ROUTED TO	M1-N1	421.	15.25	396.	227.	79.	5.69
+	HYDROGRAPH AT	N1	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN1	1264.	12.50	525.	276.	96.	7.21
+	ROUTED TO	RRCN1	420.	16.33	415.	275.	96.	7.21
+	ROUTED TO	N1-P1A	420.	16.75	415.	275.	96.	7.21
+	HYDROGRAPH AT	N2A	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN2AR	1276.	12.50	537.	323.	113.	8.73
+	HYDROGRAPH AT	P1A	441.	12.42	73.	21.	7.	.50
	ROUTED TO							

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+                        RRP1A      77.   13.50       61.       21.        7.      .50

        2 COMBINED AT
+                         CN2A    1332.   12.50      596.      342.      119.     9.23

        ROUTED TO
+                       P1A-1B     994.   13.42      572.      341.      119.     9.23

        HYDROGRAPH AT
+                          P1B     842.   13.08      231.       61.       20.     1.94

        2 COMBINED AT
+                           PR    1586.   13.25      739.      395.      138.    11.17

        HYDROGRAPH AT
+                          Q1A     915.   12.58      173.       48.       16.     1.30

        ROUTED TO
+                        RRQ1A     100.   14.17       92.       47.       16.     1.30

        ROUTED TO
+                        Q1A-P     100.   14.50       92.       47.       16.     1.30

        2 COMBINED AT
+                            P    1645.   13.25      821.      436.      152.    12.47

        HYDROGRAPH AT
+                          N2B    1331.   13.17      378.       99.       33.     3.33

        HYDROGRAPH AT
+                           O1    1163.   13.33      349.       91.       30.     3.09

        HYDROGRAPH AT
+                           M2    2347.   13.42      786.      198.       66.     7.44

        HYDROGRAPH AT
+                           Z1     558.   12.50       80.       21.        7.      .66

*** NORMAL END OF HEC-1 ***
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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   19APR06  TIME  17:23:28  *                    *           (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
    2           ID     - ALTERNATIVE B43
    3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
    4           ID
    5           ID   Alternative Description
    6           ID   The purpose of Alternative B is to capture the upstream flow at the
    7           ID   apex using online detention basins.  The presence of the detention basins
    8           ID   eliminates the downstream alluvial fan uncertainties by controlling the
    9           ID   flow from the apices to the outfall.  Alternative B4-3 is based on using a
   10           ID   relatively larger on-line detention basin at the apex accompanied by smaller
   11           ID   leveed channel sections in the down fan direction.  It is the third of three
   12           ID   corridor alignments considered as part of the Alternative B4 series.
   13           ID
   14           ID
   15           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
   16           ID   JANUARY 2006
   17           ID
   18           ID   MODEL BASED UPON:
   19           ID
   20           ID  Buckeye/Sun Valley ADMS - May 2005
   21           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
   22           ID  100-year 6-hour
   23           ID  Existing Conditions
   24           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
   25           ID  Rainfall Loss Method - Green & Ampt
   26           ID  Unit Hydrograph Method - FCDMC S-Graph
   27           ID  Channel Routing Method - Normal Depth
   28           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
   29           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
   30           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
                *DIAGRAM
   31           IT       5 01JAN94       0    2000
   32           IO       5
   33           IN      15 01JAN94       0
   34           JD    3.23    0.01
                * 6-hour distribution, pattern 1.0
   35           PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
   36           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
   37           PC   0.962   0.972   0.983   0.991     1.0
   38           IN      15 01JAN94       0
   39           JD   3.211     0.5
                * 6-hour distribution, pattern 1.0
   40           PC     0.0   0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
   41           PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
   42           PC   0.962   0.972   0.983   0.991     1.0
   43           IN      15 01JAN94       0
   44           JD   3.188     1.0
                * 6-hour distribution, pattern 1.4
   45           PC     0.0  0.0084   0.016   0.025  0.0334  0.0414  0.0504  0.0584  0.0664  0.0748
   46           PC   0.087  0.0994  0.1188   0.148  0.2304  0.4067  0.7778  0.8813  0.9186  0.9452
   47           PC  0.9572  0.9684  0.9798  0.9898     1.0
   48           IN      15 01JAN94       0
   49           JD   3.101     5.0
                * 6-hour distribution, pattern 2.3
   50           PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
1                                                HEC-1 INPUT                                                PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  51          PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
  52          PC  0.9487   0.962  0.9743  0.9877     1.0
  53          IN      15 01JAN94       0
  54          JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
  55          PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
  56          PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
  57          PC  0.9471  0.9608  0.9735  0.9873     1.0
  58          IN      15 01JAN94       0
  59          JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
  60          PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
  61          PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
  62          PC  0.9434   0.958  0.9718  0.9863     1.0
  63          IN      15 01JAN94       0
  64          JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
  65          PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
  66          PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
  67          PC   0.939  0.9544  0.9697  0.9851     1.0
  68          IN      15 01JAN94       0
  69          JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
  70          PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
  71          PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
  72          PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

  73          KK      R1   BASIN
  74          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  75          KM   L=1.01     Lca=0.46     S=213.31     Kn=0.050     LAG=18.8
  76          KM   S-GRAPH TYPE=PHX MNT
  77          BA   0.284
  78          LG    0.35     0.35   4.358   0.374   8.387
  79          UI     0.0    62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
  80          UI   57.55    39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

  81          KK     Q1B   BASIN
  82          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  83          KM   L=2.35     Lca=1.14     S=141.40     Kn=0.055     LAG=44.3
  84          KM   S-GRAPH TYPE=PHX MNT
  85          KO       0        0     0.0        1       22
  86          BA   0.937
  87          LG    0.35     0.35    4.32   0.373  14.815
              * Q1B
  88          UI     0.0    71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
  89          UI  443.72   398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
  90          UI  114.82    91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
  91          UI   35.07    15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
  92          UI   13.74      0.0
              *
1                                          HEC-1 INPUT                                          PAGE  3

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

  93          KK   DUMMY COMBINE
  94          KM    DUMMY COMBINE FOR HEC-1 STACK
  95          HC       2
              *

  96          KK      L1   BASIN
  97          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  98          KM   L=4.93     Lca=2.29     S=308.27     Kn=0.050     LAG=60.6
  99          KM   S-GRAPH TYPE=PHX MNT
 100          BA   3.546
 101          LG   0.271    0.318   4.363   0.351  16.279
 102          UI     0.0   195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 103          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 104          UI  701.22   620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 105          UI  241.82   214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 106          UI   95.79    95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 107          UI   37.52    37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

 108          KK  L1-L2A   ROUTE
 109          RS       3    FLOW     0.0     0.0
 110          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 111          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 112          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 113          KK     L2A   BASIN
 114          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 115          KM   L=2.46     Lca=1.12     S=136.18     Kn=0.055     LAG=45.0
 116          KM   S-GRAPH TYPE=DES RNGLND
 117          BA   0.693
 118          LG    0.35    0.384   5.641   0.202     0.0
 119          UI     0.0    51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 120          UI  461.36   394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 121          UI   69.92    54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
 122          UI   12.61    12.61   12.61   12.61
```

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                *

 123            KK    L2BR COMBINE
 124            KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
 125            KM     THIS IS THE TOTAL FLOW TO APEX 37
 126            HC       2
                *

 127            KK  RRL2BR STORAGE
 128            KM   PROPOSED DETENTION BASIN
 129            KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN AT APEX 37
 130            KM    outlet pipe of 4 ft diameter assumed
 131            KM    STRUCTURE ID:RRL2BR
 132            KM    DIMENSIONS: L=1800ft, W=780ft, D=10ft, Sideslope (?H:1V)= 3,  Vol.= 252.3 ac
 133            RS       1    STOR       0
 134            SV     0.0    53.7   108.8   165.2   193.9   222.9   252.3   282.1   312.2   373.4
 135            SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
 136            SQ     0.0   133.7   189.1   231.6   250.1   267.4   283.6   299.0   313.6   340.9
                *
1                                          HEC-1 INPUT                                          PAGE  4

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

 137            KK  L2AL2B   ROUTE
 138            KM   PROPOSED CHANNEL
 139            KM    ROUTE FLOW FROM APEX 37 TO SUN VALLEY PARKWAY THRU SUBBASIN L2B
 140            KM    STRUCTURE ID(s): L3R10
 141            KM    Slope=(1548.0 - 1238.5) / 20092.5
 142            RS       8    FLOW      -1
 143            RC   0.045   0.045   0.045 20092.50.015405   104.5
 144            RX     0.0    13.5    13.5    13.5   313.5   313.5   313.5   327.0
 145            RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
                *

 146            KK     L2B   BASIN
 147            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 148            KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 149            KM   S-GRAPH TYPE=DES RNGLND
 150            BA   4.077
 151            LG    0.35    0.35   4.179   0.399     0.0
 152            UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 153            UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 154            UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 155            UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 156            UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 157            UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
                *

 158            KK     L3R COMBINE
 159            KM    COMBINE ROUTED FLOW APEX 37 WITH RUNOFF FROM SUBBASIN L2B
 160            HC       2
                *

 161            KK    DL3R  DIVERT
 162            KM   Proposed Offline Detention Basin AT SUN VALLEY PARKWAY
 163            KM    STRUCTURE ID:DL3R
 164            KM    DIMENSIONS: L=260ft, W=200ft, D=4ft, Sideslope (?H:1V)= 3,  Vol.= 3 ac-ft
 165            DT    DOUT
 166            DI     0.0   360.0   720.0  1080.0  1440.0  1585.0  1820.0  2520.0  2880.0  3240.0
 167            DI  3600.0     0.0
 168            DQ     0.0     0.0     0.0     0.0     0.0     0.0   235.0   935.0  1295.0  1655.0
 169            DQ  2015.0     0.0
                *

 170            KK   L2BL3   ROUTE
 171            KM   PROPOSED CHANNEL
 172            KM    ROUTE FLOW FROM SUN VALLEY PARKWAY THRU SUBBASIN L3 TO MCDOWELL ROAD
 173            KM    STRUCTURE ID(s): L10
 174            KM    Slope=(1238.5 - 1119.1) / 12870.8
 175            RS       6    FLOW      -1
 176            RC   0.045   0.045   0.045 12870.80.009275   105.0
 177            RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
 178            RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
                *
1                                          HEC-1 INPUT                                          PAGE  5

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

 179            KK     L2C   BASIN
 180            KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 181            KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 182            KM   S-GRAPH TYPE=DES RNGLND
 183            BA   1.328
 184            LG    0.35    0.35   4.189   0.422     0.0
 185            UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 186            UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 187            UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 188            UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 189            UI   17.84   17.84   17.84   17.84   17.84     0.0
                *

 190            KK  L2C-2D   ROUTE
 191            RS       6    FLOW     0.0     0.0
```

```
192          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
193          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
194          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *

195          KK     L2D   BASIN
196          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
197          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
198          KM   S-GRAPH TYPE=DES RNGLND
199          BA   1.232
200          LG    0.35    0.35   3.578   0.544     0.0
201          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
202          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
203          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
204          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
205          UI   18.36     0.0
             *

206          KK    L3RB COMBINE
207          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
208          HC       2
             *

209          KK  L2D-L3   ROUTE
210          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
211          RS      39    FLOW     0.0     0.0
212          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
213          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
214          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

215          KK      L3   BASIN
216          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
217          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
218          KM   S-GRAPH TYPE=DES RNGLND
219          BA   5.852
220          LG   0.341   0.328    3.98   0.419    1.05
221          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
222          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

223          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
224          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
225          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
226          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
227          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

228          KK       L COMBINE
229          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
230          HC       3
             *
             * KK  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT
             *

231          KK      M1   BASIN
232          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
233          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
234          KM   S-GRAPH TYPE=PHX MNT
235          BA   5.686
236          LG    0.35    0.35   4.297    0.35  16.637
237          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
238          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
239          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
240          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
241          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
242          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
243          UI   54.77   54.77     0.0
             *

244          KK   RRCM1 STORAGE
245          KM   PROPOSED DETENTION BASIN
246          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
247          KM    outlet pipe 5 ft diameter assumed
248          KM    STRUCTURE ID:RRCM1
249          KM    DIMENSIONS: L=1980ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 314.3 ac
250          RS       1    STOR       0
251          SV     0.0    29.8    90.5   152.6   184.2   216.1   248.5   314.3   381.5   450.3
252          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
253          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
             *

254          KK   M1-M2   ROUTE
255          KM   PROPOSED CHANNEL
256          KM    ROUTE FLOW FROM APEX 36 THRU SUBBASIN M2 TO FRS NO. 1
257          KM    STRUCTURE ID(s): M110
258          KM    Slope=(1558.8 - 1078.5) / 33722.5
259          RS      18    FLOW      -1
260          RC   0.045   0.045   0.045 33722.5 0.01424   104.5
261          RX     0.0    13.5    13.5    13.5   413.5   413.5   413.5   427.0
262          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 263          KK      M2   BASIN
 264          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 265          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
 266          KM   S-GRAPH TYPE=DES RNGLND
 267          BA   7.436
 268          LG    0.35    0.35   3.959   0.445   0.291
 269          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 270          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 271          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
 272          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 273          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 274          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 275          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 276          UI   60.94   60.94   60.94   60.94     0.0
              *

 277          KK       M COMBINE
 278          KM    COMBINE ROUTED FLOW FROM APEX 36 WITH RUNOFF FROM M2
 279          HC       2
              *

 280          KK      N1   BASIN
 281          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 282          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 283          KM   S-GRAPH TYPE=PHX MNT
 284          BA   1.524
 285          LG    0.35    0.35   4.075   0.419    8.38
 286          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 287          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 288          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 289          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 290          KK   RRCN1 STORAGE
 291          KM   PROPOSED DETENTION BASIN
 292          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
 293          KM    outlet pipe 5 ft diameter assumed
 294          KM    STRUCTURE ID:RRCN1
 295          KM    DIMENSIONS: L=860ft, W=480ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 78.4 ac-f
 296          RS       1     STOR       0
 297          SV     0.0     7.1    21.7    37.1    45.0    53.1    61.3    69.8    87.2   105.3
 298          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
 299          SQ     0.0    60.5   104.8   135.3   148.2   160.1   171.1   181.5   200.7   218.2
              *

 300          KK  N1-P1A   ROUTE
 301          KM   PROPOSED CHANNEL
 302          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
 303          KM    STRUCTURE ID(s): N125
 304          KM    Slope=(1382.8 - 1276.4) / 8101.2
 305          RS       4     FLOW      -1
 306          RC   0.045   0.045   0.045  8101.20.013128   104.5
 307          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
 308          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
              *
1                                          HEC-1 INPUT                                          PAGE  8

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

 309          KK     N2A   BASIN
 310          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
 311          KM   (ASSUME SAME AS N1 FOR NOW)
 312          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 313          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 314          KM   S-GRAPH TYPE=PHX MNT
 315          BA   1.524
 316          LG    0.35    0.35   4.075   0.419    8.38
 317          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 318          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 319          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 320          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 321          KK   CN2AR COMBINE
 322          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
 323          HC       2
              *

 324          KK     P1A   BASIN
 325          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 326          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
 327          KM   S-GRAPH TYPE=PHX MNT
 328          BA     0.5
 329          LG    0.35    0.35   3.987   0.405  16.364
 330          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
 331          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
 332          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
 333          UI    8.49    8.49    8.49    8.49    8.49    8.49
              *
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KK   RRP1A STORAGE
KM   PROPOSED DETENTION BASIN
KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
KM    outlet pipe 2 ft diameter assumed
KM    STRUCTURE ID:RRP1A
KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
RS       1    STOR       0
SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    38.8    49.9
SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0    10.0
SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    96.3   107.6
*

KK    CN2A COMBINE
KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
HC       2
*
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1 HEC-1 INPUT PAGE 9

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

KK  P1A-1B   ROUTE
KM   PROPOSED CHANNEL
KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
KM    STRUCTURE ID(s): N130, N140
KM    Slope=(1276.4 - 1092.0) / 16521.3
RS      11    FLOW      -1
RC   0.045   0.045   0.045 16521.30.011161   105.0
RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
*

KK     P1B   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
KM   S-GRAPH TYPE=PHX MNT
BA   1.937
LG    0.35    0.35    4.23   0.393   4.667
UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
*

KK      PR COMBINE
KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
HC       2
*

KK     Q1A   BASIN
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
KM   S-GRAPH TYPE=PHX MNT
BA   1.297
LG    0.35    0.35   4.127     0.4    11.2
UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
*

KK   RRQ1A STORAGE
KM   PROPOSED DETENTION BASIN
KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
KM    outlet pipe of 2.5 ft diameter assumed
KM    STRUCTURE ID:RRQ1A
KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
RS       1    STOR       0
SV     0.0     6.9    21.1    36.1    51.7    59.9    68.2    76.6    85.3   103.2
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1 HEC-1 INPUT PAGE 10

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

SE     0.0     1.0     3.0     5.0     7.0     8.0     9.0    10.0    11.0    13.0
SQ     0.0    34.0    59.0    76.1    90.0    96.3   102.1   107.6   112.9   122.7
*

KK   Q1A-P   ROUTE
KM   PROPOSED CHANNEL
KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
KM    IN NEW CHANNEL
KM    STRUCTURE ID(s): P1B10
KM    Slope=(1190.4 - 1133.0) / 5122.9
RS       7    FLOW      -1
RC   0.045   0.045   0.045 5122.90.011207   104.5
RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
*
```

```
406          KK       P COMBINE
407          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
408          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
409          HC       2
             *
             *  KK  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
             *

410          KK     N2B  BASIN
411          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
412          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
413          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
414          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
415          KM   S-GRAPH TYPE=PHX MNT
416          BA   3.325
417          LG    0.35    0.35   4.117   0.405    2.67
418          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
419          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
420          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
421          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
422          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
423          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
424          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
425          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
426          UI   23.58   23.58   23.58   23.58   23.58
             *

427          KK      Q1   BASIN
428          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
429          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
430          KM   S-GRAPH TYPE=PHX MNT
431          BA   3.088
432          LG    0.35    0.35   4.191   0.393   2.105
433          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
434          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
435          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
436          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
437          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
438          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
1                                                HEC-1 INPUT                                          PAGE 11

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

439          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
440          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
441          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
442          UI   19.93   19.93   19.93     0.0
             *

443          KK      Z1   BASIN
444          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
445          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
446          KM   S-GRAPH TYPE=DES RNGLND
447          BA   0.664
448          LG   0.321   0.292   4.004    0.43   2.909
449          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
450          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
451          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
452          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    73         R1
                .
                .
    81          .         Q1B
                .           .
                .           .
    93      DUMMY............
                .
                .
    96          .          L1
                .           V
                .           V
   108          .      L1-L2A
                .           .
                .           .
   113          .           .         L2A
                .           .           .
                .           .           .
   123          .        L2BR............
                .           V
                .           V
   127          .      RRL2BR
                .           V
                .           V
   137          .      L2AL2B
                .           .
                .           .
   146          .           .         L2B
```

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                .           .
                .           .
158             .       L3R.............
                .           .
                .           .
165             .           ,-------->    DOUT
161             .      DL3R
                .         V
                .         V
170             .     L2BL3
                .           .
                .           .
179             .           .       L2C
                .           .         V
                .           .         V
190             .           .     L2C-2D
                .           .           .
                .           .           .
195             .           .           .         L2D
                .           .           .           .
                .           .           .           .
206             .           .      L3RB.............
                .           .         V
                .           .         V
209             .           .     L2D-L3
                .           .           .
                .           .           .
215             .           .           .           L3
                .           .           .           .
                .           .           .           .
228             .          L.........................
                .           .
                .           .
231             .           .         M1
                .           .         V
                .           .         V
244             .           .      RRCM1
                .           .         V
                .           .         V
254             .           .      M1-M2
                .           .           .
                .           .           .
263             .           .           .           M2
                .           .           .           .
                .           .           .           .
277             .           .          M.............
                .           .           .
                .           .           .
280             .           .           .           N1
                .           .           .            V
                .           .           .            V
290             .           .           .       RRCN1
                .           .           .            V
                .           .           .            V
300             .           .           .      N1-P1A
                .           .           .           .
                .           .           .           .
309             .           .           .           .         N2A
                .           .           .           .           .
                .           .           .           .           .
321             .           .           .       CN2AR............
                .           .           .           .
                .           .           .           .
324             .           .           .           .         P1A
                .           .           .           .           V
                .           .           .           .           V
334             .           .           .           .       RRP1A
                .           .           .           .           .
                .           .           .           .           .
344             .           .           .        CN2A............
                .           .           .            V
                .           .           .            V
348             .           .           .      P1A-1B
                .           .           .           .
                .           .           .           .
357             .           .           .           .         P1B
                .           .           .           .           .
                .           .           .           .           .
371             .           .           .          PR............
                .           .           .           .
                .           .           .           .
375             .           .           .           .         Q1A
                .           .           .           .           V
                .           .           .           .           V
386             .           .           .           .       RRQ1A
                .           .           .           .           V
                .           .           .           .           V
396             .           .           .           .       Q1A-P
                .           .           .           .           .
                .           .           .           .           .
406             .           .           .           P............
                .           .           .           .
                .           .           .           .
410             .           .           .           .         N2B
                .           .           .           .           .
```

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                .          .          .          .          .
  427           .          .          .          .          .          O1
                .          .          .          .          .           .
                .          .          .          .          .           .
  443           .          .          .          .          .           .          Z1

 (***) 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   19APR06  TIME  17:23:28  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B43
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B4-3 is based on using a relatively larger on-line detention basin at the apex accompanied by smaller leveed channel sections in the down fan direction. It is the third of three corridor alignments considered as part of the Alternative B4 series.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 6-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi) Lca(mi) S(ft/mi) LAG(min)

