

CITY OF REDLANDS
MASTER PLAN OF DRAINAGE (MPD)



TECHNICAL APPENDIX B

Hydraulics

CITY OF REDLANDS
MASTER PLAN OF DRAINAGE (MPD)



TECHNICAL APPENDIX B.1a

**WSPGW Hydraulic Calculations
- Existing Capacity**

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1										
CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	10	3	0	.000		7.170	12.000	.000	.000	.00										
CD	11	3	0	.000		5.900	12.000	.000	.000	.00										
CD	12	3	0	.000		5.000	12.000	.000	.000	.00										
CD	18	4	1			1.500														
CD	24	4	1			2.000														
CD	27	1	0	.000		9.000	27.000	1.000	1.000	.00										
CD	30	4	1			2.500														
CD	36	4	1			3.000														
CD	42	4	1			3.500														
CD	48	4	1			4.000														
CD	54	4	1			4.500														
CD	60	4	1			5.000														
CD	66	4	1			5.500														
CD	72	4	1			6.000														
CD	78	4	1			6.500														
CD	84	4	1			7.000														
CD	90	4	1			7.500														
CD	96	4	1			8.000														
CD	102	4	1			8.500														
CD	108	4	1			9.000														
CD	109	2	0	.000		9.000	9.000			.00										

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

HEADING LINE NO 3 IS -

BY DMALOTT JN:136769 APRIL

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS A	SYSTEM OUTLET		965.680	1071.110	27	3.000				
2	IS A	TRANSITION		1021.290	1071.670	109		.013	.000	.000	
3	IS A	WALL EXIT		1021.290	1071.670	109					
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS											
4	IS A	REACH		1077.740	1072.400	108		.013	.000	.000	.000
5	IS A	REACH		1122.670	1072.530	108		.013	90.001	28.603	.000
6	IS A	JUNCTION		1127.340	1072.544	108	36	0	.015	150.000	.000
							Q3		Q4	INVERT-3	INVERT-4
										1075.530	.000
										PHI 3	PHI 4
										30.000	.000
										RADIUS	ANGLE
										89.999	2.973
7	IS A	REACH		1187.700	1072.730	108		.013	90.001	38.426	.000

			3243.380	1079.044	102	18	0	.015	50.000	.000	1082.530	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	25	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3296.250	1079.200	102			.013			.000	.000	.000	0
ELEMENT NO	26	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			3301.920	1079.250	96	30	0	.015	40.000	.000	1082.200	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	27	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4270.100	1084.150	96			.013			.000	.000	.000	2
ELEMENT NO	28	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4305.460	1084.337	96			.013			45.000	-45.022	.000	0
ELEMENT NO	29	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			4310.130	1084.350	96	36	0	.015	40.000	.000	1086.830	.000	45.000	.000
											RADIUS	ANGLE		
											44.999	-5.946		
W S P G W													PAGE NO	5
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	30	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4340.810	1084.500	96			.013			45.000	-39.063	.000	0
ELEMENT NO	31	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4343.790	1084.520	96			.013			.000	.000	.000	0
ELEMENT NO	32	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			4349.450	1085.020	90	24	18	.015	12.000	7.000	1087.520	1087.770	-60.000	80.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	33	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4697.960	1086.760	90			.013			.000	.000	.000	0
ELEMENT NO	34	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			4703.620	1087.260	84	30	0	.015	35.000	.000	1089.260	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	35	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4896.580	1090.640	84			.013			.000	.000	.000	0
ELEMENT NO	36	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			4904.260	1090.730	84	36	0	.015	50.000	.000	1092.640	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	37	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5000.000	1092.410	84			.013			.000	.000	.000	0
W S P G W													PAGE NO	6
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	38	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5415.010	1099.670	84			.013			.000	.000	.000	0
ELEMENT NO	39	IS A JUNCTION	*	*	*	*	*		*		*			

		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5420.670	1099.770	84	18	18	.015	3.000	2.000	1102.420	1102.420	-80.000	60.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	40 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			5540.140	1100.970	84			.013			.000	.000	.000	0
ELEMENT NO	41 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			5734.800	1102.920	84			.013			630.800	17.681	.000	0
ELEMENT NO	42 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			5777.950	1103.350	84			.013			.000	.000	.000	0
ELEMENT NO	43 IS A JUNCTION	*	*	*	*	*			*		*		*	
	U/S DATA							N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5789.530	1103.850	78	36	48	.015	40.000	50.000	1105.340	1104.840	-45.000	45.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	44 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			5961.050	1105.580	78			.013			.000	.000	.000	0
ELEMENT NO	45 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			6143.750	1107.460	78			.013			588.087	-17.800	.000	0
ELEMENT NO	46 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			6347.280	1109.500	78			.013			.000	.000	.000	0
ELEMENT NO	47 IS A JUNCTION	*	*	*	*	*			*		*		*	
	U/S DATA							N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6352.940	1110.000	72	30	0	.015	31.000	.001	111.500	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
W S P G W														
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
PAGE NO 7														
ELEMENT NO	48 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			6406.120	1110.260	72			.013			.000	.000	.000	0
ELEMENT NO	49 IS A JUNCTION	*	*	*	*	*			*		*		*	
	U/S DATA							N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6410.790	1110.280	72	18	0	.015	2.000	.000	1112.510	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	50 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			6420.680	1110.330	72			.013			.000	.000	.000	0
ELEMENT NO	51 IS A JUNCTION	*	*	*	*	*			*		*		*	
	U/S DATA							N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6425.350	1110.360	72	18	0	.015	2.000	.000	1112.580	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	52 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H
			6722.510	1111.840	72			.013			.000	.000	.000	0
ELEMENT NO	53 IS A JUNCTION	*	*	*	*	*			*		*		*	
	U/S DATA							N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6731.150	1112.340	66	42	0	.015	58.000	.000	1113.090	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	54 IS A REACH	*	*	*										
	U/S DATA							N			RADIUS	ANGLE	ANG PT	MAN H

ELEMENT NO	55	IS	A	JUNCTION	7112.750	1116.020	66			.013			.000	.000	.000	0
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
					7118.410	1116.120	66	18	0	.015	15.000	.000	1118.020	.000	45.000	.000
													RADIUS	ANGLE		
													.000	.000		
W S P G W																
PAGE NO 8																
WATER SURFACE PROFILE - ELEMENT CARD LISTING																
ELEMENT NO	56	IS	A	REACH									RADIUS	ANGLE	ANG PT	MAN H
				U/S DATA	STATION	INVERT	SECT			N			.000	.000	.000	0
					7449.470	1119.660	66			.013			.000	.000	.000	0
ELEMENT NO	57	IS	A	JUNCTION												
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
					7458.920	1119.760	66	48	0	.015	100.000	.000	1120.430	.000	45.000	.000
													RADIUS	ANGLE		
													.000	.000		
ELEMENT NO	58	IS	A	REACH												
				U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
					7496.030	1120.160	66			.013			.000	.000	.000	0
ELEMENT NO	59	IS	A	JUNCTION												
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
					7507.890	1121.660	48	36	0	.015	57.000	.000	1121.840	.000	45.000	.000
													RADIUS	ANGLE		
													.000	.000		
ELEMENT NO	60	IS	A	REACH												
				U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
					7933.710	1126.220	48			.013			.000	.000	.000	0
ELEMENT NO	61	IS	A	JUNCTION												
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
					7939.370	1126.720	42	24	0	.015	15.000	.000	1127.220	.000	45.000	.000
													RADIUS	ANGLE		
													.000	.000		
ELEMENT NO	62	IS	A	REACH												
				U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
					8268.470	1130.670	42			.013			.000	.000	.000	0
ELEMENT NO	63	IS	A	JUNCTION												
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
					8277.880	1132.170	24	42	0	.015	86.000	.000	1130.670	.000	45.000	.000
													RADIUS	ANGLE		
													.000	.000		
W S P G W																
PAGE NO 9																
WATER SURFACE PROFILE - ELEMENT CARD LISTING																
ELEMENT NO	64	IS	A	REACH									RADIUS	ANGLE	ANG PT	MAN H
				U/S DATA	STATION	INVERT	SECT			N			.000	.000	.000	0
					8540.430	1137.170	24			.013			.000	.000	.000	0
ELEMENT NO	65	IS	A	JUNCTION												
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
					8545.090	1137.270	24	18	18	.015	8.000	7.000	1137.420	1137.420	-45.000	45.000
													RADIUS	ANGLE		
													.000	.000		
ELEMENT NO	66	IS	A	REACH												
				U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
					8553.090	1137.390	24			.013			.000	.000	.000	0
ELEMENT NO	67	IS	A	SYSTEM HEADWORKS												
				U/S DATA	STATION	INVERT	SECT						W S ELEV			
					8553.090	1137.390	24						.000			

WATER SURFACE PROFILE LISTING
REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS
LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)
BY DMALOTT JN:136769 APRIL

Date: 4-18-2014 Time: 2: 3:43

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
965.680	1071.110	1.624	1072.734	1121.10	24.12	9.03	1081.77	.00	3.60	30.25	9.000	27.000	1.00	0 .0
TRANS STR	.0101					.0162	.90	1.62	3.43		.013	.00	1.00	TRAP
1021.290	1071.670	7.210	1078.880	1121.10	17.28	4.64	1083.52	.00	7.84	9.00	9.000	9.000	.00	0 .0
WALL EXIT														
1021.290	1071.670	7.209	1078.879	1121.10	20.53	6.54	1085.42	.00	8.05	7.19	9.000	.000	.00	1 .0
41.593	.0129					.0081	.34	7.21	1.31	6.03	.013	.00	.00	PIPE
1062.883	1072.208	7.586	1079.793	1121.10	19.59	5.96	1085.76	.00	8.05	6.55	9.000	.000	.00	1 .0
14.857	.0129					.0074	.11	7.59	1.17	6.03	.013	.00	.00	PIPE
1077.740	1072.400	8.047	1080.447	1121.10	18.68	5.42	1085.87	.33	8.05	5.54	9.000	.000	.00	1 .0
36.538	.0029					.0071	.26	8.38	1.00	9.00	.013	.00	.00	PIPE
1114.278	1072.506	8.693	1081.199	1121.10	17.81	4.93	1086.12	.18	8.05	3.27	9.000	.000	.00	1 .0
8.392	.0029					.0071	.06	8.87	.72	9.00	.013	.00	.00	PIPE
1122.670	1072.530	8.761	1081.291	1121.10	17.75	4.89	1086.18	9.00	8.05	2.89	9.000	.000	.00	1 .0
JUNCT STR	.0030					.0088	.04	9.00	.67		.015	.00	.00	PIPE
1127.340	1072.544	10.063	1082.607	971.10	15.26	3.62	1086.23	.00	7.62	.00	9.000	.000	.00	1 .0
60.360	.0031					.0060	.37	.00	.00	9.00	.013	.00	.00	PIPE
1187.700	1072.730	10.715	1083.445	971.10	15.26	3.62	1087.06	.00	7.62	.00	9.000	.000	.00	1 .0
137.290	.0030					.0060	.83	10.72	.00	9.00	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1324.990 | 1073.140 | 11.135 | 1084.276 | 971.10 | 15.26 | 3.62 | 1087.89 | .00 | 7.62 | .00 | 9.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0058 | | | | | | .0069 | .06 | 11.14 | .00 | .015 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
1333.620 | 1073.190 | 12.401 | 1085.591 | 821.10 | 12.91 | 2.59 | 1088.18 | .00 | 7.08 | .00 | 9.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 844.660 | .0030 | | | | | | .0043 | 3.65 | 12.40 | .00 | 9.00 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
2178.280 | 1075.760 | 13.613 | 1089.373 | 821.10 | 12.91 | 2.59 | 1091.96 | .00 | 7.08 | .00 | 9.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0058 | | | | | | .0059 | .05 | 13.61 | .00 | .015 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
2186.910 | 1075.810 | 13.974 | 1089.784 | 721.10 | 12.71 | 2.51 | 1092.29 | .00 | 6.73 | .00 | 8.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 872.640 | .0031 | | | | | | .0045 | 3.95 | 13.97 | .00 | 8.50 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
3059.550 | 1078.490 | 15.493 | 1093.983 | 721.10 | 12.71 | 2.51 | 1096.49 | .00 | 6.73 | .00 | 8.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 35.350 | .0031 | | | | | | .0045 | .16 | .00 | .00 | 8.50 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
3094.900 | 1078.600 | 15.897 | 1094.497 | 721.10 | 12.71 | 2.51 | 1097.00 | .00 | 6.73 | .00 | 8.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 38.500 | .0029 | | | | | | .0045 | .17 | 15.90 | .00 | 8.50 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
3133.400 | 1078.710 | 15.962 | 1094.672 | 721.10 | 12.71 | 2.51 | 1097.18 | .00 | 6.73 | .00 | 8.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
TRANS STR | .0024 | | | | | | .0018 | .01 | 15.96 | .00 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
3137.540 | 1078.720 | 17.736 | 1096.456 | 721.10 | 8.38 | 1.09 | 1097.55 | .00 | 4.82 | 12.00 | 7.170 | 12.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
TRANS STR | .0037 | | | | | | .0018 | .02 | 17.74 | .55 | .013 | .00 | .00 | BOX
      | | | | | | | | | | | | | | | | |
3148.400 | 1078.760 | 16.812 | 1095.572 | 721.10 | 12.02 | 2.24 | 1097.81 | .00 | 4.82 | 12.00 | 5.000 | 12.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
      | 20.000 | .0030 | | | | | | .0052 | .10 | .00 | .95 | 4.94 | .013 | .00 | .00 | BOX
      | | | | | | | | | | | | | | | | |
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave | HF  |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3168.400 | 1078.820 | 17.094 | 1095.914 | 721.10 | 12.02 | 2.24 | 1098.16 | .00 | 4.82 | 12.00 | 5.000 | 12.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
TRANS STR | .0022 |      |      |      |      |      | .0032 | .01 | .00 | .95 | .013 | .00 | .00 | BOX
3172.880 | 1078.830 | 17.798 | 1096.628 | 721.10 | 10.19 | 1.61 | 1098.24 | .00 | 4.82 | 12.00 | 5.900 | 12.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
TRANS STR | .0029 |      |      |      |      |      | .0039 | .04 | 17.80 | .74 | .013 | .00 | .00 | BOX
3183.400 | 1078.860 | 17.264 | 1096.124 | 721.10 | 12.71 | 2.51 | 1098.63 | .00 | 6.73 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 8.290 | .0036 |      |      |      |      | .0045 | .04 | 17.26 | .00 | 8.50 | .013 | .00 | .00 | PIPE
3191.690 | 1078.890 | 17.272 | 1096.162 | 721.10 | 12.71 | 2.51 | 1098.67 | .00 | 6.73 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0030 |      |      |      |      |      | .0059 | .03 | 17.27 | .00 | .015 | .00 | .00 | PIPE
3196.360 | 1078.904 | 17.418 | 1096.323 | 710.10 | 12.51 | 2.43 | 1098.75 | .00 | 6.68 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 3.640 | .0016 |      |      |      |      | .0044 | .02 | 17.42 | .00 | 8.50 | .013 | .00 | .00 | PIPE
3200.000 | 1078.910 | 17.428 | 1096.339 | 710.10 | 12.51 | 2.43 | 1098.77 | .00 | 6.68 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 38.710 | .0031 |      |      |      |      | .0044 | .17 | 17.43 | .00 | 8.50 | .013 | .00 | .00 | PIPE
3238.710 | 1079.030 | 17.478 | 1096.508 | 710.10 | 12.51 | 2.43 | 1098.94 | .00 | 6.68 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0030 |      |      |      |      |      | .0054 | .03 | 17.48 | .00 | .015 | .00 | .00 | PIPE
3243.380 | 1079.044 | 17.820 | 1096.864 | 660.10 | 11.63 | 2.10 | 1098.97 | .00 | 6.45 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 52.870 | .0030 |      |      |      |      | .0038 | .20 | 17.82 | .00 | 8.50 | .013 | .00 | .00 | PIPE
3296.250 | 1079.200 | 17.865 | 1097.065 | 660.10 | 11.63 | 2.10 | 1099.17 | .00 | 6.45 | .00 | 8.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0088 |      |      |      |      |      | .0056 | .03 | 17.86 | .00 | .015 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
|-| Elev |-| (FT) |-| Elev |-| (CFS) |-| (FPS) |-| Head |-| Grd.El. |-| Elev |-| Depth |-| Width |-| Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp| "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3301.920 | 1079.250 | 17.729 | 1096.979 | 620.10 | 12.34 | 2.36 | 1099.34 | .00 | 6.33 | .00 | 8.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
968.180 | .0051 | | | | | .0046 | 4.48 | 17.73 | .00 | 6.26 | .013 | .00 | .00 | PIPE
4270.100 | 1084.150 | 17.541 | 1101.691 | 620.10 | 12.34 | 2.36 | 1104.05 | .00 | 6.33 | .00 | 8.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
35.360 | .0053 | | | | | .0046 | .16 | .00 | .00 | 6.13 | .013 | .00 | .00 | PIPE
4305.460 | 1084.337 | 17.852 | 1102.189 | 620.10 | 12.34 | 2.36 | 1104.55 | .00 | 6.33 | .00 | 8.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
JUNCT STR | .0028 | | | | | .0058 | .03 | .00 | .00 | .00 | .015 | .00 | .00 | PIPE
4310.130 | 1084.350 | 18.357 | 1102.707 | 580.10 | 11.54 | 2.07 | 1104.77 | .00 | 6.13 | .00 | 8.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
30.680 | .0049 | | | | | .0040 | .12 | .00 | .00 | 5.99 | .013 | .00 | .00 | PIPE
4340.810 | 1084.500 | 18.603 | 1103.103 | 580.10 | 11.54 | 2.07 | 1105.17 | .00 | 6.13 | .00 | 8.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
2.980 | .0067 | | | | | .0040 | .01 | 18.60 | .00 | 5.29 | .013 | .00 | .00 | PIPE
4343.790 | 1084.520 | 18.595 | 1103.115 | 580.10 | 11.54 | 2.07 | 1105.18 | .00 | 6.13 | .00 | 8.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
JUNCT STR | .0883 | | | | | .0062 | .04 | 18.60 | .00 | .00 | .015 | .00 | .00 | PIPE
4349.450 | 1085.020 | 17.829 | 1102.849 | 561.10 | 12.70 | 2.50 | 1105.35 | .00 | 6.11 | .00 | 7.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
348.510 | .0050 | | | | | .0053 | 1.86 | 17.83 | .00 | 6.41 | .013 | .00 | .00 | PIPE
4697.960 | 1086.760 | 17.950 | 1104.710 | 561.10 | 12.70 | 2.50 | 1107.21 | .00 | 6.11 | .00 | 7.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
JUNCT STR | .0883 | | | | | .0081 | .05 | 17.95 | .00 | .00 | .015 | .00 | .00 | PIPE
4703.620 | 1087.260 | 17.313 | 1104.573 | 526.10 | 13.67 | 2.90 | 1107.48 | .00 | 5.97 | .00 | 7.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
192.960 | .0175 | | | | | .0068 | 1.31 | 17.31 | .00 | 4.00 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4896.580 | 1090.640 | 15.242 | 1105.882 | 526.10 | 13.67 | 2.90 | 1108.78 | .00 | 5.97 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0117 | | | | | | .0082 | .06 | 15.24 | .00 | | | .015 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
4904.260 | 1090.730 | 16.064 | 1106.794 | 476.10 | 12.37 | 2.38 | 1109.17 | .00 | 5.72 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
95.740 | .0175 | | | | | | .0056 | .53 | 16.06 | .00 | 3.76 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5000.000 | 1092.410 | 14.916 | 1107.326 | 476.10 | 12.37 | 2.38 | 1109.70 | .00 | 5.72 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
415.010 | .0175 | | | | | | .0056 | 2.31 | 14.92 | .00 | 3.76 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5415.010 | 1099.670 | 9.961 | 1109.631 | 476.10 | 12.37 | 2.38 | 1112.01 | .00 | 5.72 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0177 | | | | | | .0073 | .04 | 9.96 | .00 | | | .015 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5420.670 | 1099.770 | 10.000 | 1109.770 | 471.10 | 12.24 | 2.33 | 1112.10 | .00 | 5.69 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
119.470 | .0100 | | | | | | .0054 | .65 | 10.00 | .00 | 4.46 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5540.140 | 1100.970 | 9.450 | 1110.420 | 471.10 | 12.24 | 2.33 | 1112.75 | .00 | 5.69 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
194.660 | .0100 | | | | | | .0054 | 1.06 | .00 | .00 | 4.47 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5734.800 | 1102.920 | 8.764 | 1111.685 | 471.10 | 12.24 | 2.33 | 1114.01 | .00 | 5.69 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
43.150 | .0100 | | | | | | .0054 | .23 | 8.76 | .00 | 4.48 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5777.950 | 1103.350 | 8.569 | 1111.919 | 471.10 | 12.24 | 2.33 | 1114.25 | .00 | 5.69 | .00 | 7.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0432 | | | | | | .0071 | .08 | 8.57 | .00 | | | .015 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5789.530 | 1103.850 | 9.096 | 1112.946 | 381.10 | 11.48 | 2.05 | 1114.99 | .00 | 5.22 | .00 | 6.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
171.520 | .0101 | | | | | | .0053 | .91 | 9.10 | .00 | 4.10 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5961.050 | 1105.580 | 8.272 | 1113.852 | 381.10 | 11.48 | 2.05 | 1115.90 | .00 | 5.22 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
182.700 | .0103 |      |      |      |      |      | .0053 | .97 | .00 | .00 | 4.07 | .013 | .00 | .00 | PIPE
6143.750 | 1107.460 | 7.540 | 1115.000 | 381.10 | 11.48 | 2.05 | 1117.05 | .00 | 5.22 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
203.530 | .0100 |      |      |      |      |      | .0053 | 1.08 | 7.54 | .00 | 4.11 | .013 | .00 | .00 | PIPE
6347.280 | 1109.500 | 6.575 | 1116.075 | 381.10 | 11.48 | 2.05 | 1118.12 | .00 | 5.22 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0883 |      |      |      |      |      | .0081 | .05 | 6.58 | .00 | .00 | .015 | .00 | .00 | PIPE
6352.940 | 1110.000 | 6.023 | 1116.023 | 350.10 | 12.38 | 2.38 | 1118.40 | .00 | 5.07 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
53.180 | .0049 |      |      |      |      |      | .0068 | .36 | 6.02 | .00 | 6.00 | .013 | .00 | .00 | PIPE
6406.120 | 1110.260 | 6.127 | 1116.387 | 350.10 | 12.38 | 2.38 | 1118.77 | .00 | 5.07 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0043 |      |      |      |      |      | .0090 | .04 | 6.13 | .00 | .00 | .015 | .00 | .00 | PIPE
6410.790 | 1110.280 | 6.201 | 1116.481 | 348.10 | 12.31 | 2.35 | 1118.83 | .00 | 5.06 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.890 | .0050 |      |      |      |      |      | .0068 | .07 | 6.20 | .00 | 6.00 | .013 | .00 | .00 | PIPE
6420.680 | 1110.330 | 6.218 | 1116.548 | 348.10 | 12.31 | 2.35 | 1118.90 | .00 | 5.06 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0064 |      |      |      |      |      | .0089 | .04 | 6.22 | .00 | .00 | .015 | .00 | .00 | PIPE
6425.350 | 1110.360 | 6.282 | 1116.642 | 346.10 | 12.24 | 2.33 | 1118.97 | .00 | 5.04 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
297.160 | .0050 |      |      |      |      |      | .0067 | 1.98 | 6.28 | .00 | 6.00 | .013 | .00 | .00 | PIPE
6722.510 | 1111.840 | 6.787 | 1118.627 | 346.10 | 12.24 | 2.33 | 1120.95 | .00 | 5.04 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0579 |      |      |      |      |      | .0093 | .08 | 6.79 | .00 | .00 | .015 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6731.150 | 1112.340 | 6.959 | 1119.299 | 288.10 | 12.13 | 2.28 | 1121.58 | .00 | 4.69 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
381.600 | .0096 |      |      |      |      |      | .0074 | 2.81 | 6.96 | .00 | 3.98 | .013 | .00 | .00 | PIPE
7112.750 | 1116.020 | 6.088 | 1122.108 | 288.10 | 12.13 | 2.28 | 1124.39 | .00 | 4.69 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0177 |      |      |      |      |      | .0093 | .05 | 6.09 | .00 | .00 | .015 | .00 | .00 | PIPE
7118.410 | 1116.120 | 6.386 | 1122.506 | 273.10 | 11.49 | 2.05 | 1124.56 | .00 | 4.59 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
217.214 | .0107 |      |      |      |      |      | .0066 | 1.43 | 6.39 | .00 | 3.68 | .013 | .00 | .00 | PIPE
7335.624 | 1118.443 | 5.500 | 1123.943 | 273.10 | 11.49 | 2.05 | 1125.99 | .00 | 4.59 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
48.307 | .0107 |      |      |      |      |      | .0061 | .30 | 5.50 | .00 | 3.68 | .013 | .00 | .00 | PIPE
7383.931 | 1118.959 | 5.184 | 1124.144 | 273.10 | 11.76 | 2.15 | 1126.29 | .00 | 4.59 | 2.56 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
7383.931 | 1118.959 | 4.025 | 1122.984 | 273.10 | 14.66 | 3.34 | 1126.32 | .00 | 4.59 | 4.87 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.343 | .0107 |      |      |      |      |      | .0081 | .27 | 4.03 | 1.32 | 3.68 | .013 | .00 | .00 | PIPE
7417.274 | 1119.316 | 4.151 | 1123.467 | 273.10 | 14.20 | 3.13 | 1126.60 | .00 | 4.59 | 4.73 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
24.872 | .0107 |      |      |      |      |      | .0075 | .19 | 4.15 | 1.24 | 3.68 | .013 | .00 | .00 | PIPE
7442.146 | 1119.582 | 4.355 | 1123.937 | 273.10 | 13.54 | 2.85 | 1126.78 | .00 | 4.59 | 4.47 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.324 | .0107 |      |      |      |      |      | .0067 | .05 | 4.35 | 1.12 | 3.68 | .013 | .00 | .00 | PIPE
7449.470 | 1119.660 | 4.586 | 1124.246 | 273.10 | 12.90 | 2.59 | 1126.83 | .00 | 4.59 | 4.10 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0106 |      |      |      |      |      | .0060 | .06 | 4.59 | 1.00 | .00 | .015 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7458.920 | 1119.760 | 6.893 | 1126.653 | 173.10 | 7.29 | .82 | 1127.48 | .00 | 3.68 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.110 | .0108 |      |      |      |      | .0027 | .10 | 6.89 | .00 | 2.74 | .013 | .00 | .00 | PIPE
7496.030 | 1120.160 | 6.592 | 1126.752 | 173.10 | 7.29 | .82 | 1127.58 | .00 | 3.68 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1265 |      |      |      |      | .0061 | .07 | 6.59 | .00 | .00 | .015 | .00 | .00 | PIPE
7507.890 | 1121.660 | 4.931 | 1126.591 | 116.10 | 9.24 | 1.33 | 1127.92 | .00 | 3.25 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
222.969 | .0107 |      |      |      |      | .0065 | 1.45 | 4.93 | .00 | 2.66 | .013 | .00 | .00 | PIPE
7730.859 | 1124.048 | 4.000 | 1128.048 | 116.10 | 9.24 | 1.33 | 1129.37 | .00 | 3.25 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.228 | .0107 |      |      |      |      | .0061 | .12 | 4.00 | .00 | 2.66 | .013 | .00 | .00 | PIPE
7750.087 | 1124.254 | 3.889 | 1128.143 | 116.10 | 9.31 | 1.35 | 1129.49 | .00 | 3.25 | 1.31 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
7750.087 | 1124.254 | 2.678 | 1126.932 | 116.10 | 12.98 | 2.62 | 1129.55 | .00 | 3.25 | 3.76 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
28.766 | .0107 |      |      |      |      | .0105 | .30 | 2.68 | 1.48 | 2.66 | .013 | .00 | .00 | PIPE
7778.853 | 1124.562 | 2.678 | 1127.240 | 116.10 | 12.98 | 2.62 | 1129.86 | .00 | 3.25 | 3.76 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
154.857 | .0107 |      |      |      |      | .0099 | 1.54 | 2.68 | 1.48 | 2.66 | .013 | .00 | .00 | PIPE
7933.710 | 1126.220 | 2.796 | 1129.016 | 116.10 | 12.38 | 2.38 | 1131.39 | .00 | 3.25 | 3.67 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0883 |      |      |      |      | .0142 | .08 | 2.80 | 1.36 | .015 | .00 | .00 | .00 | PIPE
7939.370 | 1126.720 | 2.638 | 1129.358 | 101.10 | 12.99 | 2.62 | 1131.98 | .00 | 3.08 | 3.02 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
90.875 | .0120 |      |      |      |      | .0120 | 1.09 | 2.64 | 1.43 | 2.64 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station  | Invert | Depth | Water | Q   | Vel  | Vel  | Energy | Super | Critical | Flow Top | Height/ | Base Wt |      | No Wth
          | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth  | Width  | Dia.-FT | or I.D. | ZL   | Prs/Pip
L/Elem   | Ch Slope |      |      |      |      |      | HF   | SE Dpth | Froude N | Norm Dp | "N"   | X-Fall | ZR   | Type Ch
***** |***** |***** |***** |***** |***** |***** |***** |***** |***** |***** |***** |***** |***** |***** |*****
8030.245 | 1127.811 | 2.638 | 1130.449 | 101.10 | 12.99 | 2.62 | 1133.07 | .00 | 3.08 | 3.02 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
184.060  | .0120     |          |          |          |          |          | .0114 | 2.10 | 2.64 | 1.43 | 2.64 | .013 | .00 | .00 | PIPE
8214.305 | 1130.020 | 2.765 | 1132.785 | 101.10 | 12.40 | 2.39 | 1135.17 | .00 | 3.08 | 2.85 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
43.363   | .0120     |          |          |          |          |          | .0103 | .45  | 2.76 | 1.29 | 2.64 | .013 | .00 | .00 | PIPE
8257.668 | 1130.540 | 2.910 | 1133.450 | 101.10 | 11.82 | 2.17 | 1135.62 | .00 | 3.08 | 2.62 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
10.802   | .0120     |          |          |          |          |          | .0095 | .10  | 2.91 | 1.15 | 2.64 | .013 | .00 | .00 | PIPE
8268.470 | 1130.670 | 3.081 | 1133.751 | 101.10 | 11.27 | 1.97 | 1135.72 | .00 | 3.08 | 2.27 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR | .1594     |          |          |          |          |          | .0090 | .08  | 3.08 | 1.00 |          | .015 | .00 | .00 | PIPE
8277.880 | 1132.170 | 4.350 | 1136.520 | 15.10  | 4.81  | .36  | 1136.88 | .00 | 1.40 | .00  | 2.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
161.093  | .0190     |          |          |          |          |          | .0044 | .71  | 4.35 | .00  | .98  | .013 | .00 | .00 | PIPE
8438.973 | 1135.238 | 2.000 | 1137.238 | 15.10  | 4.81  | .36  | 1137.60 | .00 | 1.40 | .00  | 2.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
5.024   | .0190     |          |          |          |          |          | .0041 | .02  | 2.00 | .00  | .98  | .013 | .00 | .00 | PIPE
8443.997 | 1135.334 | 1.913 | 1137.247 | 15.10  | 4.88  | .37  | 1137.62 | .00 | 1.40 | .82  | 2.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
HYDRAULIC JUMP
8443.997 | 1135.334 | 1.003 | 1136.336 | 15.10  | 9.58  | 1.43 | 1137.76 | .00 | 1.40 | 2.00 | 2.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
32.059  | .0190     |          |          |          |          |          | .0173 | .55  | 1.00 | 1.90 | .98  | .013 | .00 | .00 | PIPE
8476.056 | 1135.944 | 1.017 | 1136.961 | 15.10  | 9.41  | 1.38 | 1138.34 | .00 | 1.40 | 2.00 | 2.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
26.938  | .0190     |          |          |          |          |          | .0159 | .43  | 1.02 | 1.85 | .98  | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |          |          |          |          |          |          | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
8502.994 | 1136.457 | 1.056 | 1137.513 | 15.10 | 8.98 | 1.25 | 1138.76 | .00 | 1.40 | 2.00 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
14.322 | .0190 |          |          |          |          | .0140 | .20 | 1.06 | 1.72 | .98 | .013 | .00 | .00 | PIPE
8517.316 | 1136.730 | 1.097 | 1137.827 | 15.10 | 8.56 | 1.14 | 1138.96 | .00 | 1.40 | 1.99 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
8.946 | .0190 |          |          |          |          | .0123 | .11 | 1.10 | 1.60 | .98 | .013 | .00 | .00 | PIPE
8526.263 | 1136.900 | 1.140 | 1138.041 | 15.10 | 8.16 | 1.03 | 1139.07 | .00 | 1.40 | 1.98 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
5.931 | .0190 |          |          |          |          | .0109 | .06 | 1.14 | 1.49 | .98 | .013 | .00 | .00 | PIPE
8532.193 | 1137.013 | 1.186 | 1138.199 | 15.10 | 7.78 | .94 | 1139.14 | .00 | 1.40 | 1.97 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
3.931 | .0190 |          |          |          |          | .0096 | .04 | 1.19 | 1.38 | .98 | .013 | .00 | .00 | PIPE
8536.124 | 1137.088 | 1.235 | 1138.323 | 15.10 | 7.42 | .85 | 1139.18 | .00 | 1.40 | 1.94 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
2.503 | .0190 |          |          |          |          | .0085 | .02 | 1.23 | 1.28 | .98 | .013 | .00 | .00 | PIPE
8538.627 | 1137.136 | 1.286 | 1138.422 | 15.10 | 7.07 | .78 | 1139.20 | .00 | 1.40 | 1.92 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
1.372 | .0190 |          |          |          |          | .0076 | .01 | 1.29 | 1.18 | .98 | .013 | .00 | .00 | PIPE
8539.999 | 1137.162 | 1.341 | 1138.503 | 15.10 | 6.74 | .71 | 1139.21 | .00 | 1.40 | 1.88 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
.431 | .0190 |          |          |          |          | .0067 | .00 | 1.34 | 1.09 | .98 | .013 | .00 | .00 | PIPE
8540.430 | 1137.170 | 1.401 | 1138.571 | 15.10 | 6.42 | .64 | 1139.21 | .00 | 1.40 | 1.83 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR | .0215 |          |          |          |          | .0042 | .02 | 1.40 | 1.00 |          | .015 | .00 | .00 | PIPE
8545.090 | 1137.270 | 1.962 | 1139.232 | .10 | .03 | .00 | 1139.23 | .00 | .11 | .55 | 2.000 | .000 | .00 | 1 | .0
        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
8.000 | .0150 |          |          |          |          | .0000 | .00 | 1.96 | .00 | .09 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-18-2014 Time: 2: 3:43

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2 MOUNTAIN AVENUE & ALMOND AVENUE STORM DRAIN (NAD88 DATUM)

BY DMALOTT JN:136769 APRIL

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
8553.090 | 1137.390 | 1.842 | 1139.232 | .10 | .03 | .00 | 1139.23 | .00 | .11 | 1.08 | 2.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1									
CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH	DROP												
CD	10	3	0	.000	7.170	12.000	.000	.000	.00										
CD	11	3	0	.000	5.900	12.000	.000	.000	.00										
CD	12	3	0	.000	5.000	12.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	36	4	1		3.000														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - LINE 4-2A MOUNTAIN AVENUE STORM DRAIN

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014 (NAD88 DATUM)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV										
1	IS	A	SYSTEM	OUTLET	U/S DATA	1005.580	1086.880	36	3.000										
2	IS	A	REACH		U/S DATA	1009.410	1086.920	36	.013	RADIUS	ANGLE	ANG PT	MAN H						
3	IS	A	REACH		U/S DATA	1027.040	1087.090	36	.013	22.500	-44.895	.000	0						
4	IS	A	REACH		U/S DATA	1117.150	1088.000	36	.013	.000	.000	.000	0						
5	IS	A	JUNCTION		U/S DATA	1123.810	1088.100	36	.015	52.000	52.000	1088.500	1088.500	-60.000	60.000				
6	IS	A	REACH		U/S DATA	1131.810	1088.180	36	.013	.000	.000	.000	0						
7	IS	A	REACH		U/S DATA	1384.410	1089.540	36	.013	.000	.000	.000	0						
8	IS	A	JUNCTION		U/S DATA	1389.080	1089.560	36	.015	22.000	.000	1089.960	.000	-45.000	.000				
9	IS	A	REACH		U/S DATA	1584.410	1090.220	36	.013	.000	.000	.000	0						
10	IS	A	JUNCTION		U/S DATA	1589.080	1090.240	36	.015	7.000	.000	1092.110	.000	-45.000	.000				

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
11	IS	A	REACH	U/S DATA								

ELEMENT NO	12	IS A	JUNCTION	1784.410	1090.890	36				.013			.000	.000	.000	0
			U/S DATA	*	*	*	*	*				*	*	*	*	
				STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
				1789.080	1090.910	36	18	0	.015	2.000	.000	1093.190	.000	-45.000	.000	
												RADIUS	ANGLE			
												.000	.000			
ELEMENT NO	13	IS A	REACH	*	*	*										
			U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H	
				1899.620	1091.280	36			.013			.000	.000	.000	0	
ELEMENT NO	14	IS A	REACH	*	*	*										
			U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H	
				1933.910	1091.380	36			.013			22.500	-87.319	.000	0	
ELEMENT NO	15	IS A	JUNCTION	*	*	*	*	*								
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
				1938.580	1092.450	36	18	0	.015	1.000	.000	1093.190	.000	-45.000	.000	
												RADIUS	ANGLE			
												.000	.000			
ELEMENT NO	16	IS A	REACH	*	*	*										
			U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H	
				1969.010	1092.590	36			.013			.000	.000	.000	0	
ELEMENT NO	17	IS A	SYSTEM HEADWORKS							*						
			U/S DATA	STATION	INVERT	SECT						W S ELEV				
				1969.010	1092.590	36						.000				

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 2:17:34

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2A MOUNTAIN AVENUE STORM DRAIN

BY MCHANDOO JN:136769 APRIL 2014 (NAD88 DATUM)

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | HF      | SE Dpth|Froude N|Norm Dp | "N"    | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1005.580|1086.880|2.972|1089.852|140.00|19.84|6.11|1095.96|.00|2.97|.58|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.304|.0105|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0413|.01|2.97|1.00|3.00|.013|.00|.00|PIPE
1005.884|1086.883|3.000|1089.883|140.00|19.81|6.09|1095.97|.00|2.97|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |3.526|.0105|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0430|.15|3.00|.00|3.00|.013|.00|.00|PIPE
1009.410|1086.920|3.118|1090.039|140.00|19.81|6.09|1096.13|.00|2.97|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |17.630|.0096|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0441|.78|.00|.00|3.00|.013|.00|.00|PIPE
1027.040|1087.090|4.586|1091.676|140.00|19.81|6.09|1097.77|.00|2.97|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |90.110|.0101|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0441|3.97|4.59|.00|3.00|.013|.00|.00|PIPE
1117.150|1088.000|7.646|1095.646|140.00|19.81|6.09|1101.74|.00|2.97|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |JUNCT STR|.0150|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0313|.21|7.65|.00|.015|.00|.00|.00|PIPE
1123.810|1088.100|13.443|1101.543|36.00|5.09|.40|1101.95|.00|1.95|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |8.000|.0100|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0029|.02|13.44|.00|1.57|.013|.00|.00|PIPE
1131.810|1088.180|13.386|1101.566|36.00|5.09|.40|1101.97|.00|1.95|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |252.600|.0054|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0029|.74|13.39|.00|1.91|.013|.00|.00|PIPE
1384.410|1089.540|12.762|1102.302|36.00|5.09|.40|1102.70|.00|1.95|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |JUNCT STR|.0043|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0022|.01|12.76|.00|.015|.00|.00|.00|PIPE
1389.080|1089.560|13.094|1102.654|14.00|1.98|.06|1102.71|.00|1.19|.00|3.000|.000|.00|1|.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |195.330|.0034|      |      |      |      |      |      |      |      |      |      |      |      |      |
      |.0004|.09|13.09|.00|1.25|.013|.00|.00|PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 2:17:34

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-2A MOUNTAIN AVENUE STORM DRAIN

BY MCHANDOO JN:136769 APRIL 2014 (NAD88 DATUM)

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1584.410 | 1090.220 | 12.520 | 1102.740 | 14.00 | 1.98 | .06 | 1102.80 | .00 | 1.19 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0043 |      |      |      |      |      | .0004 | .00 | 12.52 | .00 | .015 | .00 | .00 | PIPE
1589.080 | 1090.240 | 12.507 | 1102.747 | 7.00 | .99 | .02 | 1102.76 | .00 | .83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
195.330 | .0033 |      |      |      |      |      | .0001 | .02 | 12.51 | .00 | .87 | .013 | .00 | .00 | PIPE
1784.410 | 1090.890 | 11.879 | 1102.769 | 7.00 | .99 | .02 | 1102.78 | .00 | .83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0043 |      |      |      |      |      | .0001 | .00 | 11.88 | .00 | .015 | .00 | .00 | PIPE
1789.080 | 1090.910 | 11.867 | 1102.777 | 5.00 | .71 | .01 | 1102.78 | .00 | .70 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
110.540 | .0033 |      |      |      |      |      | .0001 | .01 | 11.87 | .00 | .73 | .013 | .00 | .00 | PIPE
1899.620 | 1091.280 | 11.503 | 1102.783 | 5.00 | .71 | .01 | 1102.79 | .00 | .70 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
34.290 | .0029 |      |      |      |      |      | .0001 | .00 | .00 | .00 | .76 | .013 | .00 | .00 | PIPE
1933.910 | 1091.380 | 11.407 | 1102.787 | 5.00 | .71 | .01 | 1102.79 | .00 | .70 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .2291 |      |      |      |      |      | .0001 | .00 | 11.41 | .00 | .015 | .00 | .00 | PIPE
1938.580 | 1092.450 | 10.341 | 1102.791 | 4.00 | .57 | .00 | 1102.80 | .00 | .62 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
30.430 | .0046 |      |      |      |      |      | .0000 | .00 | 10.34 | .00 | .60 | .013 | .00 | .00 | PIPE
1969.010 | 1092.590 | 10.202 | 1102.792 | 4.00 | .57 | .00 | 1102.80 | .00 | .62 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			8.000															
CD	2	4	1			2.000															
CD	3	4	1			2.500															
CD	4	4	1			6.000															
CD	5	4	1			2.000															
CD	6	4	1			2.500															
CD	7	4	1			6.000															
CD	8	4	1			4.500															
CD	9	4	1			6.000															
CD	10	4	1			4.000															
CD	11	4	1			6.000															
CD	12	4	1			4.500															
CD	13	4	1			4.000															
CD	14	4	1			2.500															
CD	15	4	1			2.000															
CD	16	4	1			4.000															
CD	17	4	1			2.000															
CD	18	4	1			1.500															
CD	19	4	1			3.000															
CD	20	4	1			1.500															
CD	21	4	1			1.500															
CD	22	4	1			2.500															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

SD 4-3 PALMETTO AVE AND MARIGOLD AVE SANTA ANA RIVER TO SAN BERNARDINO AVE

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A	SYSTEM OUTLET	U/S DATA	1373.180	1082.980	1	1093.000				
2	IS	A	REACH	U/S DATA	1576.960	1083.750	1		.013	.000	.000	.000
3	IS	A	JUNCTION	U/S DATA	1591.960	1083.920	7		5.000	5.000	1186.070	1186.070
4	IS	A	REACH	U/S DATA	1707.540	1084.560	7		.013	.000	.000	.000
5	IS	A	REACH	U/S DATA	1923.810	1087.310	7		.013	.000	.000	.000
6	IS	A	REACH	U/S DATA	2102.140	1090.780	7		.013	.000	.000	.000
7	IS	A	REACH	U/S DATA	2250.230	1097.510	7		.013	.000	.000	.000

ELEMENT NO	8	IS A JUNCTION	*	*	*	*		*		*										
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2261.230	1097.670	9	8	0	.013	150.000	.000	1098.430	.000	90.000	.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	9	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			2941.440	1106.620	9			.013			.000	.000	.000	2						
ELEMENT NO	10	IS A JUNCTION	*	*	*	*	*		*											
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2951.440	1106.670	11	10	0	.013	140.000	.000	1107.680	.000	-45.000	.000						
											RADIUS	ANGLE								
											.000	.000								
W S P G W															PAGE NO		3			
WATER SURFACE PROFILE - ELEMENT CARD LISTING																				
ELEMENT NO	11	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			3188.450	1107.170	11			.013			.000	.000	.000	0						
ELEMENT NO	12	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			3259.090	1107.290	11			.013			45.071	89.800	.000	1						
ELEMENT NO	13	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			3277.550	1107.320	11			.013			.000	.000	.000	0						
ELEMENT NO	14	IS A JUNCTION	*	*	*	*	*		*											
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			3291.550	1109.330	13	12	0	.013	160.000	.000	1108.450	.000	-45.000	.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	15	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			3763.730	1110.270	13			.013			.000	.000	.000	0						
ELEMENT NO	16	IS A JUNCTION	*	*	*	*	*		*											
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			3773.730	1110.290	16	14	15	.013	20.000	20.000	1110.670	1110.670	-90.000	90.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	17	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			4162.620	1118.600	16			.013			.000	.000	.000	1						
ELEMENT NO	18	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			4562.900	1119.000	16			.013			.000	.000	.000	0						
ELEMENT NO	19	IS A JUNCTION	*	*	*	*	*		*											
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			4573.320	1119.010	19	17	18	.013	25.000	10.000	1167.670	1167.670	-90.000	45.000						
											RADIUS	ANGLE								
											.000	.000								
W S P G W															PAGE NO		4			
WATER SURFACE PROFILE - ELEMENT CARD LISTING																				
ELEMENT NO	20	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						
			5158.040	1120.180	19			.013			.000	.000	.000	1						
ELEMENT NO	21	IS A JUNCTION	*	*	*	*	*		*											
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			5164.700	1120.190	22	20	21	.013	10.000	10.000	1121.670	1121.670	-90.000	45.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	22	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H						

ELEMENT NO	23	IS A REACH	5872.620	1124.550	22	.013	.000	.000	.000	0
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
			5943.310	1124.910	22	.013	45.003	-90.000	.000	0
ELEMENT NO	24	IS A REACH	5980.620	1125.090	22	.013	.000	.000	.000	0
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
			6004.180	1125.210	22	.013	22.498	-60.000	.000	0
ELEMENT NO	26	IS A REACH	6008.600	1125.230	22	.013	.000	.000	.000	0
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO	27	IS A SYSTEM HEADWORKS								
		U/S DATA	STATION	INVERT	SECT		W S ELEV			
			6008.600	1125.230	22		.000			

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 2: 2:17

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-3 PALMETTO AVE AND MARIGOLD AVE SANTA ANA RIVER TO SAN BERNARDINO A

VE BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1373.180 | 1082.980 | 10.020 | 1093.000 | 578.00 | 11.50 | 2.05 | 1095.05 | .00 | 6.12 | .00 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
203.780 | .0038 | | | | | | .0040 | .82 | 10.02 | .00 | 6.80 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1576.960 | 1083.750 | 10.068 | 1093.818 | 578.00 | 11.50 | 2.05 | 1095.87 | .00 | 6.12 | .00 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0113 | | | | | | .0110 | .17 | 10.07 | .00 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1591.960 | 1083.920 | 6.296 | 1090.216 | 568.00 | 20.09 | 6.27 | 1096.48 | .00 | 5.79 | .00 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
115.580 | .0055 | | | | | | .0180 | 2.08 | 6.30 | .00 | 6.00 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1707.540 | 1084.560 | 7.735 | 1092.295 | 568.00 | 20.09 | 6.27 | 1098.56 | .00 | 5.79 | .00 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
216.270 | .0127 | | | | | | .0180 | 3.89 | 7.73 | .00 | 6.00 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1923.810 | 1087.310 | 9.188 | 1096.498 | 568.00 | 20.09 | 6.27 | 1102.76 | .00 | 5.79 | .00 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
178.330 | .0195 | | | | | | .0180 | 3.21 | 9.19 | .00 | 4.72 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
2102.140 | 1090.780 | 8.926 | 1099.706 | 568.00 | 20.09 | 6.27 | 1105.97 | .00 | 5.79 | .00 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
4.175 | .0454 | | | | | | .0180 | .08 | 8.93 | .00 | 3.45 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
2106.315 | 1090.970 | 8.809 | 1099.779 | 568.00 | 20.09 | 6.27 | 1106.05 | .00 | 5.79 | .00 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
2106.315 | 1090.970 | 4.146 | 1095.116 | 568.00 | 27.25 | 11.53 | 1106.65 | .00 | 5.79 | 5.54 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
7.975 | .0454 | | | | | | .0263 | .21 | 4.15 | 2.48 | 3.45 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
2114.290 | 1091.332 | 4.177 | 1095.509 | 568.00 | 27.03 | 11.34 | 1106.85 | .00 | 5.79 | 5.52 | 6.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
40.503 | .0454 | | | | | | .0246 | 1.00 | 4.18 | 2.44 | 3.45 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 2: 2:17

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-3 PALMETTO AVE AND MARIGOLD AVE SANTA ANA RIVER TO SAN BERNARDINO A
 VE BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2154.793 | 1093.173 | 4.366 | 1097.539 | 568.00 | 25.77 | 10.31 | 1107.85 | .00 | 5.79 | 5.34 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 31.302 | .0454 | | | | | | .0221 | .69 | 4.37 | 2.24 | 3.45 | .013 | .00 | .00 | PIPE
2186.095 | 1094.595 | 4.572 | 1099.167 | 568.00 | 24.57 | 9.38 | 1108.54 | .00 | 5.79 | 5.11 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 24.412 | .0454 | | | | | | .0198 | .48 | 4.57 | 2.04 | 3.45 | .013 | .00 | .00 | PIPE
2210.507 | 1095.705 | 4.799 | 1100.504 | 568.00 | 23.43 | 8.52 | 1109.03 | .00 | 5.79 | 4.80 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 18.845 | .0454 | | | | | | .0180 | .34 | 4.80 | 1.84 | 3.45 | .013 | .00 | .00 | PIPE
2229.352 | 1096.561 | 5.057 | 1101.618 | 568.00 | 22.34 | 7.75 | 1109.37 | .00 | 5.79 | 4.37 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 13.769 | .0454 | | | | | | .0165 | .23 | 5.06 | 1.63 | 3.45 | .013 | .00 | .00 | PIPE
2243.121 | 1097.187 | 5.363 | 1102.550 | 568.00 | 21.30 | 7.04 | 1109.59 | .00 | 5.79 | 3.70 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 7.109 | .0454 | | | | | | .0158 | .11 | 5.36 | 1.40 | 3.45 | .013 | .00 | .00 | PIPE
2250.230 | 1097.510 | 5.794 | 1103.304 | 568.00 | 20.31 | 6.40 | 1109.71 | .00 | 5.79 | 2.18 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | JUNCT STR | .0145 | | | | | | .0127 | .14 | 5.79 | 1.00 | | | .013 | .00 | .00 | PIPE
2261.230 | 1097.670 | 11.687 | 1109.357 | 418.00 | 14.78 | 3.39 | 1112.75 | .00 | 5.41 | .00 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 680.210 | .0132 | | | | | | .0097 | 6.63 | 11.69 | .00 | 4.29 | .013 | .00 | .00 | PIPE
2941.440 | 1106.620 | 9.702 | 1116.322 | 418.00 | 14.78 | 3.39 | 1119.72 | .00 | 5.41 | .00 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | JUNCT STR | .0050 | | | | | | .0070 | .07 | 9.70 | .00 | | | .013 | .00 | .00 | PIPE
2951.440 | 1106.670 | 12.296 | 1118.967 | 278.00 | 9.83 | 1.50 | 1120.47 | .00 | 4.56 | .00 | 6.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 237.010 | .0021 | | | | | | .0043 | 1.02 | 12.30 | .00 | 6.00 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 2: 2:17

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-3 PALMETTO AVE AND MARIGOLD AVE SANTA ANA RIVER TO SAN BERNARDINO A

VE BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station  | Invert  | Depth  | Water  | Q       | Vel   | Vel   | Energy | Super |Critical|Flow Top|Height/|Base Wt|   | No Wth
          | Elev    | (FT)   | Elev   | (CFS)  | (FPS) | Head  | Grd.El. | Elev  | Depth  | Width  | Dia.-FT|or I.D.| ZL | Prs/Pip
L/Elem   | Ch Slope |        |        |        |        | SF Ave| HF     |SE Dpth|Froude N|Norm Dp | "N"    | X-Fall| ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3188.450 | 1107.170 | 12.818 | 1119.988 | 278.00 | 9.83 | 1.50 | 1121.49 | .00 | 4.56 | .00 | 6.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
70.640   | .0017   |          |          |          |          | .0043 | .30    | .00 | .00 | 6.00 | .013  | .00 | .00 | PIPE
3259.090 | 1107.290 | 13.377 | 1120.667 | 278.00 | 9.83 | 1.50 | 1122.17 | .00 | 4.56 | .00 | 6.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
18.460   | .0016   |          |          |          |          | .0043 | .08    | 13.38 | .00 | 6.00 | .013  | .00 | .00 | PIPE
3277.550 | 1107.320 | 13.427 | 1120.747 | 278.00 | 9.83 | 1.50 | 1122.25 | .00 | 4.56 | .00 | 6.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR | .1436   |          |          |          |          | .0055 | .08    | 13.43 | .00 |          | .013  | .00 | .00 | PIPE
3291.550 | 1109.330 | 12.235 | 1121.565 | 118.00 | 9.39 | 1.37 | 1122.93 | .00 | 3.27 | .00 | 4.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
472.180   | .0020   |          |          |          |          | .0067 | 3.19   | 12.23 | .00 | 4.00 | .013  | .00 | .00 | PIPE
3763.730 | 1110.270 | 14.481 | 1124.751 | 118.00 | 9.39 | 1.37 | 1126.12 | .00 | 3.27 | .00 | 4.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR | .0020   |          |          |          |          | .0048 | .05    | 14.48 | .00 |          | .013  | .00 | .00 | PIPE
3773.730 | 1110.290 | 16.052 | 1126.342 | 78.00  | 6.21 | .60  | 1126.94 | .00 | 2.67 | .00 | 4.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
388.890   | .0214   |          |          |          |          | .0029 | 1.15   | 16.05 | .00 | 1.69 | .013  | .00 | .00 | PIPE
4162.620 | 1118.600 | 8.918  | 1127.518 | 78.00  | 6.21 | .60  | 1128.12 | .00 | 2.67 | .00 | 4.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
400.280   | .0010   |          |          |          |          | .0029 | 1.18   | 8.92  | .00 | 4.00 | .013  | .00 | .00 | PIPE
4562.900 | 1119.000 | 9.699  | 1128.699 | 78.00  | 6.21 | .60  | 1129.30 | .00 | 2.67 | .00 | 4.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR | .0010   |          |          |          |          | .0036 | .04    | 9.70  | .00 |          | .013  | .00 | .00 | PIPE
4573.320 | 1119.010 | 10.430 | 1129.440 | 43.00  | 6.08 | .57  | 1130.01 | .00 | 2.14 | .00 | 3.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
584.720   | .0020   |          |          |          |          | .0042 | 2.43   | 10.43 | .00 | 3.00 | .013  | .00 | .00 | PIPE

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REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-3 PALMETTO AVE AND MARIGOLD AVE SANTA ANA RIVER TO SAN BERNARDINO A
VE BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
5158.040	1120.180	11.719	1131.899	43.00	6.08	.57	1132.47	.00	2.14	.00	3.000	.000	.00	1 .0
JUNCT STR	.0015					.0037	.02	11.72	.00		.013	.00	.00	PIPE
5164.700	1120.190	12.323	1132.513	23.00	4.69	.34	1132.85	.00	1.63	.00	2.500	.000	.00	1 .0
707.920	.0062					.0031	2.23	12.32	.00	1.56	.013	.00	.00	PIPE
5872.620	1124.550	10.189	1134.739	23.00	4.69	.34	1135.08	.00	1.63	.00	2.500	.000	.00	1 .0
70.690	.0051					.0031	.22	.00	.00	1.67	.013	.00	.00	PIPE
5943.310	1124.910	10.120	1135.030	23.00	4.69	.34	1135.37	.00	1.63	.00	2.500	.000	.00	1 .0
37.310	.0048					.0031	.12	10.12	.00	1.70	.013	.00	.00	PIPE
5980.620	1125.090	10.057	1135.147	23.00	4.69	.34	1135.49	.00	1.63	.00	2.500	.000	.00	1 .0
23.560	.0051					.0031	.07	.00	.00	1.67	.013	.00	.00	PIPE
6004.180	1125.210	10.067	1135.277	23.00	4.69	.34	1135.62	.00	1.63	.00	2.500	.000	.00	1 .0
4.420	.0045					.0031	.01	10.07	.00	1.74	.013	.00	.00	PIPE
6008.600	1125.230	10.061	1135.291	23.00	4.69	.34	1135.63	.00	1.63	.00	2.500	.000	.00	1 .0

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT	1 BASE DIAMETER	2 ZL	3 ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.500															
CD	2	4	1			2.000															
CD	3	4	1			3.500															
CD	4	4	1			2.000															
CD	5	4	1			3.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
 HEADING LINE NO 2 IS -
 HEADING LINE NO 3 IS -

REDLANDS MASTER PLAN CAPACITY ANALYSIS
 SD 4-3A REDLANDS COMMERCE CENTER
 BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H										
ELEMENT NO 1	IS	A	SYSTEM	OUTLET	U/S DATA	578.040	1098.430	1	1118.000														
ELEMENT NO 2	IS	A	REACH		U/S DATA	598.880	1098.580	1		.013	.000	.000	0										
ELEMENT NO 3	IS	A	REACH		U/S DATA	661.380	1099.020	1		.013	45.044	79.500	0										
ELEMENT NO 4	IS	A	REACH		U/S DATA	680.760	1099.160	1		.013	.000	.000	0										
ELEMENT NO 5	IS	A	REACH		U/S DATA	743.340	1099.610	1		.013	45.102	-79.500	0										
ELEMENT NO 6	IS	A	JUNCTION		U/S DATA	749.480	1100.650	3		.013	13.000	1101.660	.000										
								2			Q3	INVERT-3	INVERT-4	PHI 3	PHI 4								
								0			.000	.000	45.000	.000									
ELEMENT NO 7	IS	A	REACH		U/S DATA	1198.170	1104.960	3		.013	.000	.000	0										
ELEMENT NO 8	IS	A	JUNCTION		U/S DATA	1204.330	1105.520	5		.013	13.000	1106.140	.000										
								4			Q3	INVERT-3	INVERT-4	PHI 3	PHI 4								
								0			.000	.000	45.000	.000									
ELEMENT NO 9	IS	A	REACH		U/S DATA	1795.040	1111.110	5		.013	.000	.000	3										
ELEMENT NO 10	IS	A	SYSTEM	HEADWORKS	U/S DATA	1795.040	1111.110	5															

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 3:42:11

REDLANDS MASTER PLAN CAPACITY ANALYSIS

SD 4-3A REDLANDS COMMERCE CENTER

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |         |         |         |         | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
578.040 | 1098.430 | 19.570 | 1118.000 | 39.00 | 2.45 | .09 | 1118.09 | .00 | 1.80 | .00 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
20.840 | .0072 |         |         |         |         | .0004 | .01 | 19.57 | .00 | 1.48 | .013 | .00 | .00 | PIPE
598.880 | 1098.580 | 19.428 | 1118.008 | 39.00 | 2.45 | .09 | 1118.10 | .00 | 1.80 | .00 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
62.500 | .0070 |         |         |         |         | .0004 | .02 | .00 | .00 | 1.49 | .013 | .00 | .00 | PIPE
661.380 | 1099.020 | 19.030 | 1118.050 | 39.00 | 2.45 | .09 | 1118.14 | .00 | 1.80 | .00 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
19.380 | .0072 |         |         |         |         | .0004 | .01 | 19.03 | .00 | 1.48 | .013 | .00 | .00 | PIPE
680.760 | 1099.160 | 18.898 | 1118.058 | 39.00 | 2.45 | .09 | 1118.15 | .00 | 1.80 | .00 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
62.580 | .0072 |         |         |         |         | .0004 | .02 | .00 | .00 | 1.48 | .013 | .00 | .00 | PIPE
743.340 | 1099.610 | 18.490 | 1118.100 | 39.00 | 2.45 | .09 | 1118.19 | .00 | 1.80 | .00 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .1694 |         |         |         |         | .0005 | .00 | 18.49 | .00 | .00 | .013 | .00 | .00 | PIPE
749.480 | 1100.650 | 17.422 | 1118.073 | 26.00 | 2.70 | .11 | 1118.19 | .00 | 1.57 | .00 | 3.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
448.690 | .0096 |         |         |         |         | .0007 | .30 | 17.42 | .00 | 1.23 | .013 | .00 | .00 | PIPE
1198.170 | 1104.960 | 13.412 | 1118.372 | 26.00 | 2.70 | .11 | 1118.49 | .00 | 1.57 | .00 | 3.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .0909 |         |         |         |         | .0005 | .00 | 13.41 | .00 | .00 | .013 | .00 | .00 | PIPE
1204.330 | 1105.520 | 12.886 | 1118.406 | 13.00 | 1.84 | .05 | 1118.46 | .00 | 1.15 | .00 | 3.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
590.710 | .0095 |         |         |         |         | .0004 | .22 | 12.89 | .00 | .91 | .013 | .00 | .00 | PIPE
1795.040 | 1111.110 | 7.529 | 1118.639 | 13.00 | 1.84 | .05 | 1118.69 | .00 | 1.15 | .00 | 3.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.000															
CD	2	4	1			2.000															
CD	3	4	1			3.500															
CD	4	4	1			2.000															
CD	5	4	1			3.500															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-3B REDLANDS COMMERCE CENTER

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A	SYSTEM	OUTLET	360.460	1107.680	1	1112.480				
2	IS	A	REACH		380.880	1107.750	1		.013	.000	.000	0
3	IS	A	REACH		427.890	1107.920	1		.013	90.385	29.800	0
4	IS	A	REACH		698.170	1108.870	1		.013	.000	.000	1
5	IS	A	JUNCTION		704.330	1109.370	5		.013	25.000	.000	
										1110.170	.000	45.000
										117.648	3.000	.000
6	IS	A	REACH		1591.880	1113.120	5		.013	.000	.000	4
7	IS	A	SYSTEM	HEADWORKS	1591.880	1113.120	5					

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 4:38: 1

REDLANDS MASTER PLAN CAPACITY ANALYSIS

SD 4-3B REDLANDS COMMERCE CENTER

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
         | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem  | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
360.460 | 1107.680 | 4.800 | 1112.480 | 75.00 | 5.97 | .55 | 1113.03 | .00 | 2.62 | .00 | 4.000 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
20.420  | .0034 |         |         |         |         |         | .0027 | .06 | 4.80 | .00 | 2.94 | .013 | .00 | .00 | PIPE
380.880 | 1107.750 | 4.786 | 1112.536 | 75.00 | 5.97 | .55 | 1113.09 | .00 | 2.62 | .00 | 4.000 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
47.010  | .0036 |         |         |         |         |         | .0027 | .13 | .00 | .00 | 2.88 | .013 | .00 | .00 | PIPE
427.890 | 1107.920 | 4.807 | 1112.727 | 75.00 | 5.97 | .55 | 1113.28 | .00 | 2.62 | .00 | 4.000 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
270.280 | .0035 |         |         |         |         |         | .0027 | .74 | 4.81 | .00 | 2.91 | .013 | .00 | .00 | PIPE
698.170 | 1108.870 | 4.622 | 1113.492 | 75.00 | 5.97 | .55 | 1114.05 | .00 | 2.62 | .00 | 4.000 | .000 | .00 | 1 | .0
JUNCT STR | .0812 |         |         |         |         |         | .0026 | .02 | .00 | .00 |         | .013 | .00 | .00 | PIPE
704.330 | 1109.370 | 4.270 | 1113.640 | 50.00 | 5.20 | .42 | 1114.06 | .00 | 2.21 | .00 | 3.500 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
463.487 | .0042 |         |         |         |         |         | .0025 | 1.14 | 4.27 | .00 | 2.29 | .013 | .00 | .00 | PIPE
1167.817 | 1111.328 | 3.500 | 1114.828 | 50.00 | 5.20 | .42 | 1115.25 | .00 | 2.21 | .00 | 3.500 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
146.030 | .0042 |         |         |         |         |         | .0023 | .34 | 3.50 | .00 | 2.29 | .013 | .00 | .00 | PIPE
1313.847 | 1111.945 | 3.176 | 1115.121 | 50.00 | 5.45 | .46 | 1115.58 | .00 | 2.21 | 2.03 | 3.500 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
71.593  | .0042 |         |         |         |         |         | .0022 | .16 | 3.18 | .45 | 2.29 | .013 | .00 | .00 | PIPE
1385.439 | 1112.248 | 2.987 | 1115.235 | 50.00 | 5.72 | .51 | 1115.74 | .00 | 2.21 | 2.48 | 3.500 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
58.001  | .0042 |         |         |         |         |         | .0024 | .14 | 2.99 | .54 | 2.29 | .013 | .00 | .00 | PIPE
1443.440 | 1112.493 | 2.832 | 1115.324 | 50.00 | 6.00 | .56 | 1115.88 | .00 | 2.21 | 2.75 | 3.500 | .000 | .00 | 1 | .0
         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
51.406  | .0042 |         |         |         |         |         | .0027 | .14 | 2.83 | .61 | 2.29 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 4:38:1

REDLANDS MASTER PLAN CAPACITY ANALYSIS

SD 4-3B REDLANDS COMMERCE CENTER

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
|-| Elev |-| (FT) |-| Elev |-| (CFS) |-| (FPS) Head |-| Grd.El.|-| Elev |-| Depth |-| Width |-| Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1494.847 | 1112.710 | 2.696 | 1115.406 | 50.00 | 6.29 | .61 | 1116.02 | .00 | 2.21 | 2.95 | 3.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
48.214 | .0042 | | | | | | .0030 | .14 | 2.70 | .67 | 2.29 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | | |
1543.060 | 1112.914 | 2.573 | 1115.487 | 50.00 | 6.60 | .68 | 1116.16 | .00 | 2.21 | 3.09 | 3.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
48.197 | .0042 | | | | | | .0033 | .16 | 2.57 | .74 | 2.29 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | | |
1591.257 | 1113.117 | 2.461 | 1115.578 | 50.00 | 6.92 | .74 | 1116.32 | .00 | 2.21 | 3.20 | 3.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
.623 | .0042 | | | | | | .0035 | .00 | 2.46 | .81 | 2.29 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | | |
1591.880 | 1113.120 | 2.460 | 1115.580 | 50.00 | 6.92 | .74 | 1116.32 | .00 | 2.21 | 3.20 | 3.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.500															
CD	2	4	1			2.500															
CD	3	4	1			2.500															
CD	4	4	1			4.500															
CD	5	4	1			2.000															
CD	6	4	1			2.000															
CD	7	4	1			5.000															
CD	8	4	1			5.000															
CD	9	4	1			4.500															
CD	10	4	1			2.000															
CD	11	4	1			2.500															
CD	12	4	1			3.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-3C PALMETTO AVE FROM MARIGOLD AVE TO CALIFORNIA ST

