

FINAL PLAT  
SUBDIVISION REPORT

SUBDIVISION COMMITTEE  
METROPOLITAN AREA  
PLANNING COMMISSION

S/D NO. 76-97 Name KINKAID PARK FIFTH ADDITION  
Date Application Rec'd. 10-1-76 Preliminary Approval N/A  
Scheduled S/D Meeting 10-21-76

DESCRIPTION

General Location East side of Broadway in an area south of Pawnee

Owner Builders, Inc.  
Surveyor/Engineer Moehring & Associates  
Address 314 Brown Building Phone 263-6781

1. Gross Acreage of Plat 14.975
2. Number of Lots:
  - Residential 56
  - Commercial \_\_\_\_\_
  - Industrial \_\_\_\_\_
  - Other \_\_\_\_\_
3. Total Number of Lots 56
4. Minimum Lot Frontage 51.23 ft.
5. Minimum Lot Area 7183.8 sq. ft.
6. Existing Zoning C
7. Proposed Zoning C

7. Lineal Feet of New Streets:
  - a. 64 R/W 3529.82 ft.
  - b. \_\_\_\_\_ R/W \_\_\_\_\_ ft.
  - c. \_\_\_\_\_ R/W \_\_\_\_\_ ft.
  - d. \_\_\_\_\_ R/W \_\_\_\_\_ ft.
  - e. \_\_\_\_\_ R/W \_\_\_\_\_ ft.
  - TOTAL 3529.82 ft.
8. Sidewalk adjacent to all streets? yes  no

9. Public Water Supply Yes (Yes-No), Name City of Wichita
10. Public Sanitary Sewers Yes (Yes-No), Name City of Wichita
11. Health Department Approval (where applicable) N/A (Yes-No)
12. City of Wichita X: Three-Mile Area \_\_\_\_\_

STAFF COMMENTS:

NOTE: This final plat is a portion of a previously approved preliminary plat of Kinkaid Park Third Addition.

- A. The applicant shall guarantee the paving of all streets being platted in this Addition.
- B. The applicant shall guarantee the extension of city sanitary sewer to serve each lot.
- C. The applicant shall guarantee the extension of city water to serve each lot.
- D. The applicant shall guarantee the construction of four-foot sidewalks along both sides of all interior streets and along the south side of Marion Road.
- E. The applicant or his engineer shall contact Tim Cain of the Department of Public Works relative to a name for the street connecting Emporia and Greenway Boulevard. Also, Greenway Boulevard shall be labeled on the final plat.
- F. "Complete access control" shall be labeled adjacent to the north line of Marion Road and the west and south lines of St. Francis. The plat's text shall be amended to include the access controls on St. Francis.
- G. Block numbers shall be indicated on the face of the plat.
- H. 20-foot utility easements shall be shown between Lots 2 and 3, and 9 and 10 in the block on the west and between Lots 2 and 3 in the block on the east.
- I. The 25-foot building setback from the cul-de-sac on Lot 19 may be reduced to 15 feet, thus creating more buildable lot areas.
- J. The staff recommends that the property line between Lots 19 and 20 be moved north approximately 40 feet. This would give Lot 20 the required frontage for a lot of its size and would also reduce the unbuildable portion of Lot 19.

- K. The written dimension of the west property line of Lot 20 appears to be in error and should be checked.
- L. Several lots in the block on the east do not have the required frontage for their size. It is recommended that the design requirement pertaining to minimum lot widths be waived.
- M. The north-south utility easements on the east line of the plat shall be continuous through Lot 8.
- N. The date of the survey shall be shown on the final plat tracing.
- O. Recording of the plat within 30 days after approval by the Board of City Commissioners.

