

**"INTEL" HYMO RUN**

## HYMO SUMMARY TABLE

Pg. 1

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	HYDROGRAPH AT ROUTED	31.00	1	-	0.4090	294.5	NA	1.80	1.1
			1	4					
		31.00	1		0.4090	294.5		1.80	
		31.Rt	4		0.4090	294.7		1.80	
	HYDROGRAPH AT COMBINED FLOW AT ROUTED	32.00	2	-	0.2860	336.4	NA	1.70	1.8
		32.SM	2& 4	1	0.6950	615.5		1.75	
			1	4					
		32.SM	1		0.6950	615.5		1.75	
		32.Rt	4		0.6950	609.7		1.75	
	HYDROGRAPH AT COMBINED FLOW AT ROUTED	33.00	2	-	0.0530	124.2	NA	1.55	3.6
		33.SM	2& 4	1	0.7480	675.8		1.75	
			1	4					
		33.SM	1		0.7480	675.8		1.75	
		33.Rt	4		0.7480	665.7		1.80	
	HYDROGRAPH AT COMBINED FLOW AT ROUTED	34.00	2	-	0.1320	160.3	NA	1.70	1.9
		34.SM	2& 4	1	0.8800	805.0		1.80	
			1	4					
		34.SM	1		0.8800	805.0		1.80	
		34.Rt	4		0.8800	805.1		1.80	
	HYDROGRAPH AT COMBINED FLOW AT ROUTED	35.00	2	-	0.2650	330.5	NA	1.65	1.9
		35.SM	2& 4	1	1.1450	1082.6		1.80	
			1	4					
		35.SM	1		1.1450	1082.6		1.80	
		35.Rt	4		1.1450	1030.2		1.85	
	HYDROGRAPH AT COMBINED FLOW AT ROUTED	36.00	2	-	0.1540	185.7	NA	1.70	1.8
		36.SM	2& 4	1	1.2990	1176.2		1.85	
			1	4					
		36.SM	1		1.2990	1176.2		1.85	
		36.Rt	4		1.2990	1155.1		1.90	
	HYDROGRAPH AT COMBINED FLOW AT RESERVOIR HYD	37	2	-	0.1020	147.5	NA	1.60	2.2
		37.SM	2& 4	50	1.4010	1233.6		1.85	
		37.SM	50	49	1.4010	802.0		2.20	
	HYDROGRAPH AT HYDROGRAPH AT	T	1	-	0.0022	6.1	NA	1.50	4.3
		S	2	-	0.0070	13.0	NA	1.55	2.9
	COMBINED FLOW AT ROUTED	S&T	1& 2	3	0.0092	18.7		1.50	
			3	23					
		S&T	3		0.0092	18.7		1.50	
		T&S&Rt	23		0.0092	5.9		1.80	
	HYDROGRAPH AT HYDROGRAPH AT ROUTED	R	4	-	0.0096	13.4	NA	1.65	2.1
		B	5	-	0.0059	13.4	NA	1.50	3.5
			5	25					
		B	5		0.0059	13.4		1.50	
		B&Rt	25		0.0059	4.5		1.70	
	HYDROGRAPH AT ROUTED	D2	6	-	0.0038	8.6	NA	1.50	3.5
			6	26					
		D2	6		0.0038	8.6		1.50	
		D2&Rt	26		0.0038	3.0		1.70	

## HYMO SUMMARY TABLE

Pg. 2

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	HYDROGRAPH AT	5	7	-	0.0050	7.1	NA	1.50	2.2
	COMBINED FLOW AT	ST&R	23& 4	29	0.0188	18.9		1.65	
	COMBINED FLOW AT	&B	29&25	29	0.0247	23.3		1.65	
	COMBINED FLOW AT	&D2	29&26	29	0.0285	26.2		1.65	
	COMBINED FLOW AT	&5	29& 7	29	0.0335	30.3		1.65	
	HYDROGRAPH AT	P	8	-	0.0095	10.3	NA	1.70	1.7
	ROUTED		29	39					
		&5	29		0.0335	30.3		1.65	
		&Rt	39		0.0335	18.8		1.90	
	COMBINED FLOW AT	P&SM	39& 8	39	0.0430	27.7		1.80	
	HYDROGRAPH AT	A	9	-	0.0142	33.2	NA	1.50	3.6
	RESERVOIR HYD	A	9	19	0.0142	20.1		1.65	
	ROUTED 24"		19	20					
		A	19		0.0142	20.1		1.65	
		A&R24	20		0.0142	20.1		1.65	
	ROUTED 36"		20	21					
		A&R24	20		0.0142	20.1		1.65	
		A&R36	21		0.0142	20.2		1.65	
	HYDROGRAPH AT	C1.1	20	-	0.0150	34.8	NA	1.50	3.6
	COMBINED FLOW AT	C1&A&R36	20&21	20	0.0292	49.6		1.50	
	ROUTED 36"		20	21					
		C1&A&R36	20		0.0292	49.6		1.50	
		C1&A&R60	21		0.0292	49.6		1.55	
	HYDROGRAPH AT	C1.2	10	-	0.0050	11.7	NA	1.50	3.6
	RECALL HYD	3A	20	-	0.0016	0.3		1.57	
	HYDROGRAPH AT	D3	11	-	0.0030	8.0	NA	1.50	4.1
	COMBINED FLOW AT	3A&D3	11&20	11	0.0046	8.2		1.00	
	ROUTED 24"		11	31					
		3A&D3	11		0.0046	8.2		1.00	
		3AD3R24	31		0.0046	8.1		1.00	
	HYDROGRAPH AT	1	12	-	0.0068	18.7	NA	1.50	4.3
	COMBINED FLOW AT	1&R24	12&31	41	0.0114	19.5		1.50	
	ROUTED 30"		41	42					
		1&R24	41		0.0114	19.5		1.50	
		1&D3&R30	42		0.0114	19.3		1.50	
	COMBINED FLOW AT	C12&R	10&42	43	0.0164	31.0		1.50	
	ROUTED 30"		43	22					
		C12&R	43		0.0164	31.0		1.50	
		C12R30	22		0.0164	30.6		1.50	
	HYDROGRAPH AT	2.1N	19	-	0.0030	8.3	NA	1.50	4.3
	COMBINED FLOW AT	21NR30	22&19	20	0.0194	38.9		1.50	
	ROUTED 36"		20	10					
		21NR30	20		0.0194	38.9		1.50	
		2.1N&R30	10		0.0194	38.4		1.50	
	HYDROGRAPH AT	FAB9	12	-	0.0085	23.5	NA	1.50	4.3
	ROUTED 30"		12	11					
		FAB9	12		0.0085	23.5		1.50	
		FAB&R30	11		0.0085	23.6		1.50	
	HYDROGRAPH AT	2.2N	19	-	0.0020	5.5	NA	1.50	4.3

## HYMO SUMMARY TABLE

Pg. 3

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	COMBINED FLOW AT	22NFAB	11&19	11	0.0105	29.1		1.50	
	COMBINED FLOW AT	22NFB36	11&10	22	0.0299	67.5		1.50	
	ROUTED 42"		22	20					
		22NFB36	22		0.0299	67.5		1.50	
		2NFAB&R4	20		0.0299	67.1		1.50	
	HYDROGRAPH AT	2.3-NRT	12	-	0.0040	7.2	NA	1.50	2.8
	COMBINED FLOW AT	42R23N	20&12	20	0.0339	74.3		1.50	
	COMBINED FLOW AT	R42RAC1	20&21	23	0.0631	121.9		1.50	
	ROUTED 60"		23	24					
		R42RAC1	23		0.0631	121.9		1.50	
		R&60	24		0.0631	123.0		1.55	
	HYDROGRAPH AT	2SOUTH	12	-	0.0110	24.9	NA	1.50	3.5
	ROUTED 36"		12	23					
		2SOUTH	12		0.0110	24.9		1.50	
		SOUTH&R3	23		0.0110	25.0		1.50	
	COMBINED FLOW AT	CULVRT&S	24&23	25	0.0741	145.5		1.55	
	RECALL HYD	PMP	12	-	0.0103	5.0		1.57	
	COMBINED FLOW AT	CLVRT&PS	25&12	24	0.0844	149.0		1.53	
	ROUTED 72"		24	26					
		CLVRT&PS	24		0.0844	149.0		1.53	
		CULVRT	26		0.0844	145.9		1.55	
	HYDROGRAPH AT	GNORTH	15	-	0.0230	59.2	NA	1.50	4.0
	COMBINED FLOW AT	CLVRT&GN	15&26	27	0.1074	197.6		1.55	
	ROUTED 72"		27	30					
		CLVRT&GN	27		0.1074	197.6		1.55	
		R72	30		0.1074	191.6		1.55	
	HYDROGRAPH AT	GSOUTH	17	-	0.0260	58.4	NA	1.50	3.5
	ROUTED 54"		17	27					
		GSOUTH	17		0.0260	58.4		1.50	
		Rt54	27		0.0260	58.6		1.50	
	COMBINED FLOW AT	GSO&Rt54	27&30	24	0.1334	244.3		1.55	
	ROUTED 90"		24	27					
		GSO&Rt54	24		0.1334	244.3		1.55	
		Rt90	27		0.1334	238.3		1.55	
	HYDROGRAPH AT	J	16	-	0.0450	84.2	NA	1.65	2.9
	ROUTED 42"		16	30					
		J	16		0.0450	84.2		1.65	
		Rt42	30		0.0450	84.3		1.65	
	COMBINED FLOW AT	R42&R90	30&27	16	0.1784	313.6		1.60	
	ROUTED 90"		16	30					
		R42&R90	16		0.1784	313.6		1.60	
		90.00	30		0.1784	315.1		1.60	
	HYDROGRAPH AT	GMID	36	-	0.0860	155.6	NA	1.65	2.8
	ROUTED 54"		36	16					
		GMID	36		0.0860	155.6		1.65	
		Rt54	16		0.0860	156.4		1.65	
	COMBINED FLOW AT	197	16&30	36	0.2644	463.6		1.60	
	HYDROGRAPH AT	TERMNUS	16	-	0.0060	15.7	NA	1.50	4.0
	ROUTED 90"		36	30					

