

WINDING OAKS

4-13-95

DETENTION REPORT

Total area = 10.13 A^c

Differential Runoff

15 Yr. - 10.13 (2.64 - 1.87) = 7.80 c.f.s.

25 Yr. - 10.13 (3.26 - 2.31) = 9.62 c.f.s.

Total Q to Basin

15 yr. - 40.19

25 yr. - 47.42

Allowable discharge

15 yr. - 40.19 - 7.80 = 32.39 c.f.s.

25 yr. - 47.42 - 9.62 = 37.80 c.f.s.

Overflow Structure

Use standard 48" dia. inlet manhole base
Top elevation - 475.57 w/ 15" w x 30" h slot
open in side for low flow. Elev. 470.00

check elev.
at inlet
HA & bot.

Routing (see attached)

Peak Outflow -	15 yr.	28.96	@ Elev. 474.83
	25 yr.	31.79	@ Elev. 475.57

4-13-95

$$100 \text{ yr. } Q \text{ to Basin} = 40.19 (1.39) = 55.86 \text{ c.f.s.}$$

Assuming low flow blocked, highwater in basin for 100yr. storm =

$$55.86 = 3(48''\pi) h^{3/2}$$

$$1.30' = h$$

475.57 Sill
<u>1.30'</u>
476.87

Mini. Top of Berm = 476.87	100yr. Hw
<u>+ 1.00</u>	Freeboard
477.87	
<u>.40</u>	sediment storage
478.27	

Sediment Storage / 2yrs

$$\text{Trib. area} = 13.42 \text{ AC} \times 140 \times 2 = 3758 \text{ cu. ft.}$$

(Area @ 476) $9455 \times = 3758$

$$x = 0.40' \text{ Additional storage req'd.}$$

ELEVATION	AREA	VOLUME	CUM. VOLUME
470.00	0		
		4573	4573
472.00	4573		
		11393	15966
474.00	6820		
		16275	32241
476.00	9455		
		21894	54135
478.00	12439		

 *
 * RECTANGULAR ORIFICE *
 * 15 in W X 30 in H ELEV= 470 *
 *
 * Outlet Pipe - 71 ft - 36 in pipe *
 * UFL= 464.22 LFL= 462.8 n= .018 *
 *

15 Yr.

WINDING OAKS 4-13-95 SUBMITTAL DATE:

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	1205.70	1205.70	0.00	1205.70	470.53
2	2411.40	3617.10	74.67	3542.43	471.55
3	2411.40	5953.83	376.04	5577.79	472.18
4	2411.40	7989.19	626.09	7363.10	472.49
5	2411.40	9774.50	766.08	9008.42	472.78
6	2411.40	11419.82	1134.81	10285.01	473.00
7	2411.40	12696.41	1215.15	11481.26	473.21
8	2411.40	13892.66	1285.88	12606.78	473.41
9	2411.40	15018.18	1349.06	13669.12	473.60
10	2411.40	16080.52	1406.09	14674.43	473.77
11	2411.40	17085.83	1458.00	15627.83	473.94
12	2411.40	18039.23	1505.57	16533.66	474.07
13	2411.40	18945.06	1541.28	17403.79	474.18
14	2411.40	19815.19	1570.23	18244.96	474.28
15	2411.40	20656.36	1597.72	19058.65	474.38
16	2411.40	21470.05	1623.86	19846.19	474.48
17	2411.40	22257.59	1648.78	20608.81	474.57
18	2411.40	23020.21	1672.55	21347.66	474.66
19	2411.40	23759.06	1695.26	22063.80	474.75
20	2411.40	24475.20	1716.99	22758.21	474.83
21	1205.70	23963.91	1737.80	22226.11	474.77
22	0.00	22226.11	1721.87	20504.24	474.56

PEAK OUTFLOW= 28.96 CFS AT 21 MINUTES

 *
 * RECTANGULAR ORIFICE *
 * 15 in W X 30 in H ELEV= 470 *
 *
 * Outlet Pipe - 71 ft - 36 in pipe *
 * UFL= 464.22 LFL= 462.8 n= .018 *
 *

25 Yr.

WINDING OAKS 4-13-95 SUBMITTAL DATE:

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	1422.60	1422.60	0.00	1422.60	470.62
2	2845.20	4267.80	95.70	4172.10	471.82
3	2845.20	7017.30	480.63	6536.67	472.34
4	2845.20	9381.87	700.12	8681.75	472.72
5	2845.20	11526.95	1113.33	10413.63	473.03
6	2845.20	13258.83	1222.95	12035.88	473.31
7	2845.20	14881.08	1317.40	13563.68	473.58
8	2845.20	16408.88	1400.53	15008.35	473.83
9	2845.20	17853.55	1474.83	16378.72	474.05
10	2845.20	19223.92	1536.06	17687.86	474.21
11	2845.20	20533.06	1579.57	18953.49	474.37
12	2845.20	21798.69	1620.51	20178.18	474.52
13	2845.20	23023.38	1659.17	21364.21	474.66
14	2845.20	24209.41	1695.76	22513.65	474.80
15	2845.20	25358.85	1730.50	23628.35	474.94
16	2845.20	26473.55	1763.53	24710.02	475.07
17	2845.20	27555.22	1794.99	25760.23	475.20
18	2845.20	28605.43	1825.03	26780.40	475.33
19	2845.20	29625.60	1853.74	27771.86	475.45
20	2845.20	30617.06	1881.22	28735.84	<u>475.57</u>
21	1422.60	30158.44	1907.56	28250.88	475.51
22	0.00	28250.88	1894.36	26356.52	475.28

PEAK OUTFLOW= 31.79 CFS AT 21 MINUTES

