APPENDICES FOR CHAPTER 9

APPENDIX 9.1-1

RESULTS OF CULVERT CAPACITY ANALYSIS

NOTES FOR THE TABLE

AREA	- Discharge Area No.
No.	- Culvert No.
STATION	- Culvert Location
Pipe	- Pipe size (designed)
Box	- Box size (designed)
LT ELEV.	- Left side invert elevation
FLOW	- Flow direction
RT ELEV.	- Right side invert elevation
LENGTH	- Culvert length
SLOPE	- Culvert slope gradient
V	- Water flow velocity
Q	- Discharge capacity of each culvert
RD & SLOPE	- Discharge from roadway and slopes
TD	- Total discharge from catchment area and roadway/slopes
AD	- Total discharge capacity of culverts in the catchment area
REMARKS	- Add'l: Additional new culvert. When the existing culvert needs to be replaced with bigger size culvert, existing culvert size is shown in the remarks. Designed size is shown in "PIPE" or "BOX".

NOTE - Where no (or blank) TD, catchment area cannot be identified from 1/50,000 map or culverts are located in the same catchment area of a bridge.

LIST OF CULVERTS

PK-1

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
		1113+420.00	0.61		1.32		1.50	12.00	-1.500	5.81	18.819				
	1	1113+574.40		1.80X1.80	-0.30		0.26	18.05	-3.102	8.35	27.063				
	2	1113+602.30		2.40 X 2.40	0.45		2.08	19.14	-8.517	16.77	96.573	0.159			
	3	1113+805.50	0.91		9.97		11.56	23.61	-6.736	6.448	4.192	0.100			
	4	1113+903.40	0.61		16.50		18.77	21.62	-10.497	6.165	1.801				
	5	1114+123.85	0.91		26.57		27.46	21.34	-4.170	5.074	3.299	0.111			
	6	1114+507.84	0.91		47.28		48.71	24.82	-5.761	5.963	3.876				
	7	1114+892.20	0.61		54.92		56.04	21.10	-5.308	4.384	1.281				
	8	1115+218.30	0.91		39.68		40.59	23.82	-3.820	4.856	3.157				
	9	1115+737.50	2-0.91		23.93		24.78	30.67	-2.771	4.136	5.377	0.295			
	11	1115+741.50	0.91		22.72		24.38	30.70	-5.408	5.777	3.756	0.390			
	12	1116+005.95	0.91		25.36		27.22	26.45	-7.031	6.588	4.283				
	13	1116+142.25	0.91		24.44		25.49	21.22	-4.947	5.526	3.592				
	14	1116+315.70		3.00 X 3.00	12.34		12.98	17.50	-3.657	12.75	114.738	0.246			
	15	1116+451.28	0.91		7.71		8.95	28.42	-4.363	5.190	3.374	0.205			
	16	1116+663.80	0.61		2.66		4.32	23.68	-6.165	4.725	1.380	0.345			
	17	1116+736.05	0.61		3.21		4.22	18.54	-5.447	4.441	1.297				
	18	1116+893.90	0.91		2.24		3.02	21.72	-3.591	4.708	3.061	0.218			
	19	1117+008.15	0.61		2.51		3.17	23.72	-2.783	3.174	0.927				
	20	1117+114.30	0.61		2.40		2.99	21.83	-2.703	3.129	0.914	0.098			
	21	1117+161.25	0.61		2.17		3.07	20.86	-4.315	3.953	1.155				
	22	1117+196.65	0.61		1.97		3.05	20.01	-5.396	4.421	1.291	0.213			
	23	1117+359.25	2-0.91		2.30		2.75	20.71	-2.173	3.663	4.762				
	25	1117+448.70	0.61		1.38		2.35	15.58	-6.228	4.749	1.387	0.069			
	26	1117+532.20	0.91		0.58		0.82	21.32	-1.126	2.636	1.714	0.069			
	27	1117+560	0.61		0.65		1.41	18.50	-4.108	3.857	1.127				
	28	1117+696.55	0.61		2.22		2.91	24.41	-2.826	3.199	0.934	0.075			
	29	1117+697.35	2-0.91		2.10		2.70	24.75	-2.424	3.868	5.029				
	31	1117+829.40	0.91		1.46		1.71	21.78	-1.148	2.662	1.730	0.053			
	32	1117+979.67	0.61		0.56		0.96	20.82	-1.921	2.637	0.770	0.147			
	33	1118+023.35	0.61		0.37		0.54	18.18	-0.935	1.840	0.538				
	34	1118+278.00	0.61		1.29		1.99	31.43	-2.227	2.840	0.829				
	35	1118+443.90	0.91		1.00		1.75	24.67	-3.041	4.332	2.816	0.112			
	36	1118+731.70	0.61		2.36		3.02	19.73	-3.346	3.481	1.017	0.304			
	37	1118+810.45	0.61		2.07		2.49	23.28	-1.804	2.556	0.747	0.088			
	38	1118+912.36	0.61		1.10		2.15	22.22	-4.725	4.136	1.208				
	39	1118+993.90	0.61		1.20		1.31	20.55	-0.535	1.392	0.407				
	40	1119+120.66	0.91		0.53					0.000	0.000				
	41	1119+156.90	0.61		0.69		0.85	22.58	-0.708	1.602	0.468				
	42	1119+245.80	0.91		0.96		0.99	20.17	-0.149	0.958	0.623				
	43	1119+345.55	2-0.91		0.40		1.75	22.23	-6.073	6.122	7.960				
	45	1119+553.30	0.91		1.15		1.22	21.16	-0.331	1.429	0.929				
	46	1119+657.90	0.91				2.30			0.000	0.000				
	47	1119+762.50		2.90 X 2.10	0.05		0.48	15.94	-2.698	12.32	75.054				
	48	1119+784.30	0.91		1.82		1.84	19.93	-0.100	0.787	0.512				
	49	1119+806.50	0.91				1.87			0.000	0.000				COVERED
	50	1119+819.25	0.91				2.18			0.000	0.000				COVERED
	51	1119+878.85	0.91		1.88		2.29	21.50	-1.907	3.431	2.230				
	52	119+917.60	0.91		2.20		2.26	20.12	-0.298	1.357	0.882				
	53	1120+191.80	0.91		2.09		2.37	18.19	-1.539	3.082	2.004				
	54	1120+296.00	0.91		1.76		2.09	21.92	-1.505	3.048	1.982				
	55	1120+391.00	0.91		1.00		1.15	23.36	-0.642	1.991	1.294				
	56	1120+392.00	0.61		1.48		1.66	23.65	-0.761	1.660	0.485				
	57	1120+447.05	0.91		1.86		2.15	20.86	-1.390	2.930	1.904				
	58	1120+531.90	0.91		1.85		2.23	20.79	-1.828	3.359	2.184				
	59	1120+588.60	0.91		1.75		2.19	20.79	-2.117	3.615	2.350				
	60	1120+628.00	0.91		1.81		1.99	22.21	-0.810	2.237	1.454				
	61	1120+722.90	0.91		1.93		2.36	20.97	-2.051	3.558	2.313				
	62	1120+846.50	0.91		2.14		2.22	21.97	-0.364	1.499	0.974				

LIST OF CULVERTS

PK-1

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TO (m³/s)	AD (m³/s)	REMARKS
	63	1121+364.68	0.91		2.60		2.32	21.82	1.283	2.814	1.829				
	64	1121+378		3.00 X 2.00	2.29		2.28	13.01	0.077	1.67	10.005				
	65	1122+507.30		2-1.50X1.90	1.18		0.66	20.69	2.514	6.99	39.840				
1-1		1125+000		2-1.80x1.80	7.25		7.10	14.00	1.071	4.70	30.471		43.09	59.9	Addl
	66	1125+134.60		2-1.80x1.80	6.20		6.02	18.00	1.000	4.54	29.437	0.042			1-0.61
	67	1125+251.35	0.91		6.70		6.06	16.00	4.000	4.969	3.230	0.213			1-0.61
	68	1125+265.40	0.61		7.50		7.32	17.54	1.026	1.927	0.563	0.210			
1-2	69	1125+570.50	1.22		5.70		5.54	16.00	1.000	3.021	3.529	0.352	16.47	27.8	1-0.61
	70	1125+726.20	0.91		6.90		6.26	16.00	4.000	4.969	3.230	0.159			1-0.61
	71	1125+824.90	1.22		7.20		6.24	16.00	6.000	7.399	8.645	0.176			1-0.61
	72	1125+886.65	1.22		7.50		6.30	20.00	6.000	7.399	8.645	0.245			1-0.61
	73	1125+988.60	1.22		7.50		6.21	18.00	7.167	8.087	9.448	0.406			1-0.61
1-3	74	1126+162.00	1.22		8.10		6.65	18.00	8.056	8.573	10.017	0.257	11.48	26.5	1-0.91
	75	1126+305.13	1.22		9.40		8.68	18.00	4.000	6.041	7.059	0.172			1-0.61
1-4	76	1126+560.80	1.22	x2	9.00		7.85	23.00	5.000	6.755	15.784	0.168	14.29	32.3	1-0.61
	77	1126+748.20	1.22	x2	7.30		6.20	20.00	5.500	7.084	16.554	0.244			1-0.61
	78	1126+817.20	1.22		6.30		5.54	20.00	3.800	5.888	6.880				1-0.61
1-5	79	1127+000.55	0.91		7.60		6.81	18.00	4.389	5.205	3.383	0.068	10.81	14.3	1-0.61
	80	1127+117.25	0.91		7.84		7.04	16.00	5.000	5.555	3.611				1-0.61
	81	1127+223.55	0.61		8.49		8.39	14.99	0.667	1.555	0.454				
1-6	82	1127+457.10		2-2.40x2.40	5.30		5.19	22.00	0.500	4.06	46.799		29.70	46.8	1-1.52
1-7	84	1127+673.20	1.52	x2	7.10		6.70	16.00	2.500	5.530	20.060		18.03	27.5	1-0.61
	85	1127+849.30	1.22		8.70		7.89	18.00	4.500	6.408	7.487				1-0.61
1-8	86	1128+017	1.22		9.10		8.40	16.00	4.375	6.318	7.382		9.71	12.4	1-0.91
	87	1128+118.05	1.22		8.70		8.36	17.00	2.000	4.272	4.991				1-0.91
1-9	88	1128+268.60		2-1.50x1.50	9.20		8.93	18.00	1.500	5.45	24.529		13.04	24.5	1-0.91
1-10		1128+920	1.22	x3	9.95		8.75	27.00	4.444	6.368	22.322		16.81	22.3	Addl
	89	1129+013.25	0.61		9.57		9.91	15.21	-2.235	2.845	0.831				
1-11	90	1129+482.53		2-1.50x1.50	10.40		9.48	18.00	5.111	9.49	42.726		54.79	43.6	1-0.6x0.6
	91	1129+659.00		1.50 X 2.00	8.30		8.12	19.71	0.913	4.25	12.759				
1-13	92	1129+884.30		1.00 X 1.00	8.98		8.75	21.06	1.092	3.35	3.349		37.14	46.6	
	93	1130+131.35		2-1.50x1.50	10.23		9.76	18.00	2.611	6.79	30.538				1-0.61
1-14	94	1130+406.20	1.52	x2	12.00		11.60	16.00	2.500	5.530	20.060		12.55	20.1	1-0.61
	95	1130+990.10	1.22		11.20		10.98	22.00	1.000	3.021	3.529				1-0.61
1-15	96	1131+426.30	1.22		14.30		13.49	18.00	4.500	6.408	7.487	0.111	21.40	30.0	1-0.61
	97	1131+527.05	0.61		12.60		11.50	29.38	4.425	4.003	1.169	0.036			
	98	1131+531.70	1.52		14.30		12.66	20.82	7.878	9.817	17.805				
	99	1131+904.70	0.61		11.51		10.50	24.58	4.110	3.858	1.127	0.513			
		1131+960	1.22		12.80		11.60	18.00	6.667	7.799	9.113	0.122			Addl
1-16	100	1132+018.85	1.22		12.00		11.10	18.00	5.000	6.755	7.892	0.086	21.95	25.9	1-0.91
	101	1132+245.68		1.75 X 1.20	13.71		13.61	13.16	0.760	3.69	7.750	0.185			
	102	1132+372.35		2-1.50x1.50	10.00		9.61	26.00	1.500	5.14	23.146				1-0.91
1-17	103	1132+534.70	0.61		13.63		14.01	22.81	-1.666	2.456	0.717		15.04	23.1	
	104	1132+720.45	0.91		13.51		13.76	23.05	-1.085	2.587	1.682				
	105	1132+951.60		3-1.50x1.00	15.80		15.46	17.00	2.000	5.36	24.117				1-0.61
1-18	106	1133+038.25		3-1.50x1.00	15.80		15.63	17.00	1.000	3.79	17.053		68.37	80.9	2-0.61
	108	1133+071.20		3-1.50x1.00	15.90		15.74	16.00	1.000	3.79	17.053				1-0.61
	109	1133+178.8		3-1.50x1.25	15.90		15.74	16.00	1.000	4.02	22.629				1-0.61
1-19	111	1133+568.50		2-1.80x1.80	14.30		13.86	20.00	2.200	7.03	45.582		44.74	58.9	1-0.61, 0.91
	112	1133+722.55	1.52	x2	14.60		14.42	18.00	1.000	3.498	12.687				1-0.61
	113	1133+950.60	0.91		14.22		14.18	24.06	0.168	1.013	0.658				
1-20	114	1134+533.44	0.91		15.24		13.51	39.76	4.351	5.183	3.369	0.179	9.53	14.5	
	115	1134+712.80	1.22	x2	19.10		18.45	26.00	2.500	4.776	11.161				1-0.91
1-21	116	1134+877.65	1.22	x2	19.10		15.43	28.00	13.107	10.936	25.555		14.48	30.0	1-0.91
	117	1134+934.40	0.91		17.68		15.17	33.62	7.466	6.788	4.413				
	118	1135+123.20	0.91	x2	27.10		26.30	16.00	5.000	5.555	7.223				1-0.61
	119	1135+197.19	0.61					17.30							DELETE
1-22	120	1135+279.40	0.75		19.16		18.92	37.10	0.647	1.757	0.776		8.85	22.5	
	121	1135+402.15	1.22		21.50		20.82	17.00	4.000	6.041	7.059				1-0.61
	122	1135+513.60	0.91		23.07		22.98	26.37	0.341	1.451	0.943				1-0.75
	123	1135+743.20	0.91		26.10		20.99	31.17	16.394	10.060	6.539				1-0.61

LIST OF CULVERTS

PK-1

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	124	1136+348.60	0.61		23.06	---►	21.15	23.36	8.175	5.441	1.589				
1-23	125	1136+579.50	0.75		25.41	---►	24.88	23.82	2.225	3.258	1.439		6.79	14.0	
	126	1136+726.00	1.52		22.45	---►	21.67	26.25	2.972	6.030	10.935				
1-23'	127	1137+082.10		3.00 X 3.00	21.52	---►	21.03	18.84	2.600	10.75	96.756	0.188	19.89	97.4	
	128	1137+099.65	0.61		22.37	---►	22.12	18.61	1.343	2.206	0.644				
	129	1137+730.10		2-2.40 X 1.80	22.83	---►	22.52	18.34	1.691	6.96	60.166	0.054			
1-23*	130	1137+884.50	0.91		24.37	---►	23.92	20.14	2.234	3.713	2.414		12.42	64.4	
	131	1137+911.20	0.91		24.18	---►	23.92	19.86	1.309	2.843	1.848				
1-24	132	1139+079.30	0.91	x2	31.80	---►	31.57	15.00	1.533	3.076	4.000		7.39	11.2	2-0.61
	134	1139+581.75	0.91	x2	39.80	---►	38.80	20.00	5.000	5.555	7.223				1-0.61
1-25	135	1139+708.10	0.91		38.57	---►	37.87	21.00	3.333	4.536	2.949	0.106	12.88	132.7	
	136	1139+859.26		3.00 X 3.40	36.28	---►	35.63	18.83	3.452	12.72	129.750	0.464			IN:2-2.4X3.1
	137	1140+149.40	1.22		49.29	---►	48.37	24.45	3.763	5.860	6.847				
1-26	138	1140+246.70	0.91		47.97	---►	46.87	32.63	3.371	4.562	2.955		10.65	27.9	
	139	1140+332.30		1.50 X 1.80	47.91	---►	47.38	22.49	2.357	6.70	18.084	0.123			
	140	1140+570.30	1.22	x2	57.20	---►	56.84	25.00	1.440	3.625	8.471	0.048			1-0.61
	141	1140+679.20	0.61		57.08	---►	54.76	32.10	7.227	5.116	1.494				
1-27	142	1140+816.40	1.52	x2	56.80	---►	56.30	27.00	1.852	4.760	17.265		32.12	42.7	1-0.61
	143	1140+856.60	0.91		53.07	---►	52.65	27.83	1.509	3.052	1.984	0.513			
	144	1141+165.80	1.22	x2	61.60	---►	60.65	26.00	3.654	5.774	13.493				1-0.91
1-28	145	1141+283.80	1.22	x2	59.70	---►	58.50	20.00	6.000	7.399	17.290		26.22	35.4	1-0.61
	146	1141+454.15	1.52	x2	59.39	---►	58.92	23.00	2.043	5.000	18.136				1-1.52 Add'l
	147	1141+533.05	0.91		59.37	---►	59.10	26.29	1.027	2.518	1.637				
1-29	148	1142+944.79		1-2.40x1.80	75.20	◄---	76.34	31.00	-3.677	10.27	44.366		32.47	53.1	1-0.91
	149	1143+016.90	1.22	x2	74.62	◄---	75.10	31.00	-1.548	3.759	8.784	0.040			1-0.91
	150	1143+233.50	0.91	x2	76.91	◄---	77.30	16.00	-2.438	3.879	5.043	0.095			1-0.61
1-30	151	1143+360.00	0.91	x2	77.70	◄---	77.87	18.00	-0.944	2.414	3.139		32.39	38.2	1-0.61
	152	1143+611.75		2.50X2.50	75.42	◄---	75.55	19.62	-0.663	4.61	30.035				
	153	1143+993.75	1.22	x2	74.80	◄---	75.65	31.00	-2.742	5.002	11.688				1-0.61
	154	1144+104.50	0.91		71.83	◄---	72.08	25.96	-0.963	2.438	1.585				
1-31	155	1144+773.70		1.00X1.00	79.89	◄---	80.10	29.42	-0.714	2.71	2.708		54.55	82.0	
	156	1144+898.25		1-2.40x2.40	81.46	◄---	82.90	40.30	-3.573	10.86	62.554				2-0.91
	158	1145+203.95	0.91		83.31	◄---	84.21	19.13	-4.704	5.388	3.503				
	159	1145+419.40	0.91		87.10	◄---	87.30	14.75	-1.356	2.893	1.881				
	160	1145+599.20	0.61		86.74	◄---	86.82	16.45	-0.486	1.327	0.388				
	161	1147+425.75	0.61		98.30	◄---	98.50	28.56	-0.700	1.592	0.465				
	162	1147+846.87		1-1.80x1.80	103.61	◄---	104.30	20.00	-3.450	8.81	28.541				1-0.61
	163	1148+019	1.22	x2	100.30	◄---	101.16	20.00	-4.300	6.264	14.637				1-0.61
1-32	164	1148+260.60	1.22	x2	94.23	◄---	95.36	30.00	-3.767	5.863	13.700		62.57	95.5	1-0.61
	165	1148+367.80	0.61		95.60	◄---	96.21	21.52	-2.835	3.204	0.936				
	166	1148+437.85		1-2.40x2.40	94.83	◄---	95.05	17.00	-1.294	6.54	37.645				1-0.91
1-33	167	1148+986.65		1-2.40x2.40	76.75	◄---	77.18	22.00	-1.955	8.03	46.264		23.43	46.3	1-1.52
1-34	168	1149+968		1-2.40x1.80	72.61	◄---	72.89	18.50	-1.514	6.59	28.463		17.67	28.5	1-1.52
1-35	169	1150+372.25		1-2.40x1.80	69.43	◄---	69.92	25.50	-1.922	7.42	32.071		20.80	32.1	1-1.52
	170	1150+572.15	0.91	x2	73.40	◄---	73.85	16.00	-2.812	4.167	5.417				1-0.61
1-36	171	1150+664.55	0.61		73.87	◄---	74.29	14.59	-2.879	3.229	0.943		15.96	19.4	
	172	1150+861.50	0.91		71.88	◄---	72.09	17.44	-1.204	2.726	1.772				
	173	1150+861.51	0.91		71.88	◄---	72.09	17.44	-1.204	2.726	1.772				
	174	1150+942.50	1.22	x2	73.36	◄---	73.63	15.00	-1.800	4.053	9.470				1-0.61
	175	1151+174.39	0.30		74.57	◄---	75.85	24.66	-5.213	2.707	0.181				W.B.036
	176	1151+844.25	1.22		58.01	◄---	58.40	20.00	-1.950	4.219	4.629	0.273			1-0.61
	177	1152+503.00	0.91		60.38	◄---	61.01	20.94	-3.009	4.310	2.802				1-0.61
1-40	178	1152+801.80		1-1.80x1.80	54.90	◄---	55.25	16.00	-2.188	7.01	22.726		27.33	67.2	1-0.91
	180	1152+885.20	0.91		51.42	◄---	52.30	23.00	-3.826	9.28	30.056				
	181	1153+274.70	1.22	x2	48.60	◄---	49.15	24.00	-2.292	4.573	10.686				2-0.91
	183	1153+452.60	0.91		50.35	◄---	51.15	22.00	-3.636	4.788	3.080	0.249			1-0.61
	184	1153+690.65	0.61		50.07	◄---	50.85	26.40	-2.954	3.271	0.955	0.059			