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

W S P G W

PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A	SYSTEM	OUTLET	4068.110	1108.450	1	1130.000				
2	IS	A	REACH		4077.430	1109.710	1		.013	.000	.000	0
3	IS	A	REACH		4095.100	1112.100	1		.013	22.498	-45.000	0
4	IS	A	REACH		4155.800	1120.320	1		.013	.000	.000	0
5	IS	A	JUNCTION		4162.960	1120.360	4		.013	15.000	15.000	1121.670
							2					1121.670
							3					-60.000
												60.000
6	IS	A	REACH		4667.240	1123.700	4		.013	.000	.000	1
7	IS	A	JUNCTION		4674.400	1123.750	7		.013	15.000	15.000	1125.670
							5					1125.670
							6					-45.000
												60.000
8	IS	A	REACH		5048.440	1126.220	7		.013	.000	.000	0
9	IS	A	JUNCTION		5061.440	1126.340	9		.013	35.000	.000	1126.280
							8					.000
							0					45.000
												.000

WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	10	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT		N			RADIUS	ANGLE	ANG PT	MAN H	
			5265.940	1128.670	9		.013			.000	.000	.000	0	
ELEMENT NO	11	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5274.940	1129.220	12	10	11	.013	10.000	10.000	1130.070	1130.070	-45.000	80.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	12	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5973.950	1137.620	12			.013			.000	.000	.000	2
ELEMENT NO	13	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			6044.640	1138.470	12			.013			45.003	90.000	.000	0
ELEMENT NO	14	IS A SYSTEM HEADWORKS			*				*					
		U/S DATA	STATION	INVERT	SECT					W S ELEV				
			6044.640	1138.470	12					.000				

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 3: 3:18

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-3C PALMETTO AVE FROM MARIGOLD AVE TO CALIFORNIA ST
BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
        | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4068.110 | 1108.450 | 21.550 | 1130.000 | 201.00 | 12.64 | 2.48 | 1132.48 | .00 | 4.04 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
        | 9.320 | .1352 | | | | | | .0104 | .10 | 21.55 | .00 | 1.62 | .013 | .00 | .00 | PIPE
4077.430 | 1109.710 | 20.387 | 1130.097 | 201.00 | 12.64 | 2.48 | 1132.58 | .00 | 4.04 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
        | 17.670 | .1353 | | | | | | .0104 | .18 | .00 | .00 | 1.62 | .013 | .00 | .00 | PIPE
4095.100 | 1112.100 | 18.533 | 1130.633 | 201.00 | 12.64 | 2.48 | 1133.11 | .00 | 4.04 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
        | 60.700 | .1354 | | | | | | .0104 | .63 | 18.53 | .00 | 1.62 | .013 | .00 | .00 | PIPE
4155.800 | 1120.320 | 10.947 | 1131.267 | 201.00 | 12.64 | 2.48 | 1133.75 | .00 | 4.04 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0056 | | | | | | .0090 | .06 | 10.95 | .00 | | | .013 | .00 | .00 | PIPE
4162.960 | 1120.360 | 12.252 | 1132.612 | 171.00 | 10.75 | 1.80 | 1134.41 | .00 | 3.81 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
        | 504.280 | .0066 | | | | | | .0076 | 3.81 | 12.25 | .00 | 4.08 | .013 | .00 | .00 | PIPE
4667.240 | 1123.700 | 12.815 | 1136.515 | 171.00 | 10.75 | 1.80 | 1138.31 | .00 | 3.81 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0070 | | | | | | .0052 | .04 | 12.81 | .00 | | | .013 | .00 | .00 | PIPE
4674.400 | 1123.750 | 14.095 | 1137.845 | 141.00 | 7.18 | .80 | 1138.65 | .00 | 3.40 | .00 | 5.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
        | 374.040 | .0066 | | | | | | .0029 | 1.10 | 14.10 | .00 | 2.98 | .013 | .00 | .00 | PIPE
5048.440 | 1126.220 | 12.721 | 1138.941 | 141.00 | 7.18 | .80 | 1139.74 | .00 | 3.40 | .00 | 5.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0092 | | | | | | .0029 | .04 | 12.72 | .00 | | | .013 | .00 | .00 | PIPE
5061.440 | 1126.340 | 13.097 | 1139.437 | 106.00 | 6.66 | .69 | 1140.13 | .00 | 3.03 | .00 | 4.500 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
        | 204.500 | .0114 | | | | | | .0029 | .59 | 13.10 | .00 | 2.26 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 3: 3:18

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-3C PALMETTO AVE FROM MARIGOLD AVE TO CALIFORNIA ST

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
|-| Elev |-| (FT) |-| Elev |-| (CFS) |-| (FPS) Head |-| Grd.El.|-| Elev |-| Depth |-| Width |-| Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5265.940 | 1128.670 | 11.361 | 1140.031 | 106.00 | 6.66 | .69 | 1140.72 | .00 | 3.03 | .00 | 4.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
JUNCT STR | .0611 | | | | | | .0098 | .09 | 11.36 | .00 | .013 | .00 | .00 | PIPE
5274.940 | 1129.220 | 9.910 | 1139.130 | 86.00 | 12.17 | 2.30 | 1141.43 | .00 | 2.82 | .00 | 3.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
699.010 | .0120 | | | | | | .0166 | 11.62 | 9.91 | .00 | 3.00 | .013 | .00 | .00 | PIPE
5973.950 | 1137.620 | 13.361 | 1150.981 | 86.00 | 12.17 | 2.30 | 1153.28 | .00 | 2.82 | .00 | 3.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
70.690 | .0120 | | | | | | .0166 | 1.18 | .00 | .00 | 3.00 | .013 | .00 | .00 | PIPE
6044.640 | 1138.470 | 14.146 | 1152.616 | 86.00 | 12.17 | 2.30 | 1154.91 | .00 | 2.82 | .00 | 3.000 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1										
CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	10	3	0	.000		7.170	12.000	.000	.000	.00										
CD	11	3	0	.000		5.900	12.000	.000	.000	.00										
CD	12	3	0	.000		5.000	12.000	.000	.000	.00										
CD	18	4	1			1.500														
CD	24	4	1			2.000														
CD	27	1	0	.000		9.000	27.000	1.000	1.000	.00										
CD	30	4	1			2.500														
CD	36	4	1			3.000														
CD	42	4	1			3.500														
CD	48	4	1			4.000														
CD	54	4	1			4.500														
CD	60	4	1			5.000														
CD	66	4	1			5.500														

HEADING LINE NO 1 IS - WATER SURFACE PROFILE - TITLE CARD LISTING
 HEADING LINE NO 2 IS - REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS
 HEADING LINE NO 3 IS - LINE 4-3D MOUNTAIN AVENUE STORM DRAIN
 BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

WATER SURFACE PROFILE - ELEMENT CARD LISTING															PAGE NO 2	
ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H	PHI 3	PHI 4	
1	IS	A	SYSTEM	OUTLET	U/S DATA	106.430	1126.280	60	.000							
2	IS	A	REACH		U/S DATA	128.930	1126.370	60	.013	.000	.000	.000	0			
3	IS	A	REACH		U/S DATA	164.270	1126.510	60	.013	90.001	22.498	.000	0			
4	IS	A	REACH		U/S DATA	177.600	1126.560	60	.013	.000	.000	.000	0			
5	IS	A	REACH		U/S DATA	557.670	1127.200	60	.013	.000	.000	.000	0			
6	IS	A	JUNCTION		U/S DATA	562.330	1127.210	60	.015	42.000	42.000	1128.970	1128.970	-60.000	60.000	
7	IS	A	REACH		U/S DATA	1022.670	1128.000	60	.013	.000	.000	.000	0			
8	IS	A	JUNCTION		U/S DATA	1027.330	1128.010	60	.015	29.000	29.000	1129.750	1129.750	-60.000	60.000	
9	IS	A	REACH		U/S DATA	1488.300	1128.800	60	.013	.000	.000	.000	0			
10	IS	A	JUNCTION													

		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			1492.980	1128.810	54	18	18	.015	24.000	24.000	1130.270	1130.270	-60.000	60.000
											RADIUS	ANGLE		
											.000	.000		
W S P G W														
												PAGE NO	3	
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	11	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			1688.300	1129.140	54			.013			.000	.000	.000	0
ELEMENT NO	12	IS A JUNCTION	*	*	*	*	*		*				*	
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			1692.960	1129.150	54	18	0	.015	11.000	.000	1130.570	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	13	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			1888.250	1129.480	54			.013			.000	.000	.000	0
ELEMENT NO	14	IS A JUNCTION	*	*	*	*	*		*				*	
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			1892.930	1129.490	54	18	18	.015	5.000	5.000	1130.970	1130.970	-60.000	60.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	15	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2090.470	1129.830	54			.013			.000	.000	.000	0
ELEMENT NO	16	IS A JUNCTION	*	*	*	*	*		*				*	
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2095.140	1129.840	54	18	0	.015	10.000	.000	1131.330	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	17	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2289.060	1130.170	54			.013			.000	.000	.000	0
ELEMENT NO	18	IS A JUNCTION	*	*	*	*	*		*				*	
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2295.060	1131.170	24	18	18	.015	4.000	4.000	1131.470	1131.470	-60.000	60.000
											RADIUS	ANGLE		
											.000	.000		
W S P G W														
												PAGE NO	4	
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	19	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2451.510	1132.030	24			.013			.000	.000	.000	0
ELEMENT NO	20	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2522.590	1132.410	24			.013			45.000	90.502	.000	0
ELEMENT NO	21	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2560.000	1132.620	24			.013			.000	.000	.000	0
ELEMENT NO	22	IS A JUNCTION	*	*	*	*	*		*				*	
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2564.670	1132.650	24	18	0	.015	5.000	.000	1132.870	.000	-45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	23	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2607.210	1132.870	24			.013			.000	.000	.000	0
ELEMENT NO	24	IS A SYSTEM HEADWORKS	*						*					
		U/S DATA	STATION	INVERT	SECT						W S ELEV			
			2607.210	1132.870	24						.000			

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 5:17: 7

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-3D MOUNTAIN AVENUE STORM DRAIN

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
106.430	1126.280	4.344	1130.624	238.00	13.14	2.68	1133.30	.00	4.34	3.38	5.000	.000	.00	1 .0
14.475	.0040					.0074	.11	4.34	1.00	5.00	.013	.00	.00	PIPE
120.905	1126.338	4.637	1130.975	238.00	12.53	2.44	1133.41	.00	4.34	2.60	5.000	.000	.00	1 .0
8.025	.0040					.0072	.06	4.64	.82	5.00	.013	.00	.00	PIPE
128.930	1126.370	4.706	1131.076	238.00	12.42	2.39	1133.47	.06	4.34	2.35	5.000	.000	.00	1 .0
35.340	.0040					.0074	.26	4.77	.77	5.00	.013	.00	.00	PIPE
164.270	1126.510	4.926	1131.436	238.00	12.16	2.30	1133.73	.00	4.34	1.21	5.000	.000	.00	1 .0
13.330	.0038					.0079	.10	4.93	.53	5.00	.013	.00	.00	PIPE
177.600	1126.560	4.995	1131.555	238.00	12.12	2.28	1133.84	.00	4.34	.32	5.000	.000	.00	1 .0
.767	.0017					.0081	.01	4.99	.27	5.00	.013	.00	.00	PIPE
178.367	1126.561	5.000	1131.561	238.00	12.12	2.28	1133.84	.00	4.34	.00	5.000	.000	.00	1 .0
379.303	.0017					.0082	3.11	5.00	.00	5.00	.013	.00	.00	PIPE
557.670	1127.200	7.529	1134.729	238.00	12.12	2.28	1137.01	.00	4.34	.00	5.000	.000	.00	1 .0
JUNCT STR	.0021					.0079	.04	7.53	.00		.015	.00	.00	PIPE
562.330	1127.210	8.882	1136.092	154.00	7.84	.96	1137.05	.00	3.56	.00	5.000	.000	.00	1 .0
460.340	.0017					.0035	1.61	8.88	.00	5.00	.013	.00	.00	PIPE
1022.670	1128.000	9.701	1137.701	154.00	7.84	.96	1138.66	.00	3.56	.00	5.000	.000	.00	1 .0
JUNCT STR	.0021					.0032	.02	9.70	.00		.015	.00	.00	PIPE

WATER SURFACE PROFILE LISTING
 REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS
 LINE 4-3D MOUNTAIN AVENUE STORM DRAIN
 BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

Date: 4-15-2014 Time: 5:17: 7

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Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |        |        |        |        | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1027.330 | 1128.010 | 10.290 | 1138.301 | 96.00 | 4.89 | .37 | 1138.67 | .00 | 2.79 | .00 | 5.000 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        460.970 | .0017 |        |        |        |        | .0014 | .63 | 10.29 | .00 | 3.68 | .013 | .00 | .00 | PIPE
1488.300 | 1128.800 | 10.127 | 1138.927 | 96.00 | 4.89 | .37 | 1139.30 | .00 | 2.79 | .00 | 5.000 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        JUNCT STR | .0021 |        |        |        |        | .0013 | .01 | 10.13 | .00 | .015 | .00 | .00 | PIPE
1492.980 | 1128.810 | 10.353 | 1139.163 | 48.00 | 3.02 | .14 | 1139.30 | .00 | 2.00 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        195.320 | .0017 |        |        |        |        | .0006 | .12 | 10.35 | .00 | 2.50 | .013 | .00 | .00 | PIPE
1688.300 | 1129.140 | 10.139 | 1139.279 | 48.00 | 3.02 | .14 | 1139.42 | .00 | 2.00 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        JUNCT STR | .0021 |        |        |        |        | .0006 | .00 | 10.14 | .00 | .015 | .00 | .00 | PIPE
1692.960 | 1129.150 | 10.152 | 1139.302 | 37.00 | 2.33 | .08 | 1139.39 | .00 | 1.75 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        195.290 | .0017 |        |        |        |        | .0004 | .07 | 10.15 | .00 | 2.14 | .013 | .00 | .00 | PIPE
1888.250 | 1129.480 | 9.891 | 1139.371 | 37.00 | 2.33 | .08 | 1139.46 | .00 | 1.75 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        JUNCT STR | .0021 |        |        |        |        | .0004 | .00 | 9.89 | .00 | .015 | .00 | .00 | PIPE
1892.930 | 1129.490 | 9.934 | 1139.424 | 27.00 | 1.70 | .04 | 1139.47 | .00 | 1.48 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        197.540 | .0017 |        |        |        |        | .0002 | .04 | 9.93 | .00 | 1.78 | .013 | .00 | .00 | PIPE
2090.470 | 1129.830 | 9.631 | 1139.461 | 27.00 | 1.70 | .04 | 1139.51 | .00 | 1.48 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        JUNCT STR | .0021 |        |        |        |        | .0002 | .00 | 9.63 | .00 | .015 | .00 | .00 | PIPE
2095.140 | 1129.840 | 9.649 | 1139.489 | 17.00 | 1.07 | .02 | 1139.51 | .00 | 1.17 | .00 | 4.500 | .000 | .00 | 1 | .0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        193.920 | .0017 |        |        |        |        | .0001 | .01 | 9.65 | .00 | 1.40 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 5:17: 7

REDLANDS MASTER PLAN OF DRAINAGE - CAPACITY ANALYSIS

LINE 4-3D MOUNTAIN AVENUE STORM DRAIN

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.	Base Wt/or I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2289.060	1130.170	9.334	1139.504	17.00	1.07	.02	1139.52	.00	1.17	.00	4.500	.000	.00	1 .0
JUNCT STR	.1667					.0011	.01	9.33	.00		.015	.00	.00	PIPE
2295.060	1131.170	8.286	1139.456	9.00	2.86	.13	1139.58	.00	1.07	.00	2.000	.000	.00	1 .0
156.450	.0055					.0016	.25	8.29	.00	1.04	.013	.00	.00	PIPE
2451.510	1132.030	7.674	1139.703	9.00	2.86	.13	1139.83	.00	1.07	.00	2.000	.000	.00	1 .0
71.080	.0053					.0016	.11	.00	.00	1.05	.013	.00	.00	PIPE
2522.590	1132.410	7.432	1139.842	9.00	2.86	.13	1139.97	.00	1.07	.00	2.000	.000	.00	1 .0
37.410	.0056					.0016	.06	7.43	.00	1.04	.013	.00	.00	PIPE
2560.000	1132.620	7.281	1139.901	9.00	2.86	.13	1140.03	.00	1.07	.00	2.000	.000	.00	1 .0
JUNCT STR	.0064					.0013	.01	7.28	.00		.015	.00	.00	PIPE
2564.670	1132.650	7.362	1140.012	4.00	1.27	.03	1140.04	.00	.70	.00	2.000	.000	.00	1 .0
42.540	.0052					.0003	.01	7.36	.00	.68	.013	.00	.00	PIPE
2607.210	1132.870	7.156	1140.026	4.00	1.27	.03	1140.05	.00	.70	.00	2.000	.000	.00	1 .0

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1		9.500															
CD	2	4	1		4.000															
CD	3	4	1		9.000															
CD	4	4	1		2.500															
CD	5	4	1		2.000															
CD	6	4	1		9.000															
CD	7	4	1		2.500															
CD	8	4	1		2.000															
CD	9	4	1		9.000															
CD	10	4	1		8.500															
CD	11	4	1		2.500															
CD	12	4	1		2.000															
CD	13	4	1		8.500															
CD	14	4	1		2.500															
CD	15	4	1		2.000															
CD	16	4	1		8.500															
CD	17	4	1		8.000															
CD	18	4	1		2.500															
CD	19	4	1		2.000															
CD	20	4	1		8.000															
CD	21	4	1		2.000															
CD	22	4	1		1.500															
CD	23	4	1		8.000															
CD	24	4	1		2.500															
CD	25	4	1		2.000															
CD	26	4	1		8.000															
CD	27	4	1		7.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

SD 4-3E CALIFORNIA ST FROM SANTA ANA RIVER TO SAN BERNANDINO AVE

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS A	DESCRIPTION	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS A	SYSTEM OUTLET				1128.000				
		U/S DATA	1380.370	1114.000	1					
2	IS A	REACH								
		U/S DATA	1407.990	1114.210	1		.013	.000	.000	0
3	IS A	REACH								
		U/S DATA	1537.750	1115.200	1		.013	90.008	82.600	0
4	IS A	REACH								
		U/S DATA	1754.450	1116.850	1		.013	.000	.000	1
5	IS A	REACH								
		U/S DATA	1854.460	1117.670	1		.013	.000	.000	0
6	IS A	REACH								
		U/S DATA	1886.460	1118.230	1		.013	.000	.000	0

ELEMENT NO	7	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			1918.460	1119.080	1							.000	.000	.000	0					
ELEMENT NO	8	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2242.280	1130.650	1							.000	.000	.000	0					
ELEMENT NO	9	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2254.280	1130.710	3	2	0	.013	225.000	.000	1133.270	.000	-45.000	.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	10	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2585.770	1132.230	3			.013			.000	.000	.000	0						
ELEMENT NO	11	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2595.930	1132.280	6	4	5	.013	63.000	34.000	1135.670	1135.670	-45.000	45.000						
											RADIUS	ANGLE								
											.000	.000								
W S P G W																				
WATER SURFACE PROFILE - ELEMENT CARD LISTING																				
PAGE NO 3																				
ELEMENT NO	12	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2929.520	1133.820	6			.013			.000	.000	.000	0						
ELEMENT NO	13	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2939.680	1133.860	9	7	8	.013	63.000	34.000	1137.470	1137.470	-45.000	45.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	14	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			3401.510	1135.990	9			.013			.000	.000	.000	2						
ELEMENT NO	15	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			3416.510	1136.060	10	0	0	.013	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	16	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			3677.770	1136.770	10			.013			.000	.000	.000	0						
ELEMENT NO	17	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			3687.930	1136.800	13	11	12	.013	60.000	33.000	1139.070	1139.270	-45.000	45.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	18	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			4357.480	1138.640	13			.013			.000	.000	.000	1						
ELEMENT NO	19	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			4367.640	1138.670	16	14	15	.013	60.000	33.000	1141.670	1141.870	-45.000	45.000						
											RADIUS	ANGLE								
											.000	.000								
W S P G W																				
WATER SURFACE PROFILE - ELEMENT CARD LISTING																				
PAGE NO 4																				
ELEMENT NO	20	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			4730.510	1139.740	16			.013			.000	.000	.000	0						
ELEMENT NO	21	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						

			4744.010	1139.710	17	0	0	.013	.000	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE			
											.000	.000			
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING															
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING															
ELEMENT NO	22	IS A REACH	*	*	*										
		U/S DATA	STATION	INVERT	SECT						RADIUS	ANGLE	ANG PT	MAN H	
			5081.680	1140.640	17						.000	.000	.000	0	
ELEMENT NO	23	IS A JUNCTION	*	*	*				*						
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
			5090.840	1140.660	20	18	19	.013	45.000	45.000	1147.070	1147.270	-45.000	45.000	
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	24	IS A REACH	*	*	*										
		U/S DATA	STATION	INVERT	SECT						RADIUS	ANGLE	ANG PT	MAN H	
			5769.440	1142.530	20			.013			.000	.000	.000	1	
ELEMENT NO	25	IS A JUNCTION	*	*	*				*						
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
			5779.600	1142.540	26	24	25	.013	38.000	38.000	1145.070	1145.270	-45.000	45.000	
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	26	IS A REACH	*	*	*										
		U/S DATA	STATION	INVERT	SECT						RADIUS	ANGLE	ANG PT	MAN H	
			6026.460	1143.220	26			.013			.000	.000	.000	0	
ELEMENT NO	27	IS A JUNCTION	*	*	*				*						
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
			6042.460	1143.280	27	0	0	.013	.000	.000	.000	.000	.000	.000	
											RADIUS	ANGLE			
											.000	.000			
W S P G W															
WATER SURFACE PROFILE - ELEMENT CARD LISTING															
ELEMENT NO	28	IS A REACH	*	*	*										
		U/S DATA	STATION	INVERT	SECT						RADIUS	ANGLE	ANG PT	MAN H	
			7350.000	1146.880	27			.013			.000	.000	.000	4	
ELEMENT NO	29	IS A SYSTEM HEADWORKS	*		*				*						
		U/S DATA	STATION	INVERT	SECT						W S ELEV				
			7350.000	1146.880	27						.000				

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 4:32:35

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-3E CALIFORNIA ST FROM SANTA ANA RIVER TO SAN BERNARDINO AVE
 BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
L/Elem |Ch Slope|          |          |          |          |          |          |          |          |          |          |          |          |
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|
1380.370 | 1114.000 | 14.000 | 1128.000 | 1091.00 | 15.39 | 3.68 | 1131.68 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  27.620 | .0076 |          |          |          |          | .0057 | .16 | 14.00 | .00 | 6.84 | .013 | .00 | .00 | PIPE
1407.990 | 1114.210 | 13.948 | 1128.158 | 1091.00 | 15.39 | 3.68 | 1131.84 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  129.760 | .0076 |          |          |          |          | .0057 | .74 | .00 | .00 | 6.83 | .013 | .00 | .00 | PIPE
1537.750 | 1115.200 | 14.405 | 1129.605 | 1091.00 | 15.39 | 3.68 | 1133.28 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  216.700 | .0076 |          |          |          |          | .0057 | 1.24 | 14.41 | .00 | 6.83 | .013 | .00 | .00 | PIPE
1754.450 | 1116.850 | 14.179 | 1131.029 | 1091.00 | 15.39 | 3.68 | 1134.71 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  100.010 | .0082 |          |          |          |          | .0057 | .57 | 14.18 | .00 | 6.64 | .013 | .00 | .00 | PIPE
1854.460 | 1117.670 | 13.931 | 1131.601 | 1091.00 | 15.39 | 3.68 | 1135.28 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  32.000 | .0175 |          |          |          |          | .0057 | .18 | 13.93 | .00 | 5.15 | .013 | .00 | .00 | PIPE
1886.460 | 1118.230 | 13.555 | 1131.785 | 1091.00 | 15.39 | 3.68 | 1135.46 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  28.299 | .0266 |          |          |          |          | .0057 | .16 | 13.55 | .00 | 4.55 | .013 | .00 | .00 | PIPE
1914.759 | 1118.982 | 12.962 | 1131.943 | 1091.00 | 15.39 | 3.68 | 1135.62 | .00 | 7.98 | .00 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
HYDRAULIC JUMP
1914.759 | 1118.982 | 4.793 | 1123.775 | 1091.00 | 30.43 | 14.38 | 1138.16 | .00 | 7.98 | 9.50 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  3.701 | .0266 |          |          |          |          | .0222 | .08 | 4.79 | 2.76 | 4.55 | .013 | .00 | .00 | PIPE
1918.460 | 1119.080 | 4.797 | 1123.877 | 1091.00 | 30.40 | 14.35 | 1138.23 | .00 | 7.98 | 9.50 | 9.500 | .000 | .00 | 1 | .0
  -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-| -|-|
  .309 | .0357 |          |          |          |          | .0221 | .01 | 4.80 | 2.76 | 4.18 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 4:32:35

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-3E CALIFORNIA ST FROM SANTA ANA RIVER TO SAN BERNARDINO AVE
BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1918.769 | 1119.091 | 4.797 | 1123.888 | 1091.00 | 30.40 | 14.35 | 1138.24 | .00 | 7.98 | 9.50 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
75.093 | .0357 |      |      |      |      | .0208 | 1.56 | 4.80 | 2.76 | 4.18 | .013 | .00 | .00 | PIPE
1993.862 | 1121.774 | 4.982 | 1126.756 | 1091.00 | 28.98 | 13.04 | 1139.80 | .00 | 7.98 | 9.49 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
57.076 | .0357 |      |      |      |      | .0184 | 1.05 | 4.98 | 2.56 | 4.18 | .013 | .00 | .00 | PIPE
2050.938 | 1123.813 | 5.176 | 1128.989 | 1091.00 | 27.63 | 11.86 | 1140.85 | .00 | 7.98 | 9.46 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
44.731 | .0357 |      |      |      |      | .0162 | .72 | 5.18 | 2.38 | 4.18 | .013 | .00 | .00 | PIPE
2095.668 | 1125.412 | 5.380 | 1130.792 | 1091.00 | 26.35 | 10.78 | 1141.57 | .00 | 7.98 | 9.42 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
35.686 | .0357 |      |      |      |      | .0143 | .51 | 5.38 | 2.21 | 4.18 | .013 | .00 | .00 | PIPE
2131.355 | 1126.687 | 5.595 | 1132.282 | 1091.00 | 25.12 | 9.80 | 1142.08 | .00 | 7.98 | 9.35 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
28.733 | .0357 |      |      |      |      | .0127 | .36 | 5.60 | 2.05 | 4.18 | .013 | .00 | .00 | PIPE
2160.088 | 1127.713 | 5.823 | 1133.536 | 1091.00 | 23.95 | 8.91 | 1142.45 | .00 | 7.98 | 9.25 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.167 | .0357 |      |      |      |      | .0112 | .26 | 5.82 | 1.90 | 4.18 | .013 | .00 | .00 | PIPE
2183.254 | 1128.541 | 6.065 | 1134.606 | 1091.00 | 22.84 | 8.10 | 1142.71 | .00 | 7.98 | 9.13 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.561 | .0357 |      |      |      |      | .0099 | .18 | 6.06 | 1.76 | 4.18 | .013 | .00 | .00 | PIPE
2201.815 | 1129.204 | 6.323 | 1135.527 | 1091.00 | 21.78 | 7.36 | 1142.89 | .00 | 7.98 | 8.96 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.634 | .0357 |      |      |      |      | .0088 | .13 | 6.32 | 1.62 | 4.18 | .013 | .00 | .00 | PIPE
2216.449 | 1129.727 | 6.598 | 1136.326 | 1091.00 | 20.76 | 6.69 | 1143.02 | .00 | 7.98 | 8.75 | 9.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.163 | .0357 |      |      |      |      | .0079 | .09 | 6.60 | 1.49 | 4.18 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 4:32:35

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-3E CALIFORNIA ST FROM SANTA ANA RIVER TO SAN BERNARDINO AVE
 BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2227.612	1130.126	6.896	1137.022	1091.00	19.80	6.09	1143.11	.00	7.98	8.48	9.500	.000	.00	1 .0
7.990	.0357					.0071	.06	6.90	1.37	4.18	.013	.00	.00	PIPE
2235.602	1130.411	7.220	1137.632	1091.00	18.87	5.53	1143.16	.00	7.98	8.11	9.500	.000	.00	1 .0
4.935	.0357					.0063	.03	7.22	1.25	4.18	.013	.00	.00	PIPE
2240.537	1130.588	7.578	1138.166	1091.00	18.00	5.03	1143.19	.00	7.98	7.63	9.500	.000	.00	1 .0
1.743	.0357					.0058	.01	7.58	1.13	4.18	.013	.00	.00	PIPE
2242.280	1130.650	7.984	1138.634	1091.00	17.16	4.57	1143.20	.00	7.98	6.96	9.500	.000	.00	1 .0
JUNCT STR	.0050					.0051	.06	7.98	1.00		.013	.00	.00	PIPE
2254.280	1130.710	9.978	1140.688	866.00	13.61	2.88	1143.57	.00	7.25	.00	9.000	.000	.00	1 .0
331.490	.0046					.0048	1.59	9.98	.00	7.59	.013	.00	.00	PIPE
2585.770	1132.230	10.053	1142.283	866.00	13.61	2.88	1145.16	.00	7.25	.00	9.000	.000	.00	1 .0
JUNCT STR	.0049					.0043	.04	10.05	.00		.013	.00	.00	PIPE
2595.930	1132.280	10.857	1143.137	769.00	12.09	2.27	1145.41	.00	6.86	.00	9.000	.000	.00	1 .0
333.590	.0046					.0038	1.27	10.86	.00	6.72	.013	.00	.00	PIPE
2929.520	1133.820	10.583	1144.403	769.00	12.09	2.27	1146.67	.00	6.86	.00	9.000	.000	.00	1 .0
JUNCT STR	.0039					.0033	.03	10.58	.00		.013	.00	.00	PIPE
2939.680	1133.860	11.243	1145.103	672.00	10.56	1.73	1146.84	.00	6.42	.00	9.000	.000	.00	1 .0
461.830	.0046					.0029	1.34	11.24	.00	6.05	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 4:32:35

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-3E CALIFORNIA ST FROM SANTA ANA RIVER TO SAN BERNARDINO AVE
 BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
L/Elem |Ch Slope| | | | | | | | | | | | | | | | |
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3401.510 | 1135.990 | 10.624 | 1146.614 | 672.00 | 10.56 | 1.73 | 1148.35 | .00 | 6.42 | .00 | 9.000 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
JUNCT STR | .0047 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
3416.510 | 1136.060 | 10.162 | 1146.222 | 672.00 | 11.84 | 2.18 | 1148.40 | .00 | 6.50 | .00 | 8.500 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
261.260 | .0027 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
3677.770 | 1136.770 | 10.478 | 1147.248 | 672.00 | 11.84 | 2.18 | 1149.43 | .00 | 6.50 | .00 | 8.500 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
JUNCT STR | .0030 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
3687.930 | 1136.800 | 11.187 | 1147.987 | 579.00 | 10.20 | 1.62 | 1149.60 | .00 | 6.04 | .00 | 8.500 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
669.550 | .0027 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
4357.480 | 1138.640 | 11.381 | 1150.021 | 579.00 | 10.20 | 1.62 | 1151.64 | .00 | 6.04 | .00 | 8.500 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
JUNCT STR | .0030 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
4367.640 | 1138.670 | 11.913 | 1150.583 | 486.00 | 8.56 | 1.14 | 1151.72 | .00 | 5.52 | .00 | 8.500 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
362.870 | .0029 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
4730.510 | 1139.740 | 11.589 | 1151.329 | 486.00 | 8.56 | 1.14 | 1152.47 | .00 | 5.52 | .00 | 8.500 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
JUNCT STR | -.0022 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
4744.010 | 1139.710 | 11.341 | 1151.051 | 486.00 | 9.67 | 1.45 | 1152.50 | .00 | 5.62 | .00 | 8.000 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
337.670 | .0028 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
5081.680 | 1140.640 | 11.369 | 1152.009 | 486.00 | 9.67 | 1.45 | 1153.46 | .00 | 5.62 | .00 | 8.000 | .000 | .00 | 1 | .0
|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|-|
JUNCT STR | .0022 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 4:32:35

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-3E CALIFORNIA ST FROM SANTA ANA RIVER TO SAN BERNARDINO AVE
BY MCHANDOO JN:136769 APRIL 2014 NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5090.840 | 1140.660 | 11.885 | 1152.545 | 396.00 | 7.88 | .96 | 1153.51 | .00 | 5.06 | .00 | 8.000 | .000 | .00 | 1 | .0
      | 678.600 | .0028 |      |      |      |      | .0019 | 1.28 | 11.88 | .00 | 5.55 | .013 | .00 | .00 | PIPE
5769.440 | 1142.530 | 11.342 | 1153.872 | 396.00 | 7.88 | .96 | 1154.84 | .00 | 5.06 | .00 | 8.000 | .000 | .00 | 1 | .0
      | JUNCT STR | .0010 |      |      |      |      | .0016 | .02 | 11.34 | .00 | .013 | .00 | .00 | PIPE
5779.600 | 1142.540 | 11.688 | 1154.228 | 320.00 | 6.37 | .63 | 1154.86 | .00 | 4.53 | .00 | 8.000 | .000 | .00 | 1 | .0
      | 246.860 | .0028 |      |      |      |      | .0012 | .30 | 11.69 | .00 | 4.78 | .013 | .00 | .00 | PIPE
6026.460 | 1143.220 | 11.311 | 1154.531 | 320.00 | 6.37 | .63 | 1155.16 | .00 | 4.53 | .00 | 8.000 | .000 | .00 | 1 | .0
      | JUNCT STR | .0038 |      |      |      |      | .0019 | .03 | 11.31 | .00 | .013 | .00 | .00 | PIPE
6042.460 | 1143.280 | 10.845 | 1154.125 | 320.00 | 8.32 | 1.07 | 1155.20 | .00 | 4.71 | .00 | 7.000 | .000 | .00 | 1 | .0
      | 1307.540 | .0028 |      |      |      |      | .0025 | 3.28 | 10.84 | .00 | 5.47 | .013 | .00 | .00 | PIPE
7350.000 | 1146.880 | 10.740 | 1157.620 | 320.00 | 8.32 | 1.07 | 1158.69 | .00 | 4.71 | .00 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			6.500															
CD	2	4	1			7.000															
CD	3	4	1			2.500															
CD	4	4	1			7.000															
CD	5	4	1			1.500															
CD	6	4	1			1.500															
CD	7	4	1			7.000															
CD	8	4	1			2.000															
CD	9	4	1			2.000															
CD	10	4	1			7.000															
CD	11	4	1			4.000															
CD	12	4	1			2.000															
CD	13	4	1			6.500															
CD	14	4	1			2.000															
CD	15	4	1			6.500															
CD	16	4	1			4.000															
CD	17	4	1			2.000															
CD	18	4	1			5.000															
CD	19	4	1			1.500															
CD	20	4	1			5.000															
CD	21	4	1			3.000															
CD	22	4	1			4.500															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS
 HEADING LINE NO 2 IS - SD 4-4 NEVADA ST
 HEADING LINE NO 3 IS - FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A	SYSTEM OUTLET		750.890	1151.130	1	1158.000				
2	IS	A	REACH		1005.000	1151.480	1		.013	.000	.000	1
3	IS	A	REACH		1382.040	1156.460	1		.013	.000	.000	1
4	IS	A	JUNCTION		1392.040	1156.600	2		.013	40.000	.000	1156.600
							11					45.000
							0					.000
5	IS	A	REACH		1970.000	1159.070	2		.013	.000	.000	1
6	IS	A	JUNCTION		1973.000	1159.120	4		.013	35.000	.000	1162.125
							3					-45.000
							0					.000
7	IS	A	REACH									

ELEMENT NO	IS	A	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	ANG PT	MAN H
8			JUNCTION	2392.670	1162.610	4			.013			.000	.000			.000	1
			U/S DATA	2397.330	1162.640	7	5	6	.013	10.000	10.000	1163.990	1163.990	90.000		-90.000	

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	9	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						2827.670	1165.230	7	.013			.000	.000	.000	0		
ELEMENT NO	10	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						2832.330	1165.260	10	8	9	.013	32.000	32.000	1168.650	1169.360	-90.000	90.000

ELEMENT NO	11	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						3264.000	1167.860	10	.013			.000	.000	.000	0		
ELEMENT NO	12	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						3274.500	1167.920	13	11	12	.013	50.000	32.000	1169.380	1172.010	-45.000	90.000

ELEMENT NO	13	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						3705.180	1170.520	13	.013			.000	.000	.000	1		
ELEMENT NO	14	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						4143.000	1175.160	13	.013			.000	.000	.000	0		
ELEMENT NO	15	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						4150.000	1175.230	15	14	0	.013	32.000	.000	1177.820	.000	90.000	.000

ELEMENT NO	16	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H
						4558.740	1179.550	15	.013			.000	.000	.000	0

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	17	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						4566.710	1179.050	18	16	17	.013	50.000	32.000	1180.660	1181.830	45.000	90.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO	18	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						4593.040	1181.210	18	.013			.000	.000	.000	0		
ELEMENT NO	19	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						4663.780	1181.640	18	.013			45.034	-90.000	.000	0		
ELEMENT NO	20	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N			RADIUS	ANGLE	ANG PT	MAN H		
						4812.620	1182.530	18	.013			.000	.000	.000	0		
ELEMENT NO	21	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						4817.280	1182.560	20	19	0	.013	10.000	.000	1184.990	.000	80.000	.000

										RADIUS	ANGLE				
										.000	.000				
ELEMENT NO	22	IS A REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H		
		U/S DATA	STATION	INVERT	SECT				N	.013	.000	.000	0		
			5135.330	1184.480	20					.000	.000	.000	0		
ELEMENT NO	23	IS A JUNCTION	*	*	*	*	*	*	*						
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
			5144.630	1184.980	22	21	0	.013	30.000	.000	1185.480	.000	45.000	.000	
										RADIUS	ANGLE				
										.000	.000				
ELEMENT NO	24	IS A REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H		
		U/S DATA	STATION	INVERT	SECT				N	.013	.000	.000	0		
			5233.930	1185.870	22					.000	.000	.000	0		
												PAGE NO	5		
										W S P G W					
										WATER SURFACE PROFILE - ELEMENT CARD LISTING					
ELEMENT NO	25	IS A SYSTEM HEADWORKS	*	*	*										
		U/S DATA	STATION	INVERT	SECT					W S ELEV					
			5233.930	1185.870	22					.000					

WATER SURFACE PROFILE LISTING
 REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS
 SD 4-4 NEVADA ST
 FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

Date: 4-17-2014 Time: 5:57:58

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
750.890	1151.130	6.870	1158.000	545.00	16.42	4.19	1162.19	.00	5.98	.00	6.500	.000	.00	1 .0
254.110	.0014					.0108	2.75	6.87	.00	6.50	.013	.00	.00	PIPE
1005.000	1151.480	9.475	1160.955	545.00	16.42	4.19	1165.14	.00	5.98	.00	6.500	.000	.00	1 .0
377.040	.0132					.0108	4.07	9.48	.00	4.84	.013	.00	.00	PIPE
1382.040	1156.460	8.779	1165.239	545.00	16.42	4.19	1169.43	.00	5.98	.00	6.500	.000	.00	1 .0
JUNCT STR	.0140					.0085	.09	8.78	.00		.013	.00	.00	PIPE
1392.040	1156.600	10.661	1167.261	505.00	13.12	2.67	1169.93	.00	5.87	.00	7.000	.000	.00	1 .0
577.960	.0043					.0062	3.61	10.66	.00	7.00	.013	.00	.00	PIPE
1970.000	1159.070	11.936	1171.006	505.00	13.12	2.67	1173.68	.00	5.87	.00	7.000	.000	.00	1 .0
JUNCT STR	.0167					.0058	.02	11.94	.00		.013	.00	.00	PIPE
1973.000	1159.120	12.477	1171.597	470.00	12.21	2.32	1173.91	.00	5.69	.00	7.000	.000	.00	1 .0
419.670	.0083					.0054	2.27	12.48	.00	4.77	.013	.00	.00	PIPE
2392.670	1162.610	11.374	1173.984	470.00	12.21	2.32	1176.30	.00	5.69	.00	7.000	.000	.00	1 .0
JUNCT STR	.0064					.0052	.02	11.37	.00		.013	.00	.00	PIPE
2397.330	1162.640	11.754	1174.394	450.00	11.69	2.12	1176.52	.00	5.57	.00	7.000	.000	.00	1 .0
430.340	.0060					.0050	2.14	11.75	.00	5.23	.013	.00	.00	PIPE
2827.670	1165.230	11.300	1176.530	450.00	11.69	2.12	1178.65	.00	5.57	.00	7.000	.000	.00	1 .0
JUNCT STR	.0064					.0043	.02	11.30	.00		.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 5:57:58

REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS

SD 4-4 NEVADA ST

FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2832.330 | 1165.260 | 12.411 | 1177.672 | 386.00 | 10.03 | 1.56 | 1179.23 | .00 | 5.18 | .00 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
431.670 | .0060 |      |      |      |      |      |      | 1.58 | 12.41 | .00 | 4.64 | .013 | .00 | .00 | PIPE
3264.000 | 1167.860 | 11.388 | 1179.247 | 386.00 | 10.03 | 1.56 | 1180.81 | .00 | 5.18 | .00 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0057 |      |      |      |      |      |      | .04 | 11.39 | .00 | .013 | .00 | .00 | PIPE
3274.500 | 1167.920 | 12.184 | 1180.104 | 304.00 | 9.16 | 1.30 | 1181.41 | .00 | 4.68 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
430.680 | .0060 |      |      |      |      |      |      | 1.45 | 12.18 | .00 | 4.19 | .013 | .00 | .00 | PIPE
3705.180 | 1170.520 | 11.097 | 1181.617 | 304.00 | 9.16 | 1.30 | 1182.92 | .00 | 4.68 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
437.820 | .0106 |      |      |      |      |      |      | 1.47 | 11.10 | .00 | 3.49 | .013 | .00 | .00 | PIPE
4143.000 | 1175.160 | 7.929 | 1183.089 | 304.00 | 9.16 | 1.30 | 1184.39 | .00 | 4.68 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0100 |      |      |      |      |      |      | .02 | 7.93 | .00 | .013 | .00 | .00 | PIPE
4150.000 | 1175.230 | 8.400 | 1183.630 | 272.00 | 8.20 | 1.04 | 1184.67 | .00 | 4.42 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
241.243 | .0106 |      |      |      |      |      |      | .65 | 8.40 | .00 | 3.27 | .013 | .00 | .00 | PIPE
4391.243 | 1177.780 | 6.500 | 1184.280 | 272.00 | 8.20 | 1.04 | 1185.32 | .00 | 4.42 | .00 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
61.669 | .0106 |      |      |      |      |      |      | .15 | 6.50 | .00 | 3.27 | .013 | .00 | .00 | PIPE
4452.913 | 1178.432 | 5.898 | 1184.329 | 272.00 | 8.60 | 1.15 | 1185.48 | .00 | 4.42 | 3.77 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
28.927 | .0106 |      |      |      |      |      |      | .07 | 5.90 | .52 | 3.27 | .013 | .00 | .00 | PIPE
4481.840 | 1178.737 | 5.548 | 1184.285 | 272.00 | 9.02 | 1.26 | 1185.55 | .00 | 4.42 | 4.60 | 6.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.484 | .0106 |      |      |      |      |      |      | .05 | 5.55 | .62 | 3.27 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 5:57:58

REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS

SD 4-4 NEVADA ST

FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
          | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem  | Ch Slope |          |          |          |          |          | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4502.324 | 1178.954 | 5.259 | 1184.213 | 272.00 | 9.46 | 1.39 | 1185.60 | .00 | 4.42 | 5.11 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
6.075 | .0106 |          |          |          |          |          | .0028 | .02 | 5.26 | .70 | 3.27 | .013 | .00 | .00 | PIPE
4508.399 | 1179.018 | 5.163 | 1184.181 | 272.00 | 9.62 | 1.44 | 1185.62 | .00 | 4.42 | 5.25 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
HYDRAULIC JUMP
4508.399 | 1179.018 | 3.772 | 1182.791 | 272.00 | 13.62 | 2.88 | 1185.67 | .00 | 4.42 | 6.42 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
23.326 | .0106 |          |          |          |          |          | .0063 | .15 | 3.77 | 1.36 | 3.27 | .013 | .00 | .00 | PIPE
4531.725 | 1179.264 | 3.909 | 1183.173 | 272.00 | 13.05 | 2.64 | 1185.82 | .00 | 4.42 | 6.37 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
15.958 | .0106 |          |          |          |          |          | .0056 | .09 | 3.91 | 1.27 | 3.27 | .013 | .00 | .00 | PIPE
4547.683 | 1179.433 | 4.070 | 1183.503 | 272.00 | 12.44 | 2.40 | 1185.91 | .00 | 4.42 | 6.29 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
8.473 | .0106 |          |          |          |          |          | .0050 | .04 | 4.07 | 1.18 | 3.27 | .013 | .00 | .00 | PIPE
4556.156 | 1179.523 | 4.241 | 1183.763 | 272.00 | 11.86 | 2.19 | 1185.95 | .00 | 4.42 | 6.19 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
2.584 | .0106 |          |          |          |          |          | .0044 | .01 | 4.24 | 1.09 | 3.27 | .013 | .00 | .00 | PIPE
4558.740 | 1179.550 | 4.424 | 1183.974 | 272.00 | 11.31 | 1.99 | 1185.96 | .00 | 4.42 | 6.06 | 6.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR -.0627 |          |          |          |          |          |          | .0047 | .04 | 4.42 | 1.00 |          | .013 | .00 | .00 | PIPE
4566.710 | 1179.050 | 6.521 | 1185.571 | 190.00 | 9.68 | 1.45 | 1187.02 | .00 | 3.94 | .00 | 5.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
19.824 | .0820 |          |          |          |          |          | .0053 | .10 | 6.52 | .00 | 1.72 | .013 | .00 | .00 | PIPE
4586.534 | 1180.676 | 5.000 | 1185.676 | 190.00 | 9.68 | 1.45 | 1187.13 | .00 | 3.94 | .00 | 5.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
4.113 | .0820 |          |          |          |          |          | .0050 | .02 | 5.00 | .00 | 1.72 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 5:57:58

REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS

SD 4-4 NEVADA ST

FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
4590.647	1181.014	4.537	1185.550	190.00	10.15	1.60	1187.15	.00	3.94	2.90	5.000	.000	.00	1 .0
.360	.0820					.0047	.00	4.54	.70	1.72	.013	.00	.00	PIPE
4591.007	1181.043	4.480	1185.524	190.00	10.24	1.63	1187.15	.00	3.94	3.05	5.000	.000	.00	1 .0
HYDRAULIC JUMP														
4591.007	1181.043	3.452	1184.495	190.00	13.14	2.68	1187.18	.00	3.94	4.62	5.000	.000	.00	1 .0
.468	.0820					.0077	.00	3.45	1.31	1.72	.013	.00	.00	PIPE
4591.475	1181.082	3.503	1184.585	190.00	12.93	2.60	1187.18	.00	3.94	4.58	5.000	.000	.00	1 .0
1.026	.0820					.0072	.01	3.50	1.27	1.72	.013	.00	.00	PIPE
4592.501	1181.166	3.662	1184.828	190.00	12.33	2.36	1187.19	.00	3.94	4.43	5.000	.000	.00	1 .0
.539	.0820					.0064	.00	3.66	1.16	1.72	.013	.00	.00	PIPE
4593.040	1181.210	3.836	1185.046	190.00	11.75	2.15	1187.19	.40	3.94	4.23	5.000	.000	.00	1 .0
9.915	.0061					.0061	.06	4.24	1.06	3.84	.013	.00	.00	PIPE
4602.955	1181.270	3.836	1185.106	190.00	11.75	2.15	1187.25	.40	3.94	4.23	5.000	.000	.00	1 .0
60.825	.0061					.0060	.37	4.24	1.06	3.84	.013	.00	.00	PIPE
4663.780	1181.640	3.865	1185.505	190.00	11.67	2.11	1187.62	.00	3.94	4.19	5.000	.000	.00	1 .0
121.472	.0060					.0060	.73	3.87	1.04	3.87	.013	.00	.00	PIPE
4785.252	1182.366	3.865	1186.232	190.00	11.67	2.11	1188.34	.00	3.94	4.19	5.000	.000	.00	1 .0
27.368	.0060					.0059	.16	3.87	1.04	3.87	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 5:57:58

REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS

SD 4-4 NEVADA ST

FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4812.620 | 1182.530 | 3.942 | 1186.472 | 190.00 | 11.44 | 2.03 | 1188.51 | .00 | 3.94 | 4.08 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0064 | | | | | | .0049 | .02 | 3.94 | 1.00 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
4817.280 | 1182.560 | 4.778 | 1187.338 | 180.00 | 9.31 | 1.35 | 1188.69 | .00 | 3.84 | 2.06 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 111.036 | .0060 | | | | | | .0042 | .47 | 4.78 | .54 | 3.67 | .013 | .00 | .00 | PIPE
4928.316 | 1183.230 | 4.440 | 1187.670 | 180.00 | 9.77 | 1.48 | 1189.15 | .00 | 3.84 | 3.15 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 63.251 | .0060 | | | | | | .0044 | .28 | 4.44 | .71 | 3.67 | .013 | .00 | .00 | PIPE
4991.567 | 1183.612 | 4.190 | 1187.802 | 180.00 | 10.24 | 1.63 | 1189.43 | .00 | 3.84 | 3.68 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 35.215 | .0060 | | | | | | .0048 | .17 | 4.19 | .83 | 3.67 | .013 | .00 | .00 | PIPE
5026.782 | 1183.825 | 4.017 | 1187.842 | 180.00 | 10.65 | 1.76 | 1189.60 | .00 | 3.84 | 3.97 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
5026.782 | 1183.825 | 3.672 | 1187.497 | 180.00 | 11.65 | 2.11 | 1189.60 | .00 | 3.84 | 4.42 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 52.557 | .0060 | | | | | | .0060 | .32 | 3.67 | 1.10 | 3.67 | .013 | .00 | .00 | PIPE
5079.339 | 1184.142 | 3.672 | 1187.814 | 180.00 | 11.65 | 2.11 | 1189.92 | .00 | 3.84 | 4.42 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 55.991 | .0060 | | | | | | .0057 | .32 | 3.67 | 1.10 | 3.67 | .013 | .00 | .00 | PIPE
5135.330 | 1184.480 | 3.842 | 1188.322 | 180.00 | 11.12 | 1.92 | 1190.24 | .00 | 3.84 | 4.22 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0538 | | | | | | .0053 | .05 | 3.84 | 1.00 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
5144.630 | 1184.980 | 4.320 | 1189.300 | 150.00 | 9.56 | 1.42 | 1190.72 | .00 | 3.59 | 1.76 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      | 29.172 | .0100 | | | | | | .0051 | .15 | 4.32 | .56 | 2.95 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 5:57:58

REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS

SD 4-4 NEVADA ST

FROM SANTA ANA RIVER TO PIONEER AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5173.802 | 1185.271 | 4.074 | 1189.345 | 150.00 | 9.91 | 1.52 | 1190.87 | .00 | 3.59 | 2.63 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
5173.802 | 1185.271 | 3.150 | 1188.421 | 150.00 | 12.61 | 2.47 | 1190.89 | .00 | 3.59 | 4.12 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
35.589 | .0100 | | | | | | | | | | | | | | | |
      | | | | | | | | | | | | | | | |
5209.391 | 1185.625 | 3.269 | 1188.894 | 150.00 | 12.12 | 2.28 | 1191.18 | .00 | 3.59 | 4.01 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
19.200 | .0100 | | | | | | | | | | | | | | | |
      | | | | | | | | | | | | | | | |
5228.591 | 1185.817 | 3.422 | 1189.239 | 150.00 | 11.56 | 2.07 | 1191.31 | .00 | 3.59 | 3.84 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
5.339 | .0100 | | | | | | | | | | | | | | | |
      | | | | | | | | | | | | | | | |
5233.930 | 1185.870 | 3.593 | 1189.463 | 150.00 | 11.02 | 1.88 | 1191.35 | .00 | 3.59 | 3.61 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.000															
CD	2	4	1			2.000															
CD	3	4	1			1.500															
CD	4	4	1			4.000															
CD	6	4	1			2.500															
CD	7	4	1			1.500															
CD	8	4	1			3.000															

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS
 HEADING LINE NO 2 IS - SD 4-4A NEVADA ST
 HEADING LINE NO 3 IS - FROM PIONEER AVE TO SAN BERNARDINO AVE NAD88 DATUM

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H		
1	IS	A	SYSTEM OUTLET		41.250	1180.660	1	1190.900						
2	IS	A	REACH		253.460	1182.640	1	.013	.000	.000	.000	0		
3	IS	A	JUNCTION		259.460	1182.660	4	.013	8.000	8.000	1183.150	1183.150	90.000	-90.000
4	IS	A	REACH		719.450	1184.400	4	.013	.000	.000	.000	1		
5	IS	A	REACH		1173.440	1186.120	4	.013	.000	.000	.000	0		
6	IS	A	JUNCTION		1179.440	1186.370	8	.013	2.000	2.000	1186.370	1187.240	90.000	-90.000
7	IS	A	REACH						.000	.000				

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 6:41:25

REDLANDS MASTER PLAN WITH Q25 PER STREET FLOW CALCULATIONS

SD 4-4A NEVADA ST

FROM PIONEER AVE TO SAN BERNARDINO AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      | | | | | | | | | | | | | | | | |
41.250 | 1180.660 | 10.240 | 1190.900 | 33.00 | 2.63 | .11 | 1191.01 | .00 | 1.71 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
212.210 | .0093 | | | | | | .0005 | .11 | 10.24 | .00 | 1.33 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
253.460 | 1182.640 | 8.372 | 1191.012 | 33.00 | 2.63 | .11 | 1191.12 | .00 | 1.71 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0033 | | | | | | .0003 | .00 | 8.37 | .00 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
259.460 | 1182.660 | 8.511 | 1191.171 | 17.00 | 1.35 | .03 | 1191.20 | .00 | 1.21 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
459.990 | .0038 | | | | | | .0001 | .06 | 8.51 | .00 | 1.19 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
719.450 | 1184.400 | 6.837 | 1191.237 | 17.00 | 1.35 | .03 | 1191.27 | .00 | 1.21 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
453.990 | .0038 | | | | | | .0001 | .06 | 6.84 | .00 | 1.19 | .013 | .00 | .00 | PIPE
      | | | | | | | | | | | | | | | | |
1173.440 | 1186.120 | 5.181 | 1191.301 | 17.00 | 1.35 | .03 | 1191.33 | .00 | 1.21 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0417 | | | | | | .0003 | .00
    
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1									
CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH			DROP										
CD	1	4	1		6.000														
CD	2	4	1		8.000														
CD	3	4	1		2.000														
CD	4	4	1		8.000														
CD	5	4	1		7.000														
CD	6	4	1		2.000														
CD	7	4	1		7.000														
CD	8	4	1		2.000														
CD	9	4	1		7.000														
CD	10	4	1		6.000														
CD	11	4	1		4.500														

W S P G W PAGE NO 1
 WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS 0
 HEADING LINE NO 2 IS - SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE
 HEADING LINE NO 3 IS - BY DMALOTT JN:136769 APRIL 2014

W S P G W PAGE NO 2
 WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV											
1	IS	A	SYSTEM OUTLET	U/S DATA	.000	1175.000	1	1181.900											
2	IS	A	REACH	U/S DATA	1130.550	1180.070	1	.013	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	2
3	IS	A	TRANSITION	U/S DATA	1135.000	1180.270	2	.013	.000	.000									
4	IS	A	REACH	U/S DATA	1566.440	1196.200	2	.013	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	2
5	IS	A	TRANSITION	U/S DATA	1575.180	1197.500	2	.013	.000	.000									
6	IS	A	REACH	U/S DATA	2694.490	1212.700	2	.013	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	0
7	IS	A	REACH	U/S DATA	2798.510	1213.990	2	.013	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	0
8	IS	A	JUNCTION	U/S DATA	2814.320	1213.990	4	.013	70.000	.000	1214.500	.000	-45.000	.000	.000	.000	.000	.000	
										THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING									
9	IS	A	REACH	U/S DATA	4222.090	1220.240	4	.013	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	0
10	IS	A	TRANSITION	U/S DATA	4236.640	1221.260	5	.013	.000	.000									

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth  | Width  | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF   | SE Dpth | Froude N | Norm Dp | "N"    | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000  | 1175.000 | 6.900 | 1181.900 | 329.00 | 11.64 | 2.10 | 1184.00 | .00 | 4.94 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1130.550 | .0045 |      |      |      |      | .0060 | 6.82 | 6.90 | .00 | 6.00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1130.550 | 1180.070 | 8.863 | 1188.933 | 329.00 | 11.64 | 2.10 | 1191.04 | .00 | 4.94 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
TRANS STR | .0450 |      |      |      |      | .0037 | .02 | 8.86 | .00 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1135.000 | 1180.270 | 10.476 | 1190.746 | 329.00 | 6.55 | .67 | 1191.41 | .00 | 4.59 | .00 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
65.154 | .0369 |      |      |      |      | .0013 | .08 | 10.48 | .00 | 2.35 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1200.154 | 1182.676 | 8.164 | 1190.839 | 329.00 | 6.55 | .67 | 1191.50 | .00 | 4.59 | .00 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1200.154 | 1182.676 | 2.409 | 1185.084 | 329.00 | 25.81 | 10.34 | 1195.43 | .00 | 4.59 | 7.34 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
129.836 | .0369 |      |      |      |      | .0321 | 4.17 | 2.41 | 3.45 | 2.35 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1329.990 | 1187.470 | 2.461 | 1189.931 | 329.00 | 25.05 | 9.74 | 1199.68 | .00 | 4.59 | 7.38 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
99.265 | .0369 |      |      |      |      | .0289 | 2.87 | 2.46 | 3.31 | 2.35 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1429.256 | 1191.135 | 2.548 | 1193.682 | 329.00 | 23.89 | 8.86 | 1202.54 | .00 | 4.59 | 7.45 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
61.487 | .0369 |      |      |      |      | .0253 | 1.55 | 2.55 | 3.10 | 2.35 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1490.743 | 1193.405 | 2.637 | 1196.042 | 329.00 | 22.77 | 8.05 | 1204.10 | .00 | 4.59 | 7.52 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
43.237 | .0369 |      |      |      |      | .0221 | .96 | 2.64 | 2.90 | 2.35 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1533.979 | 1195.001 | 2.731 | 1197.732 | 329.00 | 21.71 | 7.32 | 1205.05 | .00 | 4.59 | 7.59 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.461 | .0369 |      |      |      |      | .0194 | .63 | 2.73 | 2.71 | 2.35 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1566.440 | 1196.200 | 2.828 | 1199.028 | 329.00 | 20.70 | 6.66 | 1205.68 | .00 | 4.59 | 7.65 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
TRANS STR | .1487 |      |      |      |      |      | .0159 | .14 | 2.83 | 2.53 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1575.180 | 1197.500 | 3.056 | 1200.556 | 329.00 | 18.64 | 5.40 | 1205.95 | .00 | 4.59 | 7.77 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
198.616 | .0136 |      |      |      |      |      | .0136 | 2.70 | 3.06 | 2.18 | 3.06 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1773.796 | 1200.197 | 3.056 | 1203.253 | 329.00 | 18.64 | 5.40 | 1208.65 | .00 | 4.59 | 7.77 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
456.800 | .0136 |      |      |      |      |      | .0133 | 6.05 | 3.06 | 2.18 | 3.06 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2230.595 | 1206.401 | 3.096 | 1209.497 | 329.00 | 18.31 | 5.21 | 1214.70 | .00 | 4.59 | 7.79 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
250.530 | .0136 |      |      |      |      |      | .0121 | 3.04 | 3.10 | 2.13 | 3.06 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2481.125 | 1209.803 | 3.209 | 1213.011 | 329.00 | 17.46 | 4.73 | 1217.74 | .00 | 4.59 | 7.84 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
107.083 | .0136 |      |      |      |      |      | .0107 | 1.14 | 3.21 | 1.98 | 3.06 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2588.208 | 1211.257 | 3.326 | 1214.582 | 329.00 | 16.65 | 4.30 | 1218.89 | .00 | 4.59 | 7.89 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
63.719 | .0136 |      |      |      |      |      | .0094 | .60 | 3.33 | 1.85 | 3.06 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2651.927 | 1212.122 | 3.448 | 1215.569 | 329.00 | 15.87 | 3.91 | 1219.48 | .00 | 4.59 | 7.92 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
42.563 | .0136 |      |      |      |      |      | .0082 | .35 | 3.45 | 1.73 | 3.06 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2694.490 | 1212.700 | 3.575 | 1216.275 | 329.00 | 15.13 | 3.56 | 1219.83 | .00 | 4.59 | 7.95 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.336 | .0124 |      |      |      |      |      | .0074 | .19 | 3.57 | 1.61 | 3.13 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2719.827 | 1213.014 | 3.660 | 1216.674 | 329.00 | 14.68 | 3.34 | 1220.02 | .00 | 4.59 | 7.97 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.021 | .0124 |      |      |      |      |      | .0066 | .19 | 3.66 | 1.54 | 3.13 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2748.848 | 1213.374 | 3.797 | 1217.171 | 329.00 | 13.99 | 3.04 | 1220.21 | .00 | 4.59 | 7.99 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
20.286 | .0124 | | | | | .0058 | .12 | 3.80 | 1.44 | 3.13 | .013 | .00 | .00 | PIPE
2769.135 | 1213.626 | 3.941 | 1217.566 | 329.00 | 13.34 | 2.76 | 1220.33 | .00 | 4.59 | 8.00 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
13.898 | .0124 | | | | | .0051 | .07 | 3.94 | 1.34 | 3.13 | .013 | .00 | .00 | PIPE
2783.033 | 1213.798 | 4.091 | 1217.889 | 329.00 | 12.72 | 2.51 | 1220.40 | .00 | 4.59 | 8.00 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
8.971 | .0124 | | | | | .0045 | .04 | 4.09 | 1.25 | 3.13 | .013 | .00 | .00 | PIPE
2792.004 | 1213.909 | 4.249 | 1218.158 | 329.00 | 12.13 | 2.28 | 1220.44 | .00 | 4.59 | 7.98 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
4.950 | .0124 | | | | | .0040 | .02 | 4.25 | 1.16 | 3.13 | .013 | .00 | .00 | PIPE
2796.954 | 1213.971 | 4.415 | 1218.386 | 329.00 | 11.56 | 2.08 | 1220.46 | .00 | 4.59 | 7.96 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
1.556 | .0124 | | | | | .0035 | .01 | 4.42 | 1.08 | 3.13 | .013 | .00 | .00 | PIPE
2798.510 | 1213.990 | 4.591 | 1218.581 | 329.00 | 11.02 | 1.89 | 1220.47 | .00 | 4.59 | 7.91 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0000 | | | | | .0022 | .03 | 4.59 | 1.00 | | | .013 | .00 | .00 | PIPE
2814.320 | 1213.990 | 5.839 | 1219.829 | 259.00 | 6.59 | .67 | 1220.50 | .00 | 4.05 | 7.10 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
55.537 | .0044 | | | | | .0011 | .06 | 5.84 | .49 | 3.65 | .013 | .00 | .00 | PIPE
2869.857 | 1214.237 | 5.586 | 1219.822 | 259.00 | 6.91 | .74 | 1220.56 | .00 | 4.05 | 7.34 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
49.911 | .0044 | | | | | .0012 | .06 | 5.59 | .54 | 3.65 | .013 | .00 | .00 | PIPE
2919.768 | 1214.458 | 5.351 | 1219.809 | 259.00 | 7.25 | .82 | 1220.63 | .00 | 4.05 | 7.53 | 8.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
44.842 | .0044 | | | | | .0014 | .06 | 5.35 | .59 | 3.65 | .013 | .00 | .00 | PIPE

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WATER SURFACE PROFILE LISTING
 REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS
 SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE
 BY DMALOTT JN:136769 APRIL 2014

Date: 4-17-2014 Time: 8:46:28

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2964.610	1214.657	5.132	1219.790	259.00	7.60	.90	1220.69	.00	4.05	7.67	8.000	.000	.00	1 .0
40.052	.0044					.0016	.06	5.13	.64	3.65	.013	.00	.00	PIPE
3004.662	1214.835	4.927	1219.762	259.00	7.97	.99	1220.75	.00	4.05	7.78	8.000	.000	.00	1 .0
35.224	.0044					.0018	.06	4.93	.69	3.65	.013	.00	.00	PIPE
3039.885	1214.991	4.734	1219.725	259.00	8.36	1.09	1220.81	.00	4.05	7.86	8.000	.000	.00	1 .0
30.129	.0044					.0020	.06	4.73	.74	3.65	.013	.00	.00	PIPE
3070.015	1215.125	4.552	1219.677	259.00	8.77	1.19	1220.87	.00	4.05	7.92	8.000	.000	.00	1 .0
9.923	.0044					.0022	.02	4.55	.80	3.65	.013	.00	.00	PIPE
3079.938	1215.169	4.488	1219.657	259.00	8.92	1.24	1220.89	.00	4.05	7.94	8.000	.000	.00	1 .0
HYDRAULIC JUMP														
3079.938	1215.169	3.647	1218.816	259.00	11.61	2.09	1220.91	.00	4.05	7.97	8.000	.000	.00	1 .0
381.837	.0044					.0044	1.70	3.65	1.22	3.65	.013	.00	.00	PIPE
3461.775	1216.865	3.647	1220.512	259.00	11.61	2.09	1222.60	.00	4.05	7.97	8.000	.000	.00	1 .0
237.533	.0044					.0045	1.07	3.65	1.22	3.65	.013	.00	.00	PIPE
3699.308	1217.919	3.615	1221.534	259.00	11.74	2.14	1223.67	.00	4.05	7.96	8.000	.000	.00	1 .0
186.339	.0044					.0049	.91	3.62	1.24	3.65	.013	.00	.00	PIPE
3885.647	1218.746	3.486	1222.232	259.00	12.31	2.35	1224.59	.00	4.05	7.93	8.000	.000	.00	1 .0
98.857	.0044					.0056	.55	3.49	1.33	3.65	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

