

T1 Ranch-Fort Apache Storm Drain Project  
 T2 Severence - Add 5'x5' RCB to downstream end  
 T3 FKR 05/09/2013, Checked By:JSD 05/09/2013

SO	9514.7602661.670	9			2669.085				
R	9531.7402661.840	9	.013			.000	.000	0	
R	9575.5202664.570	9	.013			.000	.000	0	
R	9606.7702666.510	9	.013			19.895	.000	0	
R	9616.8902667.140	9	.013			.000	.000	0	
R	9663.1802667.300	9	.013			.000	.000	0	
WX	9663.1802667.300	1	.500						
JX	9666.9702667.320	1	5	.013	27.000	2668.630	-88.0	.000	
JX	9770.5602667.570	1	2	.013	5.000	2668.630	-90.0	.000	
R	10012.1802669.210	1		.013			.000	.000	0
JX	10017.1802669.310	1	2	.013	6.000	2671.690	-90.0	.000	
R	10227.6002671.230	1		.013			.000	.000	1
R	10246.0902671.340	1		.013			.000	.000	0
JX	10251.0902671.440	1	2	.013	6.000	2673.720	-90.0	.000	
R	10505.9102672.240	1		.013			.000	.000	0
JX	10510.9102672.440	1	2	.013	5.000	2675.740	-90.0	.000	
R	10526.8702672.590	1		.013			.000	.000	1
R	10753.6802674.720	1		.013			.000	.000	0
JX	10758.6802674.920	1	2	.013	7.000	2677.770	-90.0	.000	
R	10872.5202675.250	1		.013			.000	.000	0
JX	10877.5202675.520	1	6	.013	69.000	2675.520	44.93	.000	
R	10877.6202675.520	3		.013			.000	-44.930	0
R	10877.7202675.530	3		.013			.000	.000	0
R	10916.0402675.860	3		.013			.000	-45.000	1
R	10956.2102676.220	3		.013			.000	.000	0
JX	10961.2102676.220	3	2	.013	1.000	2676.440	.000	90.000	.000
R	10976.2102676.340	3		.013			.000	.000	0
JX	10981.2102676.440	3	2	2.013	4.000	4.0002678.8402676.440	60.0-60.0	.000	
R	11066.8602677.980	3		.013			.000	.000	0
JX	11071.8602678.080	3	4	4.013	13.000	13.0002678.0802678.340	60.0-60.0	.000	
R	11125.4502680.140	3		.013			.000	.000	0
JX	11130.4502680.640	3	4	.013	24.000	2680.240	60.0	.000	
R	11159.6502683.480	7		.013			.000	.000	0
JX	11164.6502685.480	7	4	.013	24.000	2684.980	-60.0	.000	
R	11169.6502686.950	8		.013			.000	.000	0
SH	11169.6502686.950	8				2687.770			
CD	1	4	1	.000	5.000	.000	.000	.000	.00
CD	2	4	1	.000	1.500	.000	.000	.000	.00
CD	3	4	1	.000	4.000	.000	.000	.000	.00
CD	4	4	1	.000	2.000	.000	.000	.000	.00
CD	5	4	1	.000	2.500	.000	.000	.000	.00
CD	6	4	1	.000	5.000	.000	.000	.000	.00
CD	7	4	1	.000	3.500	.000	.000	.000	.00
CD	8	4	1	.000	1.500	.000	.000	.000	.00
CD	9	3	0	.000	5.000	5.000	.000	.000	.00
Q				14.000	.0				

WATER SURFACE PROFILE LISTING

Date: 5- 9-2013 Time: 1:36:23

Ranch-Fort Apache Storm Drain Project  
Severence - Add 5'x5' RCB to downstream end  
FKR 05/09/2013, Checked By:JSD 05/09/2013

