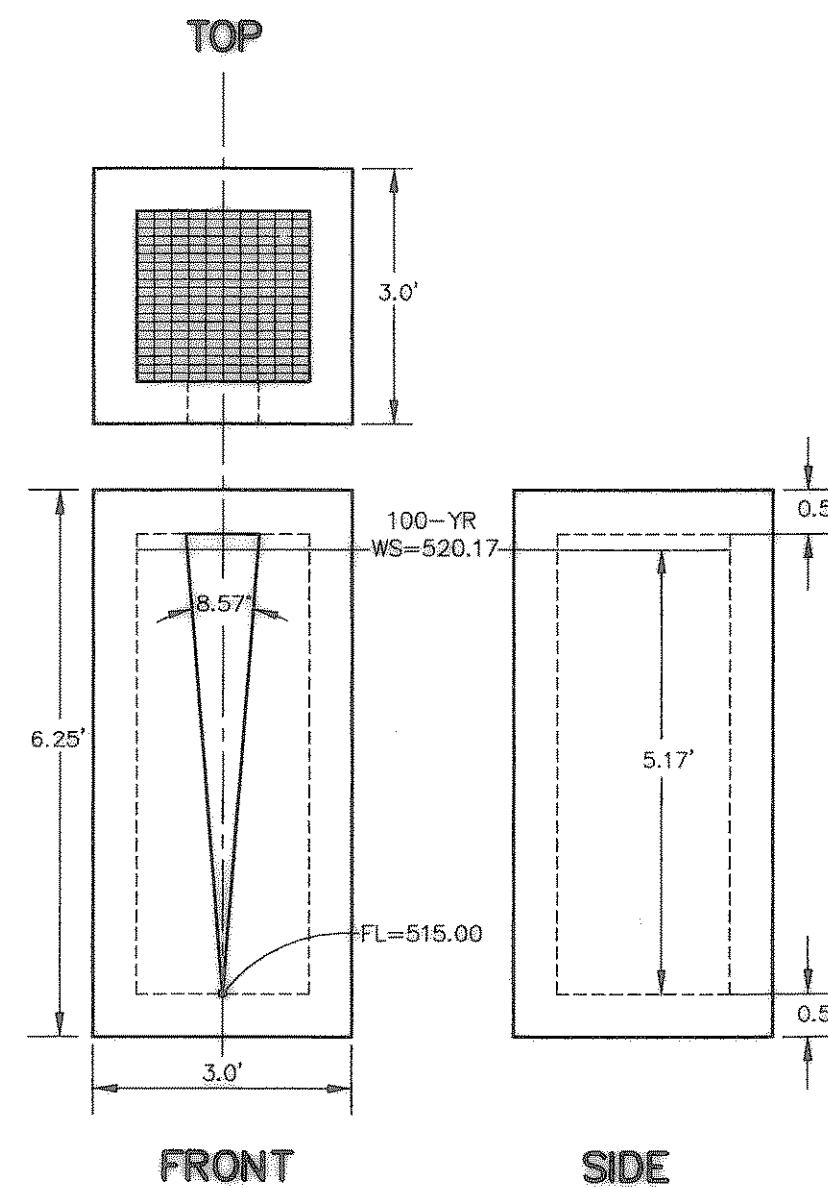
