

# POND # 1A & # 1B

FREQUENCY = 10 YEAR

## I. VOLUME REQUIRED

PRESENT CONDITION	PROPOSED CONDITION
Td = 20 DESIGN TIME	Td = 10 DESIGN TIME
C = 0.35	C = 0.90
I = 6.68 IN/HR	I = 7.19 IN/HR
A = 10.82 ACRES	A = 10.82 ACRES
Q = C*I*A = 21.52 CFS	Q = C*I*A = 69.17 CFS

MAX. RELEASE RATE = PRESENT CONDITION-DIRECT DISCHARGE  
MAX. RELEASE RATE = 21.52 - 2.52 = 19.00 CFS

TIME	INTENSITY	DISCHARGE	INFLOW	OUTFLOW	STORAGE
10	7.19	69.17	41,504.99	12,751.03	28,753.96
15	6.35	61.09	54,984.02	15,938.79	39,045.23
20	5.60	54.95	65,576.74	19,126.55	46,450.19
25	5.14	49.45	74,177.81	22,314.31	51,863.50
30	4.7	45.22	81,393.66	25,502.06	55,891.60
35	4.33	41.66	87,483.75	28,689.82	58,793.93
40	4.01	38.58	92,592.50	31,877.58	60,714.92
45	3.73	35.89	96,893.09	35,065.34	61,827.75
50	3.5	33.67	101,020.50	38,253.10	62,767.40
55	3.29	31.85	104,455.20	41,440.85	63,014.34
60	3.1	29.83	107,370.36	44,628.61	62,741.75
70	2.78	26.75	112,334.80	51,004.13	61,330.67
80	2.53	24.34	116,437.45	57,379.64	59,057.81
90	2.32	22.32	120,531.89	63,755.16	56,776.73

## II. VOLUME PROVIDED

### POND # 1A

ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	12,585.50	12,507.65	12,507.65	60,977.14
542	12,429.80	12,351.83	12,351.83	48,469.49
541	12,273.85	12,195.72	12,195.72	36,117.87
540	12,117.59	12,039.32	12,039.32	23,921.95
539	11,961.05	11,882.83	11,882.83	11,882.83
538	11,804.20			

### POND # 1B

ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	10,186.82	9,354.90	9,354.90	32,549.34
542	8,522.98	7,866.09	7,866.09	23,194.44
541	6,809.20	6,254.90	6,254.90	15,528.35
540	5,700.60	5,163.34	5,163.34	9,273.45
539	4,826.08	4,110.11	4,110.11	4,110.11
538	3,594.13			

### TOTAL = POND # 1A + POND # 1B

	POND # 1A	POND # 1B	TOT. VOL.	
543		60,977.14	32,549.34	93,526.48
542		48,469.49	23,194.44	71,663.93
541		36,117.87	15,528.35	51,646.01
540		23,921.95	9,273.45	33,195.39
539		11,882.83	4,110.11	15,992.73

V-NOTCH CALCULATIONS  
Q = 2.5 \* H<sup>2.5</sup> \* TAN 0/2

Q = DISCHARGE  
H = HEAD ON WEIR = W.S. ELEV. - F.L. ELEV  
O = ANGLE OF NOTCH IN DEGREES

FREQUENCY = 25 YEAR

## I. VOLUME REQUIRED

PRESENT CONDITION	PROPOSED CONDITION
Td = 20 DESIGN TIME	Td = 10 DESIGN TIME
C = 0.35	C = 0.90
I = 6.61 IN/HR	I = 6.22 IN/HR
A = 10.82 ACRES	A = 10.82 ACRES
Q = C*I*A = 25.03 CFS	Q = C*I*A = 79.06 CFS

MAX. RELEASE RATE = PRESENT CONDITION-DIRECT DISCHARGE  
MAX. RELEASE RATE = 25.03 - 2.86 = 22.15 CFS

TIME	INTENSITY	DISCHARGE	INFLOW	OUTFLOW	STORAGE
10	8.22	79.06	47,450.77	14,838.79	32,611.98
15	7.33	70.52	63,469.74	18,548.49	44,921.25
20	6.61	63.59	76,313.77	22,258.18	54,055.58
25	6.01	57.82	86,733.32	25,967.88	60,765.43
30	5.5	52.92	95,347.90	29,677.58	65,670.32
35	5.07	48.78	102,434.79	33,387.28	69,047.51
40	4.69	45.12	108,293.98	37,096.97	71,197.00
45	4.37	42.04	113,518.18	40,806.67	72,711.51
50	4.08	39.25	117,761.04	44,516.37	73,544.87
55	3.83	36.85	121,589.82	48,226.06	73,737.75
60	3.6	34.64	124,688.16	51,935.76	72,752.40
70	3.21	30.88	129,710.32	59,365.16	70,355.17
80	2.9	27.60	133,924.32	66,774.55	67,149.77
90	2.64	25.40	137,156.98	74,193.95	62,963.03