## HYMO SUMMARY TABLE

Pg. 4

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
		197	36		0.2644	463.6		1.60	
		RtCUL	30		0.2644	456.7		1.60	
	COMBINED FLOW AT	COMBO	16&30	32	0.2704	467.3		1.60	
	COMBINED FLOW AT	COMBO	32&39	40	0.3134	484.3		1.60	
	RESERVOIR HYD	COMBO	40	40	0.3134	231.1		2.00	
	ROUTED		40	39					
		COMBO	40		0.3134	231.1		2.00	
		RtCOMBO	39		0.3134	231.1		2.00	
	COMBINED FLOW AT	37.2	49&39	1	1.7144	1013.7		2.15	
	HYDROGRAPH AT	EX	2	-	0.0031	7.8	NA	1.50	3.8
	COMBINED FLOW AT	ROADRRP	2& 1	1	1.7176	1014.5		2.15	
	ROUTED		1	4					
		ROADRRP	1		1.7176	1014.5		2.15	
		7BAR&Rt	4		1.7176	1014.1		2.20	
	HYDROGRAPH AT	38.00	2	-	0.1220	184.0	NA	1.65	2.3
	COMBINED FLOW AT	38&BAR	2& 4	2	1.8396	1059.2		2.20	
	ROUTED		2	50					
		38&BAR	2		1.8396	1059.2		2.20	
		BLKCNFLU	50		1.8396	1063.7		2.20	
	HYDROGRAPH AT	101.10	2	-	0.0310	26.0	NA	1.55	1.3
	ROUTED		2	14					
		101.10	2		0.0310	26.0		1.55	
		101.2	14		0.0310	19.3		1.70	
	HYDROGRAPH AT	101.30	4	-	0.1060	69.2	NA	1.65	1.0
	COMBINED FLOW AT	101.4	14& 4	15	0.1370	88.2		1.65	
	HYDROGRAPH AT	101.50	3	-	0.0650	46.2	NA	1.60	1.1
	ROUTED		3	16					
		101.50	3		0.0650	46.2		1.60	
		101.6	16		0.0650	36.4		1.70	
	HYDROGRAPH AT	101.70	5	-	0.0770	57.1	NA	1.60	1.1
	COMBINED FLOW AT	101.8	16& 5	17	0.1420	87.8		1.65	
	COMBINED FLOW AT	101.9	15&17	18	0.2790	176.0		1.65	
	ROUTED		18	19					
		101.9	18		0.2790	176.0		1.65	
		101.10	19		0.2790	162.9		1.70	
	HYDROGRAPH AT	101.11	6	-	0.0940	62.7	NA	1.60	1.0
	ROUTED		6	20					
		101.11	6		0.0940	62.7		1.60	
		101.12	20		0.0940	63.0		1.65	
	HYDROGRAPH AT	101.13	7	-	0.0990	65.1	NA	1.65	1.0
	COMBINED FLOW AT	101.14	20& 7	21	0.1930	128.2		1.65	
	ROUTED		21	22					
		101.14	21		0.1930	128.2		1.65	
		101.15	22		0.1930	127.6		1.65	
	HYDROGRAPH AT	101.16	8	-	0.1680	119.5	NA	1.60	1.1
	COMBINED FLOW AT	101.17	19& 8	23	0.4470	269.6		1.70	
	COMBINED FLOW AT	101.18	23&22	24	0.6400	396.8		1.65	
	ROUTED		24	25					
		101.18	24		0.6400	396.8		1.65	

## HYMO SUMMARY TABLE

Pg. 5

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
		101.19	25		0.6400	399.1		1.70	
	HYDROGRAPH AT	101.20	10	-	0.1120	66.6	NA	1.65	0.9
	COMBINED FLOW AT	101.21	25&10	26	0.7520	464.7		1.70	
	HYDROGRAPH AT	101.22	9	-	0.1590	103.4	NA	1.65	1.0
	ROUTED		9	27					
		101.22	9		0.1590	103.4		1.65	
		101.23	27		0.1590	87.4		1.75	
	ROUTED		26	28					
		101.21	26		0.7520	464.7		1.70	
		101.24	28		0.7520	453.0		1.75	
	HYDROGRAPH AT	101.25	11	-	0.1540	87.0	NA	1.70	0.8
	COMBINED FLOW AT	101.26	28&11	29	0.9060	536.6		1.75	
	HYDROGRAPH AT	101.27	12	-	0.0630	38.2	NA	1.65	0.9
	COMBINED FLOW AT	101.28	27&12	30	0.2220	121.6		1.75	
	COMBINED FLOW AT	101.29	30&29	31	1.1280	658.2		1.75	
	ROUTED		31	32					
		101.29	31		1.1280	658.2		1.75	
		101.30	32		1.1280	487.9		1.85	
	HYDROGRAPH AT	101.31	13	-	0.1600	81.7	NA	1.75	0.8
	COMBINED FLOW AT	AP101	32&13	33	1.2880	560.9		1.85	
	HYDROGRAPH AT	102.10	2	-	0.1140	108.1	NA	1.60	1.4
	ROUTED		2	7					
		102.10	2		0.1140	108.1		1.60	
		102.2	7		0.1140	108.0		1.65	
	HYDROGRAPH AT	102.30	5	-	0.0200	27.2	NA	1.50	2.1
	ROUTED		5	8					
		102.30	5		0.0200	27.2		1.50	
		102.4	8		0.0200	16.8		1.65	
	HYDROGRAPH AT	102.50	3	-	0.1130	115.2	NA	1.60	1.5
	COMBINED FLOW AT	102.5	7& 3	9	0.2270	220.1		1.60	
	ROUTED		9	10					
		102.5	9		0.2270	220.1		1.60	
		102.6	10		0.2270	218.6		1.65	
	HYDROGRAPH AT	102.70	4	-	0.0600	69.6	NA	1.55	1.8
	COMBINED FLOW AT	102.8	10& 4	11	0.2870	278.6		1.60	
	ROUTED		11	12					
		102.8	11		0.2870	278.6		1.60	
		102.9	12		0.2870	278.2		1.65	
	HYDROGRAPH AT	102.10	6	-	0.1730	147.0	NA	1.65	1.3
	COMBINED FLOW AT	102.11	8& 6	13	0.1930	163.8		1.65	
	COMBINED FLOW AT	102.12	13&12	14	0.4800	442.1		1.65	
	ROUTED		33	15					
		AP101	33		1.2880	560.9		1.85	
		102.13	15		1.2880	561.0		1.85	
	COMBINED FLOW AT	AP102	14&15	16	1.7680	852.2		1.80	
	HYDROGRAPH AT	103.10	2	-	0.1390	208.0	NA	1.55	2.3
	ROUTED		2	7					
		103.10	2		0.1390	208.0		1.55	
		103.2	7		0.1390	200.4		1.60	

## HYMO SUMMARY TABLE

Pg. 6

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	HYDROGRAPH AT	103.30	4	-	0.0990	146.2	NA	1.60	2.3
	COMBINED FLOW AT	103.4	7& 4	8	0.2380	346.6		1.60	
	ROUTED		16	9					
		AP102	16		1.7680	852.2		1.80	
		103.5	9		1.7680	853.0		1.80	
	COMBINED FLOW AT	103.6	8& 9	10	2.0060	1074.3		1.75	
	ROUTED		10	42					
		103.6	10		2.0060	1074.3		1.75	
		103.7	42		2.0060	1068.1		1.80	
	HYDROGRAPH AT	103.80	3	-	0.2590	355.5	NA	1.60	2.1
	ROUTED		3	12					
		103.80	3		0.2590	355.5		1.60	
		103.9	12		0.2590	352.6		1.65	
	HYDROGRAPH AT	103.10	6	-	0.0640	109.1	NA	1.55	2.6
	COMBINED FLOW AT	AP1	12& 6	41	0.3230	437.5		1.60	
	HYDROGRAPH AT	104.10	2	-	0.1370	91.1	NA	1.80	1.0
	HYDROGRAPH AT	104.20	3	-	0.0520	49.3	NA	1.65	1.4
	ROUTED		2	7					
		104.10	2		0.1370	91.1		1.80	
		104.3	7		0.1370	90.8		1.85	
	HYDROGRAPH AT	104.40	4	-	0.1210	114.9	NA	1.65	1.4
	COMBINED FLOW AT	104.5	7& 4	8	0.2580	186.1		1.75	
	ROUTED		8	9					
		104.5	8		0.2580	186.1		1.75	
		104.6	9		0.2580	183.9		1.75	
	ROUTED		3	10					
		104.20	3		0.0520	49.3		1.65	
		104.7	10		0.0520	48.6		1.70	
	ROUTED		10	11					
		104.7	10		0.0520	48.6		1.70	
		104.8	11		0.0520	46.9		1.75	
	COMBINED FLOW AT	AP109	9&11	12	0.3100	230.8		1.75	
	ROUTED		12	13					
		AP109	12		0.3100	230.8		1.75	
		104.9	13		0.3100	229.2		1.80	
	HYDROGRAPH AT	104.10	6	-	0.1330	149.5	NA	1.60	1.7
	COMBINED FLOW AT	AP103	13& 6	33	0.4430	325.5		1.75	
	HYDROGRAPH AT	104.11	5	-	0.1470	122.6	NA	1.70	1.3
	COMBINED FLOW AT	AP110	42& 5	42	2.1530	1185.6		1.75	
	ROUTED		42	14					
		AP110	42		2.1530	1185.6		1.75	
		103.11	14		2.1530	1184.7		1.75	
	HYDROGRAPH AT	103.12	5	-	0.0990	128.7	NA	1.65	2.0
	COMBINED FLOW AT	AP2	14& 5	42	2.2520	1289.8		1.75	
	HYDROGRAPH AT	106.10	2	-	0.0090	13.7	NA	1.55	2.3
	HYDROGRAPH AT	106.20	3	-	0.1110	123.1	NA	1.65	1.7
	ROUTED		2	13					
		106.10	2		0.0090	13.7		1.55	
		106.3	13		0.0090	7.5		1.75	

