

T1 Ranch-Fort Apache Storm Drain Project
 T2 Main Storm Drain - Mannings's N = 0.013
 T3 By FKR, 4/23/2013 Checked By JSD, 4/28/2013

SO	800.0002588.104	1			2591.440			
R	911.1702590.528	1	.013			.000		
R	1012.1902592.730	1	.013			.000		
TS	1018.9402592.860	12	.013			.000		
JX	1018.9502592.870	12 10	.013	6.000	2593.870	80.0	.000	
TS	1062.1602593.770	3	.013			.000		
JX	1465.0002602.180	3 6	.013	5.000	2603.170	80.0	.000	
R	1850.0002610.200	3	.013			.000		
R	2059.3632613.390	3	.013			.000	.000 0	
R	2216.3622615.790	3	.013			89.954	.000 0	
R	2250.0002616.300	3	.013			.000	.000 0	
R	2612.5732621.190	3	.013			.000	.000 0	
R	2682.1602622.130	3	.013			39.870	.000 0	
R	2751.7502623.070	3	.013			-39.870	.000 0	
R	2770.0002623.360	3	.013			.000	.000 0	
JX	2778.9302623.500	3 4	.013	70.000	2624.000	-45.0	.000	.000
R	2830.0002624.300	3	.013			.000	.000 0	
JX	2846.9402624.570	3 10	.013	25.000	2625.070	-63.0	.000	.000
R	3218.4002630.400	3	.013			.000	.000 0	
R	3251.9002631.070	3	.013			-19.193	.000 0	
R	3286.3202631.760	3	.013			19.721	.000 0	
R	3400.0002634.030	3	.013			.000		
JX	3440.0002634.830	3 5	.013	210.000	2634.830	-30.0	.000	
R	3455.4902635.140	3	.013			.000		
R	3499.2802636.020	3	.013			8.364		
R	3544.8302636.400	3	.013			-8.718		
JX	3544.9302636.400	3 9	.013	6.000	2636.900	-80.0	.000	
R	3600.0002636.860	3	.013			.000		
R	4000.0002640.180	3	.013			.000		
R	4400.0002643.500	3	.013			.000		
R	4803.8502646.850	3	.013			.000		
JX	4806.7802646.890	3 7	.013	123.000	2647.390	-64.0	.000	
R	5470.0002655.420	3	.013			.000		
JX	5486.7002655.630	3 6	.013	26.000	2656.130	-45.0		
R	5578.2502656.810	3	.013			.000	.000 0	
R	5994.1802660.970	3	.013			.000	.000 0	
R	6064.3002661.660	3	.013			-25.611	.000 0	
JX	6064.4002661.670	3 11	.013	185.000	2661.670	6.0		
R	6064.5002661.680	8	.013			.000	.000 0	
R	6080.9602661.840	8	.013			-6.140	.000 0	
R	6135.1302663.140	8	.013			-23.997	.000 0	
R	6234.9902665.540	8	.013			.000	.000 0	
SH	6400.0002669.500	8			2673.760			
CD	1 2 0	.000	7.000	14.000	.000	.000	.00	
CD	2 2 0	.000	7.000	12.000	.000	.000	.00	
CD	3 3 0	.000	6.000	12.000	.000	.000	.00	
CD	4 4 1	.000	3.000	.000	.000	.000	.00	
CD	5 3 0	.000	4.000	4.000	.000	.000	.00	
CD	6 4 1	.000	2.500	.000	.000	.000	.00	
CD	7 4 1	.000	4.000	.000	.000	.000	.00	
CD	8 3 0	.000	6.000	7.000	.000	.000	.00	
CD	9 4 1	.000	28	.013		-33.124	.000 0	
R	6400.0002669.500	8.000	.000	.000	.000	.00		
CD	10 4 1	.000	1.500	.000	.000	.000	.00	
CD	11 3 0	.000	5.000	5.000	.000	.000	.00	
CD	12 2 0	.000	6.870	13.730	.000	.000	.00	
Q	815.000	.0						