```
 32 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      1JAN94  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      7JAN94  ENDING DATE
                     NDTIME        2235  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

 34 JD            INDEX STORM NO. 1
                       STRM        3.23  PRECIPITATION DEPTH
                       TRDA         .01  TRANSPOSITION DRAINAGE AREA

 35 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

 39 JD            INDEX STORM NO. 2
                       STRM        3.21  PRECIPITATION DEPTH
                       TRDA         .50  TRANSPOSITION DRAINAGE AREA
```

```
40 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

44 JD        INDEX STORM NO. 3
                STRM        3.19  PRECIPITATION DEPTH
                TRDA        1.00  TRANSPOSITION DRAINAGE AREA

45 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       .06       .06       .06       .12       .12       .12       .03       .03
                  .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

49 JD        INDEX STORM NO. 4
                STRM        3.10  PRECIPITATION DEPTH
                TRDA        5.00  TRANSPOSITION DRAINAGE AREA

50 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       .06       .06       .06       .08       .08       .08       .05       .05
                  .05       .02       .02       .02       .01       .01       .01       .01       .01       .01
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

54 JD        INDEX STORM NO. 5
                STRM        3.04  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

55 PI          PRECIPITATION PATTERN
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .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
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

59 JD        INDEX STORM NO. 6
                STRM        2.94  PRECIPITATION DEPTH
                TRDA       20.00  TRANSPOSITION DRAINAGE AREA

60 PI          PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .01       .01       .01       .00       .00       .00       .00       .00
                  .00       .01       .01       .01       .00       .00       .00       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                  .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                  .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                  .00       .00

64 JD        INDEX STORM NO. 7
                STRM        2.88  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

65 PI          PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                  .01       .01       .01       .01       .01       .00       .00       .00       .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       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .01       .01       .01       .00
                  .00       .00

69 JD        INDEX STORM NO. 8
                STRM        2.81  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

70 PI          PRECIPITATION PATTERN
                  .01       .01       .01       .00       .00       .00       .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       .02       .02       .02       .03
                  .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                  .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                  .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                  .01       .01
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
  81 KK     *     Q1B    *        BASIN
            *            *
            **************

  85 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE
                       IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                        IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                       ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                       ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                      TIMINT       .083  TIME INTERVAL IN HOURS

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
+                              R1       506.    4.25        47.         12.          4.        .28

          HYDROGRAPH AT
+                             Q1B       851.    4.50       155.         39.         13.        .94

          2 COMBINED AT
+                           DUMMY      1020.    4.50       192.         48.         16.       1.22

          HYDROGRAPH AT
+                              L1      2128.    4.75       543.        139.         46.       3.55

          ROUTED TO
+                          L1-L2A      2066.    4.92       543.        139.         46.       3.55

          HYDROGRAPH AT
+                             L2A       692.    4.58       113.         28.          9.        .69

          2 COMBINED AT
+                            L2BR      2391.    4.92       623.        159.         53.       4.24

          ROUTED TO
+                           RRL2BR       278.    7.00       261.        153.         53.       4.24

          ROUTED TO
+                           L2AL2B       275.    8.92       256.        152.         53.       4.24

          HYDROGRAPH AT
+                             L2B      1532.    5.08       418.        104.         35.       4.08

          2 COMBINED AT
+                             L3R      1321.    5.08       486.        228.         79.       8.32

          DIVERSION TO
+                            DOUT         0.     .00         0.          0.          0.       8.32

          HYDROGRAPH AT
+                            DL3R      1321.    5.08       486.        228.         79.       8.32

          ROUTED TO
+                           L2BL3      1127.    5.92       451.        225.         79.       8.32

          HYDROGRAPH AT
+                             L2C       754.    4.83       161.         40.         13.       1.33

          ROUTED TO
+                          L2C-2D       712.    5.25       161.         40.         13.       1.33

          HYDROGRAPH AT
+                             L2D       706.    4.75       136.         34.         11.       1.23

          2 COMBINED AT
+                            L3RB      1043.    5.00       260.         65.         22.       2.56

          ROUTED TO
+                           L2D-L3       650.    8.33       258.         65.         22.       2.56

          HYDROGRAPH AT
+                              L3      1832.    5.25       581.        146.         49.       5.85

          3 COMBINED AT
+                               L      1916.    5.75       932.        350.        120.      16.73

          HYDROGRAPH AT
+                              M1      2809.    4.83       790.        203.         68.       5.69
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+	ROUTED TO	RRCM1	414.	6.83	384.	201.	68.	5.69
+	ROUTED TO	M1-M2	407.	10.08	373.	200.	68.	5.69
+	HYDROGRAPH AT	M2	1849.	5.42	633.	159.	53.	7.44
+	2 COMBINED AT	M	1595.	5.42	650.	313.	106.	13.12
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52
+	ROUTED TO	RRCN1	187.	5.67	155.	53.	18.	1.52
+	ROUTED TO	N1-P1A	184.	6.33	152.	53.	18.	1.52
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52
+	2 COMBINED AT	CN2AR	1071.	4.50	304.	95.	32.	3.05
+	HYDROGRAPH AT	P1A	575.	4.42	89.	22.	7.	.50
+	ROUTED TO	RRP1A	87.	5.50	70.	22.	7.	.50
+	2 COMBINED AT	CN2A	1084.	4.50	356.	111.	37.	3.55
+	ROUTED TO	P1A-1B	802.	5.50	331.	111.	37.	3.55
+	HYDROGRAPH AT	P1B	852.	5.08	244.	62.	21.	1.94
+	2 COMBINED AT	PR	1233.	5.50	490.	156.	52.	5.49
+	HYDROGRAPH AT	Q1A	990.	4.58	193.	49.	16.	1.30
+	ROUTED TO	RRQ1A	106.	6.25	97.	48.	16.	1.30
+	ROUTED TO	Q1A-P	106.	6.50	97.	48.	16.	1.30
+	2 COMBINED AT	P	1257.	5.50	553.	189.	63.	6.78
+	HYDROGRAPH AT	N2B	1193.	5.17	366.	93.	31.	3.33
+	HYDROGRAPH AT	O1	1057.	5.33	343.	88.	29.	3.09
+	HYDROGRAPH AT	Z1	694.	4.50	100.	25.	8.	.66

*** NORMAL END OF HEC-1 ***

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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   19APR06  TIME  17:23:29  *                    *          (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
    2           ID     - ALTERNATIVE B43
    3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
    4           ID
    5           ID   Alternative Description
    6           ID   The purpose of Alternative B is to capture the upstream flow at the
    7           ID   apex using online detention basins.  The presence of the detention basins
    8           ID   eliminates the downstream alluvial fan uncertainties by controlling the
    9           ID   flow from the apices to the outfall.  Alternative B4-3 is based on using a
   10           ID   relatively larger on-line detention basin at the apex accompanied by smaller
   11           ID   leveed channel sections in the down fan direction.  It is the third of three
   12           ID   corridor alignments considered as part of the Alternative B4 series.
   13           ID
   14           ID
   15           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
   16           ID   JANUARY 2006
   17           ID
   18           ID   MODEL BASED UPON:
   19           ID
   20           ID  Buckeye/Sun Valley ADMS - May 2005
   21           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
   22           ID  100-year 24-hour
   23           ID  Existing Conditions
   24           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
   25           ID  Rainfall Loss Method - Green & Ampt
   26           ID  Unit Hydrograph Method - FCDMC S-Graph
   27           ID  Channel Routing Method - Normal Depth
   28           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
   29           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
   30           ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
                *DIAGRAM
   31           IT       5 01JAN94       0    2000
   32           IO       5
   33           IN      15 01JAN94       0
   34           JD    4.16    0.01
                * 24-hour distribution
   35           PC     0.0   0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
   36           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
   37           PC   0.064   0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
   38           PC    0.11   0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
   39           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
   40           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
   41           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
   42           PC   0.913   0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
   43           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
   44           PC   0.983   0.986   0.989   0.992   0.995   0.998     1.0
   45           JD   3.952    10.0
   46           JD   3.819    20.0
   47           JD    3.69    40.0
   48           JD   3.565    80.0
   49           JD   3.499   120.0
                *

1                                          HEC-1 INPUT                                          PAGE  2

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 50          KK      R1   BASIN
 51          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 52          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
 53          KM   S-GRAPH TYPE=PHX MNT
 54          BA   0.284
 55          LG    0.35    0.35   4.358   0.374   8.387
 56          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
 57          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
             *

 58          KK     Q1B   BASIN
 59          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 60          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
 61          KM   S-GRAPH TYPE=PHX MNT
 62          KO       0       0     0.0       1      22
 63          BA   0.937
 64          LG    0.35    0.35    4.32   0.373  14.815
             * Q1B
 65          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
 66          UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
 67          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
 68          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
 69          UI   13.74     0.0
             *

 70          KK   DUMMY COMBINE
 71          KM    DUMMY COMBINE FOR HEC-1 STACK
 72          HC       2
             *

 73          KK      L1   BASIN
 74          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 75          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
 76          KM   S-GRAPH TYPE=PHX MNT
 77          BA   3.546
 78          LG   0.271   0.318   4.363   0.351  16.279
 79          UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 80          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 81          UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 82          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 83          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 84          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
             *

 85          KK  L1-L2A   ROUTE
 86          RS       3    FLOW     0.0     0.0
 87          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 88          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 89          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *
1                                          HEC-1 INPUT                                                    PAGE  3

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

 90          KK     L2A   BASIN
 91          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 92          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
 93          KM   S-GRAPH TYPE=DES RNGLND
 94          BA   0.693
 95          LG    0.35   0.384   5.641   0.202     0.0
 96          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 97          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 98          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
 99          UI   12.61   12.61   12.61   12.61
             *

100          KK    L2BR COMBINE
101          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
102          KM     THIS IS THE TOTAL FLOW TO APEX 37
103          HC       2
             *

104          KK  RRL2BR STORAGE
105          KM   PROPOSED DETENTION BASIN
106          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN AT APEX 37
107          KM    outlet pipe of 4 ft diameter assumed
108          KM    STRUCTURE ID:RRL2BR
109          KM    DIMENSIONS: L=1800ft, W=780ft, D=10ft, Sideslope (?H:1V)= 3,  Vol.= 252.3 ac
110          RS       1    STOR       0
111          SV     0.0    53.7   108.8   165.2   193.9   222.9   252.3   282.1   312.2   373.4
112          SE     0.0     2.0     4.0     6.0     7.0     8.0     9.0    10.0    11.0    13.0
113          SQ     0.0   133.7   189.1   231.6   250.1   267.4   283.6   299.0   313.6   340.9
             *

114          KK  L2AL2B   ROUTE
115          KM   PROPOSED CHANNEL
116          KM    ROUTE FLOW FROM APEX 37 TO SUN VALLEY PARKWAY THRU SUBBASIN L2B
117          KM    STRUCTURE ID(s): L3R10
118          KM    Slope=(1548.0 - 1238.5) / 20092.5
119          RS       8    FLOW      -1
120          RC   0.045   0.045   0.045 20092.50.015405   104.5
121          RX     0.0    13.5    13.5    13.5   313.5   313.5   313.5   327.0
122          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
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 123          KK     L2B   BASIN
 124          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 125          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 126          KM   S-GRAPH TYPE=DES RNGLND
 127          BA   4.077
 128          LG    0.35    0.35   4.179   0.399     0.0
 129          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 130          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 131          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 132          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 133          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 134          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *
1                                          HEC-1 INPUT                                                    PAGE  4

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


 135          KK     L3R COMBINE
 136          KM    COMBINE ROUTED FLOW APEX 37 WITH RUNOFF FROM SUBBASIN L2B
 137          HC       2
              *

 138          KK    DL3R  DIVERT
 139          KM   Proposed Offline Detention Basin AT SUN VALLEY PARKWAY
 140          KM    STRUCTURE ID:DL3R
 141          KM    DIMENSIONS: L=260ft, W=200ft, D=4ft, Sideslope (?H:1V)= 3,  Vol.= 3 ac-ft
 142          DT    DOUT
 143          DI     0.0   360.0   720.0  1080.0  1440.0  1585.0  1820.0  2520.0  2880.0  3240.0
 144          DI  3600.0     0.0
 145          DQ     0.0     0.0     0.0     0.0     0.0     0.0   235.0   935.0  1295.0  1655.0
 146          DQ  2015.0     0.0
              *

 147          KK   L2BL3   ROUTE
 148          KM   PROPOSED CHANNEL
 149          KM    ROUTE FLOW FROM SUN VALLEY PARKWAY THRU SUBBASIN L3 TO MCDOWELL ROAD
 150          KM    STRUCTURE ID(s): L10
 151          KM    Slope=(1238.5 - 1119.1) / 12870.8
 152          RS       6    FLOW      -1
 153          RC   0.045   0.045   0.045 12870.80.009275   105.0
 154          RX     0.0    15.0    15.0    15.0   415.0   415.0   415.0   430.0
 155          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
              *

 156          KK     L2C   BASIN
 157          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 158          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 159          KM   S-GRAPH TYPE=DES RNGLND
 160          BA   1.328
 161          LG    0.35    0.35   4.189   0.422     0.0
 162          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 163          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 164          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 165          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 166          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 167          KK  L2C-2D   ROUTE
 168          RS       6    FLOW     0.0     0.0
 169          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 170          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 171          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 172          KK     L2D   BASIN
 173          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 174          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 175          KM   S-GRAPH TYPE=DES RNGLND
 176          BA   1.232
 177          LG    0.35    0.35   3.578   0.544     0.0
 178          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
1                                          HEC-1 INPUT                                                    PAGE  5

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

 179          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 180          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 181          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
 182          UI   18.36     0.0
              *

 183          KK    L3RB COMBINE
 184          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 185          HC       2
              *

 186          KK  L2D-L3   ROUTE
 187          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 188          RS      39    FLOW     0.0     0.0
 189          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
 190          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 191          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
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192          KK      L3   BASIN
193          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
194          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
195          KM   S-GRAPH TYPE=DES RNGLND
196          BA   5.852
197          LG   0.341   0.328    3.98   0.419    1.05
198          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
199          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
200          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
201          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
202          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
203          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
204          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
             *

205          KK       L COMBINE
206          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
207          HC       3
             *
             * KK  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT
             *

208          KK      M1   BASIN
209          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
210          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
211          KM   S-GRAPH TYPE=PHX MNT
212          BA   5.686
213          LG    0.35    0.35   4.297    0.35  16.637
214          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
215          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
216          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
217          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
218          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
219          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
220          UI   54.77   54.77     0.0
             *
1                                          HEC-1 INPUT                                                PAGE  6

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

221          KK   RRCM1 STORAGE
222          KM   PROPOSED DETENTION BASIN
223          KM    ROUTE COMBINED FLOW THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 36
224          KM    outlet pipe 5 ft diameter assumed
225          KM    STRUCTURE ID:RRCM1
226          KM    DIMENSIONS: L=1980ft, W=800ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 314.3 ac
227          RS       1    STOR       0
228          SV     0.0    29.8    90.5   152.6   184.2   216.1   248.5   314.3   381.5   450.3
229          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0    10.0    12.0    14.0
230          SQ     0.0   136.1   235.8   304.4   333.5   360.2   385.1   430.5   471.6   509.4
             *

231          KK   M1-M2   ROUTE
232          KM   PROPOSED CHANNEL
233          KM    ROUTE FLOW FROM APEX 36 THRU SUBBASIN M2 TO FRS NO. 1
234          KM    STRUCTURE ID(s): M110
235          KM    Slope=(1558.8 - 1078.5) / 33722.5
236          RS      18    FLOW      -1
237          RC   0.045   0.045   0.045 33722.5 0.01424   104.5
238          RX     0.0    13.5    13.5    13.5   413.5   413.5   413.5   427.0
239          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

240          KK      M2   BASIN
241          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
242          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
243          KM   S-GRAPH TYPE=DES RNGLND
244          BA   7.436
245          LG    0.35    0.35   3.959   0.445   0.291
246          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
247          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
248          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
249          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
250          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
251          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
252          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
253          UI   60.94   60.94   60.94   60.94     0.0
             *

254          KK       M COMBINE
255          KM    COMBINE ROUTED FLOW FROM APEX 36 WITH RUNOFF FROM M2
256          HC       2
             *

257          KK      N1   BASIN
258          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
259          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
260          KM   S-GRAPH TYPE=PHX MNT
261          BA   1.524
262          LG    0.35    0.35   4.075   0.419    8.38
263          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
264          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
265          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
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266          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *
1                                        HEC-1 INPUT                                                    PAGE  7

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

267          KK   RRCN1 STORAGE
268          KM   PROPOSED DETENTION BASIN
269          KM    ROUTE COMBINED FLOW THROUGH PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 7
270          KM    outlet pipe 5 ft diameter assumed
271          KM    STRUCTURE ID:RRCN1
272          KM    DIMENSIONS: L=860ft, W=480ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 78.4 ac-f
273          RS       1    STOR       0
274          SV     0.0     7.1    21.7    37.1    45.0    53.1    61.3    69.8    87.2   105.3
275          SE     0.0     1.0     3.0     5.0     6.0     7.0     8.0     9.0    11.0    13.0
276          SQ     0.0    60.5   104.8   135.3   148.2   160.1   171.1   181.5   200.7   218.2
             *

277          KK  N1-P1A   ROUTE
278          KM   PROPOSED CHANNEL
279          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
280          KM    STRUCTURE ID(s): N125
281          KM    Slope=(1382.8 - 1276.4) / 8101.2
282          RS       4    FLOW      -1
283          RC   0.045   0.045   0.045 8101.20.013128   104.5
284          RX     0.0    13.5    13.5    13.5   173.5   173.5   173.5   187.0
285          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

286          KK     N2A   BASIN
287          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
288          KM   (ASSUME SAME AS N1 FOR NOW)
289          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
290          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
291          KM   S-GRAPH TYPE=PHX MNT
292          BA   1.524
293          LG    0.35    0.35   4.075   0.419    8.38
294          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
295          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
296          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
297          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *

298          KK   CN2AR COMBINE
299          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
300          HC       2
             *

301          KK     P1A   BASIN
302          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
303          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
304          KM   S-GRAPH TYPE=PHX MNT
305          BA     0.5
306          LG    0.35    0.35   3.987   0.405  16.364
307          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
308          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
309          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
310          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *
1                                        HEC-1 INPUT                                                    PAGE  8

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

311          KK   RRP1A STORAGE
312          KM   PROPOSED DETENTION BASIN
313          KM    ROUTE RUNOFF FROM P1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 8
314          KM    outlet pipe 2 ft diameter assumed
315          KM    STRUCTURE ID:RRP1A
316          KM    DIMENSIONS: L=700ft, W=360ft, D=8ft, Sideslope (?H:1V)= 3,  Vol.= 33.4 ac-ft
317          RS       1    STOR       0
318          SV     0.0     4.4     8.9    13.5    18.3    23.2    28.3    33.4    38.8    49.9
319          SE     0.0     1.0     2.0     3.0     4.0     5.0     6.0     7.0     8.0    10.0
320          SQ     0.0    34.0    48.1    59.0    68.1    76.1    83.4    90.0    96.3   107.6
             *

321          KK    CN2A COMBINE
322          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
323          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
324          HC       2
             *

325          KK  P1A-1B   ROUTE
326          KM   PROPOSED CHANNEL
327          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
328          KM    STRUCTURE ID(s): N130, N140
329          KM    Slope=(1276.4 - 1092.0) / 16521.3
330          RS      11    FLOW      -1
331          RC   0.045   0.045   0.045 16521.30.011161   105.0
332          RX     0.0    15.0    15.0    15.0   255.0   255.0   255.0   270.0
333          RY   105.0   100.0   100.0   100.0   100.0   100.0   100.0   105.0
             *

334          KK     P1B   BASIN
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335          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
336          KM   L=4.39     Lca=2.32     S=70.84     Kn=0.055     LAG=85.3
337          KM   S-GRAPH TYPE=PHX MNT
338          BA   1.937
339          LG    0.35    0.35    4.23    0.393    4.667
340          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
341          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
342          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
343          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
344          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
345          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
346          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
347          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

348          KK      PR COMBINE
349          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
350          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
351          HC       2
             *
1                                        HEC-1 INPUT                                                    PAGE  9

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


352          KK     Q1A   BASIN
353          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
354          KM   L=3.13     Lca=1.52     S=256.86     Kn=0.055     LAG=49.3
355          KM   S-GRAPH TYPE=PHX MNT
356          BA   1.297
357          LG    0.35    0.35   4.127     0.4    11.2
358          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
359          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
360          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
361          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
362          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *

363          KK   RRQ1A STORAGE
364          KM   PROPOSED DETENTION BASIN
365          KM    ROUTE RUNOFF FROM Q1A THRU PROPOSED DETENTION BASIN JUST UPSTREAM OF APEX 12
366          KM    outlet pipe of 2.5 ft diameter assumed
367          KM    STRUCTURE ID:RRQ1A
368          KM    DIMENSIONS: L=1000ft, W=420ft, D=11ft, Sideslope (?H:1V)= 3,  Vol.= 76.6 ac-
369          RS       1    STOR       0
370          SV     0.0     6.9    21.1    36.1    51.7    59.9    68.2    76.6    85.3   103.2
371          SE     0.0     1.0     3.0     5.0     7.0     8.0     9.0    10.0    11.0    13.0
372          SQ     0.0    34.0    59.0    76.1    90.0    96.3   102.1   107.6   112.9   122.7
             *