0

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3984.504 | 1219.185 | 3.362 | 1222.547 | 259.00 | 12.92 | 2.59 | 1225.14 | .00 | 4.05 | 7.90 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
73.786 | .0044 |      |      |      |      | .0063 | .47 | 3.36 | 1.43 | 3.65 | .013 | .00 | .00 | PIPE
4058.290 | 1219.513 | 3.244 | 1222.757 | 259.00 | 13.55 | 2.85 | 1225.61 | .00 | 4.05 | 7.86 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
61.459 | .0044 |      |      |      |      | .0072 | .44 | 3.24 | 1.53 | 3.65 | .013 | .00 | .00 | PIPE
4119.750 | 1219.786 | 3.130 | 1222.916 | 259.00 | 14.21 | 3.13 | 1226.05 | .00 | 4.05 | 7.81 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
53.835 | .0044 |      |      |      |      | .0082 | .44 | 3.13 | 1.64 | 3.65 | .013 | .00 | .00 | PIPE
4173.584 | 1220.025 | 3.021 | 1223.046 | 259.00 | 14.90 | 3.45 | 1226.49 | .00 | 4.05 | 7.76 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
48.505 | .0044 |      |      |      |      | .0094 | .46 | 3.02 | 1.75 | 3.65 | .013 | .00 | .00 | PIPE
4222.090 | 1220.240 | 2.917 | 1223.157 | 259.00 | 15.63 | 3.79 | 1226.95 | .00 | 4.05 | 7.70 | 8.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
TRANS STR | .0701 |      |      |      |      | .0068 | .10 | 2.92 | 1.88 |      | .013 | .00 | .00 | PIPE
4236.640 | 1221.260 | 4.221 | 1225.481 | 259.00 | 10.68 | 1.77 | 1227.25 | .00 | 4.22 | 6.85 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.483 | .0010 |      |      |      |      | .0034 | .02 | 4.22 | 1.00 | 7.00 | .013 | .00 | .00 | PIPE
4242.124 | 1221.266 | 4.395 | 1225.661 | 259.00 | 10.18 | 1.61 | 1227.27 | .00 | 4.22 | 6.77 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.710 | .0010 |      |      |      |      | .0030 | .06 | 4.39 | .93 | 7.00 | .013 | .00 | .00 | PIPE
4261.833 | 1221.286 | 4.580 | 1225.866 | 259.00 | 9.71 | 1.46 | 1227.33 | .00 | 4.22 | 6.66 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
39.806 | .0010 |      |      |      |      | .0027 | .11 | 4.58 | .85 | 7.00 | .013 | .00 | .00 | PIPE
4301.639 | 1221.328 | 4.777 | 1226.105 | 259.00 | 9.26 | 1.33 | 1227.44 | .00 | 4.22 | 6.52 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
68.800 | .0010 |      |      |      |      | .0024 | .16 | 4.78 | .79 | 7.00 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4370.439 | 1221.399 | 4.990 | 1226.389 | 259.00 | 8.83 | 1.21 | 1227.60 | .00 | 4.22 | 6.33 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
111.619 | .0010 | | | | | .0021 | .24 | 4.99 | .72 | 7.00 | .013 | .00 | .00 | PIPE
4482.058 | 1221.516 | 5.220 | 1226.736 | 259.00 | 8.41 | 1.10 | 1227.84 | .00 | 4.22 | 6.10 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
177.456 | .0010 | | | | | .0019 | .34 | 5.22 | .66 | 7.00 | .013 | .00 | .00 | PIPE
4659.514 | 1221.701 | 5.473 | 1227.174 | 259.00 | 8.02 | 1.00 | 1228.17 | .00 | 4.22 | 5.78 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
283.607 | .0010 | | | | | .0017 | .49 | 5.47 | .60 | 7.00 | .013 | .00 | .00 | PIPE
4943.121 | 1221.996 | 5.756 | 1227.752 | 259.00 | 7.65 | .91 | 1228.66 | .00 | 4.22 | 5.35 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
3.629 | .0010 | | | | | .0016 | .01 | 5.76 | .54 | 7.00 | .013 | .00 | .00 | PIPE
4946.750 | 1222.000 | 5.759 | 1227.759 | 259.00 | 7.65 | .91 | 1228.67 | .00 | 4.22 | 5.35 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0028 | | | | | .0012 | .01 | 5.76 | .54 | | | .013 | .00 | .00 | PIPE
4953.800 | 1222.020 | 6.721 | 1228.741 | 180.00 | 4.74 | .35 | 1229.09 | .00 | 3.49 | 2.74 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
753.630 | .0006 | | | | | .0007 | .52 | 6.72 | .22 | 7.00 | .013 | .00 | .00 | PIPE
5707.430 | 1222.500 | 6.766 | 1229.266 | 180.00 | 4.73 | .35 | 1229.61 | .00 | 3.49 | 2.52 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0053 | | | | | .0004 | .01 | 6.77 | .21 | | | .013 | .00 | .00 | PIPE
5726.370 | 1222.600 | 7.275 | 1229.875 | 65.00 | 1.69 | .04 | 1229.92 | .00 | 2.05 | .00 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
53.880 | .0019 | | | | | .0001 | .01 | 7.27 | .00 | 2.32 | .013 | .00 | .00 | PIPE
5780.250 | 1222.700 | 7.180 | 1229.880 | 65.00 | 1.69 | .04 | 1229.92 | .00 | 2.05 | .00 | 7.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
138.862 | .0014 | | | | | .0001 | .01 | 7.18 | .00 | 2.49 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5919.112 | 1222.895 | 7.000 | 1229.895 | 65.00 | 1.69 | .04 | 1229.94 | .00 | 2.05 | .00 | 7.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
303.468 | .0014 |      |      |      |      |      | .0001 | .03 | 7.00 | .00 | 2.49 | .013 | .00 | .00 | PIPE
6222.580 | 1223.320 | 6.601 | 1229.921 | 65.00 | 1.73 | .05 | 1229.97 | .00 | 2.05 | 3.25 | 7.000 | .000 | .00 | 1 | .0
TRANS STR | .0019 |      |      |      |      |      | .0002 | .05 | 6.60 | .09 | .013 | .00 | .00 | PIPE
6543.170 | 1223.940 | 6.004 | 1229.944 | 65.00 | 2.30 | .08 | 1230.03 | .00 | 2.15 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0002 | .00 | 6.00 | .00 | 2.59 | .013 | .00 | .00 | PIPE
6546.356 | 1223.945 | 6.000 | 1229.945 | 65.00 | 2.30 | .08 | 1230.03 | .00 | 2.15 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0002 | .01 | 6.00 | .00 | 2.59 | .013 | .00 | .00 | PIPE
6594.010 | 1224.020 | 5.935 | 1229.955 | 65.00 | 2.30 | .08 | 1230.04 | .00 | 2.15 | 1.25 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0002 | .03 | 5.93 | .09 | 2.10 | .013 | .00 | .00 | PIPE
6750.022 | 1224.550 | 5.429 | 1229.979 | 65.00 | 2.42 | .09 | 1230.07 | .00 | 2.15 | 3.52 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0002 | .02 | 5.43 | .15 | 2.10 | .013 | .00 | .00 | PIPE
6847.632 | 1224.882 | 5.109 | 1229.991 | 65.00 | 2.53 | .10 | 1230.09 | .00 | 2.15 | 4.27 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0002 | .02 | 5.11 | .18 | 2.10 | .013 | .00 | .00 | PIPE
6928.104 | 1225.155 | 4.844 | 1230.000 | 65.00 | 2.66 | .11 | 1230.11 | .00 | 2.15 | 4.73 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0003 | .02 | 4.84 | .21 | 2.10 | .013 | .00 | .00 | PIPE
6998.487 | 1225.394 | 4.612 | 1230.007 | 65.00 | 2.79 | .12 | 1230.13 | .00 | 2.15 | 5.06 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      | .0003 | .02 | 4.61 | .23 | 2.10 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7061.833 | 1225.610 | 4.403 | 1230.013 | 65.00 | 2.92 | .13 | 1230.15 | .00 | 2.15 | 5.30 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 17.708 | .0034 |      |      |      |      | .0003 | .01 | 4.40 | .25 | 2.10 | .013 | .00 | .00 | PIPE
7079.540 | 1225.670 | 4.344 | 1230.014 | 65.00 | 2.96 | .14 | 1230.15 | .00 | 2.15 | 5.36 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
TRANS STR | .0541 |      |      |      |      |      |      |      |      |      | .013 | .00 | .00 | PIPE
7113.170 | 1227.490 | 2.346 | 1229.836 | 65.00 | 7.75 | .93 | 1230.77 | .00 | 2.35 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 1.787 | .0001 |      |      |      |      | .0036 | .01 | 2.35 | 1.00 | 4.50 | .013 | .00 | .00 | PIPE
7114.957 | 1227.490 | 2.437 | 1229.927 | 65.00 | 7.39 | .85 | 1230.78 | .00 | 2.35 | 4.48 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 6.095 | .0001 |      |      |      |      | .0032 | .02 | 2.44 | .93 | 4.50 | .013 | .00 | .00 | PIPE
7121.051 | 1227.491 | 2.533 | 1230.024 | 65.00 | 7.05 | .77 | 1230.79 | .00 | 2.35 | 4.46 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 11.460 | .0001 |      |      |      |      | .0028 | .03 | 2.53 | .86 | 4.50 | .013 | .00 | .00 | PIPE
7132.512 | 1227.491 | 2.634 | 1230.126 | 65.00 | 6.72 | .70 | 1230.83 | .00 | 2.35 | 4.43 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 18.069 | .0001 |      |      |      |      | .0025 | .04 | 2.63 | .80 | 4.50 | .013 | .00 | .00 | PIPE
7150.581 | 1227.493 | 2.741 | 1230.234 | 65.00 | 6.41 | .64 | 1230.87 | .00 | 2.35 | 4.39 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 26.363 | .0001 |      |      |      |      | .0022 | .06 | 2.74 | .74 | 4.50 | .013 | .00 | .00 | PIPE
7176.944 | 1227.495 | 2.855 | 1230.349 | 65.00 | 6.11 | .58 | 1230.93 | .00 | 2.35 | 4.33 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 36.604 | .0001 |      |      |      |      | .0019 | .07 | 2.85 | .69 | 4.50 | .013 | .00 | .00 | PIPE
7213.549 | 1227.497 | 2.975 | 1230.473 | 65.00 | 5.82 | .53 | 1231.00 | .00 | 2.35 | 4.26 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 36.451 | .0001 |      |      |      |      | .0017 | .06 | 2.98 | .63 | 4.50 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:46:28

REDLANDS MASTER PLAN NAD88 DATUM CAPACITY ANALYSIS

0

SD 4-5 ALABAMA ST FROM SANTA ANA RIVER TO ALMOND AVE

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth  | Width  | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      | SF Ave | HF  | SE Dpth | Froude N | Norm Dp | "N"  | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7250.000 | 1227.500 | 3.073 | 1230.573 | 65.00 | 5.62 | .49 | 1231.06 | .03 | 2.35 | 4.19 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
65.889 | .0002 |      |      |      |      | .0016 | .10 | 3.10 | .60 | 4.50 | .013 | .00 | .00 | PIPE
7315.889 | 1227.512 | 3.210 | 1230.722 | 65.00 | 5.36 | .45 | 1231.17 | .02 | 2.35 | 4.07 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
48.341 | .0002 |      |      |      |      | .0014 | .07 | 3.23 | .55 | 4.50 | .013 | .00 | .00 | PIPE
7364.230 | 1227.520 | 3.295 | 1230.815 | 65.00 | 5.21 | .42 | 1231.24 | .00 | 2.35 | 3.98 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
94.651 | .0000 |      |      |      |      | .0013 | .12 | 3.30 | .52 | .00 | .013 | .00 | .00 | PIPE
7458.881 | 1227.520 | 3.460 | 1230.980 | 65.00 | 4.95 | .38 | 1231.36 | .00 | 2.35 | 3.79 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
117.180 | .0000 |      |      |      |      | .0012 | .14 | 3.46 | .47 | .00 | .013 | .00 | .00 | PIPE
7576.061 | 1227.520 | 3.633 | 1231.153 | 65.00 | 4.72 | .35 | 1231.50 | .00 | 2.35 | 3.55 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
141.454 | .0000 |      |      |      |      | .0011 | .15 | 3.63 | .42 | .00 | .013 | .00 | .00 | PIPE
7717.515 | 1227.520 | 3.815 | 1231.335 | 65.00 | 4.52 | .32 | 1231.65 | .00 | 2.35 | 3.23 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.255 | .0000 |      |      |      |      | .0010 | .01 | 3.81 | .38 | .00 | .013 | .00 | .00 | PIPE
7729.770 | 1227.520 | 3.830 | 1231.350 | 65.00 | 4.51 | .32 | 1231.67 | .00 | 2.35 | 3.20 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	2	2	0	.000	3.000	6.000		.00														
CD	3	4	1		4.750																	
CD	4	4	1		3.500																	
CD	5	4	1		4.750																	
CD	6	4	1		3.500																	
CD	7	4	1		4.750																	
CD	8	4	1		3.250																	
CD	10	4	1		1.500																	
CD	11	4	1		4.750																	
CD	12	4	1		5.500																	
CD	13	4	1		3.500																	
CD	15	4	1		2.500																	
CD	16	4	1		5.500																	

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

HEADING LINE NO 2 IS - SD 4-7 LUGONIA ST

HEADING LINE NO 3 IS - FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 1	IS	A	SYSTEM	OUTLET	U/S DATA	3306.240	1272.710	2	1278.000				
ELEMENT NO 2	IS	A	REACH		U/S DATA	3416.820	1273.260	2		.014			
ELEMENT NO 3	IS	A	JUNCTION		U/S DATA	3423.320	1273.300	3					
ELEMENT NO 4	IS	A	REACH		U/S DATA	3557.230	1275.120	3					
ELEMENT NO 5	IS	A	JUNCTION		U/S DATA	3567.230	1275.250	5					
ELEMENT NO 6	IS	A	REACH		U/S DATA	4222.330	1283.900	5					
ELEMENT NO 7	IS	A	REACH		U/S DATA	4651.020	1289.470	5					
ELEMENT NO 8	IS	A	JUNCTION		U/S DATA	4661.020	1289.600	7					

ELEMENT NO	9	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N				RADIUS	ANGLE	ANG PT	MAN H								
			4665.020	1289.660	7	.013				.000	.000	.000	0								
ELEMENT NO	10	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N				RADIUS	ANGLE	ANG PT	MAN H								
			4803.880	1291.010	7	.013				.000	.000	.000	0								
ELEMENT NO	11	IS A JUNCTION	*	*	*																
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4							
			4815.000	1291.150	10	8	0	.013	6.430	.000	1291.800	.000	45.000	.000							
											RADIUS	ANGLE									
											.000	.000									
ELEMENT NO	12	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			4900.000	1295.340	10	.013					.000	.000	.000	1							
ELEMENT NO	13	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			5750.000	1303.760	10	.013					.000	.000	.000	1							
ELEMENT NO	14	IS A TRANSITION	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE									
			5760.750	1304.030	11	.013					.000	.000									
ELEMENT NO	15	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			5915.000	1305.860	11	.013					.000	.000	.000	0							
ELEMENT NO	16	IS A TRANSITION	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE									
			5923.000	1306.090	12	.013					.000	.000									
ELEMENT NO	17	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			5938.850	1306.170	12	.013					.000	.000	.000	0							
ELEMENT NO	18	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			6013.310	1306.570	12	.013					47.678	89.480	.000	0							
ELEMENT NO	19	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			6630.800	1309.650	12	.013					.000	.000	.000	1							
ELEMENT NO	20	IS A JUNCTION	*	*	*																
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4							
			6638.800	1309.670	16	13	15	.013	4.290	4.290	1313.190	1313.820	60.000	-45.000							
											RADIUS	ANGLE									
											.000	.000									
																PAGE NO		4			
W S P G W																					
WATER SURFACE PROFILE - ELEMENT CARD LISTING																					
ELEMENT NO	21	IS A REACH	*	*	*																
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H							
			6650.000	1309.750	16	.013					.000	.000	.000	0							
ELEMENT NO	22	IS A SYSTEM HEADWORKS	*		*																
		U/S DATA	STATION	INVERT	SECT						W S ELEV										
			6650.000	1309.750	16						.000										

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY
SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ or I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
3306.240	1272.710	5.290	1278.000	213.73	6.73	.70	1278.70	.00	3.40	6.00	3.000	6.000	.00	0 .0
55.373	.0050					.0018	.10	5.29	.52	3.47	.014	.00	.00	RECTANG
3361.613	1272.985	5.044	1278.029	213.73	7.06	.77	1278.80	.00	3.40	6.00	3.000	6.000	.00	0 .0
2.747	.0050					.0019	.01	5.04	.55	3.47	.014	.00	.00	RECTANG
3364.360	1272.999	5.032	1278.031	213.73	7.08	.78	1278.81	.00	3.40	6.00	3.000	6.000	.00	0 .0
HYDRAULIC JUMP														
3364.360	1272.999	2.173	1275.172	213.73	16.39	4.17	1279.35	.00	3.40	6.00	3.000	6.000	.00	0 .0
8.090	.0050					.0179	.14	2.17	1.96	3.47	.014	.00	.00	RECTANG
3372.450	1273.039	2.139	1275.179	213.73	16.65	4.31	1279.48	.00	3.40	6.00	3.000	6.000	.00	0 .0
22.630	.0050					.0196	.44	2.14	2.01	3.47	.014	.00	.00	RECTANG
3395.080	1273.152	2.040	1275.192	213.73	17.46	4.74	1279.93	.00	3.40	6.00	3.000	6.000	.00	0 .0
21.740	.0050					.0224	.49	2.04	2.15	3.47	.014	.00	.00	RECTANG
3416.820	1273.260	1.945	1275.205	213.73	18.32	5.21	1280.41	.00	3.40	6.00	3.000	6.000	.00	0 .0
JUNCT STR	.0062					.0161	.10	1.94	2.31		.013	.00	.00	RECTANG
----- WARNING - Junction Analysis - Change in Channel Type -----														
3423.320	1273.300	3.429	1276.729	213.73	15.60	3.78	1280.51	.00	4.16	4.26	4.750	.000	.00	1 .0
64.600	.0136					.0112	.72	3.43	1.53	3.23	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width  | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3487.920 | 1274.178 | 3.562 | 1277.740 | 213.73 | 14.99 | 3.49 | 1281.23 | .00 | 4.16 | 4.11 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
41.427 | .0136 |      |      |      |      |      | .0101 | .42 | 3.56 | 1.42 | 3.23 | .013 | .00 | .00 | PIPE
3529.347 | 1274.741 | 3.736 | 1278.477 | 213.73 | 14.30 | 3.17 | 1281.65 | .00 | 4.16 | 3.89 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.097 | .0136 |      |      |      |      |      | .0091 | .19 | 3.74 | 1.29 | 3.23 | .013 | .00 | .00 | PIPE
3550.444 | 1275.028 | 3.930 | 1278.958 | 213.73 | 13.63 | 2.89 | 1281.84 | .00 | 4.16 | 3.59 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.786 | .0136 |      |      |      |      |      | .0084 | .06 | 3.93 | 1.15 | 3.23 | .013 | .00 | .00 | PIPE
3557.230 | 1275.120 | 4.158 | 1279.278 | 213.73 | 12.99 | 2.62 | 1281.90 | .00 | 4.16 | 3.14 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0130 |      |      |      |      |      | .0049 | .05 | 4.16 | 1.00 |      | .013 | .00 | .00 | PIPE
3567.230 | 1275.250 | 6.300 | 1281.550 | 93.73 | 5.29 | .43 | 1281.98 | .00 | 2.79 | .00 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
135.172 | .0132 |      |      |      |      |      | .0017 | .23 | 6.30 | .00 | 1.97 | .013 | .00 | .00 | PIPE
3702.402 | 1277.035 | 4.750 | 1281.785 | 93.73 | 5.29 | .43 | 1282.22 | .00 | 2.79 | .00 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
34.071 | .0132 |      |      |      |      |      | .0016 | .05 | 4.75 | .00 | 1.97 | .013 | .00 | .00 | PIPE
3736.473 | 1277.485 | 4.310 | 1281.794 | 93.73 | 5.55 | .48 | 1282.27 | .00 | 2.79 | 2.76 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.828 | .0132 |      |      |      |      |      | .0015 | .03 | 4.31 | .39 | 1.97 | .013 | .00 | .00 | PIPE
3754.301 | 1277.720 | 4.054 | 1281.774 | 93.73 | 5.82 | .53 | 1282.30 | .00 | 2.79 | 3.36 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.472 | .0132 |      |      |      |      |      | .0017 | .02 | 4.05 | .47 | 1.97 | .013 | .00 | .00 | PIPE
3765.773 | 1277.871 | 3.879 | 1281.751 | 93.73 | 6.05 | .57 | 1282.32 | .00 | 2.79 | 3.68 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
|-| Elev |-| (FT) |-| Elev |-| (CFS) |-| (FPS) |-| Head |-| Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3765.773 | 1277.871 | 1.967 | 1279.839 | 93.73 | 13.52 | 2.84 | 1282.68 | .00 | 2.79 | 4.68 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
224.034 | .0132 | | | | | | .0132 | 2.96 | 1.97 | 1.96 | 1.97 | .013 | .00 | .00 | PIPE
3989.807 | 1280.830 | 1.967 | 1282.797 | 93.73 | 13.52 | 2.84 | 1285.63 | .00 | 2.79 | 4.68 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
232.523 | .0132 | | | | | | .0130 | 3.03 | 1.97 | 1.96 | 1.97 | .013 | .00 | .00 | PIPE
4222.331 | 1283.900 | 1.981 | 1285.881 | 93.73 | 13.40 | 2.79 | 1288.67 | .00 | 2.79 | 4.68 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
136.324 | .0130 | | | | | | .0127 | 1.74 | 1.98 | 1.93 | 1.98 | .013 | .00 | .00 | PIPE
4358.654 | 1285.671 | 1.994 | 1287.666 | 93.73 | 13.28 | 2.74 | 1290.40 | .00 | 2.79 | 4.69 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
148.781 | .0130 | | | | | | .0118 | 1.76 | 1.99 | 1.91 | 1.98 | .013 | .00 | .00 | PIPE
4507.436 | 1287.604 | 2.067 | 1289.672 | 93.73 | 12.66 | 2.49 | 1292.16 | .00 | 2.79 | 4.71 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
57.284 | .0130 | | | | | | .0104 | .59 | 2.07 | 1.78 | 1.98 | .013 | .00 | .00 | PIPE
4564.720 | 1288.349 | 2.144 | 1290.493 | 93.73 | 12.07 | 2.26 | 1292.76 | .00 | 2.79 | 4.73 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
32.457 | .0130 | | | | | | .0091 | .30 | 2.14 | 1.66 | 1.98 | .013 | .00 | .00 | PIPE
4597.177 | 1288.771 | 2.224 | 1290.995 | 93.73 | 11.51 | 2.06 | 1293.05 | .00 | 2.79 | 4.74 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
20.772 | .0130 | | | | | | .0080 | .17 | 2.22 | 1.55 | 1.98 | .013 | .00 | .00 | PIPE
4617.949 | 1289.040 | 2.308 | 1291.348 | 93.73 | 10.97 | 1.87 | 1293.22 | .00 | 2.79 | 4.75 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
13.878 | .0130 | | | | | | .0071 | .10 | 2.31 | 1.44 | 1.98 | .013 | .00 | .00 | PIPE
4631.827 | 1289.221 | 2.396 | 1291.616 | 93.73 | 10.46 | 1.70 | 1293.32 | .00 | 2.79 | 4.75 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
9.221 | .0130 | | | | | | .0062 | .06 | 2.40 | 1.34 | 1.98 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4641.048 | 1289.340 | 2.488 | 1291.828 | 93.73 | 9.98 | 1.55 | 1293.37 | .00 | 2.79 | 4.74 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.819 | .0130 |      |      |      |      | .0055 | .03 | 2.49 | 1.25 | 1.98 | .013 | .00 | .00 | PIPE
4646.867 | 1289.416 | 2.584 | 1292.000 | 93.73 | 9.51 | 1.40 | 1293.41 | .00 | 2.79 | 4.73 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.167 | .0130 |      |      |      |      | .0048 | .02 | 2.58 | 1.16 | 1.98 | .013 | .00 | .00 | PIPE
4650.034 | 1289.457 | 2.686 | 1292.143 | 93.73 | 9.07 | 1.28 | 1293.42 | .00 | 2.79 | 4.71 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.986 | .0130 |      |      |      |      | .0043 | .00 | 2.69 | 1.08 | 1.98 | .013 | .00 | .00 | PIPE
4651.020 | 1289.470 | 2.795 | 1292.265 | 93.73 | 8.64 | 1.16 | 1293.42 | .00 | 2.79 | 4.68 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0130 |      |      |      |      | .0021 | .02 | 2.79 | 1.00 |      | .013 | .00 | .00 | PIPE
4661.020 | 1289.600 | 3.810 | 1293.410 | 23.30 | 1.53 | .04 | 1293.45 | .00 | 1.35 | 3.79 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.000 | .0150 |      |      |      |      | .0001 | .00 | 3.81 | .13 | .93 | .013 | .00 | .00 | PIPE
4665.020 | 1289.660 | 3.749 | 1293.409 | 23.30 | 1.55 | .04 | 1293.45 | .00 | 1.35 | 3.87 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.833 | .0097 |      |      |      |      | .0001 | .00 | 3.75 | .14 | 1.03 | .013 | .00 | .00 | PIPE
4682.854 | 1289.833 | 3.574 | 1293.407 | 23.30 | 1.63 | .04 | 1293.45 | .00 | 1.35 | 4.10 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.141 | .0097 |      |      |      |      | .0001 | .00 | 3.57 | .15 | 1.03 | .013 | .00 | .00 | PIPE
4698.995 | 1289.990 | 3.415 | 1293.406 | 23.30 | 1.71 | .05 | 1293.45 | .00 | 1.35 | 4.27 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.819 | .0097 |      |      |      |      | .0001 | .00 | 3.42 | .17 | 1.03 | .013 | .00 | .00 | PIPE
4713.814 | 1290.134 | 3.269 | 1293.403 | 23.30 | 1.79 | .05 | 1293.45 | .00 | 1.35 | 4.40 | 4.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.701 | .0097 |      |      |      |      | .0002 | .00 | 3.27 | .18 | 1.03 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
4727.515	1290.268	3.133	1293.400	23.30	1.88	.05	1293.46	.00	1.35	4.50	4.750	.000	.00	1 .0
12.745	.0097					.0002	.00	3.13	.20	1.03	.013	.00	.00	PIPE
4740.260	1290.391	3.006	1293.397	23.30	1.97	.06	1293.46	.00	1.35	4.58	4.750	.000	.00	1 .0
11.910	.0097					.0002	.00	3.01	.22	1.03	.013	.00	.00	PIPE
4752.170	1290.507	2.887	1293.394	23.30	2.07	.07	1293.46	.00	1.35	4.64	4.750	.000	.00	1 .0
11.174	.0097					.0002	.00	2.89	.23	1.03	.013	.00	.00	PIPE
4763.344	1290.616	2.774	1293.390	23.30	2.17	.07	1293.46	.00	1.35	4.68	4.750	.000	.00	1 .0
10.485	.0097					.0003	.00	2.77	.25	1.03	.013	.00	.00	PIPE
4773.829	1290.718	2.668	1293.385	23.30	2.27	.08	1293.47	.00	1.35	4.71	4.750	.000	.00	1 .0
9.863	.0097					.0003	.00	2.67	.27	1.03	.013	.00	.00	PIPE
4783.692	1290.814	2.567	1293.380	23.30	2.38	.09	1293.47	.00	1.35	4.73	4.750	.000	.00	1 .0
9.287	.0097					.0003	.00	2.57	.29	1.03	.013	.00	.00	PIPE
4792.979	1290.904	2.471	1293.375	23.30	2.50	.10	1293.47	.00	1.35	4.75	4.750	.000	.00	1 .0
8.746	.0097					.0004	.00	2.47	.31	1.03	.013	.00	.00	PIPE
4801.725	1290.989	2.379	1293.369	23.30	2.62	.11	1293.48	.00	1.35	4.75	4.750	.000	.00	1 .0
2.155	.0097					.0004	.00	2.38	.34	1.03	.013	.00	.00	PIPE
4803.880	1291.010	2.357	1293.367	23.30	2.66	.11	1293.48	.00	1.35	4.75	4.750	.000	.00	1 .0
JUNCT STR	.0126													
								2.36	.34		.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4815.000 | 1291.150 | .975 | 1292.125 | 16.87 | 13.87 | 2.99 | 1295.11 | .00 | 1.44 | 1.43 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
22.363 | .0493 |      |      |      |      | .0437 | .98 | .98 | 2.65 | .95 | .013 | .00 | .00 | PIPE
4837.363 | 1292.252 | .997 | 1293.249 | 16.87 | 13.52 | 2.84 | 1296.09 | .00 | 1.44 | 1.42 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.063 | .0493 |      |      |      |      | .0400 | .92 | 1.00 | 2.54 | .95 | .013 | .00 | .00 | PIPE
4860.425 | 1293.389 | 1.041 | 1294.430 | 16.87 | 12.89 | 2.58 | 1297.01 | .00 | 1.44 | 1.38 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.769 | .0493 |      |      |      |      | .0357 | .49 | 1.04 | 2.34 | .95 | .013 | .00 | .00 | PIPE
4874.194 | 1294.068 | 1.088 | 1295.155 | 16.87 | 12.29 | 2.35 | 1297.50 | .00 | 1.44 | 1.34 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.333 | .0493 |      |      |      |      | .0319 | .30 | 1.09 | 2.14 | .95 | .013 | .00 | .00 | PIPE
4883.527 | 1294.528 | 1.139 | 1295.667 | 16.87 | 11.72 | 2.13 | 1297.80 | .00 | 1.44 | 1.28 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.683 | .0493 |      |      |      |      | .0287 | .19 | 1.14 | 1.95 | .95 | .013 | .00 | .00 | PIPE
4890.210 | 1294.857 | 1.195 | 1296.052 | 16.87 | 11.18 | 1.94 | 1297.99 | .00 | 1.44 | 1.21 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.834 | .0493 |      |      |      |      | .0260 | .13 | 1.19 | 1.76 | .95 | .013 | .00 | .00 | PIPE
4895.044 | 1295.096 | 1.259 | 1296.354 | 16.87 | 10.66 | 1.76 | 1298.12 | .00 | 1.44 | 1.10 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.342 | .0493 |      |      |      |      | .0239 | .08 | 1.26 | 1.57 | .95 | .013 | .00 | .00 | PIPE
4898.387 | 1295.260 | 1.334 | 1296.594 | 16.87 | 10.16 | 1.60 | 1298.20 | .00 | 1.44 | .94 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.613 | .0493 |      |      |      |      | .0227 | .04 | 1.33 | 1.35 | .95 | .013 | .00 | .00 | PIPE
4900.000 | 1295.340 | 1.438 | 1296.778 | 16.87 | 9.68 | 1.46 | 1298.23 | .00 | 1.44 | .60 | 1.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.596 | .0099 |      |      |      |      | .0232 | .04 | 1.44 | 1.00 | 1.50 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
|-| Elev |-| (FT) |-| Elev |-| (CFS) |-| (FPS) |-| Head |-| Grd.El. |-| Elev |-| Depth |-| Width |-| Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4901.596 |1295.356| 1.500 |1296.856| 16.87 | 9.55 | 1.42 |1298.27| .00 | 1.44 | .00 | 1.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
848.404 | .0099 | | | | | | .0249 | 21.13 | 1.50 | .00 | 1.50 | .013 | .00 | .00 | PIPE
5750.000 |1303.760| 15.049 |1318.809| 16.87 | 9.55 | 1.42 |1320.22| .00 | 1.44 | .00 | 1.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
TRANS STR | .0251 | | | | | | .0129 | .14 | 15.05 | .00 | .013 | .00 | .00 | PIPE
5760.750 |1304.030| 16.563 |1320.593| 16.87 | .95 | .01 |1320.61| .00 | 1.15 | .00 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
154.250 | .0119 | | | | | | .0001 | .01 | 16.56 | .00 | .84 | .013 | .00 | .00 | PIPE
5915.000 |1305.860| 14.742 |1320.602| 16.87 | .95 | .01 |1320.62| .00 | 1.15 | .00 | 4.750 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
TRANS STR | .0287 | | | | | | .0000 | .00 | 14.74 | .00 | .013 | .00 | .00 | PIPE
5923.000 |1306.090| 14.519 |1320.609| 16.87 | .71 | .01 |1320.62| .00 | 1.10 | .00 | 5.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
15.850 | .0051 | | | | | | .0000 | .00 | 14.52 | .00 | .99 | .013 | .00 | .00 | PIPE
5938.850 |1306.170| 14.439 |1320.609| 16.87 | .71 | .01 |1320.62| .00 | 1.10 | .00 | 5.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
74.460 | .0054 | | | | | | .0000 | .00 | .00 | .00 | .98 | .013 | .00 | .00 | PIPE
6013.310 |1306.570| 14.043 |1320.613| 16.87 | .71 | .01 |1320.62| .00 | 1.10 | .00 | 5.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
617.490 | .0050 | | | | | | .0000 | .02 | 14.04 | .00 | .99 | .013 | .00 | .00 | PIPE
6630.800 |1309.650| 10.979 |1320.629| 16.87 | .71 | .01 |1320.64| .00 | 1.10 | .00 | 5.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
JUNCT STR | .0025 | | | | | | .0000 | .00 | 10.98 | .00 | .013 | .00 | .00 | PIPE
6638.800 |1309.670| 10.966 |1320.636| 8.29 | .35 | .00 |1320.64| .00 | .77 | .00 | 5.500 | .000 | .00 | 1 | .0
|-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-| |-|
11.200 | .0071 | | | | | | .0000 | .00 | 10.97 | .00 | .65 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8:22: 9

REDLANDS MASTERPLAN PROPOSED SD WITH Q25 PER HYDROLOGY CAPACITY

SD 4-7 LUGONIA ST

FROM TENNESSEE ST TO NEW YORK AVE NAD88 DATUM

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope |      |      |      |      | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6650.000 | 1309.750 | 10.886 | 1320.636 | 8.29 | .35 | .00 | 1320.64 | .00 | .77 | .00 | 5.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.000															
CD	2	4	1			1.500															
CD	3	4	1			5.250															
CD	4	4	1			1.500															
CD	6	4	1			1.500															
CD	7	4	1			5.250															
CD	8	4	1			1.500															
CD	9	4	1			1.500															
CD	10	4	1			5.250															
CD	11	4	1			6.500															
CD	12	4	1			3.000															
CD	13	4	1			1.500															
CD	14	4	1			6.000															
CD	15	4	1			1.500															
CD	16	4	1			6.000															
CD	17	4	1			3.000															
CD	18	4	1			1.500															
CD	19	4	1			5.500															
CD	20	4	1			5.250															
CD	21	4	1			3.000															
CD	22	4	1			5.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTERPLAN CAPACITY ANALYSIS NAD88 DATUM
 HEADING LINE NO 2 IS - CHURCH ST FROM SANTA ANA RIVER TO PENNSYLVANIA AVE
 HEADING LINE NO 3 IS - BY DMALOTT JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	TYPE	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	RADIUS	ANGLE	ANG PT	MAN H	
1	A	SYSTEM OUTLET																		
			U/S DATA																	
				-5270.100	1332.670	1										1348.170				
2	A	REACH							N											
			U/S DATA																	
				-4938.100	1359.070	1			.013							.000	.000	.000	0	
3	A	JUNCTION																		
			U/S DATA																	
				-4934.100	1359.360	3		2	0	.013	20.000	.000	1366.970	.000	.000	.000	.000	.000	.000	
																.000	.000			
4	A	REACH							N											
			U/S DATA																	
				-4823.100	1364.670	3			.013							.000	.000	.000	0	
5	A	JUNCTION																		
			U/S DATA																	
				-4815.100	1366.670	10		8	9	.013	20.000	20.000	1368.150	1367.410	-45.000	45.000				
																.000	.000			
6	A	REACH							N											
			U/S DATA																	
				-4221.100	1373.530	10			.013							.000	.000	.000	0	
7	A	TRANSITION																		
			U/S DATA																	
									N							RADIUS	ANGLE			

ELEMENT NO	8	IS A REACH	-4215.600	1373.550	11					.013			.000	.000				
		U/S DATA	STATION	INVERT	SECT					N			RADIUS	ANGLE	ANG PT	MAN H		
			-3685.180	1375.660	11					.013			.000	.000	.000	0		
ELEMENT NO	9	IS A JUNCTION																
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4				
			-3030.010	1376.200	14	12	13	.013	20.000	20.000	1377.410	1378.890	-45.000	45.000				
											RADIUS	ANGLE						
											.000	.000						
W S P G W																		
WATER SURFACE PROFILE - ELEMENT CARD LISTING																		
ELEMENT NO	10	IS A REACH																
		U/S DATA	STATION	INVERT	SECT			N					RADIUS	ANGLE	ANG PT	MAN H		
			-3024.510	1378.790	14			.013					.000	.000	.000	2		
ELEMENT NO	11	IS A JUNCTION																
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4				
			-3018.510	1378.830	16	15	0	.013	30.000	.000	1381.540	.000	45.000	.000				
											RADIUS	ANGLE						
											.000	.000						
ELEMENT NO	12	IS A REACH																
		U/S DATA	STATION	INVERT	SECT			N					RADIUS	ANGLE	ANG PT	MAN H		
			-2375.350	1381.400	16			.013					.000	.000	.000	0		
ELEMENT NO	13	IS A JUNCTION																
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4				
			-2367.350	1382.900	19	17	18	.013	40.000	40.000	1382.900	1384.960	-45.000	45.000				
											RADIUS	ANGLE						
											.000	.000						
ELEMENT NO	14	IS A REACH																
		U/S DATA	STATION	INVERT	SECT			N					RADIUS	ANGLE	ANG PT	MAN H		
			-1712.180	1384.560	19			.013					.000	.000	.000	1		
ELEMENT NO	15	IS A TRANSITION																
		U/S DATA	STATION	INVERT	SECT			N					RADIUS	ANGLE				
			-1706.680	1384.830	20			.013					.000	.000				
ELEMENT NO	16	IS A REACH																
		U/S DATA	STATION	INVERT	SECT			N					RADIUS	ANGLE	ANG PT	MAN H		
			-1043.520	1387.480	20			.013					.000	.000	.000	0		
ELEMENT NO	17	IS A JUNCTION																
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4				
			-1035.520	1387.750	22	21	0	.013	90.000	.000	1388.610	.000	60.000	.000				
											RADIUS	ANGLE						
											.000	.000						
W S P G W																		
WATER SURFACE PROFILE - ELEMENT CARD LISTING																		
ELEMENT NO	18	IS A REACH																
		U/S DATA	STATION	INVERT	SECT			N					RADIUS	ANGLE	ANG PT	MAN H		
			-950.000	1388.090	22			.013					.000	.000	.000	2		
ELEMENT NO	19	IS A SYSTEM HEADWORKS																
		U/S DATA	STATION	INVERT	SECT								W S ELEV					
			-950.000	1388.090	22								.000					

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 8: 3:28

REDLANDS MASTERPLAN CAPACITY ANALYSIS NAD88 DATUM
CHURCH ST FROM SANTA ANA RIVER TO PENNSYLVANIA AVE
BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
-5270.100 | 1332.670 | 15.500 | 1348.170 | 360.00 | 28.65 | 12.74 | 1360.91 | .00 | 3.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      332.000 | .0795 | | | | | | .0628 | 20.85 | 15.50 | .00 | 2.94 | .013 | .00 | .00 | PIPE
-4938.100 | 1359.070 | 9.953 | 1369.023 | 360.00 | 28.65 | 12.74 | 1381.77 | .00 | 3.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      JUNCT STR | .0725 | | | | | | .0380 | .15 | 9.95 | .00 | .013 | .00 | .00 | PIPE
-4934.100 | 1359.360 | 18.843 | 1378.203 | 340.00 | 15.71 | 3.83 | 1382.03 | .00 | 4.91 | .00 | 5.250 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      111.000 | .0478 | | | | | | .0131 | 1.46 | 18.84 | .00 | 2.70 | .013 | .00 | .00 | PIPE
-4823.100 | 1364.670 | 14.992 | 1379.662 | 340.00 | 15.71 | 3.83 | 1383.49 | .00 | 4.91 | .00 | 5.250 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      JUNCT STR | .2500 | | | | | | .0117 | .09 | 14.99 | .00 | .013 | .00 | .00 | PIPE
-4815.100 | 1366.670 | 14.322 | 1380.992 | 300.00 | 13.86 | 2.98 | 1383.97 | .00 | 4.74 | .00 | 5.250 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      594.000 | .0115 | | | | | | .0102 | 6.08 | 14.32 | .00 | 4.05 | .013 | .00 | .00 | PIPE
-4221.100 | 1373.530 | 13.538 | 1387.068 | 300.00 | 13.86 | 2.98 | 1390.05 | .00 | 4.74 | .00 | 5.250 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      TRANS STR | .0036 | | | | | | .0068 | .04 | 13.54 | .00 | .013 | .00 | .00 | PIPE
-4215.600 | 1373.550 | 15.479 | 1389.029 | 300.00 | 9.04 | 1.27 | 1390.30 | .00 | 4.65 | .00 | 6.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      530.420 | .0040 | | | | | | .0033 | 1.74 | 15.48 | .00 | 4.85 | .013 | .00 | .00 | PIPE
-3685.180 | 1375.660 | 15.106 | 1390.766 | 300.00 | 9.04 | 1.27 | 1392.04 | .00 | 4.65 | .00 | 6.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      JUNCT STR | .0008 | | | | | | .0035 | 2.31 | 15.11 | .00 | .013 | .00 | .00 | PIPE
-3030.010 | 1376.200 | 16.996 | 1393.196 | 260.00 | 9.20 | 1.31 | 1394.51 | .00 | 4.42 | .00 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      5.500 | .4709 | | | | | | .0038 | .02 | 17.00 | .00 | 1.21 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373
 WATER SURFACE PROFILE LISTING
 REDLANDS MASTERPLAN CAPACITY ANALYSIS NAD88 DATUM
 CHURCH ST FROM SANTA ANA RIVER TO PENNSYLVANIA AVE
 BY DMALOTT JN:136769 APRIL 2014

Date: 4-17-2014 Time: 8: 3:28

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
  | Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
-3024.510 | 1378.790 | 14.558 | 1393.348 | 260.00 | 9.20 | 1.31 | 1394.66 | .00 | 4.42 | .00 | 6.000 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
JUNCT STR | .0067 | | | | | | .0034 | .02 | 14.56 | .00 | .013 | .00 | .00 | PIPE
-3018.510 | 1378.830 | 14.824 | 1393.654 | 230.00 | 8.13 | 1.03 | 1394.68 | .00 | 4.15 | .00 | 6.000 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
 643.160 | .0040 | | | | | | .0029 | 1.90 | 14.82 | .00 | 4.28 | .013 | .00 | .00 | PIPE
-2375.350 | 1381.400 | 14.151 | 1395.551 | 230.00 | 8.13 | 1.03 | 1396.58 | .00 | 4.15 | .00 | 6.000 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
JUNCT STR | .1875 | | | | | | .0025 | .02 | 14.15 | .00 | .013 | .00 | .00 | PIPE
-2367.350 | 1382.900 | 13.079 | 1395.979 | 150.00 | 6.31 | .62 | 1396.60 | .00 | 3.42 | .00 | 5.500 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
 655.170 | .0025 | | | | | | .0020 | 1.31 | 13.08 | .00 | 4.03 | .013 | .00 | .00 | PIPE
-1712.180 | 1384.560 | 12.757 | 1397.317 | 150.00 | 6.31 | .62 | 1397.94 | .00 | 3.42 | .00 | 5.500 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
TRANS STR | .0491 | | | | | | .0023 | .01 | 12.76 | .00 | .013 | .00 | .00 | PIPE
-1706.680 | 1384.830 | 12.398 | 1397.228 | 150.00 | 6.93 | .75 | 1397.97 | .00 | 3.46 | .00 | 5.250 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
 663.160 | .0040 | | | | | | .0026 | 1.70 | 12.40 | .00 | 3.55 | .013 | .00 | .00 | PIPE
-1043.520 | 1387.480 | 11.444 | 1398.924 | 150.00 | 6.93 | .75 | 1399.67 | .00 | 3.46 | .00 | 5.250 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
JUNCT STR | .0338 | | | | | | .0015 | .01 | 11.44 | .00 | .013 | .00 | .00 | PIPE
-1035.520 | 1387.750 | 11.787 | 1399.537 | 60.00 | 3.06 | .14 | 1399.68 | .00 | 2.18 | .00 | 5.000 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
 85.520 | .0040 | | | | | | .0005 | .05 | 11.79 | .00 | 2.09 | .013 | .00 | .00 | PIPE
-950.000 | 1388.090 | 11.507 | 1399.597 | 60.00 | 3.06 | .14 | 1399.74 | .00 | 2.18 | .00 | 5.000 | .000 | .00 | 1 | .0
  | | | | | | | | | | | | | | | | |
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1				.500														
CD	2	4	1				3.000														
CD	3	4	1				5.500														
CD	4	4	1				2.000														
CD	5	4	1				2.000														
CD	6	4	1				4.500														
CD	7	4	1				2.000														
CD	8	4	1				4.500														
CD	9	4	1				2.000														
CD	10	4	1				2.000														
CD	11	4	1				3.000														
CD	12	4	1				2.000														
CD	13	4	1				1.500														
CD	14	4	1				3.000														

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-10 JUDSON ST FROM PIONEER AVE TO LUGONIA AVE

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 2

ELEMENT NO	IS	TYPE	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A SYSTEM OUTLET	-4550.000	1458.670	1	1464.170				
2	IS	A REACH	-3679.000	1459.620	1		.000	.000	.000	0
3	IS	A JUNCTION	-3671.000	1459.670	3					
4	IS	A REACH	-3602.000	1460.350	3		.000	.000	.000	0
5	IS	A JUNCTION	-3598.000	1460.970	6					
6	IS	A REACH	-3293.620	1463.680	6		.000	.000	.000	0
7	IS	A JUNCTION	-3286.620	1463.720	8					
8	IS	A REACH	-2272.000	1477.800	8		.000	.000	.000	3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	9	IS A	JUNCTION	*	*	*	*													
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4					
				-2268.000	1478.550	11	9	10	.013	.440	40.440	1479.050	1479.050	-45.000	45.000					
												RADIUS	ANGLE							
												.000	.000							
ELEMENT NO	10	IS A	REACH	*	*	*														
			U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H					
				-1845.960	1482.940	11			.013			.000	.000	.000	1					
ELEMENT NO	11	IS A	REACH	*	*	*														
			U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H					
				-1651.010	1484.880	11			.013			.000	.000	.000	0					
ELEMENT NO	12	IS A	JUNCTION	*	*	*	*	*												
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4					
				-1641.500	1484.980	14	12	13	.013	.770	138.770	1485.480	1485.480	45.000	45.000					
												RADIUS	ANGLE							
												.000	.000							
ELEMENT NO	13	IS A	REACH	*	*	*														
			U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H					
				-989.520	1491.740	14			.013			.000	.000	.000	3					
ELEMENT NO	14	IS A	SYSTEM HEADWORKS			*														
			U/S DATA	STATION	INVERT	SECT						W S ELEV								
				-989.520	1491.740	14						.000								

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:41:46

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-10 JUDSON ST FROM PIONEER AVE TO LUGONIA AVE
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
-1845.960 | 1482.940 | ***** | ***** | 140.31 | 19.85 | 6.12 | ***** | .00 | 2.97 | .00 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
      | 194.950 | .0100 | | | | | .0443 | 8.63 | ***** | .00 | 3.00 | .013 | .00 | .00 | PIPE
-1651.010 | 1484.880 | ***** | ***** | 140.31 | 19.85 | 6.12 | ***** | .00 | 2.97 | .00 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
JUNCT STR | .0105 | | | | | | .0221 | .21 | ***** | .00 | .013 | .00 | .00 | PIPE
-1641.500 | 1484.980 | ***** | ***** | .77 | .11 | .00 | ***** | .00 | .27 | .00 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
      | 651.980 | .0104 | | | | | .0000 | .00 | ***** | .00 | .22 | .013 | .00 | .00 | PIPE
-989.520 | 1491.740 | ***** | ***** | .77 | .11 | .00 | ***** | .00 | .27 | .00 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			5.000														
CD	2	4	1			3.000														
CD	3	4	1			4.000														
CD	4	4	1			2.000														
CD	5	4	1			3.500														
CD	6	4	1			2.250														
CD	7	4	1			3.500														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-17E PARALLEL TO LUGONIA FROM MISSION CHANNEL TO BRYN MAWR AVE

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 2

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV												
1	IS	A	SYSTEM OUTLET		877.000	1107.670	1	1118.000												
2	IS	A	REACH		997.250	1109.770	1													
3	IS	A	JUNCTION		1002.750	1110.270	3													
4	IS	A	REACH		1023.500	1110.850	3													
5	IS	A	REACH		1039.430	1111.300	3													
6	IS	A	REACH		1280.440	1118.070	3													
7	IS	A	JUNCTION		1285.940	1118.570	5													
8	IS	A	REACH		1835.360	1123.350	5													
9	IS	A	JUNCTION		1840.860	1123.430	7													

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 3

ELEMENT NO	IS	A	SYSTEM HEADWORKS	U/S DATA	STATION	INVERT	SECT	W S ELEV
10	IS	A	SYSTEM HEADWORKS		1840.860	1123.430	7	.000

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 6: 4:25

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-17E PARALLEL TO LUGONIA FROM MISSION CHANNEL TO BRYN MAWR AVE
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      877.000 | 1107.670 | 10.330 | 1118.000 | 166.00 | 8.45 | 1.11 | 1119.11 | .00 | 3.69 | .00 | 5.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      120.250 | .0175 |        |        |        |        |        | .0041 | .49 | 10.33 | .00 | 2.45 | .013 | .00 | .00 | PIPE
      997.250 | 1109.770 | 8.718 | 1118.489 | 166.00 | 8.45 | 1.11 | 1119.60 | .00 | 3.69 | .00 | 5.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
    JUNCT STR | .0909 |        |        |        |        |        | .0053 | .03 | .00 | .00 | .013 | .00 | .00 | .00 | PIPE
      1002.750 | 1110.270 | 8.407 | 1118.677 | 116.00 | 9.23 | 1.32 | 1120.00 | .00 | 3.25 | .00 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      20.750 | .0279 |        |        |        |        |        | .0065 | .14 | .00 | .00 | 1.96 | .013 | .00 | .00 | PIPE
      1023.500 | 1110.850 | 8.145 | 1118.995 | 116.00 | 9.23 | 1.32 | 1120.32 | .00 | 3.25 | .00 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      15.930 | .0283 |        |        |        |        |        | .0065 | .10 | .00 | .00 | 1.95 | .013 | .00 | .00 | PIPE
      1039.430 | 1111.300 | 7.967 | 1119.267 | 116.00 | 9.23 | 1.32 | 1120.59 | .00 | 3.25 | .00 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      162.814 | .0281 |        |        |        |        |        | .0065 | 1.06 | 7.97 | .00 | 1.96 | .013 | .00 | .00 | PIPE
      1202.244 | 1115.873 | 4.453 | 1120.326 | 116.00 | 9.23 | 1.32 | 1121.65 | .00 | 3.25 | .00 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
    HYDRAULIC JUMP
      1202.244 | 1115.873 | 2.262 | 1118.135 | 116.00 | 15.83 | 3.89 | 1122.03 | .00 | 3.25 | 3.97 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      9.848 | .0281 |        |        |        |        |        | .0170 | .17 | 2.26 | 2.05 | 1.96 | .013 | .00 | .00 | PIPE
      1212.092 | 1116.150 | 2.296 | 1118.446 | 116.00 | 15.54 | 3.75 | 1122.20 | .00 | 3.25 | 3.96 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      19.950 | .0281 |        |        |        |        |        | .0156 | .31 | 2.30 | 1.99 | 1.96 | .013 | .00 | .00 | PIPE
      1232.042 | 1116.711 | 2.388 | 1119.099 | 116.00 | 14.82 | 3.41 | 1122.51 | .00 | 3.25 | 3.92 | 4.000 | .000 | .00 | 1 | .0
      -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
      14.875 | .0281 |        |        |        |        |        | .0138 | .21 | 2.39 | 1.85 | 1.96 | .013 | .00 | .00 | PIPE
    
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			3.000																
CD	2	4	1			5.000																
CD	3	4	1			2.500																
CD	4	4	1			5.000																
CD	5	4	1			2.000																
CD	6	4	1			5.000																
CD	7	4	1			4.500																
CD	11	4	1			3.000																
CD	12	4	1			4.500																
CD	13	4	1			1.500																
CD	14	4	1			3.000																
CD	16	4	1			3.000																
CD	17	4	1			2.500																
CD	18	4	1			3.000																
CD	19	4	1			2.500																
CD	20	4	1			3.000																

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTERPLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

HEADING LINE NO 3 IS - BY DMALOTT JN:136769 APRIL 2014

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 1	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	1159.830				
ELEMENT NO 2	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS													
ELEMENT NO 3	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
ELEMENT NO 4	IS	A	JUNCTION		U/S DATA	STATION	INVERT	SECT					
ELEMENT NO 5	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
ELEMENT NO 6	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
ELEMENT NO 7	IS	A	JUNCTION		U/S DATA	STATION	INVERT	SECT					
ELEMENT NO 8	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					

ELEMENT NO	9	IS A JUNCTION	*	*	*	*		*		*				
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2611.490	1182.420	7	0	0	.013	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE		
											.000	.000		

W S P G W

PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	10	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2650.000	1182.570	7			.013			.000	.000	.000	0
ELEMENT NO	11	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2650.020	1182.570	12	11	0	.013	5.110	.000	1180.650	.000	90.000	.000
											RADIUS	ANGLE		
											.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO	12	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2710.500	1182.830	12			.013			.000	.000	.000	0
ELEMENT NO	13	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2716.500	1183.830	16	13	14	.013	5.110	15.110	1183.910	1182.760	-40.000	80.000
											RADIUS	ANGLE		
											.000	.000		

ELEMENT NO	14	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			2948.500	1188.280	16			.013			.000	.000	.000	0
ELEMENT NO	15	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3050.000	1188.790	16			.013			.000	.000	.000	0
ELEMENT NO	16	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3084.510	1188.960	16			.013			45.000	43.940	.000	0

ELEMENT NO	17	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3101.660	1189.050	16			.013			.000	.000	.000	0
ELEMENT NO	18	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3126.740	1189.310	16			.013			.000	.000	.000	0

W S P G W

PAGE NO 4

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	19	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3161.250	1189.680	16			.013			45.000	-43.940	.000	0
ELEMENT NO	20	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3349.260	1191.940	16			.013			.000	.000	.000	0

ELEMENT NO	21	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			3356.260	1192.180	18	17	0	.013	10.500	.001	189.650	.000	90.000	.000
											RADIUS	ANGLE		
											.000	.000		

ELEMENT NO	22	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			3959.950	1200.930	18			.013			.000	.000	.000	1

ELEMENT NO	23	IS A JUNCTION	*	*	*	*	*		*		*			
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			3967.950	1201.020	20	19	0	.013	10.710	.001	198.560	.000	90.000	.000
											RADIUS	ANGLE		