Ranch-Fort Apache Storm Drain Project

Main Storm Drain - Mannings's N = 0.013

By FKR, 4/23/2013 Checked By JSD, 4/28/2013

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top	Height/Dia.-FT	Base Wt I.D.	ZL	No Wth
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
800.000	2588.104	3.526	2591.630	1471.00	29.80	13.79	2605.42	.00	7.00	14.00	7.000	14.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
111.170	.0218					.0218	2.43	3.53	2.80	3.53	.013	.00	.00	RECTANG
911.170	2590.528	3.525	2594.053	1471.00	29.81	13.80	2607.85	.00	7.00	14.00	7.000	14.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
101.020	.0218					.0218	2.21	3.53	2.80	3.53	.013	.00	.00	RECTANG
1012.190	2592.730	3.524	2596.254	1471.00	29.81	13.80	2610.06	.00	7.00	14.00	7.000	14.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
TRANS STR	.0193					.0217	.15	3.52	2.80		.013	.00	.00	RECTANG
1018.940	2592.860	3.601	2596.461	1471.00	29.75	13.75	2610.21	.00	7.09	13.73	6.870	13.730	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	1.0000					.0217	.00	3.60	2.76		.013	.00	.00	RECTANG
1018.950	2592.870	3.570	2596.440	1465.00	29.89	13.87	2610.31	.00	7.07	13.73	6.870	13.730	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
TRANS STR	.0208					.0209	.90	3.57	2.79		.013	.00	.00	RECTANG
1062.160	2593.770	4.166	2597.936	1465.00	29.31	13.34	2611.27	.00	6.00	12.00	6.000	12.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.0209					.0191	7.68	4.17	2.53		.013	.00	.00	BOX
1465.000	2602.180	4.274	2606.454	1460.00	28.47	12.58	2619.04	.00	6.00	12.00	6.000	12.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
232.543	.0208					.0173	4.03	4.27	2.43	4.08	.013	.00	.00	BOX
1697.543	2607.024	4.453	2611.477	1460.00	27.32	11.59	2623.07	.00	6.00	12.00	6.000	12.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
152.457	.0208					.0153	2.34	4.45	2.28	4.08	.013	.00	.00	BOX
1850.000	2610.200	4.670	2614.870	1460.00	26.05	10.54	2625.41	.00	6.00	12.00	6.000	12.000	.00	0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
209.363	.0152					.0140	2.94	4.67	2.12	4.57	.013	.00	.00	BOX

Program Package Serial Number: 1455

WATER SURFACE PROFILE LISTING

Date: 4-29-2013 Time: 2: 6:36

Ranch-Fort Apache Storm Drain Project

Main Storm Drain - Mannings's N = 0.013

By FKR, 4/23/2013 Checked By JSD, 4/28/2013

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 Prs/Pip	Wth
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type	Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2059.363	2613.390	4.744	2618.134	1460.00	25.65	10.21	2628.35	6.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
156.999	.0153					.0134	2.10	6.00	2.08	4.56	.013	.00	.00	BOX	
2216.362	2615.790	4.838	2620.628	1460.00	25.15	9.82	2630.45	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
33.638	.0152					.0129	.43	4.84	2.01	4.58	.013	.00	.00	BOX	
2250.000	2616.300	4.863	2621.163	1460.00	25.02	9.72	2630.88	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
362.573	.0135					.0123	4.47	4.86	2.00	4.78	.013	.00	.00	BOX	
2612.573	2621.190	5.011	2626.201	1460.00	24.28	9.15	2635.35	6.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
69.587	.0135					.0117	.81	6.00	1.91	4.77	.013	.00	.00	BOX	
2682.160	2622.130	5.060	2627.190	1460.00	24.04	8.98	2636.17	6.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
69.590	.0135					.0113	.79	6.00	1.88	4.77	.013	.00	.00	BOX	
2751.750	2623.070	5.122	2628.192	1460.00	23.76	8.76	2636.95	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
18.250	.0159					.0110	.20	5.12	1.85	4.50	.013	.00	.00	BOX	
2770.000	2623.360	5.159	2628.519	1460.00	23.59	8.64	2637.16	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.0157					.0122	.11	5.16	1.83		.013	.00	.00	BOX	
2778.930	2623.500	4.611	2628.111	1390.00	25.12	9.80	2637.91	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
51.070	.0157					.0133	.68	4.61	2.06	4.36	.013	.00	.00	BOX	
2830.000	2624.300	4.648	2628.948	1390.00	24.92	9.64	2638.59	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.0159					.0136	.23	4.65	2.04		.013	.00	.00	BOX	