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
9514.760	2661.670	7.415	2669.085	222.00	8.88	1.22	2670.31	.00	3.94	5.00	5.000	5.000	.00	0	.0
16.980	.0100					.0045	.08	7.42	.70	3.12	.013	.00	.00	BOX	
9531.740	2661.840	7.321	2669.161	222.00	8.88	1.22	2670.39	.00	3.94	5.00	5.000	5.000	.00	0	.0
18.554	.0624					.0045	.08	7.32	.70	1.59	.013	.00	.00	BOX	
9550.294	2662.997	6.247	2669.244	222.00	8.88	1.22	2670.47	.00	3.94	5.00	5.000	5.000	.00	0	.0
HYDRAULIC JUMP															
9550.294	2662.997	2.133	2665.130	222.00	20.81	6.73	2671.86	.00	3.94	5.00	5.000	5.000	.00	0	.0
.073	.0624					.0275	.00	2.13	2.51	1.59	.013	.00	.00	BOX	
9550.367	2663.002	2.133	2665.135	222.00	20.81	6.73	2671.86	.00	3.94	5.00	5.000	5.000	.00	0	.0
13.888	.0624					.0258	.36	2.13	2.51	1.59	.013	.00	.00	BOX	
9564.255	2663.868	2.237	2666.105	222.00	19.85	6.12	2672.22	.00	3.94	5.00	5.000	5.000	.00	0	.0
11.265	.0624					.0227	.26	2.24	2.34	1.59	.013	.00	.00	BOX	
9575.520	2664.570	2.347	2666.917	222.00	18.92	5.56	2672.48	.62	3.94	5.00	5.000	5.000	.00	0	.0
6.623	.0621					.0203	.13	2.96	2.18	1.59	.013	.00	.00	BOX	
9582.143	2664.981	2.425	2667.406	222.00	18.31	5.21	2672.61	.58	3.94	5.00	5.000	5.000	.00	0	.0
8.103	.0621					.0183	.15	3.00	2.07	1.59	.013	.00	.00	BOX	
9590.245	2665.484	2.543	2668.028	222.00	17.46	4.73	2672.76	.53	3.94	5.00	5.000	5.000	.00	0	.0
6.657	.0621					.0161	.11	3.07	1.93	1.59	.013	.00	.00	BOX	

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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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
9596.902 | 2665.897 | 2.668 | 2668.565 | 222.00 | 16.64 | 4.30 | 2672.87 | .48 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
5.448 | .0621 | | | | | .0142 | .08 | 3.15 | 1.80 | 1.59 | .013 | .00 | .00 | BOX
9602.351 | 2666.236 | 2.798 | 2669.033 | 222.00 | 15.87 | 3.91 | 2672.94 | .43 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
4.419 | .0621 | | | | | .0125 | .06 | 3.23 | 1.67 | 1.59 | .013 | .00 | .00 | BOX
9606.769 | 2666.510 | 2.934 | 2669.444 | 222.00 | 15.13 | 3.56 | 2673.00 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
1.480 | .0622 | | | | | .0115 | .02 | 2.93 | 1.56 | 1.59 | .013 | .00 | .00 | BOX
9608.249 | 2666.602 | 2.990 | 2669.592 | 222.00 | 14.85 | 3.42 | 2673.02 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
3.199 | .0622 | | | | | .0105 | .03 | 2.99 | 1.51 | 1.59 | .013 | .00 | .00 | BOX
9611.448 | 2666.801 | 3.136 | 2669.937 | 222.00 | 14.16 | 3.11 | 2673.05 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
2.456 | .0622 | | | | | .0093 | .02 | 3.14 | 1.41 | 1.59 | .013 | .00 | .00 | BOX
9613.904 | 2666.954 | 3.289 | 2670.243 | 222.00 | 13.50 | 2.83 | 2673.07 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
1.792 | .0622 | | | | | .0082 | .01 | 3.29 | 1.31 | 1.59 | .013 | .00 | .00 | BOX
9615.696 | 2667.066 | 3.449 | 2670.515 | 222.00 | 12.87 | 2.57 | 2673.09 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
1.193 | .0622 | | | | | .0073 | .01 | 3.45 | 1.22 | 1.59 | .013 | .00 | .00 | BOX
9616.890 | 2667.140 | 3.618 | 2670.758 | 222.00 | 12.27 | 2.34 | 2673.10 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
6.506 | .0035 | | | | | .0070 | .05 | 3.62 | 1.14 | 4.75 | .013 | .00 | .00 | BOX
9623.396 | 2667.162 | 3.547 | 2670.710 | 222.00 | 12.52 | 2.43 | 2673.14 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | | |
18.598 | .0035 | | | | | .0077 | .14 | 3.55 | 1.17 | 4.75 | .013 | .00 | .00 | BOX

