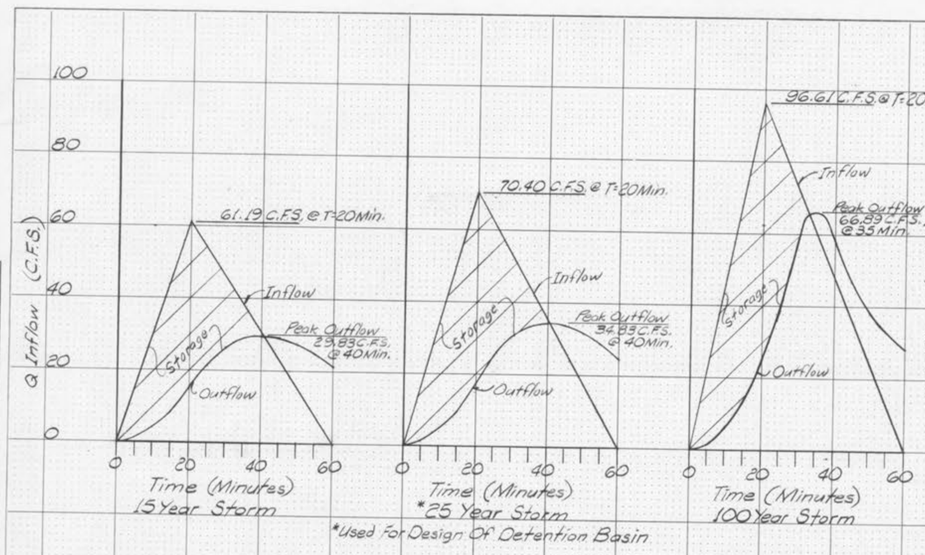
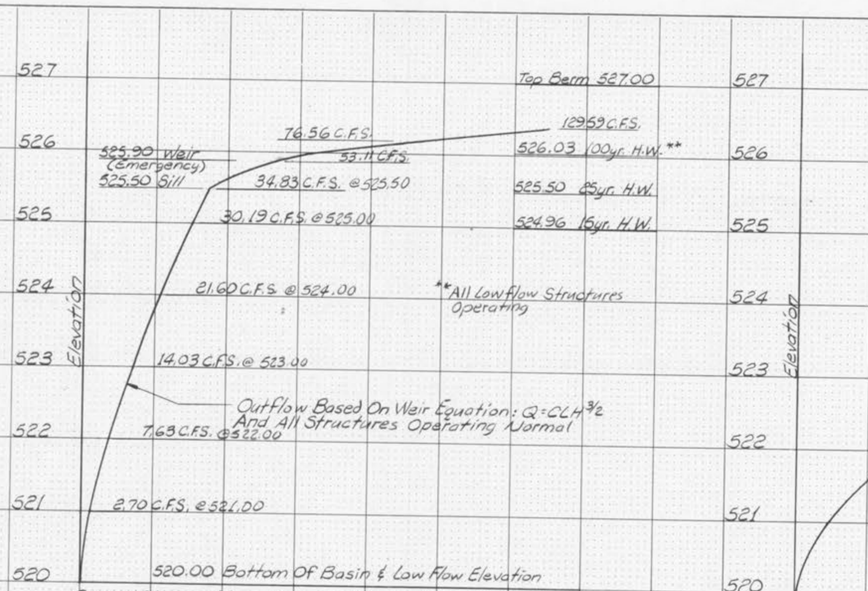
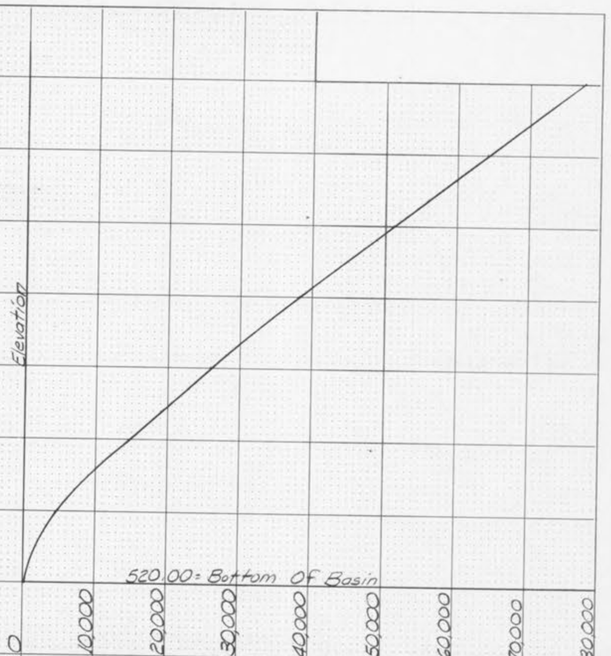