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1160.000 | 2.624 | 1162.624 | 67.59 | 10.31 | 1.65 | 1164.27 | .00 | 2.62 | 1.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.178 | .0027 |      |      |      |      |      | .0105 | .04 | 2.62 | 1.00 | 3.00 | .014 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.178 | 1160.011 | 2.807 | 1162.818 | 67.59 | 9.83 | 1.50 | 1164.32 | .00 | 2.62 | 1.47 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.800 | .0027 |      |      |      |      |      | .0108 | .15 | 2.81 | .80 | 3.00 | .014 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.978 | 1160.048 | 3.000 | 1163.048 | 67.59 | 9.56 | 1.42 | 1164.47 | .00 | 2.62 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
982.022 | .0027 |      |      |      |      |      | .0116 | 11.41 | 3.00 | .00 | 3.00 | .014 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1000.000 | 1162.650 | 12.094 | 1174.744 | 67.59 | 3.44 | .18 | 1174.93 | .00 | 2.32 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
330.610 | .0150 |      |      |      |      |      | .0007 | .22 | 12.09 | .00 | 1.56 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1330.610 | 1167.610 | 7.366 | 1174.976 | 67.59 | 3.44 | .18 | 1175.16 | .00 | 2.32 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0149 |      |      |      |      |      | .0006 | .01 | 7.37 | .00 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1338.680 | 1167.730 | 7.299 | 1175.029 | 63.04 | 3.21 | .16 | 1175.19 | .00 | 2.24 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
159.368 | .0150 |      |      |      |      |      | .0006 | .09 | 7.30 | .00 | 1.51 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1498.048 | 1170.122 | 5.000 | 1175.122 | 63.04 | 3.21 | .16 | 1175.28 | .00 | 2.24 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
30.859 | .0150 |      |      |      |      |      | .0005 | .02 | 5.00 | .00 | 1.51 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1528.907 | 1170.585 | 4.537 | 1175.122 | 63.04 | 3.37 | .18 | 1175.30 | .00 | 2.24 | 2.90 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.382 | .0150 |      |      |      |      |      | .0005 | .01 | 4.54 | .23 | 1.51 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1546.289 | 1170.846 | 4.267 | 1175.114 | 63.04 | 3.53 | .19 | 1175.31 | .00 | 2.24 | 3.54 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.036 | .0150 |      |      |      |      |      | .0006 | .01 | 4.27 | .28 | 1.51 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1560.325 | 1171.057 | 4.045 | 1175.102 | 63.04 | 3.70 | .21 | 1175.32 | .00 | 2.24 | 3.93 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.038 | .0150 |      |      |      |      | .0006 | .01 | 4.05 | .31 | 1.51 | .013 | .00 | .00 | PIPE
1572.363 | 1171.238 | 3.851 | 1175.089 | 63.04 | 3.88 | .23 | 1175.32 | .00 | 2.24 | 4.21 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.599 | .0150 |      |      |      |      | .0007 | .01 | 3.85 | .35 | 1.51 | .013 | .00 | .00 | PIPE
1582.961 | 1171.397 | 3.676 | 1175.073 | 63.04 | 4.07 | .26 | 1175.33 | .00 | 2.24 | 4.41 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.454 | .0150 |      |      |      |      | .0008 | .01 | 3.68 | .38 | 1.51 | .013 | .00 | .00 | PIPE
1592.416 | 1171.539 | 3.516 | 1175.054 | 63.04 | 4.27 | .28 | 1175.34 | .00 | 2.24 | 4.57 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.479 | .0150 |      |      |      |      | .0009 | .01 | 3.52 | .42 | 1.51 | .013 | .00 | .00 | PIPE
1600.895 | 1171.666 | 3.367 | 1175.033 | 63.04 | 4.48 | .31 | 1175.35 | .00 | 2.24 | 4.69 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.629 | .0150 |      |      |      |      | .0010 | .01 | 3.37 | .46 | 1.51 | .013 | .00 | .00 | PIPE
1608.524 | 1171.781 | 3.229 | 1175.010 | 63.04 | 4.70 | .34 | 1175.35 | .00 | 2.24 | 4.78 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.856 | .0150 |      |      |      |      | .0011 | .00 | 3.23 | .49 | 1.51 | .013 | .00 | .00 | PIPE
1612.380 | 1171.838 | 3.157 | 1174.995 | 63.04 | 4.83 | .36 | 1175.36 | .00 | 2.24 | 4.82 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
1612.380 | 1171.838 | 1.530 | 1173.368 | 63.04 | 12.38 | 2.38 | 1175.75 | .00 | 2.24 | 4.61 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
73.164 | .0150 |      |      |      |      | .0138 | 1.01 | 1.53 | 2.08 | 1.51 | .013 | .00 | .00 | PIPE
1685.544 | 1172.937 | 1.552 | 1174.489 | 63.04 | 12.14 | 2.29 | 1176.78 | .00 | 2.24 | 4.63 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
62.721 | .0150 |      |      |      |      | .0126 | .79 | 1.55 | 2.02 | 1.51 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1748.265 | 1173.878 | 1.606 | 1175.485 | 63.04 | 11.57 | 2.08 | 1177.56 | .00 | 2.24 | 4.67 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.043 | .0150 |      |      |      |      |      | .0110 | .36 | 1.61 | 1.89 | 1.51 | .013 | .00 | .00 | PIPE
1781.309 | 1174.374 | 1.663 | 1176.037 | 63.04 | 11.04 | 1.89 | 1177.93 | .00 | 2.24 | 4.71 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.031 | .0150 |      |      |      |      |      | .0096 | .20 | 1.66 | 1.77 | 1.51 | .013 | .00 | .00 | PIPE
1802.340 | 1174.690 | 1.722 | 1176.412 | 63.04 | 10.52 | 1.72 | 1178.13 | .00 | 2.24 | 4.75 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
110.560 | .0090 |      |      |      |      |      | .0090 | 1.00 | 1.72 | 1.65 | 1.72 | .013 | .00 | .00 | PIPE
1912.900 | 1175.686 | 1.722 | 1177.408 | 63.04 | 10.52 | 1.72 | 1179.13 | .00 | 2.24 | 4.75 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
171.739 | .0090 |      |      |      |      |      | .0086 | 1.47 | 1.72 | 1.65 | 1.72 | .013 | .00 | .00 | PIPE
2084.640 | 1177.232 | 1.770 | 1179.002 | 63.04 | 10.13 | 1.59 | 1180.60 | .00 | 2.24 | 4.78 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
58.799 | .0090 |      |      |      |      |      | .0076 | .45 | 1.77 | 1.57 | 1.72 | .013 | .00 | .00 | PIPE
2143.439 | 1177.762 | 1.833 | 1179.595 | 63.04 | 9.66 | 1.45 | 1181.04 | .00 | 2.24 | 4.82 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
28.296 | .0090 |      |      |      |      |      | .0067 | .19 | 1.83 | 1.46 | 1.72 | .013 | .00 | .00 | PIPE
2171.735 | 1178.016 | 1.899 | 1179.916 | 63.04 | 9.21 | 1.32 | 1181.23 | .00 | 2.24 | 4.85 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.262 | .0090 |      |      |      |      |      | .0059 | .10 | 1.90 | 1.37 | 1.72 | .013 | .00 | .00 | PIPE
2187.997 | 1178.163 | 1.968 | 1180.131 | 63.04 | 8.78 | 1.20 | 1181.33 | .00 | 2.24 | 4.89 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.673 | .0090 |      |      |      |      |      | .0051 | .05 | 1.97 | 1.28 | 1.72 | .013 | .00 | .00 | PIPE
2197.670 | 1178.250 | 2.039 | 1180.289 | 63.04 | 8.37 | 1.09 | 1181.38 | .00 | 2.24 | 4.91 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0086 |      |      |      |      |      | .0069 | .03 | 2.04 | 1.19 |      | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2202.330 | 1178.290 | 1.661 | 1179.951 | 58.78 | 10.31 | 1.65 | 1181.60 | .00 | 2.16 | 4.71 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
38.282 | .0090 | | | | | | .0090 | .34 | 1.66 | 1.65 | 1.66 | .013 | .00 | .00 | PIPE
2240.612 | 1178.634 | 1.661 | 1180.295 | 58.78 | 10.31 | 1.65 | 1181.94 | .00 | 2.16 | 4.71 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
167.169 | .0090 | | | | | | .0091 | 1.51 | 1.66 | 1.65 | 1.66 | .013 | .00 | .00 | PIPE
2407.781 | 1180.134 | 1.653 | 1181.787 | 58.78 | 10.37 | 1.67 | 1183.46 | .00 | 2.16 | 4.70 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
136.631 | .0090 | | | | | | .0098 | 1.34 | 1.65 | 1.67 | 1.66 | .013 | .00 | .00 | PIPE
2544.412 | 1181.360 | 1.597 | 1182.957 | 58.78 | 10.88 | 1.84 | 1184.80 | .00 | 2.16 | 4.66 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
59.008 | .0090 | | | | | | .0112 | .66 | 1.60 | 1.78 | 1.66 | .013 | .00 | .00 | PIPE
2603.420 | 1181.890 | 1.543 | 1183.433 | 58.78 | 11.41 | 2.02 | 1185.45 | .00 | 2.16 | 4.62 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0657 | | | | | | .0079 | .06 | 1.54 | 1.90 | | | .013 | .00 | .00 | PIPE
2611.490 | 1182.420 | 2.194 | 1184.615 | 58.78 | 7.63 | .90 | 1185.52 | .00 | 2.23 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
28.652 | .0039 | | | | | | .0039 | .11 | 2.19 | 1.03 | 2.19 | .013 | .00 | .00 | PIPE
2640.142 | 1182.532 | 2.194 | 1184.726 | 58.78 | 7.63 | .90 | 1185.63 | .00 | 2.23 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
9.858 | .0039 | | | | | | .0038 | .04 | 2.19 | 1.03 | 2.19 | .013 | .00 | .00 | PIPE
2650.000 | 1182.570 | 2.226 | 1184.796 | 58.78 | 7.49 | .87 | 1185.67 | .00 | 2.23 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .0000 | | | | | | .0026 | .00 | 2.23 | 1.00 | | | .013 | .00 | .00 | PIPE
2650.020 | 1182.570 | 2.776 | 1185.346 | 53.67 | 5.21 | .42 | 1185.77 | .00 | 2.12 | 4.38 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
24.880 | .0043 | | | | | | .0016 | .04 | 2.78 | .60 | 2.02 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2674.900 | 1182.677 | 2.668 | 1185.344 | 53.67 | 5.47 | .46 | 1185.81 | .00 | 2.12 | 4.42 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
22.885 | .0043 |      |      |      |      |      | .0018 | .04 | 2.67 | .65 | 2.02 | .013 | .00 | .00 | PIPE
2697.785 | 1182.775 | 2.565 | 1185.340 | 53.67 | 5.73 | .51 | 1185.85 | .00 | 2.12 | 4.46 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.715 | .0043 |      |      |      |      |      | .0020 | .03 | 2.56 | .70 | 2.02 | .013 | .00 | .00 | PIPE
2710.500 | 1182.830 | 2.506 | 1185.336 | 53.67 | 5.90 | .54 | 1185.88 | .00 | 2.12 | 4.47 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1667 |      |      |      |      |      |      |      | 2.51 | .73 |      | .013 | .00 | .00 | PIPE
2716.500 | 1183.830 | 1.253 | 1185.083 | 33.45 | 11.96 | 2.22 | 1187.30 | .00 | 1.88 | 2.96 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
94.665 | .0192 |      |      |      |      |      | .0183 | 1.74 | 1.25 | 2.17 | 1.25 | .013 | .00 | .00 | PIPE
2811.166 | 1185.646 | 1.276 | 1186.921 | 33.45 | 11.68 | 2.12 | 1189.04 | .00 | 1.88 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
57.915 | .0192 |      |      |      |      |      | .0167 | .97 | 1.28 | 2.10 | 1.25 | .013 | .00 | .00 | PIPE
2869.080 | 1186.757 | 1.323 | 1188.079 | 33.45 | 11.14 | 1.93 | 1190.01 | .00 | 1.88 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.798 | .0192 |      |      |      |      |      | .0146 | .41 | 1.32 | 1.95 | 1.25 | .013 | .00 | .00 | PIPE
2896.879 | 1187.290 | 1.372 | 1188.662 | 33.45 | 10.62 | 1.75 | 1190.41 | .00 | 1.88 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.105 | .0192 |      |      |      |      |      | .0129 | .22 | 1.37 | 1.82 | 1.25 | .013 | .00 | .00 | PIPE
2913.984 | 1187.618 | 1.423 | 1189.041 | 33.45 | 10.13 | 1.59 | 1190.63 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.595 | .0192 |      |      |      |      |      | .0113 | .13 | 1.42 | 1.70 | 1.25 | .013 | .00 | .00 | PIPE
2925.579 | 1187.840 | 1.477 | 1189.317 | 33.45 | 9.65 | 1.45 | 1190.76 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.166 | .0192 |      |      |      |      |      | .0100 | .08 | 1.48 | 1.58 | 1.25 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2933.745 | 1187.997 | 1.533 | 1189.530 | 33.45 | 9.21 | 1.32 | 1190.85 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.813 | .0192 |      |      |      |      | .0088 | .05 | 1.53 | 1.47 | 1.25 | .013 | .00 | .00 | PIPE
2939.558 | 1188.109 | 1.592 | 1189.701 | 33.45 | 8.78 | 1.20 | 1190.90 | .00 | 1.88 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.071 | .0192 |      |      |      |      | .0078 | .03 | 1.59 | 1.37 | 1.25 | .013 | .00 | .00 | PIPE
2943.629 | 1188.187 | 1.655 | 1189.841 | 33.45 | 8.37 | 1.09 | 1190.93 | .00 | 1.88 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.695 | .0192 |      |      |      |      | .0068 | .02 | 1.65 | 1.27 | 1.25 | .013 | .00 | .00 | PIPE
2946.323 | 1188.238 | 1.720 | 1189.958 | 33.45 | 7.98 | .99 | 1190.95 | .00 | 1.88 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.573 | .0192 |      |      |      |      | .0060 | .01 | 1.72 | 1.18 | 1.25 | .013 | .00 | .00 | PIPE
2947.897 | 1188.268 | 1.789 | 1190.058 | 33.45 | 7.61 | .90 | 1190.96 | .00 | 1.88 | 2.94 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.603 | .0192 |      |      |      |      | .0053 | .00 | 1.79 | 1.10 | 1.25 | .013 | .00 | .00 | PIPE
2948.500 | 1188.280 | 1.863 | 1190.143 | 33.45 | 7.25 | .82 | 1190.96 | .00 | 1.88 | 2.91 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.346 | .0050 |      |      |      |      | .0050 | .16 | 1.86 | 1.02 | 1.86 | .013 | .00 | .00 | PIPE
2980.846 | 1188.443 | 1.863 | 1190.305 | 33.45 | 7.25 | .82 | 1191.12 | .00 | 1.88 | 2.91 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.508 | .0050 |      |      |      |      | .0050 | .03 | 1.86 | 1.02 | 1.86 | .013 | .00 | .00 | PIPE
2986.354 | 1188.470 | 1.859 | 1190.329 | 33.45 | 7.27 | .82 | 1191.15 | .00 | 1.88 | 2.91 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.237 | .0050 |      |      |      |      | .0054 | .14 | 1.86 | 1.02 | 1.86 | .013 | .00 | .00 | PIPE
3011.591 | 1188.597 | 1.786 | 1190.383 | 33.45 | 7.62 | .90 | 1191.29 | .00 | 1.88 | 2.94 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.148 | .0050 |      |      |      |      | .0061 | .12 | 1.79 | 1.10 | 1.86 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3031.740 | 1188.698 | 1.717 | 1190.415 | 33.45 | 8.00 | .99 | 1191.41 | .00 | 1.88 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.260 | .0050 |      |      |      |      |      | .0069 | .13 | 1.72 | 1.19 | 1.86 | .013 | .00 | .00 | PIPE
3050.000 | 1188.790 | 1.652 | 1190.442 | 33.45 | 8.39 | 1.09 | 1191.53 | .14 | 1.88 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.730 | .0049 |      |      |      |      |      | .0074 | .02 | 1.80 | 1.28 | 1.88 | .013 | .00 | .00 | PIPE
3052.730 | 1188.803 | 1.641 | 1190.445 | 33.45 | 8.45 | 1.11 | 1191.55 | .15 | 1.88 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.303 | .0049 |      |      |      |      |      | .0080 | .13 | 1.79 | 1.29 | 1.88 | .013 | .00 | .00 | PIPE
3069.034 | 1188.884 | 1.580 | 1190.464 | 33.45 | 8.86 | 1.22 | 1191.68 | .16 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.476 | .0049 |      |      |      |      |      | .0090 | .14 | 1.74 | 1.39 | 1.88 | .013 | .00 | .00 | PIPE
3084.510 | 1188.960 | 1.521 | 1190.481 | 33.45 | 9.30 | 1.34 | 1191.82 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.533 | .0053 |      |      |      |      |      | .0097 | .01 | 1.52 | 1.50 | 1.84 | .013 | .00 | .00 | PIPE
3086.043 | 1188.968 | 1.516 | 1190.484 | 33.45 | 9.34 | 1.35 | 1191.84 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.617 | .0053 |      |      |      |      |      | .0104 | .16 | 1.52 | 1.51 | 1.84 | .013 | .00 | .00 | PIPE
3101.660 | 1189.050 | 1.460 | 1190.510 | 33.45 | 9.79 | 1.49 | 1192.00 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.080 | .0104 |      |      |      |      |      | .0112 | .28 | 1.46 | 1.62 | 1.49 | .013 | .00 | .00 | PIPE
3126.740 | 1189.310 | 1.448 | 1190.758 | 33.45 | 9.90 | 1.52 | 1192.28 | .20 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
34.510 | .0107 |      |      |      |      |      | .0116 | .40 | 1.65 | 1.64 | 1.47 | .013 | .00 | .00 | PIPE
3161.250 | 1189.680 | 1.430 | 1191.110 | 33.45 | 10.06 | 1.57 | 1192.68 | .00 | 1.88 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.088 | .0120 |      |      |      |      |      | .0118 | .32 | 1.43 | 1.68 | 1.42 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3364.620 | 1192.301 | 2.415 | 1194.717 | 22.95 | 3.76 | .22 | 1194.94 | .00 | 1.54 | 2.38 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.066 | .0145 |      |      |      |      |      | .0013 | .01 | 2.42 | .41 | 1.10 | .013 | .00 | .00 | PIPE
3371.687 | 1192.404 | 2.300 | 1194.704 | 22.95 | 3.95 | .24 | 1194.95 | .00 | 1.54 | 2.54 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.118 | .0145 |      |      |      |      |      | .0014 | .01 | 2.30 | .46 | 1.10 | .013 | .00 | .00 | PIPE
3377.804 | 1192.492 | 2.196 | 1194.688 | 22.95 | 4.14 | .27 | 1194.95 | .00 | 1.54 | 2.66 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.566 | .0145 |      |      |      |      |      | .0016 | .01 | 2.20 | .51 | 1.10 | .013 | .00 | .00 | PIPE
3382.370 | 1192.558 | 2.111 | 1194.669 | 22.95 | 4.32 | .29 | 1194.96 | .00 | 1.54 | 2.74 | 3.000 | .000 | .00 | 1 | .0
HYDRAULIC JUMP
3382.370 | 1192.558 | 1.098 | 1193.656 | 22.95 | 9.80 | 1.49 | 1195.15 | .00 | 1.54 | 2.89 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
344.797 | .0145 |      |      |      |      |      | .0145 | 5.00 | 1.10 | 1.92 | 1.10 | .013 | .00 | .00 | PIPE
3727.167 | 1197.556 | 1.098 | 1198.654 | 22.95 | 9.80 | 1.49 | 1200.15 | .00 | 1.54 | 2.89 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
108.538 | .0145 |      |      |      |      |      | .0142 | 1.54 | 1.10 | 1.92 | 1.10 | .013 | .00 | .00 | PIPE
3835.706 | 1199.129 | 1.111 | 1200.241 | 22.95 | 9.64 | 1.44 | 1201.68 | .00 | 1.54 | 2.90 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
60.591 | .0145 |      |      |      |      |      | .0130 | .79 | 1.11 | 1.87 | 1.10 | .013 | .00 | .00 | PIPE
3896.297 | 1200.008 | 1.151 | 1201.159 | 22.95 | 9.19 | 1.31 | 1202.47 | .00 | 1.54 | 2.92 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.041 | .0145 |      |      |      |      |      | .0114 | .29 | 1.15 | 1.75 | 1.10 | .013 | .00 | .00 | PIPE
3921.338 | 1200.370 | 1.193 | 1201.563 | 22.95 | 8.76 | 1.19 | 1202.76 | .00 | 1.54 | 2.94 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.433 | .0145 |      |      |      |      |      | .0100 | .14 | 1.19 | 1.63 | 1.10 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3935.771 | 1200.580 | 1.236 | 1201.816 | 22.95 | 8.35 | 1.08 | 1202.90 | .00 | 1.54 | 2.95 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  9.311 | .0145 |      |      |      |      |      | .0088 | .08 | 1.24 | 1.53 | 1.10 | .013 | .00 | .00 | PIPE
3945.082 | 1200.715 | 1.282 | 1201.996 | 22.95 | 7.96 | .98 | 1202.98 | .00 | 1.54 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  6.244 | .0145 |      |      |      |      |      | .0077 | .05 | 1.28 | 1.42 | 1.10 | .013 | .00 | .00 | PIPE
3951.326 | 1200.805 | 1.329 | 1202.134 | 22.95 | 7.59 | .90 | 1203.03 | .00 | 1.54 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  4.147 | .0145 |      |      |      |      |      | .0068 | .03 | 1.33 | 1.33 | 1.10 | .013 | .00 | .00 | PIPE
3955.473 | 1200.865 | 1.378 | 1202.244 | 22.95 | 7.24 | .81 | 1203.06 | .00 | 1.54 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  2.613 | .0145 |      |      |      |      |      | .0060 | .02 | 1.38 | 1.24 | 1.10 | .013 | .00 | .00 | PIPE
3958.087 | 1200.903 | 1.430 | 1202.333 | 22.95 | 6.90 | .74 | 1203.07 | .00 | 1.54 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  1.424 | .0145 |      |      |      |      |      | .0052 | .01 | 1.43 | 1.16 | 1.10 | .013 | .00 | .00 | PIPE
3959.511 | 1200.924 | 1.484 | 1202.408 | 22.95 | 6.58 | .67 | 1203.08 | .00 | 1.54 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
   .439 | .0145 |      |      |      |      |      | .0046 | .00 | 1.48 | 1.08 | 1.10 | .013 | .00 | .00 | PIPE
3959.950 | 1200.930 | 1.542 | 1202.472 | 22.95 | 6.27 | .61 | 1203.08 | .00 | 1.54 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0112 |      |      |      |      |      | .0024 | .02 | 1.54 | 1.00 | .013 | .00 | .00 | PIPE
3967.950 | 1201.020 | 2.252 | 1203.272 | 12.24 | 2.15 | .07 | 1203.34 | .00 | 1.11 | 2.60 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  6.647 | .0144 |      |      |      |      |      | .0004 | .00 | 2.25 | .26 | .79 | .013 | .00 | .00 | PIPE
3974.597 | 1201.116 | 2.152 | 1203.267 | 12.24 | 2.26 | .08 | 1203.35 | .00 | 1.11 | 2.70 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  6.054 | .0144 |      |      |      |      |      | .0005 | .00 | 2.15 | .28 | .79 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3980.651 | 1201.203 | 2.060 | 1203.262 | 12.24 | 2.37 | .09 | 1203.35 | .00 | 1.11 | 2.78 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.546 | .0144 |      |      |      |      |      | .0005 | .00 | 2.06 | .31 | .79 | .013 | .00 | .00 | PIPE
3986.198 | 1201.282 | 1.974 | 1203.257 | 12.24 | 2.48 | .10 | 1203.35 | .00 | 1.11 | 2.85 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.104 | .0144 |      |      |      |      |      | .0006 | .00 | 1.97 | .33 | .79 | .013 | .00 | .00 | PIPE
3991.302 | 1201.356 | 1.894 | 1203.250 | 12.24 | 2.60 | .11 | 1203.36 | .00 | 1.11 | 2.89 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.720 | .0144 |      |      |      |      |      | .0007 | .00 | 1.89 | .36 | .79 | .013 | .00 | .00 | PIPE
3996.021 | 1201.424 | 1.819 | 1203.243 | 12.24 | 2.73 | .12 | 1203.36 | .00 | 1.11 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.350 | .0144 |      |      |      |      |      | .0008 | .00 | 1.82 | .39 | .79 | .013 | .00 | .00 | PIPE
4000.372 | 1201.486 | 1.748 | 1203.235 | 12.24 | 2.86 | .13 | 1203.36 | .00 | 1.11 | 2.96 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.023 | .0144 |      |      |      |      |      | .0009 | .00 | 1.75 | .42 | .79 | .013 | .00 | .00 | PIPE
4004.395 | 1201.544 | 1.681 | 1203.225 | 12.24 | 3.00 | .14 | 1203.37 | .00 | 1.11 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.694 | .0144 |      |      |      |      |      | .0010 | .00 | 1.68 | .45 | .79 | .013 | .00 | .00 | PIPE
4008.090 | 1201.597 | 1.618 | 1203.215 | 12.24 | 3.15 | .15 | 1203.37 | .00 | 1.11 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.392 | .0144 |      |      |      |      |      | .0011 | .00 | 1.62 | .49 | .79 | .013 | .00 | .00 | PIPE
4011.481 | 1201.646 | 1.557 | 1203.203 | 12.24 | 3.30 | .17 | 1203.37 | .00 | 1.11 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.405 | .0144 |      |      |      |      |      | .0013 | .00 | 1.56 | .52 | .79 | .013 | .00 | .00 | PIPE
4013.887 | 1201.681 | 1.500 | 1203.180 | 12.24 | 3.46 | .19 | 1203.37 | .00 | 1.11 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4013.887 | 1201.681 | .793 | 1202.474 | 12.24 | 8.19 | 1.04 | 1203.51 | .00 | 1.11 | 2.65 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
307.670 | .0144 |      |      |      |      |      | .0144 | 4.43 | .79 | 1.92 | .79 | .013 | .00 | .00 | PIPE
4321.557 | 1206.107 | .793 | 1206.900 | 12.24 | 8.19 | 1.04 | 1207.94 | .00 | 1.11 | 2.65 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
74.840 | .0144 |      |      |      |      |      | .0137 | 1.03 | .79 | 1.92 | .79 | .013 | .00 | .00 | PIPE
4396.397 | 1207.183 | .813 | 1207.996 | 12.24 | 7.91 | .97 | 1208.97 | .00 | 1.11 | 2.67 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.939 | .0144 |      |      |      |      |      | .0122 | .34 | .81 | 1.83 | .79 | .013 | .00 | .00 | PIPE
4424.336 | 1207.585 | .841 | 1208.426 | 12.24 | 7.54 | .88 | 1209.31 | .00 | 1.11 | 2.70 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.877 | .0144 |      |      |      |      |      | .0107 | .15 | .84 | 1.71 | .79 | .013 | .00 | .00 | PIPE
4438.213 | 1207.785 | .870 | 1208.655 | 12.24 | 7.19 | .80 | 1209.46 | .00 | 1.11 | 2.72 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.486 | .0144 |      |      |      |      |      | .0094 | .08 | .87 | 1.60 | .79 | .013 | .00 | .00 | PIPE
4446.700 | 1207.907 | .901 | 1208.808 | 12.24 | 6.85 | .73 | 1209.54 | .00 | 1.11 | 2.75 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.633 | .0144 |      |      |      |      |      | .0082 | .05 | .90 | 1.50 | .79 | .013 | .00 | .00 | PIPE
4452.333 | 1207.988 | .932 | 1208.920 | 12.24 | 6.53 | .66 | 1209.58 | .00 | 1.11 | 2.78 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.817 | .0144 |      |      |      |      |      | .0072 | .03 | .93 | 1.40 | .79 | .013 | .00 | .00 | PIPE
4456.149 | 1208.043 | .965 | 1209.008 | 12.24 | 6.23 | .60 | 1209.61 | .00 | 1.11 | 2.80 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.559 | .0144 |      |      |      |      |      | .0063 | .02 | .97 | 1.31 | .79 | .013 | .00 | .00 | PIPE
4458.708 | 1208.080 | .999 | 1209.079 | 12.24 | 5.94 | .55 | 1209.63 | .00 | 1.11 | 2.83 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.625 | .0144 |      |      |      |      |      | .0055 | .01 | 1.00 | 1.23 | .79 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:30:19

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-18 REDLANDS BLVD AT CALIFORNIA ST FROM IOWA ST TO CALIFORNIA ST

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4460.333 | 1208.103 | 1.035 | 1209.138 | 12.24 | 5.66 | .50 | 1209.64 | .00 | 1.11 | 2.85 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | .889 | .0144 |      |      |      |      | .0048 | .00 | 1.03 | 1.15 | .79 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4461.223 | 1208.116 | 1.071 | 1209.187 | 12.24 | 5.40 | .45 | 1209.64 | .00 | 1.11 | 2.87 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | .277 | .0144 |      |      |      |      | .0042 | .00 | 1.07 | 1.07 | .79 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4461.500 | 1208.120 | 1.111 | 1209.231 | 12.24 | 5.14 | .41 | 1209.64 | .00 | 1.11 | 2.90 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.500															
CD	2	4	1			2.000															
CD	3	4	1			4.000															
CD	4	4	1			3.000															
CD	5	4	1			4.000															
CD	6	4	1			1.000															
CD	7	4	1			3.250															
CD	8	4	1			2.250															
CD	9	4	1			3.250															
CD	10	4	1			3.250															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

SD 4-19 ALABAMA ST FROM INDUSTRIAL PARK AVE TO MISSION CHANNEL

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 2

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H		
1	IS	A	SYSTEM	OUTLET	U/S DATA	172.600	1222.320	1	1228.000						
2	IS	A	REACH		U/S DATA	232.600	1222.380	1	.013	.000	.000	.000	0		
3	IS	A	REACH		U/S DATA	303.280	1222.450	1	.013	89.993	-45.000	.000	0		
4	IS	A	REACH		U/S DATA	1284.340	1223.440	1	.013	.000	.000	.000	2		
5	IS	A	REACH		U/S DATA	1315.790	1223.500	1	.013	.000	.000	.000	0		
6	IS	A	JUNCTION		U/S DATA	1315.800	1223.500	5	.013	22.000	.000	1224.240	.000	-90.000	.000
										RADIUS				ANGLE	
										.000		.000			
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV										-WARNING					
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV										-WARNING					
7	IS	A	REACH		U/S DATA	2200.000	1225.260	5	.013	.000	.000	.000	2		
8	IS	A	REACH		U/S DATA	2221.260	1225.300	5	.013	89.984	-13.537	.000	0		
9	IS	A	REACH		U/S DATA	2242.130	1225.340	5	.013	88.332	13.537	.000	0		
10	IS	A	REACH		U/S DATA	2602.670	1226.140	5	.013	.000	.000	.000	0		
11	IS	A	JUNCTION		U/S DATA										

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2607.340	1226.150	7	6	0	.013	13.000	.000	1227.170	.000	-90.000	.000
									RADIUS	ANGLE		
									.000	.000		

PAGE NO 3

W S P G W
 WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H		
12	IS	A	REACH	U/S DATA	2722.450	1226.610	7	.013	.000	.000	.000	0		
13	IS	A	REACH	U/S DATA	2780.720	1226.840	7	.013	89.992	37.099	.000	0		
14	IS	A	REACH	U/S DATA	2830.000	1227.040	7	.013	77.285	-36.534	.000	0		
15	IS	A	REACH	U/S DATA	3185.420	1228.480	7	.013	.000	.000	.000	0		
16	IS	A	REACH	U/S DATA	3220.830	1228.620	7	.013	22.500	90.171	.000	0		
17	IS	A	REACH	U/S DATA	3233.410	1228.670	7	.013	.000	.000	.000	0		
18	IS	A	JUNCTION	U/S DATA	3238.080	1228.690	10	.013	10.000	10.000	1226.470	1226.350	45.000	-45.000
19	IS	A	SYSTEM HEADWORKS	U/S DATA	3238.080	1228.690	10							

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 7:12:27

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-19 ALABAMA ST FROM INDUSTRIAL PARK AVE TO MISSION CHANNEL

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
172.600 | 1222.320 | 5.680 | 1228.000 | 83.00 | 5.22 | .42 | 1228.42 | .00 | 2.67 | .00 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
60.000 | .0010 |      |      |      |      |      | .0018 | .11 | 5.68 | .00 | 4.50 | .013 | .00 | .00 | PIPE
232.600 | 1222.380 | 5.727 | 1228.107 | 83.00 | 5.22 | .42 | 1228.53 | .00 | 2.67 | .00 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
70.680 | .0010 |      |      |      |      |      | .0018 | .13 | .00 | .00 | 4.50 | .013 | .00 | .00 | PIPE
303.280 | 1222.450 | 5.843 | 1228.293 | 83.00 | 5.22 | .42 | 1228.72 | .00 | 2.67 | .00 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
981.060 | .0010 |      |      |      |      |      | .0018 | 1.75 | 5.84 | .00 | 4.50 | .013 | .00 | .00 | PIPE
1284.340 | 1223.440 | 6.643 | 1230.083 | 83.00 | 5.22 | .42 | 1230.51 | .00 | 2.67 | .00 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
31.450 | .0019 |      |      |      |      |      | .0018 | .06 | 6.64 | .00 | 3.56 | .013 | .00 | .00 | PIPE
1315.790 | 1223.500 | 6.639 | 1230.139 | 83.00 | 5.22 | .42 | 1230.56 | .00 | 2.67 | .00 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0000 |      |      |      |      |      | .0018 | .00 | 6.64 | .00 |      | .013 | .00 | .00 | PIPE
1315.800 | 1223.500 | 6.938 | 1230.438 | 61.00 | 4.85 | .37 | 1230.80 | .00 | 2.35 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
884.200 | .0020 |      |      |      |      |      | .0018 | 1.59 | 6.94 | .00 | 3.12 | .013 | .00 | .00 | PIPE
2200.000 | 1225.260 | 6.809 | 1232.069 | 61.00 | 4.85 | .37 | 1232.43 | .00 | 2.35 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.260 | .0019 |      |      |      |      |      | .0018 | .04 | .00 | .00 | 3.20 | .013 | .00 | .00 | PIPE
2221.260 | 1225.300 | 6.835 | 1232.135 | 61.00 | 4.85 | .37 | 1232.50 | .00 | 2.35 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.870 | .0019 |      |      |      |      |      | .0018 | .04 | .00 | .00 | 3.18 | .013 | .00 | .00 | PIPE
2242.130 | 1225.340 | 6.862 | 1232.202 | 61.00 | 4.85 | .37 | 1232.57 | .00 | 2.35 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
360.540 | .0022 |      |      |      |      |      | .0018 | .65 | 6.86 | .00 | 2.97 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-15-2014 Time: 7:12:27

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-19 ALABAMA ST FROM INDUSTRIAL PARK AVE TO MISSION CHANNEL

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth  | Width   | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF      | SE Dpth | Froude N | Norm Dp | "N"     | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2602.670 | 1226.140 | 6.712 | 1232.852 | 61.00 | 4.85 | .37 | 1233.22 | .00 | 2.35 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0021 |      |      |      |      |      | .0026 | .01 | 6.71 | .00 | .013 | .00 | .00 | PIPE
2607.340 | 1226.150 | 6.769 | 1232.919 | 48.00 | 5.79 | .52 | 1233.44 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
115.110 | .0040 |      |      |      |      |      | .0034 | .39 | 6.77 | .00 | 2.46 | .013 | .00 | .00 | PIPE
2722.450 | 1226.610 | 6.698 | 1233.308 | 48.00 | 5.79 | .52 | 1233.83 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
58.270 | .0039 |      |      |      |      |      | .0034 | .20 | .00 | .00 | 2.47 | .013 | .00 | .00 | PIPE
2780.720 | 1226.840 | 6.731 | 1233.571 | 48.00 | 5.79 | .52 | 1234.09 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
49.280 | .0041 |      |      |      |      |      | .0034 | .17 | .00 | .00 | 2.44 | .013 | .00 | .00 | PIPE
2830.000 | 1227.040 | 6.764 | 1233.804 | 48.00 | 5.79 | .52 | 1234.32 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
355.420 | .0041 |      |      |      |      |      | .0034 | 1.20 | 6.76 | .00 | 2.44 | .013 | .00 | .00 | PIPE
3185.420 | 1228.480 | 6.525 | 1235.005 | 48.00 | 5.79 | .52 | 1235.53 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
35.410 | .0040 |      |      |      |      |      | .0034 | .12 | .00 | .00 | 2.47 | .013 | .00 | .00 | PIPE
3220.830 | 1228.620 | 6.609 | 1235.229 | 48.00 | 5.79 | .52 | 1235.75 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.580 | .0040 |      |      |      |      |      | .0034 | .04 | 6.61 | .00 | 2.46 | .013 | .00 | .00 | PIPE
3233.410 | 1228.670 | 6.601 | 1235.271 | 48.00 | 5.79 | .52 | 1235.79 | .00 | 2.21 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0043 |      |      |      |      |      | .0023 | .01 | 6.60 | .00 | .013 | .00 | .00 | PIPE
3238.080 | 1228.690 | 7.180 | 1235.870 | 28.00 | 3.38 | .18 | 1236.05 | .00 | 1.67 | .00 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			993.970	1240.370	7	6	0	.013	2.000	.000	1240.390	.000	45.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	12 IS A REACH		*	*	*									
	U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H
		1261.640	1243.630	7				.013			.000	.000	.000	0
ELEMENT NO	13 IS A SYSTEM HEADWORKS				*				*					
	U/S DATA	STATION	INVERT	SECT							W S ELEV			
		1261.640	1243.630	7							.000			

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
.000    | 1224.240 | 8.760 | 1233.000 | 40.00 | 5.66 | .50 | 1233.50 | .00 | 2.06 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
11.490  | .0191 |      |      |      |      |      | .0036 | .04 | .00 | .00 | 1.38 | .013 | .00 | .00 | PIPE
11.490  | 1224.460 | 8.652 | 1233.112 | 40.00 | 5.66 | .50 | 1233.61 | .00 | 2.06 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
17.670  | .0385 |      |      |      |      |      | .0036 | .06 | .00 | .00 | 1.14 | .013 | .00 | .00 | PIPE
29.160  | 1225.140 | 8.106 | 1233.246 | 40.00 | 5.66 | .50 | 1233.74 | .00 | 2.06 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
56.900  | .0374 |      |      |      |      |      | .0036 | .20 | 8.11 | .00 | 1.15 | .013 | .00 | .00 | PIPE
86.060  | 1227.270 | 6.205 | 1233.475 | 40.00 | 5.66 | .50 | 1233.97 | .00 | 2.06 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
154.120 | .0123 |      |      |      |      |      | .0036 | .55 | 6.21 | .00 | 1.57 | .013 | .00 | .00 | PIPE
240.180 | 1229.170 | 4.859 | 1234.029 | 40.00 | 5.66 | .50 | 1234.53 | .00 | 2.06 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0214 |      |      |      |      |      | .0028 | .01 | 4.86 | .00 |      | .013 | .00 | .00 | PIPE
244.860 | 1229.270 | 5.032 | 1234.302 | 30.00 | 4.24 | .28 | 1234.58 | .00 | 1.77 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
171.853 | .0138 |      |      |      |      |      | .0020 | .34 | 5.03 | .00 | 1.29 | .013 | .00 | .00 | PIPE
416.713 | 1231.650 | 3.000 | 1234.650 | 30.00 | 4.24 | .28 | 1234.93 | .00 | 1.77 | .00 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
20.821  | .0138 |      |      |      |      |      | .0019 | .04 | 3.00 | .00 | 1.29 | .013 | .00 | .00 | PIPE
437.534 | 1231.938 | 2.722 | 1234.660 | 30.00 | 4.45 | .31 | 1234.97 | .00 | 1.77 | 1.74 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
10.882  | .0138 |      |      |      |      |      | .0018 | .02 | 2.72 | .40 | 1.29 | .013 | .00 | .00 | PIPE
448.415 | 1232.089 | 2.560 | 1234.649 | 30.00 | 4.67 | .34 | 1234.99 | .00 | 1.77 | 2.12 | 3.000 | .000 | .00 | 1 | .0
        | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
8.384   | .0138 |      |      |      |      |      | .0020 | .02 | 2.56 | .47 | 1.29 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth  | Width  | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF     | SE Dpth | Froude N | Norm Dp | "N"     | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
456.799 | 1232.205 | 2.427 | 1234.632 | 30.00 | 4.90 | .37 | 1235.00 | .00 | 1.77 | 2.36 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.805  | .0138 |      |      |      |      |      | .0022 | .01 | 2.43 | .54 | 1.29 | .013 | .00 | .00 | PIPE
463.604 | 1232.299 | 2.311 | 1234.609 | 30.00 | 5.14 | .41 | 1235.02 | .00 | 1.77 | 2.52 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.615  | .0138 |      |      |      |      |      | .0024 | .01 | 2.31 | .59 | 1.29 | .013 | .00 | .00 | PIPE
469.218 | 1232.377 | 2.205 | 1234.582 | 30.00 | 5.39 | .45 | 1235.03 | .00 | 1.77 | 2.65 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.132   | .0138 |      |      |      |      |      | .0026 | .00 | 2.21 | .65 | 1.29 | .013 | .00 | .00 | PIPE
469.350 | 1232.378 | 2.205 | 1234.584 | 30.00 | 5.39 | .45 | 1235.03 | .00 | 1.77 | 2.65 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
469.350 | 1232.378 | 1.411 | 1233.789 | 30.00 | 9.18 | 1.31 | 1235.10 | .00 | 1.77 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.671 | .0138 |      |      |      |      |      | .0094 | .13 | 1.41 | 1.55 | 1.29 | .013 | .00 | .00 | PIPE
483.021 | 1232.568 | 1.464 | 1234.032 | 30.00 | 8.75 | 1.19 | 1235.22 | .00 | 1.77 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.393  | .0138 |      |      |      |      |      | .0083 | .08 | 1.46 | 1.44 | 1.29 | .013 | .00 | .00 | PIPE
492.413 | 1232.698 | 1.520 | 1234.218 | 30.00 | 8.35 | 1.08 | 1235.30 | .00 | 1.77 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.063  | .0138 |      |      |      |      |      | .0073 | .04 | 1.52 | 1.34 | 1.29 | .013 | .00 | .00 | PIPE
498.476 | 1232.782 | 1.579 | 1234.360 | 30.00 | 7.96 | .98 | 1235.34 | .00 | 1.77 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.753  | .0138 |      |      |      |      |      | .0064 | .02 | 1.58 | 1.25 | 1.29 | .013 | .00 | .00 | PIPE
502.229 | 1232.834 | 1.640 | 1234.474 | 30.00 | 7.59 | .89 | 1235.37 | .00 | 1.77 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.012  | .0138 |      |      |      |      |      | .0057 | .01 | 1.64 | 1.16 | 1.29 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
        | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
504.241 |1232.861| 1.705 |1234.566| 30.00 | 7.23 | .81 |1235.38 | .00 | 1.77 | 2.97 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |.619 |.0138|        |        |        |        |.0050 | .00 | 1.70 | 1.08 | 1.29 | .013 | .00 | .00 | PIPE
504.860 |1232.870| 1.774 |1234.644| 30.00 | 6.89 | .74 |1235.38 | .00 | 1.77 | 2.95 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
JUNCT STR|.0176|        |        |        |        |.0028 | .02 | 1.77 | 1.00 | .013 | .00 | .00 | PIPE
510.540 |1232.970| 2.390 |1235.360| 20.00 | 3.31 | .17 |1235.53 | .00 | 1.44 | 2.41 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |.692 |.0339|        |        |        |        |.0010 | .00 | 2.39 | .37 | .82 | .013 | .00 | .00 | PIPE
511.232 |1232.993| 2.363 |1235.357| 20.00 | 3.35 | .17 |1235.53 | .00 | 1.44 | 2.45 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
HYDRAULIC JUMP
511.232 |1232.993| .819 |1233.812| 20.00 | 12.79 | 2.54 |1236.35 | .00 | 1.44 | 2.67 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |41.471|.0339|        |        |        |        |.0339 | 1.40 | .82 | 2.95 | .82 | .013 | .00 | .00 | PIPE
552.703 |1234.398| .819 |1235.217| 20.00 | 12.79 | 2.54 |1237.76 | .00 | 1.44 | 2.67 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |95.668|.0339|        |        |        |        |.0320 | 3.06 | .82 | 2.95 | .82 | .013 | .00 | .00 | PIPE
648.371 |1237.639| .845 |1238.484| 20.00 | 12.25 | 2.33 |1240.81 | .00 | 1.44 | 2.70 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |31.886|.0339|        |        |        |        |.0282 | .90 | .84 | 2.78 | .82 | .013 | .00 | .00 | PIPE
680.257 |1238.719| .874 |1239.593| 20.00 | 11.68 | 2.12 |1241.71 | .00 | 1.44 | 2.73 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |17.559|.0339|        |        |        |        |.0246 | .43 | .87 | 2.60 | .82 | .013 | .00 | .00 | PIPE
697.816 |1239.314| .904 |1240.219| 20.00 | 11.14 | 1.93 |1242.14 | .00 | 1.44 | 2.75 | 3.000 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
        |11.666|.0339|        |        |        |        |.0216 | .25 | .90 | 2.43 | .82 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
709.482 | 1239.709 | .936 | 1240.646 | 20.00 | 10.62 | 1.75 | 1242.40 | .00 | 1.44 | 2.78 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.422 | .0339 |      |      |      |      | .0189 | .16 | .94 | 2.27 | .82 | .013 | .00 | .00 | PIPE
717.904 | 1239.995 | .969 | 1240.964 | 20.00 | 10.13 | 1.59 | 1242.56 | .00 | 1.44 | 2.81 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.379 | .0339 |      |      |      |      | .0165 | .11 | .97 | 2.13 | .82 | .013 | .00 | .00 | PIPE
724.282 | 1240.211 | 1.003 | 1241.214 | 20.00 | 9.65 | 1.45 | 1242.66 | .00 | 1.44 | 2.83 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.958 | .0339 |      |      |      |      | .0145 | .07 | 1.00 | 1.99 | .82 | .013 | .00 | .00 | PIPE
729.240 | 1240.379 | 1.039 | 1241.417 | 20.00 | 9.20 | 1.32 | 1242.73 | .00 | 1.44 | 2.85 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.902 | .0339 |      |      |      |      | .0127 | .05 | 1.04 | 1.86 | .82 | .013 | .00 | .00 | PIPE
733.142 | 1240.511 | 1.076 | 1241.587 | 20.00 | 8.78 | 1.20 | 1242.78 | .00 | 1.44 | 2.88 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.089 | .0339 |      |      |      |      | .0111 | .03 | 1.08 | 1.74 | .82 | .013 | .00 | .00 | PIPE
736.231 | 1240.616 | 1.114 | 1241.730 | 20.00 | 8.37 | 1.09 | 1242.82 | .00 | 1.44 | 2.90 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.437 | .0339 |      |      |      |      | .0098 | .02 | 1.11 | 1.62 | .82 | .013 | .00 | .00 | PIPE
738.668 | 1240.698 | 1.154 | 1241.852 | 20.00 | 7.98 | .99 | 1242.84 | .00 | 1.44 | 2.92 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.899 | .0339 |      |      |      |      | .0086 | .02 | 1.15 | 1.52 | .82 | .013 | .00 | .00 | PIPE
740.568 | 1240.762 | 1.196 | 1241.959 | 20.00 | 7.61 | .90 | 1242.86 | .00 | 1.44 | 2.94 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.445 | .0339 |      |      |      |      | .0075 | .01 | 1.20 | 1.42 | .82 | .013 | .00 | .00 | PIPE
742.013 | 1240.811 | 1.240 | 1242.051 | 20.00 | 7.25 | .82 | 1242.87 | .00 | 1.44 | 2.95 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.058 | .0339 |      |      |      |      | .0066 | .01 | 1.24 | 1.32 | .82 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
743.072 | 1240.847 | 1.285 | 1242.132 | 20.00 | 6.92 | .74 | 1242.88 | .00 | 1.44 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | .716 | .0339 |      |      |      |      | .0058 | .00 | 1.29 | 1.23 | .82 | .013 | .00 | .00 | PIPE
743.788 | 1240.872 | 1.333 | 1242.204 | 20.00 | 6.59 | .68 | 1242.88 | .00 | 1.44 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | .409 | .0339 |      |      |      |      | .0051 | .00 | 1.33 | 1.15 | .82 | .013 | .00 | .00 | PIPE
744.197 | 1240.885 | 1.382 | 1242.268 | 20.00 | 6.29 | .61 | 1242.88 | .00 | 1.44 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | .133 | .0339 |      |      |      |      | .0045 | .00 | 1.38 | 1.07 | .82 | .013 | .00 | .00 | PIPE
744.330 | 1240.890 | 1.435 | 1242.325 | 20.00 | 5.99 | .56 | 1242.88 | .00 | 1.44 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | .790 | -.0042 |      |      |      |      | .0039 | .00 | 1.44 | 1.00 | .00 | .013 | .00 | .00 | PIPE
745.120 | 1240.887 | 1.507 | 1242.393 | 20.00 | 5.63 | .49 | 1242.89 | .00 | 1.44 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 2.461 | -.0042 |      |      |      |      | .0033 | .01 | 1.51 | .91 | .00 | .013 | .00 | .00 | PIPE
747.580 | 1240.876 | 1.582 | 1242.459 | 20.00 | 5.29 | .43 | 1242.89 | .00 | 1.44 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 4.225 | -.0042 |      |      |      |      | .0028 | .01 | 1.58 | .83 | .00 | .013 | .00 | .00 | PIPE
751.805 | 1240.859 | 1.661 | 1242.520 | 20.00 | 4.98 | .38 | 1242.90 | .00 | 1.44 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 6.063 | -.0042 |      |      |      |      | .0024 | .01 | 1.66 | .76 | .00 | .013 | .00 | .00 | PIPE
757.868 | 1240.833 | 1.744 | 1242.578 | 20.00 | 4.69 | .34 | 1242.92 | .00 | 1.44 | 2.96 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 7.955 | -.0042 |      |      |      |      | .0020 | .02 | 1.74 | .69 | .00 | .013 | .00 | .00 | PIPE
765.823 | 1240.800 | 1.831 | 1242.632 | 20.00 | 4.42 | .30 | 1242.94 | .00 | 1.44 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 9.884 | -.0042 |      |      |      |      | .0018 | .02 | 1.83 | .63 | .00 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
775.707 | 1240.759 | 1.923 | 1242.682 | 20.00 | 4.18 | .27 | 1242.95 | .00 | 1.44 | 2.88 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.837 | -.0042 |      |      |      |      |      | .0015 | .02 | 1.92 | .57 | .00 | .013 | .00 | .00 | PIPE
875.707 | 1240.709 | 2.019 | 1242.729 | 20.00 | 3.95 | .24 | 1242.97 | .00 | 1.44 | 2.81 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.803 | -.0042 |      |      |      |      |      | .0013 | .02 | 2.02 | .52 | .00 | .013 | .00 | .00 | PIPE
801.347 | 1240.652 | 2.120 | 1242.772 | 20.00 | 3.75 | .22 | 1242.99 | .00 | 1.44 | 2.73 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.773 | -.0042 |      |      |      |      |      | .0012 | .02 | 2.12 | .47 | .00 | .013 | .00 | .00 | PIPE
817.120 | 1240.586 | 2.226 | 1242.812 | 20.00 | 3.56 | .20 | 1243.01 | .00 | 1.44 | 2.63 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.743 | -.0042 |      |      |      |      |      | .0011 | .02 | 2.23 | .43 | .00 | .013 | .00 | .00 | PIPE
834.863 | 1240.511 | 2.337 | 1242.849 | 20.00 | 3.38 | .18 | 1243.03 | .00 | 1.44 | 2.49 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.710 | -.0042 |      |      |      |      |      | .0009 | .02 | 2.34 | .39 | .00 | .013 | .00 | .00 | PIPE
854.573 | 1240.429 | 2.454 | 1242.883 | 20.00 | 3.23 | .16 | 1243.05 | .00 | 1.44 | 2.31 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.671 | -.0042 |      |      |      |      |      | .0009 | .02 | 2.45 | .35 | .00 | .013 | .00 | .00 | PIPE
876.245 | 1240.339 | 2.577 | 1242.916 | 20.00 | 3.10 | .15 | 1243.06 | .00 | 1.44 | 2.09 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.624 | -.0042 |      |      |      |      |      | .0008 | .02 | 2.58 | .31 | .00 | .013 | .00 | .00 | PIPE
899.869 | 1240.240 | 2.706 | 1242.946 | 20.00 | 2.98 | .14 | 1243.08 | .00 | 1.44 | 1.78 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.563 | -.0042 |      |      |      |      |      | .0008 | .02 | 2.71 | .27 | .00 | .013 | .00 | .00 | PIPE
925.432 | 1240.133 | 2.841 | 1242.974 | 20.00 | 2.89 | .13 | 1243.10 | .00 | 1.44 | 1.34 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.446 | -.0042 |      |      |      |      |      | .0008 | .02 | 2.84 | .22 | .00 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
952.878 | 1240.018 | 2.983 | 1243.001 | 20.00 | 2.83 | .12 | 1243.13 | .00 | 1.44 | .45 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.278  | -.0042 |      |      |      |      |      | .0009 | .00 | 2.98 | .13 | .00 | .013 | .00 | .00 | PIPE
956.156 | 1240.004 | 3.000 | 1243.004 | 20.00 | 2.83 | .12 | 1243.13 | .00 | 1.44 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.134 | -.0042 |      |      |      |      |      | .0009 | .03 | 3.00 | .00 | .00 | .013 | .00 | .00 | PIPE
988.290 | 1239.870 | 3.163 | 1243.033 | 20.00 | 2.83 | .12 | 1243.16 | .00 | 1.44 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0880 |      |      |      |      |      | .0014 | .01 | 3.16 | .00 | .00 | .013 | .00 | .00 | PIPE
993.970 | 1240.370 | 2.618 | 1242.988 | 18.00 | 3.67 | .21 | 1243.20 | .00 | 1.44 | .00 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.490 | .0122 |      |      |      |      |      | .0019 | .02 | 2.62 | .00 | 1.10 | .013 | .00 | .00 | PIPE
1005.460 | 1240.510 | 2.500 | 1243.010 | 18.00 | 3.67 | .21 | 1243.22 | .00 | 1.44 | .00 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.203 | .0122 |      |      |      |      |      | .0018 | .04 | 2.50 | .00 | 1.10 | .013 | .00 | .00 | PIPE
1025.663 | 1240.756 | 2.268 | 1243.024 | 18.00 | 3.85 | .23 | 1243.25 | .00 | 1.44 | 1.45 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.698 | .0122 |      |      |      |      |      | .0017 | .02 | 2.27 | .38 | 1.10 | .013 | .00 | .00 | PIPE
1036.361 | 1240.886 | 2.134 | 1243.020 | 18.00 | 4.03 | .25 | 1243.27 | .00 | 1.44 | 1.77 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.331 | .0122 |      |      |      |      |      | .0019 | .02 | 2.13 | .45 | 1.10 | .013 | .00 | .00 | PIPE
1044.691 | 1240.988 | 2.023 | 1243.010 | 18.00 | 4.23 | .28 | 1243.29 | .00 | 1.44 | 1.97 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.870 | .0122 |      |      |      |      |      | .0021 | .01 | 2.02 | .51 | 1.10 | .013 | .00 | .00 | PIPE
1051.562 | 1241.071 | 1.925 | 1242.997 | 18.00 | 4.44 | .31 | 1243.30 | .00 | 1.44 | 2.10 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.653 | .0122 |      |      |      |      |      | .0023 | .01 | 1.93 | .56 | 1.10 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1056.215 | 1241.128 | 1.838 | 1242.966 | 18.00 | 4.65 | .34 | 1243.30 | .00 | 1.44 | 2.21 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
1056.215 | 1241.128 | 1.096 | 1242.224 | 18.00 | 8.69 | 1.17 | 1243.40 | .00 | 1.44 | 2.48 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.330 | .0122 |      |      |      |      |      |      | .04 | 1.10 | 1.68 | 1.10 | .013 | .00 | .00 | PIPE
1059.545 | 1241.169 | 1.096 | 1242.265 | 18.00 | 8.69 | 1.17 | 1243.44 | .00 | 1.44 | 2.48 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
91.732 | .0122 |      |      |      |      |      |      | 1.10 | 1.10 | 1.68 | 1.10 | .013 | .00 | .00 | PIPE
1151.277 | 1242.286 | 1.104 | 1243.389 | 18.00 | 8.62 | 1.15 | 1244.54 | .00 | 1.44 | 2.48 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
62.764 | .0122 |      |      |      |      |      |      | .70 | 1.10 | 1.66 | 1.10 | .013 | .00 | .00 | PIPE
1214.042 | 1243.050 | 1.145 | 1244.195 | 18.00 | 8.21 | 1.05 | 1245.24 | .00 | 1.44 | 2.49 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
22.150 | .0122 |      |      |      |      |      |      | .22 | 1.14 | 1.54 | 1.10 | .013 | .00 | .00 | PIPE
1236.191 | 1243.320 | 1.187 | 1244.507 | 18.00 | 7.83 | .95 | 1245.46 | .00 | 1.44 | 2.50 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.768 | .0122 |      |      |      |      |      |      | .10 | 1.19 | 1.44 | 1.10 | .013 | .00 | .00 | PIPE
1247.959 | 1243.463 | 1.232 | 1244.696 | 18.00 | 7.47 | .87 | 1245.56 | .00 | 1.44 | 2.50 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.911 | .0122 |      |      |      |      |      |      | .05 | 1.23 | 1.34 | 1.10 | .013 | .00 | .00 | PIPE
1254.871 | 1243.548 | 1.279 | 1244.827 | 18.00 | 7.12 | .79 | 1245.61 | .00 | 1.44 | 2.50 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.046 | .0122 |      |      |      |      |      |      | .03 | 1.28 | 1.25 | 1.10 | .013 | .00 | .00 | PIPE
1258.916 | 1243.597 | 1.329 | 1244.926 | 18.00 | 6.79 | .72 | 1245.64 | .00 | 1.44 | 2.50 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.099 | .0122 |      |      |      |      |      |      | .01 | 1.33 | 1.16 | 1.10 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time:11: 5:19

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-19A PARK AVE FROM IOWA ST TO ALABAMA ST
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1261.016 |1243.622 | 1.381 |1245.003 | 18.00 | 6.47 | .65 |1245.65 | .00 | 1.44 | 2.49 | 2.500 | .000 | .00 | 1 | .0
      -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
      .625 | .0122 | | | | | .0052 | .00 | 1.38 | 1.08 | 1.10 | .0013 | .00 | .00 | PIPE
1261.640 |1243.630 | 1.437 |1245.067 | 18.00 | 6.17 | .59 |1245.66 | .00 | 1.44 | 2.47 | 2.500 | .000 | .00 | 1 | .0
      -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
    
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER DIAMETER	HEIGHT 1	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	1	5.000	10.000	6.000				.00										
CD	2	2	0	.000	6.000	10.000				.00										
CD	3	2	0	.000	4.000	8.000				.00										
CD	4	2	0	.000	3.500	10.000				.00										
CD	5	2	0	.000	3.500	10.000				.00										
CD	6	2	0	.000	3.500	10.000				.00										
CD	7	2	0	.000	3.000	6.000				.00										
CD	8	4	1		4.250															
CD	9	4	1		2.000															
CD	10	4	1		4.250															

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 HEADING LINE NO 2 IS - SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 HEADING LINE NO 3 IS - BY DMALOTT JN:136769 APRIL 2014

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS A	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS A SYSTEM OUTLET	19.780	1472.870	1	1484.000				
2	IS A REACH	65.000	1473.120	1		28.788	90.000	.000	0
3	IS A REACH	100.000	1476.270	1		22.282	90.000	.000	0
4	IS A REACH	555.000	1483.220	1		.000	.000	.000	0
5	IS A JUNCTION	600.000	1487.680	2				.000	.000
6	IS A REACH	670.000	1491.110	2		.000	.000	.000	0
7	IS A REACH	684.900	1491.180	2		9.486	-90.000	.000	0
8	IS A JUNCTION	709.970	1493.870	3				.000	.000
9	IS A REACH	1325.470	1510.350	3		.000	.000	.000	0
10	IS A JUNCTION	1360.347	1510.670	4				.000	.000

W S P G W													
WATER SURFACE PROFILE - ELEMENT CARD LISTING													
ELEMENT NO	IS	A	REACH	STATION	INVERT	SECT	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
11				1647.870	1519.520	4	.014			1771.382	9.300	.000	0
12				1750.800	1522.450	4	.014			.000	.000	.000	0
13				2020.100	1529.840	4	.014			572.958	26.930	.000	0
14				2099.100	1532.350	5	.030	.000	.000	.000	.000	.000	.000
15				3077.620	1570.000	5	.030			.000	.000	.000	0
16				3197.570	1575.010	5	.030			152.725	45.000	.000	0
17				3455.440	1580.000	5	.030			.000	.000	.000	0
18				3786.590	1589.940	5	.030			210.817	-90.000	.000	0
19				4337.460	1605.370	5	.030			.000	.000	.000	0
20				4410.880	1609.880	5	.030			70.111	60.000	.000	0
21				5337.250	1639.950	5	.030			.000	.000	.000	0
22				5847.560	1659.950	5	.030			.000	.000	.000	0

W S P G W															
WATER SURFACE PROFILE - ELEMENT CARD LISTING															
ELEMENT NO	IS	A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
23				5899.040	1661.450	7	6	0	.014	10.250	.000	1661.670	.000	90.000	.000
24				7972.930	1720.910	7			.014			.000	.000	.000	0
25				8069.530	1727.600	7			.014			122.994	-45.000	.000	0
26				8316.080	1739.170	7			.014			.000	.000	.000	0
27				8461.840	1745.170	7			.014			.000	.000	.000	0