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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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
9641.993 2667.227 | 3.382 | 2670.609 | 222.00 | 13.13 | 2.68 | 2673.28 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | |
      21.187 .0035 | | | | | | .0087 | .18 | 3.38 | 1.26 | 4.75 | .013 | .00 | .00 | BOX
9663.180 2667.300 | 3.225 | 2670.525 | 222.00 | 13.77 | 2.94 | 2673.47 | .00 | 3.94 | 5.00 | 5.000 | 5.000 | .00 | 0 | .0
      | | | | | | | | | | | | | | | |
      WALL EXIT
9663.180 2667.300 | 4.224 | 2671.524 | 222.00 | 12.55 | 2.44 | 2673.97 | .00 | 4.22 | 3.62 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      JUNCT STR .0053 | | | | | | .0063 | .02 | 4.22 | 1.00 | .013 | .00 | .00 | PIPE
9666.970 2667.320 | 5.631 | 2672.951 | 195.00 | 9.93 | 1.53 | 2674.48 | .00 | 3.99 | .00 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      JUNCT STR .0024 | | | | | | .0055 | .57 | 5.63 | .00 | .013 | .00 | .00 | PIPE
9770.560 2667.570 | 6.102 | 2673.672 | 190.00 | 9.68 | 1.45 | 2675.13 | .00 | 3.94 | .00 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      241.620 .0068 | | | | | | .0053 | 1.29 | 6.10 | .00 | 3.66 | .013 | .00 | .00 | PIPE
10012.180 2669.210 | 5.748 | 2674.958 | 190.00 | 9.68 | 1.45 | 2676.41 | .00 | 3.94 | .00 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      JUNCT STR .0200 | | | | | | .0052 | .03 | 5.75 | .00 | .013 | .00 | .00 | PIPE
10017.180 2669.310 | 5.855 | 2675.165 | 184.00 | 9.37 | 1.36 | 2676.53 | .00 | 3.88 | .00 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      210.420 .0091 | | | | | | .0050 | 1.05 | 5.85 | .00 | 3.20 | .013 | .00 | .00 | PIPE
10227.600 2671.230 | 5.053 | 2676.283 | 184.00 | 9.37 | 1.36 | 2677.65 | .00 | 3.88 | .00 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      18.490 .0060 | | | | | | .0050 | .09 | 5.05 | .00 | 3.76 | .013 | .00 | .00 | PIPE
10246.090 2671.340 | 5.035 | 2676.375 | 184.00 | 9.37 | 1.36 | 2677.74 | .00 | 3.88 | .00 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | |
      JUNCT STR .0200 | | | | | | .0048 | .02 | 5.04 | .00 | .013 | .00 | .00 | PIPE
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      | 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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
10251.090 2671.440 | 5.135 2676.575 | 178.00 9.07 | 1.28 2677.85 | .00 3.82 | .00 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      254.820 .0031 | | | | | | | | | | | | | | | |
10505.910 2672.240 | 5.525 2677.765 | 178.00 9.07 | 1.28 2679.04 | .00 3.82 | .00 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      JUNCT STR .0400 | | | | | | | | | | | | | | | |
10510.910 2672.440 | 5.489 2677.929 | 173.00 8.81 | 1.21 2679.13 | .00 3.77 | .00 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      15.960 .0094 | | | | | | | | | | | | | | | |
10526.870 2672.590 | 5.470 2678.060 | 173.00 8.81 | 1.21 2679.27 | .00 3.77 | .00 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      94.321 .0094 | | | | | | | | | | | | | | | |
10621.190 2673.476 | 5.000 2678.476 | 173.00 8.81 | 1.21 2679.68 | .00 3.77 | .00 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      64.829 .0094 | | | | | | | | | | | | | | | |
10686.020 2674.085 | 4.536 2678.621 | 173.00 9.24 | 1.33 2679.95 | .00 3.77 | 2.90 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      25.280 .0094 | | | | | | | | | | | | | | | |
10711.300 2674.322 | 4.267 2678.589 | 173.00 9.69 | 1.46 2680.05 | .00 3.77 | 3.54 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      3.618 .0094 | | | | | | | | | | | | | | | |
10714.920 2674.356 | 4.223 2678.579 | 173.00 9.78 | 1.48 2680.06 | .00 3.77 | 3.62 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      HYDRAULIC JUMP | | | | | | | | | | | | | | | |
10714.920 2674.356 | 3.354 2677.710 | 173.00 12.36 | 2.37 2680.08 | .00 3.77 | 4.70 5.000 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      19.420 .0094 | | | | | | | | | | | | | | | |