373          KK   Q1A-P   ROUTE
374          KM   PROPOSED CHANNEL
375          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
376          KM    IN NEW CHANNEL
377          KM    STRUCTURE ID(s): P1B10
378          KM    Slope=(1190.4 - 1133.0) / 5122.9
379          RS       7    FLOW      -1
380          RC   0.045   0.045   0.045  5122.90.011207   104.5
381          RX     0.0    13.5    13.5    13.5    58.5    58.5    58.5    72.0
382          RY   104.5   100.0   100.0   100.0   100.0   100.0   100.0   104.5
             *

383          KK       P COMBINE
384          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
385          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
386          HC       2
             *
             *  KK  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
             *

387          KK     N2B  BASIN
388          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
389          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
390          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
391          KM   L=5.64     Lca=3.27     S=170.14     Kn=0.055     LAG=90.7
392          KM   S-GRAPH TYPE=PHX MNT
393          BA   3.325
394          LG    0.35    0.35   4.117   0.405    2.67
395          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
1                                        HEC-1 INPUT                                                    PAGE 10

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

396          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
397          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
398          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
399          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
400          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
401          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
402          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
403          UI   23.58   23.58   23.58   23.58   23.58
             *

404          KK      O1   BASIN
405          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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406          KM   L=5.20     Lca=2.79     S=64.07     Kn=0.055     LAG=99.9
407          KM   S-GRAPH TYPE=PHX MNT
408          BA   3.088
409          LG    0.35    0.35   4.191   0.393   2.105
410          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
411          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
412          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
413          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
414          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
415          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
416          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
417          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
418          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
419          UI   19.93   19.93   19.93     0.0
             *

420          KK      Z1   BASIN
421          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
422          KM   L=1.70     Lca=0.66     S=47.00     Kn=0.055     LAG=39.1
423          KM   S-GRAPH TYPE=DES RNGLND
424          BA   0.664
425          LG   0.321   0.292   4.004    0.43   2.909
426          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
427          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
428          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
429          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    50         R1
                .
                .
    58          .          Q1B
                .            .
                .            .
    70      DUMMY............
                .
                .
    73          .           L1
                .            V
                .            V
    85          .       L1-L2A
                .            .
                .            .
    90          .            .          L2A
                .            .            .
                .            .            .
   100          .         L2BR............
                .            V
                .            V
   104          .       RRL2BR
                .            V
                .            V
   114          .       L2AL2B
                .            .
                .            .
   123          .            .          L2B
                .            .            .
                .            .            .
   135          .          L3R............
                .            .
                .            .
   142          .            .-------->     DOUT
   138          .         DL3R
                .            V
                .            V
   147          .        L2BL3
                .            .
                .            .
   156          .            .          L2C
                .            .            V
                .            .            V
   167          .            .       L2C-2D
                .            .            .
                .            .            .
   172          .            .            .          L2D
                .            .            .            .
                .            .            .            .
   183          .            .        L3RB............
                .            .            V
                .            .            V
   186          .            .       L2D-L3
                .            .            .
                .            .            .
   192          .            .            .           L3
                .            .            .            .
                .            .            .            .
   205          .           L.........................
                .            .
                .            .
   208          .            .           M1
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                 .          .          V
                 .          .          V
   221           .          .       RRCM1
                 .          .          V
                 .          .          V
   231           .          .       M1-M2
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                 .          .          .
   240           .          .          .          M2
                 .          .          .           .
                 .          .          .           .
   254           .          .          M............
                 .          .          .
                 .          .          .
   257           .          .          .          N1
                 .          .          .           V
                 .          .          .           V
   267           .          .          .      RRCN1
                 .          .          .           V
                 .          .          .           V
   277           .          .          .      N1-P1A
                 .          .          .           .
                 .          .          .           .
   286           .          .          .           .         N2A
                 .          .          .           .           .
                 .          .          .           .           .
   298           .          .          .      CN2AR............
                 .          .          .           .
                 .          .          .           .
   301           .          .          .           .         P1A
                 .          .          .           .           V
                 .          .          .           .           V
   311           .          .          .           .       RRP1A
                 .          .          .           .           .
                 .          .          .           .           .
   321           .          .          .       CN2A............
                 .          .          .           V
                 .          .          .           V
   325           .          .          .      P1A-1B
                 .          .          .           .
                 .          .          .           .
   334           .          .          .           .         P1B
                 .          .          .           .           .
                 .          .          .           .           .
   348           .          .          .          PR............
                 .          .          .           .
                 .          .          .           .
   352           .          .          .           .         Q1A
                 .          .          .           .           V
                 .          .          .           .           V
   363           .          .          .           .       RRQ1A
                 .          .          .           .           V
                 .          .          .           .           V
   373           .          .          .           .       Q1A-P
                 .          .          .           .           .
                 .          .          .           .           .
   383           .          .          .           P............
                 .          .          .           .
                 .          .          .           .
   387           .          .          .           .         N2B
                 .          .          .           .           .
                 .          .          .           .           .
   404           .          .          .           .           .          O1
                 .          .          .           .           .           .
                 .          .          .           .           .           .
   420           .          .          .           .           .           .          Z1
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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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   19APR06  TIME  17:23:29  *                    *           (916) 756-1104             *
 *                                      *                    *                                      *
 ****************************************                    ****************************************
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STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE B43
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
The purpose of Alternative B is to capture the upstream flow at the apex using online detention basins. The presence of the detention basins eliminates the downstream alluvial fan uncertainties by controlling the flow from the apices to the outfall. Alternative B4-3 is based on using a relatively larger on-line detention basin at the apex accompanied by smaller leveed channel sections in the down fan direction. It is the third of three corridor alignments considered as part of the Alternative B4 series.

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                    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
                    JANUARY 2006

                    MODEL BASED UPON:

                    Buckeye/Sun Valley ADMS - May 2005
                    Michael Baker Jr., Inc. - Modeler: Jacob Lesue
                    100-year 24-hour
                    Existing Conditions
                    Area 3 - Sub-basins L-R (Aluvial Fan updates)
                    Rainfall Loss Method - Green & Ampt
                    Unit Hydrograph Method - FCDMC S-Graph
                    Channel Routing Method - Normal Depth
                    Land Use - FCDMC GIS Data: mag_landuse (2000)
                    Soil Data - USDA SCS Soil Survey (1972 & 1981)
                    Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)

32 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      1JAN94  STARTING DATE
                    ITIME        0000  STARTING TIME
                       NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      7JAN94  ENDING DATE
                   NDTIME        2235  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

34 JD          INDEX STORM NO. 1
                    STRM         4.16  PRECIPITATION DEPTH
                    TRDA          .01  TRANSPOSITION DRAINAGE AREA

35 PI          PRECIPITATION PATTERN
```

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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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.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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45 JD          INDEX STORM NO. 2
                    STRM         3.95  PRECIPITATION DEPTH
                    TRDA        10.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
```

.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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46 JD INDEX STORM NO. 3
STRM 3.82 PRECIPITATION DEPTH
TRDA 20.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.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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47 JD INDEX STORM NO. 4
STRM 3.69 PRECIPITATION DEPTH
TRDA 40.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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48 JD INDEX STORM NO. 5
STRM 3.57 PRECIPITATION DEPTH
TRDA 80.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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49 JD INDEX STORM NO. 6

STRM 3.50 PRECIPITATION DEPTH

TRDA 120.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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              *            *
 58 KK        *    Q1B     *        BASIN
              *            *
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62 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	1	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	2000	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT									

+		R1	387.	12.25	37.	10.	3.	.28
+	HYDROGRAPH AT	Q1B	740.	12.50	134.	38.	13.	.94
+	2 COMBINED AT	DUMMY	902.	12.50	170.	48.	16.	1.22
+	HYDROGRAPH AT	L1	2267.	12.75	527.	150.	50.	3.55
+	ROUTED TO	L1-L2A	2154.	12.92	527.	150.	50.	3.55
+	HYDROGRAPH AT	L2A	570.	12.58	92.	23.	8.	.69
+	2 COMBINED AT	L2BR	2519.	12.92	616.	172.	57.	4.24
+	ROUTED TO	RRL2BR	276.	15.00	262.	162.	57.	4.24
+	ROUTED TO	L2AL2B	274.	16.92	258.	161.	57.	4.24
+	HYDROGRAPH AT	L2B	1700.	13.08	449.	112.	37.	4.08
+	2 COMBINED AT	L3R	1703.	13.08	585.	269.	94.	8.32
+	DIVERSION TO	DOUT	118.	13.08	6.	1.	0.	8.32
+	HYDROGRAPH AT	DL3R	1585.	12.92	580.	267.	94.	8.32
+	ROUTED TO	L2BL3	1443.	13.83	544.	263.	94.	8.32
+	HYDROGRAPH AT	L2C	692.	12.83	145.	36.	12.	1.33
+	ROUTED TO	L2C-2D	651.	13.25	145.	36.	12.	1.33
+	HYDROGRAPH AT	L2D	655.	12.75	124.	31.	10.	1.23
+	2 COMBINED AT	L3RB	1104.	13.00	266.	66.	22.	2.56
+	ROUTED TO	L2D-L3	705.	16.17	263.	66.	22.	2.56
+	HYDROGRAPH AT	L3	2129.	13.25	658.	166.	56.	5.85
+	3 COMBINED AT	L	3021.	13.58	1321.	470.	164.	16.73
+	HYDROGRAPH AT	M1	3301.	12.83	825.	236.	79.	5.69
+	ROUTED TO	RRCM1	422.	14.92	396.	227.	79.	5.69
+	ROUTED TO	M1-M2	416.	18.08	387.	226.	79.	5.69
+	HYDROGRAPH AT	M2	2347.	13.42	786.	198.	66.	7.44
+	2 COMBINED AT	M	2312.	13.42	904.	409.	141.	13.12
+	HYDROGRAPH AT	N1	1211.	12.50	192.	52.	17.	1.52
+	ROUTED TO	RRCN1	178.	13.58	147.	52.	17.	1.52
+	ROUTED TO	N1-P1A	175.	14.42	144.	52.	17.	1.52
+	HYDROGRAPH AT	N2A	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN2AR	1214.	12.50	311.	103.	34.	3.05
+	HYDROGRAPH AT	P1A	441.	12.42	73.	21.	7.	.50

	ROUTED TO							
+		RRP1A	77.	13.50	61.	21.	7.	.50
	2 COMBINED AT							
+		CN2A	1269.	12.50	369.	123.	41.	3.55
	ROUTED TO							
+		P1A-1B	851.	13.50	344.	122.	41.	3.55
	HYDROGRAPH AT							
+		P1B	842.	13.08	231.	61.	20.	1.94
	2 COMBINED AT							
+		PR	1385.	13.33	543.	182.	61.	5.49
	HYDROGRAPH AT							
+		Q1A	915.	12.58	173.	48.	16.	1.30
	ROUTED TO							
+		RRQ1A	100.	14.17	92.	47.	16.	1.30
	ROUTED TO							
+		Q1A-P	100.	14.50	92.	47.	16.	1.30
	2 COMBINED AT							
+		P	1467.	13.42	627.	227.	77.	6.78
	HYDROGRAPH AT							
+		N2B	1331.	13.17	378.	99.	33.	3.33
	HYDROGRAPH AT							
+		O1	1163.	13.33	349.	91.	30.	3.09
	HYDROGRAPH AT							
+		Z1	558.	12.50	80.	21.	7.	.66

*** NORMAL END OF HEC-1 ***

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1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   19APR06  TIME  17:28:12  *
 *                                      *
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
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XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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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

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1                                    HEC-1 INPUT                                    PAGE  1

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

   1          ID    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
   2          ID     - ALTERNATIVE C
   3          ID     - BUCKEYE FRS NO. 1 SUB-AREA
   4          ID
   5          ID   Alternative Description
   6          ID   Alternative C is based on the concept of an excavated concrete-lined
   7          ID   channel from the apex to the outfall, without providing any detention
   8          ID   basin is at the apex.  To address sedimentation associated with the
   9          ID   alluvial fan systems, sedimentation basins are provided throughout the
  10          ID   system.  The excavated concrete channels are complemented with a 120-foot
  11          ID   wide adjacent riparian preservation corridor.
  12          ID
  13          ID
  14          ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
  15          ID   JANUARY 2006
  16          ID
  17          ID   MODEL BASED UPON:
  18          ID
  19          ID  Buckeye/Sun Valley ADMS - May 2005
  20          ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
  21          ID  100-year 6-hour
  22          ID  Existing Conditions
  23          ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
  24          ID  Rainfall Loss Method - Green & Ampt
  25          ID  Unit Hydrograph Method - FCDMC S-Graph
  26          ID  Channel Routing Method - Normal Depth
  27          ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
  28          ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
  29          ID  Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)
              *DIAGRAM
  30          IT       5 01JAN94       0    2000
  31          IO       5
  32          IN      15 01JAN94       0
  33          JD    3.23     0.01
              * 6-hour distribution, pattern 1.0
  34          PC     0.0    0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
  35          PC   0.087    0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
  36          PC   0.962    0.972   0.983   0.991     1.0
  37          IN      15 01JAN94       0
  38          JD   3.211      0.5
              * 6-hour distribution, pattern 1.0
  39          PC     0.0    0.008   0.016   0.025   0.033   0.041    0.05   0.058   0.066   0.074
  40          PC   0.087    0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931    0.95
  41          PC   0.962    0.972   0.983   0.991     1.0
  42          IN      15 01JAN94       0
  43          JD   3.188      1.0
              * 6-hour distribution, pattern 1.4
  44          PC     0.0  0.0084   0.016   0.025  0.0334  0.0414  0.0504  0.0584  0.0664  0.0748
  45          PC   0.087  0.0994  0.1188   0.148  0.2304  0.4067  0.7778  0.8813  0.9186  0.9452
  46          PC  0.9572  0.9684  0.9798  0.9898     1.0
  47          IN      15 01JAN94       0
  48          JD   3.101      5.0
              * 6-hour distribution, pattern 2.3
  49          PC     0.0   0.011  0.0173  0.0267  0.0387   0.049  0.0593  0.0693  0.0797  0.0903
  50          PC   0.103  0.1173  0.1383  0.1827  0.2693   0.458   0.686  0.8233  0.8893  0.9293
1                                    HEC-1 INPUT                                    PAGE  2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  51          PC  0.9487   0.962  0.9743  0.9877     1.0
  52          IN       15 01JAN94       0
  53          JD   3.036    10.0
              * 6-hour distribution, pattern 2.7
  54          PC     0.0  0.0134  0.0189  0.0287  0.0443  0.0574  0.0694  0.0818  0.0949  0.1076
  55          PC  0.1223  0.1382  0.1604  0.2063  0.2902  0.4664  0.6764  0.8069  0.8765  0.9189
  56          PC  0.9471  0.9608  0.9735  0.9873     1.0
  57          IN       15 01JAN94       0
  58          JD   2.939    20.0
              * 6-hour distribution, pattern 3.1
  59          PC     0.0  0.0158   0.022  0.0329  0.0511  0.0663  0.0799  0.0948  0.1102  0.1246
  60          PC   0.141  0.1587  0.1828    0.23  0.3122  0.4758  0.6684  0.7929  0.8643  0.9087
  61          PC  0.9434   0.958  0.9718  0.9863     1.0
  62          IN       15 01JAN94       0
  63          JD   2.875    30.0
              * 6-hour distribution, pattern 3.4
  64          PC     0.0  0.0172  0.0256  0.0378  0.0565  0.0719  0.0868   0.103  0.1191  0.1342
  65          PC  0.1513  0.1702  0.1961  0.2439  0.3263  0.4824  0.6655  0.7875   0.858  0.9031
  66          PC   0.939  0.9544  0.9697  0.9851     1.0
  67          IN       15 01JAN94       0
  68          JD    2.81    40.0
              * 6-hour distribution, pattern 3.5
  69          PC     0.0  0.0182  0.0281  0.0413  0.0604  0.0759  0.0916  0.1088  0.1254   0.141
  70          PC  0.1586  0.1783  0.2056  0.2537  0.3362   0.487  0.6636  0.7836  0.8535  0.8991
  71          PC  0.9358  0.9519  0.9682  0.9843     1.0
              *

  72          KK      R1   BASIN
  73          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  74          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
  75          KM   S-GRAPH TYPE=PHX MNT
  76          BA   0.284
  77          LG    0.35    0.35   4.358   0.374   8.387
  78          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
  79          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
              *

  80          KK     Q1B   BASIN
  81          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  82          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
  83          KM   S-GRAPH TYPE=PHX MNT
  84          KO       0       0     0.0       1      22
  85          BA   0.937
  86          LG    0.35    0.35    4.32   0.373  14.815
              * Q1B
  87          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
  88          UI  443.72  398.92  359.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
  89          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
  90          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
  91          UI   13.74     0.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  92          KK   DUMMY COMBINE
  93          KM    DUMMY COMBINE FOR HEC-1 STACK
  94          HC       2
              *

  95          KK      L1   BASIN
  96          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  97          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
  98          KM   S-GRAPH TYPE=PHX MNT
  99          BA   3.546
 100          LG   0.271   0.318   4.363   0.351  16.279
 101          UI     0.0  195.74  198.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 102          UI  1991.3 2326.76 1576.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 103          UI  701.22  620.51  529.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 104          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 105          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 106          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
              *

 107          KK  L1-L2A   ROUTE
 108          RS       3    FLOW     0.0     0.0
 109          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 110          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 111          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *

 112          KK     L2A   BASIN
 113          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 114          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
 115          KM   S-GRAPH TYPE=DES RNGLND
 116          BA   0.693
 117          LG    0.35   0.384   5.641   0.202     0.0
 118          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 119          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 120          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
 121          UI   12.61   12.61   12.61   12.61
              *
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 122          KK    L2BR COMBINE
 123          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
 124          KM     THIS IS THE TOTAL FLOW TO APEX 37
 125          HC       2
              *

 126          KK  L2A-M1   ROUTE
 127          KM   PROPOSED CHANNEL
 128          KM    ROUTE FLOW FROM APEX 37 TO APEX 36
 129          KM    STRUCTURE ID(s): L2A10
 130          KM    Slope=(1616.0 - 1566.2) / 3875.0
 131          RS       2    FLOW      -1
 132          RC    0.02    0.02    0.02  3875.00.012845   104.0
 133          RX     0.0    12.0    42.0    48.0    73.0    79.0   109.0   121.0
 134          RY   104.0   100.0   100.0    98.0    98.0   100.0   100.0   104.0
              *
1                                          HEC-1 INPUT                                                    PAGE  4

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

 135          KK      M1   BASIN
 136          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 137          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
 138          KM   S-GRAPH TYPE=PHX MNT
 139          BA   5.686
 140          LG    0.35    0.35   4.297    0.35  16.637
 141          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
 142          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
 143          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
 144          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
 145          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
 146          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
 147          UI   54.77   54.77     0.0
              *

 148          KK     CM1 COMBINE
 149          KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
 150          HC       2
              *

 151          KK   M1-N1   ROUTE
 152          KM   PROPOSED CHANNEL
 153          KM    ROUTE FLOW FROM APEX 36 TO APEX 7
 154          KM    STRUCTURE ID(s): N110, N120
 155          KM    Slope=(1565.0 - 1382.8) / 9668.2
 156          RS       3    FLOW      -1
 157          RC    0.02    0.02    0.02  9668.20.018844   105.0
 158          RX     0.0    15.0    35.0    41.0   121.0   127.0   147.0   162.0
 159          RY   105.0   100.0   100.0    98.0    98.0   100.0   100.0   105.0
              *

 160          KK      N1   BASIN
 161          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 162          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 163          KM   S-GRAPH TYPE=PHX MNT
 164          BA   1.524
 165          LG    0.35    0.35   4.075   0.419    8.38
 166          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 167          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 168          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 169          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 170          KK     CN1 COMBINE
 171          KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
 172          HC       2
              *

 173          KK  N1-P1A   ROUTE
 174          KM   PROPOSED CHANNEL
 175          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
 176          KM    STRUCTURE ID(s): N125
 177          KM    Slope=(1382.8 - 1276.4) / 8101.2
 178          RS       3    FLOW      -1
1                                          HEC-1 INPUT                                                    PAGE  5

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

 179          RC    0.02    0.02    0.02  8101.20.013128   106.0
 180          RX     0.0    18.0    63.0    69.0   109.0   115.0   160.0   178.0
 181          RY   106.0   100.0   100.0    98.0    98.0   100.0   100.0   106.0
              *

 182          KK     N2A   BASIN
 183          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
 184          KM   (ASSUME SAME AS N1 FOR NOW)
 185          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 186          KM   L=2.79      Lca=1.44      S=340.38      Kn=0.050      LAG=39.7
 187          KM   S-GRAPH TYPE=PHX MNT
 188          BA   1.524
 189          LG    0.35    0.35   4.075   0.419    8.38
 190          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 191          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
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192          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
193          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
             *

194          KK   CN2AR COMBINE
195          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
196          HC       2
             *

197          KK     P1A   BASIN
198          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
199          KM   L=2.28      Lca=1.41      S=461.40      Kn=0.055      LAG=37.8
200          KM   S-GRAPH TYPE=PHX MNT
201          BA     0.5
202          LG    0.35    0.35   3.987   0.405  16.364
203          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
204          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
205          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
206          UI    8.49    8.49    8.49    8.49    8.49    8.49
             *

207          KK    CN2A COMBINE
208          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
209          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
210          HC       2
             *

211          KK  P1A-1B   ROUTE
212          KM   PROPOSED CHANNEL
213          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
214          KM    STRUCTURE ID(s): N130, N140
215          KM    Slope=(1276.4 - 1092.0) / 16521.3
216          RS       6    FLOW      -1
217          RC    0.02    0.02    0.02 16521.30.011161   106.0
218          RX     0.0    18.0    63.0    69.0   109.0   115.0   160.0   178.0
219          RY   106.0   100.0   100.0    98.0    98.0   100.0   100.0   106.0
             *
1                                          HEC-1 INPUT                                          PAGE  6