LIST OF CULVERTS

PK-1

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	185	1153+871.30	0.61	x2	46.58	◄	47.32	29.16	-2.538	3.032	1.771	0.132			
	187	1153+957.96	1.22		47.19	◄	47.63	39.00	-1.128	3.209	3.749				1-0.61
	188	1154+133.05		2-1.40 X 2.00	45.51	◄	45.51	15.76	0.000	0.00	0.000				
1-42	189	1154+316.90		2-1.50 X 2.00	47.07	◄	47.17	12.08	-0.828	4.05	24.295		59.30	35.3	
	190	1154+362.40	0.30		48.48	◄	48.68	18.04	-0.998	1.164	0.084				NIA
	191	1154+435.20	0.91		46.21	◄	46.40	17.00	-1.118	2.627	1.707				1-0.61
	192	1154+700.30	1.22		46.87	◄	47.10	21.00	-1.095	3.161	3.694				1-0.91
	193	1154+937.50		3.00 X 1.80	49.05	◄	49.05	12.63	0.000	0.00	0.000				
	194	1155+000	0.45		50.28	◄	50.51	15.85	-1.451	1.871	0.297				NIA
1-43	195	1155+310.65	1.22	x2	45.40	◄	45.82	19.00	-2.211	4.491	10.495		49.30	19.8	1-0.91
	196	1155+338.40	1.22	x2	45.07	◄	45.30	21.00	-1.095	3.161	7.387				1-0.61
	197	1155+435.20	0.91		46.23	◄	46.41	17.12	-1.052	2.548	1.656				
	198	1155+926.10	0.45		45.07	◄	45.41	18.88	-1.801	2.085	0.331				NIA
	199	1156+083.60		2-1.50 X 2.00	42.76	◄	42.82	12.36	-0.486	3.10	18.607				
	200	1156+163.40	0.61		43.70	◄	44.01	20.91	-1.483	2.317	0.877				Bridge
1-44	201	1156+319.50		2-1.50 X 2.00	42.14	◄	42.39	12.30	-2.032	6.34	38.069		75.68	60.1	
	202	1156+521.35	0.61		44.27	◄	44.56	20.17	-1.438	2.282	0.666				
	203	1156+589.13	0.91		43.21	◄	43.80	20.97	-2.814	4.168	2.709				1-0.61
	204	1156+702.40	0.61		43.40	◄				0.000	0.000			0.0	N/A w/ Bridge
	205	1157+043.45	0.91		40.60	◄	40.93	16.00	-2.062	3.558	2.319			5.0	1-0.61
	206	1157+578.50	0.91		38.50	◄	38.93	16.00	-2.688	4.073	2.648				1-0.61
	207	1158+094.95	0.61		38.78	►	38.64	24.00	0.500	1.346	0.393				THE HSE
	209	1158+103.35	1.07		36.95	►	36.84	23.69	0.464	1.886	1.695				
	210	1158+294.60	0.91		38.42	►	37.65	25.80	2.984	4.292	2.790				
	211	1158+304.40	0.91		38.05	►	37.54	25.66	1.988	3.503	2.277				
	212	1158+314.10	0.91		38.08	►	37.57	25.79	1.977	3.494	2.271				
	213	1158+324.70	0.91		38.09	►	37.30	25.47	3.102	4.376	2.845				
1-47	214	1159+264.55		2-2.40x2.40	38.00	►	37.70	17.00	1.765	7.63	87.921		77.92	87.9	1-0.61
	215	1159+803.20	0.61		45.54	►	45.10	45.65	0.964	1.868	0.546				
	216	1160+059.02	0.61		39.99	►	38.62	38.13	3.593	3.607	1.054	0.190			
1-48	217	1160+221.49		1-1.80x1.80	37.55	►	36.37	18.00	6.556	12.14	39.342	0.170	30.57	63.1	1-0.91
	218	1160+368.80		1-1.80x1.80	39.70	►	39.33	20.00	1.850	6.45	20.900				1-0.91
	219	1160+489.65	0.61		40.75	►	39.64	21.00	5.286	4.375	1.278				
	220	1160+696.70	1.22		39.63	►	39.60	20.00	0.150	1.170	1.357				1-0.61
	221	1160+752.35	1.52	x2	39.78	►	39.48	18.00	1.667	4.515	16.379				2-1.07
1-49	223	1160+881.45	0.91		38.45	►	38.05	15.96	2.506	3.933	2.557		38.77	57.7	
	224	1160+943.15	0.61		38.10	►	37.64	23.00	2.000	2.691	0.786				
	225	1161+090.70		4.00 X 1.60	36.54	►	36.35	22.00	0.864	5.73	36.657				
	226	1161+108.47	1.52	x2	36.50	►	35.66	22.00	3.818	6.834	24.790				1-0.91
1-50	227	1161+231.55	0.61		37.97	►	37.64	18.88	1.748	2.516	0.735		18.90	29.0	
	228	1161+320.09	0.91		38.30	►	37.49	18.00	4.500	5.270	3.426				
	229	1161+480.30	0.61		37.81	►	37.69	19.28	0.622	1.501	0.439				
	230	1161+576.80		2-1.80x1.80	35.80	►	36.59	19.00	-4.158	12.89	83.511				1-0.61
1-51	231	1161+682.10		1.50 X 1.90	36.38	►	36.35	19.00	0.158	1.75	4.992		42.97	101.2	
	232	1161+774.65	0.91		37.70	►	37.48	18.00	1.222	2.747	1.785				1-0.61
	233	1161+889.50		1..20 X 1.50	38.65	►	38.56	14.50	0.621	3.47	9.899				
	234	1162+032.90	0.61		40.00	►	39.81	20.80	0.913	1.819	0.531				
	235	1162+141.60		3.00 X 1.60	40.33	►	40.52	11.84	0.084	1.83	7.641		144.10	7.8	Bridge
	236	1162+473.60		1.70 X 1.70	38.87	►	38.73	17.63	0.794	4.07	11.756				
	237	1162+880.30	0.61		48.06	►	45.57	19.79	2.475	2.994	0.875				
	238	1163+440	0.61		49.15	►	48.50	18.00	4.062	3.835	1.120				
	239	1163+568.35	0.61		48.53	►	47.68	23.01	3.694	3.657	1.068				
		1163+720		2-2.40x2.40	45.40	►	45.25	15.00	1.000	6.32	72.809				Add'l
1-53	240	1163+872.10		2-3.00x2.40	43.33	►	43.18	14.00	1.071	6.54	94.206		56.71	167.0	1-0.61
1-54	241	1164+053.70		1.40 X 1.40	42.21	►	41.97	19.52	1.230	7.01	13.737		17.20	39.5	
		1164+130		1-1.80x1.80	42.70	►	42.43	17.00	1.588	7.97	25.807				Add'l
	242	1165+421.70	0.61		48.30	►	47.77	20.94	2.531	3.027	0.883				N/A w/ Bridge
	243	1165+980.75	0.61		49.44	►	49.20	17.27	1.389	2.243	0.655		21.10	0.7	N/A w/ Bridge
	244	1166+341.60	0.61		49.46	►	49.20	14.92	1.743	2.512	0.734				
1-56	246	1166+637.15		2-1.80x1.80	47.00	►	46.47	15.00	3.533	8.91	57.767		45.83	58.5	1-0.91, 2-0.61
	248	1168+861.80	0.61		49.19	►	48.51	12.69	5.276	4.371	1.277				NIA

LIST OF CULVERTS

K-2 (1/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TO (m³/s)	AD (m³/s)	REMARKS
	1	1167+504.06		1-2.40x2.10	43.20	→	42.40	18.50	4.324	11.582	58.374				1-0.91
	2	1167+508.75	0.91		44.25	→	43.57	18.63	3.650	4.747	3.086				
	3	1167+515.97	0.91	x2	44.32	→	43.46	20.48	4.199	5.091	6.619				
		1168+528.5		2-6.5x3.0	42.57	→	42.42	15.60	0.962	8.793	342.931				Adji
	5	1168+906.76		2.40X1.40	57.84	→	49.18	55.06	15.448	19.584	65.802	0.191			
	6	1169+347.55	1.52	x2	82.41	←	82.91	26.11	-1.915	4.840	17.556				
	8	1169+644.40	0.61		108.63	→	107.73	60.00	1.500	2.331	0.681	0.143			
	9	1169+782.81	0.61		102.53	→	99.06	60.64	5.722	4.552	1.330	0.053			
		1169+965.34	0.61		121.64	←	123.64	40.00	-5.000	4.255	1.243				
	10	1170+016.66	0.91		117.94	←	126.44	39.29	-21.634	11.556	7.512	0.343			
2-1	11	1170+462.70		1-1.50x1.80	139.00	→	137.62	32.00	4.312	9.060	24.462	0.433	18.93	24.48	1-1.52
2-2	12	1170+984.33	1.22	x2	145.15	→	143.73	20.00	7.100	8.049	18.809	0.223	13.12	18.81	1-0.91
	13	1171+045.15	0.91		140.74	→	139.81	17.77	5.234	5.684	3.695	0.048			
	14	1171+344.30	0.91		116.61	→	114.53	40.47	5.140	5.632	3.661	0.250			
2-3	15	1171+443	0.91		108.24	→	105.13	33.56	9.267	7.563	4.916	0.049	24.97	46.16	
	16	1171+607.64	0.61	x2	100.84	→	98.86	37.00	5.351	4.402	2.572	0.113			
	18	1171+731.68	1.52		93.05	→	84.94	39.75	20.403	15.798	28.653	0.057			
	19	1171+800.00	0.61		90.75	→	83.68	30.76	22.984	9.123	2.665	0.057			
2-4	20	1172+010.68	1.22	x2	79.95	→	78.45	22.00	6.818	7.838	18.432	0.167	9.37	18.43	1-1.07
2-5	21	1172+230.67	1.22	x2	63.08	→	60.47	34.60	7.543	8.296	19.387	0.193	11.19	64.97	
	22	1172+292.60	1.52	x2	56.84	→	48.76	62.60	12.907	12.566	45.580				
	24	1172+482.14	0.91		51.27	→	47.77	40.45	8.653	7.308	4.751				
	25	1172+645.90	0.61		46.94	→	46.71	23.25	1.011	1.913	0.559	0.124			
2-6	26	1172+842.25		2-3.00X3.00	38.89	→	38.52	15.33	2.414	10.357	186.428	0.120			
	27	1173+171.28	0.91		35.85	→	35.52	16.53	1.996	3.510	2.282		62.64	194.45	
	28	1173+209.10	0.61		35.38	→	35.27	18.11	0.607	1.483	0.433	0.094			
2-7	29	1173+405.15		2-2.40x1.80	35.70	→	35.57	16.00	0.813	4.827	41.708	0.315	24.02	41.71	1-0.91
	30	1173+958.70		1-1.40X1.50	55.12	→	34.75			0.000	0.000				NA
2-8	31	1173+942.85		2-2.40x1.80	35.65	→	35.53	15.00	0.800	4.790	41.386		34.30	42.43	1-1.22
	32	1174+097.70	0.91		36.71	→	36.64	16.92	0.414	1.598	1.039				
	33	1174+312.80		1-0.60X0.60	37.80	→	37.46			0.000	0.000				NA
	34	1174+359.44		1-0.60X0.60	38.02	→	37.74			0.000	0.000				NA
	35	1174+605.51	0.91		37.68	→	37.63	19.89	0.246	1.233	0.802				
2-9	36	1174+663.47	1.07		39.03	→	38.64	20.32	1.934	3.849	3.459		10.50	16.08	
		1174+720		1-1.10X0.90	40.50	→	40.23	18.00	1.500	3.968	3.948				
	37	1174+724.67	0.91		40.44	→	39.71	17.23	4.237	5.114	3.324				
	38	1174+994.78	1.22		40.04	→	39.77	16.08	1.660	3.892	4.548				
	39	1175+484.72	0.91		40.55	→	40.00	16.00	3.437	4.606	2.994				1-0.61
	40	1175+570.55	0.91		39.50	→	39.15	15.74	2.224	3.705	2.408				
2-10	41	1175+783.95	0.91		38.01	→	37.79	16.05	1.364	2.902	1.887		16.93	21.25	
	42	1175+815.20	0.91		37.77	→	37.43	17.00	2.000	3.514	2.284				1-0.61
	43	1175+992.59		1-1.50X1.50	35.78	→	35.68	18.37	0.544	3.099	6.972				
	44	1176+215.00	1.22		36.28	→	35.96	18.00	1.778	4.028	4.706	0.328			1-0.91
	45	1176+649.90	0.91		36.45	→	36.10	15.83	2.211	3.694	2.401	0.178			
	46	1176+745.27	0.61		36.15	→	35.91	16.00	1.500	2.331	0.681	0.042			
	47	1176+797.08	2-0.91		36.05	→	35.47	17.17	3.378	4.566	5.937				
2-11	49	1176+902.40	0.91		36.15	→	36.00	15.00	1.000	2.484	1.615		20.22	46.31	
	50	1177+148.61	0.91		36.21	→	35.72	14.37	3.410	4.588	2.982				
	52	1177+173.85	3-1.22		35.92	→	35.35	13.17	4.328	6.284	22.027				
	54	1177+319.20	1.52		38.02	→	37.57	15.92	2.827	5.880	10.665				
2-12	55	1177+402.85	2-1.22		39.42	→	39.07	16.99	2.060	4.336	10.131		38.30	53.05	
	57	1177+486.60		2-1.80x1.80	39.70	→	39.31	20.00	1.950	6.623	42.914				1-0.91
2-12'	58	1177+580		2-2.40x2.40	40.51	→	40.28	26.00	0.885	5.404	62.249	0.281	47.78	62.25	2-1.52

LIST OF CULVERTS

PK-2 (2/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	60	1178+041.18	1.52		49.22	---►	44.84	41.68	10.509	11.338	20.563	0.328			
	61	1178+375.10	0.61		65.58	---►	64.09	20.77	7.174	5.097	1.489	0.041			
2-13	62	1178+463.24	0.61		68.34	---►	63.25	28.04	18.153	8.108	2.368		13.62	36.01	
	63	1178+560.33	1.22		63.42	---►	60.03	31.42	10.789	9.922	11.593	0.049			
2-14	64	1178+749.75		2-1.50x1.50	58.00	---►	56.08	32.00	6.000	10.287	46.292	0.187	30.39	46.29	1-1.52
	65	1178+949.55	1.52		45.57	---►	42.84	39.26	6.954	9.223	16.727	0.226			
2-15	66	1179+094.10	0.61		55.50	---►	52.30	23.00	13.913	7.098	2.073	0.050	11.08	25.51	
	67	1179+183.43	1.22		58.81	---►	58.12	19.10	3.613	5.741	6.708	0.204			
	68	1179+516.58	0.61		58.97	---►	47.54	51.13	22.355	8.997	2.628	0.059			
	69	1179+784.86	1.22		53.22	---►	47.24	31.37	19.063	13.189	15.410				
2-16	70	1179+836.97	0.91		53.12	---►	51.73	20.35	6.830	6.493	4.221		11.19	25.52	
	71	1179+894.50	0.61		54.38	---►	52.68	17.82	9.540	5.877	1.717	0.127			
	72	1180+045.96	0.61		59.87	---►	58.43	18.62	7.734	5.292	1.546				
2-17	73	1180+208.72	1.52	x2	63.00	---►	58.75	25.00	17.000	14.421	52.309	0.153	36.05	52.31	2-0.91
	75	1180+351.27	0.91		68.86	---►	67.64	20.43	5.937	6.054	3.935				
	76	1180+380.94	0.61		69.48	---►	67.68	23.31	7.713	5.285	1.544	0.050			
2-18	77	1180+453.67	0.91		68.99	---►	66.40	34.63	7.502	6.805	4.424	0.104	1.95	11.20	
	78	1180+603.31	0.61		77.32	---►	76.12	22.03	5.456	4.445	1.298	0.199			
	79	1180+920.35	0.61		77.27	◄---	80.44	38.76	-8.179	5.442	1.590				
2-19	80	1181+167.85	1.22	x2	69.49	◄---	70.70	22.00	-5.500	7.084	16.554	0.199	19.75	25.89	1-0.61
	81	1181+387.96	1.22		52.98	◄---	54.60	26.00	-7.000	7.992	9.338	0.255			1-0.61
	82	1181+757.75	0.61		37.28	---►	37.18	19.26	0.519	1.371	0.401				
	85	1182+422.02		1-0.70X0.70	38.28	---►	38.05			0.000	0.000				N/A
	86	1182+537.09		1-0.80X0.40	37.55	---►	37.53			0.000	0.000				N/A
2-20	87	1182+769.40		2-1.50x1.25	37.10	---►	36.96	14.00	1.000	4.023	15.086		40.46	70.94	1-0.61
	88	1183+001.20		2-1.50x1.25	40.20	---►	39.57	14.00	4.500	8.534	32.002	0.061			1-0.61
	89	1183+095.60		2-1.50x1.25	40.70	---►	40.35	14.00	2.500	6.361	23.853				1-0.61
2-22	90	1183+185.50		2-1.50X1.20	39.74	---►	39.22	19.38	2.683	6.522	23.479		25.70	33.46	
		1183+460.00	1.22	x2	41.70	---►	41.38	16.00	2.000	4.272	9.983				Add'l
	91	1183+480.50	0.61		42.40	---►	42.00			0.000	0.000				
2-23	92	1184+014.86		1-0.40X0.40	38.68	---►	38.42			0.000	0.000				N/A
	93	1184+221.25		2-1.50x1.50	35.20	---►	34.70	20.00	2.500	6.640	29.882		19.10	29.88	1-0.61
	94	1184+454.50		2-1.50x1.50	37.10	---►	36.06	16.00	6.500	10.707	48.183				1-0.61
2-24	95	1184+629.80	0.91	x2	37.80	---►	37.64	16.00	1.000	2.484	3.230		46.90	61.33	1-0.61
	96	1184+711	0.91	x2	38.10	---►	37.94	16.00	1.000	2.484	3.230				1-0.61
	97	1184+828.80	0.91	x2	38.40	---►	37.80	14.00	4.286	5.143	6.687				1-0.61
	98	1185+037.60	1.22		38.00	---►	37.73	18.00	1.500	3.700	4.323	0.047			1-0.61
		1185+180	1.22		38.60	---►	38.36	16.00	1.500	3.700	4.323				Add'l
2-25	100	1185+497.28	1.22	x2	41.50	---►	41.23	18.00	1.500	3.700	8.645	0.306	21.15	30.50	1-0.91
	101	1185+808.50	1.22	x2	44.70	---►	43.93	22.00	3.500	5.651	13.206	0.095			1-0.61
2-26	102	1186+130.05		1-2.50X1.50	40.65	---►	40.45	14.49	1.380	6.067	22.753	0.422	30.62	32.74	
		1186+160	1.22	x2	43.00	---►	42.64	18.00	2.000	4.272	9.983				Add'l
	105	1186+849.05	1.52		42.24	---►	42.09	27.78	0.540	2.570	4.661				
2-27	108	1187+983.31		3-2.40x1.60	39.60	---►	39.42	18.00	1.000	5.355	69.407		33.30	69.41	1-0.91
	110	1188+405.65		2-3.00X2.40	44.25	---►	44.23	13.28	0.151	2.453	35.319				
2-28	111	1188+882.20		1-1.60x1.25	38.00	---►	37.60	16.00	2.500	6.845	15.401		52.30	61.34	2-0.61
	113	1189+098.50	1.22	x2	36.40	---►	36.16	16.00	1.500	3.700	8.645				1-0.61
	114	1189+225.50	0.91		36.50	---►	36.26	16.00	1.500	3.043	1.978				1-0.91
2-29	115	1189+606.83		2-1.80x1.50	35.20	---►	34.88	16.00	2.000	6.424	34.692		24.10	34.69	1-0.61
2-30	116	1189+807.71		3-1.80x1.50	35.10	---►	34.92	18.00	1.000	4.543	36.797		42.50	66.02	1-1.22
	117	1189+928.62		3-1.60x1.25	35.10	---►	34.94	16.00	1.000	4.329	29.221				1-0.61

LIST OF CULVERTS

PK-3

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
PK-2	1	1190+401.70	1.52		33.96		33.92	21.64	0.185	1.504	2.727				
	2	1190+469.20	0.91		34.74		34.71	15.05	0.199	1.109	0.721	0.138			
	3	1190+722.80	1.52	x2	35.77		35.32	18.00	2.500	5.530	20.060				1-0.91
3-1	4	1190+860.90	1.22	x2	35.00		35.52	21.00	2.286	4.567	10.672	0.089	36.23	49.91	1-0.91
	6	1191+087.10	1.52	x2	34.53		33.89	28.00	2.286	5.288	19.181	0.050			1-1.52
	7	1191+189.50													DELETE
	8	1191+411.60	1.22		35.48		34.82	24.40	2.705	4.968	5.805				
3-2	9	1191+543.70	1.22	x2	35.20		34.48	19.00	3.789	5.880	13.741	0.046	22.55	29.08	1-0.91
	10	1191+717.38	0.91		34.84		34.79	16.41	0.305	1.371	0.891				
	11	1191+814.70	1.22	x2	34.46		34.22	16.00	1.500	3.700	8.645				1-0.91
3-2'	*	1192+120.00		3-1.8X1.25	37.30		37.10	13.50	1.481	5.269	35.566		33.41	35.57	Add'l
	12	1192+308.74	0.91		38.60		38.50	16.46	0.608	1.936	1.259				
	13	1192+382.00													DELETE
3-3	14	1192+447.40													DELETE
	15	1192+493.60	0.91		41.00		40.70	17.82	1.684	3.224	2.096		17.49	24.95	
		1192+600	1.22	x2	41.72		41.49	15.00	1.533	3.740	8.741				Add'l
	16	1192+682	1.22		43.52		43.29	16.16	1.423	3.604	4.211				
		1192+790	1.22	x2	44.60		44.39	14.00	1.500	3.700	8.645				Add'l
3-3'	17	1193+097.40		2-1.80x1.80	48.80		48.63	13.00	1.308	5.423	35.143		27.04	35.14	1-0.91
		1193+436.00	0.91		54.00		53.59	27.00	1.519	3.062	1.990				1-0.61
	18	1193+436.15	1.22												DELETE
		1193+620.00	0.91		56.80		56.57	15.00	1.533	3.076	2.000				Add'l
3-3"	19	1193+711	1.22	x2	58.60		58.33	18.00	1.500	3.700	8.645	0.032	16.22	19.62	Add'l
	20	1193+800	1.22	x2	61.40		61.19	13.00	1.615	3.839	8.972				Add'l
3-4	21	1195+187.80		3-1.80x1.50	44.20		43.92	14.00	2.000	6.424	52.038		38.60	52.04	1-0.91
		1195+700		2-1.50x1.50	39.10		38.90	13.00	1.538	5.209	23.441				Add'l
3-5		1195+880		1-1.50x1.25	36.00		35.80	13.00	1.538	4.990	9.356		30.74	42.04	Add'l
		1196+080		1-1.50x1.25	33.80		33.59	14.00	1.500	4.927	9.238				Add'l
3-6	22	1196+345.70		2-1.50x1.25	31.70		31.47	15.00	1.533	4.981	18.680		40.46	46.11	1-0.61
		1196+410	1.22	x2	31.80		31.51	19.00	1.526	3.732	8.721				Add'l
		1196+600		2-1.50x1.25	31.60		31.40	13.00	1.538	4.990	18.712				Add'l
3-8	23	1197+049.65	1.52		31.37		31.12	16.80	1.488	4.267	7.738		5.10	7.74	
	24	1197+987.85	0.91		33.52		33.26	16.00	1.625	3.187	2.059				1-0.61
3-9	25	1198+249.85	0.91		33.32		32.90	16.00	2.625	4.025	2.617		3.34	8.75	1-0.61
	26	1198+545.85	1.22		30.20		30.00	15.00	1.333	3.488	4.075				1-0.91
	27	1198+680.60		2-1.80x1.50	30.80		30.50	16.00	1.875	6.220	33.591				1-0.61
3-10	28	1198+887.25		2-1.50x1.25	29.00		28.51	16.00	3.062	7.040	26.400		64.15	68.08	1-0.61
	29	1198+985.85	1.22	x2	28.20		27.99	16.00	1.313	3.461	8.087				1-0.61
	30	1199+643.25	1.22		21.55		21.30	16.36	1.528	3.734	4.363				
	31	1199+724.65	0.91		22.82		21.50	15.71	8.402	7.202	4.681				
3-10'	32	1199+846.68	0.61		23.20		23.02	13.80	1.304	2.173	0.635		160.22	162.63	
	34	1200+006.47		2-2.40x2.40	21.01		20.76	16.00	1.563	7.181	82.730				3-1.22
	36	1200+178.35		2-2.40x1.80	21.62		21.24	16.50	2.303	8.127	70.220				2-0.91
	38	1200+788.70		2-1.80x1.50	22.87		22.67	13.00	1.538	5.635	30.427				Add'l
3-12	39	1201+062.85	0.61		25.66		25.52	18.08	0.774	1.675	0.489		62.35	65.61	
	40	1201+246.75		2-1.80x1.50	25.01		24.67	17.00	2.000	6.424	34.692				1-0.61
3-13	41	1201+410.02		1-1.80x1.80	25.00		24.54	16.00	2.875	8.041	26.054		19.67	26.72	1-0.61
	42	1201+970.92	0.61		23.17		22.97	13.95	1.434	2.279	0.666				
	43	1202+120.90		1-1.50x1.50	21.80		21.21	14.00	4.214	8.622	19.398				1-.061
3-14	44	1202+255.80	0.91	x2	21.63		21.41	14.31	1.537	3.080	4.005		24.97	33.89	
	46	1202+565.67		1-1.50x1.25	19.50		19.22	14.50	1.931	5.590	10.482				1-0.61
	47	1203+214.02		2-3.00x2.00	17.39		17.36	16.88	0.178	2.536	30.432				
	48	1203+286.52		2-2.40x1.80	17.60		17.51	15.78	0.570	4.044	34.944				
	49	1203+401.30	0.61		18.35		17.82	14.25	3.719	3.670	1.072				
	50	1203+413.91	0.61		18.31		17.91	14.22	2.813	3.192	0.932				
	51	1203+429.60	0.91		18.03		17.29	16.67	4.439	5.235	3.403				
	52	1203+528.64	0.61												DELETE
	53	1203+568.56	0.61		17.73		17.55	14.34	1.255	2.132	0.623				
	54	1203+588.16	0.61		17.42		16.55	14.99	5.804	4.584	1.339				
	55	1203+614.85	0.61		17.69		16.99	14.34	4.881	4.204	1.228				
	56	1203+656.47	0.61		17.25		16.13	14.69	7.624	5.254	1.535				
	57	1203+867.61	1.52	x2	14.36		14.26	16.19	0.618	2.749	9.971				
	59	1204+122.38	0.91		12.60		12.55	17.93	0.279	1.312	0.853				
	60	1204+299.57	0.91		12.64		12.61	16.71	0.180	1.053	0.684				
	61	1205+343.15	1.52		7.23		7.09	17.91	0.782	3.092	5.608				
	62	1205+418.65	1.52		6.58		6.51	17.84	0.392	2.191	3.973				
	63	1205+592.35	1.52		6.83		6.68	16.37	0.916	3.348	6.072				
	64	1206+225.16	1.52	x2	4.53		4.19	23.32	1.458	4.223	15.319				
	65	1206+787.04	0.61												DELETE
	66	1206+877.60	0.61		7.77		7.55	15.07	1.460	2.299	0.672				
	67	1206+928.35	0.61		7.32		7.13	17.87	1.063	1.962	0.573				
	68	1207+418.32													DELETE
	69	1207+871.20	0.61		8.51		8.02	19.06	2.571	3.051	0.891				
	70	1208+000.00	0.61		9.00		8.86	15.22	0.920	1.825	0.533				
	71	1209+022.20	1.52		5.20		4.56	21.75	2.943	6.000	10.881				
	72	1209+450.00	0.91	x2	6.50		5.94	20.73	2.701	4.083	5.309				

