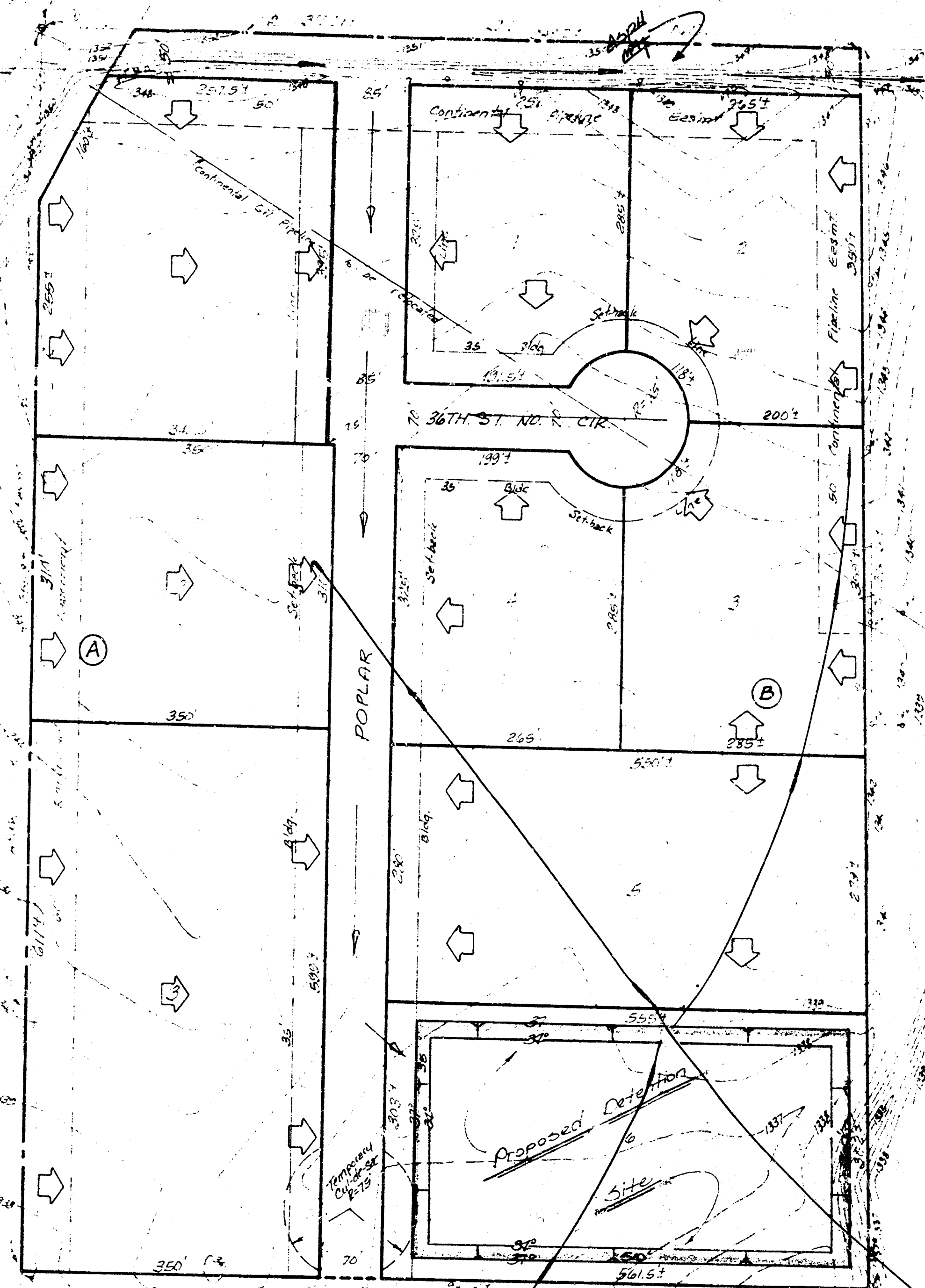


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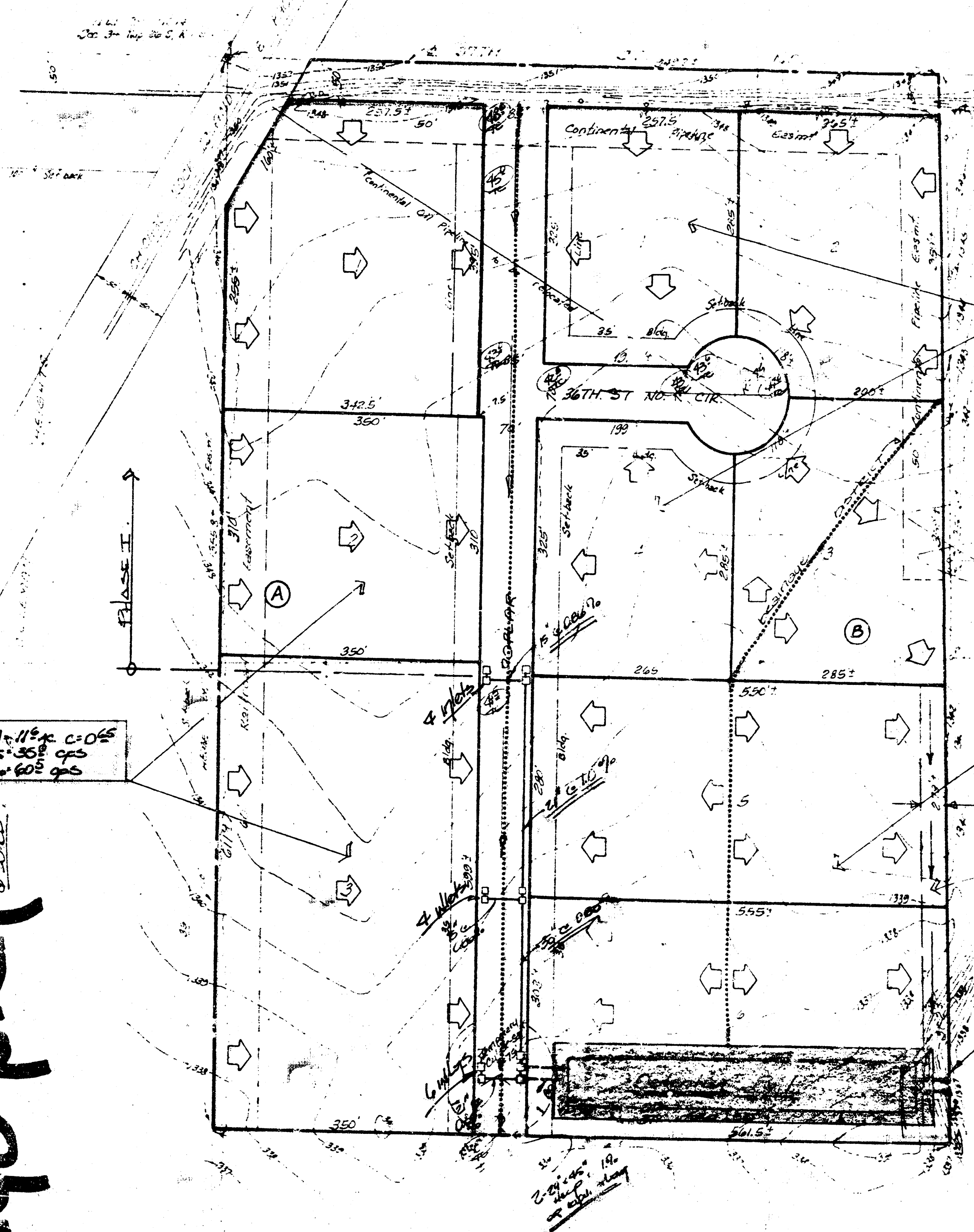


NORTHRIDGE INDUSTRIAL PARK

LEASING & RENTAL SERVICE, INC.
LESS RUDD

BAUGHMAN COMPANY, P.A.
SURVEYING & ENGINEERING
316/262-7271 • 330 LAURA • WICHITA, KANSAS 67211

layd abelueup



NORTHRIDGE INDUSTRIAL PARK

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CONFIRMATION MEMO	
DATE	July 1, 1983
JOB NO.	
COPIES TO	
TO	Chris Breitenstein
FROM	N. Brent Wooten
SUBJECT	Drainage Plan

Final Plat of Northridge Industrial Park is scheduled for July 7, 1983. The final portion of the Plat is being finalized at this point. The site will be an industrial park development with avg. sloped ground. Slope factor = 0.65.

The site is presently farmed soil type and group type B. Avg. runoff factor for the existing cultivated soil is 0.16. Area of the total site is 12.11 acres. The total area will be considered for the storage area at this point. The site is adjacent to a creek and the storm will include discharge into the creek only at the existing corner of runoff site. The remainder will be detained in a storage area at the S.W. Corner of the plat.

