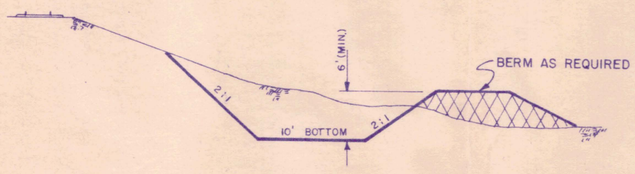
PROPOSED SURFACE DRAINAGE

LEGEND:

- AREA IMMEDIATELY TRIBUTARY TO FULHAM POND
- AREA ULTIMATELY TRIBUTARY TO FULHAM POND
- AREA IN ROSEVILLE TRIBUTARY TO LOWER END OF COUNTY DITCH 5 VIA GRAVITY SYSTEM ON MINN. TRANSFER R.R. R/W.
- EXISTING STORM SEWER
- FUTURE STORM SEWER
- PROPOSED CULVERTS
- PROPOSED FORCEMAIN
- PROPOSED DITCH AND/OR DITCH REBUILDING
- PROPOSED HOLDING POND

SCALE: 1" = 500' SEPTEMBER 15, 1965 DRAWING 2



TYPICAL DITCH SECTION


EXISTING SURFACE DRAINAGE
LEGEND:
AREA TRIBUTARY TO FULHAM POND
AREA TRIBUTARY TO LOWER END OF COUNTY DITCH 5 VIA DITCH ON MINN. TRANSFER R.R. R/W
AREA IN ROSEVILLE TRIBUTARY TO COUNTY DITCH 5 IN ADDITION TO THE TWO PRECEEDING AREAS
SCALE: 1"=500'
SEPTEMBER 15, 1965
DRAWING 1
N
POPLAR LAKE
JONES LAKE
CO. DITCH NO. 2
CO. DITCH NO. 5
FOSS ROAD
FOREST LAKE CUT-OFF
ORIGINAL CO. DITCH 5
RELOCATED CO. DITCH 5
PLUGGED & ABANDONED
I.H. 35W - U.S. 8
NEW BRIGHTON
COUNTY ROAD D
414 ACRES
COUNTY ROAD C-2
HENNEPIN COUNTY
RAMSEY COUNTY
COUNTY ROAD C
NORTHERN PACIFIC RY. CO.
MINNESOTA BELT LINE RY. CO.
SCHOOL DIST. 621
POND
LIMITS OF EXISTING FLOWAGE EASEMENT
EXTENT OF FULHAM POND AT ELEV. 917
477 ACRES
COUNTY ROAD B-2
CO. DITCH NO. 4
TRUNK
GLUEK LANE NORTH
GLUEK LANE SOUTH
COUNTY ROAD B


PROPOSED POND AND PUMPING STATION
LEGEND:
APPROXIMATE EXTENT OF REQUIRED STORAGE POND FOR PUMPING STATION AT ULTIMATE CAPACITY (SEE TEXT)
LIMITS OF EXISTING FLOWAGE EASEMENT
EXISTING CONTOURS (1' INTERVAL)
IN PLACE STORM SEWERS
SCALE : 1"=50'
SEPTEMBER 15, 1965
DRAWING 3
MINNESOTA TRANSFER R.R.
COUNTY ROAD B-2
FORCEMAIN
BASE PLAN - 36"
ALT. PLAN - 20" & 30" (BY STAGES)
PUMPING STATION
FUTURE 54" STORM SEWER (BY M.H.D.)
AUTO CONTROL GATE
30" RCP
21" RCP
24" RCP
15" RCP
12" RCP
18" CMP
CENTER SECTION 8
914.83
914.50
914.49
914.90
915.20
913.70
915.38
913.16
913.0
916.9
920.5
917.1
914.2
910.0
918.5
906.7
925
920
915
917
910
905
930
ST. CROIX STREET
FULHAM STREET
S.T.H. 36 & I.H. 35 W
N