LIST OF CULVERTS

PK-4 (1/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m3/s)	AD (m³/s)	REMARKS
	1	1211+627.08	1.52		0.66	▶	0.50	23.43	0.683	2.890	5.242				
	2	1212+327.05	1.52		2.46	▶	2.41	22.68	0.220	1.642	2.978				
	3	1212+600.00	0.61			◀				0.000	0.000				DELETE
	4	1212+683.51	0.61			◀				0.000	0.000				DELETE
	5	1213+086.75	0.61	x2	5.60	◀	5.87	24.00	-0.300	1.042	0.609				
	6	1213+501.31	0.61		6.95	◀	6.99	20.53	-0.195	0.840	0.245				
	7	1213+966.85	0.61		7.90	◀	8.04	20.30	-0.690	1.580	0.462				
	8	1214+866.43	0.61		9.47	▶	9.43	18.95	0.211	0.874	0.255				
	9	1215+015.50	0.91		9.01	▶	8.98	21.35	0.140	0.931	0.605				
	10	1215+170.50	0.61	x2	9.69	▶	9.51	21.81	1.742	2.512	1.467				
	12	1215+418.60	0.61		9.12	▶	8.88	23.11	1.125	2.018	0.590				
	13	1215+416.60	0.91		9.15	▶	8.76	22.88	1.705	3.244	2.109				
	14	1215+995.90	1.52		6.12	▶	6.07	26.24	0.191	1.527	2.769				
	15	1216+300.90	1.22		5.74	▶	5.52	21.93	1.003	3.025	3.535				
	16	1216+949.35	1.1	0.80x0.80	7.72	▶	6.94	22.90	3.406	5.097	3.262				N/A
	17	1217+045.06	0.61		6.93	▶	6.86	17.53	0.399	1.202	0.351				
	18	1217+964.42	0.91		4.58	▶	4.46	18.00	0.667	2.029	1.319				
	19	1218+105.40	0.61		5.32	▶	5.25	16.37	0.428	1.244	0.363				
	20	1218+446.13	1.22		4.09	▶	4.04	19.29	0.259	1.538	1.797				
	21	1218+519.08	0.61		4.90	▶	4.72	18.05	0.997	1.900	0.555				
	22	1218+712.20	0.61		4.95	▶	4.79	13.50	1.185	2.071	0.605				
	23	1218+820.02	0.61		4.72	▶	4.67	15.62	0.320	1.077	0.314				
	24	1218+929.25		1-1.80x1.60	3.82	▶	3.80	13.30	0.180	1.960	5.646				
	25	1219+157.50	1.22		3.98	▶	3.89	14.21	0.634	2.404	2.809				
	26	1219+453.50	1.1	0.80x0.80	4.67	▶	4.41	21.25	1.224	3.055	1.955				N/A
	27	1219+773.10	0.91		4.88	▶	4.58	16.38	1.831	3.362	2.186				
	28	1219+783.45	0.91		4.35	▶	4.19	16.45	0.973	2.450	1.593				
	29	1219+821.13		2-3.00x2.80	2.87	▶	2.87	13.00	0.000	0.000	0.000				1-3.0x2.8 Add'l
	30	1219+881.32		2-2.40x1.80	3.77	▶	3.70	13.00	0.538	3.930	33.953				1-2.4x1.8 Add'l
	31	1200+023.32		2-2.40x1.80	3.10	▶	3.04	16.00	0.375	3.280	28.335				2-1.52
	33	1220+084.20	0.61		5.05	▶				0.000	0.000				DELETE
	34	1220+158.20	0.91		4.34	▶	4.31	15.97	0.188	1.077	0.700				
	35	1220+223.43	1.1	0.80x0.80	6.00	▶	4.05	41.45	2.291	4.181	2.676				N/A
	36	1220+679.40	1.22		4.10	▶	3.89	15.80	1.330	3.483	4.070				
	37	1220+943.85	0.61		5.12	▶	4.89	13.86	1.659	2.451	0.716				
	38	1220+969.10	0.61		5.23	▶	5.14	15.36	0.586	1.457	0.426				
	39	1221+024.08	1.1	0.80x0.80	4.80	▶	4.54	20.85	0.288	1.482	0.948				N/A
	40	1221+140.12	0.61		5.02	▶	4.77	14.62	1.710	2.489	0.727				
	42	1221+261.78	1.52	x3	4.56	▶	4.39	18.40	0.924	3.362	18.291				
	44	1221+378.10	0.91		4.60	▶	4.49	15.20	0.724	2.114	1.374				
	45	1221+750.22	0.91		4.96	▶	4.82	13.13	1.066	2.565	1.668				
	46	1222+019.70	1.1	1-0.80x0.80	5.03	▶	4.81	18.43	1.194	3.018	1.931				N/A
	47	1222+240.20	0.61		5.88	▶	5.67	14.89	1.411	2.260	0.660				
	48	1222+467.20	0.61		6.74	▶	6.59	15.02	0.999	1.902	0.556				
	49	1222+599.60	0.61	x2	6.94	▶	6.83	14.44	0.762	1.661	0.970				
	51	1222+755.70	0.91		6.02	▶	5.94	18.07	0.443	1.653	1.075				
	53	1223+027.03	1.1	1-0.80x0.80	6.53	▶	6.36	19.37	0.878	2.588	1.656				N/A
	54	1223+075.76	0.61		6.79	▶	6.70	15.77	0.571	1.438	0.420				
	55	1223+399.90	0.61		7.04	▶	6.81	15.81	1.454	2.295	0.670				
	56	1223+717.50	0.61		7.49	▶	7.34	16.38	0.916	1.821	0.532				
	57	1223+914.28	1.52		6.98	▶	6.67	17.34	1.788	4.676	8.481				
	58	1224+227.50	1.1	1-0.90x0.60	6.38	▶	6.31	17.74	0.395	1.693	0.914				N/A
	59	1224+291.50		1-5.00x2.50	6.38	▶	6.29	12.31	0.731	6.614	82.678				
	60	1224+337.80		1-5.00x2.50	6.23	▶	6.16	12.31	0.569	5.834	72.929				
	61	1224+654.20		2-1.80x1.50	6.98	▶	6.96	7.77	0.257	2.305	12.448				
	63	1224+840.00	1.52			▶	6.16			0.000	0.000				DELETE
	66	1224+879.80	1.52		6.68	▶	6.62	19.75	0.304	1.928	3.496				
	67	1224+919.60	1.52		6.81	▶	6.67	22.84	0.613	2.738	4.966				
	68	1224+939.70	1.52		6.87	▶	6.75	22.80	0.526	2.537	4.602				
	69	1225+019.69	1.52		6.92	▶	6.68	23.16	1.038	3.560	6.457				
	70	1225+039.28	1.52		6.85	▶	6.65	22.94	0.872	3.266	5.923				

LIST OF CULVERTS

PK-4 (2/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m^3/s)	RD & SLOPE (m3/s)	TD (m3/s)	AD (m^3/s)	REMARKS
	71	1225+059.77	1.52		6.66	---►	6.64	22.94	0.087	1.033	1.873				
	72	1225+139.59	1.52		7.07	---►	6.77	16.24	1.847	4.753	8.620				
	73	1225+179.14	1.52		7.07	---►	6.49	15.55	3.730	6.755	12.251				
	74	1225+219.00		1-3.00x2.10	6.51	---►	6.51	11.69	0.000	0.000	0.000				
	75	1225+259.25	1.52		6.65	---►	6.32	17.02	1.939	4.870	8.832				
	76	1225+298.94	1.52		6.54	---►	6.47	15.35	0.456	2.362	4.284				
	77	1225+339.64		3-3.00x2.10	6.47	---►	6.45	11.73	0.171	2.519	47.601				
	78	1225+388.95	1.52		6.49	---►	6.35	15.24	0.918	3.352	6.079				
	79	1225+439.19	1.52		6.47	---►	6.33	15.35	0.912	3.341	6.059				
	80	1225+478.55		3-3.00x2.00	6.47	---►	6.47	11.17	0.000	0.000	0.000				
	81	1225+518.83	1.52		6.37	---►	6.27	15.69	0.637	2.792	5.065				
	82	1225+559.07	1.52		6.49	---►	6.41	15.46	0.517	2.516	4.563				
	83	1225+598.99	1.52		6.54	---►	6.45	15.32	0.587	2.680	4.861				
	84	1225+639.52	1.52		6.54	---►	6.48	15.42	0.389	2.182	3.957				
	85	1225+679.66	1.52		6.61	---►	6.47	15.43	0.907	3.331	6.042				
	86	1225+719.42	1.22		7.06	---►	6.97	15.02	0.599	2.338	2.732				
	87	1225+783.77	1.22		6.25	◄---	7.60	14.74	-9.160	9.142	10.682				
	88	1226+074.20	0.61	x2	7.71	---►	7.69	20.93	0.143	0.720	0.421				
	90	1226+143.40	0.61		8.04	---►	7.82	17.82	1.234	2.114	0.618				
	91	1226+371.60		1-0.80x0.80	7.60	---►	7.59	19.52	0.664	2.074	1.327				N/A
	92	1227+171.98		1-1.00x1.00	10.26	---►	10.24	19.89	0.102	1.022	1.022				N/A
	93	1227+239.75	0.61		9.06	---►	8.95	20.61	0.534	1.390	0.406				
	94	1227+295.02	0.61		8.80	---►	8.74	23.86	0.251	0.954	0.279				
	95	1227+454.65	1.22	x2	10.00	---►	9.66	18.14	1.874	4.135	9.663				
	97	1229+247.30	1.52		16.24	---►	16.21	18.14	0.165	1.422	2.580				
	98	1229+376.85	1.22	x2	16.70	---►	16.67	17.17	0.175	1.263	2.951				
	100	1229+581.40	1.22		17.70	---►	17.13	16.93	3.367	5.543	6.477				
	102	1231+619.56	0.61		14.50	---►	13.93	18.20	3.132	3.368	0.984				
	103	1232+540.60	1.52		12.69	---►	12.64	17.96	0.278	1.846	3.347				
	104	1232+884.40	1.22	x2	13.20	---►	13.04	17.00	0.941	2.931	6.848				
	105	1232+117.80	0.91			---►				0.000	0.000				DELETE
	107	1233+235.36	0.91	x2	12.51	---►	12.44	15.18	0.461	1.687	1.097				
	109	1233+868.27	0.61	x2	14.68	---►	14.40	16.53	1.694	2.477	1.447				
	111	1234+615.10	0.61		17.63	---►	17.57	17.11	0.351	1.127	0.329				
	112	1234+773.40	0.61		18.76	---►	17.89	15.89	5.476	4.453	1.301				
	113	1234+967.70	0.61		18.86	◄---	18.99	16.92	-0.768	1.668	0.487				
	114	1235+231.62	0.61		19.91	◄---	19.93	18.85	-0.119	0.656	0.192				
	115	1235+664	1.22		20.42	◄---	20.54	23.55	-0.510	2.156	2.520				
	116	1236+289.40	1.22		22.59	◄---	23.13	20.63	-2.618	4.888	5.711				
	117	1236+629.90		1-0.75x0.75	24.94	---►	24.65	16.20	1.790	3.640	1.911				N/A
	118	1236+624.20		2-3.00x3.00	21.75	◄---	21.76	21.76	-0.046	1.429	25.725				
	119	1236+766.95	0.61		24.19	◄---	24.51	24.54	-1.304	2.173	0.635				
	120	1236+951.40	0.61		26.27	◄---	26.43	20.67	-0.774	1.674	0.489				

LIST OF CULVERTS

PACKAGE-5 (1/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
4-1	121	1237+075.00	1.22	x2	26.28	◄	26.60	16.00	-2.000	4.272	9.983		14.50	24.74	1-0.61
	122	1237+347.65	1.22	x2	24.90	◄	25.50	20.00	-3.000	5.232	12.226				1-1.22 Add'l
4-2	"	1237+380		2-1.25x1.0	27.70	◄	27.90	13.00	-1.538	4.373	10.933		11.70	19.58	Add'l
		1237+640	1.22	x2	30.17	◄	30.50	22.00	-1.500	3.700	8.645				Add'l
4-3		1237+935		1-2.40x1.80	36.11	◄	36.40	19.00	-1.526	6.616	28.583		14.60	28.58	1-1.22
4-4	123	1238+337.20		1-2.40x2.40	47.60	►	47.51	18.00	0.500	4.062	23.400		19.20	23.40	1-1.22
4-5	124	1238+572.20		1-2.40x2.40	41.70	►	41.61	18.00	0.500	4.062	23.400	0.298	34.17	64.81	1-0.61
	125	1238+923.50		1-1.80x2.10	45.50	►	44.60	18.00	5.000	10.955	41.411	0.072			1-0.91
	126	1239+021.20	1.52		47.00	►	46.55	18.00	2.500	5.530	10.030	0.099			1-0.61
4-6	127	1239+258.3	1.52	x2	45.55	►	45.23	19.95	1.604	4.430	16.068	0.648	24.95	26.10	
	129	1239+783.1	1.52	x2	56.16	►	54.02	34.57	6.190	8.702	31.565	0.018			
4-7	131	1239+896.24	1.22		67.69	►	63.54	38.70	10.724	9.892	11.558	0.048	27.06	96.70	
	132	1240+008.86	1.52		71.09	►	68.59	25.96	9.631	10.854	19.686				
	133	1240+010.76	1.52	x2	71.72	►	70.17	21.72	7.135	9.343	33.889	0.492			
		1240+460	1.22		96.70	►	96.00	29.00	3.043	5.270	6.157				Add'l
		1240+718	1.22					0.00							DELETE
		1240+720	1.22		110.20	►	109.10	17.00	6.471	7.684	8.978				Add'l
5-1	1	1240+911.50	1.22		126.96	►	125.09	31.00	6.033	7.420	8.669	0.029	13.75	33.90	
	2	1240+972.60	1.22		130.20	►	128.40	22.00	8.182	8.640	10.095	0.219			1-0.91
	3	1241+173.80	1.22		142.71	►	135.88	37.51	18.208	12.890	15.060	0.065			
	4	1241+257.50	1.22		141.38	►	139.43	38.96	5.005	6.758	7.896	0.061			
5-2	5	1241+354.00	0.91		144.51	►	140.96	43.13	8.230	7.128	4.633	0.153	29.27	38.70	
	6	1241+528.90	0.91		148.86	►	145.36	46.75	7.487	6.798	4.419	0.327			
	7	1241+766.60	0.91		163.37	►	159.94	44.96	7.630	6.863	4.461	0.391			
	8	1242+096.30	0.61		185.21	►	180.16	31.44	16.063	7.627	2.228	0.477			
5-3	9	1242+458.00	0.91		185.62	◄	187.35	33.86	-5.109	5.615	3.650		17.60	31.47	
	10	1242+678.50		1-1.80x1.80	176.00	◄	177.00	30.50	-3.279	8.59	27.82	0.098			1-0.91
	11	1242+923.00	0.91		162.64	◄	163.48	40.81	-2.058	3.564	2.317	0.132			
	12	1243+006.50	1.22		163.90	◄	167.85	31.00	-12.742	10.783	12.598	0.028			1-0.61
5-4	13	1243+298.60		1-1.80x1.80	155.44	◄	155.76	38.00	-0.842	4.35	14.10	0.264	38.93	55.19	1-1.22
	14	1243+552.70		1-1.80X1.50	145.26	◄	148.18	40.17	-2.290	6.88	18.56	0.182			
	15	1243+746.80	1.22		148.65	◄	151.23	55.46	-4.652	6.515	7.612	0.219			
	16	1244+032.40	0.91		174.37	◄	174.98	27.64	-2.207	3.691	2.399	0.017			
5-4A	17	1244+149.60	0.61		180.98	►	180.20	18.97	4.112	3.859	1.127		3.13	7.13	
	18	1244+401.70	0.61		169.53	►	167.79	35.28	4.932	4.226	1.234	0.256			
	19	1244+486.50	0.91		170.46	►	167.67	32.01	8.717	7.335	4.768	0.053			
	20	1244+710.70	0.61		161.64	◄	165.76	42.17	-9.769	5.948	1.737				
5-5	21	1244+877.50	1.22		163.47	◄	164.11	21.00	-3.048	5.273	6.161	0.140	13.33	22.92	1-0.91
	22	1245+012.30	1.22		149.95	◄	152.88	36.29	-8.075	8.584	10.029	0.090			
		1245+050	1.22		156.08	◄	156.62	27.00	-2.000	4.272	4.991				Add'l
		1245+200	1.22		148.40	◄	148.80	20.00	-2.000	4.272	4.991	0.185			Add'l
	23	1245+285.80		1.80x1.80	140.99	◄	141.37	36.03	-1.055	4.87	15.78				
5-6	24	1245+535.80	1.22		131.63	◄	132.87	52.84	-2.347	4.627	5.407	0.037	29.19	36.65	
	25	1245+838.70	1.22	x2	127.06	◄	127.50	20.00	-2.200	4.480	10.470	0.264			1-0.91
5-7	26	1246+172.00	0.61		106.63	◄	107.95	26.05	-5.065	4.283	1.251	0.396			AFGA BR.
	27	1246+543.00	0.91		98.22	◄	100.42	29.71	-7.385	6.752	4.389	0.418			
5-8	28	1246+928.60	0.91		97.79	◄	103.01	37.82	-13.801	9.230	6.000	0.208	7.99	18.35	
	29	1247+121.00	1.22		107.32	◄	112.24	40.20	-12.239	10.568	12.347	0.079			
5-9	30	1247+219.50	1.22	X2	113.46	◄	118.48	31.00	-16.194	12.156	28.405	0.198	15.30	28.41	1-0.91
5-10	31	1247+609.00		2-3.00X3.00	108.80	◄	112.42	49.41	-7.327	18.05	324.82	0.190	16.59	325.81	
	32	1247+721.00	0.61		119.55	◄	120.28	23.14	-3.155	3.380	0.987				
	33	1247+829.00	0.91		108.23	◄	112.52	42.19	-14.908	9.593	6.236	0.048			
	34	1247+905.00	0.91		104.95	◄	110.13	44.92	-11.532	8.437	5.484	0.024			
5-11	35	1248+294.20	1.22		99.88	◄	105.82	48.40	-12.313	10.600	12.384	0.240	11.44	27.03	
	36	1248+395.00	0.61		112.48	◄	113.53	18.40	-5.706	4.546	1.328	0.050			
	37	1248+503.50	0.61		109.63	◄	111.51	22.71	-8.278	5.475	1.599	0.077			
	38	1248+697.80	0.91		93.92	◄	97.69	35.75	-10.544	8.067	5.244	0.148			
5-12	39	1248+807.40	1.22		92.12	◄	93.65	27.00	-5.667	7.191	8.402	0.083	19.63	27.87	1-0.61
	40	1248+939.40	1.52		83.19	◄	84.64	40.90	-3.545	6.586	11.944				
	41	1248+982.40	0.91		85.78	◄	86.10	16.00	-2.000	3.514	2.284				1-0.61
5-13	42	1249+305.00		2-3.00X3.00	75.80	◄	76.62	45.09	-1.818	8.99	161.82	0.193	80.29	161.82	
		1249+500	1.22	x2	92.00	◄	92.80	16.00	-5.000	6.755	15.784	0.533			Add'l
5-14		1249+940	1.22		118.10	◄	118.70	17.00	-3.529	5.675	6.631	0.475	17.61	28.43	Add'l
	43	1250+398.40	0.91		119.57	◄	126.13	47.32	-13.864	9.251	6.013				
	44	1250+887.50	0.91		88.71	◄	94.81	54.18	-11.259	8.336	5.419	0.418			
	45	1250+956.30	0.61		95.79	◄	97.19	21.94	-6.380	4.807	1.404	0.036			
5-15	46	1251+099.00	1.52		80.15	◄	83.28	45.21	-6.923	9.202	16.690	0.075	30.76	44.54	
	47	1251+248.60	0.61		87.05	◄	87.33	16.40	-1.707	2.486	0.726	0.300			
	48	1251+417.00	1.52		87.07	◄	90.17	30.28	-10.239	11.192	20.298	0.127			
5-16		1251+760	1.52	x2	80.50	◄	81.50	20.00	-5.000	7.821	28.368	0.299	19.11	30.69	Add'l
	49	1251+914.00	0.61		65.54	◄	71.36	33.35	-17.451	7.949	2.322	0.108			
5-17	50	1252+061.50		1-2.40X1.70	57.66	◄	58.50	35.86	-2.342	8.07	32.93	0.066	18.04	36.97	
	51	1252+360.00	0.91		58.42	◄	59.76	21.35	-6.276	6.224	4.046	0.676			

LIST OF CULVERTS

PACKAGE-5 (2/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m^3/s)	RD & SLOPE (m^3/s)	TD (m^3/s)	AD (m^3/s)	REMARKS
		1252+510	1.22		61.80		63.30	30.00	-5.000	6.755	7.892				Add'l
5-18	52	1252+804.80	0.91		63.50		65.94	33.79	-7.222	6.677	4.340		22.40	30.97	
	53	1252+913.30		1-1.80X1.40	57.08		58.13	37.84	-2.775	7.43	18.74				
	54	1253+154.70	1.22		58.11		58.56	18.86	-2.386	4.666	5.451	0.417			
5-19	55	1253+411.40	1.22		61.14		62.80	23.00	-7.217	8.115	9.482		12.52	25.20	1-0.61
	56	1253+499.00	1.22		61.64		63.50	22.00	-8.455	8.783	10.262				1-0.61
5-20	57	1253+559.40	0.91		61.07		61.76	34.65	-1.992	3.506	2.279			19.64	
	58	1253+836.50	1.22	x2	52.91		53.20	19.00	-1.526	3.732	8.721	0.112	12.81		1-0.61
		1253+900	1.22	x2	50.51		50.90	26.00	-1.500	3.700	8.645				Add'l