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

220          KK     P1B   BASIN
221          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
222          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
223          KM   S-GRAPH TYPE=PHX MNT
224          BA   1.937
225          LG    0.35    0.35    4.23   0.393   4.667
226          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
227          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
228          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
229          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
230          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
231          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
232          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
233          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
             *

234          KK      PR COMBINE
235          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
236          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
237          HC       2
             *

238          KK     Q1A   BASIN
239          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
240          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
241          KM   S-GRAPH TYPE=PHX MNT
242          BA   1.297
243          LG    0.35    0.35   4.127     0.4    11.2
244          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
245          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
246          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
247          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
248          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
             *

249          KK   Q1A-P   ROUTE
250          KM   PROPOSED CHANNEL
251          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
252          KM    IN NEW CHANNEL
253          KM    STRUCTURE ID(s): P1B10
254          KM    Slope=(1190.4 - 1133.0) / 5122.9
255          RS       2    FLOW      -1
256          RC    0.02    0.02    0.02 5122.90.011207   103.0
257          RX     0.0     9.0    24.0    30.0    45.0    51.0    66.0    75.0
258          RY   103.0   100.0   100.0    98.0    98.0   100.0   100.0   103.0
             *

259          KK       P COMBINE
260          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
261          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
262          HC       2
             *
             *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
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                    *
1                                          HEC-1 INPUT                                                          PAGE  7

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

 263          KK     N2B   BASIN
 264          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
 265          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
 266          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 267          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
 268          KM   S-GRAPH TYPE=PHX MNT
 269          BA   3.325
 270          LG    0.35    0.35   4.117   0.405    2.67
 271          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
 272          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 273          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 274          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 275          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 276          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 277          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
 278          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
 279          UI   23.58   23.58   23.58   23.58   23.58
              *

 280          KK      O1   BASIN
 281          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 282          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
 283          KM   S-GRAPH TYPE=PHX MNT
 284          BA   3.088
 285          LG    0.35    0.35   4.191   0.393   2.105
 286          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
 287          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
 288          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
 289          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
 290          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
 291          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
 292          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
 293          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 294          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
 295          UI   19.93   19.93   19.93     0.0
              *

 296          KK      M2   BASIN
 297          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 298          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
 299          KM   S-GRAPH TYPE=DES RNGLND
 300          BA   7.436
 301          LG    0.35    0.35   3.959   0.445   0.291
 302          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
 303          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
 304          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
 305          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
 306          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
 307          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
 308          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
 309          UI   60.94   60.94   60.94   60.94     0.0
              *
1                                          HEC-1 INPUT                                                          PAGE  8

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

 310          KK      Z1   BASIN
 311          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 312          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
 313          KM   S-GRAPH TYPE=DES RNGLND
 314          BA   0.664
 315          LG   0.321   0.292   4.004    0.43   2.909
 316          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
 317          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
 318          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
              *

 319          KK     L2B   BASIN
 320          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 321          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
 322          KM   S-GRAPH TYPE=DES RNGLND
 323          BA   4.077
 324          LG    0.35    0.35   4.179   0.399     0.0
 325          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
 326          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
 327          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
 328          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
 329          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
 330          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
              *

 331          KK  L2B-L3   ROUTE
 332          RS      18    FLOW     0.0     0.0
 333          RC    0.05    0.04   0.0619942.62  0.0089     0.0
 334          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 335          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *
```

```
 336          KK     L2C   BASIN
 337          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 338          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
 339          KM   S-GRAPH TYPE=DES RNGLND
 340          BA   1.328
 341          LG    0.35    0.35   4.189   0.422     0.0
 342          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
 343          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
 344          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
 345          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
 346          UI   17.84   17.84   17.84   17.84   17.84     0.0
              *

 347          KK  L2C-2D   ROUTE
 348          RS       6    FLOW     0.0     0.0
 349          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
 350          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 351          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
              *
1                                                HEC-1 INPUT                                                PAGE  9

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


 352          KK     L2D   BASIN
 353          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 354          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
 355          KM   S-GRAPH TYPE=DES RNGLND
 356          BA   1.232
 357          LG    0.35    0.35   3.578   0.544     0.0
 358          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
 359          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
 360          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
 361          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
 362          UI   18.36     0.0
              *

 363          KK    L3RB COMBINE
 364          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 365          HC       2
              *

 366          KK  L2D-L3   ROUTE
 367          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 368          RS      39    FLOW     0.0     0.0
 369          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
 370          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 371          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 372          KK      L3   BASIN
 373          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 374          KM   L=4.75      Lca=2.00      S=44.27      Kn=0.055      LAG=91.0
 375          KM   S-GRAPH TYPE=DES RNGLND
 376          BA   5.852
 377          LG   0.341   0.328    3.98   0.419    1.05
 378          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
 379          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
 380          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
 381          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
 382          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
 383          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
 384          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
              *

 385          KK       L COMBINE
 386          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
 387          HC       3
              *
              *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
              *
 388          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

 NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

  72          R1
              .
              .
  80          .          Q1B
              .            .
              .            .
  92       DUMMY............
              .
              .
  95          .           L1
              .            V
              .            V
 107          .       L1-L2A
              .            .
              .            .
 112          .            .          L2A
```

```
                .          .          .
                .          .          .
122             .       L2BR...........
                .          V
                .          V
126             .     L2A-M1
                .          .
                .          .
135             .          .         M1
                .          .          .
                .          .          .
148             .       CM1...........
                .          V
                .          V
151             .      M1-N1
                .          .
                .          .
160             .          .         N1
                .          .          .
                .          .          .
170             .       CN1...........
                .          V
                .          V
173             .     N1-P1A
                .          .
                .          .
182             .          .        N2A
                .          .          .
                .          .          .
194             .     CN2AR...........
                .          .
                .          .
197             .          .        P1A
                .          .          .
                .          .          .
207             .      CN2A...........
                .          V
                .          V
211             .     P1A-1B
                .          .
                .          .
220             .          .        P1B
                .          .          .
                .          .          .
234             .        PR...........
                .          .
                .          .
238             .          .        Q1A
                .          .          V
                .          .          V
249             .          .      Q1A-P
                .          .          .
                .          .          .
259             .        P...........
                .          .
                .          .
263             .          .        N2B
                .          .          .
                .          .          .
280             .          .          .         O1
                .          .          .          .
                .          .          .          .
296             .          .          .          .         M2
                .          .          .          .          .
                .          .          .          .          .
310             .          .          .          .          .         Z1
                .          .          .          .          .          .
                .          .          .          .          .          .
319             .          .          .          .          .          .       L2B
                .          .          .          .          .          .         V
                .          .          .          .          .          .         V
331             .          .          .          .          .          .     L2B-L3
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
336             .          .          .          .          .          .          .       L2C
                .          .          .          .          .          .          .         V
                .          .          .          .          .          .          .         V
347             .          .          .          .          .          .          .    L2C-2D
                .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .
352             .          .          .          .          .          .          .          .         L2D
                .          .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .          .
363             .          .          .          .          .          .          .       L3RB...........
                .          .          .          .          .          .          .          V
                .          .          .          .          .          .          .          V
366             .          .          .          .          .          .          .    L2D-L3
                .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .
372             .          .          .          .          .          .          .          .         L3
                .          .          .          .          .          .          .          .          .
                .          .          .          .          .          .          .          .          .
385             .          .          .          .          .          .          .          L.........................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   19APR06  TIME  17:28:12   *
*                                       *
*****************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
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STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
 - ALTERNATIVE C
 - BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
Alternative C is based on the concept of an excavated concrete-lined
channel from the apex to the outfall, without providing any detention
basin is at the apex.  To address sedimentation associated with the
alluvial fan systems, sedimentation basins are provided throughout the
system.  The excavated concrete channels are complemented with a 120-foot
wide adjacent riparian preservation corridor.

 JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

MODEL BASED UPON:

Buckeye/Sun Valley ADMS - May 2005
Michael Baker Jr., Inc. - Modeler: Jacob Lesue
100-year 6-hour
Existing Conditions
Area 3 - Sub-basins L-R (Aluvial Fan updates)
Rainfall Loss Method - Green & Ampt
Unit Hydrograph Method - FCDMC S-Graph
Channel Routing Method - Normal Depth
Land Use - FCDMC GIS Data: mag_landuse (2000)
Soil Data - USDA SCS Soil Survey (1972 & 1981)
Units - L(mi)   Lca(mi)   S(ft/mi)   LAG(min)

31 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     1JAN94  STARTING DATE
                 ITIME       0000  STARTING TIME
                    NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     7JAN94  ENDING DATE
                NDTIME       2235  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

33 JD        INDEX STORM NO. 1
                 STRM        3.23  PRECIPITATION DEPTH
                 TRDA         .01  TRANSPOSITION DRAINAGE AREA

34 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

38 JD        INDEX STORM NO. 2
                 STRM        3.21  PRECIPITATION DEPTH
                 TRDA         .50  TRANSPOSITION DRAINAGE AREA

39 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
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```
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00

43 JD        INDEX STORM NO. 3
                STRM        3.19  PRECIPITATION DEPTH
                TRDA        1.00  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       .06       .06       .06       .12       .12       .12       .03       .03
                .03       .01       .01       .01       .01       .01       .01       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00

48 JD        INDEX STORM NO. 4
                STRM        3.10  PRECIPITATION DEPTH
                TRDA        5.00  TRANSPOSITION DRAINAGE AREA

49 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       .06       .06       .06       .08       .08       .08       .05       .05
                .05       .02       .02       .02       .01       .01       .01       .01       .01       .01
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00

53 JD        INDEX STORM NO. 5
                STRM        3.04  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

54 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .01
                .01       .01       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .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
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00

58 JD        INDEX STORM NO. 6
                STRM        2.94  PRECIPITATION DEPTH
                TRDA       20.00  TRANSPOSITION DRAINAGE AREA

59 PI          PRECIPITATION PATTERN
                .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                .01       .01       .01       .01       .01       .00       .00       .00       .00       .00
                .00       .01       .01       .01       .00       .00       .00       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .02       .02       .02       .03
                .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                .04       .02       .02       .02       .01       .01       .01       .01       .01       .01
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00

63 JD        INDEX STORM NO. 7
                STRM        2.88  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

64 PI          PRECIPITATION PATTERN
                .01       .01       .01       .00       .00       .00       .00       .00       .00       .01
                .01       .01       .01       .01       .01       .00       .00       .00       .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       .06       .06       .06       .04       .04
                .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .01       .01       .01       .00
                .00       .00

68 JD        INDEX STORM NO. 8
                STRM        2.81  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

69 PI          PRECIPITATION PATTERN
                .01       .01       .01       .00       .00       .00       .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       .02       .02       .02       .03
                .03       .03       .05       .05       .05       .06       .06       .06       .04       .04
                .04       .02       .02       .02       .02       .02       .02       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .01       .01       .01       .01
                .01       .01

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
80 KK     *     Q1B    *        BASIN
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          *            *
          **************

 84 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          5  PRINT CONTROL
                      IPLOT          0  PLOT CONTROL
                      QSCAL         0.  HYDROGRAPH PLOT SCALE
                      IPNCH          1  PUNCH COMPUTED HYDROGRAPH
                       IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2       2000  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT       .083  TIME INTERVAL IN HOURS

1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES
```

	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	R1	506.	4.25	47.	12.	4.	.28		
+	HYDROGRAPH AT	Q1B	851.	4.50	155.	39.	13.	.94		
+	2 COMBINED AT	DUMMY	1020.	4.50	192.	48.	16.	1.22		
+	HYDROGRAPH AT	L1	2128.	4.75	543.	139.	46.	3.55		
+	ROUTED TO	L1-L2A	2066.	4.92	543.	139.	46.	3.55		
+	HYDROGRAPH AT	L2A	692.	4.58	113.	28.	9.	.69		
+	2 COMBINED AT	L2BR	2391.	4.92	623.	159.	53.	4.24		
+	ROUTED TO	L2A-M1	2378.	4.92	623.	159.	53.	4.24		
+	HYDROGRAPH AT	M1	2809.	4.83	790.	203.	68.	5.69		
+	2 COMBINED AT	CM1	4598.	4.92	1291.	332.	111.	9.92		
+	ROUTED TO	M1-N1	4551.	5.00	1290.	332.	111.	9.92		
+	HYDROGRAPH AT	N1	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN1	4841.	5.00	1408.	362.	121.	11.45		
+	ROUTED TO	N1-P1A	4794.	5.08	1408.	362.	121.	11.45		
+	HYDROGRAPH AT	N2A	1253.	4.50	210.	53.	18.	1.52		
+	2 COMBINED AT	CN2AR	5025.	5.08	1521.	392.	131.	12.97		
+	HYDROGRAPH AT	P1A	575.	4.42	89.	22.	7.	.50		
+	2 COMBINED AT	CN2A	5119.	5.08	1568.	404.	135.	13.47		
+	ROUTED TO	P1A-1B	5049.	5.25	1567.	404.	135.	13.47		
+	HYDROGRAPH AT	P1B	852.	5.08	244.	62.	21.	1.94		
+	2 COMBINED AT	PR	5396.	5.25	1694.	437.	146.	15.41		
+	HYDROGRAPH AT	Q1A	990.	4.58	193.	49.	16.	1.30		
+	ROUTED TO	Q1A-P	961.	4.75	193.	49.	16.	1.30		
+	2 COMBINED AT	P	5629.	5.25	1795.	464.	155.	16.71		
	HYDROGRAPH AT									

```
+                          N2B     1193.   5.17      366.      93.      31.     3.33

         HYDROGRAPH AT
+                           O1     1057.   5.33      343.      88.      29.     3.09

         HYDROGRAPH AT
+                           M2     1849.   5.42      633.     159.      53.     7.44

         HYDROGRAPH AT
+                           Z1      694.   4.50      100.      25.       8.      .66

         HYDROGRAPH AT
+                          L2B     1532.   5.08      418.     104.      35.     4.08

         ROUTED TO
+                       L2B-L3     1196.   6.92      416.     104.      35.     4.08

         HYDROGRAPH AT
+                          L2C      754.   4.83      161.      40.      13.     1.33

         ROUTED TO
+                       L2C-2D      712.   5.25      161.      40.      13.     1.33

         HYDROGRAPH AT
+                          L2D      706.   4.75      136.      34.      11.     1.23

         2 COMBINED AT
+                         L3RB     1043.   5.00      260.      65.      22.     2.56

         ROUTED TO
+                       L2D-L3      650.   8.33      258.      65.      22.     2.56

         HYDROGRAPH AT
+                           L3     1832.   5.25      581.     146.      49.     5.85

         3 COMBINED AT
+                            L     1638.   5.33      963.     250.      83.    12.49

 *** NORMAL END OF HEC-1 ***
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```
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   19APR06  TIME  17:28:13  *                                    *          (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    STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
        2           ID     - ALTERNATIVE C
        3           ID     - BUCKEYE FRS NO. 1 SUB-AREA
        4           ID
        5           ID   Alternative Description
        6           ID   Alternative C is based on the concept of an excavated concrete-lined
        7           ID   channel from the apex to the outfall, without providing any detention
        8           ID   basin is at the apex.  To address sedimentation associated with the
        9           ID   alluvial fan systems, sedimentation basins are provided throughout the
       10           ID   system.  The excavated concrete channels are complemented with a 120-foot
       11           ID   wide adjacent riparian preservation corridor.
       12           ID
       13           ID
       14           ID    JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
       15           ID   JANUARY 2006
       16           ID
       17           ID   MODEL BASED UPON:
       18           ID
       19           ID  Buckeye/Sun Valley ADMS - May 2005
       20           ID  Michael Baker Jr., Inc. - Modeler: Jacob Lesue
       21           ID  100-year 24-hour
       22           ID  Existing Conditions
       23           ID  Area 3 - Sub-basins L-R (Aluvial Fan updates)
       24           ID  Rainfall Loss Method - Green & Ampt
       25           ID  Unit Hydrograph Method - FCDMC S-Graph
       26           ID  Channel Routing Method - Normal Depth
       27           ID  Land Use - FCDMC GIS Data: mag_landuse (2000)
       28           ID  Soil Data - USDA SCS Soil Survey (1972 & 1981)
       29           ID  Units - L(mi)    Lca(mi)    S(ft/mi)    LAG(min)
                    *DIAGRAM
       30           IT       5 01JAN94       0    2000
       31           IO       5
       32           IN      15 01JAN94       0
       33           JD    4.16     0.01
                    * 24-hour distribution
       34           PC     0.0    0.002   0.005   0.008   0.011   0.014   0.017    0.02   0.023   0.026
       35           PC   0.029    0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056    0.06
       36           PC   0.064    0.068   0.072   0.076    0.08   0.085    0.09   0.095     0.1   0.105
       37           PC    0.11    0.115    0.12   0.126   0.133    0.14   0.147   0.155   0.163   0.172
       38           PC   0.181    0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
       39           PC   0.735    0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
       40           PC   0.856    0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
       41           PC   0.913    0.918   0.922   0.926    0.93   0.934   0.938   0.942   0.946    0.95
       42           PC   0.953    0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977    0.98
       43           PC   0.983    0.986   0.989   0.992   0.995   0.998     1.0
       44           JD   3.952     10.0
       45           JD   3.819     20.0
       46           JD    3.69     40.0
       47           JD   3.565     80.0
       48           JD   3.499    120.0
                    *
1                                                HEC-1 INPUT                                                    PAGE  2

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

       49           KK      R1   BASIN
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```
 50          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 51          KM   L=1.01      Lca=0.46      S=213.31      Kn=0.050      LAG=18.8
 52          KM   S-GRAPH TYPE=PHX MNT
 53          BA   0.284
 54          LG    0.35    0.35   4.358   0.374   8.387
 55          UI     0.0   62.14  236.01  401.85  464.97  281.72   216.1  150.63  113.71   76.28
 56          UI   57.55   39.69   27.53   24.54    9.63    9.63    9.63    9.63     0.0
             *

 57          KK     Q1B   BASIN
 58          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 59          KM   L=2.35      Lca=1.14      S=141.40      Kn=0.055      LAG=44.3
 60          KM   S-GRAPH TYPE=PHX MNT
 61          KO       0       0     0.0       1      22
 62          BA   0.937
 63          LG    0.35    0.35    4.32   0.373  14.815
             * Q1B
 64          UI     0.0   71.67   71.67  221.51  340.68  455.79   538.5  651.95  833.61  538.15
 65          UI  443.72  398.92  355.79  316.26  280.46  235.89  196.37  173.35  160.17  138.81
 66          UI  114.82   91.58   84.67    78.5   62.48   54.95   54.15   35.07   35.07   35.07
 67          UI   35.07   15.79   13.74   13.74   13.74   13.74   13.74   13.74   13.74   13.74
 68          UI   13.74     0.0
             *

 69          KK   DUMMY COMBINE
 70          KM    DUMMY COMBINE FOR HEC-1 STACK
 71          HC       2
             *

 72          KK      L1   BASIN
 73          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 74          KM   L=4.93      Lca=2.29      S=308.27      Kn=0.050      LAG=60.6
 75          KM   S-GRAPH TYPE=PHX MNT
 76          BA   3.546
 77          LG   0.271   0.318   4.363   0.351  16.279
 78          UI     0.0  195.74  195.74  266.93  603.63  823.25 1120.55 1287.08 1452.32 1611.07
 79          UI  1991.3 2326.76 1575.06 1312.31 1173.43 1097.39 1002.28  929.54   850.5  775.66
 80          UI  701.22  620.51  525.99  484.91  458.87  430.63  397.34  321.57  290.98  250.11
 81          UI  241.82  214.38  214.38  171.29  150.06  150.06  149.52   95.79   95.79   95.79
 82          UI   95.79   95.79    79.7   37.52   37.52   37.52   37.52   37.52   37.52   37.52
 83          UI   37.52   37.52   37.52   37.52   37.52   37.52   37.52     0.0
             *

 84          KK  L1-L2A   ROUTE
 85          RS       3    FLOW     0.0     0.0
 86          RC   0.046   0.045   0.046 7078.75  0.0174     0.0
 87          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
 88          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 89          KK     L2A   BASIN
 90          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 91          KM   L=2.46      Lca=1.12      S=136.18      Kn=0.055      LAG=45.0
 92          KM   S-GRAPH TYPE=DES RNGLND
 93          BA   0.693
 94          LG    0.35   0.384   5.641   0.202     0.0
 95          UI     0.0   51.83   51.83  153.34  242.24  330.72  404.46  460.56  494.88  492.21
 96          UI  461.36  394.37  327.78  266.87  221.69  182.72  150.08  121.91  100.64   84.23
 97          UI   69.92   54.93   46.45   35.48   35.48   26.06   12.61   12.61   12.61   12.61
 98          UI   12.61   12.61   12.61   12.61
             *

 99          KK    L2BR COMBINE
100          KM     COMBINE RUNOFF FROM L2A WITH ROUTED FLOW FROM L1
101          KM     THIS IS THE TOTAL FLOW TO APEX 37
102          HC       2
             *

103          KK  L2A-M1   ROUTE
104          KM   PROPOSED CHANNEL
105          KM    ROUTE FLOW FROM APEX 37 TO APEX 36
106          KM    STRUCTURE ID(S): L2A10
107          KM    Slope=(1616.0 - 1566.2) / 3875.0
108          RS       2    FLOW      -1
109          RC    0.02    0.02    0.02 3875.00.012845   104.0
110          RX     0.0    12.0    42.0    48.0    73.0    79.0   109.0   121.0
111          RY   104.0   100.0   100.0    98.0    98.0   100.0   100.0   104.0
             *