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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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
10734.340 | 2674.538 | 3.445 | 2677.983 | 173.00 | 11.99 | 2.23 | 2680.22 | .00 | 3.77 | 4.63 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      15.037 | .0094 | | | | | .0062 | .09 | 3.45 | 1.20 | 3.04 | .013 | .00 | .00 | PIPE
10749.380 | 2674.679 | 3.600 | 2678.280 | 173.00 | 11.43 | 2.03 | 2680.31 | .00 | 3.77 | 4.49 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      4.304 | .0094 | | | | | .0056 | .02 | 3.60 | 1.10 | 3.04 | .013 | .00 | .00 | PIPE
10753.680 | 2674.720 | 3.769 | 2678.489 | 173.00 | 10.90 | 1.84 | 2680.33 | .00 | 3.77 | 4.31 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      JUNCT STR | .0400 | | | | | .0046 | .02 | 3.77 | 1.00 | | | .013 | .00 | .00 | PIPE
10758.680 | 2674.920 | 4.167 | 2679.087 | 166.00 | 9.49 | 1.40 | 2680.49 | .00 | 3.69 | 3.73 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      113.840 | .0029 | | | | | .0038 | .43 | 4.17 | .77 | 5.00 | .013 | .00 | .00 | PIPE
10872.520 | 2675.250 | 4.386 | 2679.636 | 166.00 | 9.09 | 1.28 | 2680.92 | .00 | 3.69 | 3.28 | 5.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      JUNCT STR | .0540 | | | | | .0025 | .01 | 4.39 | .68 | | | .013 | .00 | .00 | PIPE
10877.520 | 2675.520 | 5.536 | 2681.056 | 97.00 | 7.72 | .93 | 2681.98 | .00 | 2.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      .101 | .0000 | | | | | .0046 | .00 | 5.54 | .00 | .00 | .013 | .00 | .00 | PIPE
10877.620 | 2675.520 | 5.674 | 2681.194 | 97.00 | 7.72 | .93 | 2682.12 | .00 | 2.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      .100 | .1005 | | | | | .0046 | .00 | 5.67 | .00 | 1.25 | .013 | .00 | .00 | PIPE
10877.720 | 2675.530 | 5.664 | 2681.194 | 97.00 | 7.72 | .93 | 2682.12 | .00 | 2.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      38.320 | .0086 | | | | | .0046 | .17 | 5.66 | .00 | 2.53 | .013 | .00 | .00 | PIPE
10916.040 | 2675.860 | 5.693 | 2681.553 | 97.00 | 7.72 | .93 | 2682.48 | .00 | 2.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | | | | | | | | | | | | | | | | |
      40.170 | .0090 | | | | | .0046 | .18 | 5.69 | .00 | 2.50 | .013 | .00 | .00 | PIPE
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FKR 05/09/2013, Checked By:JSD 05/09/2013