LIST OF CULVERTS

PACKAGE-6

ARE	NO.	STATION	PIPE	BOX	LT. ELEV.	FLOW	RT. ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
6-1	1	1254+181.70		1-1.80x1.40	48.45	◄	48.57	22.99	-0.522	3.225	8.126		26.53	28.62	
	2	1254+289.10		1-2.40x2.00	48.55	◄	48.68	21.59	-0.602	4.270	20.496				
6-2		1254+840		2-1.50x1.00	47.98	◄	49.30	16.00	-8.250	10.885	32.654		11.90	32.65	Add'l
6-3		1255+600		2-1.50x1.00	47.02	◄	47.30	14.00	-2.000	5.359	16.078		9.69	16.08	Add'l
6-4		1255+820		2-1.80x1.25	47.52	◄	47.80	14.00	-2.000	6.122	27.549		21.02	27.55	Add'l
	3	1256+049.00		1-3.00x3.00	47.93	◄	48.43	27.25	-1.835	9.031	81.279				
6-5	4	1256+251.85	0.91		53.96	◄	54.60	25.00	-3.600	4.714	3.064		19.18	85.09	1-0.61
	5	1256+422.50	0.61		53.14	◄	53.64	27.95	-1.789	2.545	0.743				
			0.61			◄	51.69								DELETE
6-6		1256+680		2-2.40x2.10	48.80	◄	49.15	14.00	-2.500	8.806	88.769		32.70	88.77	Add'l
	7	1256+795.00		1-1.20x1.20	45.98	►	45.55	27.93	1.540	4.491	6.467				
6-7	8	1257+163.00	0.61		40.72	►	40.51	21.73	0.966	1.870	0.546		11.16	11.93	
		1257+200		1-1.80x1.25	40.39	◄	40.60	14.00	-1.500	5.302	11.929				Add'l
		1257+840	0.91		49.90	►	49.40	15.00	3.333	4.536	2.949				Add'l
	9	1258+149.10	1.22	x2	52.60	►	51.91	23.00	3.000	5.232	12.226				1-0.61
6-8	10	1258+348.20	1.22	x2	60.00	►	59.40	24.00	2.500	4.776	11.161		18.51	29.39	1-0.91
	11	1258+714.40	0.91		50.51	►	48.65	51.88	3.585	4.704	3.058	0.150			
	12	1259+063.30	0.61		55.68	►	55.45	33.64	0.684	1.574	0.460	0.158			
	13	1259+216.50	0.61		50.65	►	50.22	32.53	1.322	2.188	0.639				
	14	1259+595.10	0.61			►									DELETE
	15	1259+777.50	0.61		40.42	►	39.23	25.40	4.685	4.119	1.203	0.114			
6-9	16	1259+950.30	1.22	x2	36.05	►	35.09	18.00	5.383	7.009	16.378		17.57	23.81	1-0.61
	17	1260+075.00	1.22		33.60	►	33.39	21.00	1.000	3.021	3.529				1-0.91
	18	1260+139.85	1.22		34.40	►	34.26	24.00	0.583	2.307	2.695				1-0.61
6-10	19	1260+312.00		1-2.40x2.40	34.80	►	34.44	18.00	2.000	8.125	46.799		28.85	46.80	1-0.61
	20	1260+454.90	0.61		34.90	►	33.99	26.41	3.446	3.532	1.032				
6-11	21	1260+728.20		1-2.40x1.50	33.80	►	33.55	19.61	1.275	5.744	20.679	0.066	18.12	30.01	
	22	1260+857.60	0.61		38.95	►	35.90	24.64	12.377	6.695	1.955	0.096			
	23	1260+983.60	0.91		45.09	►	41.08	25.97	15.442	9.763	6.346	0.074			
	24	1261+218.30	0.91		47.66	►	46.89	29.35	2.624	4.024	2.616				
6-12	25	1261+557.40	1.22		32.88	►	32.83	21.00	0.238	1.474	1.722		29.44	50.46	1-0.91
	26	1261+734.94		1-1.80x1.50	28.96	►	28.95	21.30	0.047	0.984	2.657				
	27	1261+888.15		2-1.80x1.80	29.30	►	28.94	18.00	2.000	6.707	43.461				1-0.91
	28	1262+109.60	0.61		30.53	►	30.38	18.30	0.836	1.740	0.508				
	29	1262+263.25	0.61		30.23	►	29.49	22.56	3.281	3.447	1.007				
	30	1262+771.00		1-0.60x1.00	30.28	►	30.28	19.39	0.000						N/A
6-13	31	1262+901.50		2-2.40x2.40	28.40	►	27.86	16.00	3.375	10.555	121.588		88.90	125.42	1-0.91
	32	1262+932.08	1.22		28.75	►	28.55	17.00	1.176	3.276	3.828				1-0.61
	33	1263+378.30		1-0.60x0.60	30.63	►	30.54	15.38	0.585	1.744					N/A
6-14	34	1263+478.15	0.61		29.28	►	28.96	20.98	1.525	2.350	0.686		25.79	47.18	
	35	1263+542		2-1.50x1.25	28.80	►	27.30	20.00	7.500	11.017	41.314				1-0.91
	36	1263+850.41	1.22		28.11	►	27.56	25.58	2.150	4.429	5.175				
	37	1264+888.60		1-1.25x1.25	25.20	►	24.96	15.00	1.600	4.704	7.350				1-0.61
	38	1265+029.50		1-1.25x1.00	25.20	►	24.99	14.00	1.500	4.318	5.398				1-0.61
6-15	39	1265+161.05	0.91		24.30	►	24.22	16.00	0.500	1.757	1.142		18.25	30.29	1-0.61
	40	1265+186.24	0.91		24.20	►	24.04	16.00	1.000	2.484	1.615				1-0.61
	41	1265+204.12	1.22	x2	23.40	►	22.70	20.00	3.500	5.651	13.206				1-0.61
	42	1265+347.60	1.22		23.70	►	23.67	15.00	0.200	1.351	1.578				1-0.61
	43	1265+669.70	0.91		22.11	►	22.07	23.00	0.191	1.087	0.706				
	44	1267+521.80	1.22		20.64	►	20.50	25.99	0.539	2.217	2.591				
	45	1267+563.40		1-1.40x1.80	20.30	►	20.23	22.22	0.315	2.370	5.972				
	46	1267+658.80	0.61		23.83	►	23.64	19.67	0.966	1.870	0.546				N/A
	47	1268+055.10	0.61		21.61	►	21.58	24.35	0.123	0.668	0.195				
	48	1268+198.15	0.61		21.90	►	21.20	18.42	3.800	3.710	1.084				
	49	1268+268.00	1.22		21.53	►	20.82	38.88	1.826	4.082	4.769				
	50	1268+804.50	1.22		24.41	►	24.18	20.23	1.137	3.221	3.763				
	51	1270+117.70	1.22		34.13	►		27.83							DELETE
	52	1270+225.00				►									DELETE
	53	1270+356.30		1-1.20x1.10	35.27	►	33.72	21.67	7.153	9.489	12.526				
	54	1270+284.41	0.91			►									DELETE
	55	1270+458.10	1.22		33.67	►	33.50	24.00	0.725	2.572	3.005				1-0.91
	56	1270+605.40	0.91		32.08	►	30.70	40.75	3.387	4.572	2.972				
6-16	57	1270+626.8	0.61		32.00	►	31.73	35.53	0.760	1.659	0.485		13.40	20.52	
	58	1270+973.00		2-1.50x1.50	32.06	►	31.84	27.00	0.815	3.791	17.059	0.061			1-0.91

LIST OF CULVERTS

PACKAGE-7

AREA	NO.	STATION	PIPE	BOX	LT. ELEV.	FLOW	RT. ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
		1271+103.10		1-1.20x1.20	31.03	→	30.95	26.6	0.301	1.985	5.716				
7-1	1	1271+103.10		2-2.00x2.25	31.03	→	30.95	26.60	0.301	2.861	25.751		18.61	31.47	Add'l
	2	1271+930.50	0.61		44.46	←	44.90	36.00	-1.222	2.104	0.615	0.012			
	3	1272+034.00	0.61		46.00	→	44.20	33.94	5.304	4.382	1.280	0.109			
	4	1272+321.00	0.91		39.52	→	38.17	27.22	4.960	5.533	3.597	0.027			
7-2	5	1272+439.00	1.22		39.36	→	38.03	29.00	4.586	6.469	7.558		13.66	18.59	1-0.91
		1272+550	1.22		44.82	→	43.80	23.00	4.435	6.361	7.432	0.043			
	6	1272+840.00	0.61		39.62	→	38.92	47.30	1.480	2.315	0.676	0.030			
7-3	7	1272+965.00	1.22		40.20	→	39.74	25.00	1.840	4.097	4.787		13.77	17.95	1-0.61
	8	1273+098.00	1.22		41.70	→	39.70	23.00	8.696	8.908	10.408	0.085			1-0.91
	9	1273+355.00	0.91		50.71	→	49.96	45.13	1.662	3.203	2.082				
7-4	10	1273+700.00	0.91		45.21	→	45.07	28.50	0.491	1.741	1.132	0.115	25.94	35.91	
	11	1273+788.00		1-1.80x1.80	44.30	→	43.26	20.30	5.123	10.734	34.779				1-0.61
	12	1274+552.00	0.91		48.84	→	48.11	24.94	2.927	4.250	2.763				
	13	1275+347.90	1.22		83.87	→	80.83	55.73	5.455	7.055	8.243	0.195			
7-5	14	1275+884.30	0.91		87.96	→	84.92	30.72	9.895	7.815	5.080	0.517	21.73	44.84	
	15	1276+136.00	1.22		78.48	→	76.03	25.09	9.763	9.438	11.028	0.239			
	16	1276+179.00	1.22		73.35	→	64.63	34.56	25.233	15.174	17.729				
	17	1276+454.30		2-3.00X3.0	60.45	→	60.15	17.14	1.750	8.820	158.760	0.258			
	18	1276+713.10	1.22		63.56	→	63.05	31.26	1.631	3.858	4.508	0.051			
	19	1276+844.00	0.91		72.30	→	72.07	16.00	1.438	2.979	1.936	0.036			1-0.61
	20	1277+078.50	0.61		72.27	→	71.32	21.61	4.396	3.990	1.165	0.094			
	21	1277+275.15	0.61		73.09	→	72.34	20.72	3.620	3.620	1.058				
	22	1277+363.80		1-2.90x1.90	72.99	→	72.50	23.44	2.090	8.461	46.619				
7-6	23	1277+531.00	0.61		81.34	←	82.52	28.59	-4.127	3.866	1.129		18.83	50.84	
	24	1277+571.15	0.61		80.35	←	80.42	25.63	-0.273	0.994	0.290	0.222			
	25	1278+008.40	1.22		102.20	→	102.00	14.00	1.429	3.610	4.218	0.014			1-0.61
	26	1278+658.15	0.61		115.83	←	116.60	39.19	-2.731	3.143	0.918	0.046			W/BRIDGE
7-7		1278+821	0.91		127.20	←	127.50	14.00	-2.143	3.637	2.364				1-0.61
	27	1279+004.00	1.22		127.60	←	128.20	25.00	-2.400	4.680	5.468				1-0.61
	28	1279+212.00	1.22		117.30	→	116.70	14.00	4.286	6.253	7.307	0.128			1-0.61
7-8	29	1279+476.70	1.22		105.00	→	104.75	19.00	1.316	3.465	4.048	0.139	8.89	12.05	1-0.61
	30	1279+605.00	0.61		103.29	→	102.99	19.02	1.577	2.390	0.698	0.072			
	31	1279+924	0.61		98.37	←	98.68	16.16	-1.918	2.636	0.770	0.161			
	32	1280+365.50	0.91		76.18	←	76.86	29.02	-2.343	3.803	2.472				
	33	1280+704.00		1-2.30x2.60	63.98	→	63.96	21.80	0.092	1.736	10.384				
	34	1280+999.20	1.22		67.10	→	66.85	25.00	1.000	3.021	3.529				1-0.61
		1281+480	1.22		81.85	←	82.00	13.00	-1.154	3.245	3.791				Add'l
	35	1281+765.50	0.61		93.24	→	92.46	14.81	5.267	4.367	1.276				
	36	1282+395.00	0.91		106.65	←	106.73	15.95	-0.502	1.760	1.144				
	37	1282+615.00	0.91		111.09	←	111.16	16.02	-0.437	1.642	1.068				
	38	1283+442.00		1-2.40x1.40	83.46	→	83.79	29.97	-1.101	5.228	17.568	0.289			
	39	1283+780.00	0.91		98.48	→	97.11	35.59	3.850	4.875	3.169				
	40	1284+045.00		1-3.00X1.5	82.27	→	82.21	39.47	0.152	2.146	9.656	0.203			
	41	1284+236.80	0.61		89.36	→	86.37	29.87	10.010	6.021	1.759				
	42	1284+317.50		1-1.80X1.8	86.65	→	86.45	34.68	0.577	3.602	11.669	0.198			
	43	1284+711.00	0.61		118.94	→	117.69	20.81	6.007	4.664	1.362	0.069			
	44	1284+836.00	0.61		125.41	→	122.39	30.01	10.063	6.037	1.763	0.130			
	45	1284+959.00	0.61		131.33	→	127.40	39.43	9.967	6.008	1.755	0.120			
	46	1285+287.50	1.22		133.08	→	132.94	27.80	0.504	2.144	2.505				
	47	1285+414.50	0.61		134.21	→	133.07	26.16	4.357	3.972	1.160				
	48	1285+643.20	0.91		133.30	→	133.10	17.00	1.176	2.695	1.752				1-0.61
	49	1286+072.50	0.91		126.41	→	126.02	21.35	1.827	3.358	2.183				
	50	1286+244.75	0.91		123.82	→	123.20	21.28	2.914	4.241	2.757				
	51	1286+353.35	0.61		122.61	→	122.02	17.04	3.462	3.541	1.034				
	52	1286+711.30	1.22		116.78	→	116.62	16.00	1.000	3.021	3.529				1-0.91
	53	1287+211.00	1.22		110.55	→	110.05	18.00	2.778	5.035	5.882				1-0.91
	54	1287+601.00	0.61		103.44	←	103.46	16.92	-0.118	0.654	0.191				
7-9	55	1287+782.15	1.22		100.41	→	100.09	27.63	1.158	3.251	3.798		13.17	19.48	
	56	1288+021.75	1.22		96.07	→	96.06	18.03	0.055	0.711	0.831				
	57	1288+340.20	1.22		95.40	→	95.10	18.00	1.667	3.900	4.556				1-0.61
	58	1288+993.40	0.61		90.27	←	90.73	18.43	-2.496	3.007	0.878				
7-10		1290+300	1.22		81.00	←	81.50	17.00	-2.941	5.180	6.053		1.61	30.48	Add'l
	59	1290+667.00		1-1.80x2.10	92.60	←	93.00	23.00	-1.739	6.461	24.423	0.055			1-0.91
	60	1290+827.00		1-2.30x1.20	87.22	←	87.81	28.94	-2.038	6.675	18.422				

LIST OF CULVERTS

PK-8

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m3/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
8-1	1	1291+106.64	1.22		96.58	◄---	96.86	23.48	-1.193	3.299	3.854	0.09	4.36	8.73	
		1291+940	1.22		99.90	---►	99.50	21.00	1.905	4.169	4.871				Add'l
8-2		1292+080	1.22	x2	101.90	---►	101.60	14.00	2.143	4.422	10.333		6.68	10.33	Add'l
	2	1292+326.00	0.91		106.25	◄---	106.72	22.71	-2.069	3.574	2.323				
	3	1292+584.30	0.61		102.83	---►	102.14	20.45	3.374	3.495	1.021	0.113			
8-3	4	1292+755.00	0.61		97.24	---►	96.47	23.96	3.214	3.411	0.996	0.236	1.26	10.01	
	5	1292+910.00	0.91		85.80	---►	84.55	34.70	3.602	4.715	3.065	0.012			
	6	1293+386.60	1.22		73.51	---►	73.07	22.56	1.951	4.219	4.929	0.266			
8-4	7	1293+547.00		1-1.50x1.20	68.67	---►	68.55	15.08	0.796	3.551	6.392	0.153	2.48	8.51	
	8	1293+769.20	0.61		57.97	---►	54.58	23.28	14.560	7.261	2.121	0.123			
	9	1294+350.61	0.61		45.89	---►	44.59	21.83	5.955	4.644	1.356				
	10	1294+661.00	0.61		37.96	---►	37.50	18.74	2.449	2.978	0.870	0.219			
	11	1294+793.00	0.91		37.00	---►	36.35	16.73	3.885	4.897	3.183	0.206			
	12	1295+008.00	1.22		36.45	---►	35.99	17.29	2.661	4.928	5.758	0.18			
	13	1295+521.00	0.61		51.73	---►	51.22	21.62	2.359	2.923	0.854				
8-5	14	1295+926.00	0.61		54.93	---►	54.64	19.97	1.452	2.293	0.670		0.81	2.42	
	15	1295+995.50	0.61		53.39	---►	52.63	29.37	2.588	3.061	0.894				
	16	1296+529.00	0.61		57.46	---►	56.46	23.85	4.193	3.896	1.138				
	17	1296+841.20	0.61		40.95	◄---	43.48	28.64	-8.835	5.656	1.652	0.194			
	18	1296+947.00	0.61		37.60	◄---	37.56	22.67	-0.262	0.975	0.285	0.058			
	19	1297+043.50	0.61		36.52	◄---	36.70	18.47	-0.975	1.879	0.549	0.037			
	20	1297+234.15		2-3.00x2.70	34.16	---►	33.76	22.38	1.788	8.700	140.938				
	21	1297+328.50		1-2.50x2.70	33.93	---►	33.69	13.66	1.757	7.958	53.716				
	22	1297+558.00	0.91		35.67	◄---	36.34	28.70	-2.335	3.796	2.468	0.315			
8-6	23	1297+938.50	1.22		50.30	---►	49.41	43.00	2.070	4.346	5.078	0.018	2.24	5.08	1-0.61
	24	1298+181.80	0.91		44.00	◄---	45.60	46.67	-3.428	4.600	2.990	0.051			
	25	1298+343.40	0.91		41.85	◄---	42.53	38.49	-1.767	3.302	2.147	0.072			
	26	1298+440	0.61		46.25	---►	45.65	28.63	2.099	2.757	0.805	0.06			
	27	1298+590.90	0.91		45.20	◄---	46.32	30.77	-3.640	4.740	3.081	0.056			
	28	1298+674.50	0.61		44.28	◄---	45.04	24.19	-3.141	3.373	0.985	0.05			
	29	1298+733.00	0.61		43.53	◄---	44.88	29.59	-4.568	4.067	1.188	0.031			
	30	1298+928.00	0.61		39.27	---►	38.72	38.27	1.437	2.281	0.666	0.054			
	31	1299+104.10	0.61		44.61	---►	44.35	36.44	0.719	1.614	0.471	0.063			
	32	1299+240	0.91		49.80	---►	49.00	22.00	3.636	4.738	3.080				
	33	1299+508.20	0.61		39.35	---►	37.47	47.88	3.926	3.771	1.101	0.213			
	34	1299+709.50	1.22		34.40	◄---	34.90	21.00	-2.381	4.661	5.446	0.114			1-0.61
	35	1300+064.37		2-3.00x1.85	32.71	---►	32.62	12.43	0.724	5.003	55.534				
8-7	36	1300+361.10		1-2.50x2.10	32.04	---►	31.24	12.56	6.369	14.300	75.073		0.38	75.07	
	37	1300+900.00	0.61		31.72	---►	31.21	19.82	2.573	3.053	0.892				
	38	1300+924.10	0.91		32.02	---►	31.71	15.54	1.995	3.509	2.281				
	39	1301+087.60	0.61		31.52	---►	31.29	19.45	1.183	2.069	0.604				
	40	1301+169.23	0.61		31.27	---►	30.76	22.92	2.207	2.827	0.826				
8-8	41	1301+621.00	1.22		32.12	---►	31.78	17.00	2.018	4.291	5.013		3.42	5.37	1-0.61
	42	1301+792.50	0.61		32.53	---►	32.45	19.72	0.406	1.212	0.354				
	43	1302+298.00	0.91		34.02	---►	33.91	25.42	0.413	1.597	1.038				
	44	1302+381.00	0.91		34.74	---►	34.60	20.75	0.665	2.026	1.317				
	45	1302+487.00	0.61		34.25	---►	33.85	26.05	1.536	2.358	0.689				
	46	1302+640	0.61		35.17	---►	34.72	41.25	1.091	1.987	0.581				
8-9	47	1302+955.00	0.61		32.81	---►	32.60	30.19	0.682	1.572	0.459		0.16	0.46	
	48	1303+074.50	0.61		32.55	---►	32.41	26.41	0.534	1.390	0.406	0.057			
		1303+340	1.22		34.19	---►	33.90	23.00	1.261	3.392	3.963				Add'l
	49	1303+368.00	0.61		33.56	---►	32.35	28.35	4.268	3.931	1.148	0.095			
8-10A	50	1303+711.5		1-1.50x1.50	31.75	---►	31.56	18.00	1.072	4.349	9.785	0.056	8.63	28.30	1-1.22
	51	1303+848.20	1.22		31.70	---►	31.20	22.00	2.273	4.554	5.321	0.117			1-0.61
	52	1304+077.00	1.22		33.80	---►	32.90	19.00	4.737	6.574	7.681	0.093			1-0.61
	53	1304+292.30	0.61		35.01	◄---	36.43	16.99	-8.359	5.502	1.607	0.138			
8-10B	54	1305+312.60		1-3.00x3.00	26.10	---►	25.97	13.00	1.000	6.667	60.000		35.39	60.00	1-0.61
8-11	55	1305+424.15		1-2.60x2.50	24.76	---►	24.58	15.05	1.163	6.366	39.786		0.95	43.09	
	56	1305+706.65	1.22		26.60	---►	26.46	16.00	0.875	2.826	3.301				1-0.61
	57	1305+804.90	1.22		26.40	---►	26.26	15.00	0.933	2.918	3.410				1-0.61
	58	1305+912.80	1.22		26.50	---►	26.36	16.00	0.875	2.826	3.301				1-0.61
	59	1305+973.50	1.22		26.40	---►	26.26	15.00	0.933	2.918	3.410				1-0.61
8-12	60	1306+099.10	1.22		27.30	---►	27.17	15.00	0.867	2.812	3.286	0.055	1.37	21.49	1-0.61
	61	1306+256.30	1.22		27.80	---►	27.66	16.00	0.875	2.826	3.301				1-0.61
	62	1306+449.00	1.22		27.90	---►	27.76	16.00	0.875	2.826	3.301				1-0.61
	63	1306+501.50	0.61		30.30	---►	29.11	16.87	7.053	5.054	1.476				
	64	1306+702.00	0.61		29.91	---►	29.46	26.57	1.694	2.477	0.723				