The detention pond and the 24" discharge pipes should be constructed at the first final phase of the plat. The area in the first phase is approximately 16 acres. The storm sewer system which begins at the S.W. Corner of the first phase would be constructed with the second phase. It is final plat and the cost of the total storm sewer charged against both Phase I and Phase II.

The detention pond will adequately serve Phase I without the storm sewer. Phase II from Phase I will be temporarily ditched south of the pond site.

The hydrograph are presented here.

TIME OF CONC.
Length = 1500 ft Slope 0.667
C = 0.85 gutter flow
T_c = 20 min. I₁₀₀ = 8.08 in/hr
I₂ = 4.66 in/hr
ALLOWABLE FLO OUT
Q₁ = 0.16 (8.08) (29.17) = 38 cfs
ASSUME WE USE 2-24" PIPES CMP
C = 110 cfs/pipe W 3.5' HEAD
W/ DEVELOPED FLO IN.
Q₂ = 0.16 (8.08) (29.17) = 152 cfs

VOLUME OF STORAGE -
APPROXIMATE STORAGE
= Q₁ - Q₂ (etc.)
= (152 - 38) (20) (60) = 136800 CF
= 3.1 AC-FT.

Basin Design -
DIMENSIONS WILL BE
820' x 60' x 3.5'
AND WILL BE LOCATED IN LOT 6 AS INDICATED.

Inflow Outflow Hydrograph Check -
Outflow = 38 cfs
W 3.5' HEAD & 24" PIPES (CMP)
Q/PIPE = 19 cfs
SO 2-24" PIPES WILL HANDLE DISCHARGE OK.

Inflow Hydrograph
Q₁ = 152 cfs Q₂ = 38 cfs
T_p = 20 min.

Basin Design -
820' x 60' x 3.5' = 3.5 AC-FT.

ROUTING -
2-24" CMP PIPE

STAGE STORAGE.

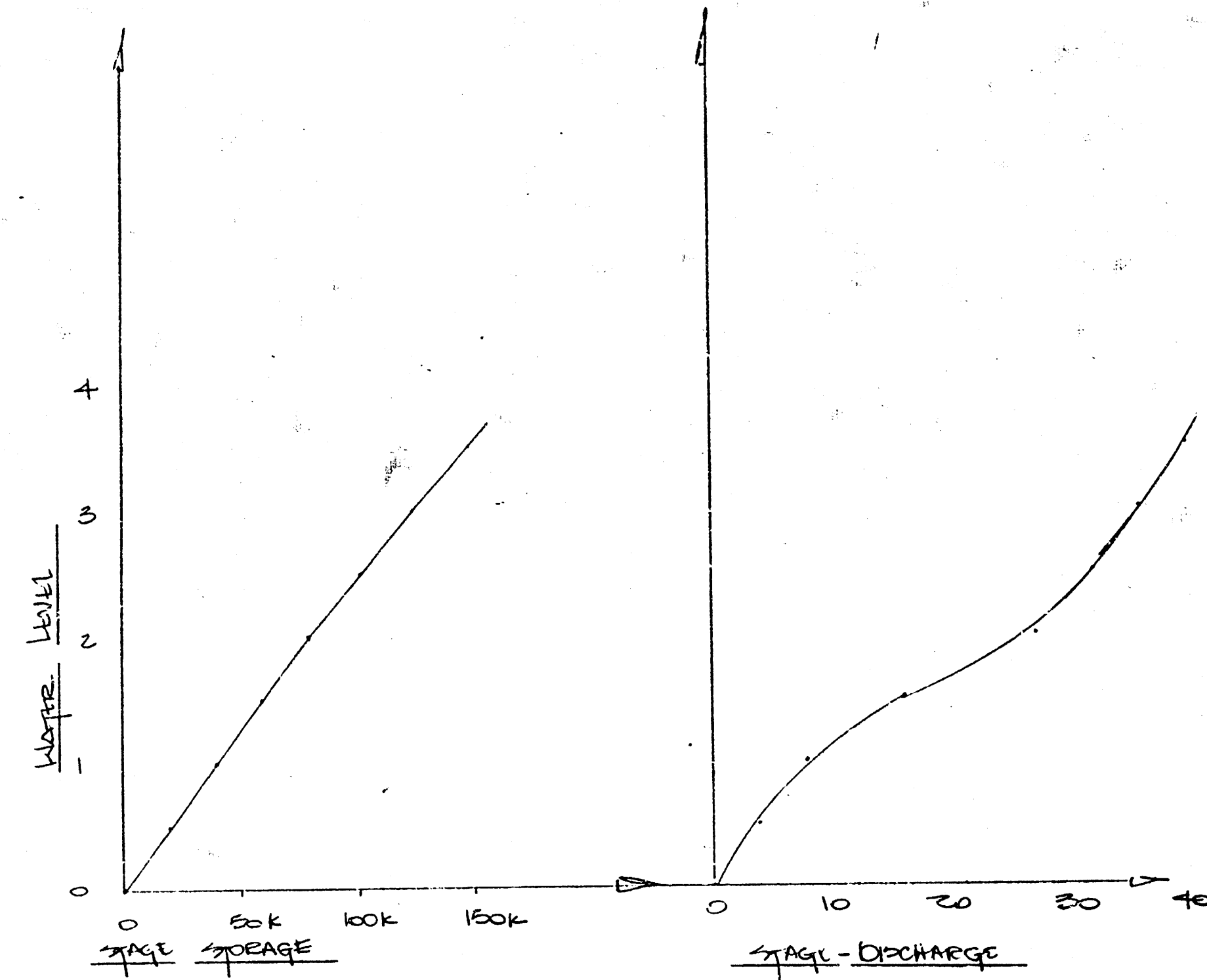
WATER LEVEL	SURFACE AREA	INC. VOL.	TOTAL VOL.
0	36281	13579	0
0.5	38036	19461	13579
1.0	39604	26582	38040
1.5	41000	21262	59302
2.0	42404	22161	81464
2.5	43806	23079	104603
3.0	45201	24000	129804