Program Package Serial Number: 1455

WATER SURFACE PROFILE LISTING

Date: 4-29-2013 Time: 2: 6:36

Ranch-Fort Apache Storm Drain Project

Main Storm Drain - Mannings's N = 0.013

By FKR, 4/23/2013 Checked By JSD, 4/28/2013

```

*****
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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3400.000 | 2634.030 | 6.000 | 2640.030 | 1365.00 | 18.96 | 5.58 | 2645.61 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
JUNCT STR .0200 |      |      |      |      |      | .0078 | .31 | 6.00 | 1.36 |      | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
3440.000 | 2634.830 | 7.715 | 2642.545 | 1155.00 | 16.04 | 4.00 | 2646.54 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
        15.490 | .0200 |      |      |      |      | .0078 | .12 | 7.72 | 1.15 | 3.51 | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
3455.490 | 2635.140 | 7.527 | 2642.667 | 1155.00 | 16.04 | 4.00 | 2646.66 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
        43.790 | .0201 |      |      |      |      | .0078 | .34 | .00 | 1.15 | 3.50 | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
3499.280 | 2636.020 | 7.232 | 2643.252 | 1155.00 | 16.04 | 4.00 | 2647.25 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
        45.550 | .0083 |      |      |      |      | .0078 | .36 | .00 | 1.15 | 4.80 | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
3544.830 | 2636.400 | 7.457 | 2643.857 | 1155.00 | 16.04 | 4.00 | 2647.85 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
JUNCT STR .0000 |      |      |      |      |      | .0077 | .00 | 7.46 | 1.15 |      | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
3544.930 | 2636.400 | 7.540 | 2643.940 | 1149.00 | 15.96 | 3.95 | 2647.89 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
        55.070 | .0084 |      |      |      |      | .0077 | .43 | 7.54 | 1.15 | 4.77 | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
3600.000 | 2636.860 | 7.506 | 2644.366 | 1149.00 | 15.96 | 3.95 | 2648.32 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
        400.000 | .0083 |      |      |      |      | .0077 | 3.09 | 7.51 | 1.15 | 4.79 | .013 | .00 | .00 | BOX
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
4000.000 | 2640.180 | 7.280 | 2647.460 | 1149.00 | 15.96 | 3.95 | 2651.41 | .00 | 6.00 | 12.00 | 6.000 | 12.000 | .00 | 0 .0
        | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|- | -|-
        400.000 | .0083 |      |      |      |      | .0077 | 3.09 | 7.28 | 1.15 | 4.79 | .013 | .00 | .00 | BOX

```

Program Package Serial Number: 1455

WATER SURFACE PROFILE LISTING

Date: 4-29-2013 Time: 2: 6:36

Ranch-Fort Apache Storm Drain Project

Main Storm Drain - Mannings's N = 0.013

By FKR, 4/23/2013 Checked By JSD, 4/28/2013

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 Prs/Pip	Wth
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type	Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
4400.000	2643.500	7.054	2650.554	1149.00	15.96	3.95	2654.51	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
403.850	.0083					.0077	3.12	7.05	1.15	4.79	.013	.00	.00	BOX	
4803.850	2646.850	6.828	2653.678	1149.00	15.96	3.95	2657.63	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.0136					.0062	.02	6.83	1.15		.013	.00	.00	BOX	
4806.780	2646.890	8.183	2655.073	1026.00	14.25	3.15	2658.23	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
61.431	.0129					.0062	.38	8.18	1.03	3.77	.013	.00	.00	BOX	
4868.210	2647.680	7.771	2655.451	1026.00	14.25	3.15	2658.60	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
HYDRAULIC JUMP															
4868.210	2647.680	3.842	2651.522	1026.00	22.25	7.69	2659.21	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
262.553	.0129					.0118	3.10	3.84	2.00	3.77	.013	.00	.00	BOX	
5130.763	2651.057	3.930	2654.987	1026.00	21.76	7.35	2662.34	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
222.400	.0129					.0107	2.38	3.93	1.93	3.77	.013	.00	.00	BOX	
5353.163	2653.917	4.122	2658.039	1026.00	20.74	6.68	2664.72	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
116.837	.0129					.0094	1.10	4.12	1.80	3.77	.013	.00	.00	BOX	
5470.000	2655.420	4.323	2659.743	1026.00	19.78	6.07	2665.82	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.0126					.0093	.16	4.32	1.68		.013	.00	.00	BOX	
5486.700	2655.630	4.058	2659.688	1000.00	20.54	6.55	2666.24	.00	6.00	12.00	6.000	12.000	.00	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
91.550	.0129					.0094	.86	4.06	1.80	3.70	.013	.00	.00	BOX	