LIST OF CULVERTS

PACKAGE-9

ARE	NO.	STATION	PIPE	BOX	ELEV.	FLOW	ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1307+050.50	1.22		28.10	---▶	26.96	19.00	6.000	7.399	8.645				1-0.61
	2	1307+078.00	1.22		28.00	---▶	27.32	17.00	4.000	6.041	7.059				1-0.61
	3	1307+133.00	1.22		27.90	---▶	27.63	18.00	1.500	3.700	4.323				1-0.61
	4	1307+234.30	1.22		27.08	---▶	26.83	20.00	1.250	3.377	3.945				1-0.91
	5	1307+278.50	1.22		27.59	---▶	27.28	22.00	1.409	3.588	4.190				1-0.91
	6	1307+672.85		2-1.80x2.10	28.87	---▶	27.30	20.84	7.534	13.447	101.662				1-1.8x2.1 Add'l
		1307+900		1-1.50x1.50	28.90	---▶	28.75	15.00	1.000	4.200	9.449				Add'l
	7	1307+945.60	1.22		27.82	---▶	27.51	22.33	1.388	3.559	4.158				
		1308+010		1-1.50x1.50	29.00	---▶	28.86	14.00	1.000	4.200	9.449				Add'l
	8	1308+090.10		2-1.50x1.50	27.97	---▶	27.72	49.00	0.510	3.000	13.499				1-1.22
	9	1308+254.00		2-3.00x3.00	28.01	---▶	27.88	9.45	1.375	7.818	140.723				
		1308+303	1.22		29.42	---▶	29.15	28.00	0.964	2.966	3.466				Add'l
	10	1308+449.35		2-1.50x1.50	29.70	---▶	28.98	16.00	4.500	8.909	40.090				2-0.91
		1308+755	1.22		29.70	---▶	29.54	16.00	1.000	3.021	3.529				Add'l
	12	1308+797.00	1.22		30.10	---▶	29.96	14.00	1.000	3.021	3.529				1-0.91
9-1	13	1308+880.00	1.22		30.30	---▶	30.06	16.00	1.500	3.700	4.323		57.77	215.47	1-0.61
		1308+900	1.22		30.00	---▶	29.84	16.00	1.000	3.021	3.529				Add'l
		1308+990	1.22		30.80	---▶	30.64	16.00	1.000	3.021	3.529				Add'l
	14	1309+026.90	1.22		31.20	---▶	30.96	16.00	1.500	3.700	4.323				1-0.61
	15	1309+143.00	1.22		32.57	---▶	31.66	17.54	5.188	6.880	8.039				
	16	1309+180.00		2-3.00x2.20	31.86	---▶	31.40	14.63	3.144	10.953	144.582				
	17	1309+300.00		2-1.50x1.20	32.22	---▶	31.62	15.50	3.871	7.834	28.201				1-0.91
9-2	18	1309+663.60		1-1.50x1.50	34.29	---▶	33.96	14.28	2.311	6.384	14.365		39.62	47.80	
	19	1309+760.80	1.22		34.6	---▶	34.27	15.00	2.200	4.480	5.235				1-0.61
9-3	20	1309+898.25	1.22		35.20	---▶	35.04	16.00	1.000	3.021	3.529		28.79	74.37	1-0.61
	21	1310+108.00		2-2.50x1.50	36.82	---▶	36.34	14.35	3.345	9.445	70.840				
9-4	22	1310+263.60		2-2.50x1.80	36.60	---▶	36.32	14.00	2.000	7.697	69.277		48.76	77.92	1-0.61
		1310+360	1.22	x2	37.05	---▶	36.81	16.00	1.500	3.700	8.645				Add'l
9-5	23	1310+421.90	1.22	x2	36.30	---▶	35.64	22.00	3.000	5.232	12.226		19.31	26.34	1-0.91
	24	1310+513.00	1.22	x2	39.60	---▶	38.72	22.00	4.000	6.041	14.118	0.115			1-0.61
	25	1310+914.50	0.91		54.66	---▶	53.17	27.81	5.358	5.751	3.738	0.056			
9-6	26	1311+055.00	1.22	x2	56.01	---▶	54.05	26.00	7.538	8.294	19.381		38.82	59.21	1-0.61
	27	1311+151.00	1.22	x2	54.48	---▶	52.32	28.00	7.714	8.390	19.605	0.026			1-0.61
	28	1311+253.50	1.22	x2	53.30	---▶	52.10	22.00	5.455	7.055	16.486				1-0.61
9-7	29	1311+635.00		2-1.80x1.80	44.98	---▶	44.28	17.95	3.900	9.365	60.688		35.37	101.46	
	30	1311+780.00		2-1.80x1.80	43.54	---▶	43.22	18.18	1.760	6.292	40.772				
9-8	31	1312+074.00	1.22	x2	53.40	---▶	52.28	32.00	3.500	5.651	13.206	0.081	15.50	23.19	1-0.91
	32	1312+221.30	1.22		62.70	---▶	61.02	21.00	8.000	8.544	9.983	0.115			1-0.91
9-9	33	1312+433.00		3-3.00x2.40	68.79	---▶	66.20	38.00	6.816	16.500	356.407	0.081	33.93	357.26	
	34	1312+741.50	0.61		88.99	---▶	88.06	39.18	2.374	2.932	0.856				
	35	1313+010.10	1.22		76.43	---▶	75.21	35.37	3.449	5.610	6.555	0.153			
9-10	36	1313+169.50	0.61		80.74	---▶	79.87	23.32	3.731	3.676	1.074		32.14	343.96	
	37	1313+405.60		3-3.00x3.00	66.07	---▶	64.59	42.39	3.491	12.457	338.335	0.110			
	38	1313+740.00	0.61		72.61	◀---	72.98	29.14	-1.201	2.088	0.609	0.033			
9-11	39	1313+931.80		1-1.30x1.20	67.85	---▶	66.92	28.90	3.218	6.724	10.490		29.69	42.57	
	40	1314+028.20		1-1.80x2.10	67.80	---▶	66.93	29.00	3.000	8.486	32.077	0.029			1-0.6x0.5
	41	1314+452.80		1-1.80x1.20	38.22	---▶	37.67	31.68	1.736	5.639	12.179	0.060			
	42	1315+404.80		1-1.50x1.20	24.60	---▶	24.27	18.91	1.745	5.260	9.467	0.065			
9-13	43	1315+501.50	1.22	x2	25.11	---▶	24.74	17.00	2.176	4.456	10.414		20.49	29.47	1-0.61
	44	1315+774.50		1-1.80x1.50	25.39	---▶	25.31	19.41	0.412	2.916	7.874				
	45	1315+973.90	0.91		27.00	---▶	26.58	37.25	1.128	2.638	1.715	0.036			
9-14	46	1316+162.00	1.22	x2	32.84	---▶	32.34	28.00	1.786	4.037	9.433		7.59	10.10	1-0.91
	47	1316+290.20	0.61		33.93	---▶	33.44	34.14	1.435	2.260	0.666				
	48	1316+663.20	1.22		30.84	---▶	30.77	44.89	0.156	1.429	2.058				
	49	1316+671.00	0.91		33.83	---▶	33.08	32.95	2.276	3.748	2.437				
	50	1316+811.60	0.91		30.58	---▶	29.68	28.69	3.137	4.400	2.860	0.071			
	51	1317+061.20	0.61		33.55	---▶	33.22	17.58	1.934	2.646	0.773				
	52	1317+851.10		2-3.00x3.00	33.03	---▶	32.84	19.54	0.972	6.574	118.330				
	53	1318+091.50	0.61		34.50	◀---	34.19	17.14	1.809	2.559	0.748				
	54	1318+258.30	0.61		32.91	---▶	32.58	18.77	1.758	2.523	0.737				
9-15	55	1318+447.50	1.22	x2	30.94	---▶	30.70	20.00	1.200	3.309	7.732		6.99	14.79	1-0.91
	56	1318+777.00	1.22	x2	29.34	---▶	29.14	20.00	1.000	3.021	7.059				1-0.91
9-16	57	1319+013.80		1-1.80x2.10	29.26	---▶	29.10	20.00	0.800	4.382	16.564		13.88	16.56	1-1.22
	58	1319+217.80		2-2.40x2.10	27.97	◀---	28.04	22.41	-0.312	3.113	31.378				
9-17	59	1319+993.20	1.22	x2	27.08	---▶	26.80	18.00	1.556	3.767	8.804		23.69	27.01	1-0.91
	60	1320+179.00		1-1.80x2.00	25.25	---▶	25.00	23.00	1.087	5.057	18.207				1-0.61
	61	1320+467.63		2-3.00x2.80	22.84	---▶	22.68	51.87	0.308	3.645	61.236				
	62	1320+696.50	1.22		24.70	---▶	24.50	24.00	0.833	2.758	3.222				1-0.61
	63	1320+966.00		2-2.60x2.00	21.02	---▶	20.22	23.36	3.425	10.524	109.452				
		1321+100		1-1.25X1.00	23.95	---▶	23.90	19.00	0.263	1.809	4.522				Add'l
	64	1321+375.50	1.22		22.70	---▶	22.15	22.00	2.500	4.776	5.580				1-0.61
		1321+780	1.22	x2	27.70	---▶	27.13	19.00	3.000	5.232	12.226				Add'l
9-18	65	1322+222.80	0.91		25.52	◀---	25.64	32.41	-0.370	1.512	0.983		10.60	22.21	
		1322+400	1.22	x2	26.32	---▶	26.02	15.00	2.000	4.272	9.983				Add'l
9-19	66	1322+830.00		1-1.50X1.00	22.90	---▶	22.50	16.00	2.500	5.992	17.976		6.57	17.98	1-0.91
9-20	67	1323+447.20	1.22		21.15	---▶	21.03	37.68	0.317	1.700	1.986		23.70	43.53	
	68	1323+879.00		2.50x2.50	21.93	---▶	21.60	26.03	1.268	6.647	41.545				

LIST OF CULVERTS

PK-10 (1/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1324+120.11	1.22		22.07		22.05	27.43	0.073	0.816	0.953				
10-1		1324+735	1.22	x2	24.90		24.04	20.00	4.300	6.264	14.637		7.70	14.64	Add'l
	2	1325+016.00		1.00X2.00	22.06		21.71	18.94	1.848	4.920	9.839				
	3	1325+321.00		1.50X1.80	20.95		20.95	21.71	0.000	0.000	0.000				
	4	1325+614.70		2.00X1.40	21.73		21.55	20.11	0.895	4.404	12.331				
10-2	5	1325+738.87	1.22		21.90		21.60	20.00	1.500	3.700	4.323		29.60	43.52	1-0.61
	6	1325+960.00		2-1.80X1.80	22.45		22.32	17.01	0.764	4.147	26.870				
10-3	7	1326+055.00	1.52	x2	23.60		23.40	20.00	1.000	3.498	12.687		15.55	21.33	2-0.61
	8	1326+179.70	1.22	x2	24.40		24.10	20.00	1.500	3.700	8.645	0.054			1-0.61
10-4	9	1326+419.30		2-1.25X1.80	24.57		23.56	27.47	3.676	7.660	34.472	0.049	27.45	34.47	
	10	1326+618.55	1.22	x2	27.00		26.24	20.00	3.800	5.888	13.760				1-0.61
	11	1326+698.70	1.22		27.70		26.50	20.00	6.000	7.399	8.645				1-0.61
	12	1326+804.87		1.50X1.00	27.01		26.96	28.90	0.173	1.576	2.364				
10-5	13	1326+893.00		1.50X1.40	26.33		26.10	20.40	1.127	4.390	9.219		33.80	50.17	
	14	1327+022.50	1.22		30.70		29.93	16.00	4.813	6.627	7.743	0.057			1-0.61
	15	1327+137.50	1.22		32.30		32.00	20.00	1.500	3.700	4.323	0.038			1-0.61
	16	1327+225.00	0.91		35.20		34.03	18.00	6.500	6.334	4.118				1-0.61
10-6	17	1327+405.50		2-2.40x2.40	29.13		28.85	16.00	1.750	7.600	87.554	0.092	53.99	87.55	1-1.3x1.0
10-7	18	1327+582.50		1.80X1.20	27.62		27.22	19.33	2.069	6.155	13.295	0.116	27.77	40.31	
	19	1327+789.30		2-1.50x1.25	26.01		25.50	16.00	3.206	7.203	27.013	0.152			1-0.61
	20	1327+853.00	1.22		24.50		23.70	19.00	4.200	6.191	7.233	0.123			1-0.61
10-8	21	1328+056.67	1.22		25.08		24.17	22.38	4.066	6.091	7.117		19.18	33.00	
	22	1328+116.70	1.22		24.59		23.74	23.69	3.588	5.722	6.686	0.134			
	23	1328+315.23	1.22		29.60		27.04	24.00	11.500	10.244	11.969	0.021			1-0.61
	24	1328+364.50	1.22		29.80		28.92	22.00	4.000	6.041	14.118				1-0.91
	25	1328+627.10	1.22		24.17		22.80	22.59	6.065	7.439	8.692	0.211			
10-9		1328+725.00	1.22		23.50		23.05	15.00	3.000	5.232	6.113	0.036	29.05	37.69	Add'l
		1328+740	1.22		23.50		23.08	14.00	3.000	5.232	6.113				Add'l
	26	1328+791.17	1.22		22.46		22.30	28.19	0.568	2.276	2.659				
	27	1329+209.97	1.22	x2	26.60		24.60	25.00	8.000	8.544	19.965	0.091			1-0.91
10-10	28	1329+270.27	1.22	x2	23.80		23.40	22.00	1.818	4.073	9.518		105.39	140.95	1-0.61
	29	1329+352.47		2-3.00x2.40	21.90		21.66	16.00	1.500	7.741	111.466				1-0.61
	30	1329+607.56	1.22		22.30		21.73	19.00	3.000	5.232	6.113				1-0.61
10-11	31	1329+753.68		2-2.40x1.80	21.70		21.43	15.00	1.800	7.185	62.079		58.60	75.14	1-0.91
	32	1330+092.6		1-1.20X1.20	23.90		23.55	19.71	1.776	4.823	6.945				
10-12	33	1330+352.70	1.22	x2	26.02		25.86	16.00	1.025	3.058	7.146		9.40	12.61	1-0.61
	34	1330+669.50	1.22		25.68		25.30	16.00	2.400	4.680	5.468				1-0.61
		1331+125	0.61		27.01		26.92	16.40	0.549	1.410	0.412				
	35	1331+370.60	1.22		27.59		27.34	21.55	1.160	3.254	3.802				
	36	1331+776.70	0.61		29.94		29.34	17.63	3.403	3.510	1.025				
	37	1331+956.80	0.91		29.35		29.30	21.92	0.228	1.186	0.771	0.035			
	38	1332+074.11	1.22		28.77		28.10	19.94	3.360	5.537	6.469	0.050			
	39	1332+210.00		1.50X1.80	21.60		21.25	23.04	1.519	5.377	14.518				
10-13	40	1332+353.80	0.91		21.95		21.45	21.57	2.318	3.782	2.459	0.110	40.79	59.36	
	41	1332+634.05	1.22		20.30		20.15	17.00	0.882	2.837	3.315	0.090			1-0.61
	43	1332+746.80		2.00X2.00	19.61		19.45	18.53	0.864	4.728	18.912				
	44	1332+927.50		1.80X1.20	19.55		19.45	17.88	0.559	3.200	6.913				
	45	1333+139.04		1.80X1.20	20.62		20.55	16.60	0.422	2.779	6.002				
	46	1333+422.94	0.91		24.27		24.15	21.73	0.552	1.846	1.200				
	47	1333+718.00	0.61		24.84		24.44			0.000	0.000				DELETE
10-14	48	1334+126.75		1-3.00X1.80 1-2.40X1.80	22.89		22.73	37.26	0.429	3.822	41.275		40.40	41.28	
		1334+800	1.22	x2	19.60		19.04	16.00	3.500	5.651	13.206				Add'l
10-15	49	1335+014.00	1.22	x2	19.10		17.10	20.00	10.000	9.552	22.322	0.238	27.64	48.73	1-0.61
		1335+140	1.22	x2	18.90		18.34	16.00	3.500	5.651	13.206				Add'l
10-16	50	1335+422.40	1.22	x2	19.00		18.46	18.00	3.000	5.232	12.226	0.056	16.81	24.45	1-0.61
		1335+580.00	1.22	x2	19.60		19.12	16.00	3.000	5.232	12.226	0.253			Add'l
	51	1335+737.00	1.22	x2	20.70		19.89	18.00	4.500	6.408	14.974	0.053			1-0.91
10-17	52	1335+815.60		2.50X1.50	19.91		19.58	20.79	1.588	6.507	24.402		39.15	50.54	
	53	1336+168.90	1.22	x2	19.00		18.55	18.00	2.500	4.776	11.161				1-0.91
10-18	54	1336+388.40		2-1.80X1.20	17.95		17.54	21.09	1.944	5.997	25.775		33.60	44.59	
		1336+420		1-1.80x1.80	19.10		18.89	14.00	1.500	5.808	18.819				Add'l
	55	1336+831.50	1.22		20.11		19.60	18.58	2.748	5.007	5.851				1-0.91
	56	1336+921.20	1.22		19.80		19.58	20.00	1.100	3.168	3.702				1-0.61
	57	1337+088.60	1.22		19.80		19.17	18.00	3.500	5.651	6.603				1-0.91
10-19	58	1337+291.00	1.22		19.30		18.58	17.71	4.082	6.103	7.131	0.308	31.74	42.21	1-0.91
	59	1337+491.60	0.91		23.29		22.46	20.56	4.037	4.992	3.245				
	60	1337+530.50	1.22		22.00		20.90	17.00	6.500	7.701	8.998	0.030			1-0.61
	61	1337+599.50	1.22		20.59		20.02	16.00	3.588	5.721	6.685				1-0.61

LIST OF CULVERTS

PK-10 (2/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	SLOPE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	62	1337+730.25		2-2.40x2.40	17.90	---►	17.42	16.00	3.000	9.951	114.634	0.118			1-0.91
10-20	63	1337+809.40	1.22		17.90	---►	17.70	19.73	1.014	3.041	3.554		112.83	150.68	
	64	1337+851.05		2-2.40X2.00	17.59	---►	17.53	15.66	0.378	3.385	32.492	0.109			
	65	1338+021.85	1.22		18.62	---►	17.81	19.00	4.263	6.237	7.287	0.096			1-0.61
10-21	66	1338+178.85	0.91		19.20	---►	18.35	24.73	3.438	4.606	2.994	0.339	24.94	37.07	
	67	1338+566.94		1.80X1.80	20.70	---►	20.03	22.04	3.040	8.268	26.789				
	68	1338+769.55	1.22		20.86	---►	20.73	27.58	0.471	2.074	2.423	0.317			
10-22	69	1338+978.94	1.22	x2	20.80	---►	19.96	21.00	4.000	6.041	14.118	0.094	19.94	25.32	1-0.61
	70	1339+065.30	1.22	x2	19.24	---►	18.90	22.00	1.545	3.755	8.775	0.031			1-1.22
	71	1339+307.50		1.20X1.00	18.31	---►	17.91	20.63	1.939	4.827	5.793	0.188			
10-23	72	1339+555.50	1.22	x2	17.30	---►	16.49	18.00	4.500	6.408	14.974	0.330	23.08	28.97	1-0.91
	73	1339+797.00	1.22	x2	17.69	---►	17.42	20.00	1.350	3.510	8.202	0.163			1-1.22
10-24	74	1340+069.50	1.22		16.10	---►	15.74	24.00	1.500	3.700	4.323	0.124	11.22	16.55	1-0.91
	75	1340+209.05	1.22	x2	15.90	---►	15.18	24.00	3.000	5.232	12.226				1-0.91
10-25	76	1340+608.85	0.61			---►				0.000	0.000	0.019			DELETE
	77	1340+723.00	1.22		20.25	---►	17.35	22.00	13.123	10.943	12.785	0.060	7.34	12.79	1-0.91
10-26	78	1340+916.00		1-1.80x1.80	16.71	---►	16.20	27.00	1.881	6.505	21.077	0.141	14.94	21.08	1-1.22
10-27	79	1341+325.40		2-2.50X2.20	15.84	---►	15.70	27.69	0.506	4.075	44.829		69.10	107.87	
		1341+360		2-2.50X2.20	18.60	---►	18.64	16.00	1.000	5.731	63.044				Add'l
	80	1341+756.50	0.61		19.01	◄---	19.46	28.00	-1.607	2.413	0.705				
10-28	81	1342+025.20	0.91		23.60	---►	23.15	38.63	1.165	2.692	1.743	0.061	5.90	6.36	
	82	1342+135.10	0.61		29.60	---►	27.23	23.99	9.878	5.981	1.747	0.050			
	83	1342+233.05	0.91		30.13	---►	29.60	29.38	1.804	3.337	2.169				
	84	1342+461.10	0.91		30.78	---►	29.66	37.25	2.953	4.270	2.775				
10-29	85	1342+563.15	0.61		29.09	---►	27.92	25.73	4.548	4.058	1.185		15.30	26.07	
	86	1343+018.15		2.40X1.80	16.85	---►	16.68	18.62	0.913	5.118	22.109				
	87	1343+242.80		1.80X1.90	17.28	---►	17.18	17.65	0.567	3.612	12.354				
	88	1343+751.05	0.61		18.72	---►	18.59	20.84	0.624	1.503	0.439				
	89	1343+962.35	0.91		18.06	---►	17.82	20.12	1.193	2.714	1.764				
	90	1344+013.50	0.91		18.67	---►	18.45	17.57	1.252	2.780	1.807				
	91	1344+115.20	0.91		18.72	◄---	18.88	18.51	-0.864	2.310	1.502				
10-30	92	1344+508.75	0.61		21.10	◄---	21.71	30.13	-2.024	2.707	0.791		21.90	28.75	
	93	1344+670.70		1-1.80x1.80	19.90	---►	19.20	20.00	3.500	8.872	28.747				1-0.91
		1344+720	1.22		20.10	---►	19.66	16.00	1.500	3.700	4.323				Add'l
	94	1344+796.10		1.80X2.00	18.80	---►	18.55	23.25	1.075	5.031	18.110				
10-31	95	1345+017.35	0.61		32.16	◄---	33.36	22.12	-5.425	4.432	1.295		17.40	22.43	
	96	1345+158.75	0.91			◄---				0.000	0.000				DELETE
	97	1345+864.30	0.61		24.45	---►	23.72	23.33	3.129	3.366	0.983				
10-32	98	1345+987.50	1.22	x2	21.38	---►	20.97	18.00	2.272	4.553	10.640		14.80	26.39	1-0.61
	100	1346+068.00	1.22	x2	21.45	---►	20.75	16.00	4.375	6.318	14.764				1-0.61
	101	1346+323.40		2-3.00X3.00	20.33	---►	19.80	17.14	3.092	11.723	211.021				
	102	1346+372.20	0.91		20.57	---►	20.30	22.14	1.220	2.744	1.784				
	103	1346+661.30		2.40X2.40	20.05	---►	19.90	17.27	0.868	5.354	30.838				
	104	1346+708.75	0.61		20.85	---►	20.79			0.000	0.000				N/A
		1346+955	0.61		22.75	---►	22.50	19.00	1.316	2.183	0.638				
	105	1347+227.80		3.00X3.00	20.88	---►	20.45	25.66	1.663	8.596	77.367				
	106	1347+522.10	1.22		21.62	---►	21.50	24.66	0.487	2.107	2.462				
10-33	107	1347+936.50	1.62	x2	22.80	---►	22.00	23.00	3.478	6.523	23.661		17.40	23.66	1-0.61
	109	1348+333.50	1.22	x2	21.80	---►	21.70	17.00	0.588	2.317	5.414				2-0.61
	111	1348+453.00	0.91		22.00	---►	21.70	20.00	1.500	3.043	1.978				1-0.61
10-34	112	1348+592.40		3.00X2.40	20.93	---►	20.91	19.94	0.100	2.002	14.413		24.00	36.00	
	113	1348+676.15	0.91		21.40	---►	20.40	20.00	5.000	5.555	3.611				1-0.61
	114	1348+771.50	1.22		20.70	---►	20.54	16.00	1.000	3.021	3.529				1-0.61
		1348+860.00	1.22	x2	21.00	---►	20.84	16.00	1.000	3.021	7.059				Add'l
	115	1348+884.00	1.22	x2		---►				0.000	0.000				1-0.61

LIST OF CULVERTS

PK-11

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1349+183.20	1.22			→		26.07	1.000	3.021	3.529				DELETE
11-1	2	1349+360.50	1.22	x2	21.90	→	21.50	23.00	1.739	3.984	9.309		16.80	23.43	1-0.91
	3	1349+623.80	1.22	x2	21.00	→	20.20	20.00	4.000	6.041	14.118				1-0.61
11-2	4	1349+939.00		1-2.40x1.80	18.50	→	18.25	18.00	1.389	6.311	27.266		24.96	28.96	1-0.91
	5	1349+944.00	0.91		18.56	→	18.29	24.48	1.103	2.609	1.696	0.164			
	6	1350+309.50	0.61		22.63	→	22.10	17.57	3.017	3.305	0.965	0.092			
	7	1350+497.50	0.61		22.01	→	21.71	21.21	1.414	2.263	0.661				
11-3	8	1350+534.50		3.00X3.00	19.89	→	19.69	20.24	0.988	6.627	59.643		16.16	68.08	
	9	1350+623.80	0.61		21.28	→	20.94	26.71	1.273	2.147	0.627				
	10	1350+727.00	0.91		22.60	→	22.05	19.00	2.895	4.227	2.748	0.064			1-0.61
	11	1350+878.00	1.22		22.04	→	21.80	25.38	0.946	2.937	3.432				
11-4	12	1350+947.00		2-2.40x2.40	22.58	→	22.42	17.50	0.914	5.493	63.284		28.90	63.28	1-0.61
	13	1351+183.50	0.91		21.57	→	21.41	26.10	0.613	1.945	1.265	0.137			
11-5	14	1351+207.00	0.91		21.30	→	21.67	19.98	-1.852	3.381	2.198		22.90	31.32	
	15	1351+239.00	1.22	x2	22.00	→	21.30	23.00	3.043	5.270	12.314	0.03			1-0.61
	16	1351+386.00	1.22	x2	20.30	→	20.15	21.00	0.714	2.553	6.966	0.03			1-0.91
	17	1351+430.30	1.22	x2	21.18	→	20.72	25.00	1.840	4.097	9.575				1-0.91
	18	1351+637.10	0.91		19.80	→	19.75	24.59	0.203	1.120	0.728				
11-6	19	1352+132.50	0.61		20.36	→	19.82	25.62	2.108	2.763	0.807		10.40	15.91	
	20	1352+461.00	1.22	x2	23.70	→	22.95	21.00	3.571	5.709	13.340	0.195			1-0.61
	21	1352+730.50	0.61		25.73	→	24.73	28.65	3.489	3.555	1.038				
11-7	22	1352+920.00	1.52	x2	25.71	→	25.40	24.00	1.292	3.975	14.419		13.18	21.48	1-0.61
	23	1353+076.00	1.22	x2	25.60	→	25.41	19.00	1.000	3.021	7.059	0.08			1-0.61
		1353+220		2-1.25X1.0	24.75	→	24.50	15.00	1.667	4.552	11.380				Add'l
11-8		1353+390		2-1.80x1.5	24.20	→	23.90	13.50	2.222	7.913	42.732		59.50	59.61	Add'l
	24	1353+391.00	0.91	x2	24.58	→	24.03	19.00	2.895	4.227	5.496				1-0.61
11-9	25	1353+451.70	1.22	x2	23.80	→	23.55	18.00	1.389	3.560	8.319		15.50	16.37	1-0.61
	26	1353+604.30	1.22	x2	23.64	→	23.38	20.00	1.300	3.444	8.048				1-1.22 Add'l
	27	1353+988.40	1.22	x2	22.82	→	22.65	17.00	1.000	3.021	7.059				1-0.91
		1354+020	0.91	x2	23.20	→	23.00	15.00	1.333	2.869	3.730				Add'l
11-10	28	1354+174.00	0.61		23.37	→	23.35	17.65	0.113	0.641	0.374		42.30	49.83	
	29	1354+181.50		1-1.20X1.2	23.19	→	22.81	20.20	1.881	4.964	7.148				
		1354+340		2-1.80x1.25	22.90	→	22.60	16.50	1.818	5.837	31.521				Add'l
	30	1354+413.60	1.22	x2	22.71	→	22.47	16.00	1.500	3.700	8.645				1-0.61
11-11	31	1354+520.40	0.61			→		23.61	0.000	0.000	0.000				DELETE
	32	1354+573.90	1.22	x2	19.50	→	18.40	28.00	3.929	5.987	13.991		13.20	25.92	
	33	1354+729.30	1.22		22.39	→	22.20	21.92	0.867	2.812	3.286				
	34	1355+212.00		2.40x2.40	21.17	→	21.03	32.10	0.436	3.794	21.854				
	35	1355+259.00	1.22		21.43	→	20.61	29.62	2.768	5.026	5.872				
	36	1355+535.50	0.91		22.58	→	22.19	20.42	1.910	3.433	2.232				
	37	1355+655.00	1.22		22.70	→	22.58	19.00	0.632	2.401	2.805				1-0.61
	38	1356+254.00	0.61		23.1	→	22.90	21.09	0.948	1.853	0.541				
	39	1356+368.00		2.40x2.40	20.88	←	21.02	23.48	-0.681	4.743	27.317				
	40	1356+574.40	0.91		22.00	→	21.79	34.87	0.602	1.928	1.253				
	41	1356+624.00	0.61		21.69	→	21.89	26.06	-0.767	1.667	0.487				
	42	1356+792.60	1.22		21.59	→	21.21	25.27	1.504	3.704	4.328				
	43	1357+302.40	0.91		22.73	→	22.44	22.58	1.284	2.816	1.830				
	44	1357+694.00		1.20x1.00	23.15	→	22.80	20.03	1.748	4.583	5.499				N/A
	45	1357+858.40	0.61		24.75	→	24.59	19.63	0.815	1.718	0.502				
	46	1358+002.80	0.61		24.25	←	24.27	21.01	-0.095	0.587	0.171				
	47	1358+159.00	0.61		24.42	→	24.43	18.08	-0.055	0.448	0.131				
	48	1358+652.60	0.61		25.25	→		17.21	0.000	0.000					DELETE
	49	1358+851.70	0.61		23.21	→	24.17	23.73	-4.046	3.827	1.118				
	50	1359+068.90	1.22		23.10	←	24.28	25.40	-4.646	6.511	7.607				
	51	1359+546.00	1.22		24.45	→	24.40	26.00	0.192	1.325	1.548				
	52	1359+610.00		2-2.60X2.4	23.89	←	23.91	18.32	-0.109	1.966	24.536				
		1359+660.00	0.91		24.90		25.10	17.00	-1.176						Add'l
	53	1359+709.20	0.61			→		16.78	0.000	0.000	0.000				DELETE
	54	1359+953.00	0.61		25.82	←	26.28	16.25	-2.831	3.202	0.935				
	55	1360+495.70		2-2.40X2.4	20.23	←	20.29	19.57	-0.307	3.181	36.647				
	56	1360+754.70	1.22		23.59	←	23.64	21.90	-0.228	1.443	1.686				
	57	1360+804.52	1.22		23.27	←	23.32	25.34	-0.197	1.342	1.568				
	58	1361+090.90		2.40x2.40	23.04	←	23.15	20.71	-0.531	4.187	24.117				
	59	1361+156.50		2.40x2.40	23.27	→	23.14	22.45	0.579	4.372	25.182				
	60	1362+036.30	0.61		27.09	←	27.24	18.81	-0.797	1.699	0.496				
	61	1362+976.30	0.61		26.87	←	26.89	25.04	-0.080	0.638	0.157				N/A
	62	1363+278.00		3.00x3.00	24.94	←	25.44	18.10	-2.762	11.080	99.723				
	63	1363+424.90		3.00x2.40	25.92	→	25.90	19.01	0.105	2.050	14.760				
	64	1363+602.30		3.00x3.00	24.57	←	24.62	19.43	-0.257	3.382	30.437				
	65	1363+703.00		3.00x3.00	24.87	←	24.91	19.81	-0.202	2.996	26.961				