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
19.780 | 1472.870 | 11.130 | 1484.000 | 117.45 | 10.55 | 1.73 | 1485.73 | .06 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
6.877 | .0055 |         |         |         |         |         | .0617 | .42 | 11.19 | 1.37 | 20.00 | .014 | .00 | .00 | RECTANG
26.657 | 1472.908 | 11.673 | 1484.581 | 117.45 | 10.06 | 1.57 | 1486.15 | .05 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
8.460 | .0055 |         |         |         |         |         | .0560 | .47 | 11.73 | 1.27 | 20.00 | .014 | .00 | .00 | RECTANG
35.116 | 1472.955 | 12.243 | 1485.198 | 117.45 | 9.59 | 1.43 | 1486.63 | .05 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
10.323 | .0055 |         |         |         |         |         | .0508 | .52 | 12.29 | 1.18 | 20.00 | .014 | .00 | .00 | RECTANG
45.439 | 1473.012 | 12.841 | 1485.852 | 117.45 | 9.15 | 1.30 | 1487.15 | .05 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
12.520 | .0055 |         |         |         |         |         | .0462 | .58 | 12.89 | 1.10 | 20.00 | .014 | .00 | .00 | RECTANG
57.958 | 1473.081 | 13.467 | 1486.548 | 117.45 | 8.72 | 1.18 | 1487.73 | .04 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
7.042 | .0055 |         |         |         |         |         | .0429 | .30 | 13.51 | 1.03 | 20.00 | .014 | .00 | .00 | RECTANG
65.000 | 1473.120 | 13.785 | 1486.905 | 117.45 | 8.52 | 1.13 | 1488.03 | .05 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
11.502 | .0900 |         |         |         |         |         | .0440 | .51 | 13.84 | .99 | 9.46 | .014 | .00 | .00 | RECTANG
76.502 | 1474.155 | 13.143 | 1487.298 | 117.45 | 8.94 | 1.24 | 1488.54 | .06 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
11.747 | .0900 |         |         |         |         |         | .0485 | .57 | 13.20 | 1.06 | 9.46 | .014 | .00 | .00 | RECTANG
88.250 | 1475.212 | 12.532 | 1487.744 | 117.45 | 9.37 | 1.36 | 1489.11 | .06 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
11.750 | .0900 |         |         |         |         |         | .0533 | .63 | 12.59 | 1.14 | 9.46 | .014 | .00 | .00 | RECTANG
100.000 | 1476.270 | 11.969 | 1488.239 | 117.45 | 9.81 | 1.50 | 1489.73 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
11.816 | .0153 |         |         |         |         |         | .0532 | .63 | 11.97 | 1.22 | 20.00 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
111.816 | 1476.450 | 12.554 | 1489.004 | 117.45 | 9.36 | 1.36 | 1490.36 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.804 | .0153 |      |      |      |      | .0483 | .72 | 12.55 | 1.14 | 20.00 | .014 | .00 | .00 | RECTANG
126.619 | 1476.677 | 13.166 | 1489.843 | 117.45 | 8.92 | 1.24 | 1491.08 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.543 | .0153 |      |      |      |      | .0439 | .81 | 13.17 | 1.06 | 20.00 | .014 | .00 | .00 | RECTANG
145.163 | 1476.960 | 13.809 | 1490.769 | 117.45 | 8.51 | 1.12 | 1491.89 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.281 | .0153 |      |      |      |      | .0398 | .93 | 13.81 | .99 | 20.00 | .014 | .00 | .00 | RECTANG
168.443 | 1477.315 | 14.483 | 1491.798 | 117.45 | 8.11 | 1.02 | 1492.82 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.375 | .0153 |      |      |      |      | .0362 | 1.06 | 14.48 | .92 | 20.00 | .014 | .00 | .00 | RECTANG
197.819 | 1477.764 | 15.190 | 1492.954 | 117.45 | 7.73 | .93 | 1493.88 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.370 | .0153 |      |      |      |      | .0329 | 1.23 | 15.19 | .86 | 20.00 | .014 | .00 | .00 | RECTANG
235.189 | 1478.335 | 15.931 | 1494.266 | 117.45 | 7.37 | .84 | 1495.11 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
48.120 | .0153 |      |      |      |      | .0298 | 1.44 | 15.93 | .80 | 20.00 | .014 | .00 | .00 | RECTANG
283.309 | 1479.070 | 16.709 | 1495.779 | 117.45 | 7.03 | .77 | 1496.55 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
63.060 | .0153 |      |      |      |      | .0271 | 1.71 | 16.71 | .74 | 20.00 | .014 | .00 | .00 | RECTANG
346.369 | 1480.033 | 17.524 | 1497.557 | 117.45 | 6.70 | .70 | 1498.25 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
84.782 | .0153 |      |      |      |      | .0246 | 2.09 | 17.52 | .69 | 20.00 | .014 | .00 | .00 | RECTANG
431.151 | 1481.328 | 18.380 | 1499.708 | 117.45 | 6.39 | .63 | 1500.34 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
118.499 | .0153 |      |      |      |      | .0224 | 2.65 | 18.38 | .64 | 20.00 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
549.650 | 1483.138 | 19.277 | 1502.415 | 117.45 | 6.09 | .58 | 1502.99 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.350 | .0153 |      |      |      |      | .0212 | .11 | 19.28 | .60 | 20.00 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
555.000 | 1483.220 | 19.311 | 1502.531 | 117.45 | 6.08 | .57 | 1503.11 | .00 | 7.54 | 6.00 | 10.000 | 6.000 | .00 | 1 5.0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0991 |      |      |      |      | .0106 | .48 | 19.31 | .60 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
600.000 | 1487.680 | 15.894 | 1503.574 | 117.45 | .74 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.081 | .0490 |      |      |      |      | .0000 | .00 | 15.89 | .03 | .69 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
615.081 | 1488.419 | 15.155 | 1503.574 | 117.45 | .78 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.377 | .0490 |      |      |      |      | .0000 | .00 | 15.15 | .04 | .69 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
629.458 | 1489.124 | 14.449 | 1503.573 | 117.45 | .81 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.706 | .0490 |      |      |      |      | .0000 | .00 | 14.45 | .04 | .69 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
643.164 | 1489.795 | 13.777 | 1503.572 | 117.45 | .85 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.065 | .0490 |      |      |      |      | .0000 | .00 | 13.78 | .04 | .69 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
656.229 | 1490.435 | 13.136 | 1503.571 | 117.45 | .89 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.454 | .0490 |      |      |      |      | .0000 | .00 | 13.14 | .04 | .69 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
668.683 | 1491.045 | 12.524 | 1503.570 | 117.45 | .94 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.317 | .0490 |      |      |      |      | .0000 | .00 | 12.52 | .05 | .69 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
670.000 | 1491.110 | 12.460 | 1503.570 | 117.45 | .94 | .01 | 1503.58 | .03 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.900 | .0047 |      |      |      |      | .0000 | .00 | 12.49 | .05 | 1.48 | .014 | .00 | .00 | RECTANG
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
684.900 | 1491.180 | 12.390 | 1503.570 | 117.45 | .95 | .01 | 1503.58 | .00 | 1.62 | 10.00 | 6.000 | 10.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .1073 | | | | | | .0000 | .00 | 12.39 | .05 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
709.970 | 1493.870 | 9.680 | 1503.550 | 117.45 | 1.52 | .04 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
16.725 | .0268 | | | | | | .0001 | .00 | 9.68 | .09 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
726.695 | 1494.318 | 9.230 | 1503.547 | 117.45 | 1.59 | .04 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
15.931 | .0268 | | | | | | .0001 | .00 | 9.23 | .09 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
742.627 | 1494.744 | 8.800 | 1503.544 | 117.45 | 1.67 | .04 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
15.173 | .0268 | | | | | | .0001 | .00 | 8.80 | .10 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
757.799 | 1495.151 | 8.391 | 1503.541 | 117.45 | 1.75 | .05 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
14.447 | .0268 | | | | | | .0001 | .00 | 8.39 | .11 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
772.246 | 1495.537 | 8.000 | 1503.538 | 117.45 | 1.84 | .05 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
13.754 | .0268 | | | | | | .0001 | .00 | 8.00 | .11 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
786.000 | 1495.906 | 7.628 | 1503.534 | 117.45 | 1.92 | .06 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
13.090 | .0268 | | | | | | .0001 | .00 | 7.63 | .12 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
799.090 | 1496.256 | 7.273 | 1503.529 | 117.45 | 2.02 | .06 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
12.455 | .0268 | | | | | | .0001 | .00 | 7.27 | .13 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
811.545 | 1496.590 | 6.934 | 1503.524 | 117.45 | 2.12 | .07 | 1503.59 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
11.847 | .0268 | | | | | | .0001 | .00 | 6.93 | .14 | .99 | .014 | .00 | .00 | RECTANG
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
823.392 | 1496.907 | 6.612 | 1503.518 | 117.45 | 2.22 | .08 | 1503.60 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.264 | .0268 |      |      |      |      | .0001 | .00 | 6.61 | .15 | .99 | .014 | .00 | .00 | RECTANG
834.655 | 1497.208 | 6.304 | 1503.512 | 117.45 | 2.33 | .08 | 1503.60 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.704 | .0268 |      |      |      |      | .0002 | .00 | 6.30 | .16 | .99 | .014 | .00 | .00 | RECTANG
845.360 | 1497.495 | 6.011 | 1503.506 | 117.45 | 2.44 | .09 | 1503.60 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.167 | .0268 |      |      |      |      | .0002 | .00 | 6.01 | .18 | .99 | .014 | .00 | .00 | RECTANG
855.527 | 1497.767 | 5.731 | 1503.498 | 117.45 | 2.56 | .10 | 1503.60 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.651 | .0268 |      |      |      |      | .0002 | .00 | 5.73 | .19 | .99 | .014 | .00 | .00 | RECTANG
865.179 | 1498.026 | 5.464 | 1503.490 | 117.45 | 2.69 | .11 | 1503.60 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.155 | .0268 |      |      |      |      | .0002 | .00 | 5.46 | .20 | .99 | .014 | .00 | .00 | RECTANG
874.334 | 1498.271 | 5.210 | 1503.481 | 117.45 | 2.82 | .12 | 1503.60 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.677 | .0268 |      |      |      |      | .0003 | .00 | 5.21 | .22 | .99 | .014 | .00 | .00 | RECTANG
883.010 | 1498.503 | 4.967 | 1503.471 | 117.45 | 2.96 | .14 | 1503.61 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.215 | .0268 |      |      |      |      | .0003 | .00 | 4.97 | .23 | .99 | .014 | .00 | .00 | RECTANG
891.226 | 1498.723 | 4.736 | 1503.459 | 117.45 | 3.10 | .15 | 1503.61 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.769 | .0268 |      |      |      |      | .0003 | .00 | 4.74 | .25 | .99 | .014 | .00 | .00 | RECTANG
898.994 | 1498.931 | 4.516 | 1503.447 | 117.45 | 3.25 | .16 | 1503.61 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.337 | .0268 |      |      |      |      | .0004 | .00 | 4.52 | .27 | .99 | .014 | .00 | .00 | RECTANG
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
906.331 | 1499.128 | 4.306 | 1503.433 | 117.45 | 3.41 | .18 | 1503.61 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
6.917 | .0268 | | | | | .0004 | .00 | 4.31 | .29 | .99 | .014 | .00 | .00 | RECTANG
913.248 | 1499.313 | 4.105 | 1503.418 | 117.45 | 3.58 | .20 | 1503.62 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
6.509 | .0268 | | | | | .0005 | .00 | 4.11 | .31 | .99 | .014 | .00 | .00 | RECTANG
919.757 | 1499.487 | 3.914 | 1503.401 | 117.45 | 3.75 | .22 | 1503.62 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
6.110 | .0268 | | | | | .0005 | .00 | 3.91 | .33 | .99 | .014 | .00 | .00 | RECTANG
925.867 | 1499.651 | 3.732 | 1503.383 | 117.45 | 3.93 | .24 | 1503.62 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
5.720 | .0268 | | | | | .0006 | .00 | 3.73 | .36 | .99 | .014 | .00 | .00 | RECTANG
931.586 | 1499.804 | 3.558 | 1503.362 | 117.45 | 4.13 | .26 | 1503.63 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
5.336 | .0268 | | | | | .0007 | .00 | 3.56 | .39 | .99 | .014 | .00 | .00 | RECTANG
936.922 | 1499.947 | 3.393 | 1503.339 | 117.45 | 4.33 | .29 | 1503.63 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
4.958 | .0268 | | | | | .0008 | .00 | 3.39 | .41 | .99 | .014 | .00 | .00 | RECTANG
941.880 | 1500.079 | 3.235 | 1503.314 | 117.45 | 4.54 | .32 | 1503.63 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
.434 | .0268 | | | | | .0008 | .00 | 3.23 | .44 | .99 | .014 | .00 | .00 | RECTANG
942.314 | 1500.091 | 3.220 | 1503.311 | 117.45 | 4.56 | .32 | 1503.63 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
942.314 | 1500.091 | .987 | 1501.078 | 117.45 | 14.87 | 3.43 | 1504.51 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
124.251 | .0268 | | | | | .0268 | 3.33 | .99 | 2.64 | .99 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1066.565 | 1503.418 | .987 | 1504.405 | 117.45 | 14.87 | 3.43 | 1507.84 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
144.232 | .0268 |      |      |      |      | .0257 | 3.70 | .99 | 2.64 | .99 | .014 | .00 | .00 | RECTANG
1210.796 | 1507.280 | 1.015 | 1508.295 | 117.45 | 14.46 | 3.25 | 1511.54 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
63.863 | .0268 |      |      |      |      | .0229 | 1.46 | 1.02 | 2.53 | .99 | .014 | .00 | .00 | RECTANG
1274.659 | 1508.990 | 1.065 | 1510.054 | 117.45 | 13.79 | 2.95 | 1513.01 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
31.130 | .0268 |      |      |      |      | .0198 | .62 | 1.06 | 2.35 | .99 | .014 | .00 | .00 | RECTANG
1305.789 | 1509.823 | 1.117 | 1510.940 | 117.45 | 13.15 | 2.68 | 1513.62 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.681 | .0268 |      |      |      |      | .0171 | .34 | 1.12 | 2.19 | .99 | .014 | .00 | .00 | RECTANG
1325.470 | 1510.350 | 1.171 | 1511.521 | 117.45 | 12.53 | 2.44 | 1513.96 | .00 | 1.88 | 8.00 | 4.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0092 |      |      |      |      | .0233 | .81 | 1.19 | 2.04 |      | .014 | .00 | .00 | RECTANG
1360.347 | 1510.670 | .805 | 1511.475 | 117.45 | 14.59 | 3.30 | 1514.78 | .04 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
166.489 | .0308 |      |      |      |      | .0308 | 5.12 | .84 | 2.87 | .81 | .014 | .00 | .00 | RECTANG
1526.836 | 1515.795 | .805 | 1516.600 | 117.45 | 14.59 | 3.30 | 1519.90 | .04 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
121.034 | .0308 |      |      |      |      | .0296 | 3.58 | .84 | 2.87 | .81 | .014 | .00 | .00 | RECTANG
1647.870 | 1519.520 | .826 | 1520.346 | 117.45 | 14.21 | 3.14 | 1523.48 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
102.930 | .0285 |      |      |      |      | .0278 | 2.86 | .83 | 2.76 | .83 | .014 | .00 | .00 | RECTANG
1750.800 | 1522.450 | .837 | 1523.287 | 117.45 | 14.04 | 3.06 | 1526.35 | .11 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
60.135 | .0274 |      |      |      |      | .0272 | 1.63 | .94 | 2.71 | .83 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1810.935 | 1524.100 | .839 | 1524.939 | 117.45 | 14.00 | 3.04 | 1527.98 | .11 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
103.284 | .0274 |      |      |      |      | .0252 | 2.60 | .95 | 2.69 | .83 | .014 | .00 | .00 | RECTANG
1914.218 | 1526.934 | .880 | 1527.814 | 117.45 | 13.35 | 2.77 | 1530.58 | .10 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
36.130 | .0274 |      |      |      |      | .0217 | .78 | .98 | 2.51 | .83 | .014 | .00 | .00 | RECTANG
1950.348 | 1527.926 | .923 | 1528.849 | 117.45 | 12.73 | 2.52 | 1531.36 | .09 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.932 | .0274 |      |      |      |      | .0187 | .39 | 1.01 | 2.33 | .83 | .014 | .00 | .00 | RECTANG
1971.280 | 1528.500 | .968 | 1529.468 | 117.45 | 12.13 | 2.29 | 1531.75 | .08 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.153 | .0274 |      |      |      |      | .0161 | .23 | 1.05 | 2.17 | .83 | .014 | .00 | .00 | RECTANG
1985.433 | 1528.889 | 1.015 | 1529.904 | 117.45 | 11.57 | 2.08 | 1531.98 | .07 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.278 | .0274 |      |      |      |      | .0139 | .14 | 1.09 | 2.02 | .83 | .014 | .00 | .00 | RECTANG
1995.711 | 1529.171 | 1.065 | 1530.235 | 117.45 | 11.03 | 1.89 | 1532.13 | .07 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.745 | .0274 |      |      |      |      | .0120 | .09 | 1.13 | 1.88 | .83 | .014 | .00 | .00 | RECTANG
2003.456 | 1529.383 | 1.117 | 1530.500 | 117.45 | 10.52 | 1.72 | 1532.22 | .06 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.942 | .0274 |      |      |      |      | .0103 | .06 | 1.18 | 1.75 | .83 | .014 | .00 | .00 | RECTANG
2009.398 | 1529.546 | 1.171 | 1530.718 | 117.45 | 10.03 | 1.56 | 1532.28 | .05 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.579 | .0274 |      |      |      |      | .0089 | .04 | 1.23 | 1.63 | .83 | .014 | .00 | .00 | RECTANG
2013.977 | 1529.672 | 1.228 | 1530.900 | 117.45 | 9.56 | 1.42 | 1532.32 | .05 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.502 | .0274 |      |      |      |      | .0077 | .03 | 1.28 | 1.52 | .83 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2017.479 | 1529.768 | 1.288 | 1531.056 | 117.45 | 9.12 | 1.29 | 1532.35 | .05 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 2.620 | .0274 |      |      |      |      | .0067 | .02 | 1.33 | 1.42 | .83 | .014 | .00 | .00 | RECTANG
2020.100 | 1529.840 | 1.351 | 1531.191 | 117.45 | 8.69 | 1.17 | 1532.36 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0318 |      |      |      |      |      | .0334 | 2.64 | 1.35 | 1.32 | .030 | .00 | .00 | RECTANG
2099.100 | 1532.350 | 1.223 | 1533.573 | 117.45 | 9.60 | 1.43 | 1535.01 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 950.380 | .0385 |      |      |      |      | .0385 | 36.57 | 1.22 | 1.53 | 1.22 | .030 | .00 | .00 | RECTANG
3049.480 | 1568.917 | 1.223 | 1570.140 | 117.45 | 9.60 | 1.43 | 1571.57 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 28.140 | .0385 |      |      |      |      | .0401 | 1.13 | 1.22 | 1.53 | 1.22 | .030 | .00 | .00 | RECTANG
3077.620 | 1570.000 | 1.191 | 1571.191 | 117.45 | 9.86 | 1.51 | 1572.70 | .20 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 62.714 | .0418 |      |      |      |      | .0418 | 2.62 | 1.39 | 1.59 | 1.19 | .030 | .00 | .00 | RECTANG
3140.334 | 1572.620 | 1.191 | 1573.810 | 117.45 | 9.86 | 1.51 | 1575.32 | .20 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 28.318 | .0418 |      |      |      |      | .0409 | 1.16 | 1.39 | 1.59 | 1.19 | .030 | .00 | .00 | RECTANG
3168.652 | 1573.802 | 1.208 | 1575.010 | 117.45 | 9.73 | 1.47 | 1576.48 | .19 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 16.629 | .0418 |      |      |      |      | .0373 | .62 | 1.40 | 1.56 | 1.19 | .030 | .00 | .00 | RECTANG
3185.281 | 1574.497 | 1.267 | 1575.763 | 117.45 | 9.27 | 1.34 | 1577.10 | .17 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 6.238 | .0418 |      |      |      |      | .0322 | .20 | 1.44 | 1.45 | 1.19 | .030 | .00 | .00 | RECTANG
3191.519 | 1574.757 | 1.328 | 1576.086 | 117.45 | 8.84 | 1.21 | 1577.30 | .16 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 3.271 | .0418 |      |      |      |      | .0279 | .09 | 1.49 | 1.35 | 1.19 | .030 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
        | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem  | Ch Slope |      |      |      |      |      | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3786.590 | 1589.940 | 1.357 | 1591.297 | 117.45 | 8.66 | 1.16 | 1592.46 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
488.553 | .0280 |      |         |         |         |         | .0280 | 13.68 | 1.36 | 1.31 | 1.36 | .030 | .00 | .00 | RECTANG
4275.144 | 1603.625 | 1.357 | 1604.981 | 117.45 | 8.66 | 1.16 | 1606.14 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
23.307 | .0280 |      |         |         |         |         | .0288 | .67 | 1.36 | 1.31 | 1.36 | .030 | .00 | .00 | RECTANG
4298.450 | 1604.277 | 1.334 | 1605.611 | 117.45 | 8.81 | 1.20 | 1606.82 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
15.322 | .0280 |      |         |         |         |         | .0318 | .49 | 1.33 | 1.34 | 1.36 | .030 | .00 | .00 | RECTANG
4313.772 | 1604.707 | 1.272 | 1605.978 | 117.45 | 9.24 | 1.32 | 1607.30 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
8.317 | .0280 |      |         |         |         |         | .0368 | .31 | 1.27 | 1.44 | 1.36 | .030 | .00 | .00 | RECTANG
4322.089 | 1604.940 | 1.213 | 1606.152 | 117.45 | 9.69 | 1.46 | 1607.61 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
6.107 | .0280 |      |         |         |         |         | .0426 | .26 | 1.21 | 1.55 | 1.36 | .030 | .00 | .00 | RECTANG
4328.197 | 1605.111 | 1.156 | 1606.267 | 117.45 | 10.16 | 1.60 | 1607.87 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
4.983 | .0280 |      |         |         |         |         | .0494 | .25 | 1.16 | 1.67 | 1.36 | .030 | .00 | .00 | RECTANG
4333.180 | 1605.250 | 1.102 | 1606.352 | 117.45 | 10.65 | 1.76 | 1608.12 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
4.280 | .0280 |      |         |         |         |         | .0572 | .24 | 1.10 | 1.79 | 1.36 | .030 | .00 | .00 | RECTANG
4337.460 | 1605.370 | 1.051 | 1606.421 | 117.45 | 11.17 | 1.94 | 1608.36 | .55 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
13.427 | .0614 |      |         |         |         |         | .0614 | .82 | 1.60 | 1.92 | 1.05 | .030 | .00 | .00 | RECTANG
4350.887 | 1606.195 | 1.051 | 1607.246 | 117.45 | 11.17 | 1.94 | 1609.18 | .55 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
29.680 | .0614 |      |         |         |         |         | .0599 | 1.78 | 1.60 | 1.92 | 1.05 | .030 | .00 | .00 | RECTANG
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4380.567 | 1608.018 | 1.068 | 1609.086 | 117.45 | 10.99 | 1.88 | 1610.96 | .54 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 16.809 | .0614 |      |      |      |      | .0544 | .91 | 1.60 | 1.87 | 1.05 | .030 | .00 | .00 | RECTANG
4397.376 | 1609.050 | 1.121 | 1610.171 | 117.45 | 10.48 | 1.71 | 1611.88 | .49 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 6.928 | .0614 |      |      |      |      | .0469 | .33 | 1.61 | 1.74 | 1.05 | .030 | .00 | .00 | RECTANG
4404.304 | 1609.476 | 1.175 | 1610.651 | 117.45 | 9.99 | 1.55 | 1612.20 | .44 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 4.001 | .0614 |      |      |      |      | .0405 | .16 | 1.62 | 1.62 | 1.05 | .030 | .00 | .00 | RECTANG
4408.305 | 1609.722 | 1.233 | 1610.954 | 117.45 | 9.53 | 1.41 | 1612.36 | .40 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 2.575 | .0614 |      |      |      |      | .0350 | .09 | 1.63 | 1.51 | 1.05 | .030 | .00 | .00 | RECTANG
4410.880 | 1609.880 | 1.293 | 1611.173 | 117.45 | 9.09 | 1.28 | 1612.45 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 882.660 | .0325 |      |      |      |      | .0325 | 28.65 | 1.29 | 1.41 | 1.29 | .030 | .00 | .00 | RECTANG
5293.541 | 1638.531 | 1.293 | 1639.824 | 117.45 | 9.09 | 1.28 | 1641.11 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 25.903 | .0325 |      |      |      |      | .0332 | .86 | 1.29 | 1.41 | 1.29 | .030 | .00 | .00 | RECTANG
5319.444 | 1639.372 | 1.275 | 1640.647 | 117.45 | 9.21 | 1.32 | 1641.96 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 17.806 | .0325 |      |      |      |      | .0365 | .65 | 1.28 | 1.44 | 1.29 | .030 | .00 | .00 | RECTANG
5337.250 | 1639.950 | 1.216 | 1641.166 | 117.45 | 9.66 | 1.45 | 1642.61 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 419.300 | .0392 |      |      |      |      | .0392 | 16.43 | 1.22 | 1.54 | 1.22 | .030 | .00 | .00 | RECTANG
5756.550 | 1656.383 | 1.216 | 1657.599 | 117.45 | 9.66 | 1.45 | 1659.05 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 27.982 | .0392 |      |      |      |      | .0395 | 1.11 | 1.22 | 1.54 | 1.22 | .030 | .00 | .00 | RECTANG
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5784.533 | 1657.480 | 1.209 | 1658.689 | 117.45 | 9.71 | 1.47 | 1660.15 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.668 | .0392 |      |      |      |      |      | .0430 | 1.02 | 1.21 | 1.56 | 1.22 | .030 | .00 | .00 | RECTANG
5808.201 | 1658.407 | 1.153 | 1659.560 | 117.45 | 10.19 | 1.61 | 1661.17 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.124 | .0392 |      |      |      |      |      | .0498 | .50 | 1.15 | 1.67 | 1.22 | .030 | .00 | .00 | RECTANG
5818.325 | 1658.804 | 1.099 | 1659.903 | 117.45 | 10.69 | 1.77 | 1661.68 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.807 | .0392 |      |      |      |      |      | .0577 | .39 | 1.10 | 1.80 | 1.22 | .030 | .00 | .00 | RECTANG
5825.131 | 1659.071 | 1.048 | 1660.119 | 117.45 | 11.21 | 1.95 | 1662.07 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.274 | .0392 |      |      |      |      |      | .0669 | .35 | 1.05 | 1.93 | 1.22 | .030 | .00 | .00 | RECTANG
5830.405 | 1659.277 | .999 | 1660.277 | 117.45 | 11.75 | 2.15 | 1662.42 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.373 | .0392 |      |      |      |      |      | .0776 | .34 | 1.00 | 2.07 | 1.22 | .030 | .00 | .00 | RECTANG
5834.778 | 1659.449 | .953 | 1660.402 | 117.45 | 12.33 | 2.36 | 1662.76 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.767 | .0392 |      |      |      |      |      | .0901 | .34 | .95 | 2.23 | 1.22 | .030 | .00 | .00 | RECTANG
5838.545 | 1659.597 | .908 | 1660.505 | 117.45 | 12.93 | 2.60 | 1663.10 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.325 | .0392 |      |      |      |      |      | .1045 | .35 | .91 | 2.39 | 1.22 | .030 | .00 | .00 | RECTANG
5841.870 | 1659.727 | .866 | 1660.593 | 117.45 | 13.56 | 2.86 | 1663.45 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.983 | .0392 |      |      |      |      |      | .1214 | .36 | .87 | 2.57 | 1.22 | .030 | .00 | .00 | RECTANG
5844.853 | 1659.844 | .826 | 1660.670 | 117.45 | 14.22 | 3.14 | 1663.81 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.707 | .0392 |      |      |      |      |      | .1410 | .38 | .83 | 2.76 | 1.22 | .030 | .00 | .00 | RECTANG
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5847.560 | 1659.950 | .787 | 1660.737 | 117.45 | 14.92 | 3.46 | 1664.19 | .00 | 1.62 | 10.00 | 3.500 | 10.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0291 |      |      |      |      |      | .0308 | 1.59 | .79 | 2.96 | .014 | .00 | .00 | RECTANG
5899.041 | 1661.450 | 1.133 | 1662.583 | 107.20 | 15.77 | 3.86 | 1666.45 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1744.750 | .0287 |      |      |      |      |      | .0287 | 50.02 | 1.13 | 2.61 | 1.13 | .014 | .00 | .00 | RECTANG
7643.791 | 1711.473 | 1.133 | 1712.606 | 107.20 | 15.77 | 3.86 | 1716.47 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
153.636 | .0287 |      |      |      |      |      | .0301 | 4.62 | 1.13 | 2.61 | 1.13 | .014 | .00 | .00 | RECTANG
7797.427 | 1715.878 | 1.098 | 1716.976 | 107.20 | 16.27 | 4.11 | 1721.09 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
69.550 | .0287 |      |      |      |      |      | .0338 | 2.35 | 1.10 | 2.74 | 1.13 | .014 | .00 | .00 | RECTANG
7866.977 | 1717.872 | 1.047 | 1718.919 | 107.20 | 17.07 | 4.52 | 1723.44 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
38.959 | .0287 |      |      |      |      |      | .0390 | 1.52 | 1.05 | 2.94 | 1.13 | .014 | .00 | .00 | RECTANG
7905.937 | 1718.989 | .998 | 1719.987 | 107.20 | 17.90 | 4.97 | 1724.96 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.573 | .0287 |      |      |      |      |      | .0450 | 1.24 | 1.00 | 3.16 | 1.13 | .014 | .00 | .00 | RECTANG
7933.509 | 1719.780 | .952 | 1720.732 | 107.20 | 18.77 | 5.47 | 1726.20 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.577 | .0287 |      |      |      |      |      | .0520 | 1.12 | .95 | 3.39 | 1.13 | .014 | .00 | .00 | RECTANG
7955.086 | 1720.398 | .907 | 1721.306 | 107.20 | 19.69 | 6.02 | 1727.33 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.844 | .0287 |      |      |      |      |      | .0600 | 1.07 | .91 | 3.64 | 1.13 | .014 | .00 | .00 | RECTANG
7972.931 | 1720.910 | .865 | 1721.775 | 107.20 | 20.65 | 6.62 | 1728.40 | .65 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.813 | .0693 |      |      |      |      |      | .0635 | 1.26 | 1.51 | 3.91 | .84 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7992.744 | 1722.282 | .873 | 1723.155 | 107.20 | 20.46 | 6.50 | 1729.66 | .63 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
50.447 | .0693 |      |      |      |      | .0584 | 2.95 | 1.51 | 3.86 | .84 | .014 | .00 | .00 | RECTANG
8043.191 | 1725.776 | .916 | 1726.692 | 107.20 | 19.51 | 5.91 | 1732.60 | .58 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
26.339 | .0693 |      |      |      |      | .0506 | 1.33 | 1.49 | 3.59 | .84 | .014 | .00 | .00 | RECTANG
8069.530 | 1727.600 | .961 | 1728.561 | 107.20 | 18.60 | 5.37 | 1733.93 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
105.687 | .0469 |      |      |      |      | .0469 | 4.96 | .96 | 3.34 | .96 | .014 | .00 | .00 | RECTANG
8175.216 | 1732.560 | .961 | 1733.520 | 107.20 | 18.60 | 5.37 | 1738.89 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
140.864 | .0469 |      |      |      |      | .0440 | 6.20 | .96 | 3.34 | .96 | .014 | .00 | .00 | RECTANG
8316.080 | 1739.170 | 1.003 | 1740.173 | 107.20 | 17.81 | 4.92 | 1745.10 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.050 | .0412 |      |      |      |      | .0412 | .04 | 1.00 | 3.13 | 1.00 | .014 | .00 | .00 | RECTANG
8317.130 | 1739.213 | 1.003 | 1740.217 | 107.20 | 17.81 | 4.92 | 1745.14 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
144.710 | .0412 |      |      |      |      | .0396 | 5.73 | 1.00 | 3.13 | 1.00 | .014 | .00 | .00 | RECTANG
8461.840 | 1745.170 | 1.031 | 1746.201 | 107.20 | 17.33 | 4.66 | 1750.87 | .62 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.030 | .0344 |      |      |      |      | .0389 | 1.13 | 1.65 | 3.01 | 1.06 | .014 | .00 | .00 | RECTANG
8490.870 | 1746.170 | 1.015 | 1747.185 | 107.20 | 17.61 | 4.81 | 1752.00 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.029 | .0164 |      |      |      |      | .0428 | .69 | 1.01 | 3.08 | 1.37 | .014 | .00 | .00 | RECTANG
8506.899 | 1746.432 | .969 | 1747.401 | 107.20 | 18.45 | 5.28 | 1752.68 | .00 | 2.15 | 6.00 | 3.000 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.674 | .0164 |      |      |      |      | .0493 | .72 | .97 | 3.30 | 1.37 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
9465.505 | 1784.361 | 1.789 | 1786.150 | 107.20 | 18.91 | 5.55 | 1791.70 | .00 | 3.09 | 4.20 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.345 | .0409 |      |      |      |      | .0277 | .92 | 1.79 | 2.87 | 1.64 | .013 | .00 | .00 | PIPE
9498.850 | 1785.724 | 1.854 | 1787.578 | 107.20 | 18.03 | 5.05 | 1792.63 | .00 | 3.09 | 4.22 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.605 | .0409 |      |      |      |      | .0243 | .57 | 1.85 | 2.67 | 1.64 | .013 | .00 | .00 | PIPE
9522.455 | 1786.689 | 1.923 | 1788.612 | 107.20 | 17.19 | 4.59 | 1793.20 | .00 | 3.09 | 4.23 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.729 | .0409 |      |      |      |      | .0214 | .38 | 1.92 | 2.49 | 1.64 | .013 | .00 | .00 | PIPE
9540.185 | 1787.414 | 1.995 | 1789.409 | 107.20 | 16.39 | 4.17 | 1793.58 | .00 | 3.09 | 4.24 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.788 | .0409 |      |      |      |      | .0188 | .26 | 2.00 | 2.33 | 1.64 | .013 | .00 | .00 | PIPE
9553.973 | 1787.977 | 2.070 | 1790.047 | 107.20 | 15.63 | 3.79 | 1793.84 | .00 | 3.09 | 4.25 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.941 | .0409 |      |      |      |      | .0166 | .18 | 2.07 | 2.17 | 1.64 | .013 | .00 | .00 | PIPE
9564.914 | 1788.425 | 2.149 | 1790.574 | 107.20 | 14.90 | 3.45 | 1794.02 | .00 | 3.09 | 4.25 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.778 | .0409 |      |      |      |      | .0146 | .13 | 2.15 | 2.02 | 1.64 | .013 | .00 | .00 | PIPE
9573.692 | 1788.783 | 2.232 | 1791.015 | 107.20 | 14.21 | 3.13 | 1794.15 | .00 | 3.09 | 4.24 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.072 | .0409 |      |      |      |      | .0129 | .09 | 2.23 | 1.88 | 1.64 | .013 | .00 | .00 | PIPE
9580.765 | 1789.072 | 2.319 | 1791.391 | 107.20 | 13.54 | 2.85 | 1794.24 | .00 | 3.09 | 4.23 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.674 | .0409 |      |      |      |      | .0114 | .06 | 2.32 | 1.75 | 1.64 | .013 | .00 | .00 | PIPE
9586.438 | 1789.304 | 2.410 | 1791.714 | 107.20 | 12.91 | 2.59 | 1794.30 | .00 | 3.09 | 4.21 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.501 | .0409 |      |      |      |      | .0100 | .05 | 2.41 | 1.62 | 1.64 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
9590.939 | 1789.488 | 2.507 | 1791.995 | 107.20 | 12.31 | 2.35 | 1794.35 | .00 | 3.09 | 4.18 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 3.497 | .0409 |         |         |         |         | .0089 | .03 | 2.51 | 1.50 | 1.64 | .013 | .00 | .00 | PIPE
9594.437 | 1789.631 | 2.609 | 1792.240 | 107.20 | 11.74 | 2.14 | 1794.38 | .00 | 3.09 | 4.14 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 2.610 | .0409 |         |         |         |         | .0079 | .02 | 2.61 | 1.39 | 1.64 | .013 | .00 | .00 | PIPE
9597.047 | 1789.738 | 2.717 | 1792.455 | 107.20 | 11.19 | 1.95 | 1794.40 | .00 | 3.09 | 4.08 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 1.808 | .0409 |         |         |         |         | .0070 | .01 | 2.72 | 1.29 | 1.64 | .013 | .00 | .00 | PIPE
9598.854 | 1789.812 | 2.833 | 1792.645 | 107.20 | 10.67 | 1.77 | 1794.41 | .00 | 3.09 | 4.01 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 1.070 | .0409 |         |         |         |         | .0062 | .01 | 2.83 | 1.19 | 1.64 | .013 | .00 | .00 | PIPE
9599.925 | 1789.855 | 2.956 | 1792.812 | 107.20 | 10.18 | 1.61 | 1794.42 | .00 | 3.09 | 3.91 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | .355 | .0409 |         |         |         |         | .0055 | .00 | 2.96 | 1.09 | 1.64 | .013 | .00 | .00 | PIPE
9600.280 | 1789.870 | 3.091 | 1792.961 | 107.20 | 9.70 | 1.46 | 1794.42 | .00 | 3.09 | 3.79 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        |         | .0400 |         |         |         |         | .0031 | .03 | 3.09 | 1.00 |         | .013 | .00 | .00 | PIPE
JUNCT STR
9610.280 | 1790.270 | 4.841 | 1795.111 | 50.30 | 3.55 | .20 | 1795.31 | .00 | 2.09 | .00 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 15.490 | .0391 |         |         |         |         | .0009 | .01 | 4.84 | .00 | 1.12 | .013 | .00 | .00 | PIPE
9625.771 | 1790.875 | 4.250 | 1795.125 | 50.30 | 3.55 | .20 | 1795.32 | .00 | 2.09 | .00 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 9.764 | .0391 |         |         |         |         | .0008 | .01 | 4.25 | .00 | 1.12 | .013 | .00 | .00 | PIPE
9635.534 | 1791.257 | 3.856 | 1795.113 | 50.30 | 3.72 | .21 | 1795.33 | .00 | 2.09 | 2.46 | 4.250 | .000 | .00 | 1 | .0
        |         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
        | 5.223 | .0391 |         |         |         |         | .0008 | .00 | 3.86 | .28 | 1.12 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
 SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
 BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
10900.000 | 1840.432 | 1.146 | 1841.577 | 50.30 | 16.31 | 4.13 | 1845.71 | .00 | 2.09 | 3.77 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 151.509 | .0351 |      |      |      |      | .0347 | 5.26 | 1.15 | 3.18 | 1.15 | .013 | .00 | .00 | PIPE
11051.510 | 1845.752 | 1.153 | 1846.905 | 50.30 | 16.18 | 4.06 | 1850.97 | .00 | 2.09 | 3.78 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 111.570 | .0351 |      |      |      |      | .0322 | 3.59 | 1.15 | 3.14 | 1.15 | .013 | .00 | .00 | PIPE
11163.080 | 1849.670 | 1.192 | 1850.863 | 50.30 | 15.42 | 3.69 | 1854.56 | .00 | 2.09 | 3.82 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 153.342 | .0301 |      |      |      |      | .0285 | 4.36 | 1.19 | 2.94 | 1.19 | .013 | .00 | .00 | PIPE
11316.420 | 1854.284 | 1.226 | 1855.510 | 50.30 | 14.83 | 3.42 | 1858.93 | .00 | 2.09 | 3.85 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 55.039 | .0301 |      |      |      |      | .0252 | 1.39 | 1.23 | 2.79 | 1.19 | .013 | .00 | .00 | PIPE
11371.460 | 1855.940 | 1.269 | 1857.209 | 50.30 | 14.14 | 3.11 | 1860.31 | .00 | 2.09 | 3.89 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 29.714 | .0301 |      |      |      |      | .0221 | .66 | 1.27 | 2.61 | 1.19 | .013 | .00 | .00 | PIPE
11401.170 | 1856.834 | 1.314 | 1858.148 | 50.30 | 13.48 | 2.82 | 1860.97 | .00 | 2.09 | 3.93 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 19.570 | .0301 |      |      |      |      | .0193 | .38 | 1.31 | 2.44 | 1.19 | .013 | .00 | .00 | PIPE
11420.750 | 1857.423 | 1.360 | 1858.783 | 50.30 | 12.86 | 2.57 | 1861.35 | .00 | 2.09 | 3.96 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 14.096 | .0301 |      |      |      |      | .0169 | .24 | 1.36 | 2.28 | 1.19 | .013 | .00 | .00 | PIPE
11434.840 | 1857.847 | 1.408 | 1859.255 | 50.30 | 12.26 | 2.33 | 1861.59 | .00 | 2.09 | 4.00 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 10.635 | .0301 |      |      |      |      | .0148 | .16 | 1.41 | 2.13 | 1.19 | .013 | .00 | .00 | PIPE
11445.480 | 1858.167 | 1.458 | 1859.625 | 50.30 | 11.69 | 2.12 | 1861.75 | .00 | 2.09 | 4.03 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 8.252 | .0301 |      |      |      |      | .0130 | .11 | 1.46 | 1.99 | 1.19 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM
SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR
BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
11453.730 | 1858.415 | 1.509 | 1859.925 | 50.30 | 11.14 | 1.93 | 1861.85 | .00 | 2.09 | 4.07 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.488 | .0301 |      |      |      |      | .0114 | .07 | 1.51 | 1.86 | 1.19 | .013 | .00 | .00 | PIPE
11460.220 | 1858.610 | 1.563 | 1860.174 | 50.30 | 10.62 | 1.75 | 1861.93 | .00 | 2.09 | 4.10 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.138 | .0301 |      |      |      |      | .0100 | .05 | 1.56 | 1.74 | 1.19 | .013 | .00 | .00 | PIPE
11465.350 | 1858.765 | 1.620 | 1860.385 | 50.30 | 10.13 | 1.59 | 1861.98 | .00 | 2.09 | 4.13 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.050 | .0301 |      |      |      |      | .0088 | .04 | 1.62 | 1.63 | 1.19 | .013 | .00 | .00 | PIPE
11469.400 | 1858.887 | 1.678 | 1860.565 | 50.30 | 9.66 | 1.45 | 1862.01 | .00 | 2.09 | 4.15 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.156 | .0301 |      |      |      |      | .0077 | .02 | 1.68 | 1.52 | 1.19 | .013 | .00 | .00 | PIPE
11472.560 | 1858.982 | 1.739 | 1860.721 | 50.30 | 9.21 | 1.32 | 1862.04 | .00 | 2.09 | 4.18 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.400 | .0301 |      |      |      |      | .0068 | .02 | 1.74 | 1.42 | 1.19 | .013 | .00 | .00 | PIPE
11474.960 | 1859.054 | 1.803 | 1860.857 | 50.30 | 8.78 | 1.20 | 1862.05 | .00 | 2.09 | 4.20 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.757 | .0301 |      |      |      |      | .0059 | .01 | 1.80 | 1.33 | 1.19 | .013 | .00 | .00 | PIPE
11476.720 | 1859.107 | 1.869 | 1860.976 | 50.30 | 8.37 | 1.09 | 1862.06 | .00 | 2.09 | 4.22 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.188 | .0301 |      |      |      |      | .0052 | .01 | 1.87 | 1.24 | 1.19 | .013 | .00 | .00 | PIPE
11477.900 | 1859.143 | 1.939 | 1861.081 | 50.30 | 7.98 | .99 | 1862.07 | .00 | 2.09 | 4.23 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.684 | .0301 |      |      |      |      | .0046 | .00 | 1.94 | 1.15 | 1.19 | .013 | .00 | .00 | PIPE
11478.590 | 1859.163 | 2.011 | 1861.174 | 50.30 | 7.61 | .90 | 1862.07 | .00 | 2.09 | 4.24 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.222 | .0301 |      |      |      |      | .0040 | .00 | 2.01 | 1.07 | 1.19 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-17-2014 Time: 7:15:58

REDLANDS MASTER PLAN CAPACITY ANALYSIS NAD88 DATUM

SD 4-22 GARDEN ST FROM REDLANDS BLVD AT PALM AVE TO MARIPOSA DR

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope |      |      |      |      | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
11478.810 | 1859.170 | 2.088 | 1861.258 | 50.30 | 7.25 | .82 | 1862.07 | .00 | 2.09 | 4.25 | 4.250 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1										
CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	4	1			4.500														
CD	2	4	1			3.500														
CD	3	4	1			4.000														
CD	4	4	1			5.000														
CD	5	4	1			1.500														
CD	6	4	1			5.000														
CD	7	4	1			1.500														
CD	8	4	1			1.500														
CD	9	4	1			5.000														
CD	10	4	1			1.500														
CD	11	4	1			1.500														
CD	12	4	1			4.000														
CD	13	4	1			1.500														
CD	14	4	1			4.000														
CD	15	4	1			4.250														
CD	16	4	1			2.000														
CD	17	4	1			4.250														
CD	18	4	1			1.500														
CD	19	4	1			1.500														
CD	20	4	1			4.250														
CD	21	4	1			1.500														
CD	22	4	1			1.500														
CD	23	4	1			4.250														
CD	24	4	1			1.500														
CD	25	4	1			4.250														
CD	26	4	1			2.000														
CD	27	4	1			4.250														
CD	28	4	1			4.250														
CD	29	4	1			3.500														
CD	30	4	1			1.500														
CD	31	4	1			3.250														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	TYPE	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS A	SYSTEM OUTLET	778.000	1611.420	1	1618.000				
2	IS A	REACH	1097.500	1615.670	1		.000	.000	22.500	1
3	IS A	JUNCTION	1102.500	1616.670	2		.000	.000	.000	.000
4	IS A	REACH	1474.000	1640.770	2		.000	.000	.000	1

ELEMENT NO	5	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			1776.760	1668.770	2							.000	.000	30.000	1					
ELEMENT NO	6	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2130.130	1706.280	2							.000	.000	.000	0					
ELEMENT NO	7	IS A JUNCTION	*	*	*	*	*													
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2135.130	1706.840	3	0	0	.013	.000	.000	.000	.000	.000	.000	.000					
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	8	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2329.860	1728.760	3			.013				.000	.000	.000	0					
ELEMENT NO	9	IS A JUNCTION	*	*	*	*	*													
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2334.860	1729.070	4	0	0	.013	.000	.000	.000	.000	.000	.000	.000					
											RADIUS	ANGLE								
											.000	.000								
W S P G W																				
WATER SURFACE PROFILE - ELEMENT CARD LISTING																				
ELEMENT NO	10	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2564.740	1731.490	4			.013				.000	.000	30.000	1					
ELEMENT NO	11	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			2887.410	1734.890	4			.013				.000	.000	.000	0					
ELEMENT NO	12	IS A JUNCTION	*	*	*	*	*													
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2892.410	1734.940	6	5	0	.013	1.000	.000	1738.670	.000	-45.000	.000						
											RADIUS	ANGLE								
											14.324	20.000								
ELEMENT NO	13	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			3389.580	1740.180	6			.013				.000	.000	.000	0					
ELEMENT NO	14	IS A JUNCTION	*	*	*	*	*													
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			3394.580	1740.240	9	7	8	.013	1.000	1.000	1741.510	1740.760	-45.000	45.000						
											RADIUS	ANGLE								
											9.549	30.000								
ELEMENT NO	15	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			3585.260	1742.250	9			.013				.000	.000	.000	0					
ELEMENT NO	16	IS A JUNCTION	*	*	*	*	*													
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			3591.260	1743.260	12	10	11	.013	1.000	1.000	1745.250	1745.250	-90.000	90.000						
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	17	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			3862.500	1757.010	12			.013				.000	.000	.000	1					
W S P G W																				
WATER SURFACE PROFILE - ELEMENT CARD LISTING																				
ELEMENT NO	18	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT							RADIUS	ANGLE	ANG PT	MAN H					
			4452.220	1775.250	12			.013				.000	.000	.000	0					
ELEMENT NO	19	IS A JUNCTION	*	*	*	*	*													
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			4458.220	1775.950	14	13	0	.013	2.000	.000	1777.000	.000	45.000	.000						
											RADIUS	ANGLE								
											.000	.000								

ELEMENT NO	IS	A	REACH	STATION	INVERT	SECT			RADIUS	ANGLE	ANG PT	MAN H			
									7.639	-45.000					
ELEMENT NO 20	IS	A	REACH	4810.150	1787.140	14		.013	.000	.000	.000	0			
ELEMENT NO 21	IS	A	JUNCTION	4815.150	1787.299	15	0	0	.013	Q3 .000	Q4 .000	INVERT-3 .000	INVERT-4 .000	PHI 3 .000	PHI 4 .000
ELEMENT NO 22	IS	A	REACH	5000.000	1792.920	15		.013	.000	.000	-20.000	0			
ELEMENT NO 23	IS	A	REACH	5229.220	1799.900	15		.013	.000	.000	.000	0			
ELEMENT NO 24	IS	A	REACH	5292.210	1799.920	15		.013	.000	.000	.000	1			
ELEMENT NO 25	IS	A	REACH	5306.980	1800.680	15		.013	90.028	9.400	.000	1			
ELEMENT NO 26	IS	A	REACH	5430.980	1807.130	15		.013	.000	.000	.000	0			
ELEMENT NO 27	IS	A	REACH	5484.920	1807.400	15		.013	.000	.000	.000	0			
W S P G W															
PAGE NO 5															
WATER SURFACE PROFILE - ELEMENT CARD LISTING															
ELEMENT NO 28	IS	A	REACH	5512.800	1807.540	15		.013	22.335	-71.520	.000	1			
ELEMENT NO 29	IS	A	REACH	5621.840	1808.110	15		.013	.000	.000	.000	0			
ELEMENT NO 30	IS	A	JUNCTION	5631.090	1808.130	17	16	0	.013	Q3 3.000	Q4 .000	INVERT-3 1809.230	INVERT-4 .000	PHI 3 45.000	PHI 4 .000
ELEMENT NO 31	IS	A	REACH	5645.970	1808.210	17		.013	.000	.000	.000	0			
ELEMENT NO 32	IS	A	REACH	5718.790	1811.030	17		.013	.000	.000	.000	0			
ELEMENT NO 33	IS	A	REACH	5741.040	1811.910	17		.013	22.504	56.650	.000	1			
ELEMENT NO 34	IS	A	REACH	5992.700	1822.810	17		.013	.000	.000	.000	0			
ELEMENT NO 35	IS	A	REACH	6043.780	1824.070	17		.013	89.010	-32.880	.000	1			
ELEMENT NO 36	IS	A	REACH	6424.550	1839.670	17		.013	.000	.000	.000	2			
ELEMENT NO 37	IS	A	REACH												

ELEMENT NO	38	IS	A	REACH	6469.390	1839.920	17				.013			45.073	57.000	.000	0	
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					6551.480	1840.380	17				.013			.000	.000	.000	0	
ELEMENT NO	39	IS	A	JUNCTION	*	*	*	*			*			*				
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
					6556.830	1840.410	20	18	19	.013	2.000	2.000	1842.000	1841.560	45.000	-45.000		
													RADIUS	ANGLE				
													.000	.000				
W S P G W																		
WATER SURFACE PROFILE - ELEMENT CARD LISTING																		
ELEMENT NO	40	IS	A	REACH	*	*	*										PAGE NO	6
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					6695.480	1841.200	20				.013			.000	.000	.000	0	
ELEMENT NO	41	IS	A	JUNCTION	*	*	*	*			*			*				
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
					6700.830	1841.230	23	21	22	.013	2.000	2.000	1843.260	1842.590	90.000	-90.000		
													RADIUS	ANGLE				
													.000	.000				
ELEMENT NO	42	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					6758.990	1842.930	23				.013			.000	.000	.000	0	
ELEMENT NO	43	IS	A	JUNCTION	*	*	*	*			*			*				
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
					6764.330	1842.970	25	24	0	.013	5.000	.000	1844.330	.000	90.000	.000		
													RADIUS	ANGLE				
													.000	.000				
ELEMENT NO	44	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					6784.940	1843.670	25				.013			45.418	-26.000	.000	0	
ELEMENT NO	45	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					7012.490	1849.690	25				.013			.000	.000	.000	0	
ELEMENT NO	46	IS	A	JUNCTION	*	*	*	*			*			*				
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
					7017.840	1849.810	27	26	0	.013	5.000	.000	1850.600	.000	90.000	.000		
													RADIUS	ANGLE				
													.000	.000				
ELEMENT NO	47	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					7083.160	1853.650	27				.013			41.584	-90.000	.000	0	
W S P G W																		
WATER SURFACE PROFILE - ELEMENT CARD LISTING																		
ELEMENT NO	48	IS	A	JUNCTION	*	*	*	*			*			*				
				U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
					7093.160	1854.050	28	0	0	.013	.000	.000	.000	.000	.000	.000	.000	
													RADIUS	ANGLE				
													.000	.000				
ELEMENT NO	49	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					7136.080	1855.160	28				.013			44.102	55.760	.000	0	
ELEMENT NO	50	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					7292.360	1859.400	28				.013			.000	.000	.000	0	
ELEMENT NO	51	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					7461.310	1863.700	28				.013			299.973	-32.270	.000	1	
ELEMENT NO	52	IS	A	REACH	*	*	*											
				U/S DATA	STATION	INVERT	SECT				N			RADIUS	ANGLE	ANG PT	MAN H	
					7608.660	1867.790	28				.013			.000	.000	.000	0	

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
778.000 | 1611.420 | 6.580 | 1618.000 | 46.00 | 2.89 | .13 | 1618.13 | .00 | 1.96 | .00 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
164.089 | .0133 | | | | | .0005 | .09 | 6.58 | .00 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
942.089 | 1613.603 | 4.500 | 1618.103 | 46.00 | 2.89 | .13 | 1618.23 | .00 | 1.96 | .00 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
31.511 | .0133 | | | | | .0005 | .02 | 4.50 | .00 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
973.600 | 1614.022 | 4.083 | 1618.105 | 46.00 | 3.03 | .14 | 1618.25 | .00 | 1.96 | 2.61 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
17.804 | .0133 | | | | | .0005 | .01 | 4.08 | .22 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
991.404 | 1614.259 | 3.841 | 1618.099 | 46.00 | 3.18 | .16 | 1618.26 | .00 | 1.96 | 3.18 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
14.420 | .0133 | | | | | .0005 | .01 | 3.84 | .26 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1005.824 | 1614.451 | 3.641 | 1618.091 | 46.00 | 3.34 | .17 | 1618.26 | .00 | 1.96 | 3.54 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
12.406 | .0133 | | | | | .0006 | .01 | 3.64 | .30 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1018.231 | 1614.616 | 3.466 | 1618.081 | 46.00 | 3.50 | .19 | 1618.27 | .00 | 1.96 | 3.79 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
8.598 | .0133 | | | | | .0006 | .01 | 3.47 | .33 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1026.829 | 1614.730 | 3.343 | 1618.073 | 46.00 | 3.63 | .20 | 1618.28 | .00 | 1.96 | 3.93 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
| | | | | | | | | | | | | | | | |
1026.829 | 1614.730 | 1.062 | 1615.792 | 46.00 | 16.04 | 4.00 | 1619.79 | .00 | 1.96 | 3.82 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
1.068 | .0133 | | | | | .0366 | .04 | 1.06 | 3.26 | 1.37 | .013 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
1027.897 | 1614.744 | 1.062 | 1615.806 | 46.00 | 16.05 | 4.00 | 1619.81 | .00 | 1.96 | 3.82 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
14.032 | .0133 | | | | | .0393 | .55 | 1.06 | 3.27 | 1.37 | .013 | .00 | .00 | PIPE
*****
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1041.929 | 1614.931 | 1.027 | 1615.958 | 46.00 | 16.83 | 4.40 | 1620.36 | .00 | 1.96 | 3.78 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.827 | .0133 |      |      |      |      | .0450 | .58 | 1.03 | 3.49 | 1.37 | .013 | .00 | .00 | PIPE
1054.756 | 1615.101 | .993 | 1616.094 | 46.00 | 17.65 | 4.84 | 1620.93 | .00 | 1.96 | 3.73 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.834 | .0133 |      |      |      |      | .0514 | .61 | .99 | 3.72 | 1.37 | .013 | .00 | .00 | PIPE
1066.590 | 1615.259 | .960 | 1616.219 | 46.00 | 18.51 | 5.32 | 1621.54 | .00 | 1.96 | 3.69 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.996 | .0133 |      |      |      |      | .0588 | .65 | .96 | 3.97 | 1.37 | .013 | .00 | .00 | PIPE
1077.586 | 1615.405 | .929 | 1616.334 | 46.00 | 19.42 | 5.86 | 1622.19 | .00 | 1.96 | 3.64 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.272 | .0133 |      |      |      |      | .0673 | .69 | .93 | 4.24 | 1.37 | .013 | .00 | .00 | PIPE
1087.858 | 1615.542 | .898 | 1616.440 | 46.00 | 20.37 | 6.44 | 1622.88 | .00 | 1.96 | 3.60 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.642 | .0133 |      |      |      |      | .0771 | .74 | .90 | 4.53 | 1.37 | .013 | .00 | .00 | PIPE
1097.500 | 1615.670 | .869 | 1616.539 | 46.00 | 21.36 | 7.08 | 1623.62 | .00 | 1.96 | 3.55 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .2000 |      |      |      |      | .0736 | .37 | .87 | 4.83 |      | .013 | .00 | .00 | PIPE
1102.500 | 1616.670 | 1.004 | 1617.674 | 46.00 | 20.17 | 6.32 | 1623.99 | .00 | 2.12 | 3.17 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
150.927 | .0649 |      |      |      |      | .0649 | 9.79 | 1.00 | 4.19 | 1.00 | .013 | .00 | .00 | PIPE
1253.427 | 1626.461 | 1.004 | 1627.465 | 46.00 | 20.17 | 6.32 | 1633.78 | .00 | 2.12 | 3.17 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
129.915 | .0649 |      |      |      |      | .0678 | 8.81 | 1.00 | 4.19 | 1.00 | .013 | .00 | .00 | PIPE
1383.343 | 1634.889 | .982 | 1635.871 | 46.00 | 20.81 | 6.72 | 1642.59 | .00 | 2.12 | 3.14 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
58.224 | .0649 |      |      |      |      | .0759 | 4.42 | .98 | 4.37 | 1.00 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1441.566 | 1638.666 | .949 | 1639.615 | 46.00 | 21.82 | 7.40 | 1647.01 | .00 | 2.12 | 3.11 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.434 | .0649 |      |      |      |      | .0867 | 2.81 | .95 | 4.67 | 1.00 | .013 | .00 | .00 | PIPE
1474.000 | 1640.770 | .917 | 1641.687 | 46.00 | 22.89 | 8.13 | 1649.82 | .00 | 2.12 | 3.08 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
71.693 | .0925 |      |      |      |      | .0925 | 6.63 | .92 | 4.99 | .92 | .013 | .00 | .00 | PIPE
1545.693 | 1647.400 | .917 | 1648.318 | 46.00 | 22.89 | 8.13 | 1656.45 | .00 | 2.12 | 3.08 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
119.187 | .0925 |      |      |      |      | .0927 | 11.04 | .92 | 4.99 | .92 | .013 | .00 | .00 | PIPE
1664.880 | 1658.423 | .916 | 1659.339 | 46.00 | 22.92 | 8.16 | 1667.50 | .00 | 2.12 | 3.08 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
111.880 | .0925 |      |      |      |      | .0995 | 11.13 | .92 | 5.00 | .92 | .013 | .00 | .00 | PIPE
1776.760 | 1668.770 | .886 | 1669.656 | 46.00 | 24.04 | 8.97 | 1678.63 | .00 | 2.12 | 3.04 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
236.487 | .1061 |      |      |      |      | .1062 | 25.10 | .89 | 5.34 | .89 | .013 | .00 | .00 | PIPE
2013.247 | 1693.873 | .886 | 1694.759 | 46.00 | 24.04 | 8.97 | 1703.73 | .00 | 2.12 | 3.04 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
116.883 | .1061 |      |      |      |      | .1055 | 12.33 | .89 | 5.34 | .89 | .013 | .00 | .00 | PIPE
2130.130 | 1706.280 | .889 | 1707.169 | 46.00 | 23.93 | 8.89 | 1716.06 | .00 | 2.12 | 3.05 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1120 |      |      |      |      | .1072 | .54 | .89 | 5.31 |      | .013 | .00 | .00 | PIPE
2135.130 | 1706.840 | .841 | 1707.680 | 46.00 | 23.96 | 8.91 | 1716.59 | .00 | 2.03 | 3.26 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
79.105 | .1126 |      |      |      |      | .1028 | 8.13 | .84 | 5.50 | .83 | .013 | .00 | .00 | PIPE
2214.235 | 1715.744 | .868 | 1716.613 | 46.00 | 22.87 | 8.12 | 1724.73 | .00 | 2.03 | 3.30 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
31.365 | .1126 |      |      |      |      | .0900 | 2.82 | .87 | 5.16 | .83 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2318.385 | 1727.468 | 1.219 | 1728.687 | 46.00 | 14.20 | 3.13 | 1731.82 | .00 | 2.03 | 3.68 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.720 | .1126 |      |      |      |      | .0236 | .06 | 1.22 | 2.67 | .83 | .013 | .00 | .00 | PIPE
2321.104 | 1727.774 | 1.261 | 1729.036 | 46.00 | 13.54 | 2.85 | 1731.88 | .00 | 2.03 | 3.72 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.332 | .1126 |      |      |      |      | .0207 | .05 | 1.26 | 2.50 | .83 | .013 | .00 | .00 | PIPE
2323.436 | 1728.037 | 1.306 | 1729.343 | 46.00 | 12.91 | 2.59 | 1731.93 | .00 | 2.03 | 3.75 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.002 | .1126 |      |      |      |      | .0181 | .04 | 1.31 | 2.33 | .83 | .013 | .00 | .00 | PIPE
2325.438 | 1728.262 | 1.352 | 1729.614 | 46.00 | 12.31 | 2.35 | 1731.97 | .00 | 2.03 | 3.78 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.715 | .1126 |      |      |      |      | .0159 | .03 | 1.35 | 2.18 | .83 | .013 | .00 | .00 | PIPE
2327.154 | 1728.455 | 1.400 | 1729.855 | 46.00 | 11.73 | 2.14 | 1731.99 | .00 | 2.03 | 3.82 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.464 | .1126 |      |      |      |      | .0139 | .02 | 1.40 | 2.04 | .83 | .013 | .00 | .00 | PIPE
2328.617 | 1728.620 | 1.450 | 1730.070 | 46.00 | 11.19 | 1.94 | 1732.01 | .00 | 2.03 | 3.85 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.243 | .1126 |      |      |      |      | .0122 | .02 | 1.45 | 1.91 | .83 | .013 | .00 | .00 | PIPE
2329.860 | 1728.760 | 1.502 | 1730.262 | 46.00 | 10.67 | 1.77 | 1732.03 | .00 | 2.03 | 3.87 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0620 |      |      |      |      | .0110 | .05 | 1.50 | 1.78 | .013 | .00 | .00 | PIPE
2334.860 | 1729.070 | 1.404 | 1730.474 | 46.00 | 10.18 | 1.61 | 1732.08 | .00 | 1.90 | 4.49 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
79.696 | .0105 |      |      |      |      | .0105 | .84 | 1.40 | 1.79 | 1.40 | .013 | .00 | .00 | PIPE
2414.556 | 1729.909 | 1.404 | 1731.313 | 46.00 | 10.18 | 1.61 | 1732.92 | .00 | 1.90 | 4.49 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
150.184 | .0105 |      |      |      |      | .0105 | 1.58 | 1.40 | 1.79 | 1.40 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3389.580 | 1740.180 | 1.326 | 1741.506 | 45.00 | 10.79 | 1.81 | 1743.31 | 1.67 | 1.88 | 4.41 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0120 |      |      |      |      |      | .0130 | .07 | 3.00 | 1.96 | .013 | .00 | .00 | PIPE
3394.580 | 1740.240 | 1.274 | 1741.514 | 43.00 | 10.91 | 1.85 | 1743.36 | .00 | 1.83 | 4.36 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
26.431 | .0105 |      |      |      |      |      | .0141 | .37 | 1.27 | 2.02 | 1.36 | .013 | .00 | .00 | PIPE
3421.011 | 1740.519 | 1.245 | 1741.763 | 43.00 | 11.27 | 1.97 | 1743.73 | .00 | 1.83 | 4.32 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.462 | .0105 |      |      |      |      |      | .0158 | .47 | 1.24 | 2.11 | 1.36 | .013 | .00 | .00 | PIPE
3450.473 | 1740.829 | 1.203 | 1742.032 | 43.00 | 11.82 | 2.17 | 1744.20 | .00 | 1.83 | 4.27 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.411 | .0105 |      |      |      |      |      | .0181 | .42 | 1.20 | 2.26 | 1.36 | .013 | .00 | .00 | PIPE
3473.884 | 1741.076 | 1.164 | 1742.240 | 43.00 | 12.40 | 2.39 | 1744.63 | .00 | 1.83 | 4.23 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.679 | .0105 |      |      |      |      |      | .0207 | .41 | 1.16 | 2.41 | 1.36 | .013 | .00 | .00 | PIPE
3493.563 | 1741.283 | 1.125 | 1742.408 | 43.00 | 13.00 | 2.62 | 1745.03 | .00 | 1.83 | 4.18 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.140 | .0105 |      |      |      |      |      | .0237 | .41 | 1.13 | 2.57 | 1.36 | .013 | .00 | .00 | PIPE
3510.703 | 1741.464 | 1.088 | 1742.552 | 43.00 | 13.64 | 2.89 | 1745.44 | .00 | 1.83 | 4.13 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.276 | .0105 |      |      |      |      |      | .0271 | .41 | 1.09 | 2.75 | 1.36 | .013 | .00 | .00 | PIPE
3525.979 | 1741.625 | 1.052 | 1742.677 | 43.00 | 14.30 | 3.18 | 1745.85 | .00 | 1.83 | 4.08 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.823 | .0105 |      |      |      |      |      | .0310 | .43 | 1.05 | 2.93 | 1.36 | .013 | .00 | .00 | PIPE
3539.802 | 1741.771 | 1.018 | 1742.788 | 43.00 | 15.00 | 3.49 | 1746.28 | .00 | 1.83 | 4.03 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.667 | .0105 |      |      |      |      |      | .0355 | .45 | 1.02 | 3.13 | 1.36 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
        | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3862.500 | 1757.010 | 1.090 | 1758.100 | 41.00 | 14.79 | 3.40 | 1761.50 | .00 | 1.91 | 3.56 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
252.306 | .0309 |         |         |         |         |         | .0309 | 7.80 | 1.09 | 2.95 | 1.09 | .013 | .00 | .00 | PIPE
4114.806 | 1764.814 | 1.090 | 1765.903 | 41.00 | 14.79 | 3.40 | 1769.30 | .00 | 1.91 | 3.56 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
139.021 | .0309 |         |         |         |         |         | .0305 | 4.24 | 1.09 | 2.95 | 1.09 | .013 | .00 | .00 | PIPE
4253.827 | 1769.114 | 1.098 | 1770.211 | 41.00 | 14.64 | 3.33 | 1773.54 | .00 | 1.91 | 3.57 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
96.368 | .0309 |         |         |         |         |         | .0282 | 2.72 | 1.10 | 2.91 | 1.09 | .013 | .00 | .00 | PIPE
4350.195 | 1772.094 | 1.136 | 1773.230 | 41.00 | 13.96 | 3.03 | 1776.26 | .00 | 1.91 | 3.61 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
37.603 | .0309 |         |         |         |         |         | .0247 | .93 | 1.14 | 2.73 | 1.09 | .013 | .00 | .00 | PIPE
4387.797 | 1773.257 | 1.175 | 1774.433 | 41.00 | 13.31 | 2.75 | 1777.18 | .00 | 1.91 | 3.64 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
22.392 | .0309 |         |         |         |         |         | .0216 | .48 | 1.18 | 2.55 | 1.09 | .013 | .00 | .00 | PIPE
4410.189 | 1773.950 | 1.216 | 1775.166 | 41.00 | 12.69 | 2.50 | 1777.67 | .00 | 1.91 | 3.68 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
15.355 | .0309 |         |         |         |         |         | .0189 | .29 | 1.22 | 2.39 | 1.09 | .013 | .00 | .00 | PIPE
4425.545 | 1774.425 | 1.259 | 1775.684 | 41.00 | 12.10 | 2.27 | 1777.96 | .00 | 1.91 | 3.72 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
11.297 | .0309 |         |         |         |         |         | .0166 | .19 | 1.26 | 2.23 | 1.09 | .013 | .00 | .00 | PIPE
4436.842 | 1774.774 | 1.303 | 1776.078 | 41.00 | 11.54 | 2.07 | 1778.14 | .00 | 1.91 | 3.75 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
8.637 | .0309 |         |         |         |         |         | .0145 | .13 | 1.30 | 2.09 | 1.09 | .013 | .00 | .00 | PIPE
4445.479 | 1775.042 | 1.349 | 1776.391 | 41.00 | 11.00 | 1.88 | 1778.27 | .00 | 1.91 | 3.78 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
6.741 | .0309 |         |         |         |         |         | .0127 | .09 | 1.35 | 1.95 | 1.09 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4452.220 | 1775.250 | 1.397 | 1776.647 | 41.00 | 10.49 | 1.71 | 1778.36 | 1.71 | 1.91 | 3.81 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1167 |      |      |      |      |      | .0218 | .13 | 3.10 | 1.83 | .013 | .00 | .00 | PIPE
4458.220 | 1775.950 | 1.055 | 1777.005 | 39.00 | 14.72 | 3.37 | 1780.37 | .00 | 1.86 | 3.53 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
217.035 | .0318 |      |      |      |      |      | .0318 | 6.90 | 1.05 | 2.99 | 1.05 | .013 | .00 | .00 | PIPE
4675.255 | 1782.851 | 1.055 | 1783.906 | 39.00 | 14.72 | 3.37 | 1787.27 | .00 | 1.86 | 3.53 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
134.895 | .0318 |      |      |      |      |      | .0307 | 4.14 | 1.05 | 2.99 | 1.05 | .013 | .00 | .00 | PIPE
4810.150 | 1787.140 | 1.074 | 1788.214 | 39.00 | 14.36 | 3.20 | 1791.41 | .00 | 1.86 | 3.55 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0318 |      |      |      |      |      | .0300 | .15 | 1.07 | 2.89 | .013 | .00 | .00 | PIPE
4815.149 | 1787.299 | 1.045 | 1788.344 | 39.00 | 14.40 | 3.22 | 1791.56 | .00 | 1.83 | 3.66 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
55.920 | .0304 |      |      |      |      |      | .0304 | 1.70 | 1.04 | 2.95 | 1.04 | .013 | .00 | .00 | PIPE
4871.069 | 1788.999 | 1.045 | 1790.044 | 39.00 | 14.40 | 3.22 | 1793.26 | .00 | 1.83 | 3.66 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
128.931 | .0304 |      |      |      |      |      | .0304 | 3.92 | 1.04 | 2.95 | 1.04 | .013 | .00 | .00 | PIPE
5000.000 | 1792.920 | 1.044 | 1793.964 | 39.00 | 14.41 | 3.22 | 1797.19 | .00 | 1.83 | 3.66 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.830 | .0305 |      |      |      |      |      | .0305 | .15 | 1.04 | 2.95 | 1.04 | .013 | .00 | .00 | PIPE
5004.830 | 1793.067 | 1.044 | 1794.111 | 39.00 | 14.41 | 3.22 | 1797.34 | .00 | 1.83 | 3.66 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
134.485 | .0305 |      |      |      |      |      | .0288 | 3.88 | 1.04 | 2.95 | 1.04 | .013 | .00 | .00 | PIPE
5139.315 | 1797.162 | 1.074 | 1798.236 | 39.00 | 13.85 | 2.98 | 1801.21 | .00 | 1.83 | 3.69 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
47.473 | .0305 |      |      |      |      |      | .0255 | 1.21 | 1.07 | 2.79 | 1.04 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5186.788 | 1798.608 | 1.111 | 1799.719 | 39.00 | 13.20 | 2.71 | 1802.43 | .00 | 1.83 | 3.74 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.590 | .0305 |      |      |      |      | .0223 | .57 | 1.11 | 2.62 | 1.04 | .013 | .00 | .00 | PIPE
5212.378 | 1799.387 | 1.149 | 1800.537 | 39.00 | 12.59 | 2.46 | 1803.00 | .00 | 1.83 | 3.78 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.842 | .0305 |      |      |      |      | .0195 | .33 | 1.15 | 2.45 | 1.04 | .013 | .00 | .00 | PIPE
5229.220 | 1799.900 | 1.189 | 1801.089 | 39.00 | 12.00 | 2.24 | 1803.33 | .00 | 1.83 | 3.82 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.248 | .0003 |      |      |      |      | .0195 | .18 | 1.19 | 2.29 | 4.25 | .013 | .00 | .00 | PIPE
5238.468 | 1799.903 | 1.151 | 1801.054 | 39.00 | 12.57 | 2.45 | 1803.51 | .00 | 1.83 | 3.78 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.442 | .0003 |      |      |      |      | .0222 | .21 | 1.15 | 2.44 | 4.25 | .013 | .00 | .00 | PIPE
5247.910 | 1799.906 | 1.112 | 1801.018 | 39.00 | 13.18 | 2.70 | 1803.72 | .00 | 1.83 | 3.74 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.274 | .0003 |      |      |      |      | .0254 | .24 | 1.11 | 2.61 | 4.25 | .013 | .00 | .00 | PIPE
5257.185 | 1799.909 | 1.075 | 1800.984 | 39.00 | 13.83 | 2.97 | 1803.95 | .00 | 1.83 | 3.70 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.087 | .0003 |      |      |      |      | .0291 | .26 | 1.08 | 2.79 | 4.25 | .013 | .00 | .00 | PIPE
5266.271 | 1799.912 | 1.040 | 1800.951 | 39.00 | 14.50 | 3.27 | 1804.22 | .00 | 1.83 | 3.65 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.876 | .0003 |      |      |      |      | .0332 | .29 | 1.04 | 2.98 | 4.25 | .013 | .00 | .00 | PIPE
5275.148 | 1799.915 | 1.005 | 1800.920 | 39.00 | 15.21 | 3.59 | 1804.51 | .00 | 1.83 | 3.61 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.647 | .0003 |      |      |      |      | .0380 | .33 | 1.01 | 3.18 | 4.25 | .013 | .00 | .00 | PIPE
5283.795 | 1799.917 | .972 | 1800.889 | 39.00 | 15.95 | 3.95 | 1804.84 | .00 | 1.83 | 3.57 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.415 | .0003 |      |      |      |      | .0435 | .37 | .97 | 3.40 | 4.25 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5292.210 | 1799.920 | .940 | 1800.860 | 39.00 | 16.73 | 4.35 | 1805.21 | .34 | 1.83 | 3.53 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.770 | .0515 |      |      |      |      | .0457 | .68 | 1.28 | 3.63 | .92 | .013 | .00 | .00 | PIPE
5306.979 | 1800.680 | .947 | 1801.626 | 39.00 | 16.56 | 4.26 | 1805.89 | .00 | 1.83 | 3.54 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.179 | .0520 |      |      |      |      | .0435 | 1.01 | .95 | 3.58 | .91 | .013 | .00 | .00 | PIPE
5330.158 | 1801.886 | .964 | 1802.849 | 39.00 | 16.15 | 4.05 | 1806.90 | .00 | 1.83 | 3.56 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
26.396 | .0520 |      |      |      |      | .0393 | 1.04 | .96 | 3.45 | .91 | .013 | .00 | .00 | PIPE
5356.555 | 1803.259 | .997 | 1804.255 | 39.00 | 15.39 | 3.68 | 1807.94 | .00 | 1.83 | 3.60 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.030 | .0520 |      |      |      |      | .0344 | .59 | 1.00 | 3.23 | .91 | .013 | .00 | .00 | PIPE
5373.585 | 1804.145 | 1.031 | 1805.175 | 39.00 | 14.68 | 3.35 | 1808.52 | .00 | 1.83 | 3.64 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.242 | .0520 |      |      |      |      | .0301 | .37 | 1.03 | 3.03 | .91 | .013 | .00 | .00 | PIPE
5385.827 | 1804.781 | 1.066 | 1805.847 | 39.00 | 13.99 | 3.04 | 1808.89 | .00 | 1.83 | 3.68 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.322 | .0520 |      |      |      |      | .0263 | .25 | 1.07 | 2.84 | .91 | .013 | .00 | .00 | PIPE
5395.149 | 1805.266 | 1.103 | 1806.369 | 39.00 | 13.34 | 2.76 | 1809.13 | .00 | 1.83 | 3.73 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.353 | .0520 |      |      |      |      | .0230 | .17 | 1.10 | 2.66 | .91 | .013 | .00 | .00 | PIPE
5402.502 | 1805.649 | 1.141 | 1806.789 | 39.00 | 12.72 | 2.51 | 1809.30 | .00 | 1.83 | 3.77 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.923 | .0520 |      |      |      |      | .0201 | .12 | 1.14 | 2.49 | .91 | .013 | .00 | .00 | PIPE
5408.425 | 1805.957 | 1.180 | 1807.137 | 39.00 | 12.13 | 2.28 | 1809.42 | .00 | 1.83 | 3.81 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.846 | .0520 |      |      |      |      | .0176 | .09 | 1.18 | 2.33 | .91 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5454.722 | 1807.249 | 1.580 | 1808.829 | 39.00 | 8.12 | 1.02 | 1809.85 | .00 | 1.83 | 4.11 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
30.198 | .0050 | | | | | .0066 | .20 | 1.58 | 1.32 | 1.67 | .013 | .00 | .00 | PIPE
5484.920 | 1807.400 | 1.525 | 1808.925 | 39.00 | 8.52 | 1.13 | 1810.05 | .41 | 1.83 | 4.08 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
4.478 | .0050 | | | | | .0071 | .03 | 1.94 | 1.42 | 1.67 | .013 | .00 | .00 | PIPE
5489.397 | 1807.422 | 1.516 | 1808.939 | 39.00 | 8.59 | 1.15 | 1810.08 | .42 | 1.83 | 4.07 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
23.402 | .0050 | | | | | .0077 | .18 | 1.93 | 1.43 | 1.67 | .013 | .00 | .00 | PIPE
5512.800 | 1807.540 | 1.464 | 1809.004 | 39.00 | 9.01 | 1.26 | 1810.26 | .00 | 1.83 | 4.04 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
12.914 | .0052 | | | | | .0085 | .11 | 1.46 | 1.53 | 1.65 | .013 | .00 | .00 | PIPE
5525.714 | 1807.608 | 1.435 | 1809.042 | 39.00 | 9.26 | 1.33 | 1810.37 | .00 | 1.83 | 4.02 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
19.810 | .0052 | | | | | .0095 | .19 | 1.43 | 1.59 | 1.65 | .013 | .00 | .00 | PIPE
5545.523 | 1807.711 | 1.386 | 1809.097 | 39.00 | 9.71 | 1.46 | 1810.56 | .00 | 1.83 | 3.98 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
17.778 | .0052 | | | | | .0108 | .19 | 1.39 | 1.71 | 1.65 | .013 | .00 | .00 | PIPE
5563.302 | 1807.804 | 1.338 | 1809.142 | 39.00 | 10.19 | 1.61 | 1810.75 | .00 | 1.83 | 3.95 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
16.257 | .0052 | | | | | .0124 | .20 | 1.34 | 1.82 | 1.65 | .013 | .00 | .00 | PIPE
5579.559 | 1807.889 | 1.293 | 1809.182 | 39.00 | 10.68 | 1.77 | 1810.95 | .00 | 1.83 | 3.91 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
15.038 | .0052 | | | | | .0141 | .21 | 1.29 | 1.95 | 1.65 | .013 | .00 | .00 | PIPE
5594.597 | 1807.968 | 1.249 | 1809.217 | 39.00 | 11.21 | 1.95 | 1811.17 | .00 | 1.83 | 3.87 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
14.048 | .0052 | | | | | .0161 | .23 | 1.25 | 2.08 | 1.65 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |          |          |          |          | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5608.645 | 1808.041 | 1.207 | 1809.248 | 39.00 | 11.75 | 2.14 | 1811.39 | .00 | 1.83 | 3.83 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 13.195 | .0052 |         |         |         |         | .0184 | .24 | 1.21 | 2.23 | 1.65 | .013 | .00 | .00 | PIPE
5621.840 | 1808.110 | 1.167 | 1809.277 | 39.00 | 12.33 | 2.36 | 1811.64 | .00 | 1.83 | 3.79 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .0022 |         |         |         |         | .0259 | .24 | 1.17 | 2.38 | .013 | .00 | .00 | PIPE
5631.090 | 1808.130 | .989 | 1809.119 | 36.00 | 14.36 | 3.20 | 1812.32 | .00 | 1.75 | 3.59 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 5.261 | .0054 |         |         |         |         | .0334 | .18 | .99 | 3.03 | 1.57 | .013 | .00 | .00 | PIPE
5636.351 | 1808.158 | .972 | 1809.130 | 36.00 | 14.73 | 3.37 | 1812.50 | .00 | 1.75 | 3.57 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 9.619 | .0054 |         |         |         |         | .0370 | .36 | .97 | 3.14 | 1.57 | .013 | .00 | .00 | PIPE
5645.970 | 1808.210 | .940 | 1809.150 | 36.00 | 15.44 | 3.70 | 1812.85 | .00 | 1.75 | 3.53 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 72.820 | .0387 |         |         |         |         | .0408 | 2.97 | .94 | 3.35 | .94 | .013 | .00 | .00 | PIPE
5718.790 | 1811.030 | .925 | 1811.955 | 36.00 | 15.79 | 3.87 | 1815.83 | 1.21 | 1.75 | 3.51 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 22.250 | .0396 |         |         |         |         | .0427 | .95 | 2.13 | 3.45 | .94 | .013 | .00 | .00 | PIPE
5741.040 | 1811.910 | .919 | 1812.829 | 36.00 | 15.95 | 3.95 | 1816.78 | .00 | 1.75 | 3.50 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 31.856 | .0433 |         |         |         |         | .0433 | 1.38 | .92 | 3.50 | .92 | .013 | .00 | .00 | PIPE
5772.896 | 1813.290 | .919 | 1814.208 | 36.00 | 15.95 | 3.95 | 1818.16 | .00 | 1.75 | 3.50 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 119.301 | .0433 |         |         |         |         | .0424 | 5.05 | .92 | 3.50 | .92 | .013 | .00 | .00 | PIPE
5892.197 | 1818.457 | .929 | 1819.386 | 36.00 | 15.70 | 3.83 | 1823.21 | .00 | 1.75 | 3.51 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
        | 70.284 | .0433 |         |         |         |         | .0388 | 2.73 | .93 | 3.42 | .92 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5962.481 | 1821.501 | .961 | 1822.462 | 36.00 | 14.97 | 3.48 | 1825.94 | .00 | 1.75 | 3.56 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
30.219 | .0433 |      |      |      |      |      | .0339 | 1.03 | .96 | 3.21 | .92 | .013 | .00 | .00 | PIPE
5992.700 | 1822.810 | .993 | 1823.803 | 36.00 | 14.27 | 3.16 | 1826.97 | .26 | 1.75 | 3.60 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
28.232 | .0247 |      |      |      |      |      | .0337 | .95 | 1.25 | 3.00 | 1.06 | .013 | .00 | .00 | PIPE
6020.932 | 1823.506 | .963 | 1824.470 | 36.00 | 14.91 | 3.45 | 1827.92 | .28 | 1.75 | 3.56 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
22.848 | .0247 |      |      |      |      |      | .0384 | .88 | 1.24 | 3.19 | 1.06 | .013 | .00 | .00 | PIPE
6043.780 | 1824.070 | .931 | 1825.001 | 36.00 | 15.64 | 3.80 | 1828.80 | .00 | 1.75 | 3.52 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
26.617 | .0410 |      |      |      |      |      | .0410 | 1.09 | .93 | 3.41 | .93 | .013 | .00 | .00 | PIPE
6070.397 | 1825.160 | .931 | 1826.092 | 36.00 | 15.64 | 3.80 | 1829.89 | .00 | 1.75 | 3.52 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
118.999 | .0410 |      |      |      |      |      | .0409 | 4.87 | .93 | 3.41 | .93 | .013 | .00 | .00 | PIPE
6189.396 | 1830.036 | .932 | 1830.968 | 36.00 | 15.62 | 3.79 | 1834.76 | .00 | 1.75 | 3.52 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
114.563 | .0410 |      |      |      |      |      | .0382 | 4.38 | .93 | 3.40 | .93 | .013 | .00 | .00 | PIPE
6303.958 | 1834.729 | .964 | 1835.693 | 36.00 | 14.89 | 3.44 | 1839.14 | .00 | 1.75 | 3.56 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.154 | .0410 |      |      |      |      |      | .0334 | 1.24 | .96 | 3.18 | .93 | .013 | .00 | .00 | PIPE
6341.112 | 1836.252 | .997 | 1837.249 | 36.00 | 14.20 | 3.13 | 1840.38 | .00 | 1.75 | 3.60 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.339 | .0410 |      |      |      |      |      | .0292 | .62 | 1.00 | 2.98 | .93 | .013 | .00 | .00 | PIPE
6362.452 | 1837.126 | 1.031 | 1838.157 | 36.00 | 13.54 | 2.85 | 1841.00 | .00 | 1.75 | 3.64 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.493 | .0410 |      |      |      |      |      | .0256 | .37 | 1.03 | 2.79 | .93 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6376.945 | 1837.720 | 1.067 | 1838.786 | 36.00 | 12.91 | 2.59 | 1841.37 | .00 | 1.75 | 3.69 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.659 | .0410 |      |      |      |      |      | .0224 | .24 | 1.07 | 2.61 | .93 | .013 | .00 | .00 | PIPE
6387.604 | 1838.156 | 1.103 | 1839.260 | 36.00 | 12.31 | 2.35 | 1841.61 | .00 | 1.75 | 3.73 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.207 | .0410 |      |      |      |      |      | .0196 | .16 | 1.10 | 2.45 | .93 | .013 | .00 | .00 | PIPE
6395.811 | 1838.492 | 1.142 | 1839.634 | 36.00 | 11.73 | 2.14 | 1841.77 | .00 | 1.75 | 3.77 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.492 | .0410 |      |      |      |      |      | .0171 | .11 | 1.14 | 2.29 | .93 | .013 | .00 | .00 | PIPE
6402.302 | 1838.758 | 1.181 | 1839.939 | 36.00 | 11.19 | 1.94 | 1841.88 | .00 | 1.75 | 3.81 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.220 | .0410 |      |      |      |      |      | .0150 | .08 | 1.18 | 2.14 | .93 | .013 | .00 | .00 | PIPE
6407.522 | 1838.972 | 1.222 | 1840.194 | 36.00 | 10.67 | 1.77 | 1841.96 | .00 | 1.75 | 3.85 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.236 | .0410 |      |      |      |      |      | .0131 | .06 | 1.22 | 2.01 | .93 | .013 | .00 | .00 | PIPE
6411.759 | 1839.146 | 1.265 | 1840.411 | 36.00 | 10.17 | 1.61 | 1842.02 | .00 | 1.75 | 3.89 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.449 | .0410 |      |      |      |      |      | .0115 | .04 | 1.26 | 1.88 | .93 | .013 | .00 | .00 | PIPE
6415.208 | 1839.287 | 1.309 | 1840.596 | 36.00 | 9.70 | 1.46 | 1842.06 | .00 | 1.75 | 3.92 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.809 | .0410 |      |      |      |      |      | .0100 | .03 | 1.31 | 1.76 | .93 | .013 | .00 | .00 | PIPE
6418.017 | 1839.402 | 1.355 | 1840.757 | 36.00 | 9.25 | 1.33 | 1842.08 | .00 | 1.75 | 3.96 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.266 | .0410 |      |      |      |      |      | .0088 | .02 | 1.35 | 1.64 | .93 | .013 | .00 | .00 | PIPE
6420.283 | 1839.495 | 1.403 | 1840.898 | 36.00 | 8.82 | 1.21 | 1842.10 | .00 | 1.75 | 4.00 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.808 | .0410 |      |      |      |      |      | .0077 | .01 | 1.40 | 1.54 | .93 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6422.091 | 1839.569 | 1.452 | 1841.022 | 36.00 | 8.41 | 1.10 | 1842.12 | .00 | 1.75 | 4.03 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 1.407 | .0410 |      |      |      |      | .0068 | .01 | 1.45 | 1.44 | .93 | .013 | .00 | .00 | PIPE
6423.498 | 1839.627 | 1.504 | 1841.131 | 36.00 | 8.02 | 1.00 | 1842.13 | .00 | 1.75 | 4.06 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 1.052 | .0410 |      |      |      |      | .0059 | .01 | 1.50 | 1.34 | .93 | .013 | .00 | .00 | PIPE
6424.550 | 1839.670 | 1.558 | 1841.228 | 36.00 | 7.64 | .91 | 1842.13 | .16 | 1.75 | 4.10 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 44.840 | .0056 |      |      |      |      | .0055 | .25 | 1.72 | 1.26 | 1.55 | .013 | .00 | .00 | PIPE
6469.390 | 1839.920 | 1.563 | 1841.483 | 36.00 | 7.61 | .90 | 1842.38 | .00 | 1.75 | 4.10 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 31.269 | .0056 |      |      |      |      | .0054 | .17 | 1.56 | 1.25 | 1.55 | .013 | .00 | .00 | PIPE
6500.659 | 1840.095 | 1.575 | 1841.670 | 36.00 | 7.53 | .88 | 1842.55 | .00 | 1.75 | 4.11 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 37.208 | .0056 |      |      |      |      | .0050 | .19 | 1.58 | 1.23 | 1.55 | .013 | .00 | .00 | PIPE
6537.866 | 1840.304 | 1.632 | 1841.936 | 36.00 | 7.18 | .80 | 1842.74 | .00 | 1.75 | 4.13 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 11.080 | .0056 |      |      |      |      | .0044 | .05 | 1.63 | 1.15 | 1.55 | .013 | .00 | .00 | PIPE
6548.946 | 1840.366 | 1.691 | 1842.057 | 36.00 | 6.84 | .73 | 1842.78 | .00 | 1.75 | 4.16 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 2.534 | .0056 |      |      |      |      | .0038 | .01 | 1.69 | 1.07 | 1.55 | .013 | .00 | .00 | PIPE
6551.480 | 1840.380 | 1.754 | 1842.134 | 36.00 | 6.52 | .66 | 1842.79 | .00 | 1.75 | 4.18 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | JUNCT STR | .0056 |      |      |      |      |      |      | 1.75 | 1.00 |      | .013 | .00 | .00 | PIPE
6556.830 | 1840.410 | 1.436 | 1841.845 | 32.00 | 7.59 | .89 | 1842.74 | .00 | 1.65 | 4.02 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 1.735 | .0057 |      |      |      |      | .0059 | .01 | 1.44 | 1.31 | 1.45 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6558.565 | 1840.420 | 1.435 | 1841.855 | 32.00 | 7.60 | .90 | 1842.75 | .00 | 1.65 | 4.02 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
60.244 | .0057 | | | | | .0064 | .38 | 1.43 | 1.31 | 1.45 | .013 | .00 | .00 | PIPE
6618.809 | 1840.763 | 1.386 | 1842.149 | 32.00 | 7.97 | .99 | 1843.13 | .00 | 1.65 | 3.98 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
32.548 | .0057 | | | | | .0073 | .24 | 1.39 | 1.40 | 1.45 | .013 | .00 | .00 | PIPE
6651.357 | 1840.948 | 1.339 | 1842.287 | 32.00 | 8.36 | 1.08 | 1843.37 | .00 | 1.65 | 3.95 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
24.180 | .0057 | | | | | .0083 | .20 | 1.34 | 1.50 | 1.45 | .013 | .00 | .00 | PIPE
6675.537 | 1841.086 | 1.294 | 1842.380 | 32.00 | 8.76 | 1.19 | 1843.57 | .00 | 1.65 | 3.91 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
19.943 | .0057 | | | | | .0095 | .19 | 1.29 | 1.60 | 1.45 | .013 | .00 | .00 | PIPE
6695.480 | 1841.200 | 1.250 | 1842.450 | 32.00 | 9.19 | 1.31 | 1843.76 | .00 | 1.65 | 3.87 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0056 | | | | | .0161 | .09 | 1.25 | 1.71 | | | .013 | .00 | .00 | PIPE
6700.830 | 1841.230 | .959 | 1842.189 | 28.00 | 11.68 | 2.12 | 1844.31 | .00 | 1.54 | 3.55 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
3.616 | .0292 | | | | | .0219 | .08 | .96 | 2.51 | .89 | .013 | .00 | .00 | PIPE
6704.446 | 1841.336 | .964 | 1842.299 | 28.00 | 11.59 | 2.09 | 1844.39 | .00 | 1.54 | 3.56 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
17.500 | .0292 | | | | | .0203 | .35 | .96 | 2.48 | .89 | .013 | .00 | .00 | PIPE
6721.946 | 1841.847 | .997 | 1842.844 | 28.00 | 11.05 | 1.90 | 1844.74 | .00 | 1.54 | 3.60 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
12.029 | .0292 | | | | | .0177 | .21 | 1.00 | 2.32 | .89 | .013 | .00 | .00 | PIPE
6733.975 | 1842.199 | 1.031 | 1843.229 | 28.00 | 10.54 | 1.72 | 1844.95 | .00 | 1.54 | 3.64 | 4.250 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
8.842 | .0292 | | | | | .0155 | .14 | 1.03 | 2.17 | .89 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6742.817 | 1842.457 | 1.066 | 1843.523 | 28.00 | 10.05 | 1.57 | 1845.09 | .00 | 1.54 | 3.68 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.753 | .0292 |      |      |      |      |      | .0136 | .09 | 1.07 | 2.04 | .89 | .013 | .00 | .00 | PIPE
6749.570 | 1842.655 | 1.103 | 1843.757 | 28.00 | 9.58 | 1.43 | 1845.18 | .00 | 1.54 | 3.73 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.267 | .0292 |      |      |      |      |      | .0119 | .06 | 1.10 | 1.91 | .89 | .013 | .00 | .00 | PIPE
6754.837 | 1842.809 | 1.141 | 1843.949 | 28.00 | 9.14 | 1.30 | 1845.25 | .00 | 1.54 | 3.77 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.153 | .0292 |      |      |      |      |      | .0104 | .04 | 1.14 | 1.78 | .89 | .013 | .00 | .00 | PIPE
6758.990 | 1842.930 | 1.180 | 1844.110 | 28.00 | 8.71 | 1.18 | 1845.29 | .00 | 1.54 | 3.81 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0075 |      |      |      |      |      | .0194 | .10 | 1.38 | 1.67 |      | .013 | .00 | .00 | PIPE
6764.330 | 1842.970 | .813 | 1843.783 | 23.00 | 12.14 | 2.29 | 1846.07 | .34 | 1.39 | 3.34 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.610 | .0340 |      |      |      |      |      | .0277 | .57 | 1.15 | 2.84 | .78 | .013 | .00 | .00 | PIPE
6784.940 | 1843.670 | .831 | 1844.502 | 23.00 | 11.75 | 2.14 | 1846.65 | .00 | 1.39 | 3.37 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.826 | .0265 |      |      |      |      |      | .0265 | .89 | .83 | 2.72 | .83 | .013 | .00 | .00 | PIPE
6818.766 | 1844.565 | .831 | 1845.396 | 23.00 | 11.75 | 2.14 | 1847.54 | .00 | 1.39 | 3.37 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
99.430 | .0265 |      |      |      |      |      | .0258 | 2.57 | .83 | 2.72 | .83 | .013 | .00 | .00 | PIPE
6918.196 | 1847.195 | .842 | 1848.037 | 23.00 | 11.55 | 2.07 | 1850.11 | .00 | 1.39 | 3.39 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
55.365 | .0265 |      |      |      |      |      | .0236 | 1.31 | .84 | 2.65 | .83 | .013 | .00 | .00 | PIPE
6973.561 | 1848.660 | .870 | 1849.531 | 23.00 | 11.01 | 1.88 | 1851.41 | .00 | 1.39 | 3.43 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
24.153 | .0265 |      |      |      |      |      | .0206 | .50 | .87 | 2.49 | .83 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |          |          |          |          |          |          | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6997.714 | 1849.299 | .900 | 1850.199 | 23.00 | 10.50 | 1.71 | 1851.91 | .00 | 1.39 | 3.47 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |      |      |      |         |      |      |      |      |      |      |      |      |
        | 14.776 | .0265 |         |         |         |         | .0180 | .27 | .90 | 2.33 | .83 | .013 | .00 | .00 | PIPE
7012.490 | 1849.690 | .931 | 1850.620 | 23.00 | 10.01 | 1.56 | 1852.18 | .00 | 1.39 | 3.52 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0225 |         |         |         |         | .0351 | .19 | 1.19 | 2.18 | .013 | .00 | .00 | PIPE
7017.840 | 1849.810 | .622 | 1850.432 | 18.00 | 13.99 | 3.04 | 1853.47 | .44 | 1.22 | 3.00 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
        | 17.549 | .0588 |         |         |         |         | .0518 | .91 | 1.06 | 3.77 | .61 | .013 | .00 | .00 | PIPE
7035.390 | 1850.842 | .631 | 1851.473 | 18.00 | 13.69 | 2.91 | 1854.38 | .42 | 1.22 | 3.02 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
        | 20.584 | .0588 |         |         |         |         | .0470 | .97 | 1.05 | 3.66 | .61 | .013 | .00 | .00 | PIPE
7055.974 | 1852.052 | .652 | 1852.704 | 18.00 | 13.05 | 2.64 | 1855.35 | .39 | 1.22 | 3.06 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
        | 12.287 | .0588 |         |         |         |         | .0410 | .50 | 1.04 | 3.43 | .61 | .013 | .00 | .00 | PIPE
7068.261 | 1852.774 | .674 | 1853.448 | 18.00 | 12.44 | 2.40 | 1855.85 | .36 | 1.22 | 3.10 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
        | 8.527 | .0588 |         |         |         |         | .0358 | .31 | 1.03 | 3.21 | .61 | .013 | .00 | .00 | PIPE
7076.789 | 1853.276 | .697 | 1853.972 | 18.00 | 11.86 | 2.19 | 1856.16 | .33 | 1.22 | 3.15 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
        | 6.372 | .0588 |         |         |         |         | .0313 | .20 | 1.03 | 3.01 | .61 | .013 | .00 | .00 | PIPE
7083.160 | 1853.650 | .720 | 1854.370 | 18.00 | 11.31 | 1.99 | 1856.36 | .00 | 1.22 | 3.19 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0400 |         |         |         |         | .0277 | .28 | 1.01 | 2.82 | .013 | .00 | .00 | PIPE
7093.160 | 1854.050 | .739 | 1854.789 | 18.00 | 10.90 | 1.84 | 1856.63 | .27 | 1.22 | 3.22 | 4.250 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |      |      |      |      |      |      |      |      |      |
        | 42.920 | .0259 |         |         |         |         | .0267 | 1.15 | 1.01 | 2.68 | .74 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7136.080 | 1855.160 | .733 | 1855.893 | 18.00 | 11.03 | 1.89 | 1857.78 | .00 | 1.22 | 3.21 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
70.933 | .0271 |      |      |      |      |      | .0271 | 1.92 | .73 | 2.73 | .73 | .013 | .00 | .00 | PIPE
7207.013 | 1857.084 | .733 | 1857.817 | 18.00 | 11.03 | 1.89 | 1859.71 | .00 | 1.22 | 3.21 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
85.347 | .0271 |      |      |      |      |      | .0263 | 2.24 | .73 | 2.73 | .73 | .013 | .00 | .00 | PIPE
7292.360 | 1859.400 | .744 | 1860.144 | 18.00 | 10.78 | 1.81 | 1861.95 | .04 | 1.22 | 3.23 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
83.859 | .0255 |      |      |      |      |      | .0255 | 2.13 | .78 | 2.64 | .74 | .013 | .00 | .00 | PIPE
7376.219 | 1861.534 | .744 | 1862.279 | 18.00 | 10.78 | 1.81 | 1864.08 | .04 | 1.22 | 3.23 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
85.091 | .0255 |      |      |      |      |      | .0267 | 2.27 | .78 | 2.64 | .74 | .013 | .00 | .00 | PIPE
7461.311 | 1863.700 | .728 | 1864.428 | 18.00 | 11.14 | 1.93 | 1866.35 | .00 | 1.22 | 3.20 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.211 | .0278 |      |      |      |      |      | .0279 | .26 | .73 | 2.76 | .73 | .013 | .00 | .00 | PIPE
7470.521 | 1863.956 | .728 | 1864.683 | 18.00 | 11.14 | 1.93 | 1866.61 | .00 | 1.22 | 3.20 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
77.187 | .0278 |      |      |      |      |      | .0299 | 2.31 | .73 | 2.76 | .73 | .013 | .00 | .00 | PIPE
7547.708 | 1866.098 | .704 | 1866.802 | 18.00 | 11.69 | 2.12 | 1868.92 | .00 | 1.22 | 3.16 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
28.950 | .0278 |      |      |      |      |      | .0343 | .99 | .70 | 2.95 | .73 | .013 | .00 | .00 | PIPE
7576.658 | 1866.902 | .681 | 1867.583 | 18.00 | 12.26 | 2.33 | 1869.92 | .00 | 1.22 | 3.12 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.337 | .0278 |      |      |      |      |      | .0393 | .72 | .68 | 3.15 | .73 | .013 | .00 | .00 | PIPE
7594.996 | 1867.411 | .659 | 1868.070 | 18.00 | 12.86 | 2.57 | 1870.64 | .00 | 1.22 | 3.08 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.665 | .0278 |      |      |      |      |      | .0450 | .61 | .66 | 3.36 | .73 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF  |SE Dpth|Froude N|Norm Dp | "N"  | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7608.660 | 1867.790 | .638 | 1868.428 | 18.00 | 13.48 | 2.82 | 1871.25 | .00 | 1.22 | 3.04 | 4.250 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0303 | | | | | | .0478 | .43 | 1.02 | 3.58 | .013 | .00 | .00 | PIPE
7617.570 | 1868.060 | .678 | 1868.738 | 18.00 | 13.75 | 2.94 | 1871.68 | .36 | 1.30 | 2.77 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
25.060 | .0511 | | | | | | .0459 | 1.15 | 1.04 | 3.52 | .67 | .013 | .00 | .00 | PIPE
7642.630 | 1869.340 | .690 | 1870.029 | 18.00 | 13.42 | 2.80 | 1872.83 | .00 | 1.30 | 2.78 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
15.414 | .0456 | | | | | | .0441 | .68 | .69 | 3.41 | .68 | .013 | .00 | .00 | PIPE
7658.044 | 1870.043 | .692 | 1870.735 | 18.00 | 13.37 | 2.77 | 1873.51 | .00 | 1.30 | 2.79 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
49.633 | .0456 | | | | | | .0410 | 2.04 | .69 | 3.39 | .68 | .013 | .00 | .00 | PIPE
7707.677 | 1872.308 | .715 | 1873.024 | 18.00 | 12.74 | 2.52 | 1875.55 | .00 | 1.30 | 2.82 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
20.945 | .0456 | | | | | | .0359 | .75 | .72 | 3.17 | .68 | .013 | .00 | .00 | PIPE
7728.622 | 1873.264 | .739 | 1874.004 | 18.00 | 12.15 | 2.29 | 1876.30 | .00 | 1.30 | 2.86 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
12.814 | .0456 | | | | | | .0313 | .40 | .74 | 2.97 | .68 | .013 | .00 | .00 | PIPE
7741.437 | 1873.849 | .765 | 1874.614 | 18.00 | 11.58 | 2.08 | 1876.70 | .00 | 1.30 | 2.89 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
8.951 | .0456 | | | | | | .0274 | .25 | .76 | 2.79 | .68 | .013 | .00 | .00 | PIPE
7750.387 | 1874.258 | .791 | 1875.048 | 18.00 | 11.05 | 1.89 | 1876.94 | .00 | 1.30 | 2.93 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
6.694 | .0456 | | | | | | .0239 | .16 | .79 | 2.61 | .68 | .013 | .00 | .00 | PIPE
7757.081 | 1874.563 | .818 | 1875.381 | 18.00 | 10.53 | 1.72 | 1877.10 | .00 | 1.30 | 2.96 | 3.500 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
5.205 | .0456 | | | | | | .0209 | .11 | .82 | 2.44 | .68 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:14:38