STAGE-DISCHARGE -

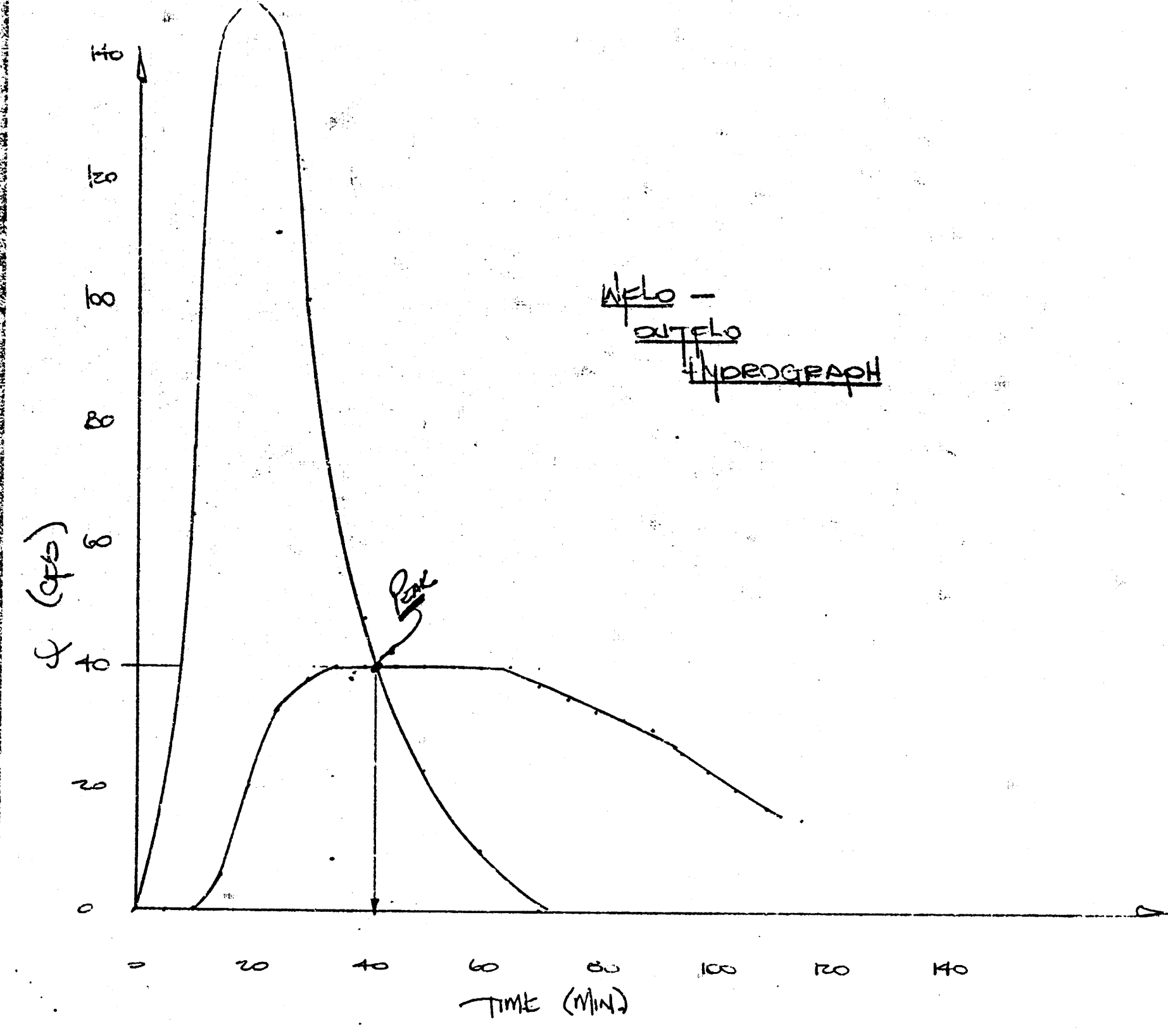
WATER LEVEL	IN D	Q ₁	Q ₂
0	0	0	0
0.5	0.25	2	4
1.0	0.5	4	6
1.5	0.75	6	16
2.0	1.0	15	27
2.5	1.25	16	32
3.0	1.50	18	36
3.5	1.75	20	40

