

**Summary of Regional Pond Storm Drain Design
and
WSPGW Input/Output Results**

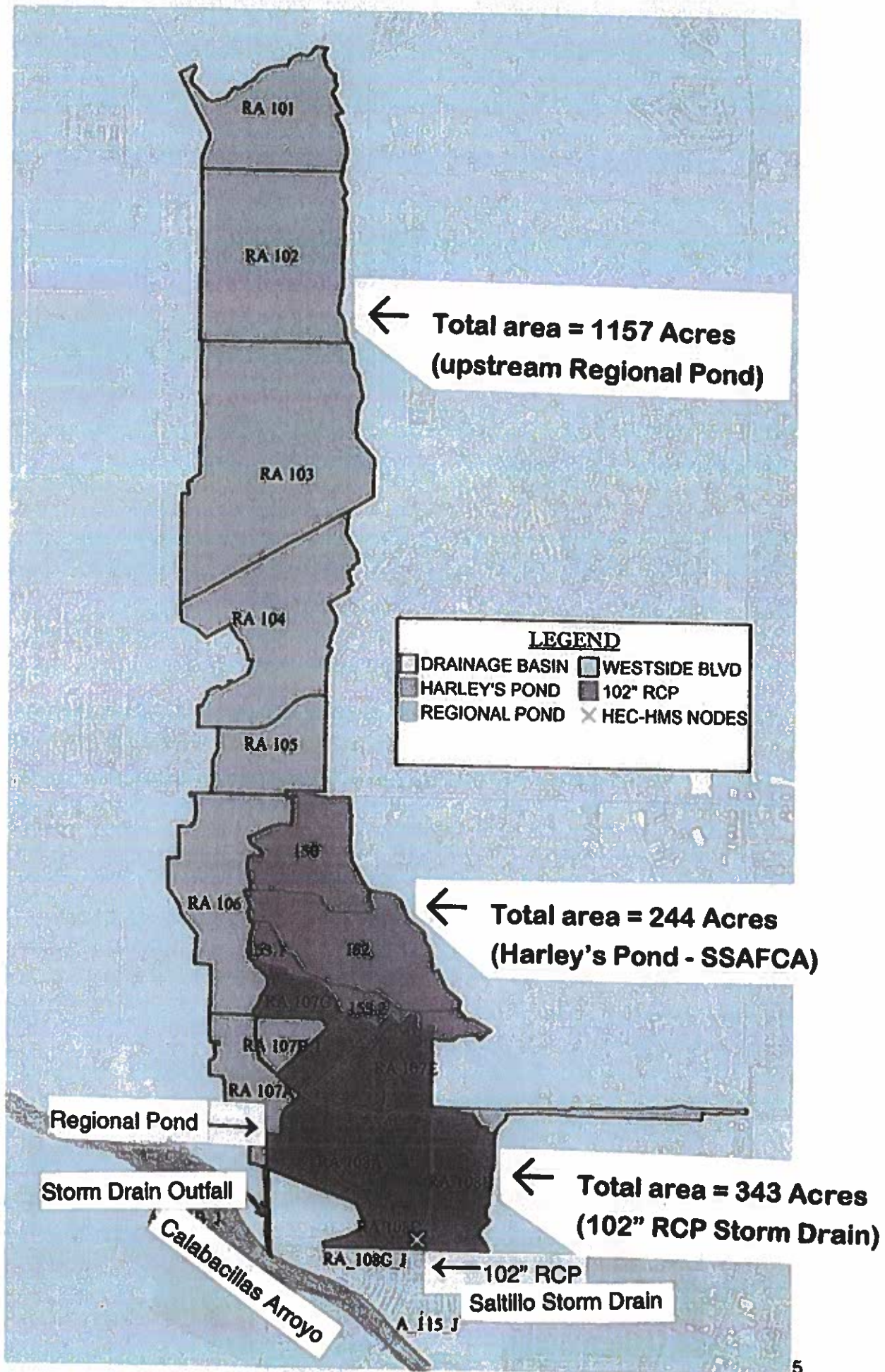


TABLE 5

Summary of Public Storm Drain
LD Regional Pond Storm Drain Outfall

Pipe length		Pipe size	Design	Upstream				Downstream						
feet	inches		Q(cfs)	Station	Rim	HGL	Velocity	Invert	Station	Rim	HGL	Velocity	Invert	
				SDMH					OUTFALL					
90.0	60	211.0		1090	5408.65	5404.23	13.66	5400.56	1000	5410.00	5403.97	12.62	5400.00	
				SDMH					SDMH					
305.0	60	211.0		1395	5414.60	5405.22	19.27	5402.49	1090	5408.65	5404.23	13.66	5400.56	
				SDMH drop 1					SDMH					
100.0	48	211.0		1495	5432.26	5410.12	12.15	5405.99	1395	5414.60	5405.22	19.27	5402.49	
				SDMH drop 2					SDMH drop 1					
180.0	48	211.0		1675	5456.64	5429.02	16.95	5425.15	1495	5432.26	5421.73	21.82	5418.85	
				SDMH drop 3					SDMH drop 2					
180.0	48	211.0		1855	5469.06	5445.38	16.95	5441.50	1675	5456.64	5438.02	21.88	5435.15	
				SDMH					SDMH drop 3					
330.0	48	211.0		2185	5482.18	5467.06	23.53	5464.37	1855	5469.06	5455.68	23.53	5453.00	
				SDMH					SDMH					
405.0	48	211.0		2590	5493.98	5481.09	22.81	5478.33	2185	5482.18	5467.06	23.53	5464.37	
				SDMH					SDMH					
225.0	48	211.0		2815	5508.00	5489.05	20.77	5486.04	2590	5493.98	5481.09	22.81	5478.33	
				OUTFALL					SDMH					
116.0	48	211.0		2931	5503.90	5493.88	16.95	5490.00	2815	5508.00	5489.05	20.77	5486.04	
												Drop Manholes		
												Head Loss		
												upstream	dnstream	delta H
												5412.41	5429.49	17.08
												5433.48	5445.83	12.34
												5449.84	5464.71	14.87

Estimated drop manhole losses = (upstream) - (downstream + manhole loss): $Y(1) + (V(1)^2/2g) - (Y(2) + (V(2)^2/2g) + (0.05)(V^2/2g))$

f://18033.../projects/drainage/SSCAFCA Reg Pond Drop Manhole.../Table 5 Summary of Public Storm Drain

11/2/2020

