

1

WEIR CALCULATOR

GIVEN INPUT DATA:
 WEIR TYPE RECTANGULAR
 EQUATION SUPPRESSED
 SOLVING FOR FLOWRATE
 DEPTH OF FLOW 5.0 IN
 COEFFICIENT 0.650
 HEIGHT 5.0 IN

COMPUTED RESULTS:
 FLOWRATE 1.87 CFS
 FULL FLOW 1.87 CFS
 VELOCITY 2.24 FPS
 WIDTH 24.0 IN
 AREA 0.83 FT²
 PERIMETER 34.0 IN
 WET PERIMETER 34.0 IN
 WET AREA 0.63 FT²
 PERCENT FULL 100.0 %

9.71 CFS OF RUN-OFF CONCENTRATES AT DESIGN POINT 1
 1.87 CFS PER SIDE x 4 SIDED Y-INLET=7.48 CFS
 7.48 CFS INTERCEPTED BY 3x3 Y-INLET AT DESIGN POINT 1
 7.48 CFS DISCHARGED TO 15" S.D.R. SEWER @ 5.82% SLOPE
 BYPASS TO DOWNSTREAM 3x3 Y-INLET AT DESIGN POINT 3=2.23 CFS

HEAD	WEIR FLOW
0.00000000	0.00000000
0.30000000	0.02748082
0.60000000	0.07772749
0.90000000	0.14279451
1.20000000	0.21984653
1.50000000	0.30724487
1.80000000	0.40388387
2.10000000	0.50895184
2.40000000	0.62181990
2.70000000	0.74198205
3.00000000	0.86901972
3.30000000	1.00257913
3.60000000	1.14235609
3.90000000	1.28808541
4.20000000	1.43953320
4.50000000	1.59649117
4.80000000	1.75877226
5.00000000	1.86983273

2

MANNING PIPE CALCULATOR

GIVEN INPUT DATA:
 SHAPE CIRCULAR
 SOLVING FOR DEPTH OF FLOW
 DIAMETER 15.0 IN
 FLOWRATE 7.48 CFS
 SLOPE 0.0582 FT/FT
 MANNING'S N 0.009

COMPUTED RESULTS:
 DEPTH 6.0 IN
 AREA 1.23 FT²
 WETTED AREA 0.45 FT²
 WETTED PERIMETER 20.4 IN
 PERIMETER 47.1 IN
 VELOCITY 16.49 FPS
 HYDRAULIC RADIUS 3.2 IN
 PERCENT FULL 39.7 %
 FULL FLOW FLOWRATE 22.51 CFS
 FULL FLOW VELOCITY 18.34 FPS

STORM DRAIN OPERATES AT PARTIAL FLOW

3

WEIR CALCULATOR

GIVEN INPUT DATA:
 WEIR TYPE RECTANGULAR
 EQUATION SUPPRESSED
 SOLVING FOR DEPTH OF FLOW
 FLOWRATE 1.64 CFS
 COEFFICIENT 0.650
 HEIGHT 5.0 IN

COMPUTED RESULTS:
 DEPTH OF FLOW 4.6 IN
 FULL FLOW 1.87 CFS
 VELOCITY 2.15 FPS
 WIDTH 24.0 IN
 AREA 0.83 FT²
 PERIMETER 34.0 IN
 WET PERIMETER 33.2 IN
 WET AREA 0.76 FT²
 PERCENT FULL 91.6 %

2.23 CFS (BYPASS FROM DESIGN POINT 1) +
 0.79 CFS RUN-OFF FROM AREA OS-4 +
 3.52 CFS RUN-OFF FROM AREA B1.1 =
 6.54 CFS RUN-OFF TO TOP OF Y-INLET

1.64 CFS PER SIDE x 4 SIDED Y-INLET=6.54 CFS
 6.54 CFS INTERCEPTED BY 3x3 Y-INLET AT DESIGN POINT 3

6.54 CFS COMBINES WITH 7.48 CFS PIPE FLOW TO YIELD 14.02 CFS DISCHARGED TO DOWNSTREAM 15" S.D.R. SEWER.

HEAD	WEIR FLOW
0.00000000	0.00000000
0.30000000	0.02748082
0.60000000	0.07772749
0.90000000	0.14279451
1.20000000	0.21984653
1.50000000	0.30724487
1.80000000	0.40388387
2.10000000	0.50895184
2.40000000	0.62181990
2.70000000	0.74198205
3.00000000	0.86901972
3.30000000	1.00257913
3.60000000	1.14235609
3.90000000	1.28808541
4.20000000	1.43953320
4.50000000	1.59649117
4.80000000	1.75877226
5.00000000	1.86983273

4

MANNING PIPE CALCULATOR

GIVEN INPUT DATA:
 SHAPE CIRCULAR
 SOLVING FOR DEPTH OF FLOW
 DIAMETER 15.0 IN
 FLOWRATE 14.02 CFS
 SLOPE 0.0556 FT/FT
 MANNING'S N 0.009

COMPUTED RESULTS:
 DEPTH 8.7 IN
 AREA 1.23 FT²
 WETTED AREA 0.74 FT²
 WETTED PERIMETER 26.0 IN
 PERIMETER 47.1 IN
 VELOCITY 19.00 FPS
 HYDRAULIC RADIUS 4.1 IN
 PERCENT FULL 58.0 %
 FULL FLOW FLOWRATE 22.00 CFS
 FULL FLOW VELOCITY 17.93 FPS