112          KK      M1   BASIN
113          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
114          KM   L=5.19      Lca=2.41      S=230.06      Kn=0.050      LAG=66.8
115          KM   S-GRAPH TYPE=PHX MNT
116          BA   5.686
117          LG    0.35    0.35   4.297    0.35  16.637
118          UI     0.0  285.74  285.74  285.74  777.57 1062.36 1436.64 1746.69  1963.2  2166.6
119          UI  2402.0 2950.38 3432.01 2399.97 1965.75 1755.17 1651.21 1526.96  1413.1 1330.61
120          UI  1198.5 1122.73 1012.84  904.53  777.77  717.96  682.12  653.26  597.45  521.66
121          UI  469.43  394.74  365.11  349.25  312.95  312.95  266.95  219.07  219.07  219.07
122          UI  181.82  139.83  139.83  139.83  139.83  139.83   125.2   54.77   54.77   54.77
123          UI   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77   54.77
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 124          UI   54.77   54.77     0.0
              *

 125          KK     CM1 COMBINE
 126          KM    COMBINE ROUTED FLOW FROM APEX 37 WITH FLOW AT APEX 36
 127          HC       2
              *
1                                          HEC-1 INPUT                                                    PAGE  4

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


 128          KK   M1-N1   ROUTE
 129          KM   PROPOSED CHANNEL
 130          KM    ROUTE FLOW FROM APEX 36 TO APEX 7
 131          KM    STRUCTURE ID(s): N110, N120
 132          KM    Slope=(1565.0 - 1382.8) / 9668.2
 133          RS       3    FLOW      -1
 134          RC    0.02    0.02    0.02  9668.20.018844   105.0
 135          RX     0.0    15.0    35.0    41.0   121.0   127.0   147.0   162.0
 136          RY   105.0   100.0   100.0    98.0    98.0   100.0   100.0   105.0
              *

 137          KK      N1   BASIN
 138          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 139          KM   L=2.79     Lca=1.44     S=340.38     Kn=0.050     LAG=39.7
 140          KM   S-GRAPH TYPE=PHX MNT
 141          BA   1.524
 142          LG    0.35    0.35   4.075   0.419    8.38
 143          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 144          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 145          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 146          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *

 147          KK     CN1 COMBINE
 148          KM    COMBINE RUNOFF FROM N1 WITH ROUTED FLOW FROM M1
 149          HC       2
              *

 150          KK  N1-P1A   ROUTE
 151          KM   PROPOSED CHANNEL
 152          KM    ROUTE COMBINED FLOW IN NEW CHANNEL TO CONFLUENCE WITH P1A OUTLOW CHANNEL
 153          KM    STRUCTURE ID(s): N125
 154          KM    Slope=(1382.8 - 1276.4) / 8101.2
 155          RS       3    FLOW      -1
 156          RC    0.02    0.02    0.02  8101.20.013128   106.0
 157          RX     0.0    18.0    63.0    69.0   109.0   115.0   160.0   178.0
 158          RY   106.0   100.0   100.0    98.0    98.0   100.0   100.0   106.0
              *

 159          KK     N2A   BASIN
 160          KM    NEW BASIN FOR PORTION OF N2 CONTRIBUTING TO NEW CHANNEL
 161          KM   (ASSUME SAME AS N1 FOR NOW)
 162          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 163          KM   L=2.79     Lca=1.44     S=340.38     Kn=0.050     LAG=39.7
 164          KM   S-GRAPH TYPE=PHX MNT
 165          BA   1.524
 166          LG    0.35    0.35   4.075   0.419    8.38
 167          UI     0.0  128.28  166.77  436.68  697.63  885.37 1048.86 1439.85 1097.59  811.01
 168          UI  717.89  633.24  554.41  482.34  398.71  327.22  300.33  268.08  210.75  167.66
 169          UI  152.68   140.5  106.78   98.35   84.12   62.78   62.78   62.78   38.34   24.59
 170          UI   24.59   24.59   24.59   24.59   24.59   24.59   24.59     0.0
              *
1                                          HEC-1 INPUT                                                    PAGE  5

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


 171          KK   CN2AR COMBINE
 172          KM    COMBINE RUNOFF FROM N2A WITH ROUTED FLOW FROM APEX 7
 173          HC       2
              *

 174          KK     P1A   BASIN
 175          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 176          KM   L=2.28     Lca=1.41     S=461.40     Kn=0.055     LAG=37.8
 177          KM   S-GRAPH TYPE=PHX MNT
 178          BA     0.5
 179          LG    0.35    0.35   3.987   0.405  16.364
 180          UI     0.0   44.27   65.19   161.0  254.76  318.08  389.84  500.04  319.07  264.12
 181          UI  232.17  203.71  176.98  147.14  118.21  105.19   95.13   74.96   59.42   52.89
 182          UI   48.49   35.98   33.94   26.82   21.67   21.67   21.56    8.49    8.49    8.49
 183          UI    8.49    8.49    8.49    8.49    8.49    8.49
              *

 184          KK    CN2A COMBINE
 185          KM    COMBINE RUNOFF FROM P1A WITH COMBINED FLOW FROM N2A AND N1, ETC.
 186          KM    ASSUME CHANNEL ROUTING TOO SHORT TO MATTER
 187          HC       2
              *

 188          KK  P1A-1B   ROUTE
 189          KM   PROPOSED CHANNEL
 190          KM   ROUTE COMBINED FLOWS IN NEW CHANNEL
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 191          KM    STRUCTURE ID(s): N130, N140
 192          KM    Slope=(1276.4 - 1092.0) / 16521.3
 193          RS       6    FLOW      -1
 194          RC    0.02    0.02    0.02 16521.30.011161   106.0
 195          RX     0.0    18.0    63.0    69.0   109.0   115.0   160.0   178.0
 196          RY   106.0   100.0   100.0    98.0    98.0   100.0   100.0   106.0
              *

 197          KK     P1B   BASIN
 198          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 199          KM   L=4.39      Lca=2.32      S=70.84      Kn=0.055      LAG=85.3
 200          KM   S-GRAPH TYPE=PHX MNT
 201          BA   1.937
 202          LG    0.35    0.35    4.23   0.393   4.667
 203          UI     0.0   76.72   76.72   76.72   89.67  220.58  274.25  335.86  432.98  478.15
 204          UI  527.91  570.85  609.55  688.62  814.07   942.3  716.43   568.2  506.83  467.32
 205          UI   446.8  421.86  394.79  374.39  356.44  329.11  309.33  293.98  263.37  241.82
 206          UI  216.83  200.89  187.72  181.75  176.46  163.15  160.42  127.42  126.04   109.8
 207          UI   98.03   98.03   90.75   84.03   84.03   84.03   60.08   58.82   58.82   58.82
 208          UI   58.82   40.74   37.54   37.54   37.54   37.54   37.54   37.54   37.54    17.9
 209          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71
 210          UI   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71   14.71     0.0
              *
1                                          HEC-1 INPUT                                                    PAGE  6

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

 211          KK      PR COMBINE
 212          KM    COMBINE RUNOFF FROM P1B WITH ROUTED FLOWS FROM CN2A
 213          KM    TOTAL FLOW IN RIGHT/WEST CHANNEL
 214          HC       2
              *

 215          KK     Q1A   BASIN
 216          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 217          KM   L=3.13      Lca=1.52      S=256.86      Kn=0.055      LAG=49.3
 218          KM   S-GRAPH TYPE=PHX MNT
 219          BA   1.297
 220          LG    0.35    0.35   4.127     0.4    11.2
 221          UI     0.0   89.12   89.12  213.78  363.94  517.41  613.88  697.52  873.62 1020.97
 222          UI  663.18  556.48  506.64  454.84  413.29  367.46  326.01  281.03  232.04  214.37
 223          UI  199.35   177.4  146.41  118.69  112.45   97.61   96.73   68.33   68.33    66.1
 224          UI   43.61   43.61   43.61   43.61   30.77   17.08   17.08   17.08   17.08   17.08
 225          UI   17.08   17.08   17.08   17.08   17.08   17.08     0.0
              *

 226          KK   Q1A-P   ROUTE
 227          KM   PROPOSED CHANNEL
 228          KM    ROUTE FLOW FROM Q1A (APEX 12) TO CP P (AT FRS NO. 1)
 229          KM    IN NEW CHANNEL
 230          KM    STRUCTURE ID(s): P1B10
 231          KM    Slope=(1190.4 - 1133.0) / 5122.9
 232          RS       2    FLOW      -1
 233          RC    0.02    0.02    0.02 5122.90.011207   103.0
 234          RX     0.0     9.0    24.0    30.0    45.0    51.0    66.0    75.0
 235          RY   103.0   100.0   100.0    98.0    98.0   100.0   100.0   103.0
              *

 236          KK       P COMBINE
 237          KM    COMBINE FLOW ROUTED FLOW FROM Q1A WITH PR
 238          KM    THIS IS THE TOTAL INFLOW TO FRS. NO. 1 IN NEW CHANNEL
 239          HC       2
              *
              *  RRP  - SPOT FOR POTENTIAL DETENTION BASIN AT FRS NO. 1
              *

 240          KK     N2B   BASIN
 241          KM    NEW BASIN FOR PORTION OF N2 D/S OF NEW CHANNEL
 242          KM   (ASSUME SAME AS ORIGINAL N2 FOR NOW)
 243          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 244          KM   L=5.64      Lca=3.27      S=170.14      Kn=0.055      LAG=90.7
 245          KM   S-GRAPH TYPE=PHX MNT
 246          BA   3.325
 247          LG    0.35    0.35   4.117   0.405    2.67
 248          UI     0.0  123.04  123.04  123.04  123.04  310.82  395.95  496.74  616.35  730.85
 249          UI  796.45  869.05  928.56  990.24 1125.95 1316.06 1517.94 1186.36  925.57  834.34
 250          UI  764.31  726.51  694.11  654.42   619.9  586.86  557.14  517.77  491.74   466.8
 251          UI  422.37  387.25   352.0  325.27  302.29  296.75  282.99  272.23  257.26  234.33
 252          UI  202.13  202.13  163.14  157.22  157.22  143.92  134.76  134.76  134.76  103.63
 253          UI   94.33   94.33   94.33   94.33   83.75   60.21   60.21   60.21   60.21   60.21
 254          UI   60.21   60.21   60.21   32.52   23.58   23.58   23.58   23.58   23.58   23.58
1                                          HEC-1 INPUT                                                    PAGE  7

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

 255          UI   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58   23.58
 256          UI   23.58   23.58   23.58   23.58   23.58
              *

 257          KK      O1   BASIN
 258          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 259          KM   L=5.20      Lca=2.79      S=64.07      Kn=0.055      LAG=99.9
 260          KM   S-GRAPH TYPE=PHX MNT
 261          BA   3.088
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262          LG    0.35    0.35   4.191   0.393   2.105
263          UI     0.0  103.98  103.98  103.98  103.98  181.97  298.95  378.66  446.43  550.06
264          UI  624.46  676.83  731.54  781.25  824.52  905.38 1042.04 1204.77  1242.7  887.05
265          UI   765.3   690.9  643.35  614.88  590.49  558.55  530.78  506.48  485.09  454.93
266          UI  429.36  410.34   388.6  356.95  326.56   302.9  274.89  260.97  254.42  242.21
267          UI  239.16  221.76  217.42  189.46  170.83  170.83  140.46  132.86  132.86  129.07
268          UI  113.88  113.88  113.88  113.88   79.72   79.72   79.72   79.72   79.72   79.72
269          UI   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   50.88   32.31
270          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
271          UI   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93   19.93
272          UI   19.93   19.93   19.93     0.0
             *

273          KK      M2   BASIN
274          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
275          KM   L=6.59      Lca=3.00      S=71.62      Kn=0.050      LAG=100.2
276          KM   S-GRAPH TYPE=DES RNGLND
277          BA   7.436
278          LG    0.35    0.35   3.959   0.445   0.291
279          UI     0.0  250.38  250.38  250.38  250.38  438.17  719.85  924.82 1114.75 1312.86
280          UI  1497.2  1700.9 1779.05 2056.71 2161.12 2246.81 2290.07 2399.49 2399.49 2399.49
281          UI  2351.5 2259.21 2219.84 2074.04 1858.21 1745.08 1567.89 1438.64 1323.61 1214.96
282          UI  1118.4 1022.47  940.03  874.15  767.84  718.48  685.57  569.22   559.1  484.22
283          UI  472.03  435.02  383.92  383.92  334.13  265.38  265.38  265.38  257.86  171.39
284          UI  171.39  171.39  171.39  171.39  171.39  131.63   60.94   60.94   60.94   60.94
285          UI   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94   60.94
286          UI   60.94   60.94   60.94   60.94     0.0
             *

287          KK      Z1   BASIN
288          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
289          KM   L=1.70      Lca=0.66      S=47.00      Kn=0.055      LAG=39.1
290          KM   S-GRAPH TYPE=DES RNGLND
291          BA   0.664
292          LG   0.321   0.292   4.004    0.43   2.909
293          UI     0.0   57.36   79.52  205.33  321.78  424.03  504.07   545.2  540.96  493.73
294          UI  399.49  319.19  256.28   205.1  164.91  127.66  104.64   87.86    60.8    54.1
295          UI   39.27   39.27    21.8   13.96   13.96   13.96   13.96   13.96   13.96     0.0
             *

296          KK     L2B   BASIN
297          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
298          KM   L=5.13      Lca=1.82      S=93.37      Kn=0.055      LAG=78.1
299          KM   S-GRAPH TYPE=DES RNGLND
300          BA   4.077
301          LG    0.35    0.35   4.179   0.399     0.0
1                                          HEC-1 INPUT                                                    PAGE  8

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

302          UI     0.0  175.97  175.97  175.97  311.91  535.45  724.28   902.8 1071.35 1224.63
303          UI  1376.8 1511.61 1580.95 1658.53 1686.39 1686.39 1632.48 1568.59 1460.56 1278.33
304          UI  1172.5 1030.99  927.32  829.82  742.49   663.7  594.61  529.93  481.83   405.6
305          UI   377.6  331.75  310.22  269.82  269.19  186.51  186.51  186.51   145.4  120.46
306          UI  120.46  120.46  120.46    90.9   42.83   42.83   42.83   42.83   42.83   42.83
307          UI   42.83   42.83   42.83   42.83   42.83   42.83   42.83   42.83     0.0
             *

308          KK  L2B-L3   ROUTE
309          RS      18    FLOW     0.0     0.0
310          RC    0.05    0.04    0.0619942.62  0.0089     0.0
311          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
312          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
             *

313          KK     L2C   BASIN
314          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
315          KM   L=3.20      Lca=1.55      S=91.31      Kn=0.055      LAG=61.2
316          KM   S-GRAPH TYPE=DES RNGLND
317          BA   1.328
318          LG    0.35    0.35   4.189   0.422     0.0
319          UI     0.0   73.31   73.31   99.98  227.13  318.43   414.0  500.47   577.1  643.23
320          UI  678.82  702.58  699.63  666.25  621.66  533.29  468.31  402.86  351.31  303.79
321          UI   266.7  226.83  200.74  164.03  144.98  131.86  112.41   97.97    77.7    77.7
322          UI   56.55   50.18   50.18   50.18   28.53   17.84   17.84   17.84   17.84   17.84
323          UI   17.84   17.84   17.84   17.84   17.84     0.0
             *

324          KK  L2C-2D   ROUTE
325          RS       6    FLOW     0.0     0.0
326          RC   0.046   0.045   0.046 9752.35  0.0122     0.0
327          RX     0.0    80.0   165.0   200.0   215.0   255.0   340.0   420.0
328          RY    19.0    17.0    14.0    10.0    10.0    14.0    18.0    22.0
             *