Table 5
Summary of Offsite Regional
Pond Storm Drain

Drop Manholes	
Head Loss	
upstream	dnstream
5412.41	5429.49
5433.48	5445.83
5449.84	5464.71
	14.87

T1 Los Diamantes Development

T2 Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R1

T3 100 Year Storm Event 9-04-2020

SO 1000.0005400.000 1 \$402.000

R 1090.0005400.560 1 .013 .000 .000 1

R 1395.0005402.490 1 .013 .000 .000 1

R 1495.0005405.990 2 .013 .000 .000 1

SH 1495.0005405.990 2 \$411.000

CD 1 4 1 .000 5.000 .000 .000 .000 .00

CD 2 4 1 .000 5.000 .000 .000 .000 .00

Q 211.000 .0

FILE: ld_reg_pond_r1.wsw

W S P G W - EDIT LISTING - Version 14.05

Date: 9- 4-2020 Time: 3:39: 9

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			5.000															
CD	2	4	1			5.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS -

Los Diamantes Development

HEADING LINE NO 2 IS -

Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R1

HEADING LINE NO 3 IS -

100 Year Storm Event 9-04-2020

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 2

ELEMENT NO 1 IS A SYSTEM OUTLET

U/S DATA STATION INVERT SECT

1000.000 5400.000 1

ELEMENT NO 2 IS A REACH

U/S DATA STATION INVERT SECT

1090.000 5400.560 1

ELEMENT NO 3 IS A REACH

U/S DATA STATION INVERT SECT

1395.000 5402.490 1

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 4 IS A REACH

U/S DATA STATION INVERT SECT

1495.000 5405.990 2

ELEMENT NO 5 IS A SYSTEM HEADWORKS

U/S DATA STATION INVERT SECT

1495.000 5405.990 2

W S ELEV

5402.000

ANG PT MAN H
.000 1

ANGLE
.000

RADIUS
.000

ANG PT MAN H
.000 1

ANGLE
.000

RADIUS
.000

ANG PT MAN H
.000 1

ANGLE
.000

RADIUS
.000

W S ELEV
5411.000

WATER SURFACE PROFILE LISTING

Date: 9-4-2020 Time: 3:17:38

Los Diamantes Development

Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R1
100 Year Storm Event 9-04-2020