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
4-23 FORD ST FROM REDLANDS BLV TO VALLEY VIEW DR
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7762.286 | 1874.801 | .846 | 1875.646 | 18.00 | 10.04 | 1.57 | 1877.21 | .00 | 1.30 | 3.00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.143 | .0456 |      |      |      |      | .0183 | .08 | .85 | 2.29 | .68 | .013 | .00 | .00 | PIPE
7766.429 | 1874.990 | .875 | 1875.865 | 18.00 | 9.57 | 1.42 | 1877.29 | .00 | 1.30 | 3.03 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.352 | .0456 |      |      |      |      | .0160 | .05 | .87 | 2.14 | .68 | .013 | .00 | .00 | PIPE
7769.780 | 1875.143 | .905 | 1876.048 | 18.00 | 9.13 | 1.29 | 1877.34 | .00 | 1.30 | 3.06 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.732 | .0456 |      |      |      |      | .0140 | .04 | .90 | 2.01 | .68 | .013 | .00 | .00 | PIPE
7772.513 | 1875.268 | .936 | 1876.204 | 18.00 | 8.70 | 1.18 | 1877.38 | .00 | 1.30 | 3.10 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.232 | .0456 |      |      |      |      | .0123 | .03 | .94 | 1.88 | .68 | .013 | .00 | .00 | PIPE
7774.745 | 1875.370 | .968 | 1876.338 | 18.00 | 8.30 | 1.07 | 1877.41 | .00 | 1.30 | 3.13 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.822 | .0456 |      |      |      |      | .0107 | .02 | .97 | 1.76 | .68 | .013 | .00 | .00 | PIPE
7776.567 | 1875.453 | 1.002 | 1876.455 | 18.00 | 7.91 | .97 | 1877.43 | .00 | 1.30 | 3.16 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.473 | .0456 |      |      |      |      | .0094 | .01 | 1.00 | 1.64 | .68 | .013 | .00 | .00 | PIPE
7778.040 | 1875.520 | 1.037 | 1876.557 | 18.00 | 7.54 | .88 | 1877.44 | .13 | 1.30 | 3.20 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0457 |      |      |      |      | .0063 | .07 | 1.16 | 1.54 | .013 | .00 | .00 | PIPE
7789.630 | 1876.050 | 1.074 | 1877.124 | 12.00 | 5.02 | .39 | 1877.51 | .05 | 1.07 | 3.06 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7956.200 | 1883.640 | 1.074 | 1884.714 | 12.00 | 5.02 | .39 | 1885.10 | .05 | 1.07 | 3.06 | 3.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1										
CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	2	0	.000	3.500	5.000									.00					
CD	2	4	1		4.500															
CD	3	4	1		1.500															
CD	4	4	1		3.500															
CD	5	4	1		1.250															
CD	6	4	1		3.500															
CD	7	2	0	.000	4.600	6.000									.00					
CD	8	4	1		3.000															

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS - REDLANDS MASTERPLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

WATER SURFACE PROFILE - ELEMENT CARD LISTING										PAGE NO 2					
ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV							
ELEMENT NO 1	IS	A	SYSTEM OUTLET	U/S DATA	.000	1425.500	1	1428.000							
ELEMENT NO 2	IS	A	REACH	U/S DATA	1640.210	1460.490	1	N	.014	RADIUS .000	ANGLE .000	ANG PT .000	MAN H 0		
ELEMENT NO 3	IS	A	REACH	U/S DATA	1645.720	1460.500	1	N	.014	RADIUS 10.523	ANGLE 30.000	ANG PT .000	MAN H 0		
ELEMENT NO 4	IS	A	REACH	U/S DATA	2292.350	1474.610	1	N	.014	RADIUS .000	ANGLE .000	ANG PT .000	MAN H 0		
ELEMENT NO 5	IS	A	REACH	U/S DATA	2355.990	1475.480	1	N	.014	RADIUS 81.029	ANGLE 45.000	ANG PT .000	MAN H 0		
ELEMENT NO 6	IS	A	REACH	U/S DATA	3100.210	1497.110	1	N	.014	RADIUS .000	ANGLE .000	ANG PT .000	MAN H 0		
ELEMENT NO 7	IS	A	JUNCTION	U/S DATA	3131.280	1497.920	2	N	.013	Q3 .000	Q4 .000	INVERT-3 .000	INVERT-4 .000	PHI 3 .000	PHI 4 .000
ELEMENT NO 8	IS	A	REACH	U/S DATA	4119.580	1527.890	2	N	.013	RADIUS .000	ANGLE .000	ANG PT .000	MAN H 0		
ELEMENT NO 9	IS	A	JUNCTION	U/S DATA	4125.580	1528.060	2	N	.013	Q3 .000	Q4 .000	INVERT-3 .000	INVERT-4 .000	PHI 3 .000	PHI 4 .000
ELEMENT NO 10	IS	A	REACH	U/S DATA	4473.380	1538.950	2	N	.013	RADIUS .000	ANGLE .000	ANG PT .000	MAN H 0		

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 3

		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			4481.390	1539.210	4	3	0	.013	85.000	.000	1537.530	.000	80.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	12	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			4630.430	1546.770	4			.013			.000	.000	.000	0
ELEMENT NO	13	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5388.820	1570.630	4			.013			965.612	45.000	.000	4
ELEMENT NO	14	IS A JUNCTION	*	*	*	*	*		*					
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5398.220	1570.750	6	5	0	.013	60.000	.000	1568.500	.000	90.000	.000
											RADIUS	ANGLE		
											11.969	45.000		
ELEMENT NO	15	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5463.820	1573.270	6			.013			.000	.000	.000	0
ELEMENT NO	16	IS A JUNCTION	*	*	*	*	*		*					
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5506.920	1583.550	7	0	0	.014	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	17	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5576.340	1584.010	7			.014			.000	.000	.000	0
ELEMENT NO	18	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			5605.700	1584.200	7			.014			18.691	-90.000	.000	0
W S P G W														
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	19	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			6279.230	1603.850	7			.014			1286.347	30.000	.000	0
ELEMENT NO	20	IS A JUNCTION	*	*	*	*	*		*					
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6289.230	1604.180	8	0	0	.013	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE		
											.000	.000		
ELEMENT NO	21	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			6534.230	1617.670	8			.013			.000	.000	.000	0
ELEMENT NO	22	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
			7191.230	1628.790	8			.013			.000	.000	.000	0
ELEMENT NO	23	IS A SYSTEM HEADWORKS			*				*					
		U/S DATA	STATION	INVERT	SECT						W S ELEV			
			7191.230	1628.790	8						.000			

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1425.500 | 2.501 | 1428.001 | 225.00 | 17.99 | 5.03 | 1433.03 | .00 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1374.815 | .0213 |      |      |      |      |      | .0213 | 29.33 | 2.50 | 2.00 | 2.50 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1374.815 | 1454.828 | 2.501 | 1457.329 | 225.00 | 17.99 | 5.03 | 1462.36 | .00 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
265.395 | .0213 |      |      |      |      |      | .0212 | 5.62 | 2.50 | 2.00 | 2.50 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1640.210 | 1460.490 | 2.516 | 1463.006 | 225.00 | 17.89 | 4.97 | 1467.97 | 2.36 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.510 | .0018 |      |      |      |      |      | .0214 | .12 | 4.88 | 1.99 | 6.68 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1645.720 | 1460.500 | 2.480 | 1462.980 | 225.00 | 18.15 | 5.11 | 1468.09 | .00 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
380.279 | .0218 |      |      |      |      |      | .0218 | 8.30 | 2.48 | 2.03 | 2.48 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2025.999 | 1468.798 | 2.480 | 1471.278 | 225.00 | 18.15 | 5.11 | 1476.39 | .00 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
266.351 | .0218 |      |      |      |      |      | .0225 | 5.99 | 2.48 | 2.03 | 2.48 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2292.350 | 1474.610 | 2.424 | 1477.034 | 225.00 | 18.56 | 5.35 | 1482.38 | .66 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.439 | .0137 |      |      |      |      |      | .0244 | .72 | 3.08 | 2.10 | 2.96 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2321.790 | 1475.012 | 2.338 | 1477.350 | 225.00 | 19.25 | 5.75 | 1483.10 | .71 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
34.200 | .0137 |      |      |      |      |      | .0273 | .93 | 3.05 | 2.22 | 2.96 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2355.990 | 1475.480 | 2.229 | 1477.709 | 225.00 | 20.19 | 6.33 | 1484.04 | .00 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
184.241 | .0291 |      |      |      |      |      | .0291 | 5.35 | 2.23 | 2.38 | 2.23 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2540.231 | 1480.835 | 2.229 | 1483.064 | 225.00 | 20.19 | 6.33 | 1489.39 | .00 | 3.98 | 5.00 | 3.500 | 5.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
264.862 | .0291 |      |      |      |      |      | .0297 | 7.87 | 2.23 | 2.38 | 2.23 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |          |          |          |          | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4245.238 | 1531.807 | 2.808 | 1534.615 | 225.00 | 21.56 | 7.22 | 1541.83 | .00 | 4.18 | 4.36 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
77.015 | .0313 |          |          |          |          | .0243 | 1.87 | 2.81 | 2.46 | 2.63 | .013 | .00 | .00 | PIPE
4322.252 | 1534.218 | 2.926 | 1537.144 | 225.00 | 20.56 | 6.56 | 1543.70 | .00 | 4.18 | 4.29 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
48.479 | .0313 |          |          |          |          | .0216 | 1.05 | 2.93 | 2.27 | 2.63 | .013 | .00 | .00 | PIPE
4370.731 | 1535.736 | 3.051 | 1538.787 | 225.00 | 19.60 | 5.96 | 1544.75 | .00 | 4.18 | 4.21 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
33.705 | .0313 |          |          |          |          | .0192 | .65 | 3.05 | 2.09 | 2.63 | .013 | .00 | .00 | PIPE
4404.436 | 1536.791 | 3.186 | 1539.978 | 225.00 | 18.69 | 5.42 | 1545.40 | .00 | 4.18 | 4.09 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
24.536 | .0313 |          |          |          |          | .0172 | .42 | 3.19 | 1.92 | 2.63 | .013 | .00 | .00 | PIPE
4428.972 | 1537.559 | 3.332 | 1540.892 | 225.00 | 17.82 | 4.93 | 1545.82 | .00 | 4.18 | 3.95 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
18.105 | .0313 |          |          |          |          | .0154 | .28 | 3.33 | 1.75 | 2.63 | .013 | .00 | .00 | PIPE
4447.077 | 1538.126 | 3.493 | 1541.619 | 225.00 | 16.99 | 4.48 | 1546.10 | .00 | 4.18 | 3.75 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
13.153 | .0313 |          |          |          |          | .0139 | .18 | 3.49 | 1.59 | 2.63 | .013 | .00 | .00 | PIPE
4460.230 | 1538.538 | 3.671 | 1542.209 | 225.00 | 16.20 | 4.07 | 1546.28 | .00 | 4.18 | 3.49 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
8.862 | .0313 |          |          |          |          | .0127 | .11 | 3.67 | 1.43 | 2.63 | .013 | .00 | .00 | PIPE
4469.092 | 1538.816 | 3.876 | 1542.692 | 225.00 | 15.44 | 3.70 | 1546.40 | .00 | 4.18 | 3.11 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
4.288 | .0313 |          |          |          |          | .0117 | .05 | 3.88 | 1.26 | 2.63 | .013 | .00 | .00 | PIPE
4473.380 | 1538.950 | 4.129 | 1543.078 | 225.00 | 14.72 | 3.37 | 1546.45 | .00 | 4.18 | 2.48 | 4.500 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .0325 |          |          |          |          | .0278 | .22 | 4.13 | 1.04 |         | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4481.390 | 1539.210 | 2.079 | 1541.289 | 140.00 | 23.51 | 8.58 | 1549.87 | .00 | 3.35 | 3.44 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
68.339 | .0507 |      |      |      |      |      | .0421 | 2.88 | 2.08 | 3.15 | 1.99 | .013 | .00 | .00 | PIPE
4549.729 | 1542.677 | 2.150 | 1544.827 | 140.00 | 22.59 | 7.92 | 1552.75 | .00 | 3.35 | 3.41 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
48.342 | .0507 |      |      |      |      |      | .0377 | 1.82 | 2.15 | 2.95 | 1.99 | .013 | .00 | .00 | PIPE
4598.071 | 1545.129 | 2.239 | 1547.368 | 140.00 | 21.54 | 7.20 | 1554.57 | .00 | 3.35 | 3.36 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.359 | .0507 |      |      |      |      |      | .0334 | 1.08 | 2.24 | 2.73 | 1.99 | .013 | .00 | .00 | PIPE
4630.430 | 1546.770 | 2.335 | 1549.105 | 140.00 | 20.53 | 6.55 | 1555.65 | .04 | 3.35 | 3.30 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
253.648 | .0315 |      |      |      |      |      | .0315 | 7.98 | 2.38 | 2.52 | 2.33 | .013 | .00 | .00 | PIPE
4884.079 | 1554.750 | 2.335 | 1557.085 | 140.00 | 20.53 | 6.55 | 1563.63 | .04 | 3.35 | 3.30 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
286.406 | .0315 |      |      |      |      |      | .0299 | 8.55 | 2.38 | 2.52 | 2.33 | .013 | .00 | .00 | PIPE
5170.485 | 1563.761 | 2.428 | 1566.189 | 140.00 | 19.65 | 6.00 | 1572.19 | .04 | 3.35 | 3.23 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
92.820 | .0315 |      |      |      |      |      | .0268 | 2.48 | 2.47 | 2.33 | 2.33 | .013 | .00 | .00 | PIPE
5263.305 | 1566.681 | 2.538 | 1569.219 | 140.00 | 18.74 | 5.45 | 1574.67 | .04 | 3.35 | 3.13 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
50.147 | .0315 |      |      |      |      |      | .0240 | 1.20 | 2.57 | 2.14 | 2.33 | .013 | .00 | .00 | PIPE
5313.452 | 1568.259 | 2.657 | 1570.916 | 140.00 | 17.87 | 4.96 | 1575.87 | .03 | 3.35 | 2.99 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.165 | .0315 |      |      |      |      |      | .0215 | .69 | 2.69 | 1.95 | 2.33 | .013 | .00 | .00 | PIPE
5345.617 | 1569.271 | 2.788 | 1572.059 | 140.00 | 17.03 | 4.51 | 1576.56 | .03 | 3.35 | 2.82 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.846 | .0315 |      |      |      |      |      | .0195 | .43 | 2.81 | 1.76 | 2.33 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5367.462 | 1569.958 | 2.937 | 1572.895 | 140.00 | 16.24 | 4.10 | 1576.99 | .02 | 3.35 | 2.57 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
14.513 | .0315 | | | | | .0179 | .26 | 2.96 | 1.56 | 2.33 | .013 | .00 | .00 | PIPE
5381.976 | 1570.415 | 3.113 | 1573.527 | 140.00 | 15.49 | 3.72 | 1577.25 | .02 | 3.35 | 2.20 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
6.844 | .0315 | | | | | .0170 | .12 | 3.13 | 1.34 | 2.33 | .013 | .00 | .00 | PIPE
5388.820 | 1570.630 | 3.354 | 1573.984 | 140.00 | 14.76 | 3.38 | 1577.37 | 3.50 | 3.35 | 1.40 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0128 | | | | | .0116 | .11 | 3.50 | 1.00 | | | .013 | .00 | .00 | PIPE
5398.220 | 1570.750 | 7.899 | 1578.649 | 80.00 | 8.32 | 1.07 | 1579.72 | .00 | 2.79 | .00 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
54.879 | .0384 | | | | | .0063 | .35 | 7.90 | .00 | 1.55 | .013 | .00 | .00 | PIPE
5453.099 | 1572.858 | 6.138 | 1578.996 | 80.00 | 8.32 | 1.07 | 1580.07 | .00 | 2.79 | .00 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
5453.099 | 1572.858 | 1.299 | 1574.157 | 80.00 | 24.62 | 9.41 | 1583.57 | .00 | 2.79 | 3.38 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
10.721 | .0384 | | | | | .0755 | .81 | 1.30 | 4.43 | 1.55 | .013 | .00 | .00 | PIPE
5463.820 | 1573.270 | 1.280 | 1574.550 | 80.00 | 25.11 | 9.79 | 1584.34 | .00 | 2.79 | 3.37 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .2385 | | | | | .0507 | 2.19 | 1.28 | 4.55 | | | .014 | .00 | .00 | PIPE
| | | | | | | | | | | | | | | | |
----- WARNING - Junction Analysis - Change in Channel Type -----
5506.920 | 1583.550 | 1.263 | 1584.813 | 80.00 | 10.56 | 1.73 | 1586.54 | .00 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
| | | | | | | | | | | | | | | | |
3.174 | .0066 | | | | | .0117 | .04 | 1.26 | 1.66 | 1.53 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5510.094 | 1583.571 | 1.254 | 1584.825 | 80.00 | 10.64 | 1.76 | 1586.58 | .00 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.235 | .0066 |      |      |      |      | .0127 | .24 | 1.25 | 1.67 | 1.53 | .014 | .00 | .00 | RECTANG
5529.330 | 1583.698 | 1.195 | 1584.894 | 80.00 | 11.16 | 1.93 | 1586.83 | .00 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.152 | .0066 |      |      |      |      | .0146 | .25 | 1.20 | 1.80 | 1.53 | .014 | .00 | .00 | RECTANG
5546.481 | 1583.812 | 1.140 | 1584.952 | 80.00 | 11.70 | 2.13 | 1587.08 | .00 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.566 | .0066 |      |      |      |      | .0169 | .26 | 1.14 | 1.93 | 1.53 | .014 | .00 | .00 | RECTANG
5562.048 | 1583.915 | 1.087 | 1585.002 | 80.00 | 12.27 | 2.34 | 1587.34 | .00 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.292 | .0066 |      |      |      |      | .0194 | .28 | 1.09 | 2.07 | 1.53 | .014 | .00 | .00 | RECTANG
5576.340 | 1584.010 | 1.036 | 1585.046 | 80.00 | 12.87 | 2.57 | 1587.62 | 1.65 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.671 | .0065 |      |      |      |      | .0214 | .10 | 2.69 | 2.23 | 1.54 | .014 | .00 | .00 | RECTANG
5581.011 | 1584.040 | 1.019 | 1585.059 | 80.00 | 13.09 | 2.66 | 1587.72 | 1.71 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.769 | .0065 |      |      |      |      | .0236 | .30 | 2.73 | 2.29 | 1.54 | .014 | .00 | .00 | RECTANG
5593.780 | 1584.123 | .971 | 1585.094 | 80.00 | 13.73 | 2.93 | 1588.02 | 1.88 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.920 | .0065 |      |      |      |      | .0272 | .32 | 2.85 | 2.45 | 1.54 | .014 | .00 | .00 | RECTANG
5605.700 | 1584.200 | .926 | 1585.126 | 80.00 | 14.40 | 3.22 | 1588.34 | .03 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
343.046 | .0292 |      |      |      |      | .0292 | 10.01 | .96 | 2.64 | .93 | .014 | .00 | .00 | RECTANG
5948.747 | 1594.208 | .926 | 1595.134 | 80.00 | 14.40 | 3.22 | 1598.35 | .03 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
124.432 | .0292 |      |      |      |      | .0300 | 3.74 | .96 | 2.64 | .93 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6073.178 | 1597.838 | .909 | 1598.747 | 80.00 | 14.67 | 3.34 | 1602.09 | .03 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
71.178 | .0292 |      |      |      |      | .0333 | 2.37 | .94 | 2.71 | .93 | .014 | .00 | .00 | RECTANG
6144.356 | 1599.915 | .867 | 1600.781 | 80.00 | 15.39 | 3.68 | 1604.46 | .03 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
35.271 | .0292 |      |      |      |      | .0385 | 1.36 | .90 | 2.91 | .93 | .014 | .00 | .00 | RECTANG
6179.627 | 1600.944 | .826 | 1601.770 | 80.00 | 16.14 | 4.04 | 1605.81 | .04 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.938 | .0292 |      |      |      |      | .0445 | 1.06 | .86 | 3.13 | .93 | .014 | .00 | .00 | RECTANG
6203.566 | 1601.642 | .788 | 1602.430 | 80.00 | 16.92 | 4.45 | 1606.88 | .04 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.338 | .0292 |      |      |      |      | .0514 | .94 | .83 | 3.36 | .93 | .014 | .00 | .00 | RECTANG
6221.904 | 1602.177 | .751 | 1602.928 | 80.00 | 17.75 | 4.89 | 1607.82 | .05 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.969 | .0292 |      |      |      |      | .0595 | .89 | .80 | 3.61 | .93 | .014 | .00 | .00 | RECTANG
6236.873 | 1602.614 | .716 | 1603.330 | 80.00 | 18.62 | 5.38 | 1608.71 | .05 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.701 | .0292 |      |      |      |      | .0689 | .88 | .77 | 3.88 | .93 | .014 | .00 | .00 | RECTANG
6249.574 | 1602.985 | .683 | 1603.668 | 80.00 | 19.53 | 5.92 | 1609.59 | .06 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.057 | .0292 |      |      |      |      | .0798 | .88 | .74 | 4.16 | .93 | .014 | .00 | .00 | RECTANG
6260.631 | 1603.307 | .651 | 1603.958 | 80.00 | 20.48 | 6.51 | 1610.47 | .06 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.799 | .0292 |      |      |      |      | .0925 | .91 | .71 | 4.47 | .93 | .014 | .00 | .00 | RECTANG
6270.430 | 1603.593 | .621 | 1604.214 | 80.00 | 21.48 | 7.16 | 1611.38 | .07 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.800 | .0292 |      |      |      |      | .1073 | .94 | .69 | 4.80 | .93 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF   | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6279.230 | 1603.850 | .592 | 1604.442 | 80.00 | 22.53 | 7.88 | 1612.32 | .00 | 1.77 | 6.00 | 4.600 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0330 |      |      |      |      |      |      | .0756 | .76 | 5.16 | .013 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
----- WARNING - Junction Analysis - Change in Channel Type -----
6289.230 | 1604.180 | 1.548 | 1605.728 | 80.00 | 21.75 | 7.35 | 1613.07 | .00 | 2.77 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
50.276 | .0551 |      |      |      |      |      |      | .0506 | 2.55 | 1.55 | 3.46 | 1.52 | .013 | .00 | .00 | PIPE
6339.506 | 1606.948 | 1.568 | 1608.517 | 80.00 | 21.39 | 7.11 | 1615.62 | .00 | 2.77 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
69.152 | .0551 |      |      |      |      |      |      | .0466 | 3.22 | 1.57 | 3.37 | 1.52 | .013 | .00 | .00 | PIPE
6408.658 | 1610.756 | 1.629 | 1612.385 | 80.00 | 20.40 | 6.46 | 1618.85 | .00 | 2.77 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.516 | .0551 |      |      |      |      |      |      | .0411 | 1.54 | 1.63 | 3.14 | 1.52 | .013 | .00 | .00 | PIPE
6446.173 | 1612.822 | 1.694 | 1614.515 | 80.00 | 19.45 | 5.87 | 1620.39 | .00 | 2.77 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
24.874 | .0551 |      |      |      |      |      |      | .0363 | .90 | 1.69 | 2.91 | 1.52 | .013 | .00 | .00 | PIPE
6471.047 | 1614.191 | 1.761 | 1615.952 | 80.00 | 18.54 | 5.34 | 1621.29 | .00 | 2.77 | 2.95 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.035 | .0551 |      |      |      |      |      |      | .0321 | .58 | 1.76 | 2.70 | 1.52 | .013 | .00 | .00 | PIPE
6489.082 | 1615.184 | 1.833 | 1617.017 | 80.00 | 17.68 | 4.85 | 1621.87 | .00 | 2.77 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.723 | .0551 |      |      |      |      |      |      | .0284 | .39 | 1.83 | 2.51 | 1.52 | .013 | .00 | .00 | PIPE
6502.805 | 1615.940 | 1.909 | 1617.849 | 80.00 | 16.86 | 4.41 | 1622.26 | .00 | 2.77 | 2.89 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.734 | .0551 |      |      |      |      |      |      | .0252 | .27 | 1.91 | 2.32 | 1.52 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3: 5:36

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-26 FROM UNIVERSITY ST AT CITRUS AVE TO DEARBORN ST AT FIFTH AVE

BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6513.539 | 1616.531 | 1.990 | 1618.521 | 80.00 | 16.07 | 4.01 | 1622.53 | .00 | 2.77 | 2.84 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 8.524 | .0551 |      |      |      |      | .0224 | .19 | 1.99 | 2.14 | 1.52 | .013 | .00 | .00 | PIPE
6522.063 | 1617.000 | 2.077 | 1619.077 | 80.00 | 15.32 | 3.65 | 1622.72 | .00 | 2.77 | 2.77 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 6.792 | .0551 |      |      |      |      | .0200 | .14 | 2.08 | 1.97 | 1.52 | .013 | .00 | .00 | PIPE
6528.856 | 1617.374 | 2.170 | 1619.544 | 80.00 | 14.61 | 3.32 | 1622.86 | .00 | 2.77 | 2.68 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 5.374 | .0551 |      |      |      |      | .0179 | .10 | 2.17 | 1.80 | 1.52 | .013 | .00 | .00 | PIPE
6534.230 | 1617.670 | 2.272 | 1619.942 | 80.00 | 13.93 | 3.01 | 1622.96 | .00 | 2.77 | 2.57 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 341.036 | .0169 |      |      |      |      | .0169 | 5.77 | 2.27 | 1.64 | 2.27 | .013 | .00 | .00 | PIPE
6875.266 | 1623.442 | 2.272 | 1625.714 | 80.00 | 13.93 | 3.01 | 1628.73 | .00 | 2.77 | 2.57 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 197.209 | .0169 |      |      |      |      | .0164 | 3.24 | 2.27 | 1.64 | 2.27 | .013 | .00 | .00 | PIPE
7072.475 | 1626.780 | 2.338 | 1629.118 | 80.00 | 13.54 | 2.85 | 1631.96 | .00 | 2.77 | 2.49 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 77.739 | .0169 |      |      |      |      | .0151 | 1.18 | 2.34 | 1.55 | 2.27 | .013 | .00 | .00 | PIPE
7150.213 | 1628.096 | 2.458 | 1630.554 | 80.00 | 12.91 | 2.59 | 1633.14 | .00 | 2.77 | 2.31 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 30.960 | .0169 |      |      |      |      | .0138 | .43 | 2.46 | 1.39 | 2.27 | .013 | .00 | .00 | PIPE
7181.173 | 1628.620 | 2.596 | 1631.216 | 80.00 | 12.31 | 2.35 | 1633.57 | .00 | 2.77 | 2.05 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 10.057 | .0169 |      |      |      |      | .0128 | .13 | 2.60 | 1.22 | 2.27 | .013 | .00 | .00 | PIPE
7191.230 | 1628.790 | 2.770 | 1631.560 | 80.00 | 11.73 | 2.14 | 1633.70 | .00 | 2.77 | 1.60 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER DIAMETER	HEIGHT 1	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1		6.000																
CD	2	4	1		2.000																
CD	3	4	1		6.000																
CD	4	4	1		2.000																
CD	5	4	1		5.500																
CD	6	4	1		2.000																
CD	7	4	1		5.500																
CD	8	4	1		2.000																
CD	9	4	1		5.000																
CD	10	2	1	6.000	3.000	6.100				-3.00											
CD	11	4	1		5.000																
CD	12	4	1		2.000																
CD	13	4	1		5.000																

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-27 COLTON AVE QIN 25YR HYDROLOGY MODEL FROM JUDSON ST TO CHURCH ST

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV
1	IS	A	SYSTEM	OUTLET	U/S DATA	1006.750	1391.110	1	1408.000
2	IS	A	REACH		U/S DATA	1082.250	1392.680	1	.013
3	IS	A	JUNCTION		U/S DATA	1090.750	1395.080	3	10.000
4	IS	A	REACH		U/S DATA	2147.250	1415.160	3	.013
5	IS	A	JUNCTION		U/S DATA	2152.750	1416.770	5	30.000
6	IS	A	REACH		U/S DATA	3347.250	1439.470	5	.013
7	IS	A	JUNCTION		U/S DATA	3352.750	1440.480	7	51.000
8	IS	A	REACH		U/S DATA	5147.250	1470.990	7	.013

ELEMENT NO	9 IS A JUNCTION	*	*	*	*			*		*										
	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4							
		5152.750	1471.590	9	8	0	.013	51.000	.000	1474.090	.000	-45.000	.000							
										RADIUS	ANGLE									
										.000	.000									
ELEMENT NO	10 IS A REACH	*	*	*																
	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H							
		6228.040	1491.870	9			.013			.000	.000	.000	1							
ELEMENT NO	11 IS A JUNCTION	*	*	*	*	*		*		*		*								
	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4							
		6244.250	1490.800	11	10	0	.013	75.000	.000	1492.000	.000	-45.000	.000							
										RADIUS	ANGLE									
										.000	.000									
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING																				
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING																				
ELEMENT NO	12 IS A REACH	*	*	*																
	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H							
		6462.250	1494.070	11			.013			.000	.000	.000	0							
ELEMENT NO	13 IS A JUNCTION	*	*	*	*	*		*		*		*								
	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4							
		6467.750	1494.150	13	12	0	.013	60.000	.000	1496.610	.000	-45.000	.000							
										RADIUS	ANGLE									
										.000	.000									
ELEMENT NO	14 IS A SYSTEM HEADWORKS																			
	U/S DATA	STATION	INVERT	SECT						W S ELEV										
		6475.920	1494.270	13						.000										

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 4:23:26

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-27 COLTON AVE QIN 25YR HYDROLOGY MODEL FROM JUDSON ST TO CHURCH ST

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1006.750 | 1391.110 | 16.890 | 1408.000 | 457.00 | 16.16 | 4.06 | 1412.06 | .00 | 5.56 | .00 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      75.500 | .0208 | | | | | | .0116 | .88 | .00 | .00 | 3.87 | .013 | .00 | .00 | PIPE
1082.250 | 1392.680 | 16.987 | 1409.667 | 457.00 | 16.16 | 4.06 | 1413.72 | .00 | 5.56 | .00 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .2823 | | | | | | .0114 | .10 | .00 | .00 | .013 | .00 | .00 | .00 | PIPE
1090.750 | 1395.080 | 15.011 | 1410.091 | 447.00 | 15.81 | 3.88 | 1413.97 | .00 | 5.52 | .00 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      903.052 | .0190 | | | | | | .0111 | 10.06 | 15.01 | .00 | 3.93 | .013 | .00 | .00 | PIPE
1993.802 | 1412.244 | 8.072 | 1420.315 | 447.00 | 15.81 | 3.88 | 1424.20 | .00 | 5.52 | .00 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
1993.802 | 1412.244 | 3.764 | 1416.007 | 447.00 | 23.94 | 8.90 | 1424.91 | .00 | 5.52 | 5.80 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      153.448 | .0190 | | | | | | .0225 | 3.45 | 3.76 | 2.35 | 3.93 | .013 | .00 | .00 | PIPE
2147.250 | 1415.160 | 3.668 | 1418.828 | 447.00 | 24.68 | 9.46 | 1428.29 | .00 | 5.52 | 5.85 | 6.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .2927 | | | | | | .0212 | .12 | 3.67 | 2.47 | .013 | .00 | .00 | .00 | PIPE
2152.750 | 1416.770 | 4.082 | 1420.852 | 417.00 | 22.05 | 7.55 | 1428.40 | .00 | 5.24 | 4.81 | 5.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      680.952 | .0190 | | | | | | .0190 | 12.94 | 4.08 | 1.96 | 4.08 | .013 | .00 | .00 | PIPE
2833.702 | 1429.711 | 4.082 | 1433.793 | 417.00 | 22.05 | 7.55 | 1441.34 | .00 | 5.24 | 4.81 | 5.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      513.548 | .0190 | | | | | | .0185 | 9.49 | 4.08 | 1.96 | 4.08 | .013 | .00 | .00 | PIPE
3347.250 | 1439.470 | 4.183 | 1443.653 | 417.00 | 21.51 | 7.18 | 1450.84 | .00 | 5.24 | 4.69 | 5.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
JUNCT STR | .1836 | | | | | | .0175 | .10 | 4.18 | 1.87 | .013 | .00 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 4:23:26

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-27 COLTON AVE QIN 25YR HYDROLOGY MODEL FROM JUDSON ST TO CHURCH ST

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
        | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3352.750 | 1440.480 | 3.845 | 1444.325 | 366.00 | 20.63 | 6.61 | 1450.94 | .00 | 5.09 | 5.05 | 5.500 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
1316.275 | .0170 |      |         |         |         |         | .0170 | 22.38 | 3.85 | 1.94 | 3.85 | .013 | .00 | .00 | PIPE
4669.025 | 1462.859 | 3.845 | 1466.704 | 366.00 | 20.63 | 6.61 | 1473.31 | .00 | 5.09 | 5.05 | 5.500 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
478.225 | .0170 |      |         |         |         |         | .0175 | 8.38 | 3.85 | 1.94 | 3.85 | .013 | .00 | .00 | PIPE
5147.250 | 1470.990 | 3.761 | 1474.751 | 366.00 | 21.14 | 6.94 | 1481.69 | .00 | 5.09 | 5.11 | 5.500 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .1091 |      |         |         |         |         | .0184 | .10 | 3.76 | 2.02 |         | .013 | .00 | .00 | PIPE
5152.750 | 1471.590 | 3.642 | 1475.232 | 315.00 | 20.56 | 6.56 | 1481.79 | .00 | 4.72 | 4.45 | 5.000 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
338.638 | .0189 |      |         |         |         |         | .0189 | 6.39 | 3.64 | 1.95 | 3.64 | .013 | .00 | .00 | PIPE
5491.388 | 1477.977 | 3.642 | 1481.619 | 315.00 | 20.56 | 6.56 | 1488.18 | .00 | 4.72 | 4.45 | 5.000 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
439.522 | .0189 |      |         |         |         |         | .0181 | 7.97 | 3.64 | 1.95 | 3.64 | .013 | .00 | .00 | PIPE
5930.911 | 1486.266 | 3.766 | 1490.032 | 315.00 | 19.85 | 6.12 | 1496.15 | .00 | 4.72 | 4.31 | 5.000 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
161.350 | .0189 |      |         |         |         |         | .0166 | 2.67 | 3.77 | 1.82 | 3.64 | .013 | .00 | .00 | PIPE
6092.261 | 1489.309 | 3.951 | 1493.260 | 315.00 | 18.93 | 5.56 | 1498.82 | .00 | 4.72 | 4.07 | 5.000 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
76.820 | .0189 |      |         |         |         |         | .0150 | 1.15 | 3.95 | 1.65 | 3.64 | .013 | .00 | .00 | PIPE
6169.081 | 1490.758 | 4.158 | 1494.916 | 315.00 | 18.05 | 5.06 | 1499.97 | .00 | 4.72 | 3.74 | 5.000 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
42.102 | .0189 |      |         |         |         |         | .0137 | .58 | 4.16 | 1.47 | 3.64 | .013 | .00 | .00 | PIPE
6211.182 | 1491.552 | 4.401 | 1495.953 | 315.00 | 17.21 | 4.60 | 1500.55 | .00 | 4.72 | 3.25 | 5.000 | .000 | .00 | 1 | .0
        |         |      |         |         |         |         |         |         |         |         |         |         |         |         |         |
16.858 | .0189 |      |         |         |         |         | .0129 | .22 | 4.40 | 1.28 | 3.64 | .013 | .00 | .00 | PIPE

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			5.000															
CD	2	4	1			1.500															
CD	3	4	1			5.000															
CD	4	4	1			2.500															
CD	5	4	1			5.000															
CD	6	4	1			2.000															
CD	7	4	1			5.000															
CD	8	4	1			2.000															
CD	9	4	1			4.500															
CD	10	4	1			1.500															
CD	11	4	1			4.500															
CD	12	4	1			1.500															
CD	13	4	1			5.000															
CD	14	4	1			5.000															

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-30 WABASH AVE SD FROM 5TH AVE TO ZANJA CHANNEL

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	TYPE	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	RADIUS	ANGLE	ANG PT	MAN H	
1	IS	A SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT									W S ELEV				
				.000	1612.800	1									1618.000				
2	IS	A REACH	U/S DATA	STATION	INVERT	SECT		N							RADIUS	ANGLE	ANG PT	MAN H	
				324.070	1618.670	1		.013							.000	.000	.000	0	
3	IS	A JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	RADIUS	ANGLE	ANG PT	MAN H
				328.730	1618.760	3	2	0	.013	6.000	.000	1621.310	.000	90.000	.000	.000	.000	.000	0
4	IS	A REACH	U/S DATA	STATION	INVERT	SECT			N						RADIUS	ANGLE	ANG PT	MAN H	
				534.700	1624.950	3			.013						.000	.000	.000	0	
5	IS	A JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	RADIUS	ANGLE	ANG PT	MAN H
				539.030	1625.070	5	4	0	.013	33.000	.000	1627.170	.000	-45.000	.000	.000	.000	.000	0
6	IS	A REACH	U/S DATA	STATION	INVERT	SECT			N						RADIUS	ANGLE	ANG PT	MAN H	
				653.370	1627.930	5			.013						.000	.000	.000	0	
7	IS	A JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	RADIUS	ANGLE	ANG PT	MAN H
				658.030	1628.050	7	6	0	.013	30.000	.000	1630.010	.000	-90.000	.000	.000	.000	.000	0
8	IS	A REACH	U/S DATA	STATION	INVERT	SECT			N						RADIUS	ANGLE	ANG PT	MAN H	
				690.870	1629.350	7			.013						.000	.000	.000	0	

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:45:27

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-30 WABASH AVE SD FROM 5TH AVE TO ZANJA CHANNEL
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1612.800 | 5.200 | 1618.000 | 408.00 | 20.78 | 6.70 | 1624.70 | .00 | 4.89 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
324.070 | .0181 |      |      |      |      |      | .0245 | 7.95 | 5.20 | .00 | 5.00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
324.070 | 1618.670 | 7.283 | 1625.953 | 408.00 | 20.78 | 6.70 | 1632.66 | .00 | 4.89 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0193 |      |      |      |      |      | .0242 | .11 | 7.28 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
328.730 | 1618.760 | 7.697 | 1626.457 | 402.00 | 20.47 | 6.51 | 1632.97 | .00 | 4.89 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
205.970 | .0301 |      |      |      |      |      | .0238 | 4.91 | 7.70 | .00 | 3.68 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
534.700 | 1624.950 | 6.414 | 1631.365 | 402.00 | 20.47 | 6.51 | 1637.87 | .00 | 4.89 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0277 |      |      |      |      |      | .0219 | .10 | 6.41 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
539.030 | 1625.070 | 8.191 | 1633.261 | 369.00 | 18.79 | 5.48 | 1638.74 | .00 | 4.84 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
114.340 | .0250 |      |      |      |      |      | .0201 | 2.30 | 8.19 | .00 | 3.69 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
653.370 | 1627.930 | 7.626 | 1635.556 | 369.00 | 18.79 | 5.48 | 1641.04 | .00 | 4.84 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0257 |      |      |      |      |      | .0185 | .09 | 7.63 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
658.030 | 1628.050 | 9.303 | 1637.353 | 339.00 | 17.27 | 4.63 | 1641.98 | .00 | 4.79 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.840 | .0396 |      |      |      |      |      | .0169 | .56 | 9.30 | .00 | 2.95 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
690.870 | 1629.350 | 8.560 | 1637.910 | 339.00 | 17.27 | 4.63 | 1642.54 | .00 | 4.79 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0386 |      |      |      |      |      |      |      | 8.56 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
695.530 | 1629.530 | 3.023 | 1632.553 | 309.00 | 27.20 | 11.49 | 1644.04 | .00 | 4.40 | 4.23 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
130.360 | .0394 |      |      |      |      |      | .0394 | 5.13 | 3.02 | 2.92 | 3.02 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:45:27

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-30 WABASH AVE SD FROM 5TH AVE TO ZANJA CHANNEL
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
825.890 | 1634.660 | 3.023 | 1637.683 | 309.00 | 27.20 | 11.49 | 1649.17 | .00 | 4.40 | 4.23 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
424.340 | .0394 |      |      |      |      |      | .0376 | 15.96 | 3.02 | 2.92 | 3.02 | .013 | .00 | .00 | PIPE
1250.230 | 1651.360 | 3.128 | 1654.488 | 309.00 | 26.18 | 10.65 | 1665.13 | .00 | 4.40 | 4.14 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
125.762 | .0359 |      |      |      |      |      | .0359 | 4.51 | 3.13 | 2.73 | 3.13 | .013 | .00 | .00 | PIPE
1375.992 | 1655.871 | 3.128 | 1659.000 | 309.00 | 26.18 | 10.65 | 1669.65 | .00 | 4.40 | 4.14 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
424.238 | .0359 |      |      |      |      |      | .0376 | 15.96 | 3.13 | 2.73 | 3.13 | .013 | .00 | .00 | PIPE
1800.230 | 1671.090 | 3.023 | 1674.113 | 309.00 | 27.20 | 11.49 | 1685.60 | .00 | 4.40 | 4.23 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
91.231 | .0397 |      |      |      |      |      | .0393 | 3.58 | 3.02 | 2.92 | 3.01 | .013 | .00 | .00 | PIPE
1891.461 | 1674.715 | 3.028 | 1677.743 | 309.00 | 27.15 | 11.44 | 1689.19 | .00 | 4.40 | 4.22 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
334.327 | .0397 |      |      |      |      |      | .0370 | 12.38 | 3.03 | 2.91 | 3.01 | .013 | .00 | .00 | PIPE
2225.788 | 1688.000 | 3.161 | 1691.162 | 309.00 | 25.88 | 10.40 | 1701.56 | .00 | 4.40 | 4.11 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
119.782 | .0397 |      |      |      |      |      | .0330 | 3.96 | 3.16 | 2.68 | 3.01 | .013 | .00 | .00 | PIPE
2345.570 | 1692.760 | 3.305 | 1696.065 | 309.00 | 24.68 | 9.46 | 1705.52 | .00 | 4.40 | 3.97 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0386 |      |      |      |      |      | .0376 | .18 | 3.31 | 2.45 |      | .013 | .00 | .00 | PIPE
2350.230 | 1692.940 | 2.636 | 1695.576 | 267.00 | 27.58 | 11.81 | 1707.39 | .00 | 4.32 | 4.43 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
345.467 | .0442 |      |      |      |      |      | .0419 | 14.46 | 2.64 | 3.29 | 2.63 | .013 | .00 | .00 | PIPE
2695.697 | 1708.213 | 2.724 | 1710.937 | 267.00 | 26.52 | 10.92 | 1721.86 | .00 | 4.32 | 4.40 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
131.160 | .0442 |      |      |      |      |      | .0375 | 4.92 | 2.72 | 3.09 | 2.63 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:45:27

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-30 WABASH AVE SD FROM 5TH AVE TO ZANJA CHANNEL
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2826.856 | 1714.012 | 2.836 | 1716.848 | 267.00 | 25.28 | 9.93 | 1726.78 | .00 | 4.32 | 4.34 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
71.464 | .0442 |      |      |      |      | .0333 | 2.38 | 2.84 | 2.86 | 2.63 | .013 | .00 | .00 | PIPE
2898.321 | 1717.171 | 2.956 | 1720.127 | 267.00 | 24.11 | 9.02 | 1729.15 | .00 | 4.32 | 4.27 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
47.249 | .0442 |      |      |      |      | .0296 | 1.40 | 2.96 | 2.64 | 2.63 | .013 | .00 | .00 | PIPE
2945.570 | 1719.260 | 3.084 | 1722.344 | 267.00 | 22.99 | 8.20 | 1730.55 | .00 | 4.32 | 4.18 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0451 |      |      |      |      | .0327 | .15 | 3.08 | 2.43 |      | .013 | .00 | .00 | PIPE
2950.230 | 1719.470 | 2.340 | 1721.810 | 225.00 | 24.96 | 9.67 | 1731.48 | .00 | 4.25 | 4.99 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
107.840 | .0422 |      |      |      |      | .0354 | 3.82 | 2.34 | 3.27 | 2.26 | .013 | .00 | .00 | PIPE
3058.070 | 1724.020 | 2.420 | 1726.440 | 225.00 | 23.89 | 8.86 | 1735.30 | .89 | 4.25 | 5.00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
35.081 | .0422 |      |      |      |      | .0324 | 1.14 | 3.31 | 3.07 | 2.26 | .013 | .00 | .00 | PIPE
3093.151 | 1725.501 | 2.463 | 1727.964 | 225.00 | 23.36 | 8.47 | 1736.44 | .85 | 4.25 | 5.00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
53.375 | .0422 |      |      |      |      | .0295 | 1.58 | 3.31 | 2.97 | 2.26 | .013 | .00 | .00 | PIPE
3146.526 | 1727.753 | 2.557 | 1730.310 | 225.00 | 22.27 | 7.70 | 1738.01 | .77 | 4.25 | 5.00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.176 | .0422 |      |      |      |      | .0260 | .97 | 3.33 | 2.76 | 2.26 | .013 | .00 | .00 | PIPE
3183.702 | 1729.322 | 2.656 | 1731.978 | 225.00 | 21.24 | 7.00 | 1738.98 | .70 | 4.25 | 4.99 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.668 | .0422 |      |      |      |      | .0229 | .63 | 3.35 | 2.57 | 2.26 | .013 | .00 | .00 | PIPE
3211.370 | 1730.490 | 2.760 | 1733.250 | 225.00 | 20.25 | 6.37 | 1739.62 | .00 | 4.25 | 4.97 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
219.398 | .0219 |      |      |      |      | .0209 | 4.59 | 2.76 | 2.39 | 2.74 | .013 | .00 | .00 | PIPE
    
```


Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:45:27

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-30 WABASH AVE SD FROM 5TH AVE TO ZANJA CHANNEL
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth  | Width  | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF      | SE Dpth | Froude N | Norm Dp | "N"     | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3800.201 | 1743.396 | 3.835 | 1747.231 | 225.00 | 13.92 | 3.01 | 1750.24 | .51 | 4.25 | 4.23 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 5.953 | .0217 |      |      |      |      | .0081 | .05 | 4.34 | 1.25 | 2.75 | .013 | .00 | .00 | PIPE
3806.154 | 1743.525 | 4.028 | 1747.553 | 225.00 | 13.27 | 2.74 | 1750.29 | .43 | 4.25 | 3.96 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 2.056 | .0217 |      |      |      |      | .0074 | .02 | 4.46 | 1.13 | 2.75 | .013 | .00 | .00 | PIPE
3808.210 | 1743.570 | 4.248 | 1747.818 | 225.00 | 12.65 | 2.49 | 1750.30 | .00 | 4.25 | 3.57 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 2.610 | -.0027 |      |      |      |      | .0068 | .02 | 4.25 | 1.00 | .00 | .013 | .00 | .00 | PIPE
3810.820 | 1743.563 | 4.461 | 1748.024 | 225.00 | 12.17 | 2.30 | 1750.32 | .00 | 4.25 | 3.10 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 8.229 | -.0027 |      |      |      |      | .0065 | .05 | 4.46 | .88 | .00 | .013 | .00 | .00 | PIPE
3819.049 | 1743.541 | 4.684 | 1748.224 | 225.00 | 11.77 | 2.15 | 1750.38 | .00 | 4.25 | 2.43 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 14.675 | -.0027 |      |      |      |      | .0066 | .10 | 4.68 | .74 | .00 | .013 | .00 | .00 | PIPE
3833.724 | 1743.501 | 4.918 | 1748.419 | 225.00 | 11.50 | 2.05 | 1750.47 | .00 | 4.25 | 1.27 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 6.941 | -.0027 |      |      |      |      | .0071 | .05 | 4.92 | .52 | .00 | .013 | .00 | .00 | PIPE
3840.665 | 1743.483 | 5.000 | 1748.483 | 225.00 | 11.46 | 2.04 | 1750.52 | .00 | 4.25 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 8.455 | -.0027 |      |      |      |      | .0074 | .06 | 5.00 | .00 | .00 | .013 | .00 | .00 | PIPE
3849.120 | 1743.460 | 5.086 | 1748.546 | 225.00 | 11.46 | 2.04 | 1750.58 | .00 | 4.25 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
    
```


WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT	1 BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1				4.000														
CD	2	4	1				1.500														
CD	3	4	1				4.000														
CD	4	4	1				2.500														
CD	5	4	1				3.000														
CD	6	4	1				3.000														
CD	7	4	1				3.000														

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
HEADING LINE NO 2 IS -
HEADING LINE NO 3 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4- 37 IOWA ST FROM MORREY ARROYO TO HYACINTH AVE
BY MCHANDOO JN:136769 APRIL 2014

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV													
1	IS	A	SYSTEM OUTLET					1213.000													
2	IS	A	REACH		88.810	1209.600	1		.013			155.055	32.817	.000							
3	IS	A	REACH		335.500	1211.710	1		.013			.000	.000	.000							
4	IS	A	JUNCTION		340.580	1211.750	3		.013	Q3	1.000	Q4	.000	1212.770	.000	-45.000					
5	IS	A	REACH		414.800	1212.390	3		.013			.000	.000	.000							
6	IS	A	JUNCTION		420.840	1213.450	5		.013	Q3	25.000	Q4	.000	1213.470	.000	-45.000					
7	IS	A	REACH		643.810	1216.940	5		.013			.000	.000	.000							
8	IS	A	REACH		893.810	1228.760	5		.013			.000	.000	.000							
9	IS	A	JUNCTION		900.390	1228.830	7		.013	Q3	40.000	Q4	.000	1228.760	.000	-60.000					

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	10	IS	A	REACH		1179.300	1235.660	7		.013			.000	.000	.000						
------------	----	----	---	-------	--	----------	----------	---	--	------	--	--	------	------	------	--	--	--	--	--	--

ELEMENT NO	11	IS A REACH	*	*	*						
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H	
			1249.990	1237.330	7	.013	45.003	-90.000	.000	0	
ELEMENT NO	12	IS A REACH	*	*	*						
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H	
			1401.920	1240.930	7	.013	.000	.000	.000	0	
ELEMENT NO	13	IS A REACH	*	*	*						
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H	
			1472.600	1242.600	7	.013	45.000	89.993	.000	0	
ELEMENT NO	14	IS A REACH	*	*	*						
		U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H	
			1784.710	1250.020	7	.013	.000	.000	.000	0	
ELEMENT NO	15	IS A SYSTEM HEADWORKS			*						
		U/S DATA	STATION	INVERT	SECT		W S ELEV				
			1784.710	1250.020	7		.000				

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 7: 9:11

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4- 37 IOWA ST FROM MORREY ARROYO TO HYACINTH AVE
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
663.898 |1217.890| 2.009 |1219.899| 110.00 | 21.86 | 7.42 |1227.32 | .00 | 2.93 | 2.82 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
91.223  |.0473  |      |      |      |      |      |.0413  | 3.77 | 2.01 | 2.88 | 1.95 | .013 | .00 | .00 | PIPE
755.121 |1222.203| 2.097 |1224.299| 110.00 | 20.85 | 6.75 |1231.05 | .00 | 2.93 | 2.75 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
49.893  |.0473  |      |      |      |      |      |.0369  | 1.84 | 2.10 | 2.65 | 1.95 | .013 | .00 | .00 | PIPE
805.014 |1224.562| 2.192 |1226.753| 110.00 | 19.88 | 6.14 |1232.89 | .00 | 2.93 | 2.66 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
31.878  |.0473  |      |      |      |      |      |.0330  | 1.05 | 2.19 | 2.43 | 1.95 | .013 | .00 | .00 | PIPE
836.892 |1226.069| 2.296 |1228.364| 110.00 | 18.95 | 5.58 |1233.94 | .00 | 2.93 | 2.54 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
22.365  |.0473  |      |      |      |      |      |.0297  | .67  | 2.30 | 2.21 | 1.95 | .013 | .00 | .00 | PIPE
859.257 |1227.126| 2.410 |1229.537| 110.00 | 18.07 | 5.07 |1234.61 | .00 | 2.93 | 2.38 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.289  |.0473  |      |      |      |      |      |.0270  | .44  | 2.41 | 1.99 | 1.95 | .013 | .00 | .00 | PIPE
875.546 |1227.896| 2.541 |1230.437| 110.00 | 17.23 | 4.61 |1235.05 | .00 | 2.93 | 2.16 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.716  |.0473  |      |      |      |      |      |.0249  | .29  | 2.54 | 1.77 | 1.95 | .013 | .00 | .00 | PIPE
887.262 |1228.450| 2.697 |1231.148| 110.00 | 16.43 | 4.19 |1235.34 | .00 | 2.93 | 1.81 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.548   |.0473  |      |      |      |      |      |.0241  | .16  | 2.70 | 1.50 | 1.95 | .013 | .00 | .00 | PIPE
893.810 |1228.760| 2.927 |1231.687| 110.00 | 15.66 | 3.81 |1235.50 | .00 | 2.93 | .92  | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR|.0106  |      |      |      |      |      |.0176  | .12  | 2.93 | 1.00 | .013 | .00 | .00 | .00 | PIPE
900.390 |1228.830| 7.012 |1235.842| 70.00  | 9.90  | 1.52 |1237.36 | .00 | 2.66 | .00  | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
245.977 |.0245  |      |      |      |      |      |.0110  | 2.71 | 7.01 | .00  | 1.80 | .013 | .00 | .00 | PIPE
    
```

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 7: 9:11

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4- 37 IOWA ST FROM MORREY ARROYO TO HYACINTH AVE
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1146.367 | 1234.854 | 3.765 | 1238.619 | 70.00 | 9.90 | 1.52 | 1240.14 | .00 | 2.66 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
1146.367 | 1234.854 | 1.815 | 1236.668 | 70.00 | 15.66 | 3.81 | 1240.47 | .00 | 2.66 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.933 | .0245 |      |      |      |      | .0237 | .78 | 1.81 | 2.23 | 1.80 | .013 | .00 | .00 | PIPE
1179.300 | 1235.660 | 1.818 | 1237.478 | 70.00 | 15.62 | 3.79 | 1241.27 | .49 | 2.66 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
70.690 | .0236 |      |      |      |      | .0237 | 1.67 | 2.31 | 2.23 | 1.82 | .013 | .00 | .00 | PIPE
1249.990 | 1237.330 | 1.818 | 1239.148 | 70.00 | 15.62 | 3.79 | 1242.94 | .00 | 2.66 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
151.930 | .0237 |      |      |      |      | .0236 | 3.58 | 1.82 | 2.23 | 1.82 | .013 | .00 | .00 | PIPE
1401.920 | 1240.930 | 1.822 | 1242.752 | 70.00 | 15.58 | 3.77 | 1246.52 | .49 | 2.66 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
70.680 | .0236 |      |      |      |      | .0234 | 1.66 | 2.31 | 2.22 | 1.82 | .013 | .00 | .00 | PIPE
1472.600 | 1242.600 | 1.825 | 1244.425 | 70.00 | 15.55 | 3.75 | 1248.18 | .00 | 2.66 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
49.955 | .0238 |      |      |      |      | .0233 | 1.16 | 1.83 | 2.21 | 1.82 | .013 | .00 | .00 | PIPE
1522.555 | 1243.788 | 1.832 | 1245.620 | 70.00 | 15.48 | 3.72 | 1249.34 | .00 | 2.66 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
133.934 | .0238 |      |      |      |      | .0218 | 2.92 | 1.83 | 2.19 | 1.82 | .013 | .00 | .00 | PIPE
1656.489 | 1246.972 | 1.908 | 1248.880 | 70.00 | 14.76 | 3.38 | 1252.26 | .00 | 2.66 | 2.89 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
51.307 | .0238 |      |      |      |      | .0194 | .99 | 1.91 | 2.03 | 1.82 | .013 | .00 | .00 | PIPE
1707.796 | 1248.191 | 1.989 | 1250.180 | 70.00 | 14.07 | 3.08 | 1253.26 | .00 | 2.66 | 2.84 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.391 | .0238 |      |      |      |      | .0172 | .51 | 1.99 | 1.87 | 1.82 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 7: 9:11

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4- 37 IOWA ST FROM MORREY ARROYO TO HYACINTH AVE
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|        |        |        |        |        | SF Ave | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1737.186 | 1248.890 | 2.075 | 1250.965 | 70.00 | 13.42 | 2.80 | 1253.76 | .00 | 2.66 | 2.77 | 3.000 | .000 | .00 | 1 | .0
      | 19.075 | .0238 |        |        |        |        | .0153 | .29 | 2.08 | 1.72 | 1.82 | .013 | .00 | .00 | PIPE
1756.261 | 1249.344 | 2.169 | 1251.512 | 70.00 | 12.79 | 2.54 | 1254.05 | .00 | 2.66 | 2.69 | 3.000 | .000 | .00 | 1 | .0
      | 12.891 | .0238 |        |        |        |        | .0137 | .18 | 2.17 | 1.58 | 1.82 | .013 | .00 | .00 | PIPE
1769.152 | 1249.650 | 2.270 | 1251.920 | 70.00 | 12.20 | 2.31 | 1254.23 | .00 | 2.66 | 2.57 | 3.000 | .000 | .00 | 1 | .0
      | 8.582 | .0238 |        |        |        |        | .0123 | .11 | 2.27 | 1.44 | 1.82 | .013 | .00 | .00 | PIPE
1777.734 | 1249.854 | 2.382 | 1252.236 | 70.00 | 11.63 | 2.10 | 1254.34 | .00 | 2.66 | 2.43 | 3.000 | .000 | .00 | 1 | .0
      | 5.137 | .0238 |        |        |        |        | .0112 | .06 | 2.38 | 1.30 | 1.82 | .013 | .00 | .00 | PIPE
1782.871 | 1249.976 | 2.508 | 1252.484 | 70.00 | 11.09 | 1.91 | 1254.39 | .00 | 2.66 | 2.22 | 3.000 | .000 | .00 | 1 | .0
      | 1.839 | .0238 |        |        |        |        | .0102 | .02 | 2.51 | 1.16 | 1.82 | .013 | .00 | .00 | PIPE
1784.710 | 1250.020 | 2.658 | 1252.678 | 70.00 | 10.57 | 1.73 | 1254.41 | .00 | 2.66 | 1.91 | 3.000 | .000 | .00 | 1 | .0
      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
    
```


WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1									
CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH	DROP												
CD	1	4	1		4.500														
CD	2	4	1		2.000														
CD	3	4	1		4.500														
CD	4	4	1		1.500														
CD	5	4	1		4.500														
CD	6	4	1		4.000														
CD	7	4	1		3.250														
CD	8	4	1		3.000														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV										
1				.000	1230.000	1	1238.000										
ELEMENT NO	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H						
2				463.000	1231.890	1	.013	.000	.000	.000	0						
ELEMENT NO	IS A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
3				463.010	1231.890	3	2	0	.013	22.120	.000	1231.950	.000	-60.000	.000		
												RADIUS	ANGLE				
												.000	.000				

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H						
4				486.170	1232.180	3	.013	.000	.000	.000	0						
ELEMENT NO	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H						
5				1288.350	1241.800	3	.013	.000	.000	.000	0						
ELEMENT NO	IS A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
6				1288.360	1241.800	5	4	0	.013	39.120	.000	1244.810	.000	-45.000	.000		
												RADIUS	ANGLE				
												.000	.000				

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
7				1352.920	1245.710	5	.013	99.982	36.997	.000	1				
ELEMENT NO	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
8				1461.510	1246.240	5	.013	.000	.000	.000	0				
ELEMENT NO	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
9				1639.100	1250.620	5	.013	.000	.000	.000	0				

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	10	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N				RADIUS	ANGLE	ANG PT	MAN H							
			1703.670	1252.210	5	.013				99.997	36.997	.000	0							
ELEMENT NO	11	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N				RADIUS	ANGLE	ANG PT	MAN H							
			2007.460	1252.900	5	.013				.000	.000	.000	1							
ELEMENT NO	12	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*							
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2012.090	1255.170	6	0	0	.013	.000	.000	.000	.000	.000	.000	.000					
											RADIUS	ANGLE								
											.000	.000								
ELEMENT NO	13	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H						
			2083.140	1256.380	6	.013					44.988	-90.488	.000	0						
ELEMENT NO	14	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H						
			2166.670	1257.800	6	.013					.000	.000	.000	0						
ELEMENT NO	15	IS A JUNCTION	*	*	*	*	*	*	*	*	*	*	*							
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4						
			2173.170	1257.800	8	7	0	.013	45.100	.000	1258.590	.000	60.000	.000	.000					
											RADIUS	ANGLE								
											.000	.000								
THE ABOVE ELEMENT CONTAINED AN			INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING																	
THE ABOVE ELEMENT CONTAINED AN			INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING																	
ELEMENT NO	16	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H						
			2510.780	1265.370	8	.013					.000	.000	.000	0						
ELEMENT NO	17	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H						
			2531.640	1265.750	8	.013					.000	.000	.000	1						
ELEMENT NO	18	IS A REACH	*	*	*															
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H						
			2746.760	1272.450	8	.013					.000	.000	.000	2						
ELEMENT NO	19	IS A SYSTEM HEADWORKS	*						*											
		U/S DATA	STATION	INVERT	SECT						W S ELEV									
			2746.760	1272.450	8						.000									

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 4

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
        | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|       |       |       |       |       | HF     | SE Dpth|Froude N|Norm Dp | "N"   | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
.000    |1230.000| 8.000 |1238.000| 187.29 | 11.78 | 2.15 |1240.15 | .00 | 3.94 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
463.000 | .0041  |        |        |        |        |        | .0091  | 4.20 | 8.00 | .00 | 4.50  | .013 | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
463.000 |1231.890| 10.310|1242.200| 187.29 | 11.78 | 2.15 |1244.35 | .00 | 3.94 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
JUNCT STR |.0000  |        |        |        |        |        | .0081  | .00 | 10.31 | .00 | .013  | .00  | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
463.010 |1231.890| 11.115|1243.005| 165.17 | 10.39 | 1.67 |1244.68 | .00 | 3.75 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
23.160  | .0125  |        |        |        |        |        | .0071  | .16 | 11.11 | .00 | 2.91  | .013 | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
486.170 |1232.180| 10.988|1243.168| 165.17 | 10.39 | 1.67 |1244.84 | .00 | 3.75 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
802.180 | .0120  |        |        |        |        |        | .0071  | 5.66 | 10.99 | .00 | 2.95  | .013 | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
1288.350|1241.800| 7.027 |1248.828| 165.17 | 10.39 | 1.67 |1250.50 | .00 | 3.75 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
JUNCT STR |.0000  |        |        |        |        |        | .0056  | .00 | .00  | .00 | .013  | .00  | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
1288.360|1241.800| 7.727 |1249.527| 126.05 | 7.93  | .98  |1250.50 | .00 | 3.31 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
59.775  | .0606  |        |        |        |        |        | .0041  | .25 | .00  | .00 | 1.57  | .013 | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
1348.135|1245.420| 4.516 |1249.937| 126.05 | 7.93  | .98  |1250.91 | .00 | 3.31 | .00 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
HYDRAULIC JUMP
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
1348.135|1245.420| 2.353 |1247.773| 126.05 | 14.98 | 3.49 |1251.26 | .31 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
.016    | .0606  |        |        |        |        |        | .0141  | .00 | 2.67 | 1.93 | 1.57  | .013 | .00 | .00 | PIPE
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
1348.151|1245.421| 2.353 |1247.774| 126.05 | 14.98 | 3.49 |1251.26 | .31 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 |.0
        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
4.769  | .0606  |        |        |        |        |        | .0133  | .06 | 2.67 | 1.93 | 1.57  | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1352.920 | 1245.710 | 2.444 | 1248.154 | 126.05 | 14.28 | 3.17 | 1251.32 | .00 | 3.31 | 4.48 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
  9.903 | .0049 |      |      |      |      |      | .0128 | .13 | 2.44 | 1.79 | 3.39 | .013 | .00 | .00 | PIPE
1362.823 | 1245.758 | 2.410 | 1248.168 | 126.05 | 14.54 | 3.28 | 1251.45 | .00 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 26.305 | .0049 |      |      |      |      |      | .0139 | .37 | 2.41 | 1.84 | 3.39 | .013 | .00 | .00 | PIPE
1389.128 | 1245.887 | 2.320 | 1248.207 | 126.05 | 15.25 | 3.61 | 1251.82 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 25.170 | .0049 |      |      |      |      |      | .0158 | .40 | 2.32 | 1.98 | 3.39 | .013 | .00 | .00 | PIPE
1414.298 | 1246.010 | 2.235 | 1248.244 | 126.05 | 15.99 | 3.97 | 1252.21 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 24.114 | .0049 |      |      |      |      |      | .0180 | .43 | 2.23 | 2.13 | 3.39 | .013 | .00 | .00 | PIPE
1438.412 | 1246.127 | 2.153 | 1248.280 | 126.05 | 16.77 | 4.37 | 1252.65 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 23.098 | .0049 |      |      |      |      |      | .0204 | .47 | 2.15 | 2.29 | 3.39 | .013 | .00 | .00 | PIPE
1461.510 | 1246.240 | 2.075 | 1248.315 | 126.05 | 17.59 | 4.80 | 1253.12 | .00 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 56.348 | .0247 |      |      |      |      |      | .0210 | 1.18 | 2.08 | 2.45 | 2.00 | .013 | .00 | .00 | PIPE
1517.858 | 1247.630 | 2.119 | 1249.748 | 126.05 | 17.12 | 4.55 | 1254.30 | .00 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 58.861 | .0247 |      |      |      |      |      | .0190 | 1.12 | 2.12 | 2.36 | 2.00 | .013 | .00 | .00 | PIPE
1576.719 | 1249.081 | 2.199 | 1251.280 | 126.05 | 16.32 | 4.14 | 1255.42 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 36.814 | .0247 |      |      |      |      |      | .0167 | .62 | 2.20 | 2.20 | 2.00 | .013 | .00 | .00 | PIPE
1613.532 | 1249.989 | 2.282 | 1252.272 | 126.05 | 15.57 | 3.76 | 1256.03 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
 25.568 | .0247 |      |      |      |      |      | .0147 | .38 | 2.28 | 2.04 | 2.00 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1639.100 | 1250.620 | 2.370 | 1252.990 | 126.05 | 14.84 | 3.42 | 1256.41 | .31 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      2.885 | .0246 | | | | | | .0137 | .04 | 2.68 | 1.90 | 2.00 | .013 | .00 | .00 | PIPE
1641.984 | 1250.691 | 2.383 | 1253.073 | 126.05 | 14.75 | 3.38 | 1256.45 | .30 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      18.043 | .0246 | | | | | | .0128 | .23 | 2.69 | 1.88 | 2.00 | .013 | .00 | .00 | PIPE
1660.027 | 1251.135 | 2.476 | 1253.611 | 126.05 | 14.06 | 3.07 | 1256.68 | .27 | 3.31 | 4.48 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      13.555 | .0246 | | | | | | .0113 | .15 | 2.75 | 1.75 | 2.00 | .013 | .00 | .00 | PIPE
1673.582 | 1251.469 | 2.574 | 1254.042 | 126.05 | 13.41 | 2.79 | 1256.83 | .25 | 3.31 | 4.45 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      10.245 | .0246 | | | | | | .0100 | .10 | 2.82 | 1.63 | 2.00 | .013 | .00 | .00 | PIPE
1683.828 | 1251.721 | 2.677 | 1254.398 | 126.05 | 12.78 | 2.54 | 1256.93 | .22 | 3.31 | 4.42 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      7.652 | .0246 | | | | | | .0088 | .07 | 2.90 | 1.51 | 2.00 | .013 | .00 | .00 | PIPE
1691.479 | 1251.910 | 2.787 | 1254.696 | 126.05 | 12.19 | 2.31 | 1257.00 | .20 | 3.31 | 4.37 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      5.551 | .0246 | | | | | | .0078 | .04 | 2.99 | 1.40 | 2.00 | .013 | .00 | .00 | PIPE
1697.030 | 1252.046 | 2.903 | 1254.949 | 126.05 | 11.62 | 2.10 | 1257.05 | .18 | 3.31 | 4.31 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      3.758 | .0246 | | | | | | .0069 | .03 | 3.08 | 1.29 | 2.00 | .013 | .00 | .00 | PIPE
1700.788 | 1252.139 | 3.027 | 1255.166 | 126.05 | 11.08 | 1.91 | 1257.07 | .16 | 3.31 | 4.22 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      2.170 | .0246 | | | | | | .0062 | .01 | 3.19 | 1.19 | 2.00 | .013 | .00 | .00 | PIPE
1702.958 | 1252.192 | 3.160 | 1255.353 | 126.05 | 10.56 | 1.73 | 1257.09 | .14 | 3.31 | 4.12 | 4.500 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      .712 | .0246 | | | | | | .0055 | .00 | 3.30 | 1.09 | 2.00 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1703.670 | 1252.210 | 3.305 | 1255.515 | 126.05 | 10.07 | 1.57 | 1257.09 | .00 | 3.31 | 3.97 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.308 | .0023 |      |      |      |      | .0049 | .03 | 3.31 | 1.00 | 4.50 | .013 | .00 | .00 | PIPE
1708.978 | 1252.222 | 3.462 | 1255.684 | 126.05 | 9.60 | 1.43 | 1257.12 | .00 | 3.31 | 3.79 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.522 | .0023 |      |      |      |      | .0044 | .09 | 3.46 | .91 | 4.50 | .013 | .00 | .00 | PIPE
1729.500 | 1252.269 | 3.637 | 1255.906 | 126.05 | 9.15 | 1.30 | 1257.21 | .00 | 3.31 | 3.54 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
45.900 | .0023 |      |      |      |      | .0040 | .19 | 3.64 | .82 | 4.50 | .013 | .00 | .00 | PIPE
1775.400 | 1252.373 | 3.836 | 1256.209 | 126.05 | 8.73 | 1.18 | 1257.39 | .00 | 3.31 | 3.19 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.179 | .0023 |      |      |      |      | .0038 | .10 | 3.84 | .72 | 4.50 | .013 | .00 | .00 | PIPE
1800.578 | 1252.430 | 3.909 | 1256.339 | 126.05 | 8.59 | 1.15 | 1257.49 | .00 | 3.31 | 3.04 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
1800.578 | 1252.430 | 2.775 | 1255.205 | 126.05 | 12.25 | 2.33 | 1257.53 | .00 | 3.31 | 4.38 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.828 | .0023 |      |      |      |      | .0087 | .09 | 2.77 | 1.41 | 4.50 | .013 | .00 | .00 | PIPE
1810.406 | 1252.453 | 2.718 | 1255.170 | 126.05 | 12.55 | 2.45 | 1257.62 | .00 | 3.31 | 4.40 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.229 | .0023 |      |      |      |      | .0095 | .18 | 2.72 | 1.46 | 4.50 | .013 | .00 | .00 | PIPE
1829.635 | 1252.496 | 2.612 | 1255.108 | 126.05 | 13.17 | 2.69 | 1257.80 | .00 | 3.31 | 4.44 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.947 | .0023 |      |      |      |      | .0108 | .21 | 2.61 | 1.58 | 4.50 | .013 | .00 | .00 | PIPE
1849.582 | 1252.542 | 2.512 | 1255.053 | 126.05 | 13.81 | 2.96 | 1258.01 | .00 | 3.31 | 4.47 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.311 | .0023 |      |      |      |      | .0122 | .25 | 2.51 | 1.70 | 4.50 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth  | Width  | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF      | SE Dpth | Froude N | Norm Dp | "N"     | X-Fall  | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1869.893 | 1252.588 | 2.417 | 1255.005 | 126.05 | 14.48 | 3.26 | 1258.26 | .00 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.427 | .0023 |      |      |      |      | .0138 | .28 | 2.42 | 1.83 | 4.50 | .013 | .00 | .00 | PIPE
1890.320 | 1252.634 | 2.327 | 1254.961 | 126.05 | 15.19 | 3.58 | 1258.54 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.344 | .0023 |      |      |      |      | .0157 | .32 | 2.33 | 1.97 | 4.50 | .013 | .00 | .00 | PIPE
1910.664 | 1252.680 | 2.241 | 1254.922 | 126.05 | 15.93 | 3.94 | 1258.86 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.119 | .0023 |      |      |      |      | .0178 | .36 | 2.24 | 2.12 | 4.50 | .013 | .00 | .00 | PIPE
1930.783 | 1252.726 | 2.159 | 1254.885 | 126.05 | 16.71 | 4.33 | 1259.22 | .00 | 3.31 | 4.50 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.801 | .0023 |      |      |      |      | .0202 | .40 | 2.16 | 2.27 | 4.50 | .013 | .00 | .00 | PIPE
1950.584 | 1252.771 | 2.081 | 1254.852 | 126.05 | 17.52 | 4.77 | 1259.62 | .00 | 3.31 | 4.49 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.413 | .0023 |      |      |      |      | .0230 | .45 | 2.08 | 2.44 | 4.50 | .013 | .00 | .00 | PIPE
1969.997 | 1252.815 | 2.006 | 1254.821 | 126.05 | 18.38 | 5.24 | 1260.07 | .00 | 3.31 | 4.47 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.973 | .0023 |      |      |      |      | .0262 | .50 | 2.01 | 2.62 | 4.50 | .013 | .00 | .00 | PIPE
1988.970 | 1252.858 | 1.935 | 1254.793 | 126.05 | 19.28 | 5.77 | 1260.56 | .00 | 3.31 | 4.46 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.490 | .0023 |      |      |      |      | .0298 | .55 | 1.94 | 2.80 | 4.50 | .013 | .00 | .00 | PIPE
2007.460 | 1252.900 | 1.867 | 1254.767 | 126.05 | 20.22 | 6.35 | 1261.11 | .00 | 3.31 | 4.43 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .4903 |      |      |      |      | .0232 | .11 | 3.12 | 3.00 |      | .013 | .00 | .00 | PIPE
2012.090 | 1255.170 | 2.527 | 1257.697 | 126.05 | 15.06 | 3.52 | 1261.22 | .60 | 3.37 | 3.86 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.579 | .0170 |      |      |      |      | .0145 | .14 | 3.13 | 1.80 | 2.40 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD

BY MCHANDOO JN:136769 APRIL 2014

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2021.669	1255.333	2.538	1257.871	126.05	14.99	3.49	1261.36	.60	3.37	3.85	4.000	.000	.00	1 .0
61.470	.0170					.0136	.84	3.14	1.79	2.40	.013	.00	.00	PIPE
2083.140	1256.380	2.646	1259.026	126.05	14.29	3.17	1262.20	.00	3.37	3.79	4.000	.000	.00	1 .0
7.885	.0170					.0127	.10	2.65	1.65	2.40	.013	.00	.00	PIPE
2091.025	1256.514	2.666	1259.180	126.05	14.17	3.12	1262.30	.00	3.37	3.77	4.000	.000	.00	1 .0
32.487	.0170					.0119	.39	2.67	1.63	2.40	.013	.00	.00	PIPE
2123.511	1257.066	2.782	1259.848	126.05	13.51	2.83	1262.68	.00	3.37	3.68	4.000	.000	.00	1 .0
20.543	.0170					.0106	.22	2.78	1.50	2.40	.013	.00	.00	PIPE
2144.054	1257.416	2.908	1260.323	126.05	12.88	2.58	1262.90	.00	3.37	3.56	4.000	.000	.00	1 .0
12.935	.0170					.0095	.12	2.91	1.37	2.40	.013	.00	.00	PIPE
2156.989	1257.635	3.045	1260.680	126.05	12.28	2.34	1263.02	.00	3.37	3.41	4.000	.000	.00	1 .0
7.279	.0170					.0085	.06	3.04	1.25	2.40	.013	.00	.00	PIPE
2164.268	1257.759	3.196	1260.955	126.05	11.71	2.13	1263.08	.00	3.37	3.21	4.000	.000	.00	1 .0
2.402	.0170					.0077	.02	3.20	1.13	2.40	.013	.00	.00	PIPE
2166.670	1257.800	3.368	1261.168	126.05	11.16	1.93	1263.10	.00	3.37	2.92	4.000	.000	.00	1 .0
JUNCT STR	.0000					.0110	.07	3.37	1.00		.013	.00	.00	PIPE
2173.170	1257.800	4.649	1262.449	80.95	11.45	2.04	1264.49	.00	2.78	.00	3.000	.000	.00	1 .0
118.596	.0224					.0147	1.75	4.65	.00	2.05	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2291.766 | 1260.459 | 3.736 | 1264.195 | 80.95 | 11.45 | 2.04 | 1266.23 | .00 | 2.78 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
2291.766 | 1260.459 | 2.025 | 1262.484 | 80.95 | 15.95 | 3.95 | 1266.43 | .00 | 2.78 | 2.81 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
113.330 | .0224 |      |      |      |      | .0236 | 2.67 | 2.02 | 2.09 | 2.05 | .013 | .00 | .00 | PIPE
2405.096 | 1263.000 | 1.999 | 1265.000 | 80.95 | 16.18 | 4.06 | 1269.06 | .00 | 2.78 | 2.83 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
105.684 | .0224 |      |      |      |      | .0255 | 2.69 | 2.00 | 2.14 | 2.05 | .013 | .00 | .00 | PIPE
2510.780 | 1265.370 | 1.918 | 1267.288 | 80.95 | 16.96 | 4.47 | 1271.76 | .00 | 2.78 | 2.88 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
20.860 | .0182 |      |      |      |      | .0280 | .58 | 1.92 | 2.32 | 2.22 | .013 | .00 | .00 | PIPE
2531.640 | 1265.750 | 1.874 | 1267.624 | 80.95 | 17.43 | 4.72 | 1272.34 | .00 | 2.78 | 2.91 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.521 | .0311 |      |      |      |      | .0287 | .45 | 1.87 | 2.43 | 1.83 | .013 | .00 | .00 | PIPE
2547.160 | 1266.233 | 1.881 | 1268.115 | 80.95 | 17.35 | 4.67 | 1272.79 | .00 | 2.78 | 2.90 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
82.557 | .0311 |      |      |      |      | .0270 | 2.23 | 1.88 | 2.41 | 1.83 | .013 | .00 | .00 | PIPE
2629.717 | 1268.805 | 1.961 | 1270.765 | 80.95 | 16.54 | 4.25 | 1275.01 | .00 | 2.78 | 2.86 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
41.917 | .0311 |      |      |      |      | .0239 | 1.00 | 1.96 | 2.23 | 1.83 | .013 | .00 | .00 | PIPE
2671.635 | 1270.110 | 2.045 | 1272.155 | 80.95 | 15.77 | 3.86 | 1276.02 | .00 | 2.78 | 2.79 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
26.521 | .0311 |      |      |      |      | .0213 | .57 | 2.05 | 2.05 | 1.83 | .013 | .00 | .00 | PIPE
2698.156 | 1270.936 | 2.136 | 1273.072 | 80.95 | 15.04 | 3.51 | 1276.58 | .00 | 2.78 | 2.72 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
18.257 | .0311 |      |      |      |      | .0191 | .35 | 2.14 | 1.88 | 1.83 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:30: 3

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-38 PARALLEL TO ALABAMA ST FROM MORREY ARROYO TO BARTON ROAD

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| | | | | | | | | |
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope| | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2716.413 | 1271.505 | 2.234 | 1273.739 | 80.95 | 14.34 | 3.19 | 1276.93 | .00 | 2.78 | 2.62 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | | | | |
12.971 | .0311 | | | | | .0171 | .22 | 2.23 | 1.72 | 1.83 | .013 | .00 | .00 | PIPE
2729.384 | 1271.909 | 2.342 | 1274.251 | 80.95 | 13.67 | 2.90 | 1277.15 | .00 | 2.78 | 2.48 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | | | | |
9.105 | .0311 | | | | | .0154 | .14 | 2.34 | 1.56 | 1.83 | .013 | .00 | .00 | PIPE
2738.489 | 1272.192 | 2.463 | 1274.656 | 80.95 | 13.03 | 2.64 | 1277.29 | .00 | 2.78 | 2.30 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | | | | |
5.879 | .0311 | | | | | .0141 | .08 | 2.46 | 1.40 | 1.83 | .013 | .00 | .00 | PIPE
2744.368 | 1272.375 | 2.603 | 1274.978 | 80.95 | 12.43 | 2.40 | 1277.38 | .00 | 2.78 | 2.03 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | | | | |
2.392 | .0311 | | | | | .0131 | .03 | 2.60 | 1.22 | 1.83 | .013 | .00 | .00 | PIPE
2746.760 | 1272.450 | 2.779 | 1275.229 | 80.95 | 11.85 | 2.18 | 1277.41 | .00 | 2.78 | 1.57 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | | | | |

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1		3.250															
CD	2	4	1		2.000															
CD	3	4	1		3.000															
CD	4	4	1		2.000															
CD	5	4	1		3.000															
CD	6	4	1		3.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-38A ALABAMA ST FROM ALABAMA ST TO BARTON ROAD AT BELLEVUE AVE

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	TYPE	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	W S ELEV
1	IS A	SYSTEM OUTLET														1263.000
2	IS A	REACH		769.750	1270.070	1			N							
3	IS A	REACH		879.560	1274.100	6			N							
4	IS A	JUNCTION		883.650	1274.250	3	2	0	N	20.410		1275.250		45.000		
5	IS A	REACH		919.070	1275.550	3			N							
6	IS A	JUNCTION		922.880	1275.690	5	4	0	N	20.410		1276.690		-90.000		
7	IS A	REACH		1157.180	1279.720	5			N			355.077	-37.807			
8	IS A	REACH		1432.420	1291.170	5			N							
9	IS A	REACH		1555.090	1294.470	5			N							
10	IS A	SYSTEM HEADWORKS		1555.090	1294.470	5			N							

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

WATER SURFACE PROFILE LISTING
REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-38A ALABAMA ST FROM ALABAMA ST TO BARTON ROAD AT BELLEVUE AVE
BY MCHANDOO JN:136769 APRIL 2014

Date: 4-16-2014 Time: 5:49:30

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Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
.000	1258.590	4.410	1263.000	101.23	12.20	2.31	1265.31	.00	3.03	.00	3.250	.000	.00	1 .0
769.750	.0149					.0150	11.57	4.41	.00	2.68	.013	.00	.00	PIPE
769.750	1270.070	4.731	1274.801	101.23	14.32	3.18	1277.99	.00	2.90	.00	3.000	.000	.00	1 .0
109.810	.0367					.0230	2.53	4.73	.00	2.02	.013	.00	.00	PIPE
879.560	1274.100	3.231	1277.331	101.23	14.32	3.18	1280.52	.00	2.90	.00	3.000	.000	.00	1 .0
JUNCT STR	.0367					.0189	.08	3.23	.00		.013	.00	.00	PIPE
883.650	1274.250	5.056	1279.306	80.82	11.43	2.03	1281.34	.00	2.78	.00	3.000	.000	.00	1 .0
35.420	.0367					.0147	.52	5.06	.00	1.73	.013	.00	.00	PIPE
919.070	1275.550	4.276	1279.826	80.82	11.43	2.03	1281.86	.00	2.78	.00	3.000	.000	.00	1 .0
JUNCT STR	.0367					.0114	.04	.00	.00		.013	.00	.00	PIPE
922.880	1275.690	5.971	1281.661	60.41	8.55	1.13	1282.79	.00	2.51	.00	3.000	.000	.00	1 .0
210.674	.0172					.0082	1.73	.00	.00	1.83	.013	.00	.00	PIPE
1133.554	1279.314	4.206	1283.520	60.41	8.55	1.13	1284.65	.00	2.51	.00	3.000	.000	.00	1 .0
HYDRAULIC JUMP														
1133.554	1279.314	1.464	1280.777	60.41	17.64	4.83	1285.61	.08	2.51	3.00	3.000	.000	.00	1 .0
3.344	.0172					.0359	.12	1.55	2.91	1.83	.013	.00	.00	PIPE
1136.899	1279.371	1.458	1280.829	60.41	17.73	4.88	1285.71	.08	2.51	3.00	3.000	.000	.00	1 .0
20.281	.0172					.0387	.78	1.54	2.93	1.83	.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:49:30

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-38A ALABAMA ST FROM ALABAMA ST TO BARTON ROAD AT BELLEVUE AVE
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1157.180 | 1279.720 | 1.405 | 1281.125 | 60.41 | 18.60 | 5.37 | 1286.49 | .00 | 2.51 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
144.047 | .0416 |      |      |      |      | .0392 | 5.65 | 1.40 | 3.15 | 1.40 | .013 | .00 | .00 | PIPE
1301.227 | 1285.712 | 1.445 | 1287.158 | 60.41 | 17.92 | 4.99 | 1292.15 | .00 | 2.51 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
60.661 | .0416 |      |      |      |      | .0350 | 2.12 | 1.45 | 2.98 | 1.40 | .013 | .00 | .00 | PIPE
1361.888 | 1288.236 | 1.500 | 1289.736 | 60.41 | 17.09 | 4.54 | 1294.27 | .00 | 2.51 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.985 | .0416 |      |      |      |      | .0308 | 1.02 | 1.50 | 2.77 | 1.40 | .013 | .00 | .00 | PIPE
1394.873 | 1289.608 | 1.558 | 1291.166 | 60.41 | 16.29 | 4.12 | 1295.29 | .00 | 2.51 | 3.00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
21.816 | .0416 |      |      |      |      | .0272 | .59 | 1.56 | 2.58 | 1.40 | .013 | .00 | .00 | PIPE
1416.688 | 1290.516 | 1.618 | 1292.134 | 60.41 | 15.54 | 3.75 | 1295.88 | .00 | 2.51 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.732 | .0416 |      |      |      |      | .0240 | .38 | 1.62 | 2.40 | 1.40 | .013 | .00 | .00 | PIPE
1432.420 | 1291.170 | 1.682 | 1292.852 | 60.41 | 14.81 | 3.41 | 1296.26 | .00 | 2.51 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.170 | .0269 |      |      |      |      | .0223 | .20 | 1.68 | 2.23 | 1.59 | .013 | .00 | .00 | PIPE
1441.590 | 1291.417 | 1.693 | 1293.109 | 60.41 | 14.70 | 3.35 | 1296.46 | .00 | 2.51 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
38.569 | .0269 |      |      |      |      | .0208 | .80 | 1.69 | 2.20 | 1.59 | .013 | .00 | .00 | PIPE
1480.159 | 1292.454 | 1.760 | 1294.214 | 60.41 | 14.01 | 3.05 | 1297.26 | .00 | 2.51 | 2.95 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
24.057 | .0269 |      |      |      |      | .0184 | .44 | 1.76 | 2.04 | 1.59 | .013 | .00 | .00 | PIPE
1504.216 | 1293.101 | 1.832 | 1294.933 | 60.41 | 13.36 | 2.77 | 1297.70 | .00 | 2.51 | 2.93 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.527 | .0269 |      |      |      |      | .0163 | .27 | 1.83 | 1.89 | 1.59 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5:49:30

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-38A ALABAMA ST FROM ALABAMA ST TO BARTON ROAD AT BELLEVUE AVE
BY MCHANDOO JN:136769 APRIL 2014

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1520.743	1293.546	1.908	1295.454	60.41	12.74	2.52	1297.97	.00	2.51	2.89	3.000	.000	.00	1 .0
11.880	.0269					.0144	.17	1.91	1.75	1.59	.013	.00	.00	PIPE
1532.623	1293.866	1.989	1295.854	60.41	12.15	2.29	1298.14	.00	2.51	2.84	3.000	.000	.00	1 .0
8.640	.0269					.0128	.11	1.99	1.62	1.59	.013	.00	.00	PIPE
1541.263	1294.098	2.075	1296.173	60.41	11.58	2.08	1298.26	.00	2.51	2.77	3.000	.000	.00	1 .0
6.207	.0269					.0114	.07	2.08	1.49	1.59	.013	.00	.00	PIPE
1547.470	1294.265	2.168	1296.433	60.41	11.04	1.89	1298.33	.00	2.51	2.69	3.000	.000	.00	1 .0
4.240	.0269					.0102	.04	2.17	1.36	1.59	.013	.00	.00	PIPE
1551.710	1294.379	2.270	1296.649	60.41	10.53	1.72	1298.37	.00	2.51	2.57	3.000	.000	.00	1 .0
2.516	.0269					.0092	.02	2.27	1.24	1.59	.013	.00	.00	PIPE
1554.227	1294.447	2.382	1296.828	60.41	10.04	1.56	1298.39	.00	2.51	2.43	3.000	.000	.00	1 .0
.863	.0269					.0083	.01	2.38	1.12	1.59	.013	.00	.00	PIPE
1555.090	1294.470	2.509	1296.979	60.41	9.57	1.42	1298.40	.00	2.51	2.22	3.000	.000	.00	1 .0

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.000															
CD	2	4	1			3.500															
CD	3	4	1			1.250															
CD	4	4	1			3.000															
CD	5	4	1			3.000															
CD	6	4	2			2.000															
CD	7	4	1			3.000															
CD	8	4	1			2.500															
CD	9	4	1			2.000															
CD	10	4	1			3.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

SD 4-38B PARALLEL TO KANSAS ST FROM MORREY ARROYO TO MAGNOLIA AVE

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H				
1	IS	A	SYSTEM	OUTLET					1248.000								
2	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						36.340	1238.240	1		.013	46.270	45.000	.000 0				
3	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						296.210	1241.900	1		.013	.000	.000	.000 1				
4	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						430.500	1246.630	1		.013	.000	.000	.000 0				
5	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						467.440	1247.930	1		.013	45.032	-47.000	.000 0				
6	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						503.320	1249.190	1		.013	.000	.000	.000 0				
7	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						537.100	1250.410	1		.013	45.010	-43.000	.000 0				
8	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						546.370	1250.710	1		.013	.000	.000	.000 0				
9	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						581.710	1251.950	1		.013	22.498	90.000	.000 0				
10	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						636.210	1253.880	1		.013	.000	.000	.000 1				
11	IS	A	REACH														
					U/S DATA	STATION	INVERT	SECT									
						660.210	1257.290	1		.013	.000	.000	.000 1				
12	IS	A	JUNCTION														
					U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4

667.710 1257.320 1 0 0 .013 .000 .000 .000 .000 .000 .000
 RADIUS ANGLE
 .000 .000

PAGE NO 3

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	REACH	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	MAN H
13			REACH	753.980	1257.670	1			.013			.000	.000	.000	.000	0
14			REACH	856.250	1258.080	1			.013			300.002	-19.532	.000	.000	0
15			REACH	957.020	1258.480	1			.013			.000	.000	.000	.000	0
16			JUNCTION	961.180	1258.980	2	0	0	.013	.000	.000	.000	.000	.000	.000	.000
17			REACH	1126.100	1260.750	2			.013			.000	.000	.000	.000	0
18			REACH	1284.840	1263.290	2			.013			300.001	30.317	.000	.000	0
19			REACH	1296.630	1263.480	2			.013			.000	.000	.000	.000	0
20			REACH	1320.630	1265.880	2			.013			.000	.000	.000	.000	0
21			REACH	1538.460	1269.130	2			.013			.000	.000	.000	.000	0
22			JUNCTION	1542.800	1269.700	4	3	0	.013	75.240	.000	1269.920	.000	-45.000	.000	.000

PAGE NO 4

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	REACH	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	MAN H
23			REACH	1770.940	1273.840	4			.013			.000	.000	.000	.000	0
24			REACH	1865.770	1275.520	4			.013			1000.067	-5.433	.000	.000	0
25			REACH	1929.630	1276.680	4			.013			.000	.000	.000	.000	0
26			REACH	1967.630	1278.950	4			.013			.000	.000	.000	.000	0
27			REACH	2085.630	1281.760	4			.013			.000	.000	.000	.000	3
28			REACH	2246.110	1287.310	4			.013			.000	.000	.000	.000	0
29			REACH													

ELEMENT NO	IS	A	DESCRIPTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	ANG PT	MAN H
			U/S DATA	2308.180	1289.470	4			.013			193.806	-18.350			.000	0
ELEMENT NO 30	IS	A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*
			U/S DATA	2312.180	1289.570	5	0	0	.013	.000	.000	.000	.000	.000	.000	.000	.000
												RADIUS	ANGLE				
												.000	.000				
ELEMENT NO 31	IS	A	REACH	*	*	*											
			U/S DATA	2412.180	1290.470	5			.013			63.662	90.000			.000	0
ELEMENT NO 32	IS	A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*
			U/S DATA	2417.180	1290.570	6	0	0	.013	.000	.000	.000	.000	.000	.000	.000	.000
												RADIUS	ANGLE				
												.000	.000				
W S P G W																	
WATER SURFACE PROFILE - ELEMENT CARD LISTING																	
ELEMENT NO 33	IS	A	REACH	*	*	*											
			U/S DATA	2509.180	1292.410	6			.013			.000	.000			.000	0
ELEMENT NO 34	IS	A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*
			U/S DATA	2514.180	1292.910	7	0	0	.013	.000	.000	.000	.000	.000	.000	.000	.000
												RADIUS	ANGLE				
												.000	.000				
ELEMENT NO 35	IS	A	REACH	*	*	*											
			U/S DATA	2888.480	1303.270	7			.013			.000	.000			.000	1
ELEMENT NO 36	IS	A	REACH	*	*	*											
			U/S DATA	3039.960	1307.970	7			.013			72.326	-120.000			.000	0
ELEMENT NO 37	IS	A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*
			U/S DATA	3044.960	1308.070	10	8	9	.013	30.630	15.630	1307.970	1307.970	-90.000	90.000	.000	.000
												RADIUS	ANGLE				
												.000	.000				
ELEMENT NO 38	IS	A	SYSTEM HEADWORKS	*						*							
			U/S DATA	3044.960	1308.070	10						W S ELEV					
												.000					

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 6: 4:45

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-38B PARALLEL TO KANSAS ST FROM MORREY ARROYO TO MAGNOLIA AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
546.370 | 1250.710 | 2.289 | 1252.999 | 162.13 | 21.80 | 7.38 | 1260.38 | 4.00 | 3.68 | 3.96 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
35.340 | .0351 |      |      |      |      |      | .0324 | 1.14 | 4.00 | 2.80 | 2.24 | .013 | .00 | .00 | PIPE
581.710 | 1251.950 | 2.303 | 1254.253 | 162.13 | 21.65 | 7.28 | 1261.53 | .00 | 3.68 | 3.95 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
54.500 | .0354 |      |      |      |      |      | .0314 | 1.71 | 2.30 | 2.77 | 2.23 | .013 | .00 | .00 | PIPE
636.210 | 1253.880 | 2.337 | 1256.217 | 162.13 | 21.27 | 7.02 | 1263.24 | .00 | 3.68 | 3.94 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.389 | .1421 |      |      |      |      |      | .0294 | .10 | 2.34 | 2.70 | 1.50 | .013 | .00 | .00 | PIPE
639.599 | 1254.362 | 2.401 | 1256.762 | 162.13 | 20.59 | 6.58 | 1263.34 | .00 | 3.68 | 3.92 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.325 | .1421 |      |      |      |      |      | .0266 | .11 | 2.40 | 2.56 | 1.50 | .013 | .00 | .00 | PIPE
643.924 | 1254.976 | 2.499 | 1257.475 | 162.13 | 19.63 | 5.98 | 1263.46 | .00 | 3.68 | 3.87 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.705 | .1421 |      |      |      |      |      | .0236 | .09 | 2.50 | 2.37 | 1.50 | .013 | .00 | .00 | PIPE
647.629 | 1255.502 | 2.604 | 1258.107 | 162.13 | 18.72 | 5.44 | 1263.55 | .00 | 3.68 | 3.81 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.157 | .1421 |      |      |      |      |      | .0209 | .07 | 2.60 | 2.19 | 1.50 | .013 | .00 | .00 | PIPE
650.786 | 1255.951 | 2.716 | 1258.667 | 162.13 | 17.84 | 4.94 | 1263.61 | .00 | 3.68 | 3.73 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.666 | .1421 |      |      |      |      |      | .0186 | .05 | 2.72 | 2.02 | 1.50 | .013 | .00 | .00 | PIPE
653.452 | 1256.330 | 2.837 | 1259.166 | 162.13 | 17.01 | 4.49 | 1263.66 | .00 | 3.68 | 3.63 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.219 | .1421 |      |      |      |      |      | .0166 | .04 | 2.84 | 1.85 | 1.50 | .013 | .00 | .00 | PIPE
655.670 | 1256.645 | 2.967 | 1259.612 | 162.13 | 16.22 | 4.09 | 1263.70 | .00 | 3.68 | 3.50 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.799 | .1421 |      |      |      |      |      | .0149 | .03 | 2.97 | 1.69 | 1.50 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 6: 4:45

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-38B PARALLEL TO KANSAS ST FROM MORREY ARROYO TO MAGNOLIA AVE

BY MCHANDOO JN:136769 APRIL 2014

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
657.470	1256.901	3.110	1260.010	162.13	15.47	3.71	1263.72	.00	3.68	3.33	4.000	.000	.00	1 .0
1.388	.1421					.0135	.02	3.11	1.54	1.50	.013	.00	.00	PIPE
658.858	1257.098	3.269	1260.367	162.13	14.75	3.38	1263.74	.00	3.68	3.09	4.000	.000	.00	1 .0
.954	.1421					.0123	.01	3.27	1.38	1.50	.013	.00	.00	PIPE
659.811	1257.233	3.452	1260.685	162.13	14.06	3.07	1263.76	.00	3.68	2.75	4.000	.000	.00	1 .0
.399	.1421					.0114	.00	3.45	1.21	1.50	.013	.00	.00	PIPE
660.210	1257.290	3.680	1260.970	162.13	13.40	2.79	1263.76	.00	3.68	2.17	4.000	.000	.00	1 .0
JUNCT STR	.0040					.0112	.08	3.68	1.00		.013	.00	.00	PIPE
667.710	1257.320	3.909	1261.229	162.13	12.98	2.61	1263.84	.00	3.68	1.19	4.000	.000	.00	1 .0
7.875	.0041					.0118	.09	3.91	.71	4.00	.013	.00	.00	PIPE
675.586	1257.352	4.000	1261.352	162.13	12.90	2.58	1263.94	.00	3.68	.00	4.000	.000	.00	1 .0
78.394	.0041					.0125	.98	4.00	.00	4.00	.013	.00	.00	PIPE
753.980	1257.670	4.681	1262.351	162.13	12.90	2.58	1264.94	.00	3.68	.00	4.000	.000	.00	1 .0
102.270	.0040					.0127	1.30	.00	.00	4.00	.013	.00	.00	PIPE
856.250	1258.080	5.814	1263.894	162.13	12.90	2.58	1266.48	.00	3.68	.00	4.000	.000	.00	1 .0
100.770	.0040					.0127	1.28	5.81	.00	4.00	.013	.00	.00	PIPE
957.020	1258.480	6.698	1265.178	162.13	12.90	2.58	1267.76	.00	3.68	.00	4.000	.000	.00	1 .0
JUNCT STR	.1202					.0194	.08	6.70	.00		.013	.00	.00	PIPE

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 6: 4:45

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-38B PARALLEL TO KANSAS ST FROM MORREY ARROYO TO MAGNOLIA AVE

BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
961.180 | 1258.980 | 4.486 | 1263.466 | 162.13 | 16.85 | 4.41 | 1267.88 | .00 | 3.42 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
164.920 | .0107 |      |      |      |      |      | .0260 | 4.28 | 4.49 | .00 | 3.50 | .013 | .00 | .00 | PIPE
1126.100 | 1260.750 | 6.999 | 1267.749 | 162.13 | 16.85 | 4.41 | 1272.16 | .00 | 3.42 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
158.740 | .0160 |      |      |      |      |      | .0260 | 4.12 | .00 | .00 | 3.50 | .013 | .00 | .00 | PIPE
1284.840 | 1263.290 | 9.093 | 1272.383 | 162.13 | 16.85 | 4.41 | 1276.79 | .00 | 3.42 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.790 | .0161 |      |      |      |      |      | .0260 | .31 | 9.09 | .00 | 3.50 | .013 | .00 | .00 | PIPE
1296.630 | 1263.480 | 9.209 | 1272.689 | 162.13 | 16.85 | 4.41 | 1277.10 | .00 | 3.42 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
24.000 | .1000 |      |      |      |      |      | .0260 | .62 | 9.21 | .00 | 1.77 | .013 | .00 | .00 | PIPE
1320.630 | 1265.880 | 7.432 | 1273.312 | 162.13 | 16.85 | 4.41 | 1277.72 | .00 | 3.42 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
217.830 | .0149 |      |      |      |      |      | .0260 | 5.66 | 7.43 | .00 | 3.50 | .013 | .00 | .00 | PIPE
1538.460 | 1269.130 | 9.839 | 1278.969 | 162.13 | 16.85 | 4.41 | 1283.38 | .00 | 3.42 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1313 |      |      |      |      |      | .0215 | .09 | 9.84 | .00 |      | .013 | .00 | .00 | PIPE
1542.800 | 1269.700 | 11.425 | 1281.125 | 86.89 | 12.29 | 2.35 | 1283.47 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
228.140 | .0181 |      |      |      |      |      | .0170 | 3.87 | 11.43 | .00 | 2.37 | .013 | .00 | .00 | PIPE
1770.940 | 1273.840 | 11.157 | 1284.997 | 86.89 | 12.29 | 2.35 | 1287.34 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
94.830 | .0177 |      |      |      |      |      | .0170 | 1.61 | .00 | .00 | 2.40 | .013 | .00 | .00 | PIPE
1865.770 | 1275.520 | 11.202 | 1286.722 | 86.89 | 12.29 | 2.35 | 1289.07 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
63.860 | .0182 |      |      |      |      |      | .0170 | 1.08 | 11.20 | .00 | 2.37 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 6: 4:45

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-38B PARALLEL TO KANSAS ST FROM MORREY ARROYO TO MAGNOLIA AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1929.630 | 1276.680 | 11.125 | 1287.805 | 86.89 | 12.29 | 2.35 | 1290.15 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
38.000 | .0597 |      |      |      |      | .0170 | .64 | 11.13 | .00 | 1.56 | .013 | .00 | .00 | PIPE
1967.630 | 1278.950 | 9.500 | 1288.450 | 86.89 | 12.29 | 2.35 | 1290.80 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
118.000 | .0238 |      |      |      |      | .0170 | 2.00 | 9.50 | .00 | 2.11 | .013 | .00 | .00 | PIPE
2085.630 | 1281.760 | 9.045 | 1290.805 | 86.89 | 12.29 | 2.35 | 1293.15 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
160.480 | .0346 |      |      |      |      | .0170 | 2.72 | 9.04 | .00 | 1.85 | .013 | .00 | .00 | PIPE
2246.110 | 1287.310 | 6.218 | 1293.528 | 86.89 | 12.29 | 2.35 | 1295.87 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
62.070 | .0348 |      |      |      |      | .0170 | 1.05 | .00 | .00 | 1.85 | .013 | .00 | .00 | PIPE
2308.180 | 1289.470 | 5.324 | 1294.794 | 86.89 | 12.29 | 2.35 | 1297.14 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0250 |      |      |      |      | .0170 | .07 | .00 | .00 | .013 | .00 | .00 | .00 | PIPE
2312.180 | 1289.570 | 5.292 | 1294.861 | 86.89 | 12.29 | 2.35 | 1297.21 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
100.000 | .0090 |      |      |      |      | .0170 | 1.70 | .00 | .00 | 3.00 | .013 | .00 | .00 | PIPE
2412.180 | 1290.470 | 6.558 | 1297.028 | 86.89 | 12.29 | 2.35 | 1299.37 | .00 | 2.83 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0200 |      |      |      |      | .0269 | .13 | 6.56 | .00 | .013 | .00 | .00 | .00 | PIPE
2417.180 | 1290.570 | 5.971 | 1296.541 | 86.89 | 13.83 | 2.97 | 1299.51 | .00 | 1.97 | .00 | 2.000 | .000 | .00 | 2 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
92.000 | .0200 |      |      |      |      | .0369 | 3.39 | 5.97 | .00 | 2.00 | .013 | .00 | .00 | PIPE
2509.180 | 1292.410 | 7.524 | 1299.934 | 86.89 | 13.83 | 2.97 | 1302.90 | .00 | 1.97 | .00 | 2.000 | .000 | .00 | 2 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1000 |      |      |      |      | .0269 | .13 | 7.52 | .00 | .013 | .00 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 6: 4:45

REDLANDS MASTERPLAN - CAPACITY ANALYSIS

SD 4-38B PARALLEL TO KANSAS ST FROM MORREY ARROYO TO MAGNOLIA AVE

BY MCHANDOO JN:136769 APRIL 2014

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3036.373	1307.859	2.637	1310.495	86.89	13.20	2.71	1313.20	.15	2.83	1.96	3.000	.000	.00	1 .0
	3.587 .0310					.0150	.05	2.78	1.27	1.92	.013	.00	.00	PIPE
3039.960	1307.970	2.826	1310.796	86.89	12.59	2.46	1313.26	.00	2.83	1.40	3.000	.000	.00	1 .0
JUNCT STR	.0200					.0092	.05	2.92	1.00		.013	.00	.00	PIPE
----- WARNING - Junction Analysis - Large Lateral Flow(s) -----														
3044.960	1308.070	6.595	1314.665	40.63	5.75	.51	1315.18	.00	2.08	.00	3.000	.000	.00	1 .0

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING															PAGE	1				
CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH			DROP											
CD	1	4	1		6.000															
CD	2	4	1		4.000															
CD	3	4	1		4.250															
CD	4	4	1		3.000															
CD	5	4	1		3.750															
CD	6	4	1		1.500															
CD	7	4	1		3.500															
CD	8	4	1		4.000															
CD	9	4	1		3.000															
CD	10	4	1		5.000															
CD	11	4	1		1.500															
CD	12	4	1		3.500															
CD	13	4	1		3.500															
CD	14	4	1		3.500															
CD	15	4	1		1.500															
CD	16	4	1		1.500															
CD	17	4	1		3.000															
CD	18	4	1		3.000															
CD	19	4	1		3.000															
CD	20	4	1		3.000															
CD	21	4	1		2.000															
CD	22	4	1		2.500															
CD	23	4	1		5.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS -

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

HEADING LINE NO 3 IS -

BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV												
1	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	1263.000												
					.000	1254.860	1													
2	IS	A	REACH	U/S DATA	STATION	INVERT	SECT		N	.013		RADIUS	ANGLE	ANG PT	MAN H					
					53.530	1256.860	1					.000	.000	.000	1					
3	IS	A	REACH	U/S DATA	STATION	INVERT	SECT		N	.013		RADIUS	ANGLE	ANG PT	MAN H					
					1000.000	1265.550	1					.000	.000	.000	0					
4	IS	A	REACH	U/S DATA	STATION	INVERT	SECT		N	.013		RADIUS	ANGLE	ANG PT	MAN H					
					1008.140	1265.620	1					10.364	-45.000	.000	0					
5	IS	A	REACH	U/S DATA	STATION	INVERT	SECT		N	.013		RADIUS	ANGLE	ANG PT	MAN H					
					1399.040	1275.770	1					.000	.000	.000	0					
6	IS	A	REACH	U/S DATA	STATION	INVERT	SECT		N	.013		RADIUS	ANGLE	ANG PT	MAN H					
					1450.000	1275.920	1					32.442	90.000	.000	0					
7	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT		N	.013	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4				
					1455.000	1276.000	1				200.150	.000	1281.170	.000	-90.000	.000				
													RADIUS	ANGLE						

ELEMENT NO	8	IS A REACH	*	*	*						.000	.000		
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			1750.000	1276.930	1	.013					.000	.000	.000	0
ELEMENT NO	9	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			1800.000	1277.700	1	.013					31.831	-90.000	.000	0
ELEMENT NO	10	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			1842.470	1279.530	1	.013					.000	.000	.000	0
ELEMENT NO	11	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			1900.000	1280.870	1	.013					.000	.000	45.000	0
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS														
ELEMENT NO	12	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			2305.690	1289.510	9	.013					.000	.000	.000	0
W S P G W													PAGE NO	3
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	13	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			2356.310	1290.590	9	.013					.000	.000	47.180	5
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS														
ELEMENT NO	14	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			2497.220	1293.590	10	.013					118.138	-68.340	.000	3
ELEMENT NO	15	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			2763.690	1299.290	10	.013					.000	.000	.000	0
ELEMENT NO	16	IS A JUNCTION	*	*	*		*							
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			2767.690	1299.330	2	0	0	.013	.000	.000	.000	.000	.000	.000
RADIUS ANGLE											.000	.000		
ELEMENT NO	17	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			2935.340	1306.390	2	.013					.000	.000	.000	1
ELEMENT NO	18	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			3015.370	1309.060	2	.013					90.531	-50.650	.000	0
ELEMENT NO	19	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			3061.670	1310.630	2	.013					52.375	50.650	.000	0
ELEMENT NO	20	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			3153.690	1313.720	2	.013					.000	.000	.000	1
ELEMENT NO	21	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			3256.190	1317.170	2	.013					.000	.000	.000	0
ELEMENT NO	22	IS A REACH	*	*	*									
		U/S DATA	STATION	INVERT	SECT	N					RADIUS	ANGLE	ANG PT	MAN H
			3451.590	1321.410	2	.013					.000	.000	.000	0
ELEMENT NO	23	IS A JUNCTION	*	*	*		*							
		U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			3461.590	1321.430	3	0	0	.013	.000	.000	.000	.000	.000	.000
RADIUS ANGLE											.000	.000		
W S P G W													PAGE NO	4
WATER SURFACE PROFILE - ELEMENT CARD LISTING														
ELEMENT NO	24	IS A REACH	*	*	*									

	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		3721.680	1324.670	3	.013	.000	.000	.000	4				
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS													
ELEMENT NO	25 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		3787.500	1325.830	2	.013	.000	.000	.000	0				
ELEMENT NO	26 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		3863.540	1327.620	2	.013	50.056	87.038	.000	1				
ELEMENT NO	27 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4141.590	1333.400	2	.013	.000	.000	.000	1				
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS													
ELEMENT NO	28 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4182.450	1334.250	5	.013	.000	.000	.000	1				
ELEMENT NO	29 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4320.110	1336.940	5	.013	.000	.000	.000	0				
ELEMENT NO	30 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4334.910	1337.350	5	.013	.000	.000	.000	0				
ELEMENT NO	31 IS A JUNCTION	*	*	*									
	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
		4342.910	1337.350	5	4	0	.013	21.590	.000	1337.620	.000	45.000	.000
										RADIUS	ANGLE		
										.000	.000		
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING													
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING													
ELEMENT NO	32 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4388.440	1338.310	5	.013	29.321	-88.970	.000	0				
ELEMENT NO	33 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4421.810	1338.980	5	.013	.000	.000	.000	0				
ELEMENT NO	34 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4496.630	1340.510	5	.013	65.619	65.330	.000	0				
W S P G W													
WATER SURFACE PROFILE - ELEMENT CARD LISTING													
ELEMENT NO	35 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4533.970	1341.230	5	.013	.000	.000	.000	0				
ELEMENT NO	36 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4637.540	1343.310	5	.013	111.188	-53.370	.000	1				
ELEMENT NO	37 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		4968.540	1349.930	5	.013	.000	.000	.000	1				
ELEMENT NO	38 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		5142.850	1354.100	5	.013	187.202	53.350	.000	0				
ELEMENT NO	39 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		5338.690	1358.790	5	.013	.000	.000	.000	0				
ELEMENT NO	40 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
		5558.590	1364.030	5	.013	139.993	-90.000	.000	1				
ELEMENT NO	41 IS A REACH	*	*	*									
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H				
					N								

ELEMENT NO	42	IS A	JUNCTION	5749.450	1366.830	5			.013			.000	.000	.000	1
			U/S DATA	*	*	*	*	*		*		*	*	*	
			STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
			5759.450	1366.960	7	6	0	.013	5.540	.000	1369.960	.000	-20.000	.000	
											RADIUS	ANGLE			
											12.732	45.000			
ELEMENT NO	43	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N			.000	.000	.000	0	
			5804.320	1368.870	7			.013							
ELEMENT NO	44	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5814.320	1369.360	12	11	0	.013	10.540	.000	1370.060	.000	45.000	.000	
											RADIUS	ANGLE			
											7.162	-80.000			

W S P G W

PAGE NO 6

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	45	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N			.000	.000	.000	0	
			5829.320	1369.930	12			.013							
ELEMENT NO	46	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5839.320	1370.310	14	13	0	.013	10.540	.000	1370.310	.000	90.000	.000	
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	47	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N			.000	.000	.000	0	
			5839.990	1370.340	14			.013							
ELEMENT NO	48	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5849.990	1370.590	17	15	16	.013	15.080	15.080	1371.060	1371.060	-90.000	90.000	
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	49	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N			.000	.000	.000	0	
			6193.040	1383.870	17			.013							
ELEMENT NO	50	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6203.040	1384.270	18	0	0	.013	.000	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	51	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N			.000	.000	.000	0	
			6482.073	1395.670	18			.013							
ELEMENT NO	52	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6492.070	1395.970	19	0	0	.013	.000	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE			
											.000	.000			

W S P G W

PAGE NO 7

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	53	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N			.000	.000	.000	0	
			6822.670	1410.170	19			.013							
ELEMENT NO	54	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			6832.670	1410.210	20	0	0	.013	.000	.000	.000	.000	.000	.000	.000
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	55	IS A	REACH	*	*	*					RADIUS	ANGLE	ANG PT	MAN H	
			U/S DATA	STATION	INVERT	SECT		N							

ELEMENT NO	56	IS A	JUNCTION	7060.950	1420.160	20			.013			.000	.000	.000	0
				*	*	*	*	*		*		*			
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
				7070.950	1420.410	22	21	0	.013	50.080	.001	421.160	.000	45.000	.000
												RADIUS	ANGLE		
												.000	.000		
ELEMENT NO	57	IS A	REACH	*	*	*									
			U/S DATA	STATION	INVERT	SECT			N					RA	

