

CITY OF REDLANDS
MASTER PLAN OF DRAINAGE (MPD)



TECHNICAL APPENDIX C.1

Detailed Cost Spreadsheet

CITY OF REDLANDS MASTER PLAN OF DRAINAGE
APPENDIX C.1 DETAILED COST SPREADSHEETS

Project Area	SD #	Type	Size	Length	Barrel	Unit Cost	Cost	
	17-B	RCP	30	334		\$225	\$75,150	
		RCP	36	683		\$313	\$213,779	
	17-A	RCP	48	1389		\$363	\$504,280	
		RCP	60	1690		\$456	\$770,640	
		RCP	72	3322		\$531	\$1,763,780	
			84	185		\$613	\$113,638	
			108	820		\$2,000	\$1,639,240	
17							Total :	\$4,791,578
Project Area	System #	Type	Size	Length		Unit Cost	Cost	
	18	RCP	42	612		\$344	\$210,421	
		RCP	48	640		\$363	\$232,233	
			RCB	1331		\$1,000	\$1,330,610	
	18A	RCP	30	217		\$225	\$48,850	
18							Total:	\$1,773,264.24
Project Area	System #	Type	Size	Length		Unit Cost	Cost	
	19	RCP	60	631		\$456	\$287,617	
		RCP	72	2435		\$531	\$1,292,847	
19							Total :	\$1,580,464.38
Project Area	System #	Type	Size	Length		Unit Cost	Cost	
37	37	RCP	N/A	-			\$0	
							Total :	
Project Area	SD #	Type	Size	Length		Unit Cost	Cost	
	38	RCP	60	1549		\$456	\$706,380	
		RCP	66	463		\$494	\$228,727	
	38-B	RCP	60	1543		\$456	\$703,517	
38							Total :	\$932,243.74
Project Area	SD #	Type	Size	Length		Unit Cost	Cost	
	39	RCP	48	1577		\$363	\$572,451	
		RCP	54	1415		\$375	\$530,535	
		RCP	60	192		\$456	\$87,338	
	39-A	RCP	48	2109		\$363	\$765,425	
		RCP	54	1976		\$375	\$740,929	
39							Total :	\$2,696,677.86

Project Area	SD #	Type	Size	Length		Unit Cost	Cost	
	40	RCP	60	2582		\$456	\$1,177,424	
			RCB	264		\$1,000	\$263,640	
			RCB	1269		\$1,000	\$1,269,200	
40							Total :	\$2,710,263.92
Project Area	System #	Type	Size	Length		Unit Cost	Cost	
	41	RCC	RCC	1440.18		\$350	\$504,063	
		RCC	RCC	1350.00		\$350	\$472,500	
		RCC	RCC	1350.00		\$350	\$472,500	
		RCC	RCC	2427.97		\$350	\$849,790	
		RCC	RCC	1424.56		\$350	\$498,596	
		RCC	RCC	1047.47	2.00	\$350	\$733,229	
41							Total :	\$3,530,677.50

CITY OF REDLANDS MASTER PLAN OF DRAINAGE

APPENDIX C.1 DETAILED COST SPREADSHEETS

Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	22	RCB	RCB	1019	\$1,000	\$1,019,490	
	22-G	RCB	RCB	1174	\$1,000	\$1,174,000	
	22-J	RCP	84	2911	\$613	\$1,784,277	
	22-J	RCB	RCB	6469	\$1,000	\$6,468,980	
22						Total:	\$10,446,747
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	23	RCP	N/A	xx		0	
23						Total:	\$0
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	25A	RCP	72	7014.30	\$531	\$3,724,593	
		RCP	78	227.70	\$575	\$130,928	
25						Total:	\$3,855,521
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	26A	RCP	48	1375.00	\$363	\$499,125	
26						Total:	\$499,125

CITY OF REDLANDS MASTER PLAN OF DRAINAGE
APPENDIX C.1 DETAILED COST SPREADSHEETS

Project Area	System #	Type	Size	Length	Barrel	Unit Cost	Cost	
	20	RCP	N/A	-				
	20-A	RCP	N/A	-				
20							Total :	\$0
Project Area	System #	Type	Size	Length		Unit Cost	Cost	
	21	RCP	72	644		\$531	\$341,964	
21							Total :	\$341,964
Project Area	System #	Type	Size	Length		Unit Cost	Cost	
	22-K	RCB	RCB	2480	2	\$1,000	\$4,960,000	
	22	RCB	RCB	1520	1	\$1,000	\$1,520,000	
		RCB	RCB	227	3	\$1,000	\$681,300	
	22-A	RCP	36	591		\$313	\$184,983	
	22-B	RCP	30	924		\$225	\$207,900	
	22-D	RCP	24	396		\$206	\$81,576	
	22-E	RCP	36	796		\$313	\$249,148	
	22-L	RCP	72	522		\$531	\$277,182	
		RCP	78	780		\$575	\$448,500	
22							Total :	\$8,610,589