329          KK     L2D   BASIN
330          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
331          KM   L=2.77      Lca=1.24      S=74.13      Kn=0.055      LAG=55.4
332          KM   S-GRAPH TYPE=DES RNGLND
333          BA   1.232
334          LG    0.35    0.35   3.578   0.544     0.0
335          UI     0.0   75.42   75.42  141.88  262.35  378.71  482.07  569.62  651.08   696.0
336          UI  722.74  714.79  677.77  607.49  518.22  439.07   376.3  322.28  277.17  232.67
337          UI  200.55   167.8  142.18   124.1  114.53   79.93   79.93    61.7   51.62   51.62
338          UI   51.62   20.09   18.36   18.36   18.36   18.36   18.36   18.36   18.36   18.36
```

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 339          UI   18.36     0.0
              *

 340          KK    L3RB COMBINE
 341          KM    COMBINE RUNOFF FROM L2D WITH ROUTED FLOW FROM L2C AT SUN VALLEY PARKWAY
 342          HC       2
              *
1                                          HEC-1 INPUT                                                    PAGE  9

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


 343          KK  L2D-L3   ROUTE
 344          KM    ROUTE COMBINED FLOW FROM L3RB TO FRS NO. 1 THRU SUBBASIN L3
 345          RS      39    FLOW     0.0     0.0
 346          RC    0.05    0.04    0.06 27374.0  0.0077     0.0
 347          RX     0.0  1093.0  1210.0  1215.0  1225.0  1232.0  1372.0  2000.0
 348          RY    18.0    11.8    11.7    10.0    10.0    11.7    11.8    18.0
              *

 349          KK      L3   BASIN
 350          KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 351          KM   L=4.75     Lca=2.00     S=44.27     Kn=0.055     LAG=91.0
 352          KM   S-GRAPH TYPE=DES RNGLND
 353          BA   5.852
 354          LG   0.341   0.328    3.98   0.419    1.05
 355          UI     0.0  216.51  216.51  216.51  216.51  546.97   701.8  899.01 1098.32 1266.32
 356          UI  1460.0  1557.8 1786.11 1888.64 1950.18 2034.93 2074.93 2074.93 2053.76  1965.5
 357          UI  1920.6 1789.17 1583.49 1486.07 1313.64 1207.78 1091.43  994.63  909.22  825.03
 358          UI   759.9  663.98  614.46  574.55  483.48  461.45  408.18  402.68  331.99  331.99
 359          UI  296.91  229.48  229.48  229.48  197.56  148.21  148.21  148.21  148.21  148.21
 360          UI  121.69    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7    52.7
 361          UI    52.7    52.7    52.7    52.7    52.7    52.7    52.7     0.0
              *

 362          KK       L COMBINE
 363          KM    COMBINE RUNOFF FROM SUBBASIN L3 WITH ROUTED FLOW FROM L3R AND L3RB
 364          HC       3
              *
              *  RRL - SPOT FOR POTENTIAL BASIN ALONG MCDOWELL ROAD UPSTREAM OF SINGLE LOT DEV
              *
 365          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   49          R1
               .
               .
   57          .         Q1B
               .           .
               .           .
   69       DUMMY...........
               .
               .
   72          .          L1
               .           V
               .           V
   84          .      L1-L2A
               .           .
               .           .
   89          .           .         L2A
               .           .           .
               .           .           .
   99          .       L2BR...........
               .           V
               .           V
  103          .      L2A-M1
               .           .
               .           .
  112          .           .          M1
               .           .           .
               .           .           .
  125          .         CM1...........
               .           V
               .           V
  128          .       M1-N1
               .           .
               .           .
  137          .           .          N1
               .           .           .
               .           .           .
  147          .         CN1...........
               .           V
               .           V
  150          .      N1-P1A
               .           .
               .           .
  159          .           .         N2A
               .           .           .
               .           .           .
  171          .       CN2AR...........
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                .          .
                .          .
  174           .          .          P1A
                .          .            .
                .          .            .
  184           .       CN2A............
                .          V
                .          V
  188           .     P1A-1B
                .          .
                .          .
  197           .          .          P1B
                .          .            .
                .          .            .
  211           .         PR............
                .          .
                .          .
  215           .          .          Q1A
                .          .            V
                .          .            V
  226           .          .        Q1A-P
                .          .            .
                .          .            .
  236           .          P............
                .          .
                .          .
  240           .          .          N2B
                .          .            .
                .          .            .
  257           .          .            .          O1
                .          .            .           .
                .          .            .           .
  273           .          .            .           .          M2
                .          .            .           .           .
                .          .            .           .           .
  287           .          .            .           .           .          Z1
                .          .            .           .           .           .
                .          .            .           .           .           .
  296           .          .            .           .           .           .        L2B
                .          .            .           .           .           .          V
                .          .            .           .           .           .          V
  308           .          .            .           .           .           .      L2B-L3
                .          .            .           .           .           .           .
                .          .            .           .           .           .           .
  313           .          .            .           .           .           .           .        L2C
                .          .            .           .           .           .           .          V
                .          .            .           .           .           .           .          V
  324           .          .            .           .           .           .           .      L2C-2D
                .          .            .           .           .           .           .           .
                .          .            .           .           .           .           .           .
  329           .          .            .           .           .           .           .           .          L2D
                .          .            .           .           .           .           .           .           .
                .          .            .           .           .           .           .           .           .
  340           .          .            .           .           .           .           .           .       L3RB............
                .          .            .           .           .           .           .           .          V
                .          .            .           .           .           .           .           .          V
  343           .          .            .           .           .           .           .           .      L2D-L3
                .          .            .           .           .           .           .           .           .
                .          .            .           .           .           .           .           .           .
  349           .          .            .           .           .           .           .           .           .          L3
                .          .            .           .           .           .           .           .           .           .
                .          .            .           .           .           .           .           .           .           .
  362           .          .            .           .           .           .           .           L.......................
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 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *           VERSION 4.1                *
 *                                      *
 *  RUN DATE   19APR06  TIME  17:28:13  *
 *                                      *
 ****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104              *
*                                      *
****************************************
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STEP 2 HYDROLOGY FOR SUN VALLEY ADMP
- ALTERNATIVE C
- BUCKEYE FRS NO. 1 SUB-AREA

Alternative Description
Alternative C is based on the concept of an excavated concrete-lined channel from the apex to the outfall, without providing any detention basin is at the apex. To address sedimentation associated with the alluvial fan systems, sedimentation basins are provided throughout the system. The excavated concrete channels are complemented with a 120-foot wide adjacent riparian preservation corridor.

JE FULLER/ HYDROLOGY & GEOMORPHOLOGY, INC.
JANUARY 2006

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                    MODEL BASED UPON:

                    Buckeye/Sun Valley ADMS - May 2005
                    Michael Baker Jr., Inc. - Modeler: Jacob Lesue
                    100-year 24-hour
                    Existing Conditions
                    Area 3 - Sub-basins L-R (Aluvial Fan updates)
                    Rainfall Loss Method - Green & Ampt
                    Unit Hydrograph Method - FCDMC S-Graph
                    Channel Routing Method - Normal Depth
                    Land Use - FCDMC GIS Data: mag_landuse (2000)
                    Soil Data - USDA SCS Soil Survey (1972 & 1981)
                    Units - L(mi)    Lca(mi)    S(ft/mi)    LAG(min)

31 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     1JAN94  STARTING DATE
                ITIME       0000  STARTING TIME
                  NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE     7JAN94  ENDING DATE
              NDTIME       2235  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

33 JD        INDEX STORM NO. 1
                STRM        4.16  PRECIPITATION DEPTH
                TRDA         .01  TRANSPOSITION DRAINAGE AREA

34 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
                .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
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                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                .00       .00       .00       .00       .00       .00       .00       .00

44 JD        INDEX STORM NO. 2
                STRM        3.95  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
                .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       .01       .00       .01
                .01       .01       .01       .01       .01       .01       .01       .01       .03       .03
                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
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                .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       .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       .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
45 JD         INDEX STORM NO. 3
                STRM        3.82  PRECIPITATION DEPTH
                TRDA       20.00  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
                .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       .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       .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       .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
46 JD         INDEX STORM NO. 4
                STRM        3.69  PRECIPITATION DEPTH
                TRDA       40.00  TRANSPOSITION DRAINAGE AREA

0 PI          PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .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
47 JD         INDEX STORM NO. 5
                STRM        3.57  PRECIPITATION DEPTH
                TRDA       80.00  TRANSPOSITION DRAINAGE AREA

0 PI          PRECIPITATION PATTERN
                .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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48 JD INDEX STORM NO. 6

STRM 3.50 PRECIPITATION DEPTH
TRDA 120.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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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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          *            *
57 KK     *     Q1B    *        BASIN
          *            *
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61 KO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE
IPNCH	1	PUNCH COMPUTED HYDROGRAPH
IOUT	22	SAVE HYDROGRAPH ON THIS UNIT
ISAV1	1	FIRST ORDINATE PUNCHED OR SAVED
ISAV2	2000	LAST ORDINATE PUNCHED OR SAVED
TIMINT	.083	TIME INTERVAL IN HOURS

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	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	R1	387.	12.25	37.	10.	3.	.28		
+	HYDROGRAPH AT	Q1B	740.	12.50	134.	38.	13.	.94		

+	2 COMBINED AT	DUMMY	902.	12.50	170.	48.	16.	1.22
+	HYDROGRAPH AT	L1	2267.	12.75	527.	150.	50.	3.55
+	ROUTED TO	L1-L2A	2154.	12.92	527.	150.	50.	3.55
+	HYDROGRAPH AT	L2A	570.	12.58	92.	23.	8.	.69
+	2 COMBINED AT	L2BR	2519.	12.92	616.	172.	57.	4.24
+	ROUTED TO	L2A-M1	2504.	12.92	616.	172.	57.	4.24
+	HYDROGRAPH AT	M1	3301.	12.83	825.	236.	79.	5.69
+	2 COMBINED AT	CM1	5718.	12.92	1429.	405.	135.	9.92
+	ROUTED TO	M1-N1	5639.	13.00	1428.	405.	135.	9.92
+	HYDROGRAPH AT	N1	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN1	6078.	13.00	1599.	451.	151.	11.45
+	ROUTED TO	N1-P1A	6014.	13.08	1599.	451.	151.	11.45
+	HYDROGRAPH AT	N2A	1211.	12.50	192.	52.	17.	1.52
+	2 COMBINED AT	CN2AR	6376.	13.08	1766.	497.	166.	12.97
+	HYDROGRAPH AT	P1A	441.	12.42	73.	21.	7.	.50
+	2 COMBINED AT	CN2A	6501.	13.08	1829.	515.	172.	13.47
+	ROUTED TO	P1A-1B	6396.	13.25	1828.	515.	172.	13.47
+	HYDROGRAPH AT	P1B	842.	13.08	231.	61.	20.	1.94
+	2 COMBINED AT	PR	7049.	13.25	2028.	568.	190.	15.41
+	HYDROGRAPH AT	Q1A	915.	12.58	173.	48.	16.	1.30
+	ROUTED TO	Q1A-P	875.	12.75	173.	48.	16.	1.30
+	2 COMBINED AT	P	7456.	13.17	2177.	609.	204.	16.71
+	HYDROGRAPH AT	N2B	1331.	13.17	378.	99.	33.	3.33
+	HYDROGRAPH AT	O1	1163.	13.33	349.	91.	30.	3.09
+	HYDROGRAPH AT	M2	2347.	13.42	786.	198.	66.	7.44
+	HYDROGRAPH AT	Z1	558.	12.50	80.	21.	7.	.66
+	HYDROGRAPH AT	L2B	1700.	13.08	449.	112.	37.	4.08
+	ROUTED TO	L2B-L3	1323.	14.83	447.	112.	37.	4.08
+	HYDROGRAPH AT	L2C	692.	12.83	145.	36.	12.	1.33
+	ROUTED TO	L2C-2D	651.	13.25	145.	36.	12.	1.33
+	HYDROGRAPH AT	L2D	655.	12.75	124.	31.	10.	1.23
	2 COMBINED AT							

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+                          L3RB      1104.   13.00        266.        66.        22.       2.56

          ROUTED TO
+                        L2D-L3       705.   16.17        263.        66.        22.       2.56

          HYDROGRAPH AT
+                            L3      2129.   13.25        658.       166.        56.       5.85

          3 COMBINED AT
+                             L      2162.   13.33       1287.       335.       112.      12.49

 *** NORMAL END OF HEC-1 ***
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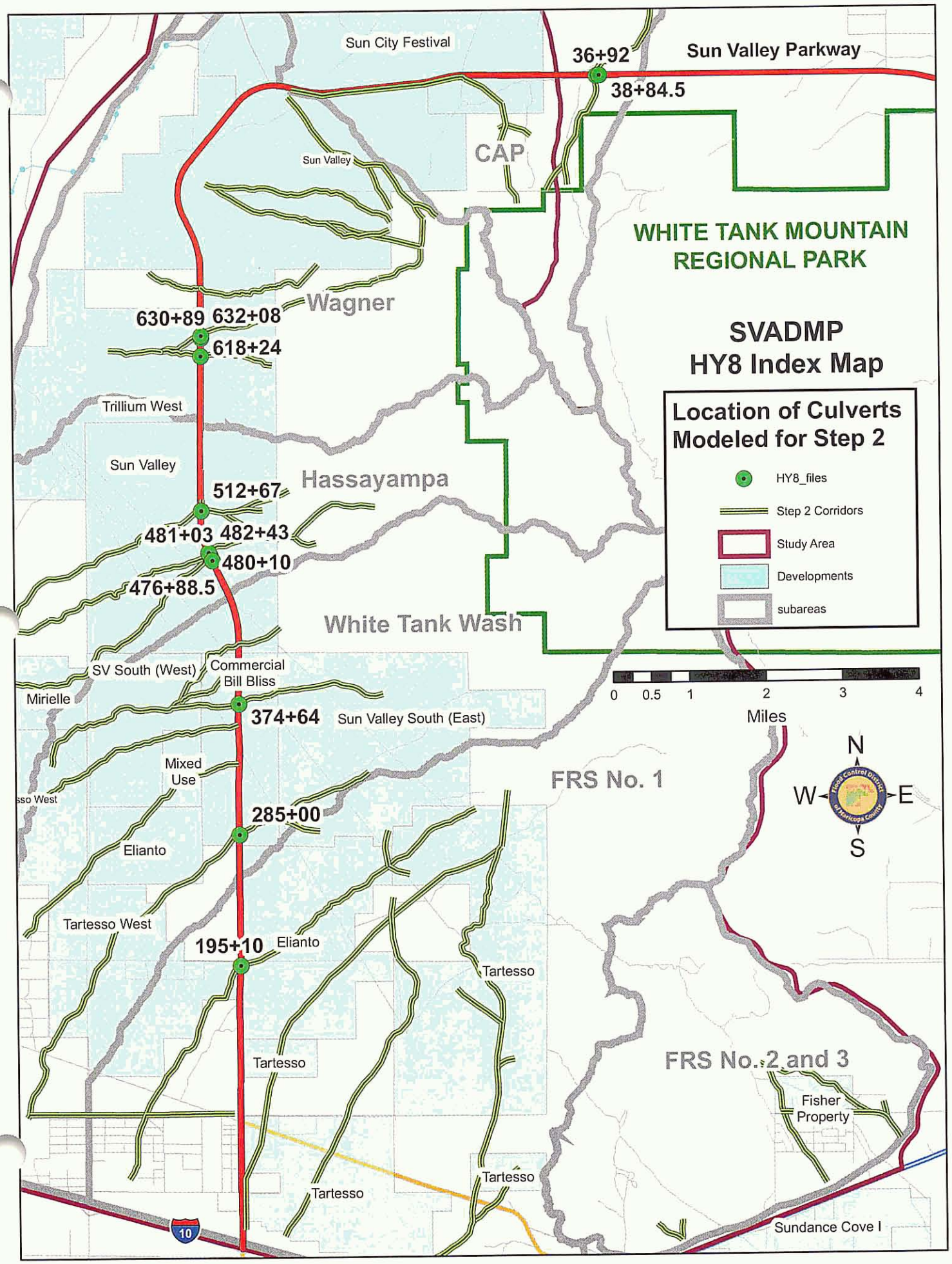
SVADMP
HY8 Index Map
Location of Culverts Modeled for Step 2
HY8_files
Step 2 Corridors
Study Area
Developments
subareas
0 0.5 1 2 3 4
Miles
N
W
E
S
Sun City Festival
Sun Valley Parkway
36+92
38+84.5
CAP
Sun Valley
WHITE TANK MOUNTAIN REGIONAL PARK
Wagner
630+89
632+08
618+24
Trillium West
Sun Valley
Hassayampa
512+67
481+03
482+43
480+10
476+88.5
White Tank Wash
SV South (West)
Commercial
Bill Bliss
Mirielle
374+64
Sun Valley South (East)
Mixed Use
FRS No. 1
285+00
Elianto
Tartesso West
195+10
Elianto
Tartesso
FRS No. 2 and 3
Fisher Property
Sundance Cove I
10

CURRENT DATE: 10-20-2005
CURRENT TIME: 19:37:34

FILE DATE: 10-20-2005
FILE NAME: SVC37464

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	62.80	62.17	100.00	4 RCB	10.00	3.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVC37464 DATE: 10-20-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
62.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
63.80	120.0	120.0	0.0	0.0	0.0	0.0	0.0	0.00	1
64.39	240.0	240.0	0.0	0.0	0.0	0.0	0.0	0.00	1
64.89	360.0	360.0	0.0	0.0	0.0	0.0	0.0	0.00	1
65.34	480.0	480.0	0.0	0.0	0.0	0.0	0.0	0.00	1
65.78	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
65.81	610.0	610.0	0.0	0.0	0.0	0.0	0.0	0.00	1
66.72	840.0	840.0	0.0	0.0	0.0	0.0	0.0	0.00	1
67.28	960.0	960.0	0.0	0.0	0.0	0.0	0.0	0.00	1
67.90	1080.0	1080.0	0.0	0.0	0.0	0.0	0.0	0.00	1
68.57	1200.0	1192.7	0.0	0.0	0.0	0.0	0.0	6.20	5
68.49	1179.7	1179.7	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVC37464 DATE: 10-20-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
62.80	0.000	0.00	0.00	0.00
63.80	0.000	120.00	0.00	0.00
64.39	0.000	240.00	0.00	0.00
64.89	0.000	360.00	0.00	0.00
65.34	0.000	480.00	0.00	0.00
65.78	0.000	600.00	0.00	0.00
65.81	0.000	610.00	0.00	0.00
66.72	0.000	840.00	0.00	0.00
67.28	0.000	960.00	0.00	0.00
67.90	0.000	1080.00	0.00	0.00
68.57	-0.003	1200.00	1.08	0.09

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-20-2005 FILE DATE: 10-20-2005
CURRENT TIME: 19:37:34 FILE NAME: SVC37464

PERFORMANCE CURVE FOR CULVERT 1 - 4(10.00 (ft) BY 3.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	62.80	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
120.00	63.80	1.00	1.00	1-S2n	0.50	0.66	0.51	0.87	5.87	3.74
240.00	64.39	1.59	1.59	1-S2n	0.78	1.04	0.80	1.32	7.50	4.83
360.00	64.89	2.09	2.09	1-S2n	1.02	1.36	0.96	1.68	9.35	5.60
480.00	65.34	2.54	2.54	1-S2n	1.23	1.65	1.29	1.99	9.32	6.20
600.00	65.78	2.98	2.98	1-S2n	1.42	1.92	1.50	2.26	9.97	6.70
610.00	65.81	3.01	3.01	5-S2n	1.44	1.94	1.52	2.29	10.05	6.74
840.00	66.72	3.92	3.92	5-S2n	1.78	2.40	1.91	2.76	11.01	7.52
960.00	67.28	4.48	4.48	5-S2n	1.94	2.62	2.10	2.98	11.42	7.87
1080.00	67.90	5.10	4.75	4-FFt	2.11	2.84	2.11	3.19	12.81	8.19
1192.72	68.56	5.76	5.44	4-S2n	2.25	3.00	2.46	3.39	12.12	8.48

El. inlet face invert 62.80 ft El. outlet invert 62.17 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

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***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       62.80 ft
      OUTLET STATION                       100.00 ft
      OUTLET ELEVATION                      62.17 ft
      NUMBER OF BARRELS                     4
      SLOPE (V/H)                           0.0063
      CULVERT LENGTH ALONG SLOPE           100.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             3.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
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CURRENT DATE: 10-20-2005
CURRENT TIME: 19:37:34

FILE DATE: 10-20-2005
FILE NAME: SVC37464

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	35.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.010
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	62.17 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	62.17 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	62.17	0.000	0.00	0.00	0.00
120.00	63.04	0.704	0.87	3.74	0.55
240.00	63.49	0.741	1.32	4.83	0.82
360.00	63.85	0.762	1.68	5.60	1.05
480.00	64.16	0.775	1.99	6.20	1.24
600.00	64.43	0.785	2.26	6.70	1.41
610.00	64.46	0.786	2.29	6.74	1.43
840.00	64.93	0.799	2.76	7.52	1.72
960.00	65.15	0.804	2.98	7.87	1.86
1080.00	65.36	0.808	3.19	8.19	1.99
1200.00	65.56	0.812	3.39	8.48	2.11

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	80.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	68.49 ft

CURRENT DATE: 10-21-2005
CURRENT TIME: 08:11:53

FILE DATE: 10-21-2005
FILE NAME: SVP28500

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	8.56	7.96	135.00	4 RCB	10.00	4.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP28500 DATE: 10-21-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
8.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
9.67	140.0	140.0	0.0	0.0	0.0	0.0	0.0	0.00	1
10.32	280.0	280.0	0.0	0.0	0.0	0.0	0.0	0.00	1
10.88	420.0	420.0	0.0	0.0	0.0	0.0	0.0	0.00	1
11.37	560.0	560.0	0.0	0.0	0.0	0.0	0.0	0.00	1
11.79	688.0	688.0	0.0	0.0	0.0	0.0	0.0	0.00	1
12.27	840.0	840.0	0.0	0.0	0.0	0.0	0.0	0.00	1
12.71	980.0	980.0	0.0	0.0	0.0	0.0	0.0	0.00	1
13.17	1120.0	1120.0	0.0	0.0	0.0	0.0	0.0	0.00	1
13.67	1260.0	1260.0	0.0	0.0	0.0	0.0	0.0	0.00	1
14.23	1400.0	1389.7	0.0	0.0	0.0	0.0	0.0	8.65	3
14.08	1367.2	1367.2	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP28500 DATE: 10-21-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
8.56	0.000	0.00	0.00	0.00
9.67	0.000	140.00	0.00	0.00
10.32	0.000	280.00	0.00	0.00
10.88	0.000	420.00	0.00	0.00