## HYMO SUMMARY TABLE

Pg. 7

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	COMBINED FLOW AT	106.4	13& 3	14	0.1200	130.0		1.65	
	HYDROGRAPH AT	106.50	4	-	0.0880	107.5	NA	1.65	1.9
	ROUTED		4	15					
		106.50	4		0.0880	107.5		1.65	
		106.6	15		0.0880	102.9		1.70	
	HYDROGRAPH AT	106.70	6	-	0.0760	81.1	NA	1.70	1.6
	COMBINED FLOW AT	106.8	15& 6	16	0.1640	184.0		1.70	
	ROUTED		16	17					
		106.8	16		0.1640	184.0		1.70	
		106.9	17		0.1640	178.2		1.75	
	HYDROGRAPH AT	106.10	9	-	0.0890	83.2	NA	1.75	1.4
	COMBINED FLOW AT	106.11	17& 9	18	0.2530	261.4		1.75	
	ROUTED		18	19					
		106.11	18		0.2530	261.4		1.75	
		106.13	19		0.2530	239.1		1.85	
	HYDROGRAPH AT	106.14	11	-	0.1070	107.1	NA	1.70	1.5
	COMBINED FLOW AT	106.15	19&11	20	0.3600	335.1		1.80	
	ROUTED		20	21					
		106.15	20		0.3600	335.1		1.80	
		106.16	21		0.3600	318.1		1.90	
	HYDROGRAPH AT	106.17	12	-	0.1350	129.0	NA	1.75	1.4
	COMBINED FLOW AT	106.18	21&12	43	0.4950	434.6		1.85	
	ROUTED		14	22					
		106.4	14		0.1200	130.0		1.65	
		106.19	22		0.1200	129.4		1.70	
	HYDROGRAPH AT	106.20	5	-	0.0370	40.8	NA	1.65	1.7
	COMBINED FLOW AT	106.21	22& 5	23	0.1570	170.0		1.70	
	ROUTED		23	24					
		106.21	23		0.1570	170.0		1.70	
		106.22	24		0.1570	167.5		1.75	
	HYDROGRAPH AT	106.23	8	-	0.0360	50.4	NA	1.60	2.1
	COMBINED FLOW AT	106.24	24& 8	25	0.1930	204.1		1.70	
	ROUTED		25	26					
		106.24	25		0.1930	204.1		1.70	
		106.25	26		0.1930	201.7		1.75	
	HYDROGRAPH AT	106.26	7	-	0.0620	85.1	NA	1.60	2.1
	ROUTED		7	27					
		106.26	7		0.0620	85.1		1.60	
		106.27	27		0.0620	85.0		1.60	
	COMBINED FLOW AT	106.28	26&27	28	0.2550	272.2		1.70	
	ROUTED		28	29					
		106.28	28		0.2550	272.2		1.70	
		106.29	29		0.2550	272.6		1.70	
	HYDROGRAPH AT	106.30	10	-	0.1120	144.4	NA	1.60	2.0
	COMBINED FLOW AT	106.31	29&10	30	0.3670	399.3		1.70	
	ROUTED		30	31					
		106.31	30		0.3670	399.3		1.70	
		106.32	31		0.3670	359.8		1.75	
	COMBINED FLOW AT	106.33	31&43	43	0.8620	779.1		1.85	



## HYMO SUMMARY TABLE

Pg. 8

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	HYDROGRAPH AT ROUTED	107.10	2	-	0.1260	103.3	NA	1.65	1.2
			2	5					
		107.10	2		0.1260	103.3		1.65	
		107.2	5		0.1260	68.0		1.85	
	HYDROGRAPH AT	107.30	3	-	0.2170	68.5	NA	2.30	0.4
	COMBINED FLOW AT	107.4	5& 3	6	0.3430	118.6		2.05	
	COMBINED FLOW AT	AP3	43& 6	43	1.2050	888.2		1.85	
	HYDROGRAPH AT	105.00	35	-	0.0470	40.6	NA	1.65	1.3
	HYDROGRAPH AT ROUTED	105.10	2	-	0.1350	133.7	NA	1.65	1.5
			2	5					
		105.10	2		0.1350	133.7		1.65	
		105.2	5		0.1350	133.5		1.70	
	HYDROGRAPH AT	105.30	4	-	0.0650	67.7	NA	1.65	1.6
	COMBINED FLOW AT	AP107	5& 4	37	0.2000	199.9		1.65	
	HYDROGRAPH AT	108.00	38	-	0.1100	113.8	NA	1.65	1.6
	HYDROGRAPH AT	201.10	2	-	0.1510	88.5	NA	1.60	0.9
	ROUTED		2	8					
		201.10	2		0.1510	88.5		1.60	
		201.2	8		0.1510	84.6		1.65	
	HYDROGRAPH AT	201.30	3	-	0.2160	112.8	NA	1.65	0.8
	COMBINED FLOW AT	201.4	8& 3	9	0.3670	197.4		1.65	
	ROUTED		9	10					
		201.4	9		0.3670	197.4		1.65	
		201.5	10		0.3670	197.4		1.65	
	HYDROGRAPH AT	201.60	4	-	0.1520	78.3	NA	1.65	0.8
	COMBINED FLOW AT	201.7	10& 4	11	0.5190	275.7		1.65	
	ROUTED		11	12					
		201.7	11		0.5190	275.7		1.65	
		201.8	12		0.5190	268.2		1.70	
	HYDROGRAPH AT	201.90	5	-	0.1950	99.4	NA	1.65	0.8
	COMBINED FLOW AT	201.10	12& 5	13	0.7140	362.6		1.70	
	ROUTED		13	14					
		201.10	13		0.7140	362.6		1.70	
		201.11	14		0.7140	364.9		1.70	
	HYDROGRAPH AT	201.12	6	-	0.0120	8.7	NA	1.55	1.1
	COMBINED FLOW AT	201.13	14& 6	15	0.7260	370.2		1.70	
	ROUTED		15	16					
		201.13	15		0.7260	370.2		1.70	
		201.14	16		0.7260	336.9		1.80	
	HYDROGRAPH AT	201.15	7	-	0.0550	23.9	NA	1.65	0.6
	COMBINED FLOW AT	AP201	16& 7	45	0.7810	357.1		1.75	
	HYDROGRAPH AT	202.10	2	-	0.0560	35.4	NA	1.55	0.9
	ROUTED		2	12					
		202.10	2		0.0560	35.4		1.55	
		202.2	12		0.0560	32.3		1.65	
	HYDROGRAPH AT	202.30	3	-	0.0410	25.6	NA	1.60	0.9
	ROUTED		3	13					
		202.30	3		0.0410	25.6		1.60	
		202.4	13		0.0410	24.2		1.65	