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      | 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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
10956.210 | 2676.220 | 5.516 | 2681.736 | 97.00 | 7.72 | .93 | 2682.66 | .00 | 2.98 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0000 | | | | | .0045 | .02 | 5.52 | .00 | .013 | .00 | .00 | PIPE
10961.210 | 2676.220 | 5.575 | 2681.795 | 96.00 | 7.64 | .91 | 2682.70 | .00 | 2.97 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 15.000 | .0080 | | | | | .0045 | .07 | 5.58 | .00 | 2.58 | .013 | .00 | .00 | PIPE
10976.210 | 2676.340 | 5.522 | 2681.862 | 96.00 | 7.64 | .91 | 2682.77 | .00 | 2.97 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0200 | | | | | .0041 | .02 | 5.52 | .00 | .013 | .00 | .00 | PIPE
10981.210 | 2676.440 | 5.710 | 2682.150 | 88.00 | 7.00 | .76 | 2682.91 | .00 | 2.84 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 85.650 | .0180 | | | | | .0038 | .32 | 5.71 | .00 | 1.90 | .013 | .00 | .00 | PIPE
11066.860 | 2677.980 | 4.491 | 2682.471 | 88.00 | 7.00 | .76 | 2683.23 | .00 | 2.84 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
JUNCT STR | .0200 | | | | | .0028 | .01 | 4.49 | .00 | .013 | .00 | .00 | PIPE
11071.860 | 2678.080 | 5.039 | 2683.119 | 62.00 | 4.93 | .38 | 2683.50 | .00 | 2.37 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 28.412 | .0384 | | | | | .0019 | .05 | 5.04 | .00 | 1.28 | .013 | .00 | .00 | PIPE
11100.270 | 2679.172 | 4.000 | 2683.172 | 62.00 | 4.93 | .38 | 2683.55 | .00 | 2.37 | .00 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 9.049 | .0384 | | | | | .0017 | .02 | 4.00 | .00 | 1.28 | .013 | .00 | .00 | PIPE
11109.320 | 2679.520 | 3.629 | 2683.149 | 62.00 | 5.17 | .42 | 2683.56 | .00 | 2.37 | 2.32 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 4.746 | .0384 | | | | | .0017 | .01 | 3.63 | .40 | 1.28 | .013 | .00 | .00 | PIPE
11114.070 | 2679.702 | 3.413 | 2683.115 | 62.00 | 5.43 | .46 | 2683.57 | .00 | 2.37 | 2.83 | 4.000 | .000 | .00 | 1 | .0
      | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
      | 3.585 | .0384 | | | | | .0018 | .01 | 3.41 | .48 | 1.28 | .013 | .00 | .00 | PIPE
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WATER SURFACE PROFILE LISTING

Date: 5- 9-2013 Time: 1:36:23

Ranch-Fort Apache Storm Drain Project  
Severence - Add 5'x5' RCB to downstream end  
FKR 05/09/2013, Checked By:JSD 05/09/2013