11.37	0.000	560.00	0.00	0.00
11.79	0.000	688.00	0.00	0.00
12.27	0.000	840.00	0.00	0.00
12.71	0.000	980.00	0.00	0.00
13.17	0.000	1120.00	0.00	0.00
13.67	0.000	1260.00	0.00	0.00
14.23	-0.004	1400.00	1.66	0.12

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-21-2005 FILE DATE: 10-21-2005
CURRENT TIME: 08:11:53 FILE NAME: SVP28500

PERFORMANCE CURVE FOR CULVERT 1 - 4(10.00 (ft) BY 4.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	8.56	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
140.00	9.67	1.11	1.11	1-S2n	0.61	0.73	0.53	1.09	6.65	3.05
280.00	10.32	1.76	1.76	1-S2n	0.96	1.15	0.95	1.64	7.35	3.94
420.00	10.88	2.32	2.32	1-S2n	1.26	1.51	1.21	2.09	8.67	4.55
560.00	11.37	2.81	2.81	1-S2n	1.53	1.83	1.55	2.47	9.01	5.04
688.00	11.79	3.23	3.23	1-S2n	1.75	2.10	1.70	2.79	10.12	5.41
840.00	12.27	3.71	3.71	1-S2n	2.01	2.40	2.05	3.13	10.22	5.80
980.00	12.71	4.15	4.15	5-S2n	2.23	2.66	2.29	3.43	10.71	6.11
1120.00	13.17	4.61	4.61	5-S2n	2.44	2.90	2.50	3.70	11.18	6.38
1260.00	13.67	5.11	5.11	5-S2n	2.65	3.14	2.73	3.96	11.53	6.64
1389.69	14.23	5.61	5.67	4-FFt	2.84	3.35	4.00	4.21	8.69	6.87

El. inlet face invert 8.56 ft El. outlet invert 7.96 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	8.56 ft
OUTLET STATION	135.00 ft
OUTLET ELEVATION	7.96 ft
NUMBER OF BARRELS	4
SLOPE (V/H)	0.0044
CULVERT LENGTH ALONG SLOPE	135.00 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	10.00 ft
BARREL RISE	4.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (30-75 DEG. FLARE)
INLET DEPRESSION	NONE

CURRENT DATE: 10-21-2005
CURRENT TIME: 08:11:53

FILE DATE: 10-21-2005
FILE NAME: SVP28500

TAILWATER

******* REGULAR CHANNEL CROSS SECTION ****************

BOTTOM WIDTH	40.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.005
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	7.96 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	7.96 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	7.96	0.000	0.00	0.00	0.00
140.00	9.05	0.515	1.09	3.05	0.34
280.00	9.60	0.541	1.64	3.94	0.51
420.00	10.05	0.556	2.09	4.55	0.65
560.00	10.43	0.565	2.47	5.04	0.77
688.00	10.75	0.571	2.79	5.41	0.87
840.00	11.09	0.577	3.13	5.80	0.98
980.00	11.39	0.581	3.43	6.11	1.07
1120.00	11.66	0.585	3.70	6.38	1.15
1260.00	11.92	0.588	3.96	6.64	1.24
1400.00	12.17	0.590	4.21	6.87	1.31

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	14.08 ft

CURRENT DATE: 10-21-2005
CURRENT TIME: 09:48:42

FILE DATE: 10-21-2005
FILE NAME: SVP19510

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	33.92	33.44	140.00	6 RCB	10.00	4.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP19510 DATE: 10-21-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
33.92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
35.51	360.0	360.0	0.0	0.0	0.0	0.0	0.0	0.00	1
36.46	720.0	720.0	0.0	0.0	0.0	0.0	0.0	0.00	1
37.25	1080.0	1080.0	0.0	0.0	0.0	0.0	0.0	0.00	1
38.47	1440.0	1440.0	0.0	0.0	0.0	0.0	0.0	0.00	1
39.59	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
39.65	1820.0	1820.0	0.0	0.0	0.0	0.0	0.0	0.00	1
41.47	2520.0	2264.7	0.0	0.0	0.0	0.0	0.0	255.75	3
42.21	2880.0	2400.1	0.0	0.0	0.0	0.0	0.0	480.38	3
42.89	3240.0	2513.1	0.0	0.0	0.0	0.0	0.0	726.08	3
43.53	3600.0	2615.2	0.0	0.0	0.0	0.0	0.0	987.04	3
40.05	1924.3	1924.3	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP19510 DATE: 10-21-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
33.92	0.000	0.00	0.00	0.00
35.51	0.000	360.00	0.00	0.00
36.46	0.000	720.00	0.00	0.00
37.25	0.000	1080.00	0.00	0.00
38.47	0.000	1440.00	0.00	0.00
39.59	0.000	1800.00	0.00	0.00
39.65	0.000	1820.00	0.00	0.00
41.47	0.001	2520.00	-0.42	-0.02
42.21	0.001	2880.00	-0.45	-0.02
42.89	-0.001	3240.00	0.86	0.03
43.53	0.003	3600.00	-2.27	-0.06

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-21-2005 FILE DATE: 10-21-2005
CURRENT TIME: 09:48:42 FILE NAME: SVP19510

PERFORMANCE CURVE FOR CULVERT 1 - 6(10.00 (ft) BY 4.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	33.92	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
360.00	35.51	1.59	1.59	1-S2n	0.95	1.04	0.84	1.79	7.14	3.76
720.00	36.46	2.54	2.54	1-S2n	1.50	1.65	1.45	2.69	8.27	4.82
1080.00	37.25	3.33	3.33	1-S2n	1.97	2.16	1.96	3.42	9.17	5.56
1440.00	38.47	4.09	4.55	4-FFt	2.40	2.62	4.00	4.04	6.00	6.13
1800.00	39.59	4.89	5.67	4-FFt	2.81	3.04	4.00	4.60	7.50	6.61
1820.00	39.65	4.94	5.73	4-FFt	2.83	3.06	4.00	4.63	7.58	6.63
2264.67	41.46	6.11	7.54	4-FFt	3.30	3.54	4.00	5.58	9.44	7.38
2400.07	42.21	6.51	8.29	4-FFt	3.44	3.68	4.00	6.02	10.00	7.71
2513.07	42.89	6.87	8.97	4-FFt	3.55	3.80	4.00	6.44	10.47	8.00
2615.23	43.53	7.21	9.61	4-FFt	4.00	3.90	4.00	6.84	10.90	8.27

El. inlet face invert 33.92 ft El. outlet invert 33.44 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	33.92 ft
OUTLET STATION	140.00 ft
OUTLET ELEVATION	33.44 ft
NUMBER OF BARRELS	6
SLOPE (V/H)	0.0034
CULVERT LENGTH ALONG SLOPE	140.00 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	10.00 ft
BARREL RISE	4.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (30-75 DEG. FLARE)
INLET DEPRESSION	NONE

CURRENT DATE: 10-21-2005 FILE DATE: 10-21-2005
CURRENT TIME: 09:48:42 FILE NAME: SVP19510

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	50.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.004
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	33.44 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	33.44 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	33.44	0.000	0.00	0.00	0.00
360.00	35.23	0.495	1.79	3.76	0.45
720.00	36.13	0.518	2.69	4.82	0.67
1080.00	36.86	0.530	3.42	5.56	0.85
1440.00	37.48	0.537	4.04	6.13	1.01
1800.00	38.04	0.543	4.60	6.61	1.15
1820.00	38.07	0.543	4.63	6.63	1.16
2520.00	39.02	0.551	5.58	7.38	1.39
2880.00	39.46	0.553	6.02	7.71	1.50
3240.00	39.88	0.556	6.44	8.00	1.61
3600.00	40.28	0.558	6.84	8.27	1.71

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	40.05 ft

CURRENT DATE: 10-24-2005
CURRENT TIME: 16:06:55

FILE DATE: 10-24-2005
FILE NAME: SVP3692

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	58.40	57.70	140.00	6 RCB	10.00	4.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP3692 DATE: 10-24-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
58.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
59.47	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
60.10	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
60.64	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
61.12	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
61.56	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
61.77	1100.0	1100.0	0.0	0.0	0.0	0.0	0.0	0.00	1
62.40	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
62.83	1600.0	1600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
63.29	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
63.78	2000.0	2000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
64.55	2278.1	2278.1	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP3692 DATE: 10-24-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
58.40	0.000	0.00	0.00	0.00
59.47	0.000	200.00	0.00	0.00
60.10	0.000	400.00	0.00	0.00
60.64	0.000	600.00	0.00	0.00
61.12	0.000	800.00	0.00	0.00
61.56	0.000	1000.00	0.00	0.00
61.77	0.000	1100.00	0.00	0.00
62.40	0.000	1400.00	0.00	0.00
62.83	0.000	1600.00	0.00	0.00
63.29	0.000	1800.00	0.00	0.00
63.78	0.000	2000.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-24-2005 FILE DATE: 10-24-2005
CURRENT TIME: 16:06:55 FILE NAME: SVP3692

PERFORMANCE CURVE FOR CULVERT 1 - 6(10.00 (ft) BY 4.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	58.40	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	59.47	1.07	1.07	1-S2n	0.57	0.70	0.50	0.69	6.63	3.57
400.00	60.10	1.70	1.70	1-S2n	0.90	1.12	0.82	1.04	8.17	4.68
600.00	60.64	2.24	2.24	1-S2n	1.18	1.46	1.19	1.33	8.39	5.47
800.00	61.12	2.72	2.72	1-S2n	1.41	1.77	1.45	1.58	9.21	6.11
1000.00	61.56	3.16	3.16	1-S2n	1.64	2.06	1.69	1.80	9.89	6.65
1100.00	61.77	3.37	3.37	1-S2n	1.75	2.19	1.81	1.90	10.14	6.89
1400.00	62.40	4.00	4.00	1-S2n	2.06	2.57	2.13	2.20	10.94	7.55
1600.00	62.83	4.43	4.43	5-S2n	2.26	2.81	2.35	2.38	11.34	7.93
1800.00	63.29	4.89	4.89	5-S2n	2.45	3.04	2.55	2.55	11.76	8.28
2000.00	63.78	5.38	5.38	5-S2n	2.64	3.26	2.75	2.72	12.11	8.61

El. inlet face invert 58.40 ft El. outlet invert 57.70 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	58.40 ft
OUTLET STATION	140.00 ft
OUTLET ELEVATION	57.70 ft
NUMBER OF BARRELS	6
SLOPE (V/H)	0.0050
CULVERT LENGTH ALONG SLOPE	140.00 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	10.00 ft
BARREL RISE	4.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (30-75 DEG. FLARE)
INLET DEPRESSION	NONE

CURRENT DATE: 10-24-2005
CURRENT TIME: 16:06:55

FILE DATE: 10-24-2005
FILE NAME: SVP3692

TAILWATER

******* REGULAR CHANNEL CROSS SECTION ****************

BOTTOM WIDTH	80.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.012
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	57.70 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	57.70 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	57.70	0.000	0.00	0.00	0.00
200.00	58.39	0.759	0.69	3.57	0.51
400.00	58.74	0.808	1.04	4.68	0.78
600.00	59.03	0.837	1.33	5.47	0.99
800.00	59.28	0.858	1.58	6.11	1.18
1000.00	59.50	0.873	1.80	6.65	1.35
1100.00	59.60	0.880	1.90	6.89	1.43
1400.00	59.90	0.897	2.20	7.55	1.65
1600.00	60.08	0.906	2.38	7.93	1.78
1800.00	60.25	0.914	2.55	8.28	1.91
2000.00	60.42	0.921	2.72	8.61	2.04

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	64.55 ft

CURRENT DATE: 10-24-2005
CURRENT TIME: 16:28:28

FILE DATE: 10-24-2005
FILE NAME: SVP3884

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	58.40	57.60	136.00	2 RCB	10.00	3.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP3884 DATE: 10-24-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
58.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
59.40	60.0	60.0	0.0	0.0	0.0	0.0	0.0	0.00	1
59.99	120.0	120.0	0.0	0.0	0.0	0.0	0.0	0.00	1
60.49	180.0	180.0	0.0	0.0	0.0	0.0	0.0	0.00	1
60.94	240.0	240.0	0.0	0.0	0.0	0.0	0.0	0.00	1
61.38	300.0	300.0	0.0	0.0	0.0	0.0	0.0	0.00	1
61.83	360.0	360.0	0.0	0.0	0.0	0.0	0.0	0.00	1
62.32	420.0	420.0	0.0	0.0	0.0	0.0	0.0	0.00	1
62.88	480.0	480.0	0.0	0.0	0.0	0.0	0.0	0.00	1
63.50	540.0	540.0	0.0	0.0	0.0	0.0	0.0	0.00	1
63.87	600.0	571.6	0.0	0.0	0.0	0.0	0.0	27.79	4
63.54	543.1	543.1	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP3884 DATE: 10-24-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
58.40	0.000	0.00	0.00	0.00
59.40	0.000	60.00	0.00	0.00
59.99	0.000	120.00	0.00	0.00
60.49	0.000	180.00	0.00	0.00
60.94	0.000	240.00	0.00	0.00
61.38	0.000	300.00	0.00	0.00
61.83	0.000	360.00	0.00	0.00
62.32	0.000	420.00	0.00	0.00
62.88	0.000	480.00	0.00	0.00
63.50	0.000	540.00	0.00	0.00
63.87	-0.002	600.00	0.62	0.10

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-24-2005 FILE DATE: 10-24-2005
CURRENT TIME: 16:28:28 FILE NAME: SVP3884

PERFORMANCE CURVE FOR CULVERT 1 - 2(10.00 (ft) BY 3.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	58.40	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
60.00	59.40	1.00	1.00	1-S2n	0.51	0.66	0.46	0.76	6.59	3.66
120.00	59.99	1.59	1.59	1-S2n	0.80	1.04	0.74	1.15	8.11	4.70
180.00	60.49	2.09	2.09	1-S2n	1.04	1.36	0.96	1.45	9.35	5.41
240.00	60.94	2.54	2.54	1-S2n	1.25	1.65	1.29	1.72	9.30	5.97
300.00	61.38	2.98	2.98	1-S2n	1.45	1.92	1.50	1.95	9.98	6.43
360.00	61.83	3.43	3.43	5-S2n	1.64	2.16	1.70	2.17	10.57	6.82
420.00	62.32	3.92	3.92	5-S2n	1.82	2.40	1.90	2.37	11.07	7.17
480.00	62.88	4.48	4.48	5-S2n	1.99	2.62	2.09	2.55	11.48	7.49
540.00	63.50	5.10	5.10	5-S2n	2.15	2.84	2.28	2.73	11.87	7.77
571.59	63.87	5.47	5.47	5-S2n	2.24	2.94	2.37	2.90	12.04	8.03

El. inlet face invert 58.40 ft El. outlet invert 57.60 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       58.40 ft
      OUTLET STATION                       136.00 ft
      OUTLET ELEVATION                      57.60 ft
      NUMBER OF BARRELS                     2
      SLOPE (V/H)                           0.0059
      CULVERT LENGTH ALONG SLOPE           136.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             3.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 10-24-2005
CURRENT TIME: 16:28:28

FILE DATE: 10-24-2005
FILE NAME: SVP3884

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	20.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.012
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	57.60 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	57.60 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	57.60	0.000	0.00	0.00	0.00
60.00	58.36	0.740	0.76	3.66	0.57
120.00	58.74	0.774	1.15	4.70	0.86
180.00	59.05	0.791	1.45	5.41	1.09
240.00	59.32	0.802	1.72	5.97	1.29
300.00	59.55	0.810	1.95	6.43	1.46
360.00	59.77	0.816	2.17	6.82	1.62
420.00	59.97	0.821	2.37	7.17	1.77
480.00	60.15	0.825	2.55	7.49	1.91
540.00	60.33	0.829	2.73	7.77	2.04
600.00	60.50	0.831	2.90	8.03	2.17

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	63.54 ft

CURRENT DATE: 12-06-2005
CURRENT TIME: 12:14:19

FILE DATE: 12-06-2005
FILE NAME: SVP47688

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	12.90	11.50	137.01	1 RCB	6.00	3.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP47688 DATE: 12-06-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
12.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
14.14	25.0	25.0	0.0	0.0	0.0	0.0	0.0	0.00	1
14.88	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.51	75.0	75.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.12	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.79	125.0	125.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.82	126.0	126.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.07	175.0	163.8	0.0	0.0	0.0	0.0	0.0	10.03	6
18.25	200.0	168.6	0.0	0.0	0.0	0.0	0.0	30.65	4
18.39	225.0	172.2	0.0	0.0	0.0	0.0	0.0	51.17	3
18.52	250.0	175.4	0.0	0.0	0.0	0.0	0.0	73.19	3
17.90	159.3	159.3	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP47688 DATE: 12-06-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
12.90	0.000	0.00	0.00	0.00
14.14	0.000	25.00	0.00	0.00
14.88	0.000	50.00	0.00	0.00
15.51	0.000	75.00	0.00	0.00
16.12	0.000	100.00	0.00	0.00
16.79	0.000	125.00	0.00	0.00
16.82	0.000	126.00	0.00	0.00
18.07	-0.006	175.00	1.15	0.66
18.25	-0.003	200.00	0.76	0.38
18.39	-0.007	225.00	1.68	0.75
18.52	-0.006	250.00	1.42	0.57

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 12-06-2005 FILE DATE: 12-06-2005
CURRENT TIME: 12:14:19 FILE NAME: SVP47688

PERFORMANCE CURVE FOR CULVERT 1 - 1(6.00 (ft) BY 3.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	12.90	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
25.00	14.14	1.24	1.24	1-S2n	0.55	0.82	0.55	0.47	7.64	3.12
50.00	14.88	1.98	1.98	1-S2n	0.86	1.29	0.79	0.71	10.49	4.02
75.00	15.51	2.61	2.61	1-S2n	1.13	1.70	1.18	0.91	10.62	4.65
100.00	16.12	3.22	3.22	5-S2n	1.38	2.06	1.45	1.07	11.53	5.14
125.00	16.79	3.89	3.89	5-S2n	1.61	2.38	1.71	1.22	12.15	5.55
126.00	16.82	3.92	3.92	5-S2n	1.62	2.40	1.73	1.23	12.16	5.56
163.82	18.06	5.16	5.16	5-S2n	1.95	2.86	2.10	1.48	13.03	6.21
168.59	18.25	5.35	5.35	5-S2n	1.99	2.91	2.14	1.60	13.12	6.49
172.16	18.39	5.49	5.49	5-S2n	2.02	2.95	2.17	1.72	13.21	6.74
175.39	18.51	5.61	5.61	5-S2n	2.05	2.99	2.21	1.82	13.23	6.98

El. inlet face invert 12.90 ft El. outlet invert 11.50 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       12.90 ft
      OUTLET STATION                       137.00 ft
      OUTLET ELEVATION                      11.50 ft
      NUMBER OF BARRELS                      1
      SLOPE (V/H)                            0.0102
      CULVERT LENGTH ALONG SLOPE           137.01 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN             6.00 ft
      BARREL RISE             3.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 12-06-2005
CURRENT TIME: 12:14:19

FILE DATE: 12-06-2005
FILE NAME: SVP47688

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	16.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.016
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	11.50 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	11.50 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	11.50	0.000	0.00	0.00	0.00
25.00	11.97	0.799	0.47	3.12	0.47
50.00	12.21	0.839	0.71	4.02	0.71
75.00	12.41	0.860	0.91	4.65	0.90
100.00	12.57	0.874	1.07	5.14	1.07
125.00	12.72	0.884	1.22	5.55	1.22
126.00	12.73	0.885	1.23	5.56	1.23
175.00	12.98	0.898	1.48	6.21	1.48
200.00	13.10	0.903	1.60	6.49	1.60
225.00	13.22	0.907	1.72	6.74	1.71
250.00	13.32	0.912	1.82	6.98	1.82

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	17.90 ft

CURRENT DATE: 12-06-2005
CURRENT TIME: 13:02:20

FILE DATE: 12-06-2005
FILE NAME: SVP48010

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	11.50	11.00	142.00	6 RCB	10.00	5.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP48010 DATE: 12-06-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
14.66	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.07	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.46	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.84	1600.0	1600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.21	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.59	2000.0	2000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.97	2200.0	2200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.37	2400.0	2400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.80	2600.0	2600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.24	2800.0	2800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.69	3000.0	2986.6	0.0	0.0	0.0	0.0	0.0	12.13	3
18.50	2907.3	2907.3	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP48010 DATE: 12-06-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
14.66	0.000	1000.00	0.00	0.00
15.07	0.000	1200.00	0.00	0.00
15.46	0.000	1400.00	0.00	0.00
15.84	0.000	1600.00	0.00	0.00
16.21	0.000	1800.00	0.00	0.00
16.59	0.000	2000.00	0.00	0.00
16.97	0.000	2200.00	0.00	0.00
17.37	0.000	2400.00	0.00	0.00
17.80	0.000	2600.00	0.00	0.00
18.24	0.000	2800.00	0.00	0.00
18.69	-0.002	3000.00	1.31	0.04

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 12-06-2005 FILE DATE: 12-06-2005
CURRENT TIME: 13:02:20 FILE NAME: SVP48010

PERFORMANCE CURVE FOR CULVERT 1 - 6(10.00 (ft) BY 5.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
1000.00	14.66	3.16	3.16	1-S2n	1.85	2.06	1.76	1.83	9.50	8.58
1200.00	15.07	3.57	3.57	1-S2n	2.10	2.32	2.02	2.04	9.90	9.18
1400.00	15.46	3.96	3.96	1-S2n	2.33	2.57	2.27	2.23	10.27	9.72
1600.00	15.84	4.34	4.34	1-S2n	2.56	2.81	2.58	2.42	10.35	10.20
1800.00	16.21	4.71	4.71	1-S2n	2.77	3.04	2.80	2.59	10.72	10.65
2000.00	16.59	5.09	5.09	5-S2n	2.99	3.26	3.01	2.76	11.06	11.06
2200.00	16.97	5.47	5.47	5-S2n	3.20	3.48	3.22	2.92	11.37	11.45
2400.00	17.37	5.87	5.87	5-S2n	3.40	3.68	3.43	3.07	11.66	11.81
2600.00	17.80	6.30	6.30	5-S2n	3.60	3.89	3.63	3.22	11.93	12.15
2800.00	18.24	6.74	6.74	5-S2n	3.80	4.08	3.83	3.36	12.18	12.47
2986.57	18.69	7.19	7.19	5-S2n	3.99	4.26	4.01	3.50	12.41	12.78

El. inlet face invert 11.50 ft El. outlet invert 11.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

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***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       11.50 ft
      OUTLET STATION                       142.00 ft
      OUTLET ELEVATION                      11.00 ft
      NUMBER OF BARRELS                     6
      SLOPE (V/H)                           0.0035
      CULVERT LENGTH ALONG SLOPE           142.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             5.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 12-06-2005 FILE DATE: 12-06-2005
CURRENT TIME: 13:02:20 FILE NAME: SVP48010

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	60.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.020
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	11.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	11.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
1000.00	12.83	1.118	1.83	8.58	2.28
1200.00	13.04	1.133	2.04	9.18	2.55
1400.00	13.23	1.146	2.23	9.72	2.79
1600.00	13.42	1.156	2.42	10.20	3.02
1800.00	13.59	1.165	2.59	10.65	3.24
2000.00	13.76	1.173	2.76	11.06	3.44
2200.00	13.92	1.181	2.92	11.45	3.64
2400.00	14.07	1.187	3.07	11.81	3.84
2600.00	14.22	1.193	3.22	12.15	4.02
2800.00	14.36	1.198	3.36	12.47	4.20
3000.00	14.50	1.203	3.50	12.78	4.37

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	18.50 ft

CURRENT DATE: 12-06-2005
CURRENT TIME: 13:11:11

FILE DATE: 12-06-2005
FILE NAME: SVP48103

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	11.50	11.00	143.00	6 RCB	10.00	5.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP48103 DATE: 12-06-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
14.66	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.07	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.46	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
15.84	1600.0	1600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.21	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.59	2000.0	2000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.97	2200.0	2200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.37	2400.0	2400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.80	2600.0	2600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.24	2800.0	2800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.69	3000.0	2988.0	0.0	0.0	0.0	0.0	0.0	9.46	3
18.55	2928.3	2928.3	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP48103 DATE: 12-06-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
14.66	0.000	1000.00	0.00	0.00
15.07	0.000	1200.00	0.00	0.00