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					SP Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	5400.000	3.971	5403.971	211.00	12.62	2.47	5406.44	.00	4.13	4.04	5.000	.000	.00	1 .0
36.227	.0062					.0072	.26	3.97	1.09	4.23	.013	.00	.00	PIPE
1036.227	5400.226	3.843	5404.069	211.00	13.03	2.64	5406.70	.00	4.13	4.22	5.000	.000	.00	1 .0
53.773	.0062					.0079	.42	3.84	1.17	4.23	.013	.00	.00	PIPE
1090.000	5400.560	3.669	5404.229	211.00	13.66	2.90	5407.13	.00	4.13	4.42	5.000	.000	.00	1 .0
11.887	.0063					.0084	.10	3.67	1.29	4.19	.013	.00	.00	PIPE
1101.887	5400.635	3.633	5404.268	211.00	13.81	2.96	5407.23	.00	4.13	4.46	5.000	.000	.00	1 .0
51.589	.0063					.0090	.47	3.63	1.31	4.19	.013	.00	.00	PIPE
1153.476	5400.961	3.476	5404.438	211.00	14.48	3.26	5407.69	.00	4.13	4.60	5.000	.000	.00	1 .0
47.414	.0063					.0101	.48	3.48	1.43	4.19	.013	.00	.00	PIPE
1200.890	5401.262	3.330	5404.592	211.00	15.19	3.58	5408.17	.00	4.13	4.72	5.000	.000	.00	1 .0
44.215	.0063					.0114	.50	3.33	1.56	4.19	.013	.00	.00	PIPE
1245.105	5401.542	3.195	5404.737	211.00	15.93	3.94	5408.68	.00	4.13	4.80	5.000	.000	.00	1 .0
40.977	.0063					.0128	.53	3.20	1.69	4.19	.013	.00	.00	PIPE
1286.082	5401.801	3.067	5404.868	211.00	16.70	4.33	5409.20	.00	4.13	4.87	5.000	.000	.00	1 .0
38.487	.0063					.0145	.56	3.07	1.83	4.19	.013	.00	.00	PIPE
1324.569	5402.044	2.947	5404.992	211.00	17.52	4.77	5409.76	.00	4.13	4.92	5.000	.000	.00	1 .0
36.250	.0063					.0164	.59	2.95	1.97	4.19	.013	.00	.00	PIPE

Program Package Serial Number: 1454

WATER SURFACE PROFILE LISTING

Date: 9- 4-2020 Time: 3:17:38

Los Diamantes Development

Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R1

100 Year Storm Event 9-04-2020

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 or I.D.	Base Wt	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Proude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1360.819	5402.274	2.834	5405.108	211.00	18.37	5.24	5410.35	.00	4.13	4.96	5.000	.000	.00	1 .0
34.181	.0063					.0185	.63	2.83	2.13	4.19	.013	.00	.00	PIPE
1395.000	5402.490	2.727	5405.217	211.00	19.27	5.77	5410.98	.00	4.13	4.98	5.000	.000	.00	1 .0
17.568	.0350					.0189	.33	2.73	2.29	2.30	.013	.00	.00	PIPE
1412.568	5403.105	2.797	5405.902	211.00	18.67	5.41	5411.31	.00	4.13	4.96	5.000	.000	.00	1 .0
21.163	.0350					.0170	.36	2.80	2.18	2.30	.013	.00	.00	PIPE
1433.731	5403.846	2.909	5406.755	211.00	17.80	4.92	5411.67	.00	4.13	4.93	5.000	.000	.00	1 .0
16.570	.0350					.0151	.25	2.91	2.02	2.30	.013	.00	.00	PIPE
1450.301	5404.426	3.026	5407.452	211.00	16.97	4.47	5411.92	.00	4.13	4.89	5.000	.000	.00	1 .0
13.001	.0350					.0133	.17	3.03	1.88	2.30	.013	.00	.00	PIPE
1463.302	5404.881	3.151	5408.032	211.00	16.18	4.07	5412.10	.00	4.13	4.83	5.000	.000	.00	1 .0
10.213	.0350					.0118	.12	3.15	1.74	2.30	.013	.00	.00	PIPE
1473.515	5405.238	3.284	5408.522	211.00	15.43	3.70	5412.22	.00	4.13	4.75	5.000	.000	.00	1 .0
7.924	.0350					.0105	.08	3.28	1.60	2.30	.013	.00	.00	PIPE
1481.439	5405.516	3.426	5408.942	211.00	14.71	3.36	5412.30	.00	4.13	4.64	5.000	.000	.00	1 .0
5.948	.0350					.0094	.06	3.43	1.48	2.30	.013	.00	.00	PIPE
1487.387	5405.724	3.579	5409.303	211.00	14.03	3.05	5412.36	.00	4.13	4.51	5.000	.000	.00	1 .0
4.195	.0350					.0084	.04	3.58	1.35	2.30	.013	.00	.00	PIPE