*Used For Design Of Detention Basin

INFLOW / OUTFLOW HYDROGRAPHS



ELEVATION VS. DISCHARGE



ELEVATION VS. STORAGE

TIME	INFLOW			OUTFLOW			STORAGE		
MIN	CFS	CF INCRE	CF CUMUL	CFS	CF INCRE	CF CUMUL	CF CUMUL	ELEV
0	0		0	0		0	0	520.00
5	15.30	2295	2295	1.19	357	357	1938	520.38
10	30.60	6885	9180	4.24	1272	1629	7551	521.35
15	45.89	11474	20654	8.51	2553	4182	16472	522.15
20	61.19	16062	36716	15.17	4551	8733	27983	523.16
25	53.54	17210	53926	21.76	6528	15261	38665	524.02
30	45.89	14915	68841	26.38	7914	23175	45666	524.57
35	38.24	12620	81461	29.02	8706	31881	49580	524.87
40	30.60	10326	91787	29.83	8949	40830	50957	524.96
45	22.95	8033	99820	29.38	8814	49644	50176	524.91
50	15.30	5738	105558	27.78	8334	57978	47580	524.73
55	7.65	3443	109001	24.92	7476	65454	43547	524.40
60	0	1148	110149	21.60	6480	71934	38125	524.00

15 YEAR STORM

TIME	INFLOW			OUTFLOW			STORAGE		
MIN	CFS	CF INCRE	CF CUMUL	CFS	CF INCRE	CF CUMUL	CF CUMUL	ELEV
0	0		0	0		0	0	520.00
5	17.60	2640	2640	1.25	375	375	2265	520.60
10	35.20	7920	10560	4.96	1488	1863	8697	521.50
15	52.80	13200	23760	9.91	2973	4836	18924	522.38
20	70.40	18480	42240	17.76	5328	10164	32076	523.51
25	61.60	17160	62040	25.52	9246	17820	44220	524.47
30	52.80	14520	79200	30.82	10147	27066	52134	525.07
35	44.00	11880	93720	33.69	10449	37173	56547	525.38
40	35.20	9240	105600	34.83	10221	47622	57978	525.50
45	26.40	6600	114840	34.07	9576	57843	56997	525.42
50	17.60	3960	121440	31.92	8652	67419	54027	525.19
55	8.80	1320	125400	28.84	7449	76071	49329	524.85
60	0		126720	24.88		83520	43200	524.39

*25 YEAR STORM

TIME	INFLOW			OUTFLOW			STORAGE		
MIN	CFS	CF INCRE	CF CUMUL	CFS	CF INCRE	CF CUMUL	CF CUMUL	ELEV
0	0		0	0		0	0	520.00
5	24.15	3623	3623	1.79	537	537	3086	520.76
10	48.31	10869	14492	6.41	1923	2460	12032	521.78
15	72.46	18116	32608	13.82	4146	6606	26002	522.97
20	96.61	25361	57969	25.17	7551	14157	43812	524.43
25	84.53	27171	85140	38.74	11622	25779	59361	525.63
30	72.46	23549	108689	61.97	18591	44370	64319	525.99
35	60.38	19926	128615	66.89	20067	64437	64178	526.03
40	48.31	16304	144919	57.57	17271	81708	63211	525.95
45	36.23	12681	157600	47.08	14124	95832	61768	525.80
50	24.15	9057	166657	37.58	11274	107106	59551	525.60
55	12.08	5435	172092	32.94	9882	116988	55104	525.30
60	0	1812	173904	28.39	8517	125505	48399	524.80

100 YEAR STORM

BASIN VOLUME
(BASED ON GEOMETRICS OF BASIN)

ELEV	AREA SQ. FT.	INCREMENTAL VOLUME	CUMULATIVE VOLUME CU. FT.
520.0	0		0
1.0'		4325	
521.0	8650		4325
0.25'		2413	
521.25	10650		6738
0.75'		8175	
522.0	11150		14913
2.0'		23350	
524.0	12200		38263
2.0'		25650	
526.0	13450		63913
1.0'		13825	
527.0	14200		77738

NOTE: SEE SHEET 20 OF 22 FOR CALCULATIONS RE: TRIBUTARY DRAINAGE AREAS.

LOWFLOW OPENING (25 YR)
- 0.90' OPENING CAST IN STRUCTURE (Weir) (SEE DETAIL ON SHEET 16 OF 22)
- FLOWLINE ELEV. = 520.00
- TOP = 525.50

PRIMARY OVERFLOW (25 YR.)
- STRUCTURE WILL SILL OF 19' (Weir Length) (SEE DETAIL ON SHEET 16 OF 22)
- SILL ELEV. = 525.50
- TOP = 527.25

EMERGENCY OVERFLOW (100 YR.)
- RIP RAP WEIR 35' LENGTH
- FLOWLINE ELEV. = 525.90
- TOP BERM 527.00

WEIR EQUATION = $Q = CLH^{3/2}$
WHERE: C = 3.0, L = 35', Q = 96.61 cfs
SOLVE FOR H = 0.95'
0.95' + 525.90 = 526.85
527.00 - 526.85 = 0.15' FREEBOARD

@ 100 year Discharge Assuming "Low Flow" Structure (Weir/Inlet) Not Functioning.

LAKEVIEW

DETENTION CALCULATIONS (BASIN # 1)

HALL, HALSEY & WIND
LAND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
10820 SUNSET OFFICE DRIVE, SUITE 203, ST LOUIS, MO 63127 - 314/966-5577

Drawn By	Checked By	Project Number	Sheet Number
VLB	DCW	86025	17 OF 22

Date 2/28/87
Revisions City 5-21-87

FINAL SURVEY — SURVEYED, DRAWN, TEMPLATE, AREAS, AREAS CHECKED, DATE, BY, NOTE BOOK, NO.

ORIGINAL SURVEY — SURVEYED, DRAWN, TEMPLATE, AREAS, AREAS CHECKED, DATE, BY, NOTE BOOK, NO.