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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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
11117.650 2679.840 | 3.236 2683.076 | 62.00 5.69 | .50 2683.58 | .00 2.37 | 3.14 | 4.000 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        2.901 .0384 | | | | | | | | | | | | | | | |
11120.550 2679.952 | 3.080 2683.032 | 62.00 5.97 | .55 2683.59 | .00 2.37 | 3.37 | 4.000 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        .601 .0384 | | | | | | | | | | | | | | | |
11121.150 2679.975 | 3.045 2683.020 | 62.00 6.04 | .57 2683.59 | .00 2.37 | 3.41 | 4.000 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
HYDRAULIC JUMP
11121.150 2679.975 | 1.826 2681.800 | 62.00 11.10 | 1.91 2683.71 | .00 2.37 | 3.98 | 4.000 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        .798 .0384 | | | | | | | | | | | | | | | |
11121.950 2680.005 | 1.838 2681.844 | 62.00 11.00 | 1.88 2683.72 | .00 2.37 | 3.99 | 4.000 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        3.498 .0384 | | | | | | | | | | | | | | | |
11125.450 2680.140 | 1.907 2682.047 | 62.00 10.49 | 1.71 2683.75 | .00 2.37 | 4.00 | 4.000 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
JUNCT STR .1000 | | | | | | | | | | | | | | | |
11130.450 2680.640 | .965 2681.605 | 38.00 17.61 | 4.82 2686.42 | .00 1.92 | 3.13 | 3.500 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        1.509 .0973 | | | | | | | | | | | | | | | |
11131.960 2680.787 | .970 2681.757 | 38.00 17.48 | 4.74 2686.50 | .00 1.92 | 3.13 | 3.500 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        7.992 .0973 | | | | | | | | | | | | | | | |
11139.950 2681.564 | 1.003 2682.567 | 38.00 16.66 | 4.31 2686.88 | .00 1.92 | 3.17 | 3.500 | .000 | .00 | 1 | .0
        | | | | | | | | | | | | | | | |
        6.403 .0973 | | | | | | | | | | | | | | | |

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WATER SURFACE PROFILE LISTING

Date: 5- 9-2013 Time: 1:36:23

Ranch-Fort Apache Storm Drain Project  
Severence - Add 5'x5' RCB to downstream end  
FKR 05/09/2013, Checked By:JSD 05/09/2013

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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
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
11146.360 2682.187 | 1.038 2683.225 | 38.00 15.89 | 3.92 2687.14 | .00 1.92 | 3.20 3.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      5.242 .0973 | | | | | | | | | | | | | | | |
      .0364 .19 | 1.04 3.24 | .82 .013 | .00 .00 | PIPE
11151.600 2682.697 | 1.075 2683.772 | 38.00 15.15 | 3.56 2687.34 | .00 1.92 | 3.23 3.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      4.385 .0973 | | | | | | | | | | | | | | | |
      .0318 .14 | 1.08 3.03 | .82 .013 | .00 .00 | PIPE
11155.980 2683.123 | 1.112 2684.235 | 38.00 14.44 | 3.24 2687.47 | .00 1.92 | 3.26 3.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      3.668 .0973 | | | | | | | | | | | | | | | |
      .0279 .10 | 1.11 2.83 | .82 .013 | .00 .00 | PIPE
11159.650 2683.480 | 1.152 2684.632 | 38.00 13.77 | 2.94 2687.58 | .00 1.92 | 3.29 3.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      JUNCT STR .4000 | | | | | | | | | | | | | | | |
      .0244 .12 | 1.15 2.65 | .013 .00 | .00 .00 | PIPE
11164.650 2685.480 | .719 2686.199 | 14.00 16.73 | 4.35 2690.55 | .00 1.38 | 1.50 1.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      .882 .2940 | | | | | | | | | | | | | | | |
      .0797 .07 | .72 3.95 | .51 .013 | .00 .00 | PIPE
11165.530 2685.739 | .732 2686.471 | 14.00 16.34 | 4.15 2690.62 | .00 1.38 | 1.50 1.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      1.575 .2940 | | | | | | | | | | | | | | | |
      .0725 .11 | .73 3.81 | .51 .013 | .00 .00 | PIPE
11167.110 2686.202 | .760 2686.962 | 14.00 15.58 | 3.77 2690.73 | .00 1.38 | 1.50 1.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      1.363 .2940 | | | | | | | | | | | | | | | |
      .0639 .09 | .76 3.55 | .51 .013 | .00 .00 | PIPE
11168.470 2686.603 | .789 2687.392 | 14.00 14.85 | 3.43 2690.82 | .00 1.38 | 1.50 1.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
      1.180 .2940 | | | | | | | | | | | | | | | |
      .0563 .07 | .79 3.30 | .51 .013 | .00 .00 | PIPE
11169.650 2686.950 | .820 2687.770 | 14.00 14.16 | 3.11 2690.88 | .00 1.38 | 1.49 1.500 | .000 .00 | 1 .0
      | | | | | | | | | | | | | | | |
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