CITY OF REDLANDS MASTER PLAN OF DRAINAGE
APPENDIX C.1 DETAILED COST SPREADSHEETS

Project Area	System #	Type	Size	Length	Barrel	Unit Cost	Cost	
	27	RCP	54	1315		\$375	\$493,125	
		RCP	84	1120		\$613	\$686,560	
		RCP	90	2923		\$644	\$1,882,412	
		RCB	RCB	385	2	\$1,000	\$770,000	
27							Total :	\$3,832,097
Project Area	System #	Type	Size	Length			Cost	
30A	30A	RCP	N/A	-				
							Total :	\$0
Project Area	System #	Type	Size	Length			Cost	
	-	Basin	1	1		\$15,000,000	\$15,000,000	
Opal Basin				Total:				\$15,000,000

CITY OF REDLANDS MASTER PLAN OF DRAINAGE

APPENDIX C.1 DETAILED COST SPREADSHEETS

Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	4	RCP	36	303	\$313	\$94,839	
		RCP	42	303	\$344	\$104,232	
		RCP	48	882	\$363	\$320,166	
4						Total:	\$519,237
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	5	RCP	30	427	\$225	\$96,075	
	5	RCP	42	803	\$344	\$276,232	
	5	RCP	48	711	\$363	\$258,093	
	5	RCP	84	1135	\$613	\$695,755	
	5	RCP	96	440	\$669	\$294,480	
5						Total:	\$1,620,635
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	7	RCP	42	317	\$344	\$108,876	
		RCP	54	2665	\$375	\$999,533	
		RCP	66	1001	\$494	\$494,494	
		RCP	72	1989	\$531	\$1,056,148	
		RCP	84	1238	\$613	\$758,710	
		RCB	RCB	117	\$1,000	\$117,080	
	7A	RCP	30	611	\$225	\$137,475	
		RCP	36	1002	\$313	\$313,626	
		RCP	42	3348	\$344	\$1,151,712	
	7B	RCP	48	2047	\$363	\$743,061	
		RCP	60	1313	\$456	\$598,728	
		RCP	72	4211	\$531	\$2,236,041	
7						Total:	\$8,715,484
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
		RCP	30	486	\$225	\$109,350	
		RCP	36	1415	\$313	\$442,895	
		RCP	42	249	\$344	\$85,656	
	8	RCP	48	4060	\$363	\$1,473,780	
8						Total:	\$2,111,681
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
		RCP	48	2186	\$363	\$793,518	
	9	RCP	72	336	\$531	\$178,416	
9						Total:	\$971,934
Project Area	System #	Type	Size	Length	Unit Cost	Cost	
	10	RCP	42	424	\$344	\$145,856	
		RCP	48	1199	\$363	\$435,237	
		RCP	54	804	\$375	\$301,500	
		RCP	60	1569	\$456	\$715,464	
		RCP	72	652	\$531	\$346,201	
		RCP	84	1645	\$613	\$1,008,459	
		RCP	96	1961	\$669	\$1,312,023	
	10A	RCP	N/A	N/A	#N/A	\$0	
	10B	RCP	42	1346	\$344	\$463,024	
		RCP	54	5404	\$375	\$2,026,500	
10						Total:	\$6,754,264

CITY OF REDLANDS MASTER PLAN OF DRAINAGE								
PROPOSED STORM DRAIN SYSTEMS								
SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4								
			Existing	Proposed			Proposed RCB	
System ID	Subarea Name	Length	Diameter (Inches)	Diameter (Inches)		Barrel	Height (ft)	Width (ft)
27	Mission Zanja	1315		54	54			
27	Mission Zanja	1120		84	84			
27	Mission Zanja	2923		90	90			
27B	Mission Zanja	385				2	6	10