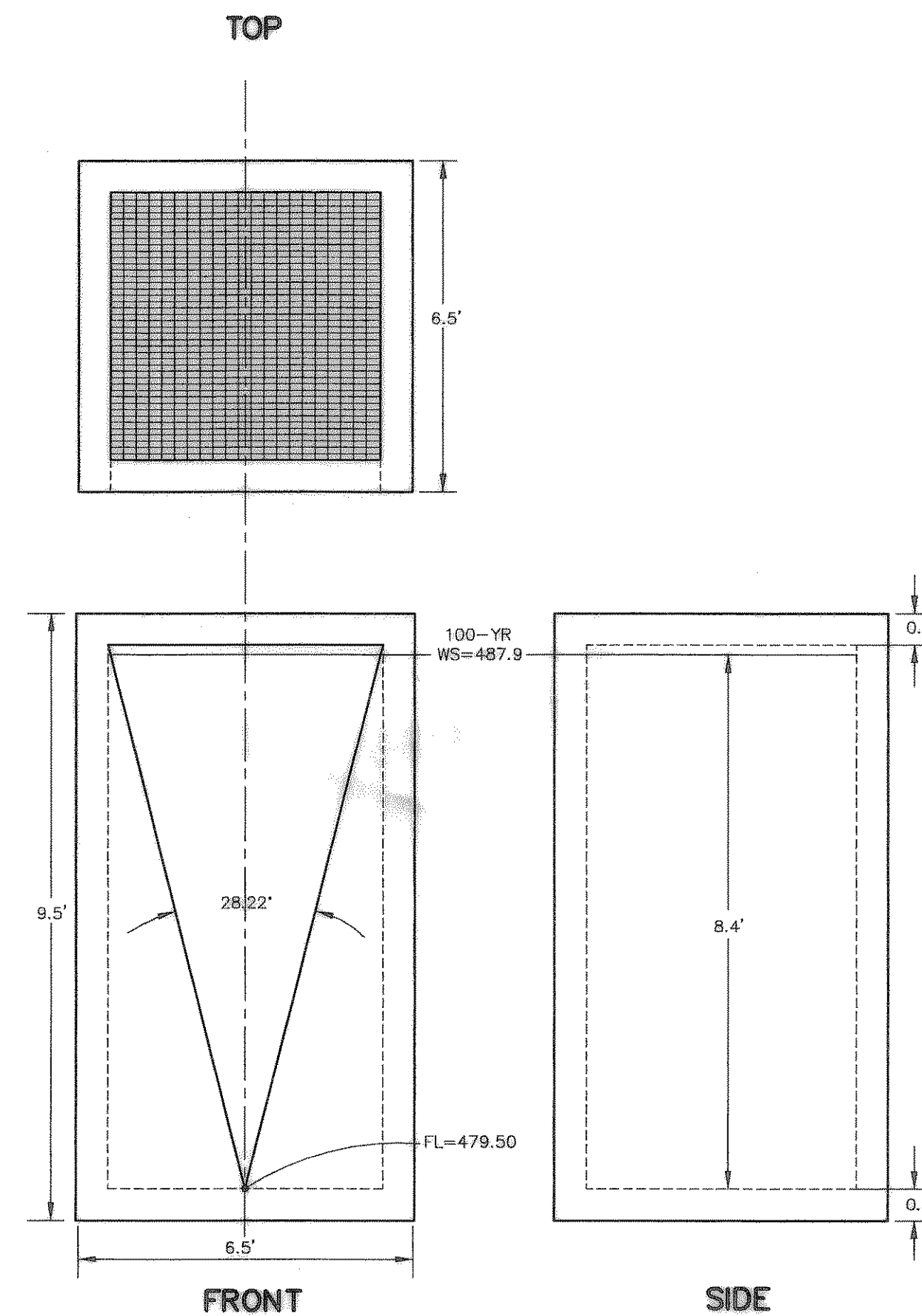