## HYMO SUMMARY TABLE

Pg. 9

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	COMBINED FLOW AT ROUTED	AP210	12&13 14	14 15	0.0970	56.4		1.65	
		AP210	14		0.0970	56.4		1.65	
		202.5	15		0.0970	51.6		1.70	
	HYDROGRAPH AT	202.60	6	-	0.0750	42.0	NA	1.60	0.8
	COMBINED FLOW AT	202.7	15& 6	16	0.1720	88.6		1.65	
	ROUTED		16 17						
		202.7	16		0.1720	88.6		1.65	
		202.8	17		0.1720	77.3		1.75	
	ROUTED		41	18					
		AP1	41		0.3230	437.5		1.60	
		202.9	18		0.3230	432.6		1.65	
	HYDROGRAPH AT	202.10	4	-	0.0970	50.0	NA	1.65	0.8
	COMBINED FLOW AT	202.11	18& 4	19	0.4200	482.5		1.65	
	ROUTED		19 20						
		202.11	19		0.4200	482.5		1.65	
		202.12	20		0.4200	484.7		1.65	
	ROUTED		42	21					
		AP2	42		2.2520	1289.8		1.75	
		202.13	21		2.2520	1279.4		1.80	
	COMBINED FLOW AT	AP211	20&21	22	2.6720	1709.4		1.75	
	ROUTED		22 23						
		AP211	22		2.6720	1709.4		1.75	
		202.14	23		2.6720	1713.1		1.75	
	COMBINED FLOW AT	AP212	17&23	24	2.8440	1790.4		1.75	
	ROUTED		24 25						
		AP212	24		2.8440	1790.4		1.75	
		202.15	25		2.8440	1792.5		1.75	
	HYDROGRAPH AT	202.16	5	-	0.0940	45.3	NA	1.65	0.7
	COMBINED FLOW AT	202.17	25& 5	26	2.9380	1832.8		1.75	
	HYDROGRAPH AT	202.18	7	-	0.1370	79.2	NA	1.60	0.9
	ROUTED		7 27						
		202.18	7		0.1370	79.2		1.60	
		202.19	27		0.1370	71.0		1.70	
	HYDROGRAPH AT	202.20	9	-	0.0940	41.3	NA	1.65	0.6
	COMBINED FLOW AT	202.21	27& 9	28	0.2310	112.1		1.70	
	ROUTED		28 29						
		202.21	28		0.2310	112.1		1.70	
		202.22	29		0.2310	113.8		1.70	
	HYDROGRAPH AT	202.23	8	-	0.0770	52.7	NA	1.55	1.0
	ROUTED		8 30						
		202.23	8		0.0770	52.7		1.55	
		202.24	30		0.0770	38.2		1.70	
	ROUTED		26	31					
		202.17	26		2.9380	1832.8		1.75	
		202.25	31		2.9380	1775.2		1.80	
	COMBINED FLOW AT	202.26	29&30	32	0.3080	152.0		1.70	
	COMBINED FLOW AT	202.27	32&31	49	3.2460	1908.5		1.80	
	HYDROGRAPH AT	202.27	10	-	0.1330	57.5	NA	1.70	0.6

## HYMO SUMMARY TABLE

Pg. 10

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	COMBINED FLOW AT ROUTED	AP213	49&10 48	48 47	3.3790	1959.8		1.80	
		AP213	48		3.3790	1959.8		1.80	
		202.28	47		3.3790	1966.2		1.80	
	COMBINED FLOW AT ROUTED	202.29	45&47 33	46 4	4.1600	2323.2		1.80	
		AP103	33		0.4430	325.5		1.75	
		203.1	4		0.4430	307.4		1.80	
	HYDROGRAPH AT	203.20	2	-	0.1540	84.1	NA	1.65	0.8
	COMBINED FLOW AT ROUTED	202.4	4& 2 5	5 6	0.5970	378.0		1.80	
		202.4	5		0.5970	378.0		1.80	
		203.2	6		0.5970	363.7		1.85	
	HYDROGRAPH AT	203.30	3	-	0.0400	18.4	NA	1.70	0.7
	COMBINED FLOW AT	202.4	6& 3	7	0.6370	379.8		1.85	
	COMBINED FLOW AT ROUTED	AP201	46& 7 31	31 6	4.7970	2694.0		1.80	
		AP201	31		4.7970	2694.0		1.80	
		204.1	6		4.7970	2690.1		1.80	
	HYDROGRAPH AT	204.20	2	-	0.0840	32.7	NA	1.70	0.6
	COMBINED FLOW AT ROUTED	202.4	6& 2 7	7 8	4.8810	2720.4		1.80	
		202.4	7		4.8810	2720.4		1.80	
		203.2	8		4.8810	2709.4		1.80	
	HYDROGRAPH AT	204.20	3	-	0.1210	43.9	NA	1.75	0.5
	COMBINED FLOW AT ROUTED	202.4	8& 3 9	9 10	5.0020	2752.0		1.80	
		202.4	9		5.0020	2752.0		1.80	
		203.2	10		5.0020	2764.4		1.85	
	HYDROGRAPH AT	204.20	4	-	0.0940	41.0	NA	1.65	0.6
	COMBINED FLOW AT ROUTED	202.4	10& 4 11	11 12	5.0960	2795.4		1.85	
		202.4	11		5.0960	2795.4		1.85	
		203.2	12		5.0960	2818.2		1.85	
	HYDROGRAPH AT	204.20	5	-	0.0890	32.0	NA	1.75	0.5
	COMBINED FLOW AT	202.4	12& 5	13	5.1850	2847.4		1.85	
	HYDROGRAPH AT ROUTED	206.10	2	-	0.2810	172.1	NA	1.60	0.9
		206.10	2		0.2810	172.1		1.60	
		206.2	4		0.2810	168.9		1.65	
	HYDROGRAPH AT	206.40	3	-	0.1640	69.0	NA	1.70	0.6
	COMBINED FLOW AT ROUTED	206.5	4& 3 5	5 6	0.4450	236.6		1.65	
		206.5	5		0.4450	236.6		1.65	
		206.2	6		0.4450	219.9		1.70	
	HYDROGRAPH AT	206.40	4	-	0.0790	31.7	NA	1.70	0.6
	COMBINED FLOW AT	206.5	6& 4	7	0.5240	251.6		1.70	
	COMBINED FLOW AT ROUTED	206.5	13& 7 36	36 22	5.7090	3054.2		1.85	

## HYMO SUMMARY TABLE

Pg. 11

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
		206.5	36		5.7090	3054.2		1.85	
		206.2	22		5.7090	3073.9		1.85	
	HYDROGRAPH AT	207.10	2	-	0.2390	156.5	NA	1.60	1.0
	ROUTED		2	5					
		207.10	2		0.2390	156.5		1.60	
		207.2	5		0.2390	127.1		1.70	
	HYDROGRAPH AT	207.30	3	-	0.2480	103.0	NA	1.70	0.6
	COMBINED FLOW AT	207.4	5& 3	6	0.4870	230.2		1.70	
	ROUTED		6	7					
		207.4	6		0.4870	230.2		1.70	
		206.2	7		0.4870	225.8		1.75	
	HYDROGRAPH AT	207.40	4	-	0.0490	26.0	NA	1.60	0.8
	COMBINED FLOW AT	207.5	7& 4	8	0.5360	246.6		1.70	
	ROUTED		8	9					
		207.5	8		0.5360	246.6		1.70	
		206.2	9		0.5360	249.0		1.75	
	HYDROGRAPH AT	205.10	2	-	0.0860	37.5	NA	1.70	0.6
	COMBINED FLOW AT	207.5	9& 2	10	0.6220	284.9		1.75	
	COMBINED FLOW AT	207.5	22&10	11	6.3310	3320.4		1.85	
	ROUTED		11	12					
		207.5	11		6.3310	3320.4		1.85	
		206.2	12		6.3310	3335.8		1.85	
	HYDROGRAPH AT	207.40	5	-	0.0170	10.2	NA	1.60	0.9
	COMBINED FLOW AT	207.5	12& 5	13	6.3480	3340.3		1.85	
	ROUTED		13	14					
		207.5	13		6.3480	3340.3		1.85	
		206.2	14		6.3480	3353.1		1.85	
	HYDROGRAPH AT	205.10	3	-	0.0230	11.4	NA	1.65	0.7
	COMBINED FLOW AT	207.5	14& 3	15	6.3710	3360.7		1.85	
	HYDROGRAPH AT	212.10	2	-	0.1380	64.6	NA	1.65	0.7
	ROUTED		2	4					
		212.10	2		0.1380	64.6		1.65	
		207.2	4		0.1380	63.5		1.70	
	HYDROGRAPH AT	212.30	3	-	0.0560	40.8	NA	1.55	1.1
	COMBINED FLOW AT	207.4	4& 3	5	0.1940	92.5		1.65	
	COMBINED FLOW AT	207.4	15& 5	27	6.5650	3422.8		1.85	
	ROUTED		37	6					
		AP107	37		0.2000	199.9		1.65	
		207.2	6		0.2000	171.0		1.80	
	HYDROGRAPH AT	208.20	2	-	0.1870	75.5	NA	1.70	0.6
	COMBINED FLOW AT	208.4	6& 2	7	0.3870	244.3		1.75	
	ROUTED		7	8					
		208.4	7		0.3870	244.3		1.75	
		208.3	8		0.3870	244.1		1.75	
	HYDROGRAPH AT	208.30	3	-	0.1670	58.3	NA	1.75	0.5
	COMBINED FLOW AT	208.4	8& 3	9	0.5540	302.4		1.75	
	ROUTED		9	10					
		208.4	9		0.5540	302.4		1.75	
		208.2	10		0.5540	292.7		1.85	