CITY OF REDLANDS MASTER PLAN OF DRAINAGE

PROPOSED STORM DRAIN SYSTEMS

SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4

System ID	Subarea Name	Length	Existing	Proposed		Existing RCB		Proposed RCB	
			Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)	Height (ft)	Width (ft)
4	North City	303.00		30	30				
4	North City	566.00		36	36				
4	North City	1504.00		42	42				
4	North City	882.00		48	48				
5	North City	427.00		30	30				
5	North City	803.00		42	42				
5	North City	711.00		48	48				
5	North City	616.60	54	54	No Changes				
5	North City	570.00	72	72	No Changes				
5	North City	816.80	84	84	No Changes				
5	North City	772.57	84	84	No Changes				
5	North City	717.16	84	84	No Changes				
5	North City	1422.32	96	96	No Changes				
5	North City	1239.14	96	96	No Changes				
5	North City	440.18	72	96	96				
5	North City	1135.00	72	84	84				
7	North City	316.50		42	42				
7	North City	315.54		54	54				
7	North City	664.38		54	54				
7	North City	675.50		54	54				
7	North City	1010.00		54	54				
7	North City	1001.00		66	66				
7	North City	11.20	66	72	72				
7	North City	715.80	66	72	72				
7	North City	162.25	57	72	72				
7	North City	945.75	18	72	72				
7	North City	153.98	57	72	72				

CITY OF REDLANDS MASTER PLAN OF DRAINAGE

PROPOSED STORM DRAIN SYSTEMS

SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4

System ID	Subarea Name	Length	Existing	Proposed		Existing RCB		Proposed RCB	
			Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)	Height (ft)	Width (ft)
7	North City	1093.79	57	84	84				
7	North City	143.91	57	84	84				
7	North City	117.08				3	6	3	10
7A	North City	611.00		30	30				
7A	North City	1002.00		36	36				
7A	North City	3348.00		42	42				
7B	North City	2047.00		48	48				
7B	North City	1313.00		60	60				
7B	North City	4211.00		72	72				
8	North City	486.00		30	30				
8	North City	1415.00		36	36				
8	North City	249.00		42	42				
8	North City	4060.00		48	48				
9	North City	2186.00		48	48				
9	North City	85.52	60	60	No Changes				
9	North City	671.16	63	63	No Changes				
9	North City	660.67	66	66	No Changes				
9	North City	651.16	72	72	No Changes				
9	North City	6.00	72	72	No Changes				
9	North City	1191.09	78	78	No Changes				
9	North City	599.50	63	63	No Changes				
9	North City	119.00	63	63	No Changes				
9	North City	336.00	48	72	72				
10	North City	424.00		42	42				
10	North City	1199.00		48	48				
10	North City	804.00		54	54				
10	North City	1569.00		60	60				

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PROPOSED STORM DRAIN SYSTEMS

SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4

System ID	Subarea Name	Length	Existing	Proposed		Existing RCB		Proposed RCB	
			Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)	Height (ft)	Width (ft)
10	North City	651.98	36	72	72				
10	North City	626.50	36	84	84				
10	North City	1018.62	54	84	84				
10	North City	311.38	54	96	96				
10	North City	73.00	66	96	96				
10	North City	879.00	6	96	96				
10	North City	697.79		96	96				
10A	North City	34.34	30	30	No Changes				
10A	North City	12.53	48	48	No Changes				
10A	North City	1361.65	48	48	No Changes				
10A	North City	19.71	54	54	No Changes				
10A	North City	16.19	60	60	No Changes				
10A	North City	19.50	60	60	No Changes				
10A	North City	188.37	66	66	No Changes				
10A	North City	670.55	72	72	No Changes				
10A	North City	1341.38	78	78	No Changes				
10A	North City	263.71	30	30	No Changes				
10A	North City	320.50	36	36	No Changes				
10A	North City	161.96	42	42	No Changes				
10A	North City	80.03	54	54	No Changes				
10A	North City	716.85	60	60	No Changes				
10B	North City	1346.00		42	42				
10B	North City	3454.00		54	54				
10B	North City	1950.00		54	54				

CITY OF REDLANDS MASTER PLAN OF DRAINAGE									
PROPOSED STORM DRAIN SYSTEMS									
SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4									
System ID	Subarea Name	Length	Existing	Existing	Proposed	Barrel	Proposed RCB		
			Diameter (ft)	Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)	
21	Downtown	644			72	72			
22	Downtown	1520					1	15	9
22	Downtown	227					3	10	9
22A	Downtown	591			36	36			
22B	Downtown	924			30	30			
22D	Downtown	396			24	24			
22E	Downtown	796			36	36			
22L	Reservoir Canyon	522.00			72	72			
22K	Downtown	2480					2	12	8
22L	Reservoir Canyon	780.00			78	78			