## II. VOLUME PROVIDED

### POND # 1A

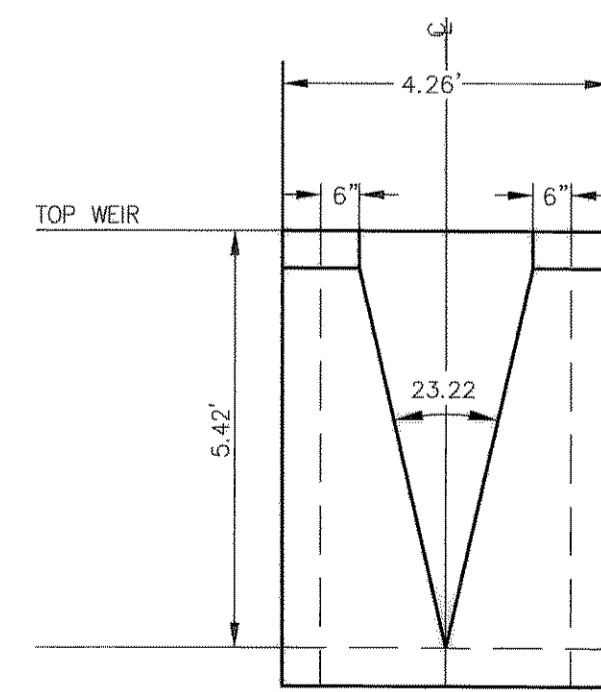
ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	12,585.50	12,507.65	12,507.65	60,977.14
542	12,429.80	12,351.83	12,351.83	48,469.49
541	12,273.85	12,195.72	12,195.72	36,117.87
540	12,117.59	12,039.32	12,039.32	23,921.95
539	11,961.05	11,882.83	11,882.83	11,882.83
538	11,804.20			

### POND # 1B

ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	10,186.82	9,354.90	9,354.90	32,549.34
542	8,522.98	7,866.09	7,866.09	23,194.44
541	6,809.20	6,254.90	6,254.90	15,528.35
540	5,700.60	5,163.34	5,163.34	9,273.45
539	4,826.08	4,110.11	4,110.11	4,110.11
538	3,594.13			

### TOTAL = POND # 1A + POND # 1B

	POND # 1A	POND # 1B	TOT. VOL.	
543		60,977.14	32,549.34	93,526.48
542		48,469.49	23,194.44	71,663.93
541		36,117.87	15,528.35	51,646.01
540		23,921.95	9,273.45	33,195.39
539		11,882.83	4,110.11	15,992.73



SECTION "A-A" POND  
NTS

H = TOTAL HEAD = 541.57 - 538.00 = 3.57

Q = 2.5 \* 3.57<sup>2.5</sup> \* TAN 23.22/2 = 12.37 CFS

FREQUENCY = 50 YEAR

## I. VOLUME REQUIRED

PRESENT CONDITION	PROPOSED CONDITION
Td = 20 DESIGN TIME	Td = 10 DESIGN TIME
C = 0.35	C = 0.90
I = 7.42 IN/HR	I = 9.01 IN/HR
A = 10.82 ACRES	A = 10.82 ACRES
Q = C*I*A = 28.09 CFS	Q = C*I*A = 86.68 CFS

MAX. RELEASE RATE = PRESENT CONDITION-DIRECT DISCHARGE  
MAX. RELEASE RATE = 28.09 - 3.16 = 24.93 CFS

TIME	INTENSITY	DISCHARGE	INFLOW	OUTFLOW	STORAGE
10	9.01	86.69	52,011.13	16,657.16	35,353.97
15	8.16	78.51	70,666.62	20,821.45	49,845.18
20	7.42	71.39	85,665.38	24,985.74	60,679.65
25	6.77	65.13	97,701.26	29,150.03	68,551.23
30	6.2	59.65	107,370.38	33,314.32	74,056.04
35	5.7	54.84	115,163.37	37,478.61	77,684.76
40	5.25	50.51	121,224.60	41,642.90	79,581.71
45	4.86	46.76	126,246.76	45,807.18	80,439.58
50	4.5	43.29	129,863.50	49,971.47	79,912.03
55	4.19	40.31	133,029.57	54,135.76	78,593.80
60	3.9	37.52	135,078.84	58,300.05	76,778.79
70	3.41	32.81	137,791.96	66,626.63	71,163.33
80	3.0	28.66	138,542.40	74,957.21	63,585.19
90	2.66	25.59	138,196.04	83,286.79	54,910.25