STORM DRAIN OPERATES AT PARTIAL FLOW

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CHANNEL CALCULATOR

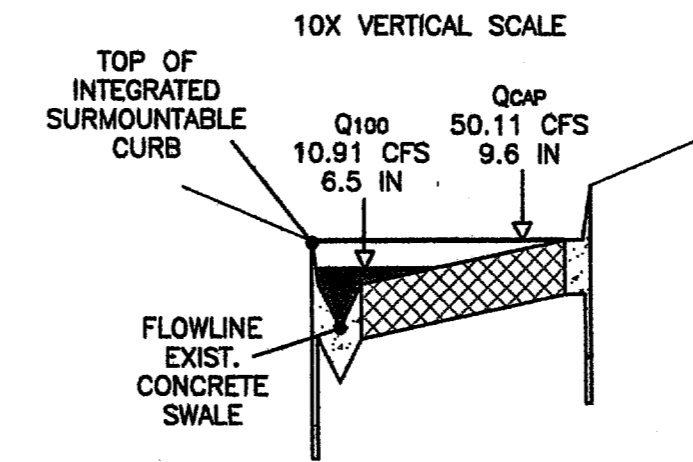
GIVEN INPUT DATA:
 SLOPE 0.0667 FT/FT
 MANNING'S N 0.020
 HEIGHT 9.6 IN

COMPUTED RESULTS:
 Q100 DEPTH 6.5 IN
 VELOCITY 5.86 FPS
 FLOWRATE 10.91 CFS
 FLOW AREA 1.84 FT²
 FLOW PERIMETER 10.96 FT
 HYDRAULIC RADIUS 0.17 FT

QCAP DEPTH 9.6 IN
 VELOCITY 7.94 FPS
 FLOWRATE 50.11 CFS
 FLOW AREA 6.31 FT²
 FLOW PERIMETER 23.80 FT
 HYDRAULIC RADIUS 0.27 FT
 PERCENT FULL 67.7 %

CONCRETE SWALE OPERATES AT PARTIAL FLOW

SECTION A-A



SECTION A-A

1X VERTICAL SCALE

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CHANNEL CALCULATOR

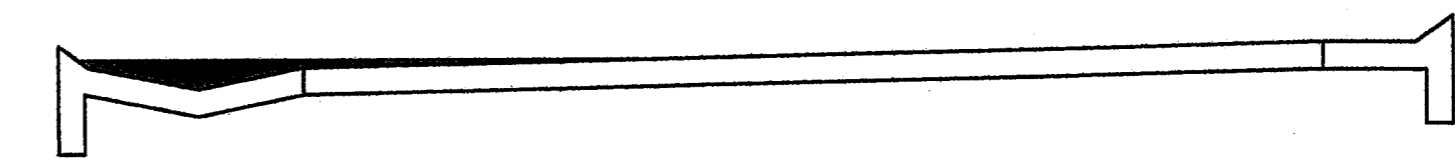
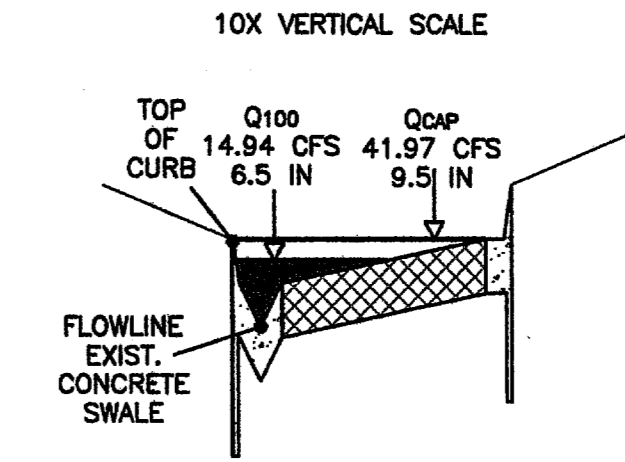
GIVEN INPUT DATA:
 SLOPE 0.0667 FT/FT
 MANNING'S N 0.020
 HEIGHT 9.5 IN

COMPUTED RESULTS:
 Q100 DEPTH 7.3 IN
 VELOCITY 5.83 FPS
 FLOWRATE 14.94 CFS
 FLOW AREA 2.70 FT²
 FLOW PERIMETER 14.40 FT
 HYDRAULIC RADIUS 0.19 FT

QCAP DEPTH 9.5 IN
 VELOCITY 6.86 FPS
 FLOWRATE 41.97 CFS
 FLOW AREA 6.12 FT²
 FLOW PERIMETER 23.45 FT
 HYDRAULIC RADIUS 0.26 FT
 PERCENT FULL 78.8 %

CONCRETE SWALE OPERATES AT PARTIAL FLOW

SECTION B-B



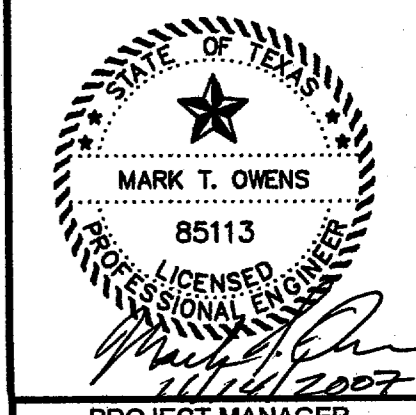
REVISIONS	BY	DATE
		11/15/07

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LOT 1A & 1B, MILLIKEN ADDITION
 SPRINGFIELD CUSTOM HOMES (OWNER LOT 1B)
 RAY JACKSON (OWNER LOT 1A)

DRAINAGE CALCULATIONS



PROJECT MANAGER
 NJO
 PROJECT TECHNICIAN
 NJO
 JOB NUMBER
 2006.018
 SHEET NUMBER

3.3