CITY OF REDLANDS MASTER PLAN OF DRAINAGE								
PROPOSED STORM DRAIN SYSTEMS								
SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4								
			Existing	Proposed	Existing RCB		Proposed RCB	
System ID	Subarea Name	Length	Diameter (Inches)	Diameter (Inches)	Width (ft)		Height (ft)	Width (ft)
22	Reservoir Canyon	1019.49					8	10
22G	Reservoir Canyon	1174					12	5
22J	Reservoir Canyon	1868.53	51	84		84		
22J	Reservoir Canyon	1042.20	51	84		84		
22J	Reservoir Canyon	2669.04			6		3	14
22J	Reservoir Canyon	3799.94			10		4	14
22J	Reservoir Canyon	738.76			10	No Changes		
22J	Reservoir Canyon	650.37			8	No Changes		
22J	Reservoir Canyon	109.97			10	No Changes		
22J	Reservoir Canyon	580.22			6	No Changes		
25A	Reservoir Canyon	7014.30		72		72		
	Reservoir Canyon	227.70		78		78		
26	Reservoir Canyon	1375.00		48		48		

CITY OF REDLANDS MASTER PLAN OF DRAINAGE							
PROPOSED STORM DRAIN SYSTEMS							
SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4							
System ID	Subarea Name	Length	Existing	Proposed		Proposed RCB	
			Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)
17A	South City	334.00		30			
17A	South City	683.00		36			
17A	South City	1273.20	42	48	48		
17A	South City	1275.20	48	48	No Changes		
17A	South City	116.00	24	48	48		
17A	South City	1690.00	51	60	60		
17A	South City	945.67	66	66	No Changes		
17A	South City	611.18	66	66	No Changes		
17A	South City	675.11	66	72	72		
17A	South City	21.53	36	72	72		
17A	South City	1801.23	66	72	72		
17A	South City	823.75	66	72	72		
17A	South City	185.38	66	84	84		
17A	South City	819.62	72	108	108		
18	South City	493.55	36	36	No Changes		
18	South City	611.69	36	42	42		
18	South City	639.76	36	48	48		
18	South City	66.48	54	54	No Changes		
18	South City	38.53	54	54	No Changes		
18	South City	409.16	60	60	No Changes		
18	South City	863.65	60	60	No Changes		
18	South City	8.07	60	60	No Changes		
18	South City	1330.61	36		No Changes	10	3
19	South City	630.74	39	60	60		
19	South City	1291.54	48	72	72		
19	South City	1143.20	54	72	72		
38	South City	573.59	36	36	No Changes		

CITY OF REDLANDS MASTER PLAN OF DRAINAGE							
PROPOSED STORM DRAIN SYSTEMS							
SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4							
System ID	Subarea Name	Length	Existing	Proposed		Proposed RCB	
			Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)
38	South City	161.08	48	48	No Changes		
38	South City	723.73	54	60	60		
38	South City	825.35	54	60	60		
38	South City	463.01	54	66	66		
38B	South City	530.78	36	36	No Changes		
38B	South City	97.00	24	24	No Changes		
38B	South City	105.00	36	36	No Changes		
38B	South City	769.38	36	36	No Changes		
38B	South City	581.62	42	60	60		
38B	South City	961.18	48	60	60		
39	South City	132.32	30	30	No Changes		
39	South City	238.28	36	36	No Changes		
39	South City	340.60	36	36	No Changes		
39	South City	289.03	36	36	No Changes		
39	South City	353.05	36	36	No Changes		
39	South City	10.67	42	42	No Changes		
39	South City	25.00	42	42	No Changes		
39	South City	54.87	42	42	No Changes		
39	South City	1416.54	45	48	48		
39	South City	160.46	45	48	48		
39	South City	460.95	48	54	54		
39	South City	259.91	51	54	54		
39	South City	693.90	48	54	54		
39	South City	270.47	60	60	No Changes		
39	South City	191.53	36	60	60		
39	South City	850.69	72	72	No Changes		
39	South City	1455.00	72	72	No Changes		

CITY OF REDLANDS MASTER PLAN OF DRAINAGE							
PROPOSED STORM DRAIN SYSTEMS							
SBCFCD ZONE 3 - COMPREHENSIVE STORM DRAIN PLAN (CSDP) NO. 4							
System ID	Subarea Name	Length	Existing	Proposed		Proposed RCB	
			Diameter (Inches)	Diameter (Inches)		Height (ft)	Width (ft)
39A	South City	999.62	36	48	48		
39A	South City	1108.99	42	48	48		
39A	South City	676.76	45	54	54		
39A	South City	690.65	51	54	54		
39A	South City	392.53	48	54	54		
39A	South City	215.87	48	54	54		
40	South City	263.64			No Changes	5	14
40	South City	422.03	48	60	60		
40	South City	150.08	48	60	60		
40	South City	2009.96	54	60	60		
40	South City	1269.20			No Changes	7	10