## II. VOLUME PROVIDED

### POND # 1A

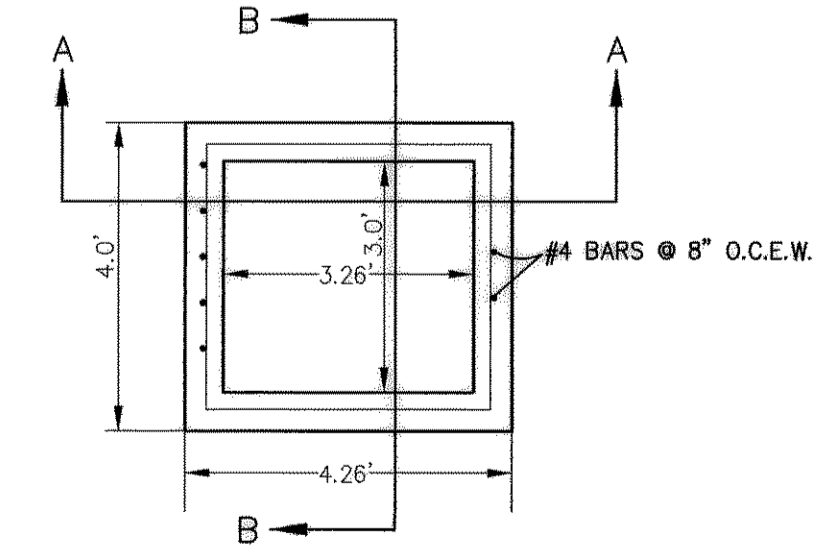
ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	12,585.50	12,507.65	12,507.65	60,977.14
542	12,429.80	12,351.83	12,351.83	48,469.49
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540	12,117.59	12,039.32	12,039.32	23,921.95
539	11,961.05	11,882.83	11,882.83	11,882.83
538	11,804.20			

### POND # 1B

ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	10,186.82	9,354.90	9,354.90	32,549.34
542	8,522.98	7,866.09	7,866.09	23,194.44
541	6,809.20	6,254.90	6,254.90	15,528.35
540	5,700.60	5,163.34	5,163.34	9,273.45
539	4,826.08	4,110.11	4,110.11	4,110.11
538	3,594.13			

### TOTAL = POND # 1A + POND # 1B

	POND # 1A	POND # 1B	TOT. VOL.	
543		60,977.14	32,549.34	93,526.48
542		48,469.49	23,194.44	71,663.93
541		36,117.87	15,528.35	51,646.01
540		23,921.95	9,273.45	33,195.39
539		11,882.83	4,110.11	15,992.73



PLAN  
NTS

FREQUENCY = 100 YEAR

## I. VOLUME REQUIRED

PRESENT CONDITION	PROPOSED CONDITION
Td = 20 DESIGN TIME	Td = 10 DESIGN TIME
C = 0.35	C = 0.90
I = 8.3 IN/HR	I = 9.8 IN/HR
A = 10.82 ACRES	A = 10.82 ACRES
Q = C*I*A = 31.43 CFS	Q = C*I*A = 94.28 CFS

MAX. RELEASE RATE = PRESENT CONDITION-DIRECT DISCHARGE  
MAX. RELEASE RATE = 31.05 - 3.44 = 27.61 CFS

TIME	INTENSITY	DISCHARGE	INFLOW	OUTFLOW	STORAGE
10	9.80	94.29	56,571.48	18,632.67	37,938.81
15	9.00	86.59	77,930.10	23,290.84	54,639.26
20	8.30	79.85	95,825.16	27,949.01	67,876.16
25	7.50	72.16	108,236.25	32,607.17	75,629.08
30	7.10	68.31	122,956.38	37,265.34	85,691.04
35	6.40	61.57	129,306.24	41,923.51	87,382.73
40	5.90	56.76	136,233.36	46,581.68	89,651.69
45	5.40	51.95	140,274.16	51,239.84	89,034.34
50	5.00	48.11	144,315.00	55,898.01	88,416.99
55	4.60	44.16	152,396.94	60,556.18	91,848.46
60	4.50	43.29	155,880.20	65,214.35	90,645.86
70	4.00	38.48	161,632.80	74,530.68	87,102.12
80	3.70	35.80	170,868.96	83,847.02	87,021.95
90	3.40	32.71	176,641.56	93,163.35	83,478.21

## II. VOLUME PROVIDED

### POND # 1A

ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	12,585.50	12,507.65	12,507.65	60,977.14
542	12,429.80	12,351.83	12,351.83	48,469.49
541	12,273.85	12,195.72	12,195.72	36,117.87
540	12,117.59	12,039.32	12,039.32	23,921.95
539	11,961.05	11,882.83	11,882.83	11,882.83
538	11,804.20			

### POND # 1B

ELEV	AREA	AVE. AREA	VOLUME	CUM. VOL.
543	10,186.82	9,354.90	9,354.90	32,549.34
542	8,522.98	7,866.09	7,866.09	