WATER SURFACE PROFILE LISTING

Date: 4-29-2013 Time: 2: 6:36

Ranch-Fort Apache Storm Drain Project

Main Storm Drain - Mannings's N = 0.013

By FKR, 4/23/2013 Checked By JSD, 4/28/2013

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 With Prs/Pip	
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
5578.250	2656.810	4.212	2661.022	1000.00	19.79	6.08	2667.10	.00	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
122.605	.0100					.0087	1.07	4.21	1.70	4.05	.013	.00	.00	BOX	
5700.855	2658.036	4.300	2662.336	1000.00	19.38	5.83	2668.17	.00	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
154.424	.0100					.0079	1.22	4.30	1.65	4.05	.013	.00	.00	BOX	
5855.279	2659.581	4.510	2664.091	1000.00	18.48	5.30	2669.39	.00	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
85.806	.0100					.0069	.60	4.51	1.53	4.05	.013	.00	.00	BOX	
5941.085	2660.439	4.730	2665.169	1000.00	17.62	4.82	2669.99	.00	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
53.095	.0100					.0061	.32	4.73	1.43	4.05	.013	.00	.00	BOX	
5994.181	2660.970	4.961	2665.931	1000.00	16.80	4.38	2670.31	.67	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
34.265	.0098					.0054	.18	5.63	1.33	4.07	.013	.00	.00	BOX	
6028.446	2661.307	5.198	2666.505	1000.00	16.03	3.99	2670.50	.61	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
21.298	.0098					.0047	.10	5.81	1.24	4.07	.013	.00	.00	BOX	
6049.744	2661.517	5.452	2666.969	1000.00	15.29	3.63	2670.60	6.00	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
11.199	.0098					.0041	.05	6.00	1.15	4.07	.013	.00	.00	BOX	
		----- WARNING - Flow depth near top of box conduit -----													
6060.943	2661.627	5.718	2667.345	1000.00	14.57	3.30	2670.64	6.00	6.00	12.00	6.000	12.000	.00	0 .0	
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
3.356	.0098					.0036	.01	6.00	1.07	4.07	.013	.00	.00	BOX	
		----- WARNING - Flow depth near top of box conduit -----													

WATER SURFACE PROFILE LISTING

Date: 4-29-2013 Time: 2: 6:36

Ranch-Fort Apache Storm Drain Project

Main Storm Drain - Mannings's N = 0.013

By FKR, 4/23/2013 Checked By JSD, 4/28/2013

*****															*****	
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		
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****		
6064.300	2661.660	5.998	2667.658	1000.00	13.89	3.00	2670.66	.00	6.00	12.00	6.000	12.000	.00	0 .0		
JUNCT STR	.1000					.0039	.00	6.00	1.00		.013	.00	.00	BOX		
----- WARNING - Flow depth near top of box conduit -----																
6064.400	2661.670	7.415	2669.085	815.00	11.32	1.99	2671.07	.00	5.23	12.00	6.000	12.000	.00	0 .0		
6064.400	2661.670	4.308	2665.978	815.00	27.03	11.34	2677.32	.00	6.00	7.00	6.000	7.000	.00	0 .0		
.100	.1000					.0232	.00	4.31	2.29	2.50	.013	.00	.00	BOX		
6064.500	2661.680	4.310	2665.990	815.00	27.02	11.33	2677.32	.52	6.00	7.00	6.000	7.000	.00	0 .0		
16.460	.0097					.0236	.39	4.83	2.29	6.00	.013	.00	.00	BOX		
6080.960	2661.840	4.257	2666.097	815.00	27.35	11.61	2677.71	1.26	6.00	7.00	6.000	7.000	.00	0 .0		
54.170	.0240					.0240	1.30	5.51	2.34	4.26	.013	.00	.00	BOX		
6135.130	2663.140	4.257	2667.397	815.00	27.35	11.61	2679.01	.94	6.00	7.00	6.000	7.000	.00	0 .0		
99.860	.0240					.0240	2.39	5.20	2.34	4.25	.013	.00	.00	BOX		
6234.990	2665.540	4.258	2669.798	815.00	27.34	11.61	2681.41	.00	6.00	7.00	6.000	7.000	.00	0 .0		
165.010	.0240					.0239	3.95	4.26	2.34	4.26	.013	.00	.00	BOX		
6400.000	2669.500	4.260	2673.760	815.00	27.33	11.60	2685.36	.00	6.00	7.00	6.000	7.000	.00	0 .0		