15.46	0.000	1400.00	0.00	0.00
15.84	0.000	1600.00	0.00	0.00
16.21	0.000	1800.00	0.00	0.00
16.59	0.000	2000.00	0.00	0.00
16.97	0.000	2200.00	0.00	0.00
17.37	0.000	2400.00	0.00	0.00
17.80	0.000	2600.00	0.00	0.00
18.24	0.000	2800.00	0.00	0.00
18.69	-0.005	3000.00	2.58	0.09

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 12-06-2005 FILE DATE: 12-06-2005
CURRENT TIME: 13:11:11 FILE NAME: SVP48103

PERFORMANCE CURVE FOR CULVERT 1 - 6(10.00 (ft) BY 5.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
1000.00	14.66	3.16	3.16	1-S2n	1.85	2.06	1.76	1.83	9.50	8.58
1200.00	15.07	3.57	3.57	1-S2n	2.10	2.32	2.02	2.04	9.90	9.18
1400.00	15.46	3.96	3.96	1-S2n	2.33	2.57	2.27	2.23	10.27	9.72
1600.00	15.84	4.34	4.34	1-S2n	2.56	2.81	2.58	2.42	10.35	10.20
1800.00	16.21	4.71	4.71	1-S2n	2.77	3.04	2.80	2.59	10.72	10.65
2000.00	16.59	5.09	5.09	5-S2n	2.99	3.26	3.01	2.76	11.06	11.06
2200.00	16.97	5.47	5.47	5-S2n	3.20	3.48	3.22	2.92	11.37	11.45
2400.00	17.37	5.87	5.87	5-S2n	3.40	3.68	3.43	3.07	11.66	11.81
2600.00	17.80	6.30	6.30	5-S2n	3.60	3.89	3.63	3.22	11.93	12.15
2800.00	18.24	6.74	6.74	5-S2n	3.80	4.08	3.83	3.36	12.19	12.47
2987.96	18.69	7.19	7.19	5-S2n	3.99	4.26	4.01	3.50	12.41	12.78

El. inlet face invert 11.50 ft El. outlet invert 11.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       11.50 ft
      OUTLET STATION                       143.00 ft
      OUTLET ELEVATION                      11.00 ft
      NUMBER OF BARRELS                      6
      SLOPE (V/H)                            0.0035
      CULVERT LENGTH ALONG SLOPE           143.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             5.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 12-06-2005
CURRENT TIME: 13:11:11

FILE DATE: 12-06-2005
FILE NAME: SVP48103

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	60.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.020
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	11.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	11.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
1000.00	12.83	1.118	1.83	8.58	2.28
1200.00	13.04	1.133	2.04	9.18	2.55
1400.00	13.23	1.146	2.23	9.72	2.79
1600.00	13.42	1.156	2.42	10.20	3.02
1800.00	13.59	1.165	2.59	10.65	3.24
2000.00	13.76	1.173	2.76	11.06	3.44
2200.00	13.92	1.181	2.92	11.45	3.64
2400.00	14.07	1.187	3.07	11.81	3.84
2600.00	14.22	1.193	3.22	12.15	4.02
2800.00	14.36	1.198	3.36	12.47	4.20
3000.00	14.50	1.203	3.50	12.78	4.37

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	60.00 ft
OVERTOPPING CREST ELEVATION	18.55 ft

CURRENT DATE: 12-06-2005
CURRENT TIME: 13:22:12

FILE DATE: 12-06-2005
FILE NAME: SVP48243

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	11.50	11.00	164.00	3 RCB	12.00	5.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP48243 DATE: 12-06-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
16.27	1100.0	1100.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.50	1172.0	1172.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.73	1244.0	1244.0	0.0	0.0	0.0	0.0	0.0	0.00	1
16.96	1316.0	1316.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.20	1388.0	1388.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.44	1460.0	1460.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.58	1500.0	1500.0	0.0	0.0	0.0	0.0	0.0	0.00	1
17.96	1604.0	1604.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.23	1676.0	1676.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.51	1748.0	1748.0	0.0	0.0	0.0	0.0	0.0	0.00	1
18.73	1820.0	1801.8	0.0	0.0	0.0	0.0	0.0	16.41	3
18.50	1817.1	1817.1	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP48243 DATE: 12-06-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
16.27	0.000	1100.00	0.00	0.00
16.50	0.000	1172.00	0.00	0.00
16.73	0.000	1244.00	0.00	0.00
16.96	0.000	1316.00	0.00	0.00
17.20	0.000	1388.00	0.00	0.00
17.44	0.000	1460.00	0.00	0.00
17.58	0.000	1500.00	0.00	0.00
17.96	0.000	1604.00	0.00	0.00
18.23	0.000	1676.00	0.00	0.00
18.51	0.000	1748.00	0.00	0.00
18.73	-0.004	1820.00	1.80	0.10

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 12-06-2005 FILE DATE: 12-06-2005
CURRENT TIME: 13:22:12 FILE NAME: SVP48243

PERFORMANCE CURVE FOR CULVERT 1 - 3(12.00 (ft) BY 5.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
1100.00	16.27	4.77	4.77	1-S2n	2.88	3.08	2.78	2.45	11.00	10.02
1172.00	16.50	5.00	5.00	1-S2n	3.01	3.21	2.91	2.54	11.18	10.24
1244.00	16.73	5.23	5.23	5-S2n	3.14	3.34	3.04	2.63	11.36	10.46
1316.00	16.96	5.46	5.46	5-S2n	3.26	3.47	3.17	2.72	11.53	10.66
1388.00	17.20	5.70	5.70	5-S2n	3.39	3.60	3.30	2.80	11.70	10.86
1460.00	17.44	5.94	5.94	5-S2n	3.51	3.72	3.42	2.89	11.86	11.05
1500.00	17.58	6.08	6.08	5-S2n	3.58	3.79	3.49	2.93	11.95	11.15
1604.00	17.96	6.46	6.46	5-S2n	3.75	3.96	3.66	3.05	12.18	11.41
1676.00	18.23	6.73	6.73	5-S2n	3.87	4.08	3.78	3.13	12.33	11.58
1748.00	18.51	7.01	7.01	5-S2n	3.99	4.19	3.89	3.20	12.47	11.75
1801.79	18.73	7.23	7.23	5-S2n	4.08	4.28	3.98	3.28	12.58	11.91

El. inlet face invert 11.50 ft El. outlet invert 11.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       11.50 ft
      OUTLET STATION                       164.00 ft
      OUTLET ELEVATION                      11.00 ft
      NUMBER OF BARRELS                      3
      SLOPE (V/H)                            0.0030
      CULVERT LENGTH ALONG SLOPE           164.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            12.00 ft
      BARREL RISE             5.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 12-06-2005 FILE DATE: 12-06-2005
CURRENT TIME: 13:22:12 FILE NAME: SVP48243

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	40.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.020
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	11.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	11.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
1100.00	13.45	1.129	2.45	10.02	3.05
1172.00	13.54	1.133	2.54	10.24	3.17
1244.00	13.63	1.137	2.63	10.46	3.28
1316.00	13.72	1.140	2.72	10.66	3.39
1388.00	13.80	1.143	2.80	10.86	3.50
1460.00	13.89	1.146	2.89	11.05	3.60
1500.00	13.93	1.148	2.93	11.15	3.66
1604.00	14.05	1.152	3.05	11.41	3.81
1676.00	14.13	1.154	3.13	11.58	3.90
1748.00	14.20	1.157	3.20	11.75	4.00
1820.00	14.28	1.159	3.28	11.91	4.09

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	120.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	18.50 ft

CURRENT DATE: 11-21-2005
CURRENT TIME: 14:24:18

FILE DATE: 11-21-2005
FILE NAME: SVP51267

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	23.11	22.00	133.00	4 RCB	10.00	4.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP51267 DATE: 11-21-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
23.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
24.51	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
25.34	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
26.05	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
26.69	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
27.32	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
27.76	1132.0	1132.0	0.0	0.0	0.0	0.0	0.0	0.00	1
28.71	1400.0	1389.8	0.0	0.0	0.0	0.0	0.0	7.08	2
29.24	1600.0	1517.4	0.0	0.0	0.0	0.0	0.0	81.91	3
29.70	1800.0	1619.0	0.0	0.0	0.0	0.0	0.0	180.55	3
30.13	2000.0	1706.4	0.0	0.0	0.0	0.0	0.0	292.51	2
28.58	1357.2	1357.2	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP51267 DATE: 11-21-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
23.11	0.000	0.00	0.00	0.00
24.51	0.000	200.00	0.00	0.00
25.34	0.000	400.00	0.00	0.00
26.05	0.000	600.00	0.00	0.00
26.69	0.000	800.00	0.00	0.00
27.32	0.000	1000.00	0.00	0.00
27.76	0.000	1132.00	0.00	0.00
28.71	-0.009	1400.00	3.12	0.22
29.24	-0.002	1600.00	0.65	0.04
29.70	-0.001	1800.00	0.43	0.02
30.13	-0.002	2000.00	1.08	0.05

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 11-21-2005 FILE DATE: 11-21-2005
CURRENT TIME: 14:24:18 FILE NAME: SVP51267

PERFORMANCE CURVE FOR CULVERT 1 - 4(10.00 (ft) BY 4.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	23.11	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	24.51	1.40	1.40	1-S2n	0.63	0.92	0.65	1.08	7.70	6.79
400.00	25.34	2.23	2.23	1-S2n	0.99	1.46	1.03	1.63	9.69	8.68
600.00	26.05	2.94	2.94	1-S2n	1.29	1.92	1.38	2.07	10.90	9.97
800.00	26.69	3.58	3.58	1-S2n	1.57	2.32	1.69	2.44	11.83	10.97
1000.00	27.32	4.21	4.21	5-S2n	1.82	2.69	1.99	2.77	12.54	11.81
1132.00	27.76	4.65	4.65	5-S2n	1.98	2.93	2.18	2.98	13.01	12.29
1389.80	28.71	5.60	5.60	5-S2n	2.28	3.35	2.53	3.36	13.71	13.15
1517.44	29.24	6.13	6.13	5-S2n	2.42	3.56	2.71	3.62	14.02	13.71
1619.02	29.70	6.59	6.59	5-S2n	2.53	3.71	2.84	3.87	14.23	14.22
1706.40	30.12	7.01	6.08	4-FFt	2.62	3.85	2.62	4.10	16.26	14.69

El. inlet face invert 23.11 ft El. outlet invert 22.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

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***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       23.11 ft
      OUTLET STATION                       133.00 ft
      OUTLET ELEVATION                      22.00 ft
      NUMBER OF BARRELS                      4
      SLOPE (V/H)                            0.0083
      CULVERT LENGTH ALONG SLOPE           133.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             4.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 11-21-2005
CURRENT TIME: 14:24:18

FILE DATE: 11-21-2005
FILE NAME: SVP51267

TAILWATER

******* REGULAR CHANNEL CROSS SECTION ****************

BOTTOM WIDTH	25.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.026
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	22.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	22.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	22.00	0.000	0.00	0.00	0.00
200.00	23.08	1.148	1.08	6.79	1.76
400.00	23.63	1.197	1.63	8.68	2.65
600.00	24.07	1.222	2.07	9.97	3.35
800.00	24.44	1.238	2.44	10.97	3.96
1000.00	24.77	1.250	2.77	11.81	4.50
1132.00	24.98	1.256	2.98	12.29	4.83
1400.00	25.36	1.265	3.36	13.15	5.45
1600.00	25.62	1.270	3.62	13.71	5.87
1800.00	25.87	1.275	3.87	14.22	6.27
2000.00	26.10	1.278	4.10	14.69	6.65

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	28.58 ft

CURRENT DATE: 10-24-2005
CURRENT TIME: 14:52:12

FILE DATE: 10-24-2005
FILE NAME: SVP61824

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	44.20	42.86	135.01	4 RCB	10.00	5.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP61824 DATE: 10-24-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
44.20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
45.60	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
46.42	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
47.13	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
47.76	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
48.33	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
48.89	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
49.46	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
49.95	1565.0	1565.0	0.0	0.0	0.0	0.0	0.0	0.00	1
50.70	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
51.33	2000.0	1978.0	0.0	0.0	0.0	0.0	0.0	20.57	3
51.06	1902.0	1902.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP61824 DATE: 10-24-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
44.20	0.000	0.00	0.00	0.00
45.60	0.000	200.00	0.00	0.00
46.42	0.000	400.00	0.00	0.00
47.13	0.000	600.00	0.00	0.00
47.76	0.000	800.00	0.00	0.00
48.33	0.000	1000.00	0.00	0.00
48.89	0.000	1200.00	0.00	0.00
49.46	0.000	1400.00	0.00	0.00
49.95	0.000	1565.00	0.00	0.00
50.70	0.000	1800.00	0.00	0.00
51.33	-0.003	2000.00	1.45	0.07

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-24-2005 FILE DATE: 10-24-2005
CURRENT TIME: 14:52:12 FILE NAME: SVP61824

PERFORMANCE CURVE FOR CULVERT 1 - 4(10.00 (ft) BY 5.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	44.20	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	45.60	1.40	1.40	1-S2n	0.59	0.92	0.52	0.74	9.60	12.68
400.00	46.42	2.22	2.22	1-S2n	0.94	1.46	0.98	1.11	10.18	16.28
600.00	47.13	2.93	2.93	1-S2n	1.22	1.92	1.31	1.40	11.49	18.75
800.00	47.76	3.56	3.56	1-S2n	1.48	2.32	1.61	1.66	12.42	20.68
1000.00	48.33	4.13	4.13	1-S2n	1.71	2.69	1.89	1.89	13.21	22.28
1200.00	48.89	4.69	4.69	1-S2n	1.94	3.04	2.18	2.10	13.75	23.65
1400.00	49.46	5.26	5.26	5-S2n	2.15	3.37	2.44	2.29	14.34	24.88
1565.00	49.95	5.75	5.75	5-S2n	2.32	3.63	2.66	2.44	14.71	25.79
1800.00	50.70	6.50	6.50	5-S2n	2.56	3.99	2.96	2.64	15.23	26.96
1977.97	51.32	7.12	7.12	5-S2n	2.73	4.24	3.14	2.80	15.73	27.87

El. inlet face invert 44.20 ft El. outlet invert 42.86 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       44.20 ft
      OUTLET STATION                       135.00 ft
      OUTLET ELEVATION                      42.86 ft
      NUMBER OF BARRELS                     4
      SLOPE (V/H)                           0.0099
      CULVERT LENGTH ALONG SLOPE           135.01 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             5.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 10-24-2005 FILE DATE: 10-24-2005
CURRENT TIME: 14:52:12 FILE NAME: SVP61824

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	20.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.150
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	42.86 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	42.86 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	42.86	0.000	0.00	0.00	0.00
200.00	43.60	2.607	0.74	12.68	6.88
400.00	43.97	2.727	1.11	16.28	10.35
600.00	44.26	2.789	1.40	18.75	13.13
800.00	44.52	2.829	1.66	20.68	15.53
1000.00	44.75	2.857	1.89	22.28	17.67
1200.00	44.96	2.878	2.10	23.65	19.63
1400.00	45.15	2.898	2.29	24.88	21.43
1565.00	45.30	2.910	2.44	25.79	22.83
1800.00	45.50	2.924	2.64	26.96	24.72
2000.00	45.66	2.934	2.80	27.87	26.23

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	51.06 ft

CURRENT DATE: 10-24-2005
CURRENT TIME: 13:45:20

FILE DATE: 10-24-2005
FILE NAME: SVP63089

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	50.40	49.50	155.00	4 RCB	10.00	3.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP63089 DATE: 10-24-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
50.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
51.81	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
52.65	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
53.38	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
54.15	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
54.64	910.0	910.0	0.0	0.0	0.0	0.0	0.0	0.00	1
56.03	1200.0	1171.0	0.0	0.0	0.0	0.0	0.0	26.07	4
56.64	1400.0	1266.2	0.0	0.0	0.0	0.0	0.0	133.12	3
57.15	1600.0	1340.9	0.0	0.0	0.0	0.0	0.0	258.65	3
57.61	1800.0	1404.8	0.0	0.0	0.0	0.0	0.0	394.71	3
58.04	2000.0	1462.0	0.0	0.0	0.0	0.0	0.0	537.73	3
55.72	1117.9	1117.9	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP63089 DATE: 10-24-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
50.40	0.000	0.00	0.00	0.00
51.81	0.000	200.00	0.00	0.00
52.65	0.000	400.00	0.00	0.00
53.38	0.000	600.00	0.00	0.00
54.15	0.000	800.00	0.00	0.00
54.64	0.000	910.00	0.00	0.00
56.03	-0.009	1200.00	2.96	0.25
56.64	-0.002	1400.00	0.70	0.05
57.15	-0.001	1600.00	0.40	0.03
57.61	-0.001	1800.00	0.52	0.03
58.04	-0.001	2000.00	0.28	0.01

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-24-2005 FILE DATE: 10-24-2005
CURRENT TIME: 13:45:20 FILE NAME: SVP63089

PERFORMANCE CURVE FOR CULVERT 1 - 4(10.00 (ft) BY 3.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	50.40	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	51.81	1.41	1.41	1-S2n	0.71	0.92	0.62	0.76	8.05	4.26
400.00	52.65	2.25	2.25	1-S2n	1.12	1.46	1.06	1.15	9.42	5.56
600.00	53.38	2.98	2.98	1-S2n	1.46	1.92	1.50	1.47	10.03	6.48
800.00	54.15	3.75	3.75	5-S2n	1.77	2.32	1.84	1.75	10.87	7.22
910.00	54.64	4.24	4.24	5-S2n	1.93	2.53	2.01	1.88	11.32	7.57
1170.97	56.03	5.63	5.63	5-S2n	2.29	2.99	2.41	2.22	12.14	8.38
1266.18	56.64	6.24	5.44	6-S2n	2.42	3.00	2.55	2.43	12.41	8.87
1340.95	57.15	6.75	5.85	6-S2n	2.51	3.00	2.67	2.63	12.56	9.31
1404.78	57.61	7.21	6.22	6-S2n	2.60	3.00	2.84	2.82	12.37	9.71
1461.99	58.04	7.64	6.56	4-S2n	2.67	3.00	2.90	3.00	12.60	10.09

El. inlet face invert 50.40 ft El. outlet invert 49.50 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       50.40 ft
      OUTLET STATION                       155.00 ft
      OUTLET ELEVATION                      49.50 ft
      NUMBER OF BARRELS                     4
      SLOPE (V/H)                           0.0058
      CULVERT LENGTH ALONG SLOPE           155.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            10.00 ft
      BARREL RISE             3.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 10-24-2005
CURRENT TIME: 13:45:20

FILE DATE: 10-24-2005
FILE NAME: SVP63089

TAILWATER

******* REGULAR CHANNEL CROSS SECTION ****************

BOTTOM WIDTH	60.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.015
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	49.50 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	49.50 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	49.50	0.000	0.00	0.00	0.00
200.00	50.26	0.859	0.76	4.26	0.71
400.00	50.65	0.911	1.15	5.56	1.08
600.00	50.97	0.941	1.47	6.48	1.38
800.00	51.25	0.963	1.75	7.22	1.63
910.00	51.38	0.972	1.88	7.57	1.76
1200.00	51.72	0.991	2.22	8.38	2.08
1400.00	51.93	1.002	2.43	8.87	2.28
1600.00	52.13	1.011	2.63	9.31	2.46
1800.00	52.32	1.019	2.82	9.71	2.64
2000.00	52.50	1.025	3.00	10.09	2.81

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	110.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	55.72 ft

CURRENT DATE: 10-24-2005
CURRENT TIME: 14:21:03

FILE DATE: 10-24-2005
FILE NAME: SVP63208

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	49.54	49.27	135.00	3 RCB	12.00	5.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: SVP63208 DATE: 10-24-2005

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
49.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
51.19	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
52.17	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
52.98	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
53.71	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
54.08	910.0	910.0	0.0	0.0	0.0	0.0	0.0	0.00	1
55.01	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
55.60	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
56.16	1600.0	1600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
56.64	1800.0	1770.2	0.0	0.0	0.0	0.0	0.0	30.22	2
57.12	2000.0	1885.9	0.0	0.0	0.0	0.0	0.0	113.51	3
56.30	1648.9	1648.9	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: SVP63208 DATE: 10-24-2005

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
49.54	0.000	0.00	0.00	0.00
51.19	0.000	200.00	0.00	0.00
52.17	0.000	400.00	0.00	0.00
52.98	0.000	600.00	0.00	0.00
53.71	0.000	800.00	0.00	0.00
54.08	0.000	910.00	0.00	0.00
55.01	0.000	1200.00	0.00	0.00
55.60	0.000	1400.00	0.00	0.00
56.16	0.000	1600.00	0.00	0.00
56.64	0.001	1800.00	-0.44	-0.02
57.12	-0.001	2000.00	0.55	0.03

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-24-2005 FILE DATE: 10-24-2005
CURRENT TIME: 14:21:03 FILE NAME: SVP63208

PERFORMANCE CURVE FOR CULVERT 1 - 3(12.00 (ft) BY 5.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	49.54	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	51.19	1.51	1.65	3-M1t	1.06	0.99	1.28	1.28	4.35	5.69
400.00	52.17	2.40	2.63	3-M1t	1.67	1.57	1.92	1.92	5.80	7.24
600.00	52.98	3.16	3.44	3-M1t	2.19	2.06	2.42	2.42	6.88	8.30
800.00	53.71	3.84	4.17	3-M1t	2.66	2.49	2.86	2.86	7.78	9.12
910.00	54.08	4.19	4.54	3-M1t	2.91	2.71	3.07	3.07	8.23	9.51
1200.00	55.01	5.09	5.47	3-M1t	3.53	3.26	3.59	3.59	9.27	10.37
1400.00	55.60	5.74	6.06	3-M2t	3.93	3.62	3.92	3.92	9.93	10.88
1600.00	56.16	6.45	6.62	3-M2t	4.33	3.95	4.22	4.22	10.53	11.34
1770.22	56.64	7.10	7.09	3-M2t	5.00	4.23	4.51	4.51	10.92	11.75
1885.94	57.12	7.58	7.39	3-M2t	5.00	4.41	4.77	4.77	10.97	12.13

El. inlet face invert 49.54 ft El. outlet invert 49.27 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

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***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                       49.54 ft
      OUTLET STATION                       135.00 ft
      OUTLET ELEVATION                      49.27 ft
      NUMBER OF BARRELS                     3
      SLOPE (V/H)                           0.0020
      CULVERT LENGTH ALONG SLOPE           135.00 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE          BOX
      BARREL SPAN            12.00 ft
      BARREL RISE             5.00 ft
      BARREL MATERIAL       CONCRETE
      BARREL MANNING'S n    0.012
      INLET TYPE            CONVENTIONAL
      INLET EDGE AND WALL   SQUARE EDGE (30-75 DEG. FLARE)
      INLET DEPRESSION      NONE
```

CURRENT DATE: 10-24-2005
CURRENT TIME: 14:21:03

FILE DATE: 10-24-2005
FILE NAME: SVP63208

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	25.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.015
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	49.27 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	49.27 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	49.27	0.000	0.00	0.00	0.00
200.00	50.55	0.888	1.28	5.69	1.19
400.00	51.19	0.923	1.92	7.24	1.79
600.00	51.69	0.940	2.42	8.30	2.27
800.00	52.13	0.951	2.86	9.12	2.67
910.00	52.34	0.956	3.07	9.51	2.88
1200.00	52.86	0.964	3.59	10.37	3.36
1400.00	53.19	0.969	3.92	10.88	3.67
1600.00	53.49	0.972	4.22	11.34	3.95
1800.00	53.78	0.975	4.51	11.75	4.22
2000.00	54.04	0.978	4.77	12.13	4.47

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	100.00 ft
CREST LENGTH	50.00 ft
OVERTOPPING CREST ELEVATION	56.30 ft