LIST OF CULVERTS

PACKAGE-12

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1364+088.20		1-2.00X2.40	26.76	►	26.69			0.000	0.000				N/A
	2	1364+183.80		1-3.00X3.00	24.35	◄	24.74	19.31	-2.020	9.474	85.269				
	3	1364+452.30	1.22		25.55	►	25.51	32.29	0.124	1.063	1.242				
	4	1364+880.00	0.61		28.64	►	29.26	23.32	-2.659	3.103	0.906				
	5	1364+953.00		1-0.60X0.60	28.17	►	28.05	23.50	0.511	2.586	0.931				
	6	1365+059.60	0.61		29.00	►	28.30	23.68	2.956	3.272	0.956				
	7	1365+506.50	0.61		28.84	►	28.52	20.44	1.566	2.381	0.695				
	8	1365+791.30		1-3.00x3.00	27.47	◄	27.67	18.41	-1.086	6.949	62.537				
	9	1366+172.50	1.22		27.09	◄	27.38	20.72	-1.400	3.574	4.175				
	10	1366+286.50	1.22		27.01	◄	27.10	29.46	-0.305	1.670	1.951				1-0.61
	11	1366+961.20	1.22		30.32	►	29.90	18.13	2.317	4.598	5.372				
	12	1367+217.70		1-1.25X1.00	30.44	◄	30.65	19.00	-1.105	3.707	4.633				1-0.61
	13	1367+680.70	1.22		32.32	◄	32.64	30.83	-1.038	3.077	3.596				
	14	1368+080.50	0.61		35.27	◄	35.45	23.68	3.463	3.541	1.034				
	15	1368+682.80		1-1.40x1.20	31.63	◄	31.78	26.39	-0.568	2.917	4.900				
	16	1369+236.50	0.61		34.46	◄	34.88	20.78	-2.021	2.705	0.790				
	16A	1369+430.00	0.61			◄				0.000	0.000				DELETE
	17	1369+507.80		1-1.35X1.20	36.00	◄	39.55	49.11	-7.229	10.243	16.594				1-0.61
	18	1369+805.00	0.91		37.78	◄	38.37	40.63	-1.452	2.994	1.946				
	19	1369+911.50	0.91		37.82	◄	38.41	32.52	-1.814	3.346	2.175				
	20	1370+057.60	0.91		36.63	◄	37.36	32.48	-2.254	3.730	2.425				
	21	1370+255.00	1.22		41.00	◄	41.51	23.22	-2.196	4.477	5.231				
	22	1370+440.20		1-1.20X1.20	37.30	◄	37.35	23.51	-0.213	1.669	2.403				
	23	1370+774.40	0.61		37.60	◄	38.21	35.29	-1.729	2.502	0.731				
	24	1370+868.00	1.22		38.09	◄	38.73	38.48	-1.663	3.896	4.552	0.075			
	25	1370+985.00	0.61		45.14	►	42.31	32.77	8.636	5.592	1.633	0.048			
	26	1371+089.00	1.22		44.46	►	43.75	45.00		0.000	0.000				
	27	1371+352.90	0.61		58.32	►	58.10	28.39	0.778	1.679	0.490				
	28	1371+495.00		1-1.60X1.30	56.72	►	56.13	39.99	1.475	5.069	10.543				
	29	1371+788.60	0.91		64.20	►	63.35	41.19	2.064	3.569	2.320				
	30	1371+883.50	0.61		63.77	►	63.04	31.50	2.317	2.697	0.846				
	31	1372+195.60	0.91		56.16	►	54.13	45.15	4.496	5.268	3.425				
	32	1372+334.20		1-1.50X1.30	44.20	►	43.77	39.00	1.103	4.265	8.317				
	33	1372+463.40	0.61		44.54	►	44.34	24.06	0.831	1.735	0.507	0.069			
	34	1372+766.90	0.61		45.57	◄	47.94	23.00	-10.304	6.108	1.784				
	35	1372+933.65	0.91		40.09	◄	41.60	35.00	-4.314	5.160	3.355				
	36	1373+132.00	0.91		43.28	◄	44.35	42.71	-2.505	3.932	2.556				
	37	1373+313.00	0.61		53.26	►	51.09	24.83	8.739	5.626	1.643				
	38	1373+715.40	0.91		38.85	◄	39.44	32.11	-1.837	3.358	2.189				
	39	1373+813.00	1.22	x2	37.66	►	37.28	26.76	2.167	4.447	5.196				
12-1	41	1373+996.60	0.91		38.03	►	37.46	27.15	2.099	3.600	2.340		15.2	16.6	
	42	1374+016.20	0.91		38.20	►	37.63	27.14	2.100	3.600	2.341	0.21			
	43	1374+244.20	1.22		44.80	►	44.00	22.00	3.636	5.760	6.730				1-0.61
	44	1374+325.00	1.22	x2	44.75	►	43.88	38.00	2.289	4.571	10.681				1-0.61
	45	1374+537.00	1.22		41.70	►	41.38	28.00	1.500	3.700	4.323				1-0.91
12-2	46	1374+796.50	0.61		47.44	◄	48.37	20.85	-4.460	4.019	1.174	0.054	16.7	23.5	
	47	1374+899.60	0.61		44.56	◄	44.58	34.87	-0.057	0.456	0.133	0.202			
	48	1375+189.00	1.22		51.84	◄	52.49	33.04	-1.967	4.237	4.950				
	49	1375+265.50	1.22	x2	56.80	►	55.30	26.00	5.769	7.256	8.477				1-0.61
12-3	50	1375+734.30	0.91		67.67	◄	68.94	22.23	-5.713	5.938	3.860		28.1	103.1	
	51	1376+036.60		2-2.40x2.40	77.15	◄	77.60	20.00	-2.250	8.618	99.276				1-0.61
	53	1376+203.70	1.22	x2	69.00	◄	69.35	28.00	-1.346	3.505	8.190				1-0.61
12-4	54	1376+456.60	1.22	x2	61.00	◄	62.00	32.00	-2.300	4.581	10.705	0.121	19.6	19.8	1-0.91
	55	1376+579.70	0.91		60.45	◄	60.53	25.09	-0.319	1.403	0.912	0.039			

LIST OF CULVERTS

PK-13

AREA	NO.	STATION	PIPE	BOX	LEFT ELEV.	FLOW	RIGHT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m3/s)	AD (m³/s)	REMARKS
13-1	1	1376+950.40	1.22		60.58	---►	59.15	34.44	4.152	6.155	7.192	0.120	9.58	13.79	
		1376+980	1.22		61.50	---►	60.94	16.00	3.500	5.651	6.603				Add'l
13-3	2	1377+379.00	0.61		52.34	---►	50.54	39.96	4.505	4.039	1.160	0.093	2.18	2.41	
	3	1377+448.70	0.61		50.06	---►	48.64	28.83	4.925	4.223	1.233				
	4	1378+314.80	0.91		74.53	---►	66.35	44.45	18.401	10.657	6.928				
13-4	5	1378+534.00	1.22		83.08	---►	79.07	41.02	9.776	9.445	11.035	0.177	20.05	38.82	
	6	1378+832.30	1.22		84.40	---►	84.05	30.68	1.141	3.226	3.769	0.203			
		1379+000	1.22		82.30	---►	81.7	20.00	3.000	5.232	6.113				Add'l
	7	1379+079.00	1.22		72.55	---►	67.65	50.67	9.671	9.394	10.976	0.388			
13-5	8	1379+238.00		2-1.50x1.80	82.50	---►	81.45	17.50	6.000	10.687	57.709	0.211	45.70	60.21	1-0.91
	9	1379+334.00	0.61		84.20	---►	79.56	22.92	20.244	8.562	2.501	0.768			
13-6	10	1379+815.55		3-3.00X3.0	53.09	---►	52.65	43.11	1.021	6.735	181.851	0.029	17.17	186.06	
	11	1380+049.20	0.91		68.32	---►	65.78	37.35	6.799	6.478	4.211	0.100			
	12	1380+437.00	0.61		57.70	---►	56.24	82.06	1.779	2.538	0.741	0.208			
13-7	13	1380+532.20	0.91		70.61	---►	69.43	22.41	5.266	5.701	3.706	0.144	13.42	44.30	
	14	1380+636.60		1-1.50X1.2	64.81	---►	53.32	53.58	21.443	18.437	33.187	0.305			
	15	1380+991.50	0.91		89.90	---►	82.04	46.17	17.024	10.251	6.664	0.291			
	16	1381+378.00	0.91		80.42	---►	79.44	46.82	2.093	3.594	2.337	0.095			
	17	1381+606.20	0.61		81.49	---►	80.30	29.22	4.072	3.840	1.122	0.145			
	18	1381+764.00	0.91		76.78	---►	76.49	25.53	1.136	2.648	1.721				
	19	1381+766.00	0.91		77.35	---►	76.55	25.89	3.089	4.367	2.839				
	20	1381+896.00	0.61		66.59	---►	65.58	24.05	4.199	3.899	1.139	0.115			
	21	1381+994.20	0.91		55.49	---►	51.74	40.47	9.266	7.563	4.916	0.025			
	22	1382+952.00	0.91		43.40	---►	42.16	25.87	4.793	5.439	3.536	0.248			
	23	1383+029.00	1.22		46.09	---►	43.12	25.00	3.880	5.950	6.952				1-0.61
	24	1383+148.50	1.22		41.80	---►	41.39	26.00	1.577	3.793	4.432	0.248			1-0.75
13-8	25	1383+414.35	0.91		41.28	---►	40.48	29.62	2.701	4.083	2.654	0.035	72.79	93.93	
	26	1383+470.80		2-3.00X3.0	40.58	---►	40.47	31.44	0.350	3.944	70.983	0.077			
	27	1383+638.80	0.91		42.62	---►	42.17	36.93	1.219	2.742	3.566				
	28	1383+639.90	0.91		42.60	---►	42.14	36.90	1.247	2.774	1.803	0.040			
	29	1383+859.00	0.61		45.37	◄---	46.09	36.93	-1.950	2.657	0.776				
	30	1384+021.85	0.61		49.54	---►	48.34	33.26	3.608	3.615	1.056	0.091			
	31	1384+296.40	0.61		46.55	---►	45.08	40.68	1.155	2.045	0.597	0.095			
13-9	32	1384+422.00	0.91		47.99	---►	45.63	27.70	8.520	7.252	4.714	0.055	45.04	85.03	
	33	1384+483.00		2-1.80x2.10	45.16	---►	44.36	21.00	3.810	9.562	72.292	0.026			1-0.61
	34	1384+589.00		1-1.50X1.5	42.69	---►	42.60	19.79	0.455	2.832	6.372	0.335			
13-10	35	1384+975.10	0.61		46.00	---►	45.68	28.34	1.129	2.022	0.591	0.112	26.04	212.46	
	36	1385+051.30		2-2.40X2.4	47.72	---►	45.79	18.83	10.248	18.391	211.868	0.271			
		1386+000	1.22		64.30	---►	63.96	17.00	2.000	4.272	4.991	0.322			Add'l
	37	1386+137.00	1.22		53.67	---►	53.01	27.82	2.372	4.653	5.436	0.079	17.88	23.87	
13-11	38	1386+286.00	1.22	x2	53.59	---►	53.18	24.00	1.708	3.948	9.226				1-0.61
	39	1386+368.00	1.22		54.80	---►	54.50	21.00	1.429	3.610	4.218				1-0.61
	40	1386+480.00	0.91		53.32	---►	52.61	25.14	2.824	4.175	2.714				
13-12	41	1386+961.20		1-1.80x2.10	59.25	---►	58.83	17.00	2.471	7.701	29.109	0.008	18.51	29.11	1-0.61
	42	1387+072.00		2-2.40X2.4	58.08	---►	58.03	18.04	0.277	3.025	34.845	0.058			
13-13	43	1387+390.00	0.61		56.60	---►	56.18	22.05	1.904	2.626	0.787	0.207	12.26	50.03	
	44	1387+578.10		1-1.80X1.5	52.79	---►	52.57	21.67	1.015	4.577	12.358	0.325			
	45	1387+742.40	0.61		56.30	---►	53.21	22.89	13.497	6.991	2.042	0.281			
13-14	46	1387+987.60	0.61		54.07	---►	52.14	36.65	5.266	4.367	1.276		4.61	70.72	
	47	1388+021.50		1-3.00X3.0	51.80	---►	51.22	43.30	1.340	7.716	69.444	0.14			
	48	1388+244.00	0.61		66.58	---►	63.09	31.64	11.032	6.320	1.846	0.044			
13-15	49	1388+342.60	0.91		61.80	---►	60.50	58.51	2.222	3.703	2.407	0.023	7.43	20.63	
	50	1388+592		1-1.60X1.8	60.62	---►	59.79	51.92	1.599	5.685	16.372	0.613			
13-16	51	1389+027.70		1-2.40X1.8	81.52	---►	80.28	42.23	2.936	9.177	39.643	0.087	10.41	39.64	
	52	1389+150.50	0.61		89.61	---►	88.53	30.15	3.582	3.602	1.052				
	53	1389+663.50	0.61		76.71	---►	71.98	23.34	20.349	8.584	2.507				
	54	1389+864.50	0.91		66.79	---►	66.13	36.04	1.831	3.362	2.185	0.217			
		1390+000	0.61	x2	63.50	---►	63.20	20.00	1.500	2.331	1.362	0.137			Add'l
	55	1390+120.10	0.91		55.56	---►	53.79	33.57	5.272	5.705	3.708				
13-17	56	1390+488.80		2-1.80X1.8	50.12	---►	49.92	15.40	1.298	5.404	35.018	0.073	25.42	35.02	
	57	1391+159.50	0.75		48.39	---►	48.20	21.69	0.876	2.044	0.903				
	58	1391+319.40	0.61		48.53	---►	48.43	22.17	0.226	0.904	0.264				
13-18	59	1391+377.000	1.22	x2	48.70	---►	48.10	18.00	3.333	5.515	12.687		17.94	21.95	1-0.61
	60	1391+656.30		1-1.80X1.5	53.65	---►	53.55	19.45	0.514	3.257	8.795				
	61	1391+918.70	0.61		61.63	◄---	63.82	34.52	-6.345	4.793	1.400	0.019			
	62	1391+920	0.61		62.24	◄---	64.59								DELETED
13-19	63	1392+005.70	0.61		63.59	◄---	66.22	39.97	-6.580	4.881	1.426	0.015	17.34	26.95	
	64	1392+243.00	0.75		64.32	◄---	66.42	33.17	-6.332	5.495	2.427				
		1392+440	1.22	x2	52.57	◄---	54.00	37.00	-3.865	5.938	13.877				Add'l
	65	1392+465.50		1-1.25X1.2	52.10	◄---	52.67	28.50	-2.000	5.211	7.817	0.054			
	66	1392+739.45		1-1.80X2.1	46.80	---►	46.55	24.83	1.007	4.916	18.584				
13-20		1393+080	1.22	x2	50.00	◄---	50.20	24.00	-0.833	2.758	12.687		5.00	12.89	Add'l
13-21	67	1393+305.20	0.61		50.30	◄---	50.39	23.65	-0.381	1.174	0.343		6.70	7.40	
	68	1393+497.00	1.22	x2	49.50	---►	49.13	37.00	1.000	3.021	7.059				1-0.61
	69	1393+629.8	0.91		48.02	---►	47.65	22.23	1.665	3.206	2.084				
	70	1393+651.3	0.91		48.02	---►	47.65	21.70	1.705	3.244	2.109				
	71	1393+872.30	0.61		51.08	---►	50.32	17.06	4.455	4.016	1.173				
	72	1394+035.50	0.91		50.12	---►	49.97	20.50	0.732	2.125	1.381				
	73	1394+037.10	0.91		50.11	---►	49.91	20.35	0.983	2.463	1.601				
	74	1394+033.60	0.91		50.18	---►	49.95	19.34	1.190	2.710	1.761				
	75	1394+110.00		2-3.00X3.0	49.48	---►	49.39	12.19	0.738	5.727	103.091				
	76	1394+269.00	0.61		50.77	---►	50.73	22.60	0.178	0.802	0.234				
	77	1394+464.60		1-3.00X3.0	43.74	◄---	44.56	28.35	-2.893	11.339	102.050				
13-22	78	1394+836.00		1-3.00X3.0	44.55	◄---	45.31	16.66	-4.562	14.239	128.147		9.40	128.15	

LIST OF CULVERTS

PACKAGE-14

ARE	NO.	STATION	PiPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	TD (m³/s)	AD (m³/s)	REMARKS
		0000+010	0.91		51.00		52.10	19.00	-5.789	5.978	3.886			
		1393+521	1.22		49.70		50.20	19.00	-2.632	4.900	5.725			
		1393+800	1.22		51.10		51.30	18.00	-1.111	3.184	3.720			
		1394+080	1.22		51.20		51.40	21.00	-0.952	2.948	3.444			
		1394+400	1.22		51.20		52.65	19.00	-7.632	8.345	9.750			
		1395+127.5	1.22		50.85		51.50	18.00	-3.611	5.740	6.707			
		1395+460		1-3.0x3.0	49.00		49.20	21.42	-0.934	6.442	57.977			
		1395+520		1-5.0x4.5	47.40		47.76	20.00	-1.800	12.272	276.120			
		1395+926	1.22		52.20		52.40	14.00	-1.429	3.610	4.218			
		1396+026.5	1.22		50.00		51.50	33.00	-4.545	6.440	7.525			

LIST OF CULVERTS

PACKAGE-15 (1/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m3/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1396+183	1.22	x2	52.09		53.00	26.00	-3.500	5.651	13.206	0.170			1-0.61
	2	1396+243.90	1.22	x2	50.73		51.50	22.00	-3.500	5.651	13.206				1-0.61
15-1	3	1396+371.50		1-2.4x2.4	47.85		47.95	38.33	-0.261	2.934	16.903	0.078	40.72	56.85	
	4	1396+803.00	1.22	x2	55.31		56.00	23.00	-3.000	5.232	12.226	0.101			1-0.61
	5	1396+965	0.61		53.87		54.73	48.44	-1.775	2.536	0.741	0.097			
	6	1397+086.50	0.61		58.43		58.80	35.09	-1.054	1.954	0.571				
15-2	7	1397+594.60	1.22	x2	52.60		53.20	22.00	-2.727	4.989	11.657		7.82	11.66	1-0.91
15-3		1398+200	1.22	x2	48.63		49.50	29.00	-3.000	5.232	12.226				Add'l
	8	1398+413.00	0.91		50.19		50.56	24.85	-1.501	3.044	1.979	0.064	10.54	14.20	
15-4	9	1398+670.00		2-3.0x3.0	49.57		50.26	20.89	-3.303	12.116	218.090	0.117	8.99	218.09	
15-5	10	1398+920.70		1-2.4x2.4	49.50		50.30	16.00	-5.000	12.647	73.996	0.294	69.71	74.00	
15-6	11	1399+149.50		2-3.0x3.0	46.33		46.33	26.21	0.000	0.000	0.000	0.687	112.01	0.00	1-0.61
15-7	12	1399+488.00	0.61		50.73		52.54	24.52	-7.382	5.170	1.510		31.54	67.33	
	13	1399+605.15		2-3.0x3.0	44.76		44.87	36.56	-0.301	3.657	65.823	0.172			
	14	1399+879.00	0.91		58.56		59.11	22.11	-2.488	3.918	2.547	0.030			
15-8	15	1399+941.00	0.91		53.63		59.47	32.08	-18.204	10.600	6.891	0.036	19.96	43.11	
	16	1400+071.50	0.61		58.73		60.21	24.90	-5.944	4.639	1.355				
	17	1400+192.00		1-1.9x1.9	50.38		51.58	36.19	-3.316	8.953	32.320	0.174			
15-9		1400+340		1-1.8x2.1	51.88		52.70	19.00	-4.300	10.159	38.403		22.75	40.94	Add'l
	19	1400+351.00	0.91		49.74		50.45	28.74	-2.470	3.905	2.538				
15-10	20	1400+629.00		1-2.4x1.8	52.60		52.67	19.46	-0.360	3.212	13.876	0.219	9.03	17.19	
	21	1400+763.50	0.91		52.00		52.81	19.22	-4.214	5.100	3.315	0.588			
		1400+840	1.22		52.60		52.60	17.00	-3.529	5.675	6.631				Add'l
15-11		1401+040	1.22	x2	56.66		57.20	18.00	-3.000	5.232	12.226		8.11	12.23	Add'l
15-12	22	1401+531.3		1-3.0x3.0	47.64		49.17	46.32	-3.299	12.108	108.975	0.119	10.04	111.12	
	23	1401+682.50	0.91		50.84		51.45	34.75	-1.755	3.292	2.140	0.025			
15-13A	24	1401+833.40	0.61		51.68		52.94	24.85	-5.070	4.285	1.252	0.073	8.90	13.48	
	25	1402+025.00	1.22	x2	51.81		52.50	23.00	-3.000	5.232	12.226	0.151			1-0.61
	26	1402+346	0.61		53.53		53.60	22.17	-1.218	2.100	0.613				
	27	1402+618.00	0.61		53.20		53.36	16.94	-0.945	1.849	0.540				
	28	1402+845.27		1-1.5X1.5	54.26		54.41	19.65	-0.916	4.020	9.044				
15-13B	29	1402+911		2-3.0x3.0	50.10		50.24	25.07	-0.558	4.982	89.674	0.139	31.79	99.63	
	30	1403+162.50	0.61		61.76		62.25	18.03	-2.718	3.137	0.916	0.314			
15-14	31	1403+773.50	1.22	x2	56.69		57.50	18.00	-4.500	6.408	14.974	0.282	11.47	14.97	1-0.91
15-15	32	1403+872.35	1.22	x2	55.74		56.48	19.00	-3.789	5.880	13.741		8.28	13.74	1-0.91
15-16	33	1404+109.53		1-1.5X1.5	53.46		54.58	19.73	-5.677	10.006	22.514		7.70	22.51	
15-17	34	1404+486.10	0.61		53.54		53.72	21.67	-0.831	1.734	0.507	0.191	21.04	92.81	
	35	1404+659.00		2-3.0x3.0	50.87		51.00	21.97	-0.592	5.128	92.308				
15-18	36	1405+071.50	0.61		54.53		55.03	19.13	-2.614	3.076	0.899	0.062	28.93	92.76	
	37	1405+174.30		1-2.4x2.4	52.73		54.00	16.48	-7.706	15.949	91.865	0.074			
		1405+320	1.22		53.04		53.32	14.00	-2.000	4.272	4.991				Add'l
15-19A	38	1405+535.60	0.91		53.89		54.07	23.16	-0.777	2.190	1.424	0.086	5.13	6.42	
	39	1405+715.30		1-2.4X1.8	52.97		52.97	17.80	0.000	0.000	0.000	0.111			
15-19B	40	1406+025.85	0.91		55.80		56.48	19.15	-3.551	4.682	3.043	0.239			1-0.61
	41	1406+343.00		2-3.0x3.0	53.19		53.68	17.49	-2.802	11.159	200.858	0.045	77.44	203.90	
15-20	42	1406+699.50	1.22	x2	53.54		54.00	23.00	-2.000	4.272	9.983	0.128	14.73	19.97	1-0.91
	43	1406+955.00	1.22	x2	55.34		55.80	23.00	-2.000	4.272	9.983	0.100			1-0.91
	44	1407+101.00	0.91		54.37		55.53	27.22	-4.262	5.129	3.334				
	45	1407+408.50	1.22	x2	55.10		56.00	20.00	-4.500	6.408	14.974	0.070			1-0.91
	46	1407+626.00		1-1.2x2.4	53.49		54.00	18.92	-2.696	6.710	19.325	0.106			
15-21	47	1407+796.50	1.22		56.82		57.90	18.00	-6.000	7.399	8.645		52.87	65.11	1-0.91
	48	1407+979.60	0.91		55.86		56.74	29.74	-2.959	4.274	2.778				
	50	1408+092.00	0.91		56.21		57.25	31.37	-3.315	4.524	2.941				
	51	1408+302.00	0.91		56.17		56.31	25.08	-0.562	1.896	1.232	0.134			
		1408+380	1.22	x2	56.49		57.00	18.00	-2.833	5.085	11.882				Add'l
	52	1409+099.50	1.22	x2	58.57		59.20	21.00	-3.000	5.232	12.226	0.047			1-0.61
15-23	53	1409+202.10	1.22	x2	57.72		57.90	18.00	-1.000	3.021	7.059		9.11	20.33	1-0.61
	54	1409+263.40	0.91		57.79		57.87	18.98	-0.421	1.613	1.049				
15-24	55	1409+392.50	1.22	x2	56.51		57.50	18.00	-5.500	7.084	16.554		13.06	16.55	
	56	1409+998.00	0.61		61.92		62.55	22.31	-2.824	3.198	0.934	0.063			
15-25	57	1410+195.20	1.22	x2	61.34		61.50	18.00	-1.000	3.021	7.059		14.46	22.37	1-0.91
		1410+320	1.22	x2	59.40		59.80	20.00	-2.000	4.272	9.983				Add'l
	58	1410+530.50	0.91		61.13		61.87	20.67	-3.599	4.714	3.064	0.014			
	59	1410+531.40	0.91		61.18		61.30	20.54	-0.682	2.051	1.333				
	60	1410+951.80	1.22	x2	57.60		57.79	18.00	-1.056	3.103	7.252				1-0.91
	61	1410+967.90	1.22	x2	57.20		57.40	19.00	-1.053	3.099	7.242				1-0.91
15-26	62	1411+131.55	0.91		58.67		58.69	17.19	-0.116	0.847	0.551		21.61	24.57	
	63	1411+224.00	0.91		58.77		59.24	20.08	-2.326	3.789	2.463				
	64	1411+279.00	1.22	x2	58.83		59.00	17.00	-1.000	3.021	7.059				1-0.91