## HYMO SUMMARY TABLE

Pg. 12

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	HYDROGRAPH AT	208.40	4	-	0.1510	52.6	NA	1.75	0.5
	COMBINED FLOW AT	208.5	10& 4	11	0.7050	342.7		1.85	
	ROUTED		11	12					
		208.5	11		0.7050	342.7		1.85	
		206.2	12		0.7050	335.0		1.85	
	HYDROGRAPH AT	208.40	5	-	0.0490	29.3	NA	1.60	0.9
	COMBINED FLOW AT	208.5	12& 5	13	0.7540	348.4		1.85	
	ROUTED		38	6					
		108.00	38		0.1100	113.8		1.65	
		208.2	6		0.1100	102.8		1.70	
	ROUTED		43	7					
		AP3	43		1.2050	888.2		1.85	
		208.2	7		1.2050	889.2		1.85	
	COMBINED FLOW AT	209.4	6& 7	8	1.3150	978.4		1.85	
	ROUTED		8	9					
		209.4	8		1.3150	978.4		1.85	
		208.2	9		1.3150	966.3		1.90	
	ROUTED		35	10					
		105.00	35		0.0470	40.6		1.65	
		208.2	10		0.0470	29.9		1.80	
	COMBINED FLOW AT	209.4	9&10	11	1.3620	994.9		1.90	
	ROUTED		11	12					
		209.4	11		1.3620	994.9		1.90	
		208.2	12		1.3620	997.8		1.90	
	HYDROGRAPH AT	209.20	2	-	0.2260	95.0	NA	1.75	0.6
	COMBINED FLOW AT	209.4	12& 2	14	1.5880	1075.2		1.90	
	ROUTED		14	15					
		209.4	14		1.5880	1075.2		1.90	
		209.3	15		1.5880	1063.7		1.90	
	HYDROGRAPH AT	209.30	3	-	0.1700	70.1	NA	1.70	0.6
	COMBINED FLOW AT	209.4	15& 3	16	1.7580	1120.7		1.90	
	ROUTED		16	17					
		209.4	16		1.7580	1120.7		1.90	
		209.2	17		1.7580	1093.9		1.95	
	HYDROGRAPH AT	209.40	4	-	0.1280	62.0	NA	1.65	0.7
	COMBINED FLOW AT	209.5	17& 4	18	1.8860	1128.0		1.95	
	ROUTED		18	19					
		209.5	18		1.8860	1128.0		1.95	
		209.2	19		1.8860	1127.3		1.95	
	HYDROGRAPH AT	209.40	5	-	0.0100	8.4	NA	1.50	1.3
	COMBINED FLOW AT	209.5	19& 5	20	1.8960	1128.5		1.95	
	COMBINED FLOW AT	209.5	13&20	24	2.6500	1461.2		1.95	
	HYDROGRAPH AT	210.20	2	-	0.0950	38.6	NA	1.80	0.6
	ROUTED		2	8					
		210.20	2		0.0950	38.6		1.80	
		210.3	8		0.0950	37.1		1.85	
	HYDROGRAPH AT	210.30	3	-	0.0660	43.6	NA	1.60	1.0
	HYDROGRAPH AT	210.30	5	-	0.0380	25.1	NA	1.60	1.0
	COMBINED FLOW AT	210.4	8& 3	9	0.1610	67.6		1.70	

## HYMO SUMMARY TABLE

Pg. 13

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	COMBINED FLOW AT ROUTED	210.4	9& 5 10	10 11	0.1990	90.4		1.65	
		210.4	10		0.1990	90.4		1.65	
		210.3	11		0.1990	77.6		1.80	
	HYDROGRAPH AT	210.30	4	-	0.1910	117.4	NA	1.65	0.9
	COMBINED FLOW AT	210.4	11& 4	12	0.3900	182.3		1.70	
	ROUTED		12 13						
		210.4	12		0.3900	182.3		1.70	
		210.3	13		0.3900	181.9		1.70	
	ROUTED		24	14					
		209.5	24		2.6500	1461.2		1.95	
		210.3	14		2.6500	1448.4		2.00	
	COMBINED FLOW AT	210.4	14&13	15	3.0400	1573.4		1.95	
	HYDROGRAPH AT	210.30	6	-	0.0770	47.0	NA	1.65	0.9
	COMBINED FLOW AT	210.4	15& 6	26	3.1170	1594.6		1.95	
	ROUTED		27 20						
		207.4	27		6.5650	3422.8		1.85	
		210.3	20		6.5650	3404.8		1.85	
	ROUTED		26	21					
		210.4	26		3.1170	1594.6		1.95	
		210.3	21		3.1170	1589.0		2.00	
	COMBINED FLOW AT	210.4	20&21	22	9.6820	4797.1		1.90	
	HYDROGRAPH AT	210.30	7	-	0.0460	39.2	NA	1.55	1.3
	COMBINED FLOW AT	210.4	22& 7	23	9.7280	4807.0		1.90	
	HYDROGRAPH AT	213.10	2	-	0.1110	64.4	NA	1.65	0.9
	ROUTED		2 4						
		213.10	2		0.1110	64.4		1.65	
		210.3	4		0.1110	64.9		1.65	
	HYDROGRAPH AT	213.30	3	-	0.0200	15.5	NA	1.55	1.2
	COMBINED FLOW AT	210.4	4& 3	28	0.1310	77.9		1.60	
	ROUTED		28 24						
		210.4	28		0.1310	77.9		1.60	
		210.3	24		0.1310	77.1		1.65	
	COMBINED FLOW AT	APDAM	23&24	25	9.8590	4851.8		1.90	
	PUNCHED HYD	APDAM	25	-	9.8590	4851.8		1.90	
	RESERVOIR HYD	DAMOUT	25	40	9.8590	2442.1		2.35	
	HYDROGRAPH AT	210.30	8	-	0.0270	67.1	NA	1.50	3.8
	COMBINED FLOW AT	AP301	40& 8	40	9.8860	2446.0		2.35	
	ROUTED		40 3						
		AP301	40		9.8860	2446.0		2.35	
		211.5	3		9.8860	2445.4		2.35	
	HYDROGRAPH AT	413.00	5	-	0.0280	54.2	NA	1.50	3.0
	HYDROGRAPH AT	414.00	2	-	0.0720	139.3	NA	1.50	3.0
	COMBINED FLOW AT	414.10	2& 5	2	0.1000	193.5		1.50	
	COMBINED FLOW AT	414.20	3& 2	1	9.9860	2454.0		2.35	
	ROUTED		1 3						
		414.20	1		9.9860	2454.0		2.35	
		211.7	3		9.9860	2453.7		2.35	
	HYDROGRAPH AT	213.40	4	-	0.1530	218.4	NA	1.60	2.2

## HYMO SUMMARY TABLE

Pg. 14

## INTEL PHASE 2, WATERSHED FULLY DEV. 1000 CFS POND

0	DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	COMBINED FLOW AT	220.40	4& 3	4	10.1390	2475.2		2.35	
	HYDROGRAPH AT	410.00	2	-	0.0740	98.3	NA	1.60	2.0
	HYDROGRAPH AT	411.00	5	-	0.0030	7.6	NA	1.50	3.9
	COMBINED FLOW AT	480.00	5& 2	5	0.0770	103.5		1.60	
	ROUTED 54"		5	2					
		480.00	5		0.0770	103.5		1.60	
		411.50	2		0.0770	100.2		1.65	
	HYDROGRAPH AT	412.00	6	-	0.0240	45.0	NA	1.50	2.9
	COMBINED FLOW AT	412.1	2& 6	6	0.1010	131.7		1.60	
	ROUTED 42"		6	5					
		412.1	6		0.1010	131.7		1.60	
		412.2	5		0.1010	131.9		1.60	
	ROUTED 42"		5	6					
		412.2	5		0.1010	131.9		1.60	
		412.3	6		0.1010	132.0		1.60	
	ROUTED 36"		6	5					
		412.3	6		0.1010	132.0		1.60	
		412.4	5		0.1010	131.0		1.60	
	ROUTED 42"		5	6					
		412.4	5		0.1010	131.0		1.60	
		412.5	6		0.1010	130.7		1.60	
	HYDROGRAPH AT	415.00	5	-	0.0330	61.8	NA	1.50	2.9
	HYDROGRAPH AT	416.00	2	-	0.0180	43.7	NA	1.50	3.7
	COMBINED FLOW AT	416.10	2& 5	2	0.0510	105.5		1.50	
	HYDROGRAPH AT	417.00	3	-	0.0520	97.4	NA	1.50	2.9
	COMBINED FLOW AT	417.1	3& 2	3	0.1030	203.0		1.50	
	COMBINED FLOW AT	L11	3& 6	3	0.2040	300.8		1.55	
	COMBINED FLOW AT	AP7	4& 3	3	10.3430	2504.5		2.30	
	COMBINED FLOW AT	100	3&50	3	12.1826	3555.7		2.20	
	ROUTED		3	4					
		100	3		12.1826	3555.7		2.20	
		BLACK	4		12.1826	3548.1		2.25	
	HYDROGRAPH AT	39.00	5	-	0.0020	5.5	NA	1.50	4.2
	HYDROGRAPH AT	40.00	6	-	0.0213	53.1	NA	1.50	3.8
	COMBINED FLOW AT	38.1	5& 6	7	0.0234	58.6		1.50	
	ROUTED 42"		7	8					
		38.1	7		0.0234	58.6		1.50	
		RCP1	8		0.0234	54.9		1.50	
	COMBINED FLOW AT	110	8& 4	9	12.2059	3553.0		2.25	