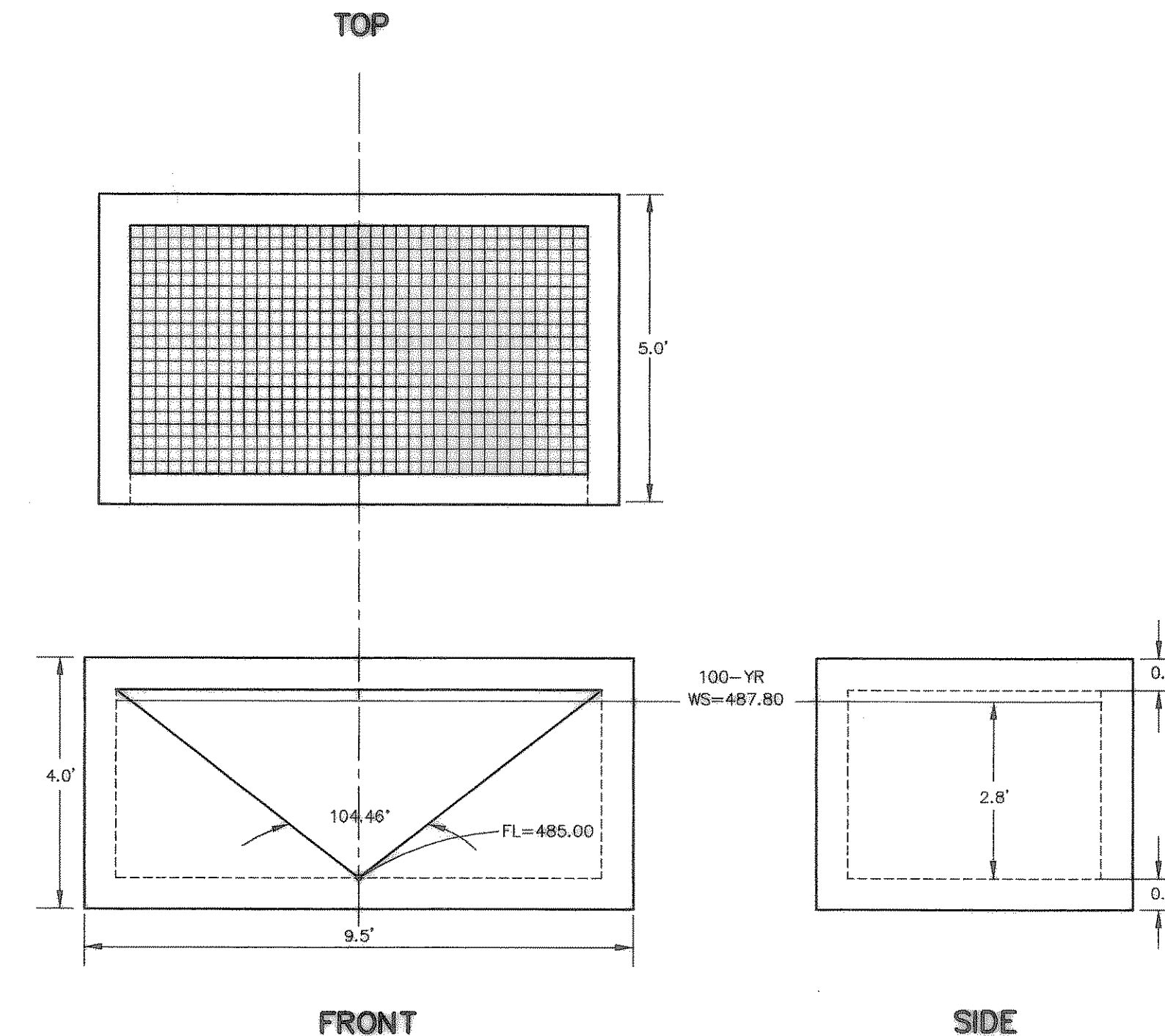
POND 1
METERING STRUCTURE

N.T.S.



POND 2
METERING STRUCTURE

N.T.S.



POND 3
METERING STRUCTURE

N.T.S.

POND DESIGNATION	Tc (min.)	i (in/hr)	A (acres)	C	Q _{in} (cfs)	Q _{out} (cfs)	VOLUME INFLOW (FT ³)	VOLUME OUTFLOW (FT ³)	VOLUME DETAINED (FT ³)
PRE-DEV.	20	8.3	3.96	0.35	—	11.50	—	—	—
POST-DEV. ①	10	9.8	3.96	0.8	31.05	11.50	18,627.84	8,627.85	10,000
	20	8.3	3.96	0.8	26.29	11.50	31,553.28	12,078.99	19,474.29
	30	6.86	3.96	0.8	21.73	11.50	39,118.46	15,530.13	23,588.33
	40	5.74	3.96	0.8	18.18	11.50	43,642.37	18,981.27	24,661.1
	50	4.95	3.96	0.8	15.68	11.50	47,044.8	22,432.41	24,612.39
	60	4.37	3.96	0.8	13.84	11.50	49,838.98	25,863.55	23,955.43
	70	3.91	3.96	0.8	12.39	11.50	52,024.9	29,334.69	22,690.21

POND DESIGNATION	Tc (min.)	i (in/hr)	A (acres)	C	Q _{in} (cfs)	Q _{out} (cfs)	VOLUME INFLOW (FT ³)	VOLUME OUTFLOW (FT ³)	VOLUME DETAINED (FT ³)
PRE-DEV.	20	8.3	44.69	0.35	—	129.80	—	—	—
POST-DEV. ②	10	9.8	44.69	0.81	354.7	129.80	212,849.50	97,368.34	115,481.20
	20	8.3	44.69	0.81	300.5	129.80	360,541	136,315.7	224,225.4
	30	6.86	44.69	0.81	248.3	129.80	446,984	175,263	271,721
	40	5.74	44.69	0.81	207.8	129.80	498,676	214,210.3	284,465.7
	50	4.95	44.69	0.81	179.2	129.80	537,553.7	253,157.7	284,396
	60	4.37	44.69	0.81	158.2	129.80	569,481.1	292,105	277,376.1
	70	3.91	44.69	0.81	141.5	129.80	594,458.3	331,052.3	263,406