LIST OF CULVERTS

PACKAGE-15 (2/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m3/s)	RD'& SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
15-27	65	1411+475.50		3-1.5x1.0	61.20		61.40	20.00	-1.000	3.790	17.053		10.62	17.05	1-0.61
15-28	66	1411+800.80		3-2.0x1.25	63.07		63.25	18.00	-1.000	4.505	33.790		29.33	33.79	1-0.91
15-29	67	1412+237.00	1.22	x2	61.90		62.42	17.00	-3.059	5.283	12.345		14.28	14.59	1-0.61
		1412+300	0.61	x2	63.80		64.00	15.00	-1.333	2.197	1.284				Add'l
	68	1412+472.10	0.61	x2	64.65		64.76	15.00	-0.753	1.652	0.965				1-0.61 Add'l
	69	1412+980.00	0.91		63.93		63.99	14.97	-0.401	1.573	1.022				
	70	1413+275.90	1.22	x2	61.56		61.70	15.00	-0.933	2.918	6.819				1-0.91
	71	1413+438.00	1.22	x2	61.43		61.60	17.00	-1.000	3.021	7.059				1-0.91
15-30	72	1413+596.85	0.75		59.99		60.20	14.85	-1.421	2.603	1.150		18.92	19.76	
	73	1413+598.00	0.75		60.01		60.31	14.85	-2.040	3.120	1.378				
	74	1413+689.80	0.91		59.12		59.22	19.19	-0.521	1.793	1.166				
	75	1413+690.90	0.91		59.12		59.22	19.19	-0.521	1.793	1.166				
15-31	76	1414+247.50	1.22	x2	65.40		65.70	17.00	-1.765	4.013	9.377				1-0.61
		1414+280	1.52	x2	65.30		65.60	20.00	-1.500	4.284	15.538		31.11	35.23	Add'l
	77	1414+337.70	1.22	x2	66.00		66.32	15.00	-2.133	4.412	10.310				1-0.61
15-32	78	1414+553.05	1.22		67.28		67.46	19.75	-0.911	2.884	3.369		92.46	101.53	1-0.61
	79	1414+661.08		3-2.4x1.8	67.23		67.55	16.00	-2.000	7.574	98.156				1-0.91
	80	1414+889.55		1-2.4X2.4	66.86		66.99	17.11	-0.760	5.008	28.845				
	81	1415+290.00	0.91		64.97		65.31	18.64	-1.824	3.355	2.181				
15-33A	82	1415+417.00	1.22	x2	64.58		64.75	17.00	-1.000	3.021	7.059		33.17	48.03	1-0.91
	83	1415+462.00	0.91		64.62		64.77	17.69	-0.848	2.288	1.487				
	84	1415+504.00	1.22	x2	64.12		64.30	18.00	-1.000	3.021	7.059				1-0.91
	85	1415+543.50	0.91		65.23		65.35	16.01	-0.750	2.151	1.398				
	86	1416+365.50		1-2.4X2.4	67.75		67.98	16.92	-1.359	6.698	38.582				
15-33B	87	1416+438.20	0.91		67.88		68.03	18.62	-0.806	2.230	1.450		72.78	86.83	
	89	1416+652.20		1-2.4x2.4	66.35		66.55	15.00	-2.000	8.125	46.799				1-0.91
15-34	90	1416+760	0.91	x2	67.00		67.30	16.00	-1.875	3.402	4.423		26.02	26.85	Add'l
	91	1416+798.00	1.52	x2	66.00		66.50	16.00	-3.125	6.183	22.427				1-0.61,1-0.91
15-35	92	1416+937.00	1.22	x2	67.50		67.80	15.00	-2.000	4.272	9.983		13.97	18.61	1-0.91
	93	1417+090.10	1.22	x2	67.65		67.90	16.00	-1.563	3.776	8.823				1-0.91,1-0.61
15-36	95	1417+328.00	1.22	x2	68.30		68.60	19.00	-1.579	3.796	8.870		8.61	8.87	1-0.61
15-37	96	1417+742.20		2-2.4x1.8	68.05		68.18	16.50	-0.667	4.373	37.780		30.39	37.78	1-0.91
		1418+320	1.22	x2	69.40		69.80	16.00	-2.500	4.776	11.161				Add'l
15-38	97	1418+370.50	1.22		68.28		68.73	18.27	-2.463	4.741	5.539		22.80	27.14	
	98	1418+372.50	1.22		68.28		68.73	17.72	-2.540	4.814	5.624				
		1418+640	0.91	x2	70.40		70.80	18.00	-2.222	3.704	4.815				Add'l
	99	1418+708.10	0.61		69.64		70.40	22.40	-3.393	3.505	1.024				
	100	1418+938.00		1-2.4X2.4	69.60		69.79	21.73	-0.874	5.372	30.944				
15-39	101	1419+167.40	1.22	x2	66.29		67.00	23.00	-3.087	5.307	12.402		53.89	66.57	1-0.61
	102	1419+452.00	1.22	x2	64.25		64.80	16.00	-3.437	5.601	13.087	0.298			1-0.61
	103	1419+492.10	1.22	x2	64.50		64.80	18.00	-1.667	3.900	9.113	0.043			1-0.91
15-40	104	1419+700.80		1-2.4x2.0	62.99		63.35	17.50	-2.057	7.893	37.887		22.68	37.89	1-0.61
	105	1419+954.00	1.22		62.82		63.32	20.00	-2.500	4.776	5.580				1-0.91
	106	1420+088	1.22	x2	63.00		64.00	18.00	-5.556	7.120	16.638				1-0.91
15-41	107	1420+380.60	0.61		64.80		65.53	19.79	-3.689	3.655	1.068		36.22	46.31	
	108	1420+381.70	0.61		64.77		65.57	19.65	-4.071	3.840	1.122				
	109	1420+686.40	1.22	x2	63.67		63.95	23.00	-1.217	3.333	7.788				1-0.61
	110	1420+855.00	1.22	x2	64.04		64.84	20.00	-4.000	8.041	14.118				1-0.61
15-42	111	1421+120.00	1.22	x2	66.10		66.50	24.00	-1.667	3.900	9.113	0.095	18.41	40.80	1-0.91
	111a	1421+134	1.22	x2	67.68		65.20	29.00	8.545	8.830	20.634				Add'l
	112	1421+300.15	1.22	x2	69.29		69.78	20.00	-2.450	4.728	11.049	0.179			1-0.61
	113	1421+525	1.22	x2	71.49		72.50	20.00	-5.050	6.788	15.863				1-0.61
15-43	114	1421+609.2	1.22		71.97		73.20	17.00	-7.235	8.125	9.493	0.697	53.59	68.55	1-0.61
	115	1421+976.00		1-2.4X2.4	77.91		78.25	19.96	-1.703	7.498	43.190				
		1422+580		1-2.4x2.4	69.04		69.50	15.00	-3.100	10.115	58.265				
15-44	116	1422+594.30	1.52		68.91		69.40	19.79	-2.476	5.504	9.682		49.74	81.13	Add'l
	119	1422+864.00	1.22	x2	71.55		71.94	19.00	-2.053	4.328	10.113				1-1.22
	120	1423+061.00	0.91		76.88		77.43	19.40	-2.938	4.259	2.768				1-0.61
15-45	121	1423+231.50	1.22	x2	77.16		77.60	17.00	-2.600	4.871	11.382		46.94	58.45	
		1423+480	1.22	x2	73.65		73.95	19.00	-1.579	3.796	8.870				1-0.61
	122	1423+519.5		1-2.4X2.4	72.55		72.83	21.01	-1.333	6.632	38.202				Add'l
15-46	123	1424+603.50		3-1.8x1.5	82.85		83.25	26.00	-1.538	5.635	45.641		39.42	45.64	1-0.91

LIST OF CULVERTS

PACKAGE - 16 (1/2)

AREA	NO.	STATION	PIPE	BOX	INV.ELE NORTH (m)	FLOW	INV.ELE SOUTH (m)	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1425+017.6	0.91		82.05	◄ -	82.56	26.35	-1.935	3.456	2.247				
16-2	3	1425+147		1.5x1.5	81.10	◄ –	81.60	19.80	-2.525	6.674	15.016				3-0.91
16-3	*	1425+500	1.22	x2	95.19	◄ -	95.70	17.00	-3.000	5.232	12.226		10.41	13.17	Add'l
	5	1425+972.5	2.74	(2-0.91)	91.18	◄ –	91.22	46.81	-0.085	0.726	0.944				
16-4	6	1426+213		1-2.0x2.0	99.75	◄ –	100.10	17.50	-2.000	7.195	28.780		20.27	28.78	1-0.91
16-5	7	1426+441.2	1.52		93.26	◄ –	94.50	31.00	-4.000	6.995	12.687		4.73	12.69	1-0.91
	8	1426+941.6	0.91		90.53	◄ -	91.72	39.10	-3.043	4.334	2.818				
16-6	9	1426+943	0.91		90.34	◄ -	91.56	38.56	-3.164	4.419	2.873	0.458	12.82	14.66	
	*	1427+020	1.52		96.38	◄ -	96.80	21.00	-2.000	4.946	6.971				Add'l
16-8	*	1427+360	1.22	x2	102.31	◄ -	103.00	23.00	-3.000	5.232	12.226				Add'l
	10	1427+407.5	0.91		102.07	◄ -	102.28	23.31	-0.901	2.358	1.533	0.317	11.22	13.76	
	11	1427+640.7	0.61		102.16	◄ -	102.57	40.29	-1.018	1.920	0.561	0.319			
16-9		1427+955	1.52		119.30	◄ –	120.70	25.00	-5.600	8.277	15.011		10.06	17.61	Add'l
	12	1427+958	0.91		117.79	◄ –	118.29	31.31	-1.597	3.140	2.041				
	13	1429+081.6	0.61		83.01	- ►	82.70	15.13	2.049	2.724	0.796	0.490			
16-10	14	1429+256	0.91		82.17	- ►	81.37	15.99	5.003	5.557	3.612	0.254	6.88	9.28	
		1429+360	0.91		83.30	- ►	83.00	15.00	2.000	3.514	2.284				Add'l
	15	1429+639.3	0.91	x2	79.50	- ►	78.80	22.00	3.182	4.432	2.589	0.188			
16-11	16	1429+924	1.22	x2	78.94	- ►	78.00	18.00	5.222	6.903	16.131	0.431	15.56	22.97	1-0.91
	17	1430+205.5	1.22		78.60	- ►	78.00	16.00	3.750	5.850	6.835	0.060			1-0.91
	18	1430+541	0.91		74.87	◄ –	75.28	24.48	-1.687	3.227	2.098				
16-12	19	1430+874	0.91	x2	72.16	◄ –	72.45	20.00	-1.450	2.992	3.890	0.233	16.23	24.85	1-0.61
	20	1431+308	1.52	x2	72.03	◄ –	72.49	25.00	-1.840	4.744	17.209	0.258			1-0.61
	21	1431+589	0.91		70.74	◄ –	70.98	23.02	-1.043	2.537	1.649				
	22	1432+244.5	1.22		69.30	◄ –	69.50	17.00	-1.176	3.276	3.828				1-0.91
16-13	23	1432+246.5	1.22		69.30	◄ –	69.50	17.00	-1.176	3.276	3.828		6.62	13.33	1-0.91
	24	1432+482.9	0.91	x2	67.88	◄ –	68.13	21.32	-1.173	2.690	3.498	0.076			1-0.91 Add'l
	25	1432+596.8	0.91		68.18	◄ –	68.66	26.42	-1.817	3.349	2.177				
16-14	26	1432+959.2	0.91		65.04	◄ -	65.60	27.11	-2.066	3.571	2.321	0.186	10.99	11.32	
	27	1433+183.8	1.22	x2	62.70	◄ –	63.09	24.00	-1.625	3.851	8.998	0.175			1-0.91
	28	1433+433.2	0.91		61.93	◄ –	62.29	19.07	-1.888	3.414	2.219				
16-15	29	1433+471.9	0.91		62.52	◄ –	62.57	18.86	-0.265	1.279	0.832		39.65	41.40	
	31	1433+799.5		2-1.6X1.5	60.90	◄ –	61.23	13.50	-2.444	7.103	38.354				1-0.91
	32	1433+959	0.91		61.16	◄ -	61.55	20.05	-1.945	3.465	2.252				
	33	1434+060	0.91		60.99	◄ -	61.90	21.88	-4.159	5.067	3.294				
	34	1434+294.7	1.22		62.50	◄ -	62.70	15.00	-1.333	3.488	4.075				1-0.61
16-16	35	1434+459.7	0.91		62.70	◄ -	63.17	15.15	-3.102	4.376	2.845		43.17	55.20	
	36	1434+531	1.22	x2	62.58	◄ -	62.80	15.40	-1.429	3.610	8.437				1-0.61
	37	1434+648	0.61		62.93	◄ -	63.12	16.27	-1.180	2.067	0.604				
	38	1434+763.9	2.00		61.24	◄ -	62.14	13.79	-6.526	10.729	33.689				
	39	1434+945	2.74		64.38	◄ –	64.61	11.58	-1.986	7.301	43.028				
	40	1435+078.2	2.74		64.90	◄ -	65.29	11.48	-3.397	9.548	56.273	0.065			
16-17	41	1435+305	1.22		67.87	◄ -	68.16	14.00	-2.071	4.348	5.080		10.89	13.52	1-0.61
	42	1435+497.8	1.22	x2	64.70	◄ –	64.90	14.00	-1.429	3.610	8.437				1-0.61
16-18	43	1435+787.8	2.74		61.15	◄ -	61.70	12.86	-4.277	10.713	63.139		54.84	63.14	
	44	1435+914.3	1.22	x2	60.50	◄ -	60.95	13.00	-3.462	5.620	13.133				1-0.75
16-19	45	1436+352	1.22		58.00	◄ -	58.30	16.00	-1.875	4.136	4.833		19.81	30.44	1-0.91
	46	1436+489	1.22	x2	57.80	◄ -	58.30	16.00	-3.125	5.340	12.478				1-0.61
16-20	47	1436+810.5	1.52	x2	59.70	◄ -	59.30	15.00	-4.000	6.995	25.374		23.35	25.37	2-0.91
	48	437+004.2	1.22	x2	58.05	◄ -	58.26	14.00	-1.500	3.700	8.645				1-0.61
	49	1437+139.5	1.22	x2	55.00	◄ -	55.50	21.00	-2.381	4.661	10.692	0.072			1-0.61
16-21	50	1437+332.7	1.22	x2	54.60	◄ -	55.20	24.00	-2.500	4.776	11.161		42.57	46.78	1-0.61
	51	1437+699.3	1.22	x2	55.65	◄ -	56.00	19.00	-1.842	4.100	9.580				1-0.61
	52	1437+836	0.91		54.61	◄ -	55.05	22.00	-2.000	3.514	2.284				
	53	1438+082	0.91		55.85	◄ -	57.90	30.00	-6.833	6.495	4.222				

LIST OF CULVERTS

PACKAGE - 16 (2/2)

AREA	NO.	STATION	PIPE	BOX	INV.ELE NORTH (m)	FLOW	INV.ELE SOUTH (m)	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	54	1438+268.6	0.91		57.43	◀	57.13	27.93	1.074	2.575	1.674				
	55	1438+371.4	0.91		54.57	◀	54.93	26.95	-1.336	2.871	1.867				
16-22	56	1438+487.3	1.22		58.80	◀	59.00	15.00	-1.333	3.488	4.075		13.47	25.81	1-0.61
	57	1438+543.2	0.91		56.23	◀	57.45	26.00	-4.692	5.382	3.498	0.059			
	58	1438+756.7	1.22		59.00	◀	59.80	16.00	-5.000	6.755	7.892	0.250			1-0.61
	59	1438+999.8	1.22		60.70	◀	61.50	21.50	-3.721	5.827	6.808	0.135			1-0.61
	60	1439+213.5	0.91		57.34	◀	59.11	32.36	-5.470	5.810	3.777	0.096			
16-23	61	1439+324.6	0.91		61.52	◀	61.98	18.82	-2.444	3.896	2.555	0.182			
	62	1439+440	1.22		62.94	◀	63.50	19.00	-2.947	5.186	6.059	0.063	18.38	18.54	1-0.61
	63	1439+509.5	1.22		65.30	◀	65.60	13.00	-2.308	4.589	5.362	0.340			1-0.91
		1440+150	0.61		68.00	◀	68.30	15.00	-2.000	2.691	0.786				Add'l
	64	1440+419.0	0.61		52.03	▶	51.68	28.96	1.209	2.092	0.611				
16-24		1440+500	1.52	x2	53.04	▶	52.70	17.00	2.000	4.946	17.942	0.086			Add'l
	65	1440+580.0	0.91		47.40	▶	48.32	39.63	-2.321	3.785	2.461		22.19	24.94	
	66	1440+797.8	0.91		49.07	▶	48.58	33.85	1.448	2.989	1.943				
	67	1440+799.3	0.91		49.07	▶	48.56	33.85	1.507	3.050	1.982				
	68	1441+747.3	1.22	x2	92.70	◀	93.51	19.00	-4.263	6.237	14.574	0.128			1-0.61
16-26	69	1442+011	0.91		101.05	◀	103.19	38.09	-5.618	5.889	3.828	0.025	0.26	33.85	
	70	1442+173.2	1.22		102.71	◀	104.06	29.00	-4.655	6.517	7.615	0.108			1-0.61
	71	1442+173.6	1.22		102.63	◀	104.06	29.00	-4.931	6.708	7.637				1-0.61
	72	1442+231	0.61		101.80	◀	104.11	22.00	-10.500	6.166	1.801	0.552			
		1442+362	0.91		108.10	◀	108.30	17.00	-1.176	2.695	1.752				Add'l
	73	1442+569.2	0.91		114.00	◀	117.54	29.00	-12.207	8.680	5.643	0.054			
16-27	74	1442+699.5	0.91		124.65	◀	125.93	20.24	-6.324	6.248	4.061	0.368	27.14	33.06	
	75	1442+914.3	1.22		135.60	◀	136.25	15.00	-4.333	6.288	7.347	0.632			1-0.61
	76	1443+265	1.22		143.30	◀	144.70	26.00	-5.385	7.009	8.190	0.272			1-0.61
	77	1443+468.3	0.91		146.65	◀	148.37	24.66	-6.975	6.561	4.265	0.244			
	78	1443+728.4	0.61		145.71	◀	148.93	34.34	-9.377	5.827	1.702	0.143			
16-28	79	1443+857.7	0.91		159.04	◀	160.45	19.61	-7.190	6.662	4.331	0.128	11.28	17.79	
	80	1444+226	0.91		144.98	◀	149.19	26.18	-16.081	9.963	6.476	0.386			
	81	1444+296.8	0.91		134.32	◀	140.52	58.02	-10.686	8.122	5.279	0.044			
	82	1444+621.3	1.22		138.16	◀	138.37	16.00	-1.313	3.461	4.043	0.440			1-0.61
16-29	83	1444+693.2	1.22		133.90	◀	136.87	20.00	-14.850	11.641	13.601	0.135	13.48	19.93	1-0.61
		1444+980	0.91		137.82	◀	138.10	14.00	-2.000	3.514	2.284				Add'l
16-30		1446+020	1.22	x2	126.15	◀	127.50	27.00	-5.000	6.755	15.794		12.59	17.07	Add'l
		1446+460	0.61		119.60	▶	118.80	15.00	5.333	4.395	1.284				Add'l
16-31	84	1446+738	0.61		113.76	◀	118.24	37.60	-11.915	6.569	1.919	0.165	19.26	30.11	
	85	1446+940	1.22	x2	116.50	◀	123.60	44.50	-15.955	12.066	28.195				1-0.61
	86	1448+080	0.61		87.88	◀	91.74	23.28	-16.581	7.749	2.263	0.122			
16-32		1448+140	0.91		91.02	◀	91.50	16.00	-3.000	4.303	2.797	0.306	7.06	10.79	Add'l
	87	1448+406	0.91		83.99	◀	87.48	27.60	-12.572	8.809	5.727	0.076			
	88	1448+537.5	1.22		84.80	◀	85.44	18.00	-3.567	5.705	6.665	0.435			1-0.61
	89	1448+719	0.91		85.50	◀	86.90	20.00	-7.000	6.573	4.273	0.038			
16-33	90	1448+945.4	0.61		80.55	◀	82.60	21.65	-9.469	5.856	1.710		9.27	21.84	
	91	1449+108.4	1.22		79.22	◀	79.70	16.00	-3.000	5.232	6.113	0.359			1-0.61
		1449+220	0.91		78.70	◀	79.00	15.00	-2.000	3.514	2.284				Add'l
	92	1449+354	0.91		77.01	◀	77.64	17.50	-3.623	4.729	3.074	0.047			1-0.61
16-34	93	1449+740	1.22		56.50	◀	57.00	19.00	-2.632	4.900	5.725		5.60	5.73	1-0.91
	94	1449+963.8	1.22		46.84	◀	47.79	17.00	-5.588	7.141	8.343	0.529			1-0.61
16-35	95	1450+243.6	0.91		41.52	◀	41.92	20.33	-1.968	3.485	2.265	0.176	9.21	16.72	
		1450+520	1.22		32.46	◀	33.00	18.00	-3.000	5.232	6.113	0.361			1-0.91
	96	1450+793	0.91		30.38	◀	30.93	21.40	-2.570	3.983	2.589	0.199			
16-36	97	1450+947.5	0.91		25.50	◀	28.06	30.00	-1.867	3.394	2.207		12.28	13.91	
	98	1450+948.5	0.91		27.02	◀	31.59	30.00	-15.233	9.697	6.303				
	99	1450+949.6	0.91		25.42	◀	26.33	30.00	-3.033	4.327	2.813				
	100	1453+046.4	1.22		25.65	◀	25.80	15.00	-1.000	3.021	3.529				1-0.91
16-37	101	1453+128.6	1.22	x2	24.84	◀	25.00	16.00	-1.000	3.021	7.059		15.15	18.52	1-0.91
	102	1453+267	1.22		25.01	◀	25.35	23.00	-1.500	3.700	4.323				1-0.91
		1453+850	0.91	x2	24.00	◀	23.80	16.00	1.250	2.778	3.611				Add'l
	103	1455+209		1-2.40X1.1	20.34	▶	20.33	18.88	0.053	1.060	2.797			2.80	