**EXCERPTS FROM INTEL STUDY**

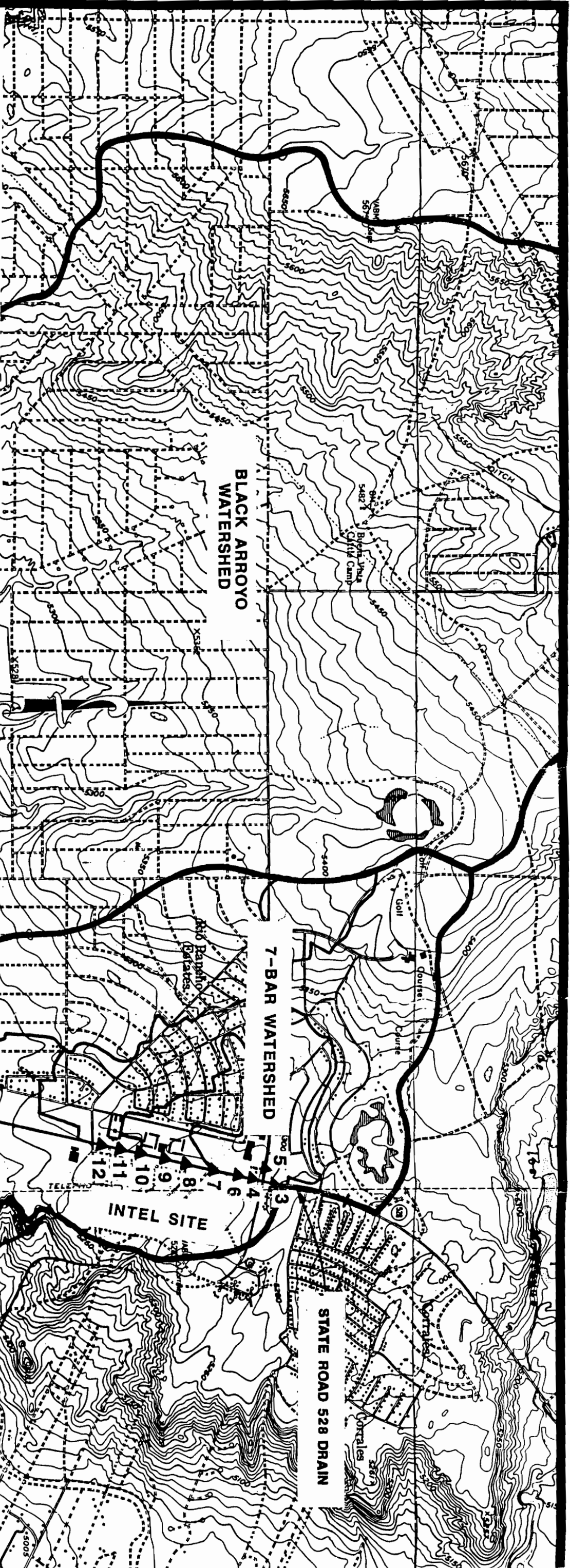


#### **D. Black Arroyo and 7-Bar Watersheds**

The model that simulates the hydrology for the Intel site was combined with the Black Arroyo and 7-Bar models that Bohannon-Huston Inc. had created for AMAFCA. This model was previously used to size the Black Arroyo Dam, which was constructed in 1992. The Black Arroyo Dam was constructed to capture sediment and reduce peak flows generated from the Black Arroyo Watershed. The majority of the Black Arroyo Watershed lies within the municipal boundaries of Rio Rancho. The Black Arroyo Dam is therefore designed to insure the Blacks Diversion is not overtopped during the 100-year storm event. The model utilized for the Black Arroyo and 7-Bar Watersheds is based on full development conditions.

The flows outletting from the Intel site flow into the NM 528 earthen channel. At that point, the flows combine with the rest of the basin in the 7-Bar Watershed which, in general, lies north and west of Intel (see Figure 2, 7-Bar Watershed Map). The flows are then carried in the 7-Bar Channel to its confluence with Blacks Diversion, at which point the flows combine with flows from the Black Arroyo (see Figure 3, Black Arroyo Watershed Map).

The 7-Bar Watershed, at the confluence with Intel flows, has a drainage area of approximately 1.4 square miles and drains most of the easterly portion of the Rio Rancho area (see Figure 2). The NM 528 earthen channel collects the flows from the portion of Rio Rancho in the 7-Bar Watershed. The earthen channel has a number of constrictions caused by culvert structures at road crossings which, in general, are not sufficiently large to carry the 100-year flows. Figure 2 shows a comparison of the flows that are anticipated from the contributing basins versus the capacity of each of the channel culvert structures. These crossing structures prevent the entire flow of 1234 cfs (see Table 4) from being delivered to the 7-Bar Channel from the Rio Rancho area. However, for this analysis, the assumption has been made that at



FLOW ANALYSIS POINT	Q CAPACITY - CFS -	Q100 - CFS -
3	300	294
4	411	605
5	105	333
6	411	605
7	411	669
8	411	659
9	411	659
10	561	798
11	760	795
12	760	795
13	925	1014
14	925	1159
15	1330	1211