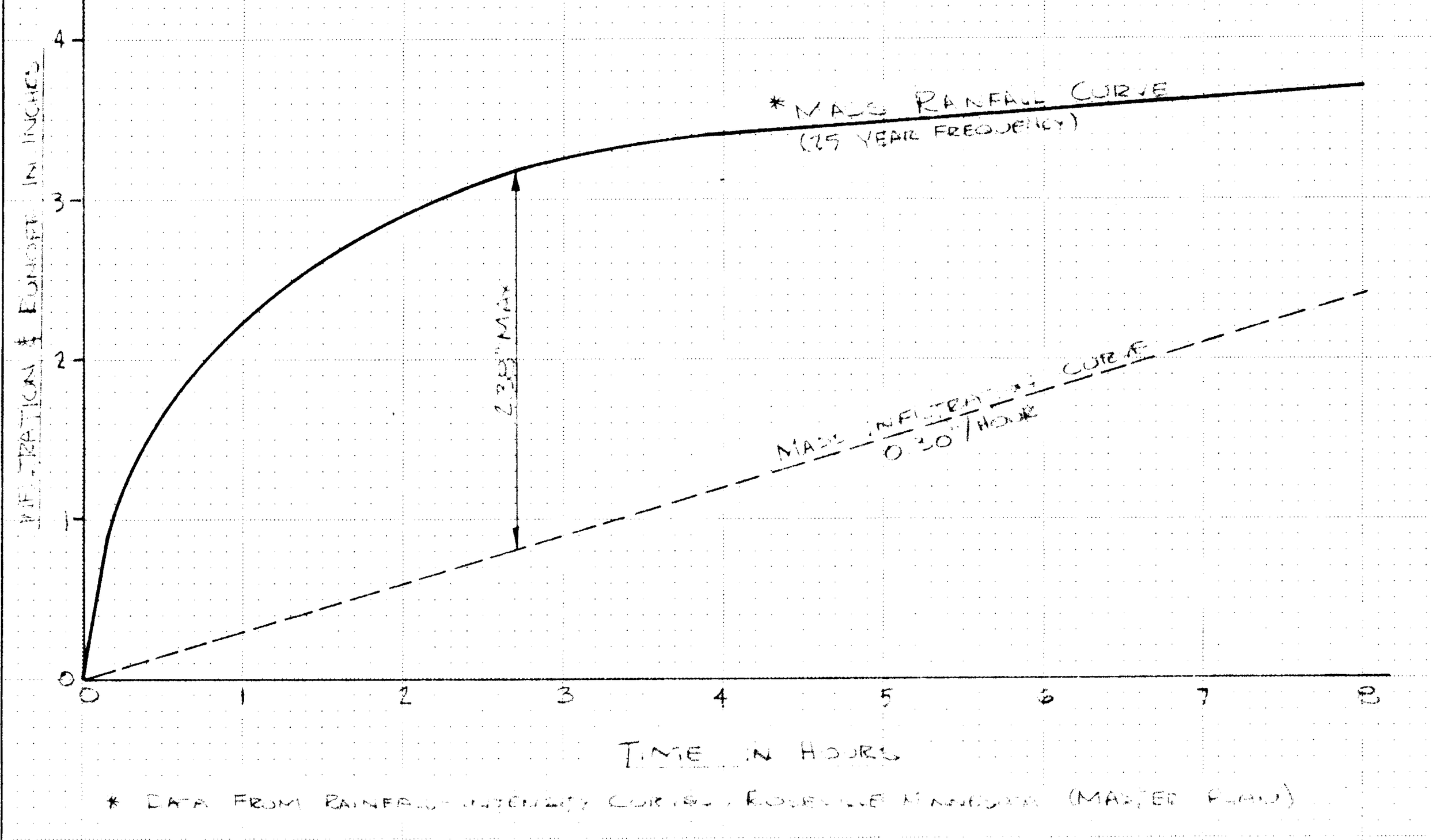


FIGURE I - RAINFALL CURVE

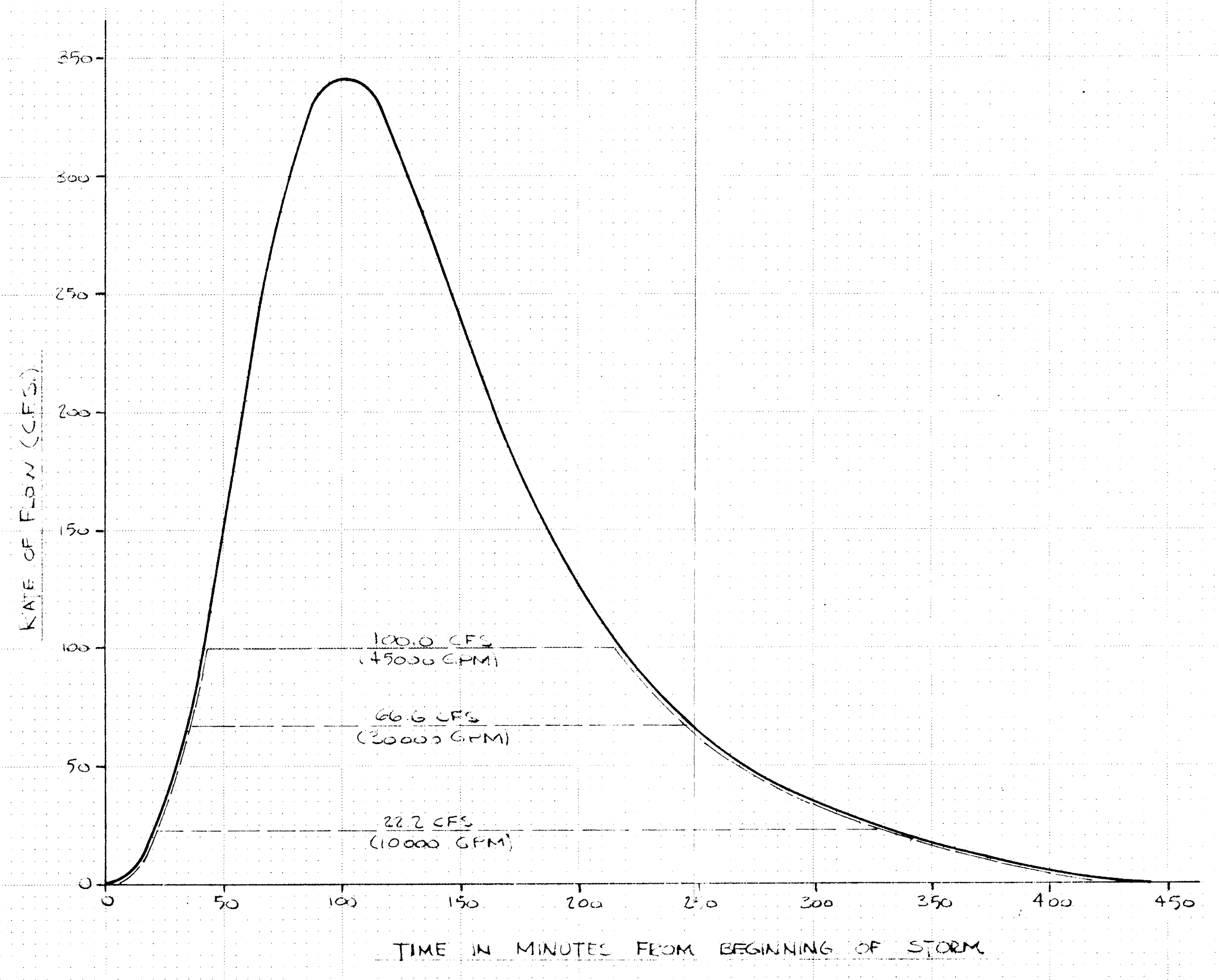


FIGURE 2 - 25 YEAR STORM HYDROGRAPH

CALCULATIONS AND BASIC ASSUMPTIONS

A. DETERMINATION OF PEAK RUNOFF RATE

1) RATIONAL METHOD (Q = CIA)
A = 244 ACRES; ASSUME AVG. C = 0.40, I = 2.50
Q = 0.40 × 2.50 × 244 = 244 CFS

2) USDA METHOD (Q = RF × LF × FF × Q...)
A = 244 ACRES, ASSUME RF = 0.8, LF = 1.0, FF = 1.0, Q = 420 (SEE USDA MANUAL)
Q = 0.8 × 1.0 × 1.0 × 420 = 336 CFS

∴ USE: Q = 340 CFS

B. TOTAL RUNOFF:

FROM FIGURE I: R = 3.35/12 × 244 = 68 AC. FT.

C. DESIGN INFLOW HYDROGRAPH (USDA METHOD)

HYDROGRAPH CONSTANTS:

V = 0.000842 R = 0.0514 AC. FT.
W = Q/60 = 5.61 CFS
K = 726V/W = 7.35 MINUTES

POINT	COORDINATES: TIME (MINUTES) t	× K	= T	FLOW (CFS) q	× W	= Q	CUMULATIVE RUNOFF R, IN % OF TOTAL (ACRE FEET) %	R
a	0	7.35	0	0	5.61	0	0	0
b	2	↑	14.7	3.5	↑	19.6	0.2	[illegible]
c	4		29.4	8.6		48.3	1.2	[illegible]
d	6		44.1	20.7		117.4	3.8	[illegible]
e	8		58.8	35.0		195.4	[illegible]	[illegible]
f	10		73.5	49.7		282.0	15.6	[illegible]
g	12		88.2	58.5		331.7	24.7	[illegible]
h	14		102.9	60.0		340.2	34.8	[illegible]
i	16		117.6	57.7		[illegible]	44.6	[illegible]
j	18		132.3	51.0		284.2	53.8	36.5
k	20		147.0	43.8		248.3	61.8	[illegible]
l	24		176.4	30.0		170.1	74.2	50.4
m	28		205.8	20.4		115.7	82.1	[illegible]
n	32		235.2	14.0		79.4	87.7	60.1
o	36		264.6	9.6		54.4	92.4	62.8
p	40		294.0	6.6		37.4	95.2	64.4
q	50	↓	367.5	2.4	↓	[illegible]	[illegible]	[illegible]
r	60	7.35	441.0	0	5.61	0	100.0	68.0