Inflow Hydrograph -
Q₁ = 152 cfs
T_p = 20 min.

WATER LEVEL	Q ₁	Q ₂
0	0	0
0.5	0.25	0
1.0	1.00	20



Time (min)	Storage (cu ft)	Drainage (cu ft)
0	0	0
10	10	10
20	20	20
30	30	30
40	40	40
50	50	50
60	60	60
70	70	70
80	80	80
90	90	90
100	100	100
110	110	110
120	120	120
130	130	130
140	140	140
150	150	150
160	160	160
170	170	170
180	180	180
190	190	190
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340	340	340
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CONFIRMATION MEMO

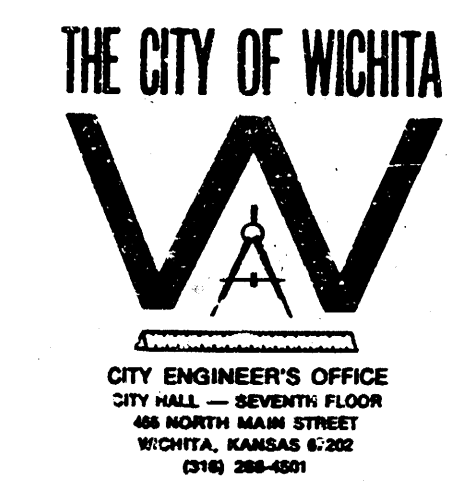
PROJECT: Northridge Industrial Park
TO: Chris Breitenstein
FROM: N. Brent Wooten
REFERENCE: Drainage Concept

DATE: June 6, 1983
COPIES TO:

Preliminary Plat is scheduled for Subdivision for June 9, 1983.
The plan presented is a concept only till future development plans are defined. A detention site will be located on Lot 6 as indicated. The lots will drain to this site. The calculations are shown below.

DA = 29.2 Acres
Soil type for this area is Farnum soil type. Soil group is B. 55% of the area will be industrial and 45% will be cultivated. Average runoff group = 80. For the antecedent storm moisture condition II (6" rainfall) runoff amount = 3.78 inches.

Volume of detention = (3.78/12)(29.2 Acres) = 9 AC. - FT.
Consider a pond site depth of 3 foot. Volume / 3 FT. = 3 Acre-foot surface area or approximately a 260' x 510' site.



Mr. Don Arnold, Jr.
John T. Arnold Asso.
190 N. Main, Suite 501
Wichita, KS 67202

June 14, 1988

Dear Mr. Arnold:

As per our discussion on the drainage plan for Northridge Industrial Park, the City concurs with the proposed revision on the attached drainage plan, provided that sufficient drainage easement is obtained to allow for any cross lot drainage to occur.

Sincerely,
Vicky Huang
Vicky Huang, P.E.
Subdivision Engineer

VH:sm/5148A