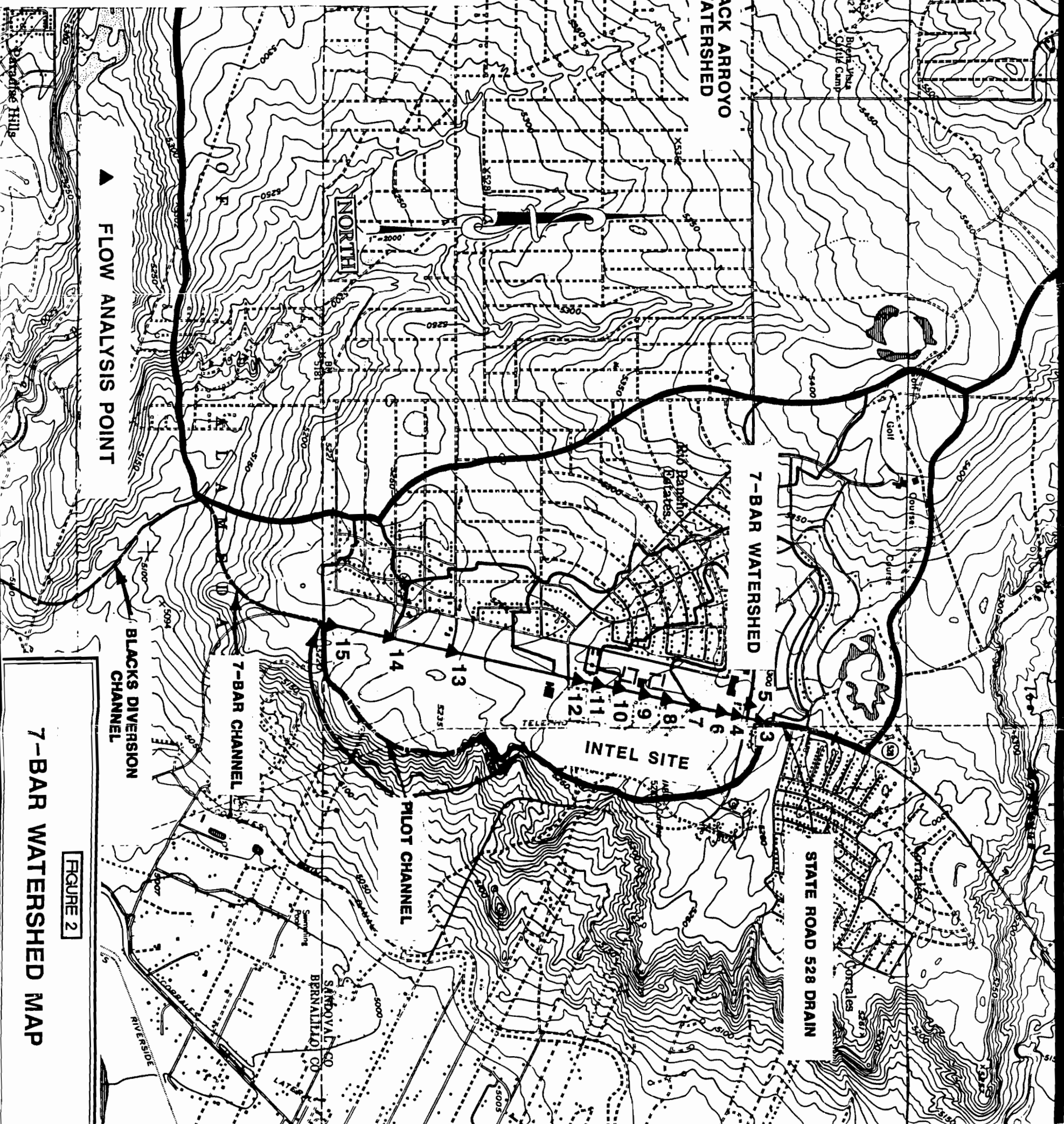


FIGURE 2

7-BAR WATERSHED MAP



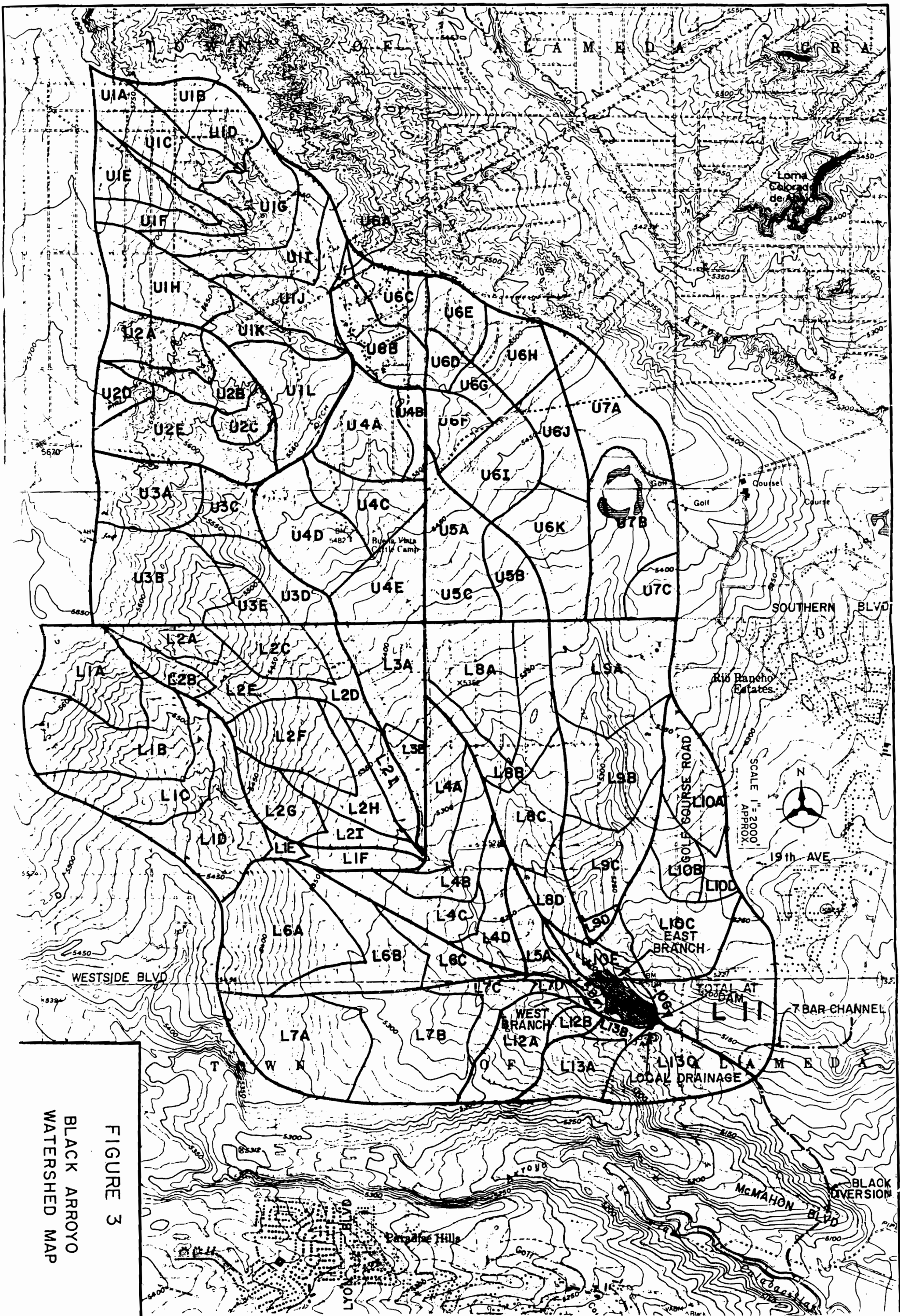


FIGURE 3  
BLACK ARROYO  
WATERSHED MAP

**TABLE 4**  
**BLACK ARROYO AND 7-BAR WATERSHED FLOWS**  
**100-Year Flows**

Flow Location	Phase 1 Watershed Developed cfs (1)	Phase 1 Existing Watershed cfs (2)	Phase 2 Watershed Developed No Ponding cfs (3)	Phase 2 Watershed Developed 7-Bar Max. is 1250 cfs cfs (4)	Phase 2 Watershed Developed 7-Bar Max. is 1000 cfs cfs (5)
Rio Rancho - Upstream of Intel	1234	970	1234	1234	1234
528 Pond - Upstream of Intel	--	--	--	964	802
Volume Required	--	--	--	20.6 ac.-ft.	30.3 ac.-ft.
Intel site Flow	186	186	490	484	484
Intel Detention Pond	--	--	--	337.6	231
Volume Required	--	--	--	8.7 ac.-ft.	13.15 ac.-ft.
Flow Entering 7-Bar Channel	1407	1150	1560	1230	1015
7-Bar Channel at Black Arroyo	1433	1192	1580	1295	1064
Black Arroyo Upstream of 7-Bar	2503	2440	2505	2505	2505
Flow Entering Blacks Diversion	3697	3640	3804	3711	3470
Blacks Diversion at Calabacillas	3693	3640	3818	3706	3468

**Notes:**

1. Phases 1 and 2 refer to Intel site expansions
2. Watershed Developed - 7-Bar and Black Arroyo at ultimate development
3. Column 1 represents the flows in the downstream facilities assuming the undersized structure along the NM 528 Channel have been up-sized.
4. Column 2 shows the flows in the downstream facilities with the existing undersized structures in the NM 528 Channel. Flow calculation is based on the assumption that half the weir flow at each structure adds back into the channel.
5. Column 4 represents the capacity of 7-Bar Channel if the channel is upgraded from the present capacity of 1000 cfs to 1250 cfs.

some point in the future these structures will be upgraded to accommodate the anticipated 100-year flows.

Table 4, Black Arroyo and 7-Bar Watershed Flows, shows the peak flows at key points for both Phase 1 and Phase 2 development conditions at the Intel site. From previous reports performed for AMAFCA by Bohannon-Huston Inc., the capacity of the Blacks Diversion is 3,700 cfs, and the capacity of the 7-Bar Channel is 1000 cfs. A comparison of the capacities of the drainage facilities and the 100-year flows are shown in Table 5.

**TABLE 5**  
**DOWNSTREAM DRAINAGE FACILITIES CAPACITY**

Drainage Facility	Structure Capacity cfs	100-year Flows	
		Phase 1 cfs	Phase 2 cfs
3-42" RCPs - Intel Storm Outlet	190	186	490
7-Bar Channel at Upstream End	1,000	1,407	1,560
7-Bar Channel at Confluence with Blacks Diversion	1,000	1,433	1,580
Blacks Diversion	3,700	3,697	3,804

NOTE: Flows shown are with 7-Bar and Black Arroyo Watersheds fully developed.

Table 5 shows that the 7-Bar Channel is under capacity for Phase 1 and Phase 2, and the Blacks Diversion and the three 42" RCPs are under capacity for Phase 2. The flows shown in this table assume Rio Rancho has up-sized the drainage crossing structures along the NM 528 Channel. The impact on the Intel development is that either the drainage structures must be increased in capacity or a detention pond is

required to attenuate the peak flows. The following section on hydraulics examines the facilities drainage capacity issue.

## **V. HYDRAULICS**

As part of this study, the downstream drainage facilities were examined to first review the capacity of the existing structures, and secondly, examine the potential for increasing their capacities.

### **A. Black Arroyo Dam**

Constructed in 1992 by AMAFCA, this dam has a storage capacity of 200 acre-feet. At present, the entire storage capacity has not been completely excavated since the Black Arroyo Watershed is not fully developed. AMAFCA has indicated that additional storage capacity will be developed in the near future as part of a Corps of Engineers project which will remove earth from the storage pond.

One possibility to remedy the downstream system capacity problems would be to increase the amount of water storage behind the dam. Increasing the storage would make it possible to decrease the peak flow discharging from the dam.

The potential improvements that would be necessary to decrease the peak flow discharging from the dam (and thereby reduce the peak flow entering Blacks Diversion) entails increasing the storage capacity and/or modifying the principal spillway. An analysis to upgrade this facility was not performed, mainly due to the fact that the costs involved would be excessive. Additionally, the main system constraint is the 7-Bar Channel and Blacks Diversion, not the Black Arroyo Dam. The main reason for the high cost was due to the fact that additional land would be required and the dam outlet structure would need modification.

## **B. Blacks Diversion**

The Blacks Diversion has a capacity of 3,700 cfs with sediment bulking (3,600 cfs without sediment bulking). Typically, flows calculated in a hydrologic model are for clear water. However, almost all runoff picks up and transports sediment as it moves across the earth's surface. The flow has therefore been increased by a factor (referred to as sediment bulking) to reflect the fact that a portion of the runoff is composed of sediment.

Bohannon-Huston Inc., as part of the design analysis for Black Arroyo Dam, investigated the possibility of increasing the capacity of the Blacks Diversion. For this project, increasing the Blacks Diversion to accommodate the additional 100 cfs required would entail placing an 8" block on top of the existing walls for the entire length of the channel. It is believed that the walls can handle the additional height without major reinforcement, but this has never been verified with the Soil Conservation Service who constructed the facility. However, from the Black Arroyo design analysis, it was not considered cost effective to attempt to increase the capacity of the Blacks Diversion.

## **C. Black Arroyo and 7-Bar Confluence**

Easterling & Associates, Inc., analyzed and designed an upgrade to this confluence in 1990. In this effort, the confluence was designed for a maximum capacity of 4,200 cfs, which at the time would have been the maximum capacity of Blacks Diversion if an 8" block upgrade had been constructed. The flows calculated in this report indicate that the confluence does not need upgrading; however; this may have to be verified in a physical model study should the 7-Bar Channel be upgraded.

#### **D. 7-Bar Channel**

The 7-Bar Channel was designed to carry a peak flow of 1,000 cfs. The channel was constructed in 1983, well before the Black Arroyo Dam was constructed. The channel was designed using a more conservative freeboard equation that has since been revised by both the City and AMAFCA. The present equation indicates that substantial reaches of the 7-Bar Channel have capacity greater than 1,000 cfs. The channel has markedly different slopes. The initial part of the channel has a fairly flat slope where it parallels NM 528. However, once the channel alignment veers away from NM 528, the channel leaves the mesa top and traverses through a steep slope area.