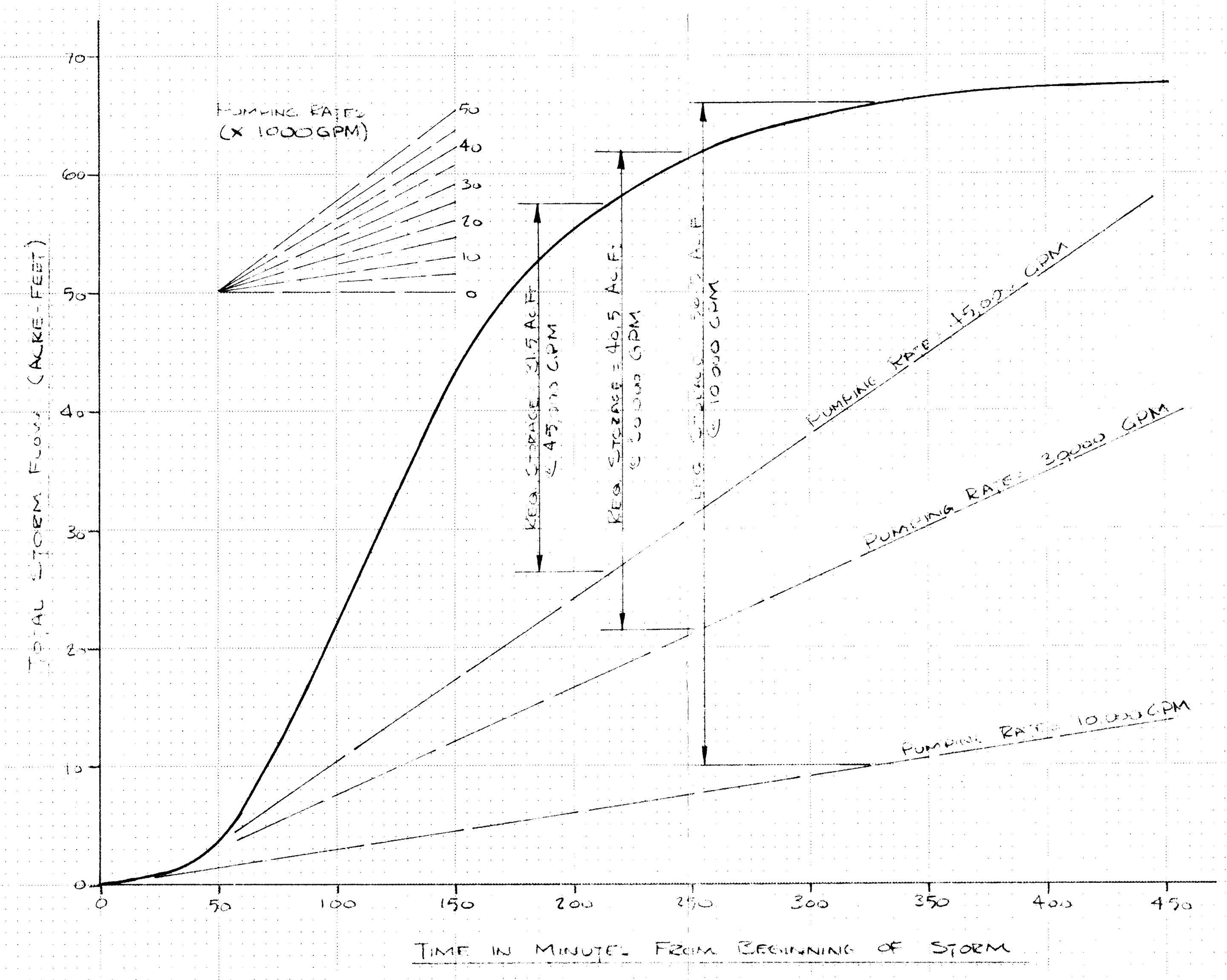


FIGURE 3 - 25 YEAR STORM MASS DIAGRAM SHOWING STORAGE VERSUS PUMPING REQUIREMENTS

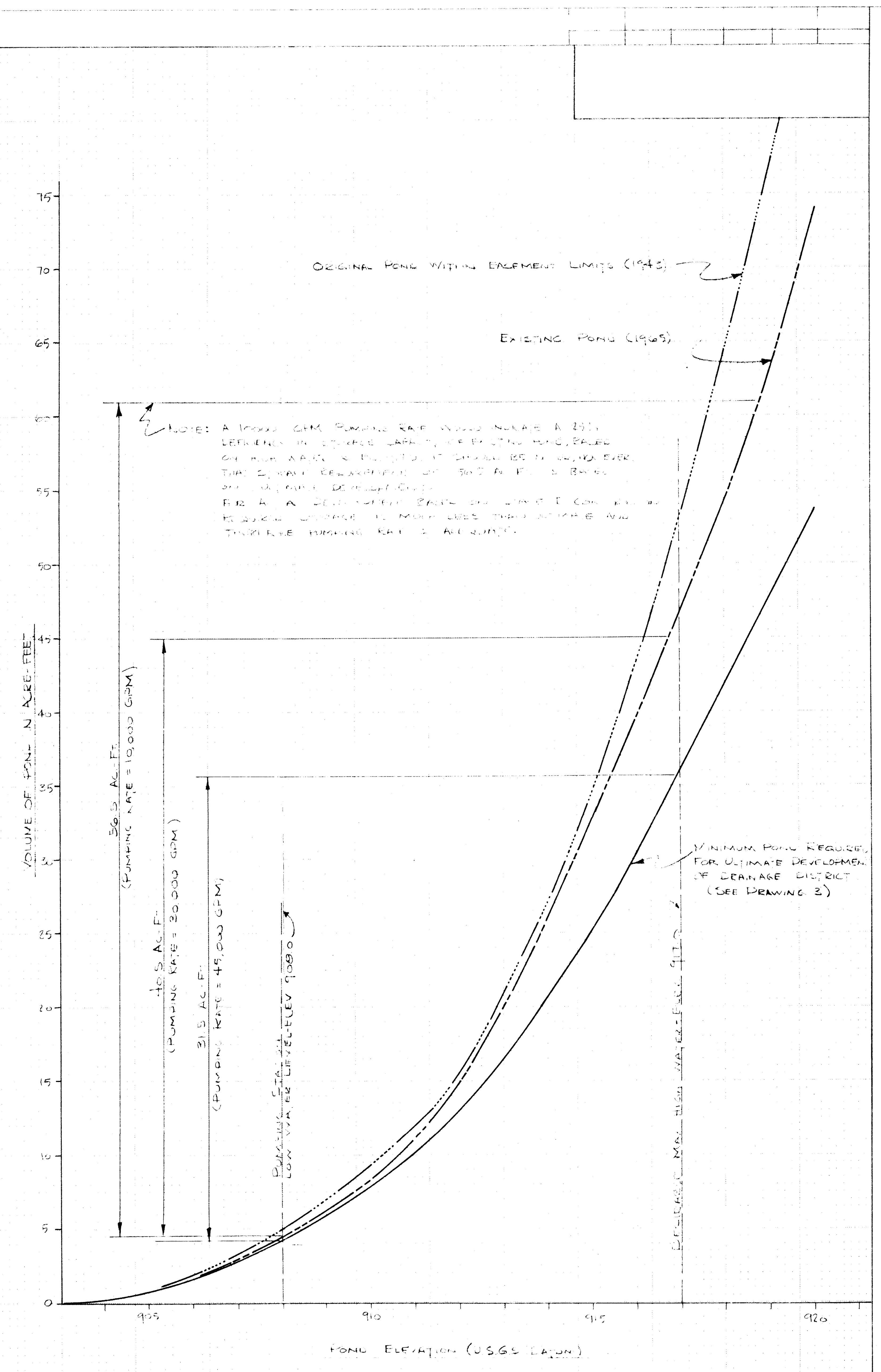


FIGURE 4 - AVAILABLE STORAGE

PREPARED BY:
BANISTER ENGINEERING CO.
ST. PAUL, MINNESOTA

SEPTEMBER 15, 1965

DRAWING 4

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		