POND DESIGNATION	Tc (min.)	i (in/hr)	A (acres)	C	Q _{in} (cfs)	Q _{out} (cfs)	VOLUME INFLOW (FT ³)	VOLUME OUTFLOW (FT ³)	VOLUME DETAINED (FT ³)
PRE-DEV.	20	8.3	14.72	0.35	—	42.76	—	—	—
POST-DEV. ③	10	9.8	14.72	0.82	118.3	42.76	70,973.95	32,071.20	38,902.75
	20	8.3	14.72	0.82	100.2	42.76	120,221.2	44,899.68	75,321.5
	30	6.86	14.72	0.82	82.8	42.76	149,045.3	57,728.16	91,317.14
	40	5.74	14.72	0.82	69.28	42.76	166,281.8	70,556.64	95,725.19
	50	4.95	14.72	0.82	59.75	42.76	179,245.4	83,385.12	95,860.32
	60	4.37	14.72	0.82	52.75	42.76	189,891.5	96,213.6	93,677.93
	70	3.91	14.72	0.82	52.75	42.76	198,220.1	109,042.1	89,178.03

POND DESIGNATION	FREQ. (YR.)	Q EXISTING	Q PROPOSED	Q RELEASED ALLOWABLE	BASED ON STAGE VS. STORAGE CURVE FOR POND		BASED ON RELEASE STRUCTURE	
					CALCULATED STORAGE ELEV. (FT)	CAL. MIN. STORAGE VALUE (FT ³)	CALCULATED STORAGE ELEV. (FT)	CAL. STORAGE VALUE (FT ³)
①	100	11.5	31.05	11.5	520.17	24,661	520.17	24,661
	50	10.4	28.2	10.4	519.67	20,864	519.96	23,048
	25	9.01	24.08	9.01	519.41	19,023	519.68	20,938
	10	7.97	20.59	7.97	518.86	15,362	519.46	19,356
	5	6.65	17.74	6.65	518.46	12,973	519.15	17,238
	2	5.13	14.57	5.13	517.94	10,166	518.74	14,633

DETENTION POND VOLUME
REQUIRED = 24,661 FT³

DETENTION POND VOLUME
PROVIDED = 27,431 FT³

METERING DEVICE

"V" Notched Weir in Detention Wall

$$Q = 0.58 \frac{8}{15} \tan \frac{\Delta}{2} \sqrt{2g} H^{\frac{5}{2}}$$

$$Q = 11.5 \text{ cfs}$$

$$\Delta = 8.57^\circ$$

$$Q = 5.12 \text{ cfs}$$
$$Q = 6.52 \text{ cfs}$$
$$Q = 7.81 \text{ cfs}$$
$$Q = 8.81 \text{ cfs}$$
$$Q = 10.19 \text{ cfs}$$

POND DESIGNATION	FREQ. (YR.)	Q EXISTING	Q PROPOSED	Q RELEASED ALLOWABLE	BASED ON STAGE VS. STORAGE CURVE FOR POND		BASED ON RELEASE STRUCTURE	
					CALCULATED STORAGE ELEV. (FT)	CAL. MIN. STORAGE VALUE (FT ³)	CALCULATED STORAGE ELEV. (FT)	CAL. STORAGE VALUE (FT ³)
②	100	129.8	354.7	129.8	487.9	284,466	487.9	284,466
	50	117.3	322.2	117.3	486.91	240,823	487.56	268,849
	25	101.7	275.1	101.7	486.41	219,841	487.11	249,139
	10	89.94	235.3	89.94	485.35	177,559	486.75	233,806
	5	75.08	202.7	75.08	484.58	149,783	486.24	212,736
	2	57.87	166.5	57.87	483.65	117,358	485.58	186,583

DETENTION POND VOLUME
REQUIRED = 284,466 FT³

DETENTION POND VOLUME
PROVIDED = 288,711 FT³

METERING DEVICE

"V" Notched Weir in Detention Wall

$$Q = 0.58 \frac{8}{15} \tan \frac{\Delta}{2} \sqrt{2g} H^{\frac{5}{2}}$$

$$Q = 129.8 \text{ cfs}$$

$$\Delta = 28.22^\circ$$

$$Q = 56.87 \text{ cfs}$$
$$Q = 73.59 \text{ cfs}$$
$$Q = 88.31 \text{ cfs}$$
$$Q = 99.69 \text{ cfs}$$
$$Q = 115.3 \text{ cfs}$$

METERING DEVICE

"V" Notched Weir in Detention Wall

$$Q = 0.58 \frac{8}{15} \tan \frac{\Delta}{2} \sqrt{2g} H^{\frac{5}{2}}$$

$$Q = 42.76 \text{ cfs}$$

$$\Delta = 104.46^\circ$$

$$Q = 18.58 \text{ cfs}$$
$$Q = 24.32 \text{ cfs}$$
$$Q = 28.88 \text{ cfs}$$
$$Q = 32.61 \text{ cfs}$$
$$Q = 37.67 \text{ cfs}$$

RECORD DRAWINGS
AS PROVIDED BY:
I.C.S. COMMERCIAL
MICHAEL S. ALLEN, P.E.
DATE: 9/25/03