This study performed a detailed analysis of the channel capacity using the Corps of Engineers hydraulic program HEC-2. Once the water surface depths were determined from the HEC-2 analysis, the results were incorporated into a spreadsheet to determine the total freeboard and superelevation required based on the present freeboard equations currently used by AMAFCA. The results of the freeboard analysis are summarized in Table 6. Table 6 reflects the peak of 1150 cfs from Phase 1 with the existing undersized structures in the NM 528 channel.

A number of flow rates were analyzed in order to determine the optimal flow capacity. Table 7 reflects the flow capacity the majority of 7-Bar Channel can adequately pass is 1250 cfs. The exception to this is at the upstream end of the channel from Sta. 30+75 to Sta. 43+75, a distance of approximately 1,200 feet. In this portion, the channel freeboard is deficient by up to .5 feet.



**TABLE 6**  
**7-BAR CHANNEL FREEBOARD - 1,150 CFS**

Location	Water Depth ft.	Water Discharge cfs.	Flow Area sq. ft.	Velocity fps.	Radius of Horiz. Curve ft.	Normal Freeboard ft.	Super Elevation Freeboard ft.	Total Freeboard ft.	Channel Depth Required ft.	Existing Channel Depth ft.
Trapezoidal Channel	(1)									
	Sta. 43+75 7bar	5.25	1,150.0	107.63	10.7	0	1.7	1.7	7.0	7.0
	Sta. 35+00 7bar	5.24	1,150.0	107.32	10.7	1395	1.7	1.8	7.1	7.0
	Sta. 32+00 7bar	4.87	1,150.0	96.13	12.0	1395	1.8	1.9	6.7	7.0
	Sta. 30+75 7bar	5.01	1,150.0	100.30	11.5	1395	1.7	1.8	6.9	7.0
	Sta. 29+50 7bar	4.07	1,150.0	73.83	15.6	1395	1.8	2.0	6.1	7.0
	Sta. 28+50 7bar	3.31	1,150.0	55.01	20.9	1395	1.9	2.2	5.5	7.0
	Sta. 27+50 7bar	2.93	1,150.0	46.47	24.7	1395	2.0	2.4	5.3	6.5
	Sta. 26+50 7bar	2.80	1,150.0	43.68	26.3	0	2.0	2.0	4.8	6.5
	Sta. 25+50 7bar	2.89	1,150.0	45.60	25.2	0	2.0	2.0	4.9	6.5
	Sta. 24+75 7bar	3.06	1,150.0	49.33	23.3	0	2.0	2.0	5.1	6.5
	Sta. 24+25 7bar	3.09	1,150.0	50.00	23.0	0	2.0	2.0	5.1	6.6
	Sta. 23+75 7bar	3.02	1,150.0	48.44	23.7	0	2.0	2.0	5.0	6.5
	Sta. 23+00 7bar	2.81	1,150.0	43.89	26.2	0	2.0	2.0	4.9	6.5
	Sta. 21+00 7bar	2.42	1,150.0	35.91	32.0	658	2.2	3.2	5.6	6.5
	Sta. 20+00 7bar	2.36	1,150.0	34.74	33.1	658	2.2	3.3	5.6	6.5
Rectangular channel	Sta. 18+50 7bar	2.40	1,150.0	35.52	32.4	658	2.2	3.2	5.6	6.5
	Sta. 16+50 7bar	2.45	1,150.0	36.51	31.5	658	2.1	3.2	5.6	6.5
	Sta. 15+50 7bar	2.52	1,150.0	37.90	30.3	0	2.1	2.1	4.6	6.0
	Sta. 14+50 7bar	2.71	1,150.0	41.79	27.5	0	2.1	2.1	4.8	6.0
	Sta. 10+50 7bar	3.34	1,150.0	55.71	20.6	0	1.9	1.9	5.3	6.0
	Begin transition									
	Sta. 10+25 7bar	3.28	1,150.0	54.32	21.2	0	2.0	2.0	5.2	6.2
	Sta. 9+75 7bar	3.45	1,150.0	58.31	19.7	0	1.9	1.9	5.4	6.9
	Sta. 9+25 7bar	3.14	1,150.0	51.12	22.5	0	2.0	2.0	5.1	7.5
Confluence - Black's Diversion	Sta. 8+75 7bar	3.39	1,150.0	33.90	33.9	0.0	2.3	2.3	5.7	8.2
	Sta. 8+25 7bar	4.18	1,150.0	41.80	27.5	0.0	2.2	2.2	6.4	8.9
	Sta. 7+75 7bar	5.75	1,150.0	57.50	20.0	335.8	2.0	2.4	8.1	9.0
	Sta. 5+00 7bar	5.47	1,150.0	54.70	21.0	335.8	2.0	2.5	7.9	9.7
	Sta. 4+00 7bar	7.33	1,150.0	73.30	15.7	335.8	1.9	2.2	9.5	9.7
	Sta. 3+00 7bar	7.41	1,150.0	74.10	15.5	335.8	1.9	2.2	9.6	10.0
	Sta. 2+00 7bar	7.50	1,150.0	75.00	15.3	335.8	1.9	2.1	9.6	10.0

**TABLE 7**  
**7-BAR CHANNEL FREEBOARD - 1,250 CFS**

Location	Water Depth ft.	Water Discharge cfs.	Flow Area sq. ft.	Velocity fps.	Radius of Horiz. Curve ft.	Normal Freeboard ft.	Super Elevation Freeboard ft.	Total Freeboard ft.	Channel Depth Required ft.	Existing Channel Depth ft.
Trapezoidal Channel	(1)									
	Sta. 43+75 7bar	1,250.0	115.50	10.8	0	1.7	0.0	1.7	7.2	7.0
	Sta. 35+00 7bar	1,250.0	113.59	11.0	1395	1.7	0.1	1.8	7.3	7.0
	Sta. 32+00 7bar	1,250.0	107.63	11.6	1395	1.8	0.1	1.9	7.1	7.0
	Sta. 30+75 7bar	1,250.0	107.32	11.6	1395	1.8	0.1	1.9	7.1	7.0
	Sta. 29+50 7bar	1,250.0	78.36	16.0	1395	1.9	0.2	2.0	6.3	7.0
	Sta. 28+50 7bar	1,250.0	59.02	21.2	1395	2.0	0.3	2.2	5.7	7.0
	Sta. 27+50 7bar	1,250.0	49.55	25.2	1395	2.0	0.4	2.4	5.5	6.5
	Sta. 26+50 7bar	1,250.0	46.47	26.9	0	2.1	0.0	2.1	5.0	6.5
	Sta. 25+50 7bar	1,250.0	48.66	25.7	0	2.1	0.0	2.1	5.1	6.5
	Sta. 24+75 7bar	1,250.0	52.48	23.8	0	2.0	0.0	2.0	5.2	6.5
	Sta. 24+25 7bar	1,250.0	52.94	23.6	0	2.0	0.0	2.0	5.2	6.6
	Sta. 23+75 7bar	1,250.0	51.57	24.2	0	2.0	0.0	2.0	5.2	6.5
	Sta. 23+00 7bar	1,250.0	46.91	26.6	0	2.1	0.0	2.1	5.0	6.5
	Sta. 21+00 7bar	1,250.0	38.10	32.8	658	2.2	1.1	3.3	5.8	6.5
	Sta. 20+00 7bar	1,250.0	37.10	33.7	658	2.2	1.2	3.4	5.9	6.5
Rectangular channel	Sta. 18+50 7bar	1,250.0	37.70	33.2	658	2.2	1.1	3.3	5.8	6.5
	Sta. 16+50 7bar	1,250.0	38.91	32.1	658	2.2	1.1	3.3	5.8	6.5
	Sta. 15+50 7bar	1,250.0	40.13	31.1	0	2.2	0.0	2.2	4.8	6.0
	Sta. 14+50 7bar	1,250.0	44.10	28.3	0	2.1	0.0	2.1	4.9	6.0
	Sta. 10+50 7bar	1,250.0	58.78	21.3	0	2.0	0.0	2.0	5.4	6.0
	Begin transition									
	Sta. 10+25 7bar	1,250.0	57.36	21.8	0	2.0	0.0	2.0	5.4	6.2
	Sta. 9+75 7bar	1,250.0	61.92	20.2	0	1.9	0.0	1.9	5.5	6.9
	Sta. 9+25 7bar	1,250.0	53.86	23.2	0	2.0	0.0	2.0	5.3	7.5
	Sta. 8+75 7bar	1,250.0	33.00	37.9	0	2.4	0.0	2.4	5.7	8.2
Confluence - Black's Diversion	Sta. 8+25 7bar	1,250.0	40.60	30.8	0	2.3	0.0	2.3	6.3	8.9
	Sta. 7+75 7bar	1,250.0	55.40	22.6	335.84	2.1	0.5	2.6	8.1	9.0
	Sta. 5+00 7bar	1,250.0	62.70	19.9	335.84	2.0	0.4	2.4	8.7	9.7
	Sta. 4+00 7bar	1,250.0	71.50	17.5	335.84	2.0	0.3	2.3	9.4	9.7
	Sta. 3+00 7bar	1,250.0	72.60	17.2	335.84	2.0	0.3	2.3	9.5	10.0
	Sta. 2+00 7bar	1,250.0	73.50	17.0	335.84	2.0	0.3	2.2	9.6	10.0