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1254.860 | 8.140 | 1263.000 | 378.68 | 13.39 | 2.79 | 1265.79 | .00 | 5.23 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
53.530 | .0374 |      |      |      |      |      | .0080 | .43 | 8.14 | .00 | 2.87 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
53.530 | 1256.860 | 6.707 | 1263.567 | 378.68 | 13.39 | 2.79 | 1266.35 | .00 | 5.23 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
458.780 | .0092 |      |      |      |      |      | .0080 | 3.67 | 6.71 | .00 | 4.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
512.310 | 1261.072 | 6.163 | 1267.236 | 378.68 | 13.39 | 2.79 | 1270.02 | .00 | 5.23 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
512.310 | 1261.072 | 4.294 | 1265.367 | 378.68 | 17.49 | 4.75 | 1270.11 | .00 | 5.23 | 5.41 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
129.178 | .0092 |      |      |      |      |      | .0114 | 1.48 | 4.29 | 1.54 | 4.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
641.489 | 1262.258 | 4.111 | 1266.369 | 378.68 | 18.34 | 5.22 | 1271.59 | .00 | 5.23 | 5.57 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
96.679 | .0092 |      |      |      |      |      | .0128 | 1.24 | 4.11 | 1.68 | 4.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
738.168 | 1263.146 | 3.941 | 1267.087 | 378.68 | 19.24 | 5.75 | 1272.83 | .00 | 5.23 | 5.70 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
79.145 | .0092 |      |      |      |      |      | .0144 | 1.14 | 3.94 | 1.82 | 4.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
817.313 | 1263.873 | 3.781 | 1267.654 | 378.68 | 20.17 | 6.32 | 1273.97 | .00 | 5.23 | 5.79 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
68.046 | .0092 |      |      |      |      |      | .0163 | 1.11 | 3.78 | 1.98 | 4.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
885.359 | 1264.497 | 3.631 | 1268.129 | 378.68 | 21.16 | 6.95 | 1275.08 | .00 | 5.23 | 5.87 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
60.251 | .0092 |      |      |      |      |      | .0184 | 1.11 | 3.63 | 2.13 | 4.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
945.610 | 1265.051 | 3.490 | 1268.541 | 378.68 | 22.19 | 7.65 | 1276.19 | .00 | 5.23 | 5.92 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
54.390 | .0092 |      |      |      |      |      | .0208 | 1.13 | 3.49 | 2.30 | 4.59 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1000.000 | 1265.550 | 3.356 | 1268.906 | 378.68 | 23.27 | 8.41 | 1277.32 | 6.00 | 5.23 | 5.96 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      8.140 | .0086 |      |      |      |      |      | .0223 | .18 | 6.00 | 2.48 | 4.74 | .013 | .00 | .00 | PIPE
1008.140 | 1265.620 | 3.335 | 1268.955 | 378.68 | 23.46 | 8.54 | 1277.50 | .00 | 5.23 | 5.96 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      22.322 | .0260 |      |      |      |      |      | .0224 | .50 | 3.34 | 2.51 | 3.19 | .013 | .00 | .00 | PIPE
1030.462 | 1266.199 | 3.350 | 1269.550 | 378.68 | 23.33 | 8.45 | 1278.00 | .00 | 5.23 | 5.96 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      125.336 | .0260 |      |      |      |      |      | .0209 | 2.62 | 3.35 | 2.49 | 3.19 | .013 | .00 | .00 | PIPE
1155.798 | 1269.454 | 3.484 | 1272.938 | 378.68 | 22.24 | 7.68 | 1280.62 | .00 | 5.23 | 5.92 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      74.438 | .0260 |      |      |      |      |      | .0185 | 1.38 | 3.48 | 2.31 | 3.19 | .013 | .00 | .00 | PIPE
1230.236 | 1271.387 | 3.625 | 1275.011 | 378.68 | 21.21 | 6.98 | 1281.99 | .00 | 5.23 | 5.87 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      50.521 | .0260 |      |      |      |      |      | .0164 | .83 | 3.62 | 2.14 | 3.19 | .013 | .00 | .00 | PIPE
1280.756 | 1272.699 | 3.774 | 1276.473 | 378.68 | 20.22 | 6.35 | 1282.82 | .00 | 5.23 | 5.80 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      36.481 | .0260 |      |      |      |      |      | .0145 | .53 | 3.77 | 1.98 | 3.19 | .013 | .00 | .00 | PIPE
1317.238 | 1273.646 | 3.933 | 1277.579 | 378.68 | 19.28 | 5.77 | 1283.35 | .00 | 5.23 | 5.70 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      27.125 | .0260 |      |      |      |      |      | .0129 | .35 | 3.93 | 1.83 | 3.19 | .013 | .00 | .00 | PIPE
1344.363 | 1274.350 | 4.103 | 1278.453 | 378.68 | 18.38 | 5.25 | 1283.70 | .00 | 5.23 | 5.58 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      20.313 | .0260 |      |      |      |      |      | .0115 | .23 | 4.10 | 1.69 | 3.19 | .013 | .00 | .00 | PIPE
1364.676 | 1274.878 | 4.286 | 1279.163 | 378.68 | 17.53 | 4.77 | 1283.93 | .00 | 5.23 | 5.42 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      14.987 | .0260 |      |      |      |      |      | .0103 | .15 | 4.29 | 1.55 | 3.19 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1379.663 | 1275.267 | 4.484 | 1279.751 | 378.68 | 16.71 | 4.34 | 1284.09 | .00 | 5.23 | 5.21 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.537 | .0260 |      |      |      |      | .0092 | .10 | 4.48 | 1.41 | 3.19 | .013 | .00 | .00 | PIPE
1390.200 | 1275.540 | 4.701 | 1280.242 | 378.68 | 15.93 | 3.94 | 1284.18 | .00 | 5.23 | 4.94 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.495 | .0260 |      |      |      |      | .0083 | .05 | 4.70 | 1.28 | 3.19 | .013 | .00 | .00 | PIPE
1396.695 | 1275.709 | 4.945 | 1280.654 | 378.68 | 15.19 | 3.58 | 1284.24 | .00 | 5.23 | 4.57 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.345 | .0260 |      |      |      |      | .0076 | .02 | 4.95 | 1.15 | 3.19 | .013 | .00 | .00 | PIPE
1399.040 | 1275.770 | 5.229 | 1280.999 | 378.68 | 14.48 | 3.26 | 1284.26 | .40 | 5.23 | 4.02 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.007 | .0029 |      |      |      |      | .0071 | .11 | 5.63 | 1.00 | 6.00 | .013 | .00 | .00 | PIPE
1414.047 | 1275.814 | 5.587 | 1281.401 | 378.68 | 13.81 | 2.96 | 1284.36 | .28 | 5.23 | 3.04 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
35.953 | .0029 |      |      |      |      | .0070 | .25 | 5.86 | .81 | 6.00 | .013 | .00 | .00 | PIPE
1450.000 | 1275.920 | 5.884 | 1281.804 | 378.68 | 13.45 | 2.81 | 1284.62 | .00 | 5.23 | 1.65 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0160 |      |      |      |      | .0045 | .02 | 5.88 | .57 |      | .013 | .00 | .00 | PIPE
1455.000 | 1276.000 | 10.194 | 1286.194 | 178.53 | 6.31 | .62 | 1286.81 | .00 | 3.64 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
295.000 | .0032 |      |      |      |      | .0018 | .52 | 10.19 | .00 | 3.88 | .013 | .00 | .00 | PIPE
1750.000 | 1276.930 | 9.789 | 1286.719 | 178.53 | 6.31 | .62 | 1287.34 | .00 | 3.64 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
50.000 | .0154 |      |      |      |      | .0018 | .09 | .00 | .00 | 2.41 | .013 | .00 | .00 | PIPE
1800.000 | 1277.700 | 9.231 | 1286.931 | 178.53 | 6.31 | .62 | 1287.55 | .00 | 3.64 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
42.470 | .0431 |      |      |      |      | .0018 | .08 | 9.23 | .00 | 1.83 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
1842.470 | 1279.530 | 7.477 | 1287.007 | 178.53 | 6.31 | .62 | 1287.63 | .00 | 3.64 | .00 | 6.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
57.530 | .0233 |      |      |      |      |      | .0018 | .10 | 7.48 | .00 | 2.16 | .013 | .00 | .00 | PIPE
1900.000 | 1280.870 | 6.331 | 1287.201 | 178.53 | 25.26 | 9.91 | 1297.11 | .00 | 2.99 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
405.690 | .0213 |      |      |      |      |      | .0716 | 29.07 | 6.33 | .00 | 3.00 | .013 | .00 | .00 | PIPE
2305.690 | 1289.510 | 26.757 | 1316.267 | 178.53 | 25.26 | 9.91 | 1326.17 | .00 | 2.99 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
50.620 | .0213 |      |      |      |      |      | .0716 | 3.63 | 26.76 | .00 | 3.00 | .013 | .00 | .00 | PIPE
2356.310 | 1290.590 | 33.323 | 1323.913 | 178.53 | 9.09 | 1.28 | 1325.20 | .00 | 3.83 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
140.910 | .0213 |      |      |      |      |      | .0047 | .66 | .00 | .00 | 2.41 | .013 | .00 | .00 | PIPE
2497.220 | 1293.590 | 31.401 | 1324.991 | 178.53 | 9.09 | 1.28 | 1326.27 | .00 | 3.83 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
266.470 | .0214 |      |      |      |      |      | .0047 | 1.25 | 31.40 | .00 | 2.41 | .013 | .00 | .00 | PIPE
2763.690 | 1299.290 | 26.953 | 1326.243 | 178.53 | 9.09 | 1.28 | 1327.53 | .00 | 3.83 | .00 | 5.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0100 |      |      |      |      |      | .0101 | .04 | 26.95 | .00 | .013 | .00 | .00 | .00 | PIPE
2767.690 | 1299.330 | 25.192 | 1324.522 | 178.53 | 14.21 | 3.13 | 1327.66 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
167.650 | .0421 |      |      |      |      |      | .0154 | 2.59 | 25.19 | .00 | 2.25 | .013 | .00 | .00 | PIPE
2935.340 | 1306.390 | 20.879 | 1327.269 | 178.53 | 14.21 | 3.13 | 1330.40 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
80.030 | .0334 |      |      |      |      |      | .0154 | 1.24 | .00 | .00 | 2.42 | .013 | .00 | .00 | PIPE
3015.370 | 1309.060 | 19.915 | 1328.975 | 178.53 | 14.21 | 3.13 | 1332.11 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
46.300 | .0339 |      |      |      |      |      | .0154 | .72 | .00 | .00 | 2.41 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE
 BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height | Base Wt | | No Wth
        | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |         |         |         |         | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3061.670 | 1310.630 | 19.531 | 1330.161 | 178.53 | 14.21 | 3.13 | 1333.29 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
  92.020 | .0336 |         |         |         |         | .0154 | 1.42 | 19.53 | .00 | 2.41 | .013 | .00 | .00 | PIPE
3153.690 | 1313.720 | 18.019 | 1331.739 | 178.53 | 14.21 | 3.13 | 1334.87 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
 102.500 | .0337 |         |         |         |         | .0154 | 1.58 | 18.02 | .00 | 2.41 | .013 | .00 | .00 | PIPE
3256.190 | 1317.170 | 16.152 | 1333.322 | 178.53 | 14.21 | 3.13 | 1336.46 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
 195.400 | .0217 |         |         |         |         | .0154 | 3.02 | 16.15 | .00 | 2.82 | .013 | .00 | .00 | PIPE
3451.590 | 1321.410 | 14.930 | 1336.340 | 178.53 | 14.21 | 3.13 | 1339.47 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .0020 |         |         |         |         | .0133 | .13 | 14.93 | .00 |         | .013 | .00 | .00 | PIPE
3461.590 | 1321.430 | 15.716 | 1337.146 | 178.53 | 12.58 | 2.46 | 1339.61 | .00 | 3.85 | .00 | 4.250 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
 260.090 | .0125 |         |         |         |         | .0112 | 2.91 | 15.72 | .00 | 3.30 | .013 | .00 | .00 | PIPE
3721.680 | 1324.670 | 15.876 | 1340.546 | 178.53 | 14.21 | 3.13 | 1343.68 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
  65.820 | .0176 |         |         |         |         | .0154 | 1.02 | 15.88 | .00 | 3.07 | .013 | .00 | .00 | PIPE
3787.500 | 1325.830 | 15.732 | 1341.562 | 178.53 | 14.21 | 3.13 | 1344.70 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
  76.040 | .0235 |         |         |         |         | .0154 | 1.17 | .00 | .00 | 2.73 | .013 | .00 | .00 | PIPE
3863.540 | 1327.620 | 15.890 | 1343.510 | 178.53 | 14.21 | 3.13 | 1346.64 | .00 | 3.77 | .00 | 4.000 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
 278.050 | .0208 |         |         |         |         | .0154 | 4.30 | 15.89 | .00 | 2.86 | .013 | .00 | .00 | PIPE
4141.590 | 1333.400 | 14.562 | 1347.962 | 178.53 | 16.16 | 4.06 | 1352.02 | .00 | 3.63 | .00 | 3.750 | .000 | .00 | 1 | .0
        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
  40.860 | .0208 |         |         |         |         | .0218 | .89 | 14.56 | .00 | 3.16 | .013 | .00 | .00 | PIPE
  
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4182.450 | 1334.250 | 14.805 | 1349.055 | 178.53 | 16.16 | 4.06 | 1353.11 | .00 | 3.63 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
137.660 | .0195 | | | | | .0218 | 3.00 | 14.81 | .00 | 3.31 | .013 | .00 | .00 | PIPE
4320.110 | 1336.940 | 15.116 | 1352.056 | 178.53 | 16.16 | 4.06 | 1356.11 | .00 | 3.63 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
14.800 | .0277 | | | | | .0218 | .32 | 15.12 | .00 | 2.75 | .013 | .00 | .00 | PIPE
4334.910 | 1337.350 | 15.028 | 1352.378 | 178.53 | 16.16 | 4.06 | 1356.44 | .00 | 3.63 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0000 | | | | | .0193 | .15 | .00 | .00 | .013 | .00 | .00 | .00 | PIPE
4342.910 | 1337.350 | 16.896 | 1354.246 | 156.94 | 14.21 | 3.14 | 1357.38 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
45.530 | .0211 | | | | | .0168 | .77 | .00 | .00 | 2.76 | .013 | .00 | .00 | PIPE
4388.440 | 1338.310 | 17.326 | 1355.636 | 156.94 | 14.21 | 3.14 | 1358.77 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
33.370 | .0201 | | | | | .0168 | .56 | 17.33 | .00 | 2.82 | .013 | .00 | .00 | PIPE
4421.810 | 1338.980 | 17.218 | 1356.198 | 156.94 | 14.21 | 3.14 | 1359.33 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
74.820 | .0204 | | | | | .0168 | 1.26 | .00 | .00 | 2.80 | .013 | .00 | .00 | PIPE
4496.630 | 1340.510 | 17.482 | 1357.992 | 156.94 | 14.21 | 3.14 | 1361.13 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
37.340 | .0193 | | | | | .0168 | .63 | 17.48 | .00 | 2.87 | .013 | .00 | .00 | PIPE
4533.970 | 1341.230 | 17.391 | 1358.621 | 156.94 | 14.21 | 3.14 | 1361.76 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
103.570 | .0201 | | | | | .0168 | 1.74 | .00 | .00 | 2.82 | .013 | .00 | .00 | PIPE
4637.540 | 1343.310 | 17.695 | 1361.005 | 156.94 | 14.21 | 3.14 | 1364.14 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
331.000 | .0200 | | | | | .0168 | 5.57 | 17.69 | .00 | 2.83 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave | HF  |SE Dpth|Froude N|Norm Dp | "N"  | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4968.540 | 1349.930 | 16.806 | 1366.736 | 156.94 | 14.21 | 3.14 | 1369.87 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
174.310 | .0239 |      |      |      |      |      | .0168 | 2.94 | .00 | .00 | 2.63 | .013 | .00 | .00 | PIPE
5142.850 | 1354.100 | 16.055 | 1370.155 | 156.94 | 14.21 | 3.14 | 1373.29 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
195.840 | .0239 |      |      |      |      |      | .0168 | 3.30 | 16.05 | .00 | 2.63 | .013 | .00 | .00 | PIPE
5338.690 | 1358.790 | 14.663 | 1373.453 | 156.94 | 14.21 | 3.14 | 1376.59 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
219.900 | .0238 |      |      |      |      |      | .0168 | 3.70 | .00 | .00 | 2.63 | .013 | .00 | .00 | PIPE
5558.590 | 1364.030 | 13.911 | 1377.941 | 156.94 | 14.21 | 3.14 | 1381.08 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
190.860 | .0147 |      |      |      |      |      | .0168 | 3.21 | 13.91 | .00 | 3.43 | .013 | .00 | .00 | PIPE
5749.450 | 1366.830 | 14.482 | 1381.312 | 156.94 | 14.21 | 3.14 | 1384.45 | .00 | 3.56 | .00 | 3.750 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0130 |      |      |      |      |      | .0197 | .20 | .00 | .00 | .013 | .00 | .00 | .00 | PIPE
5759.450 | 1366.960 | 14.042 | 1381.002 | 151.40 | 15.74 | 3.85 | 1384.85 | .00 | 3.39 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
44.870 | .0426 |      |      |      |      |      | .0226 | 1.02 | 14.04 | .00 | 2.22 | .013 | .00 | .00 | PIPE
5804.320 | 1368.870 | 13.148 | 1382.018 | 151.40 | 15.74 | 3.85 | 1385.86 | .00 | 3.39 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0490 |      |      |      |      |      | .0211 | .21 | .00 | .00 | .013 | .00 | .00 | .00 | PIPE
5814.320 | 1369.360 | 13.759 | 1383.119 | 140.86 | 14.64 | 3.33 | 1386.45 | .00 | 3.36 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.000 | .0380 |      |      |      |      |      | .0196 | .29 | 13.76 | .00 | 2.20 | .013 | .00 | .00 | PIPE
5829.320 | 1369.930 | 13.483 | 1383.413 | 140.86 | 14.64 | 3.33 | 1386.74 | .00 | 3.36 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0380 |      |      |      |      |      | .0182 | .18 | 13.48 | .00 | .013 | .00 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
5839.320 | 1370.310 | 14.244 | 1384.554 | 130.32 | 13.55 | 2.85 | 1387.40 | .00 | 3.31 | .00 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
.670 | .0446 | | | | | .0168 | .01 | 14.24 | .00 | 1.98 | .013 | .00 | .00 | PIPE
5839.990 | 1370.340 | 14.225 | 1384.565 | 130.32 | 13.55 | 2.85 | 1387.41 | .00 | 3.31 | .00 | 3.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0250 | | | | | .0197 | .20 | 14.23 | .00 | .013 | .00 | .00 | PIPE
5849.990 | 1370.590 | 15.460 | 1386.050 | 100.16 | 14.17 | 3.12 | 1389.17 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
343.050 | .0387 | | | | | .0226 | 7.74 | 15.46 | .00 | 1.96 | .013 | .00 | .00 | PIPE
6193.040 | 1383.870 | 9.916 | 1393.786 | 100.16 | 14.17 | 3.12 | 1396.90 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0400 | | | | | .0226 | .23 | 9.92 | .00 | .013 | .00 | .00 | PIPE
6203.040 | 1384.270 | 9.741 | 1394.011 | 100.16 | 14.17 | 3.12 | 1397.13 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
254.136 | .0409 | | | | | .0226 | 5.73 | 9.74 | .00 | 1.93 | .013 | .00 | .00 | PIPE
6457.176 | 1394.653 | 5.089 | 1399.742 | 100.16 | 14.17 | 3.12 | 1402.86 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
6457.176 | 1394.653 | 1.913 | 1396.566 | 100.16 | 21.05 | 6.88 | 1403.45 | .00 | 2.90 | 2.88 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
24.897 | .0409 | | | | | .0417 | 1.04 | 1.91 | 2.89 | 1.93 | .013 | .00 | .00 | PIPE
6482.073 | 1395.670 | 1.912 | 1397.582 | 100.16 | 21.07 | 6.89 | 1404.48 | .00 | 2.90 | 2.88 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
JUNCT STR | .0300 | | | | | .0423 | .42 | 1.91 | 2.89 | .013 | .00 | .00 | PIPE
6492.070 | 1395.970 | 1.895 | 1397.865 | 100.16 | 21.28 | 7.03 | 1404.90 | .00 | 2.90 | 2.89 | 3.000 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
173.770 | .0430 | | | | | .0423 | 7.35 | 1.90 | 2.94 | 1.89 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE
BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
6665.840 | 1403.434 | 1.911 | 1405.344 | 100.16 | 21.08 | 6.90 | 1412.25 | .00 | 2.90 | 2.89 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
156.830 | .0430 |      |      |      |      | .0395 | 6.19 | 1.91 | 2.90 | 1.89 | .013 | .00 | .00 | PIPE
6822.670 | 1410.170 | 1.992 | 1412.162 | 100.16 | 20.10 | 6.28 | 1418.44 | .00 | 2.90 | 2.83 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0040 |      |      |      |      | .0386 | .39 | 1.99 | 2.67 | .013 | .00 | .00 | PIPE
6832.670 | 1410.210 | 1.939 | 1412.149 | 100.16 | 20.73 | 6.67 | 1418.82 | .00 | 2.90 | 2.87 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
77.075 | .0436 |      |      |      |      | .0384 | 2.96 | 1.94 | 2.82 | 1.88 | .013 | .00 | .00 | PIPE
6909.746 | 1413.569 | 2.001 | 1415.570 | 100.16 | 20.00 | 6.21 | 1421.78 | .00 | 2.90 | 2.83 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
53.421 | .0436 |      |      |      |      | .0347 | 1.85 | 2.00 | 2.65 | 1.88 | .013 | .00 | .00 | PIPE
6963.167 | 1415.898 | 2.088 | 1417.986 | 100.16 | 19.07 | 5.65 | 1423.63 | .00 | 2.90 | 2.76 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.050 | .0436 |      |      |      |      | .0309 | 1.02 | 2.09 | 2.44 | 1.88 | .013 | .00 | .00 | PIPE
6996.216 | 1417.339 | 2.183 | 1419.521 | 100.16 | 18.18 | 5.13 | 1424.65 | .00 | 2.90 | 2.67 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
22.856 | .0436 |      |      |      |      | .0277 | .63 | 2.18 | 2.23 | 1.88 | .013 | .00 | .00 | PIPE
7019.073 | 1418.335 | 2.285 | 1420.620 | 100.16 | 17.34 | 4.67 | 1425.29 | .00 | 2.90 | 2.56 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
16.612 | .0436 |      |      |      |      | .0249 | .41 | 2.29 | 2.03 | 1.88 | .013 | .00 | .00 | PIPE
7035.685 | 1419.059 | 2.399 | 1421.458 | 100.16 | 16.53 | 4.24 | 1425.70 | .00 | 2.90 | 2.40 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.227 | .0436 |      |      |      |      | .0226 | .28 | 2.40 | 1.83 | 1.88 | .013 | .00 | .00 | PIPE
7047.912 | 1419.592 | 2.528 | 1422.120 | 100.16 | 15.76 | 3.86 | 1425.98 | .00 | 2.90 | 2.19 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
8.643 | .0436 |      |      |      |      | .0207 | .18 | 2.53 | 1.63 | 1.88 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7056.555 | 1419.969 | 2.681 | 1422.649 | 100.16 | 15.03 | 3.51 | 1426.16 | .00 | 2.90 | 1.85 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.395 | .0436 |      |      |      |      | .0199 | .09 | 2.68 | 1.39 | 1.88 | .013 | .00 | .00 | PIPE
7060.950 | 1420.160 | 2.896 | 1423.056 | 100.16 | 14.32 | 3.19 | 1426.24 | .00 | 2.90 | 1.10 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0250 |      |      |      |      | .0173 | .17 | 2.90 | 1.00 | .013 | .00 | .00 | PIPE
7070.950 | 1420.410 | 4.695 | 1425.105 | 50.08 | 10.20 | 1.62 | 1426.72 | .00 | 2.30 | .00 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.613 | .0626 |      |      |      |      | .0149 | .07 | 4.69 | .00 | 1.23 | .013 | .00 | .00 | PIPE
7075.563 | 1420.699 | 4.473 | 1425.172 | 50.08 | 10.20 | 1.62 | 1426.79 | .00 | 2.30 | .00 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
7075.563 | 1420.699 | 1.297 | 1421.995 | 50.08 | 19.48 | 5.89 | 1427.89 | .00 | 2.30 | 2.50 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
31.058 | .0626 |      |      |      |      | .0503 | 1.56 | 1.30 | 3.38 | 1.23 | .013 | .00 | .00 | PIPE
7106.621 | 1422.642 | 1.335 | 1423.977 | 50.08 | 18.78 | 5.48 | 1429.45 | .00 | 2.30 | 2.49 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.405 | .0626 |      |      |      |      | .0450 | 1.14 | 1.34 | 3.20 | 1.23 | .013 | .00 | .00 | PIPE
7132.026 | 1424.232 | 1.387 | 1425.619 | 50.08 | 17.91 | 4.98 | 1430.60 | .00 | 2.30 | 2.48 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
17.419 | .0626 |      |      |      |      | .0398 | .69 | 1.39 | 2.97 | 1.23 | .013 | .00 | .00 | PIPE
7149.445 | 1425.322 | 1.442 | 1426.764 | 50.08 | 17.07 | 4.53 | 1431.29 | .00 | 2.30 | 2.47 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.875 | .0626 |      |      |      |      | .0351 | .45 | 1.44 | 2.76 | 1.23 | .013 | .00 | .00 | PIPE
7162.320 | 1426.128 | 1.501 | 1427.628 | 50.08 | 16.28 | 4.11 | 1431.74 | .00 | 2.30 | 2.45 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.924 | .0626 |      |      |      |      | .0311 | .31 | 1.50 | 2.56 | 1.23 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 3:46:44

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39 FROM MORREY ARROYO CHANNEL TO SUNNYSIDE AT CYPRESS AVE

BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
7172.244 | 1426.749 | 1.562 | 1428.311 | 50.08 | 15.52 | 3.74 | 1432.05 | .00 | 2.30 | 2.42 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.843 | .0626 |      |      |      |      | .0276 | .22 | 1.56 | 2.37 | 1.23 | .013 | .00 | .00 | PIPE
7180.087 | 1427.239 | 1.628 | 1428.867 | 50.08 | 14.80 | 3.40 | 1432.27 | .00 | 2.30 | 2.38 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.276 | .0626 |      |      |      |      | .0245 | .15 | 1.63 | 2.19 | 1.23 | .013 | .00 | .00 | PIPE
7186.363 | 1427.632 | 1.698 | 1429.330 | 50.08 | 14.11 | 3.09 | 1432.42 | .00 | 2.30 | 2.33 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.048 | .0626 |      |      |      |      | .0218 | .11 | 1.70 | 2.02 | 1.23 | .013 | .00 | .00 | PIPE
7191.411 | 1427.948 | 1.773 | 1429.721 | 50.08 | 13.45 | 2.81 | 1432.53 | .00 | 2.30 | 2.27 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.039 | .0626 |      |      |      |      | .0195 | .08 | 1.77 | 1.85 | 1.23 | .013 | .00 | .00 | PIPE
7195.450 | 1428.201 | 1.854 | 1430.055 | 50.08 | 12.83 | 2.55 | 1432.61 | .00 | 2.30 | 2.19 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.169 | .0626 |      |      |      |      | .0175 | .06 | 1.85 | 1.69 | 1.23 | .013 | .00 | .00 | PIPE
7198.619 | 1428.399 | 1.944 | 1430.343 | 50.08 | 12.23 | 2.32 | 1432.67 | .00 | 2.30 | 2.08 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.385 | .0626 |      |      |      |      | .0158 | .04 | 1.94 | 1.54 | 1.23 | .013 | .00 | .00 | PIPE
7201.004 | 1428.548 | 2.043 | 1430.591 | 50.08 | 11.66 | 2.11 | 1432.70 | .00 | 2.30 | 1.93 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.606 | .0626 |      |      |      |      | .0144 | .02 | 2.04 | 1.38 | 1.23 | .013 | .00 | .00 | PIPE
7202.610 | 1428.649 | 2.158 | 1430.806 | 50.08 | 11.12 | 1.92 | 1432.73 | .00 | 2.30 | 1.72 | 2.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT	1 BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.000															
CD	2	4	1			4.000															
CD	5	4	1			4.250															
CD	6	4	1			3.750															
CD	7	4	1			2.000															
CD	8	4	1			3.500															
CD	9	4	1			3.000															

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 HEADING LINE NO 2 IS - SD 4-39A PARALLEL TO SAN MATEO FROM BROOKSIDE AT TENNESSEE TO CYPRESS AVE
 HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV													
1	IS	A	SYSTEM OUTLET		.000	1283.840	1	1285.230													
2	IS	A	REACH		54.690	1284.250	1		.013			.000	.000	45.000	0						
3	IS	A	REACH		210.870	1285.410	1		.013			.000	.000	45.000	0						
4	IS	A	JUNCTION		215.870	1285.530	2		.013	Q3	Q4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5	IS	A	REACH		437.460	1293.770	2		.013			.000	.000	-30.000	0						
6	IS	A	REACH		479.690	1295.340	2		.013			.000	.000	.000	2						
7	IS	A	REACH		603.370	1298.010	2		.013			.000	.000	60.000	2						
8	IS	A	JUNCTION		608.400	1298.070	5		.013	Q3	Q4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	IS	A	REACH		1294.050	1310.670	5		.013			654.747	-60.000	.000	2						
10	IS	A	JUNCTION		1299.050	1310.870	6		.013	Q3	Q4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 4:23:57

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39A PARALLEL TO SAN MATEO FROM BROOKSIDE AT TENNESSEE TO CYPRESS AV

E BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1283.840 | 3.895 | 1287.735 | 221.46 | 17.75 | 4.89 | 1292.63 | .00 | 3.90 | 1.28 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.440 | .0075 |      |      |      |      | .0219 | .05 | 3.90 | 1.00 | 4.00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.440 | 1283.858 | 4.000 | 1287.858 | 221.46 | 17.62 | 4.82 | 1292.68 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
52.250 | .0075 |      |      |      |      | .0233 | 1.22 | 4.00 | .00 | 4.00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
54.690 | 1284.250 | 4.850 | 1289.100 | 221.46 | 17.62 | 4.82 | 1293.92 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
156.180 | .0074 |      |      |      |      | .0238 | 3.71 | 4.85 | .00 | 4.00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
210.870 | 1285.410 | 8.119 | 1293.529 | 221.46 | 17.62 | 4.82 | 1298.35 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0240 |      |      |      |      | .0238 | .12 | 8.12 | .00 |      | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
215.870 | 1285.530 | 8.118 | 1293.648 | 221.46 | 17.62 | 4.82 | 1298.47 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
221.590 | .0372 |      |      |      |      | .0238 | 5.27 | 8.12 | .00 | 2.71 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
437.460 | 1293.770 | 5.622 | 1299.392 | 221.46 | 17.62 | 4.82 | 1304.21 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
42.230 | .0372 |      |      |      |      | .0238 | 1.00 | 5.62 | .00 | 2.71 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
479.690 | 1295.340 | 5.538 | 1300.878 | 221.46 | 17.62 | 4.82 | 1305.70 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
123.680 | .0216 |      |      |      |      | .0238 | 2.94 | 5.54 | .00 | 3.49 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
603.370 | 1298.010 | 7.245 | 1305.255 | 221.46 | 17.62 | 4.82 | 1310.08 | .00 | 3.90 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0119 |      |      |      |      | .0205 | .10 | .00 | .00 |      | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
608.400 | 1298.070 | 8.323 | 1306.393 | 221.46 | 15.61 | 3.78 | 1310.18 | .00 | 4.05 | .00 | 4.250 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
616.552 | .0184 |      |      |      |      | .0172 | 10.61 | .00 | .00 | 3.37 | .013 | .00 | .00 | PIPE
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 4:23:57

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39A PARALLEL TO SAN MATEO FROM BROOKSIDE AT TENNESSEE TO CYPRESS AV
 E BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | SF Ave | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2089.730 | 1344.610 | 6.936 | 1351.546 | 125.82 | 13.08 | 2.66 | 1354.20 | .00 | 3.29 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 5.820 | .0309 |      |      |      |      | .0156 | .09 | 6.94 | .00 | 2.18 | .013 | .00 | .00 | PIPE
2095.550 | 1344.790 | 6.847 | 1351.637 | 125.82 | 13.08 | 2.66 | 1354.29 | .00 | 3.29 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 34.740 | .0317 |      |      |      |      | .0156 | .54 | .00 | .00 | 2.16 | .013 | .00 | .00 | PIPE
2130.290 | 1345.890 | 6.638 | 1352.528 | 125.82 | 13.08 | 2.66 | 1355.18 | .00 | 3.29 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 49.140 | .0317 |      |      |      |      | .0156 | .77 | 6.64 | .00 | 2.16 | .013 | .00 | .00 | PIPE
2179.430 | 1347.450 | 5.847 | 1353.297 | 125.82 | 13.08 | 2.66 | 1355.95 | .00 | 3.29 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 60.780 | .0318 |      |      |      |      | .0156 | .95 | .00 | .00 | 2.16 | .013 | .00 | .00 | PIPE
2240.210 | 1349.380 | 5.331 | 1354.711 | 125.82 | 13.08 | 2.66 | 1357.37 | .00 | 3.29 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 8.471 | .0318 |      |      |      |      | .0156 | .13 | 5.33 | .00 | 2.16 | .013 | .00 | .00 | PIPE
2248.681 | 1349.649 | 5.194 | 1354.843 | 125.82 | 13.08 | 2.66 | 1357.50 | .00 | 3.29 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
2248.681 | 1349.649 | 2.172 | 1351.821 | 125.82 | 20.06 | 6.25 | 1358.07 | .00 | 3.29 | 3.40 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 146.519 | .0318 |      |      |      |      | .0306 | 4.49 | 2.17 | 2.60 | 2.16 | .013 | .00 | .00 | PIPE
2395.200 | 1354.310 | 2.204 | 1356.515 | 125.82 | 19.71 | 6.03 | 1362.55 | .82 | 3.29 | 3.38 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 30.440 | .0319 |      |      |      |      | .0297 | .90 | 3.02 | 2.53 | 2.16 | .013 | .00 | .00 | PIPE
2425.640 | 1355.280 | 2.217 | 1357.497 | 125.82 | 19.59 | 5.96 | 1363.45 | .00 | 3.29 | 3.37 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
      | 32.170 | .0376 |      |      |      |      | .0284 | .91 | 2.22 | 2.50 | 2.04 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 4:23:57

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-39A PARALLEL TO SAN MATEO FROM BROOKSIDE AT TENNESSEE TO CYPRESS AV

E BY MCHANDOO JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
          | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem  | Ch Slope |          |          |          |          | SF Ave | HF | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2457.810 | 1356.490 | 2.277 | 1358.766 | 125.82 | 18.99 | 5.60 | 1364.37 | .00 | 3.29 | 3.34 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
217.121 | .0272 |          |          |          |          | .0278 | 6.03 | 2.28 | 2.38 | 2.28 | .013 | .00 | .00 | PIPE
2674.931 | 1362.388 | 2.249 | 1364.637 | 125.82 | 19.26 | 5.76 | 1370.40 | .00 | 3.29 | 3.35 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
168.395 | .0272 |          |          |          |          | .0301 | 5.06 | 2.25 | 2.43 | 2.28 | .013 | .00 | .00 | PIPE
2843.326 | 1366.963 | 2.159 | 1369.122 | 125.82 | 20.20 | 6.33 | 1375.46 | .00 | 3.29 | 3.40 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
81.266 | .0272 |          |          |          |          | .0339 | 2.76 | 2.16 | 2.63 | 2.28 | .013 | .00 | .00 | PIPE
2924.592 | 1369.170 | 2.074 | 1371.245 | 125.82 | 21.18 | 6.97 | 1378.21 | .00 | 3.29 | 3.44 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
55.208 | .0272 |          |          |          |          | .0383 | 2.12 | 2.07 | 2.84 | 2.28 | .013 | .00 | .00 | PIPE
2979.800 | 1370.670 | 1.994 | 1372.664 | 125.82 | 22.22 | 7.67 | 1380.33 | .00 | 3.29 | 3.47 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
100.000 | .0420 |          |          |          |          | .0399 | 3.99 | 1.99 | 3.06 | 1.97 | .013 | .00 | .00 | PIPE
3079.800 | 1374.870 | 2.019 | 1376.889 | 125.82 | 21.88 | 7.44 | 1384.33 | .00 | 3.29 | 3.46 | 3.500 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
JUNCT STR | .0400 |          |          |          |          | .0395 | .20 | 2.02 | 2.99 |          | .013 | .00 | .00 | PIPE
3084.800 | 1375.070 | 2.323 | 1377.393 | 125.82 | 21.43 | 7.13 | 1384.52 | .00 | 2.96 | 2.51 | 3.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
135.860 | .0398 |          |          |          |          | .0398 | 5.41 | 2.32 | 2.47 | 2.32 | .013 | .00 | .00 | PIPE
3220.660 | 1380.484 | 2.323 | 1382.807 | 125.82 | 21.43 | 7.13 | 1389.94 | .00 | 2.96 | 2.51 | 3.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
279.038 | .0398 |          |          |          |          | .0383 | 10.68 | 2.32 | 2.47 | 2.32 | .013 | .00 | .00 | PIPE
3499.698 | 1391.603 | 2.419 | 1394.023 | 125.82 | 20.60 | 6.59 | 1400.61 | .00 | 2.96 | 2.37 | 3.000 | .000 | .00 | 1 | .0
          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
97.838 | .0398 |          |          |          |          | .0351 | 3.43 | 2.42 | 2.26 | 2.32 | .013 | .00 | .00 | PIPE

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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING										PAGE 1											
CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT	1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH				DROP											
CD	1	4	1		3.500																
CD	2	4	1		1.500																
CD	3	4	1		3.000																
CD	4	4	1		1.500																
CD	5	4	1		3.000																

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-39B BELLEVUE RD FROM FERN AVE TO ACACIA CT

HEADING LINE NO 3 IS - BY MCHANDOO JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	1383.000				
2	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
3	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
4	IS	A	JUNCTION		U/S DATA	STATION	INVERT	SECT					
5	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
6	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
7	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					
8	IS	A	JUNCTION		U/S DATA	STATION	INVERT	SECT					
9	IS	A	REACH		U/S DATA	STATION	INVERT	SECT					

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	REACH	U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H
10	IS	A	REACH	U/S DATA	STATION	INVERT	SECT				
11	IS	A	REACH	U/S DATA	STATION	INVERT	SECT				

ELEMENT NO	12	IS A	REACH	730.100	1397.030	5	.013	44.989	-38.614	.000	0
				*		*					
			U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
				866.190	1403.200	5	.013	.000	.000	.000	0
ELEMENT NO	13	IS A	SYSTEM HEADWORKS				*				
			U/S DATA	STATION	INVERT	SECT		W S ELEV			
				886.190	1403.200	5		.000			

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5: 1:30

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
SD 4-39B BELLEVUE RD FROM FERN AVE TO ACACIA CT
BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1368.650 | 14.350 | 1383.000 | 140.63 | 14.62 | 3.32 | 1386.32 | .00 | 3.36 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
44.080 | .0533 |      |      |      |      |      | .0195 | .86 | 14.35 | .00 | 1.96 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
44.080 | 1371.000 | 13.027 | 1384.027 | 140.63 | 14.62 | 3.32 | 1387.34 | .00 | 3.36 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
215.830 | .0387 |      |      |      |      |      | .0195 | 4.22 | 13.03 | .00 | 2.18 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
259.910 | 1379.350 | 8.894 | 1388.244 | 140.63 | 14.62 | 3.32 | 1391.56 | .00 | 3.36 | .00 | 3.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .1201 |      |      |      |      |      | .0211 | .13 | 8.89 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
265.990 | 1380.080 | 8.931 | 1389.011 | 100.37 | 14.20 | 3.13 | 1392.14 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
287.370 | .0360 |      |      |      |      |      | .0226 | 6.51 | 8.93 | .00 | 2.02 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
553.360 | 1390.420 | 5.099 | 1395.519 | 100.37 | 14.20 | 3.13 | 1398.65 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
23.660 | .0359 |      |      |      |      |      | .0226 | .54 | .00 | .00 | 2.02 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
577.020 | 1391.270 | 5.147 | 1396.417 | 100.37 | 14.20 | 3.13 | 1399.55 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.360 | .0361 |      |      |      |      |      | .0226 | .85 | 5.15 | .00 | 2.01 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
614.380 | 1392.620 | 4.643 | 1397.263 | 100.37 | 14.20 | 3.13 | 1400.39 | .00 | 2.90 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0000 |      |      |      |      |      | .0177 | .11 | .00 | .00 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
620.800 | 1392.620 | 6.716 | 1399.336 | 75.18 | 10.64 | 1.76 | 1401.09 | .00 | 2.72 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
49.270 | .0414 |      |      |      |      |      | .0127 | .63 | .00 | .00 | 1.59 | .013 | .00 | .00 | PIPE
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
670.070 | 1394.660 | 5.694 | 1400.354 | 75.18 | 10.64 | 1.76 | 1402.11 | .00 | 2.72 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
29.710 | .0397 |      |      |      |      |      | .0127 | .38 | 5.69 | .00 | 1.62 | .013 | .00 | .00 | PIPE
*****

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5: 1:30

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39B BELLEVUE RD FROM FERN AVE TO ACACIA CT
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
699.780 | 1395.840 | 4.891 | 1400.731 | 75.18 | 10.64 | 1.76 | 1402.49 | .00 | 2.72 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.382 | .0393 |      |      |      |      | .0127 | .18 | .00 | .00 | 1.62 | .013 | .00 | .00 | PIPE
714.162 | 1396.404 | 4.616 | 1401.021 | 75.18 | 10.64 | 1.76 | 1402.78 | .00 | 2.72 | .00 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
714.162 | 1396.404 | 1.649 | 1398.054 | 75.18 | 18.88 | 5.54 | 1403.59 | .73 | 2.72 | 2.99 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0369 | .59 | 2.38 | 2.88 | 1.62 | .013 | .00 | .00 | PIPE
730.100 | 1397.030 | 1.655 | 1398.685 | 75.18 | 18.80 | 5.49 | 1404.18 | .00 | 2.72 | 2.98 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0346 | 1.34 | 1.65 | 2.86 | 1.55 | .013 | .00 | .00 | PIPE
768.705 | 1398.780 | 1.717 | 1400.497 | 75.18 | 17.98 | 5.02 | 1405.51 | .00 | 2.72 | 2.97 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0307 | .81 | 1.72 | 2.67 | 1.55 | .013 | .00 | .00 | PIPE
795.195 | 1399.981 | 1.786 | 1401.767 | 75.18 | 17.14 | 4.56 | 1406.33 | .00 | 2.72 | 2.94 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0272 | .51 | 1.79 | 2.47 | 1.55 | .013 | .00 | .00 | PIPE
814.019 | 1400.835 | 1.859 | 1402.693 | 75.18 | 16.34 | 4.15 | 1406.84 | .00 | 2.72 | 2.91 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0241 | .34 | 1.86 | 2.29 | 1.55 | .013 | .00 | .00 | PIPE
828.105 | 1401.473 | 1.937 | 1403.410 | 75.18 | 15.58 | 3.77 | 1407.18 | .00 | 2.72 | 2.87 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0214 | .23 | 1.94 | 2.12 | 1.55 | .013 | .00 | .00 | PIPE
838.959 | 1401.965 | 2.019 | 1403.985 | 75.18 | 14.86 | 3.43 | 1407.41 | .00 | 2.72 | 2.81 | 3.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      | .0190 | .16 | 2.02 | 1.95 | 1.55 | .013 | .00 | .00 | PIPE
    
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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 5: 1:30

REDLANDS MASTER PLAN - CAPACITY ANALYSIS
 SD 4-39B BELLEVUE RD FROM FERN AVE TO ACACIA CT
 BY MCHANDOO JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      | HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
847.424 | 1402.349 | 2.108 | 1404.457 | 75.18 | 14.16 | 3.12 | 1407.57 | .00 | 2.72 | 2.74 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 6.601 | .0453 | | | | | | .0170 | .11 | 2.11 | 1.79 | 1.55 | .013 | .00 | .00 | PIPE
854.025 | 1402.648 | 2.204 | 1404.853 | 75.18 | 13.51 | 2.83 | 1407.69 | .00 | 2.72 | 2.65 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 5.067 | .0453 | | | | | | .0152 | .08 | 2.20 | 1.64 | 1.55 | .013 | .00 | .00 | PIPE
859.091 | 1402.878 | 2.309 | 1405.188 | 75.18 | 12.88 | 2.57 | 1407.76 | .00 | 2.72 | 2.53 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 3.718 | .0453 | | | | | | .0137 | .05 | 2.31 | 1.49 | 1.55 | .013 | .00 | .00 | PIPE
862.810 | 1403.047 | 2.426 | 1405.473 | 75.18 | 12.28 | 2.34 | 1407.81 | .00 | 2.72 | 2.36 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 2.427 | .0453 | | | | | | .0125 | .03 | 2.43 | 1.34 | 1.55 | .013 | .00 | .00 | PIPE
865.237 | 1403.157 | 2.559 | 1405.716 | 75.18 | 11.71 | 2.13 | 1407.84 | .00 | 2.72 | 2.13 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | .953 | .0453 | | | | | | .0115 | .01 | 2.56 | 1.19 | 1.55 | .013 | .00 | .00 | PIPE
866.190 | 1403.200 | 2.721 | 1405.921 | 75.18 | 11.16 | 1.93 | 1407.85 | .00 | 2.72 | 1.74 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
886.190 | 1403.200 | 2.721 | 1405.921 | 75.18 | 11.16 | 1.93 | 1407.85 | .00 | 2.72 | 1.74 | 3.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
    
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER DIAMETER	HEIGHT 1	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	2	0	.000	5.000	6.000				.00											
CD	2	4	1		4.500																
CD	3	4	1		2.000																
CD	4	4	1		4.000																
CD	5	4	1		4.000																
CD	6	2	0	.000	7.000	8.000				.00											
CD	7	2	0	.000	1.500	8.000				.00											

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - REDLANDS MASTER PLAN - CAPACITY ANALYSIS

HEADING LINE NO 2 IS - SD 4-40 FROM MORREY ARROYO TO PALM AVE

HEADING LINE NO 3 IS - BY DMALOTT JN:136769 APRIL 2014

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H						
ELEMENT NO 1	IS	A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT	1342.520										
					.000	1337.520	1											
ELEMENT NO 2	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					498.660	1353.200	1		.014	.000	.000	.000						
ELEMENT NO 3	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4					
					503.660	1353.390	1	7	0	.013	400.000	.000	1354.390	.000	-45.000	.000		
										RADIUS	ANGLE							
										.000	.000							
ELEMENT NO 4	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					664.780	1358.280	1		.014	.000	.000	.000						
ELEMENT NO 5	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					841.180	1363.010	1		.014	.000	.000	.000						
ELEMENT NO 6	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					903.760	1364.260	1		.014	159.359	22.500	.000	0					
ELEMENT NO 7	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					976.040	1366.010	1		.014	.000	.000	.000	0					
ELEMENT NO 8	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					1012.530	1366.840	1		.014	92.921	22.500	.000	0					
ELEMENT NO 9	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					1063.760	1367.700	1		.014	.000	.000	.000	0					
ELEMENT NO 10	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					1149.010	1370.780	1		.014	108.544	-45.000	.000	0					
ELEMENT NO 11	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					1224.490	1372.980	1		.014	.000	.000	.000	0					
ELEMENT NO 12	IS	A	REACH	U/S DATA	STATION	INVERT	SECT											
					1264.020	1373.480	1		.014	.000	.000	.000	0					

WATER SURFACE PROFILE - ELEMENT CARD LISTING																	
ELEMENT NO	13	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						1269.200	1373.610	2	0	0	.013	.000	.000	.000	.000	.000	.000
														RADIUS	ANGLE		
														.000	.000		
ELEMENT NO	14	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						1353.200	1374.800	2			.013			.000	.000	30.000	0
ELEMENT NO	15	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						1587.650	1381.960	2			.013			.000	.000	.000	0
ELEMENT NO	16	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2359.260	1402.000	2			.013			.000	.000	-45.000	0
ELEMENT NO	17	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2526.290	1407.000	2			.013			.000	.000	.000	0
ELEMENT NO	18	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2610.350	1408.410	2			.013			.000	.000	.000	0
ELEMENT NO	19	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2690.380	1410.950	2			.013			.000	.000	.000	0
ELEMENT NO	20	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2754.160	1413.220	2			.013			182.716	-20.000	.000	0
ELEMENT NO	21	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2826.160	1417.120	2			.013			.000	.000	.000	0
ELEMENT NO	22	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2851.580	1417.800	2			.013			.000	.000	.000	0
ELEMENT NO	23	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						2958.160	1422.270	2			.013			.000	.000	.000	0
ELEMENT NO	24	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						3054.160	1424.920	2			.013			.000	.000	.000	0

WATER SURFACE PROFILE - ELEMENT CARD LISTING																	
ELEMENT NO	25	IS	A	REACH <th>U/S DATA</th> <th>STATION</th> <th>INVERT</th> <th>SECT</th> <th></th> <th></th> <th>N</th> <th>Q3</th> <th>Q4</th> <th>INVERT-3</th> <th>INVERT-4</th> <th>PHI 3</th> <th>PHI 4</th>	U/S DATA	STATION	INVERT	SECT			N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						3223.580	1428.300	2			.013			.000	.000	.000	0
ELEMENT NO	26	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						3274.160	1429.250	2			.013			.000	.000	.000	1
ELEMENT NO	27	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						3279.160	1429.450	4	3	0	.013	170.000	.000	1433.020	.000	90.000	.000
														RADIUS	ANGLE		
														.000	.000		
ELEMENT NO	28	IS	A	REACH	U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
						3424.240	1432.700	4			.013			615.739	13.500	.000	0
ELEMENT NO	29	IS	A	JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
						3429.240	1432.880	5	0	0	.013	.000	.000	.000	.000	.000	.000
														RADIUS	ANGLE		
														.000	.000		

ELEMENT NO	IS A	REACH	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
30	IS A	REACH	3553.270	1439.810	5	.013	861.381	-8.250	.000	1
31	IS A	REACH	3580.270	1440.880	5	.013	.000	.000	.000	0
32	IS A	REACH	3736.350	1446.170	5	.013	.000	.000	.000	0
33	IS A	REACH	3801.270	1447.870	5	.013	92.991	-40.000	.000	0
34	IS A	REACH	3841.240	1448.670	5	.013	.000	.000	.000	0
W S P G W										
WATER SURFACE PROFILE - ELEMENT CARD LISTING										
35	IS A	JUNCTION	3851.270	1449.070	6	.014	.000	.000	.000	.000
			Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4		
			.000	.000	.000	.000	.000	.000		
			RADIUS	ANGLE						
			.000	.000						
36	IS A	REACH	4250.000	1470.000	6	.013	.000	.000	.000	0
3										

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1337.520 | 4.431 | 1341.950 | 710.00 | 26.71 | 11.08 | 1353.03 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
78.468 | .0314 |      |      |      |      |      | .0287 | 2.25 | 4.43 | 2.24 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
78.468 | 1339.987 | 4.485 | 1344.472 | 710.00 | 26.38 | 10.81 | 1355.28 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
159.674 | .0314 |      |      |      |      |      | .0267 | 4.26 | 4.49 | 2.20 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
238.142 | 1345.008 | 4.704 | 1349.712 | 710.00 | 25.15 | 9.83 | 1359.54 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
85.090 | .0314 |      |      |      |      |      | .0236 | 2.01 | 4.70 | 2.04 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
323.231 | 1347.684 | 4.934 | 1352.617 | 710.00 | 23.98 | 8.93 | 1361.55 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
54.612 | .0314 |      |      |      |      |      | .0210 | 1.15 | 4.93 | 1.90 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
377.844 | 1349.401 | 5.175 | 1354.576 | 710.00 | 22.87 | 8.12 | 1362.70 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.919 | .0314 |      |      |      |      |      | .0186 | .71 | 5.17 | 1.77 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
415.763 | 1350.593 | 5.427 | 1356.021 | 710.00 | 21.80 | 7.38 | 1363.40 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.297 | .0314 |      |      |      |      |      | .0166 | .45 | 5.43 | 1.65 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
443.060 | 1351.452 | 5.692 | 1357.144 | 710.00 | 20.79 | 6.71 | 1363.85 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
19.880 | .0314 |      |      |      |      |      | .0147 | .29 | 5.69 | 1.54 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
462.940 | 1352.077 | 5.970 | 1358.047 | 710.00 | 19.82 | 6.10 | 1364.15 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.358 | .0314 |      |      |      |      |      | .0131 | .19 | 5.97 | 1.43 | 4.30 | .014 | .00 | .00 | RECTANG
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
477.297 | 1352.528 | 6.261 | 1358.789 | 710.00 | 18.90 | 5.55 | 1364.34 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.046 | .0314 |      |      |      |      |      | .0117 | .12 | 6.26 | 1.33 | 4.30 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
487.343 | 1352.844 | 6.567 | 1359.411 | 710.00 | 18.02 | 5.04 | 1364.45 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
6.551 | .0314 |      |      |      |      | .0104 | .07 | 6.57 | 1.24 | 4.30 | .014 | .00 | .00 | RECTANG
493.894 | 1353.050 | 6.887 | 1359.938 | 710.00 | 17.18 | 4.58 | 1364.52 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.633 | .0314 |      |      |      |      | .0093 | .03 | 6.89 | 1.15 | 4.30 | .014 | .00 | .00 | RECTANG
497.527 | 1353.164 | 7.224 | 1360.388 | 710.00 | 16.38 | 4.17 | 1364.55 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.133 | .0314 |      |      |      |      | .0083 | .01 | 7.22 | 1.07 | 4.30 | .014 | .00 | .00 | RECTANG
498.660 | 1353.200 | 7.577 | 1360.777 | 710.00 | 15.62 | 3.79 | 1364.56 | .00 | 7.58 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0380 |      |      |      |      | .0036 | .02 | 7.58 | 1.00 |      | .013 | .00 | .00 | RECTANG
503.660 | 1353.390 | 10.840 | 1364.230 | 310.00 | 4.77 | .35 | 1364.58 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
15.815 | .0304 |      |      |      |      | .0007 | .01 | 10.84 | .26 | 2.33 | .014 | .00 | .00 | RECTANG
519.475 | 1353.870 | 10.336 | 1364.206 | 310.00 | 5.00 | .39 | 1364.59 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.945 | .0304 |      |      |      |      | .0008 | .01 | 10.34 | .27 | 2.33 | .014 | .00 | .00 | RECTANG
534.420 | 1354.324 | 9.855 | 1364.178 | 310.00 | 5.24 | .43 | 1364.60 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
14.099 | .0304 |      |      |      |      | .0009 | .01 | 9.85 | .29 | 2.33 | .014 | .00 | .00 | RECTANG
548.519 | 1354.751 | 9.396 | 1364.147 | 310.00 | 5.50 | .47 | 1364.62 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
13.276 | .0304 |      |      |      |      | .0010 | .01 | 9.40 | .32 | 2.33 | .014 | .00 | .00 | RECTANG
561.795 | 1355.154 | 8.959 | 1364.113 | 310.00 | 5.77 | .52 | 1364.63 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
12.472 | .0304 |      |      |      |      | .0011 | .01 | 8.96 | .34 | 2.33 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
574.267 | 1355.533 | 8.542 | 1364.075 | 310.00 | 6.05 | .57 | 1364.64 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
11.683 | .0304 |      |      |      |      | .0012 | .01 | 8.54 | .36 | 2.33 | .014 | .00 | .00 | RECTANG
585.950 | 1355.888 | 8.144 | 1364.032 | 310.00 | 6.34 | .62 | 1364.66 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.907 | .0304 |      |      |      |      | .0013 | .01 | 8.14 | .39 | 2.33 | .014 | .00 | .00 | RECTANG
596.856 | 1356.219 | 7.765 | 1363.984 | 310.00 | 6.65 | .69 | 1364.67 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
10.139 | .0304 |      |      |      |      | .0015 | .02 | 7.77 | .42 | 2.33 | .014 | .00 | .00 | RECTANG
606.995 | 1356.526 | 7.404 | 1363.930 | 310.00 | 6.98 | .76 | 1364.69 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.678 | .0304 |      |      |      |      | .0016 | .01 | 7.40 | .45 | 2.33 | .014 | .00 | .00 | RECTANG
614.674 | 1356.759 | 7.122 | 1363.881 | 310.00 | 7.25 | .82 | 1364.70 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
614.674 | 1356.759 | 2.428 | 1359.188 | 310.00 | 21.28 | 7.03 | 1366.22 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
50.106 | .0304 |      |      |      |      | .0266 | 1.33 | 2.43 | 2.41 | 2.33 | .014 | .00 | .00 | RECTANG
664.780 | 1358.280 | 2.465 | 1360.745 | 310.00 | 20.96 | 6.82 | 1367.57 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
176.400 | .0268 |      |      |      |      | .0251 | 4.43 | 2.46 | 2.35 | 2.44 | .014 | .00 | .00 | RECTANG
841.180 | 1363.010 | 2.535 | 1365.545 | 310.00 | 20.38 | 6.45 | 1372.00 | .49 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
62.580 | .0200 |      |      |      |      | .0252 | 1.58 | 3.02 | 2.26 | 2.72 | .014 | .00 | .00 | RECTANG
903.760 | 1364.260 | 2.459 | 1366.719 | 310.00 | 21.01 | 6.85 | 1373.57 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
72.280 | .0242 |      |      |      |      | .0268 | 1.94 | 2.46 | 2.36 | 2.53 | .014 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
976.040 | 1366.010 | 2.419 | 1368.429 | 310.00 | 21.36 | 7.08 | 1375.51 | .91 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
36.490 | .0227 |      |      |      |      |      | .0281 | 1.02 | 3.33 | 2.42 | 2.59 | .014 | .00 | .00 | RECTANG
1012.530 | 1366.840 | 2.380 | 1369.220 | 310.00 | 21.71 | 7.32 | 1376.54 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
7.731 | .0168 |      |      |      |      |      | .0290 | .22 | 2.38 | 2.48 | 2.90 | .014 | .00 | .00 | RECTANG
1020.261 | 1366.970 | 2.362 | 1369.332 | 310.00 | 21.87 | 7.43 | 1376.76 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
43.499 | .0168 |      |      |      |      |      | .0313 | 1.36 | 2.36 | 2.51 | 2.90 | .014 | .00 | .00 | RECTANG
1063.760 | 1367.700 | 2.252 | 1369.952 | 310.00 | 22.94 | 8.17 | 1378.13 | .90 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
85.250 | .0361 |      |      |      |      |      | .0323 | 2.76 | 3.16 | 2.69 | 2.19 | .014 | .00 | .00 | RECTANG
1149.010 | 1370.780 | 2.306 | 1373.086 | 310.00 | 22.41 | 7.80 | 1380.88 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
75.480 | .0291 |      |      |      |      |      | .0320 | 2.42 | 2.31 | 2.60 | 2.37 | .014 | .00 | .00 | RECTANG
1224.490 | 1372.980 | 2.269 | 1375.249 | 310.00 | 22.78 | 8.05 | 1383.30 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
9.039 | .0126 |      |      |      |      |      | .0334 | .30 | 2.27 | 2.66 | 3.23 | .014 | .00 | .00 | RECTANG
1233.529 | 1373.094 | 2.238 | 1375.332 | 310.00 | 23.09 | 8.28 | 1383.61 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
30.491 | .0126 |      |      |      |      |      | .0364 | 1.11 | 2.24 | 2.72 | 3.23 | .014 | .00 | .00 | RECTANG
1264.020 | 1373.480 | 2.134 | 1375.614 | 310.00 | 24.21 | 9.10 | 1384.72 | .00 | 4.36 | 6.00 | 5.000 | 6.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0251 |      |      |      |      |      | .0289 | .15 | 2.13 | 2.92 | 2.92 | .013 | .00 | .00 | RECTANG
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----- WARNING - Junction Analysis - Change in Channel Type -----

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

```

*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
2561.036 | 1407.583 | 3.315 | 1410.898 | 310.00 | 24.68 | 9.46 | 1420.36 | .00 | 4.40 | 3.96 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
49.314 | .0168 |      |      |      |      | .0330 | 1.63 | 3.31 | 2.44 | 4.50 | .013 | .00 | .00 | PIPE
2610.350 | 1408.410 | 3.170 | 1411.580 | 310.00 | 25.89 | 10.41 | 1421.99 | .00 | 4.40 | 4.11 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
80.030 | .0317 |      |      |      |      | .0356 | 2.85 | 3.17 | 2.67 | 3.29 | .013 | .00 | .00 | PIPE
2690.380 | 1410.950 | 3.122 | 1414.072 | 310.00 | 26.33 | 10.76 | 1424.84 | .49 | 4.40 | 4.15 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
63.780 | .0356 |      |      |      |      | .0364 | 2.32 | 3.61 | 2.75 | 3.15 | .013 | .00 | .00 | PIPE
2754.160 | 1413.220 | 3.113 | 1416.333 | 310.00 | 26.41 | 10.83 | 1427.16 | .00 | 4.40 | 4.16 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
38.943 | .0542 |      |      |      |      | .0348 | 1.36 | 3.11 | 2.77 | 2.71 | .013 | .00 | .00 | PIPE
2793.103 | 1415.329 | 3.237 | 1418.566 | 310.00 | 25.32 | 9.95 | 1428.52 | .00 | 4.40 | 4.04 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.057 | .0542 |      |      |      |      | .0314 | 1.04 | 3.24 | 2.56 | 2.71 | .013 | .00 | .00 | PIPE
2826.160 | 1417.120 | 3.387 | 1420.507 | 310.00 | 24.14 | 9.05 | 1429.55 | .00 | 4.40 | 3.88 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
25.420 | .0268 |      |      |      |      | .0298 | .76 | 3.39 | 2.34 | 3.55 | .013 | .00 | .00 | PIPE
2851.580 | 1417.800 | 3.370 | 1421.170 | 310.00 | 24.27 | 9.14 | 1430.31 | .00 | 4.40 | 3.90 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
41.650 | .0419 |      |      |      |      | .0288 | 1.20 | 3.37 | 2.36 | 2.96 | .013 | .00 | .00 | PIPE
2893.230 | 1419.547 | 3.501 | 1423.048 | 310.00 | 23.35 | 8.47 | 1431.51 | .00 | 4.40 | 3.74 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
37.593 | .0419 |      |      |      |      | .0262 | .99 | 3.50 | 2.18 | 2.96 | .013 | .00 | .00 | PIPE
2930.823 | 1421.124 | 3.681 | 1424.804 | 310.00 | 22.26 | 7.70 | 1432.50 | .00 | 4.40 | 3.47 | 4.500 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.336 | .0419 |      |      |      |      | .0239 | .65 | 3.68 | 1.96 | 2.96 | .013 | .00 | .00 | PIPE

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3553.270 | 1439.810 | 8.150 | 1447.960 | 140.00 | 11.14 | 1.93 | 1449.89 | .00 | 3.51 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
27.000 | .0396 |      |      |      |      |      | .0095 | .26 | 8.15 | .00 | 1.98 | .013 | .00 | .00 | PIPE
3580.270 | 1440.880 | 7.336 | 1448.216 | 140.00 | 11.14 | 1.93 | 1450.14 | .00 | 3.51 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
75.141 | .0339 |      |      |      |      |      | .0095 | .71 | 7.34 | .00 | 2.07 | .013 | .00 | .00 | PIPE
3655.411 | 1443.427 | 5.502 | 1448.928 | 140.00 | 11.14 | 1.93 | 1450.86 | .00 | 3.51 | .00 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
HYDRAULIC JUMP
3655.411 | 1443.427 | 2.198 | 1445.625 | 140.00 | 19.79 | 6.08 | 1451.71 | .00 | 3.51 | 3.98 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
33.662 | .0339 |      |      |      |      |      | .0270 | .91 | 2.20 | 2.62 | 2.07 | .013 | .00 | .00 | PIPE
3689.073 | 1444.568 | 2.240 | 1446.807 | 140.00 | 19.34 | 5.81 | 1452.61 | .00 | 3.51 | 3.97 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
47.277 | .0339 |      |      |      |      |      | .0246 | 1.16 | 2.24 | 2.52 | 2.07 | .013 | .00 | .00 | PIPE
3736.350 | 1446.170 | 2.329 | 1448.499 | 140.00 | 18.44 | 5.28 | 1453.78 | .45 | 3.51 | 3.95 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
64.920 | .0262 |      |      |      |      |      | .0222 | 1.44 | 2.78 | 2.34 | 2.24 | .013 | .00 | .00 | PIPE
3801.270 | 1447.870 | 2.390 | 1450.260 | 140.00 | 17.87 | 4.96 | 1455.22 | .00 | 3.51 | 3.92 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
39.970 | .0200 |      |      |      |      |      | .0215 | .86 | 2.39 | 2.23 | 2.44 | .013 | .00 | .00 | PIPE
3841.240 | 1448.670 | 2.374 | 1451.044 | 140.00 | 18.01 | 5.04 | 1456.08 | .00 | 3.51 | 3.93 | 4.000 | .000 | .00 | 1 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
JUNCT STR | .0399 |      |      |      |      |      | .0430 | .43 | 2.37 | 2.26 |      | .014 | .00 | .00 | PIPE
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----- WARNING - Junction Analysis - Change in Channel Type -----

Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

REDLANDS MASTER PLAN - CAPACITY ANALYSIS

SD 4-40 FROM MORREY ARROYO TO PALM AVE

BY DMALOTT JN:136769 APRIL 2014

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
      | Elev   | (FT)  | Elev   | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4223.768 | 1468.623 | 1.254 | 1469.877 | 140.00 | 13.96 | 3.02 | 1472.90 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
5.669 | .0525 |      |      |      |      | .0148 | .08 | 1.25 | 2.20 | .85 | .013 | .00 | .00 | RECTANG
4229.437 | 1468.921 | 1.315 | 1470.236 | 140.00 | 13.31 | 2.75 | 1472.98 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
4.682 | .0525 |      |      |      |      | .0128 | .06 | 1.32 | 2.04 | .85 | .013 | .00 | .00 | RECTANG
4234.118 | 1469.166 | 1.379 | 1470.546 | 140.00 | 12.69 | 2.50 | 1473.05 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.864 | .0525 |      |      |      |      | .0111 | .04 | 1.38 | 1.90 | .85 | .013 | .00 | .00 | RECTANG
4237.982 | 1469.369 | 1.447 | 1470.816 | 140.00 | 12.10 | 2.27 | 1473.09 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
3.173 | .0525 |      |      |      |      | .0096 | .03 | 1.45 | 1.77 | .85 | .013 | .00 | .00 | RECTANG
4241.155 | 1469.536 | 1.517 | 1471.053 | 140.00 | 11.53 | 2.07 | 1473.12 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.578 | .0525 |      |      |      |      | .0084 | .02 | 1.52 | 1.65 | .85 | .013 | .00 | .00 | RECTANG
4243.733 | 1469.671 | 1.591 | 1471.262 | 140.00 | 11.00 | 1.88 | 1473.14 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
2.057 | .0525 |      |      |      |      | .0073 | .01 | 1.59 | 1.54 | .85 | .013 | .00 | .00 | RECTANG
4245.790 | 1469.779 | 1.669 | 1471.448 | 140.00 | 10.48 | 1.71 | 1473.16 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.597 | .0525 |      |      |      |      | .0063 | .01 | 1.67 | 1.43 | .85 | .013 | .00 | .00 | RECTANG
4247.387 | 1469.863 | 1.751 | 1471.614 | 140.00 | 10.00 | 1.55 | 1473.17 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
1.184 | .0525 |      |      |      |      | .0055 | .01 | 1.75 | 1.33 | .85 | .013 | .00 | .00 | RECTANG
4248.570 | 1469.925 | 1.836 | 1471.761 | 140.00 | 9.53 | 1.41 | 1473.17 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.810 | .0525 |      |      |      |      | .0048 | .00 | 1.84 | 1.24 | .85 | .013 | .00 | .00 | RECTANG

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Program Package Serial Number: 1373

WATER SURFACE PROFILE LISTING

Date: 4-16-2014 Time: 2:36:58

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SD 4-40 FROM MORREY ARROYO TO PALM AVE

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
      | Elev  | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope|      |      |      |      |      |      | SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
4249.380 | 1469.968 | 1.926 | 1471.893 | 140.00 | 9.09 | 1.28 | 1473.18 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      | .468 | .0525 |      |      |      |      | .0042 | .00 | 1.93 | 1.15 | .85 | .013 | .00 | .00 | RECTANG
4249.848 | 1469.992 | 2.020 | 1472.012 | 140.00 | 8.67 | 1.17 | 1473.18 | .00 | 2.12 | 8.00 | 7.000 | 8.000 | .00 | 0 | .0
      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
    
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