T1 Los Diamantes Development

T2 Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R2

T3 100 Year Storm Event 9-04-2020

SO 1495.0005418.850 1 5418.850

R 1675.0005425.150 2 .013

SH 1675.0005425.150 2 5425.150

CD 1 4 1 .000 5.000 .000 .000 .000 .00

CD 2 4 1 .000 4.000 .000 .000 .000 .00

Q 211.000 .0

0

.000 .000 1

WATER SURFACE PROFILE LISTING

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T1 Los Diamantes Development

T2 Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R3

T3 100 Year Storm Event 9-04-2020

SO 1675.0005435.150 2 5435.150

R 1855.0005441.500 2 .013

SH 1855.0005441.500 2 5441.500

CD 1 4 1 .000 5.000 .000 .000 .000 .00

CD 2 4 1 .000 4.000 .000 .000 .000 .00

Q 211.000 .0

0

.000 .000 1

T1 Los Diamantes Development

T2 Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R4

T3 100 Year Storm Event 9-04-2020

SO	1855.0005453.000	2		5453.000					
R	2185.0005464.370	2	.013		.000	.000	1		
R	2590.0005478.330	2	.013		.000	.000	1		
R	2815.0005486.040	2	.013		.000	45.000	1		
R	2931.0005490.000	2	.013		.000	.000	1		
SH	2931.0005490.000	2		5490.000					
CD	1 4 1	.000	5.000	.000	.000	.000	.00		
CD	2 4 1	.000	4.000	.000	.000	.000	.00		
Q	211.000	.0							

Date: 9- 4-2020 Time: 1:37:33

WATER SURFACE PROFILE LISTING

Los Diamantes Development

Regional Pond Outfall Storm Drain FILE:LD_REG_POND_R4

100 Year Storm Event 9-04-2020

Station	Invert Elev	Depth (Ft)	Water Elev	Q (CFS)	Vel (FPS)	Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top 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		2R	Type Ch
1855.000	5453.000	2.685	5455.685	211.00	23.53	8.60	5464.28	.00	3.87	3.76	4.000	.000	.00	1 .0
79.021	.0345					.0345	2.72	2.68	2.68	2.68	.013	.00	.00	PIPE
1934.021	5455.723	2.685	5458.408	211.00	23.53	8.60	5467.00	.00	3.87	3.76	4.000	.000	.00	1 .0
250.979	.0345					.0345	8.65	2.68	2.68	2.68	.013	.00	.00	PIPE
2185.000	5464.370	2.685	5467.055	211.00	23.53	8.60	5475.65	.00	3.87	3.76	4.000	.000	.00	1 .0
51.943	.0345					.0345	1.79	2.68	2.68	2.68	.013	.00	.00	PIPE
2236.943	5466.161	2.685	5468.845	211.00	23.53	8.60	5477.44	.00	3.87	3.76	4.000	.000	.00	1 .0
353.057	.0345					.0332	11.73	2.68	2.68	2.68	.013	.00	.00	PIPE
2590.000	5478.330	2.760	5481.090	211.00	22.81	8.08	5489.17	.00	3.87	3.70	4.000	.000	.00	1 .0
149.893	.0343					.0303	4.54	2.76	2.54	2.69	.013	.00	.00	PIPE
2739.893	5483.466	2.880	5486.346	211.00	21.78	7.37	5493.71	.00	3.87	3.59	4.000	.000	.00	1 .0
75.107	.0343					.0271	2.04	2.88	2.34	2.69	.013	.00	.00	PIPE
2815.000	5486.040	3.015	5489.054	211.00	20.77	6.70	5495.75	.00	3.87	3.45	4.000	.000	.00	1 .0
14.299	.0341					.0253	.36	3.01	2.13	2.69	.013	.00	.00	PIPE
2829.299	5486.528	3.051	5489.579	211.00	20.51	6.53	5496.11	.00	3.87	3.40	4.000	.000	.00	1 .0
42.488	.0341					.0237	1.01	3.05	2.08	2.69	.013	.00	.00	PIPE
2871.788	5487.979	3.203	5491.182	211.00	19.56	5.94	5497.12	.00	3.87	3.20	4.000	.000	.00	1 .0
29.104	.0341					.0215	.63	3.20	1.88	2.69	.013	.00	.00	PIPE