LIST OF CULVERT

PACKAGE-17

ARE	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m^3/s)	TD (m^3/s)	AD (m^3/s)	REMARKS
	1	1457+987	0.61		10.26	→	10.18	13.69	0.570	1.436	0.420			
	2	1458+530	0.91		8.37	←	9.06	12.79	-5.348	5.745	3.735			
	3	1459+213	0.91		7.49	←	7.64	13.20	-1.114	2.622	1.704			
	4	1459+460	0.91		7.18	←	7.20	13.44	-0.166	1.072	0.697			
	5	1459+693	0.91		6.77	←	6.90	12.43	-1.046	2.541	1.652			
	6	1459+892	0.91		6.27	←	6.31	12.65	-0.316	1.397	0.908			
	7	1460+069.3	0.91		5.90	←	6.00	13.66	-0.754	2.158	1.403			
	8	1460+315	0.91		5.22	←	5.63	12.65	-3.273	4.495	2.922			
	9	1462+065.6	0.91		3.14	→	3.09	10.38	0.405	1.580	1.027			
	10	1462+355.6	0.91		2.86	→	2.84	10.81	0.240	1.218	0.792			
	11	1462+954.5	0.91		2.12	←	2.24	10.90	-1.045	2.540	1.651			
	12	1463+134.7	0.91		1.62	←	1.86	12.52	-1.917	3.439	2.236			
	13	1463+233.7	0.91		1.43	←	1.53	11.67	-0.857	2.299	1.495			
	14	1463+359	0.91		1.27	→	1.25	11.56	0.208	1.132	0.736			
	15	1463+649.5	0.91		0.85	→	0.15	11.94	5.854	6.011	3.908			
	16	1463+774.5	0.91		0.40	←	0.53	11.58	-1.105	2.612	1.698			
	17	1464+110		3-3.1X2.0	-0.35	←	0.17	8.91	-5.839	14.72	273.74			
	18	1464+298		3-3.1X2.0	0.07	←	0.18	8.96	-1.227	6.75	125.51			
	19	1464+362	0.91		0.65	←	0.70	11.00	-0.491	1.741	1.132			
	20	1464+437.8		3-3.1X2.0	-0.04	→	-0.11	11.48	0.610	4.76	88.47			
	21	1464+637.8		3-3.1X2.0	-0.38	→	-0.40	12.24	0.131	2.20	40.96			
	22	1464+736.5	0.91		-0.13	→	-0.35	11.00	1.936	3.457	2.247			
	23	1464+828.8	0.91		0.38	←	0.67	12.18	-2.381	3.834	2.492			
	24	1464+927		3-3.1X2.74	0.03	→	-0.18	11.36	1.822	8.94	75.93			
	25	1464.538.8		3-3.1X2.0	-0.11	←	0.23	11.11	-3.043	10.62	197.61			
	26	1465+577.7	0.91		0.56	←	0.81	11.05	-2.262	3.737	2.429			
	27	1465+962.7	0.91		1.22	←	1.32	11.62	-0.895	2.350	1.528			
	28	1466+173.6	0.91		1.32	←	1.60	11.28	-2.482	3.914	2.544			
	29	1466+635.5	0.91		2.24	←	2.64	12.36	-3.236	4.469	2.905			
	30	1467+238.7	0.91		1.78	←	2.11	15.74	-2.096	3.597	2.338			
	31	1467+826	0.91		0.98	←	1.28	15.00	-2.007	3.519	2.288			

LIST OF CULVERTS

PACKAGE - 18 (1/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	1	1468+023.50	0.91	x2	0.77	◄	1.36	17.43	-3.385	4.671	5.943				HA
	3	1468+047.50	0.91	x2	1.150	◄	1.220	16.76	-0.418	1.606	2.087				
	5	1468+170.00		3-3.0x2.4	0.300	◄	0.100	13.60	-2.943	10.842	234.184				
	6	1468+223.80	0.91		1.50	◄	2.00	17.90	-2.793	4.152	2.699				
	7	1468+247.43	0.91		1.07	◄	1.51	17.17	-2.563	3.977	2.585				
	8	1468+559.40	0.61		1.74	◄	1.89	15.75	-0.952	1.857	0.000				
	9	1468+657.35	0.61		1.86	◄	2.00	15.66	-0.894	1.799	0.526				
	10	1469+136.75	0.61		1.23	◄	1.53	15.34	-1.956	2.661	0.777				
	11	1469+271.06	0.61		1.16	◄	1.50	17.24	-1.972	2.672	0.781				
	12	1469+303.00	0.61		0.57	►	0.50	17.56	0.399	1.201	0.351				
	13	1469+355.00	0.61		0.97	►	-0.01	20.61	4.755	4.150	1.212				
	14	1469+482.00	0.61		0.61	◄	0.93	17.71	-1.807	2.558	0.747				
	15	1470+560.00	0.61		1.49	◄	1.52	16.12	-0.186	0.821	0.240				
	16	1470+770.95	0.61		2.31	►	2.24	19.31	0.363	1.146	0.335				
	17	1470+971.10	0.61		1.89	◄	2.16	18.51	-1.459	2.298	0.671				
	17A	1471+260.00	0.75		1.25	◄	1.36	19.50	-0.564	1.640	0.724				
	18	1471+655.70	0.91		1.32	◄	1.49	16.94	-1.004	2.489	1.618				
	18B	1471+850.00	0.75		1.6	◄	1.85	23.00	-1.087	2.277	1.005				
	19	1471+944.60	0.75	x2	1.49	◄	1.54	21.02	-0.238	1.065	0.941				
	20	1472+097.50	0.61		1.21	◄	1.71	22.84	-2.189	2.816	0.822				
	21	1472+472.30	0.75	x2	1.20	◄	1.32	15.92	-0.754	1.896	0.837				
	22	1472+566.00	0.75	x2	0.84	◄	1.00	15.23	-1.051	2.238	1.977				
	24	1472+726.80	0.75	x2	1.60	◄	1.62	16.30	-0.123	0.765	0.676				
	26	1472+851.80	0.75		0.00	◄	0.30	19.25	-1.558	2.726	1.204				
	27	1472+995.50	2.74		-0.69	◄	-0.65	12.16	-0.329	2.971	17.511				
	28	1473+044.82		3-2.40X2.40	0.10	◄	0.69	29.79	-1.981	8.085	139.713				
	29	1473+153.00	0.61		1.75	◄	1.93	15.89	-1.133	2.025	0.592				
	30	1473+227.43	0.61		2.43	◄	2.44	16.51	-0.061	0.468	0.137				
	31	1473+751.90	0.61		2.01	◄	2.43	16.60	-2.530	3.027	0.884				
	32	1473+935.05	0.91		2.19	◄	2.27	18.25	-0.438	1.645	1.069				
	33	1474+135.95	0.91	x2	2.07	◄	2.11	13.05	-0.307	1.375	1.788				
	35	1474+336.12	0.91	x2	2.49	►	2.41	13.07	0.612	1.944	2.527				
	37	1474+407.20	0.75		2.36	►	3.00	14.13	-4.529	4.648	2.052				
	38	1474+866.60	0.91		3.13	►	3.10	15.66	0.192	1.087	0.707				
	39	1475+198.60	0.61		3.38	►	3.38	15.96	0.000	0.000	0.000				
	40	1475+579.00	0.91		3.64	►	3.00	16.84	3.800	4.843	3.148				
	41	1475+710.75	0.61		4.69	◄	4.83	12.90	-1.085	1.982	0.579				
	42	1475+845.15	0.61		4.68	◄	5.18	12.87	-3.885	3.751	1.096				
	43	1476+241.13	0.61		5.11	◄	5.27	13.37	-1.197	2.082	0.608				
	44	1477+010.70	0.91	x2	3.53	◄	4.28	17.07	-4.394	5.208	6.771				
	46	1477+264.70	0.61		4.10	►	4.08	12.41	0.161	0.764	0.223				
	47	1477+431.20	0.75		3.94	◄	4.05	16.14	-0.682	1.803	0.796				
	48	1478+007.00	0.91			◄	1.94			0.000	0.000				DELETE
	49	1478+129.30	1.22		1.07	◄	1.16	29.38	-0.306	1.672	1.953				
	50	1478+131.30	0.91	x2	1.11	◄	1.26	29.33	-0.511	1.777	2.310				
	52	1478+258.95		2-1.30X1.80	0.53	◄	0.65	22.98	-0.522	2.843	13.775				
	53	1478+386.80		1-2.40X1.80	-0.03	◄	0.52	23.06	-2.385	8.271	35.739				
	54	1478+650.75		1-3.00X2.20	1.12	◄	2.52	23.27	-6.016	15.151	99.998				
	55	1479+177.95	0.61	x2	2.89	◄	3.11	21.80	-1.009	1.912	1.117				
	57	1479+407.45	0.61	x2	2.97	◄	3.39	14.56	-2.885	3.232	1.888				
	59	1479+831.75	0.61		3.47	◄	3.61	15.28	-0.916	1.621	0.532				
	60	1480+309.00	0.91		3.16	◄	3.65	15.06	-3.254	4.481	2.913				
	60B	1482+430.00	0.91		3.58	◄	3.81	18.25	-1.260	2.789	1.813				
	61	1482+639.80	0.91	x2	2.85	◄	3.04	16.28	-1.167	2.684	3.489				
	63	1482+700.92	0.91	x2	2.89	◄	3.23	15.45	-2.201	3.686	4.792				
	65	1482+817.95	0.91	x2	2.84	◄	2.99	17.49	-0.858	2.301	2.991				
	67	1483+200.01	1.22		3.65	◄	3.94	16.13	-1.798	4.050	4.732				1-0.61
	68	1483+229.50	1.22		2.75	◄	3.68	17.63	-5.275	6.938	8.106				
	69	1483+258.50	1.22		3.01	◄	3.04	16.37	-0.183	1.293	1.511				
	70	1483+308.00	1.22		2.87	◄	3.10	16.76	-1.372	3.539	4.135				
	71	1483+358.00	1.22		2.73	◄	3.14	16.71	-2.454	4.732	5.528				
	72	1483+398.40	1.22		2.23	◄	2.41	16.64	-1.082	3.142	3.671				
	73	1483+421.10	0.91	x2	1.63	◄	2.36	15.85	-4.606	5.332	6.932				
	75	1483+459.00	1.22		2.28	◄	2.36	16.92	-0.473	2.077	2.427				
	76	1483+490.80	0.91		1.88	◄	2.15	15.42	-1.751	3.288	2.137				
	77	1483+560.50	0.61		2.10	◄	2.31	14.56	-1.442	2.285	0.668				
	78	1483+803.00	0.91	x2	2.36	◄	2.72	13.96	-2.579	2.495	0.793				2-0.45
	80	1484+634.80	0.91	x2	2.09	◄	2.16	14.29	-0.490	1.739	2.261				
	82	1484+828.00	1.22		2.39	◄	2.62	16.53	-1.391	3.563	4.163				
	83	1485+046.42	0.91		3.40	◄	3.47	13.37	-0.524	1.798	1.169				
	84	1485+908.98	0.61		4.20	►	3.50	15.72	4.485	4.030	1.177				
	85	1486+588.66	0.61		2.60	◄	2.90	13.55	-2.214	2.831	0.827				

LIST OF CULVERTS

PACKAGE - 18 (2/2)

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m³/s)	RD & SLOPE (m3/s)	TD (m³/s)	AD (m³/s)	REMARKS
	86	1486+632.60	0.61		2.36		2.63	14.47	-1.666	2.599	0.759				
	87	1486+654.20	0.61	x2	2.39		2.94	14.37	-3.827	3.723	2.175				
	89	1486+685.00	0.61	x2	2.00		2.38	14.47	-2.626	3.084	1.802				
	91	1486+729.30	0.61		1.99		2.36	13.84	-2.652	3.099	0.905				
	92	1486+895.00	1.22		1.35		1.37	15.67	-0.128	1.079	1.261				
	93	1486+897.00	0.61		1.42		1.60	15.21	-1.183	2.070	0.605				
	95	1487+075.00	0.61		1.41		1.80	14.61	-2.642	3.093	0.903				
	96	1487+192.60	0.61		1.17		1.75	14.63	-3.958	3.786	1.106				
	97	1488+211.60		2-1.50X1.50	1.21		1.35	16.00	-0.875	3.928	17.678				1-0.91
18-1	98	1488+755.00		2-1.80X1.50	3.43		4.00	16.00	-3.594	8.612	46.504		51.0	65.0	1-0.91
	99	1488+943.60	0.61		4.41		4.78	16.73	-2.212	2.830	0.827				
	100	1489+450.00	0.91		5.00		5.50	19.50	-2.564	3.978	2.586				1-0.61
	101	1489+451.80	0.61		5.26		5.32	19.44	-0.309	1.057	0.309				
18-2	102	1489+480.00		3-1.80X1.50	4.14		4.65	16.00	-3.200	8.126	65.824		61.1	77.2	2-0.91
	104	1489+633.50	0.61		4.00		4.80	15.57	-5.138	4.313	1.260				
	105	1489+695.00	0.91	x2	3.65		4.55	17.96	-5.011	5.562	7.231				1-0.91 Add'l
	106	1490+106.20	0.91	x2	2.69		3.09	18.53	-2.180	3.668	4.769				
	108	1490+259.20	1.22	x2	1.06		1.44	19.74	-1.925	4.191	9.794				1-1.22 Add'l
18-3	109	1490+273.20	1.22	x2	1.78		2.45	17.00	-3.941	5.997	14.013		51.4	55.1	
	110	1490+546.60	1.22	x2	2.84		3.25	16.98	-2.415	4.694	10.959				1-0.61
	112	1490+720.00	1.22	x2	1.73		1.95	16.00	-1.375	3.542	8.277				
	114	1490+964.00	1.22	x2	2.93		3.11	16.72	-1.077	3.134	7.324				2-0.91
18-4	116	1491+158.60		1-3.00X3.00	3.67		3.96	13.95	-2.079	9.612	86.509		61.6	86.5	
18-5	118	1491+566.50	1.52	x2	1.85		2.00	16.00	-0.937	3.386	24.568		15.6	27.9	2-1.22
	120	1491+830.40	0.91		2.40		3.10	16.69	-4.194	5.068	3.308				
18-6	121	1492+127.60	0.61		2.63		2.76	16.17	-0.804	1.706	0.498		37.9	46.8	
	122	1492+277.70		2-2.40x1.80	1.53		1.68	15.00	-1.000	5.355	46.271				1-0.61
	123	1492+401.60	2-0.61		2.41		2.65	17.25	-1.391	2.245	1.311				
18-7	125	1492+516.00	1.22		1.90		2.19	17.82	-1.627	3.853	4.502		31.8	75.1	
	126	1492+697.00		1-3.00X3.00	1.76		1.99	17.25	-1.333	7.698	69.282				
	127A	1492+980.00	1.22					17.00	0.000	0.000	0.000	0.021			
	128	1493+285.30	0.91	x2						0.000	0.000				DEL 1-0.61
		1493+500	0.91	x2	1.76		2.00	16.00	-1.500	3.043	3.956				Add'l
18-8	129	1493+549.75	0.91	x2	1.50		1.98	17.00	-2.824	4.175	5.428		26.6	33.8	1-0.61
		1493+700	0.91	x2	1.75		2.00	17.00	-1.471	3.013	3.917				Add'l
	130	1493+859.60	0.91	x2	1.07		1.52	17.00	-2.647	4.042	5.255				1-0.61
	131	1493+926.60		2-1.25x1.00	1.00		1.50	16.80	-2.976	6.083	15.207				1-0.61
	132	1494+615.40	0.91		1.85		1.94	17.50	-0.514	1.782	1.158				
	133	1494+821.00	0.91		0.91		1.12	24.00	-0.875	2.324	1.511				
	134	1495+044.60	0.91		1.21		2.00	18.65	-4.252	5.123	3.330				
18-9		1495+414.70		2-2.00X2.25	1.50		1.60	16.78	-0.596	4.028	36.248		29.1	52.1	Add'l
	135	1495+693.50	2-0.91		2.06		2.57	19.91	-2.562	3.976	5.170				
	137	1495+893.60	0.61		2.12		2.45	18.00	-1.339	2.580	0.754				
		1496+380.00	0.91		1.46		1.70	16.00	-1.500	3.043	1.978				Add'l
	139	1496+426.00	0.61							0.000	0.000				DELETE
		1496+680.00	0.91		1.46		1.70	16.00	-1.500	3.043	1.978				Add'l

LIST OF CULVERTS

PACKAGE-19

AREA	NO.	STATION	PIPE	BOX	LT ELEV.	FLOW	RT ELEV.	LENGTH (m)	GRADE (%)	V (m/s)	Q (m^3/s)	RD & SLOPE (m3/s)	TD (m^3/s)	AD (m^3/s)	REMARKS
	1	1497+645.00	0.61		0.51	◄	2.12	21.97	-7.328	5.151	1.505				
	2	1497+655.20	0.91		0.27	◄	2.28	23.40	-8.590	7.281	4.733				
	3	1497+823.95	0.61		0.90	►	0.60	24.14	1.243	2.121	0.620				
	4	1498+635.70	0.91		14.51	◄	15.37	27.58	-3.118	4.387	2.852				
	5	1499+583.70	0.61		26.53	►	23.48	29.42	10.367	6.127	1.790	0.136			
	6	1499+733.20	0.91		29.28	►	25.80	72.31	4.813	5.450	3.543				
	7	1500+269.90	0.91		38.51	►	37.22	16.93	7.620	6.858	4.458	0.333			
	8	1500+921.00	1.22		16.00	◄	16.90	42.88	-2.099	4.376	5.113				
	9	1501+511.60	0.91		20.95	►	20.86	25.37	0.355	1.480	0.962				
19-1	11	1501+806.00	2-0.91		13.44	◄	13.83	23.72	-1.644	3.186	4.142		4.1	6.7	
	12	1501+997.50	0.91		15.27	◄	15.96	28.37	-2.432	3.875	2.519				
	13	1502+119.00	0.91		23.77	►	22.77	25.36	3.943	4.933	3.207				
	14	1503+097.40	0.61		18.32	►	15.88	19.18	2.294	2.882	0.842				
19-2	15	1503+392.20		1-3.0X3.0	10.58	◄	11.03	15.13	-2.974	11.497	103.476		80.0	103.5	
	16	1504+104.00	0.61		25.50	◄	25.92	21.44	-1.959	2.663	0.778				
	17	1504+219.60	0.61		27.56	◄	29.24	19.67	-8.541	5.561	1.624				
	18	1504+378.40	0.61		29.11	◄	29.70	22.66	-2.604	3.071	0.897				
19-3	19	1504+947.50	1.22		13.49	◄	13.96	52.55	-0.894	2.857	3.338		7.3	12.3	
		1505+000.00	1.22		2.15	◄	2.62	19.00	-2.474	4.751	5.551				Add'l
	20	1505+239.10	1.22		16.64	◄	16.99	38.00	-0.921	2.699	3.387				
	21	1505+410.00	0.91		20.94	►	19.46	54.17	2.732	4.107	2.670				
	22	1505+884.20	1.22		27.25	►	21.42	57.62	10.118	9.609	11.227				
	23	1506+691.60	1.22		7.20	◄	7.44	33.70	-0.712	2.549	2.978				
	24	1507+035.50	0.91		7.50	►	6.91	37.30	1.582	3.125	2.031				
19-4	25	1507+319.60	1.22	x2	20.55	◄	21.25	30.80	-2.273	4.554	10.641	0.344	13.3	16.9	1-1.22 Add'l
	26	1507+890.00	1.22		17.72	◄	18.54	25.75	-3.184	5.390	6.298				
19-5	27	1508+281.10		1-3.0X3.0	19.98	◄	20.10	19.05	-0.630	5.291	47.621		30.9	52.3	
	28	1508+375.40	1.22		21.60	◄	21.90	17.00	-1.765	4.013	4.669				1-0.91
		1508+500.00	0.91		20.09	◄	21.45	24.00	-5.667	5.914	3.845				Add'l
19-6	29	1508+589.91		1-2.4X2.4	18.43	◄	18.69	25.71	-1.011	5.777	33.278		36.4	49.3	
	30	1508+929.00	1.22		27.86	◄	31.60	31.46	-11.888	10.415	12.169				
		1509+000	1.22		30.40	◄	31.10	24.00	-2.917	5.159	6.028				Add'l
19-7	31	1509+151.60	1.22		31.00	◄	27.52	29.50	11.797	10.375	12.122		7.6	18.1	
	31A	1509+445.00		1-3.0X3.0	40.00	◄	40.50	25.00	-2.000	9.428	84.853				
19-8	32	1509+522.30	1.22		52.97	◄	53.96	22.76	-4.350	6.300	7.361		30.2	118.8	
	33	1509+720.00	1.22		62.18	◄	68.60	34.29	-18.723	13.071	15.272	0.026			
	34	1509+899.00	1.22		80.31	◄	82.53	21.44	-10.354	9.720	11.357	0.193			
	35	1510+043.40	1.22		91.20	◄	91.28	14.89	-0.537	2.214	2.587	0.474			
19-9	36	1510+340.00	1.22		111.07	◄	113.52	17.62	-13.905	11.264	13.161	0.217	19.5	34.3	
	37	1210+571.20	0.91		123.53	◄	126.91	28.34	-11.927	8.580	5.578				
	38	1510+601.50	1.22		128.38	◄	131.22	21.06	-13.485	11.093	12.961	0.280			
19-10	39	1511+857.20	0.91		89.91	►	84.42	33.81	16.238	10.011	6.508	0.520	9.6	15.2	
	40	1511+936.50	1.22		87.00	►	85.50	25.00	6.000	7.399	8.645				1-0.91
		1512+260.00	1.22		68.90	►	68.69	14.00	1.500	3.700	4.323				Add'l
	41	1512+545.52	1.22		50.82	►	48.30	31.00	8.129	8.612	10.063	0.347			1-0.91
19-11	42	1512+589.50	0.91		41.40	►	39.96	45.90	3.137	4.401	2.861		15.6	29.9	
	43	1512+725.00	0.91		36.74	►	35.83	32.19	2.827	4.177	2.715	0.065			
	44	1512+828.80	1.22		35.42	►	33.13	29.00	7.897	8.488	9.918				1-0.91
19-12	45	1513+654.40	1.22	x2	9.73	◄	9.10	16.00	3.938	5.994	14.007		5.6	14.0	1-0.91
	46	1514+031.50	1.22	x2	6.11	◄	6.39	26.00	-1.077	3.135	7.325				1-0.61
19-13	47	1514+130.40		2-1.50x1.5	5.31	◄	5.97	21.21	-3.112	7.408	33.338		37.5	43.1	2-1.22
	49	1514+533.60	0.91		10.50	►	12.49	26.90	-7.398	6.757	4.393				
	50	1514+643.30	0.91		9.16	◄	9.88	30.47	-2.363	3.819	2.483				
	51	1514+763.30	0.91		9.21	◄	9.53	28.30	-1.131	2.642	1.717				
	52	1514+903.00	1.22		10.00	◄	11.00	18.00	-5.556	7.120	8.319				1-0.61
19-14	53	1515+001.20	1.22		10.37	◄	11.18	26.89	-3.012	5.243	6.126		19.6	30.5	
	54	1515+096.00	1.22		15.95	◄	16.82	19.98	-4.354	6.303	7.365	0.082			1-0.61
	55	1515+383.00	2-0.91		10.96	◄	11.89	52.27	-1.779	3.314	4.309	0.096			
	57	1515+627.50	0.91		10.09	◄	10.90	29.66	-2.731	4.106	2.669				