Final plat  
SUBDIVISION REPORT

SUBDIVISION COMMITTEE  
METROPOLITAN AREA  
PLANNING COMMISSION

S/D NO. 80-78 Name Kinkaid Park Fifth Addition  
Date Application Rec'd. 9-19-80 Preliminary Approval  
Scheduled S/D Meeting 10-2-80

DESCRIPTION

General Location Between Marion Court and St. Francis, 1/2 mile south of Pawnee

Owner Builders, Inc. Attention: Alexander L. Dean  
Surveyor/Engineer Moehring and Associates  
Address 433 S. Hydraulic, Wichita, Ks. 67211 Phone 263-8291

1. Gross Acreage of Plat 22.13
2. Number of Lots:  
Residential 1  
Commercial \_\_\_\_\_  
Industrial \_\_\_\_\_  
Other \_\_\_\_\_
3. Total Number of Lots 1
4. Minimum Lot Frontage 64 ft.
5. Minimum Lot Area 964,175 sq. ft.
6. Existing Zoning C
7. Proposed Zoning C w/ CUP (DP-43)

7. Lineal Feet of New Streets:  
a. \_\_\_\_\_ R/W 0 ft.  
b. \_\_\_\_\_ R/W \_\_\_\_\_ ft.  
c. \_\_\_\_\_ R/W \_\_\_\_\_ ft.  
d. \_\_\_\_\_ R/W \_\_\_\_\_ ft.  
e. \_\_\_\_\_ R/W \_\_\_\_\_ ft.  
TOTAL 0 ft.

8. Sidewalk adjacent to all streets? yes no

9. Public Water Supply yes (Yes-No), Name City of Wichita
10. Public Sanitary Sewers yes (Yes-No), Name City of Wichita
11. Health Department Approval (where applicable) N.A. (Yes-No)
12. City of Wichita X: Three-Mile Area \_\_\_\_\_

STAFF COMMENTS:

Note: This plat constitutes a replat of all of Kinkaid Park 4th Addition and a replat of part of Kinkaid Park 2nd and 3rd Additions. The previous plat of Kinkaid Park 5th which was reviewed and approved in 1976 was never recorded. The associated C.U.P. has been adjusted to allow Garden Apartments on this property.

- A. The representative from City Engineering should be prepared to comment on the status of the applicant's drainage plan.
- B. On the final plat tracing, the Engineer's text shall be amended to reference the fact that street rights-of-way, lots, building setbacks, and easements are being vacated by virtue of K.S.A. 12-512 (b).
- C. The applicant shall guarantee the reconstruction of Marion Rd., where it enters this property, to a private driveway entrance.
- D. Recording of the plat within 30 days after approval by the Board of City Commissioners.

Note: This plat is submitted in final form only, as provided for in Article 4, Part 5 of the MAPC Subdivision Regulations. The Utility Advisory Committee should be prepared to comment on existing utilities and other various improvements, or discuss the feasibility of the applicant extending and/or installing same.

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①

"The Shores" - Sewage Pumping Facilities

A - Contribution of Gravity Sewer System to Lift Station

<u>Bldg #</u>	<u>D.U.'s</u>
1	12
2	16
3	18
4-A	18
4-B	18
5	Club House & Office (Assume <sup>MAX</sup> 7 DU Equiv.)
6	24
7	24
8	12
9	18
10	18
11	24
12	12
13	18
14	18
15	18
16	18
17	12
18-A	18
18-B	18

DEVELOPMENT TOTAL = 341 D.U.'s

B. Gallonage contribution - Peaking Factor - Pumping Rate & Clearwell Sizing.

$$\begin{array}{r}
 341 \text{ D.U.'s} \\
 \times 3 \text{ persons/D.U.} \\
 \hline
 1023 \text{ P.E.}
 \end{array}$$

(cont'd)

Assuming 90 gpcpd;

$$\begin{array}{r} 1023 \text{ P.E.} \\ \times 90 \text{ gpcpd} \\ \hline \end{array}$$

$$\text{Average Daily Contribution} = 92,070 \text{ gal./day} \\ = 64 \text{ gpm}$$

w/ Peak Flow Rate @ 3 x Ave.

$$\text{PEAK FLOW RATE} = 64 \text{ gpm} \times 3 = 192 \text{ gpm}$$

Use 200 gpm as design pumping rate

Since the length of force main is relatively long (Equivalent length = 1430 L.F.), use 6" diam. P.U.C. force main, which will reduce the Horse Power requirements approx. 50%

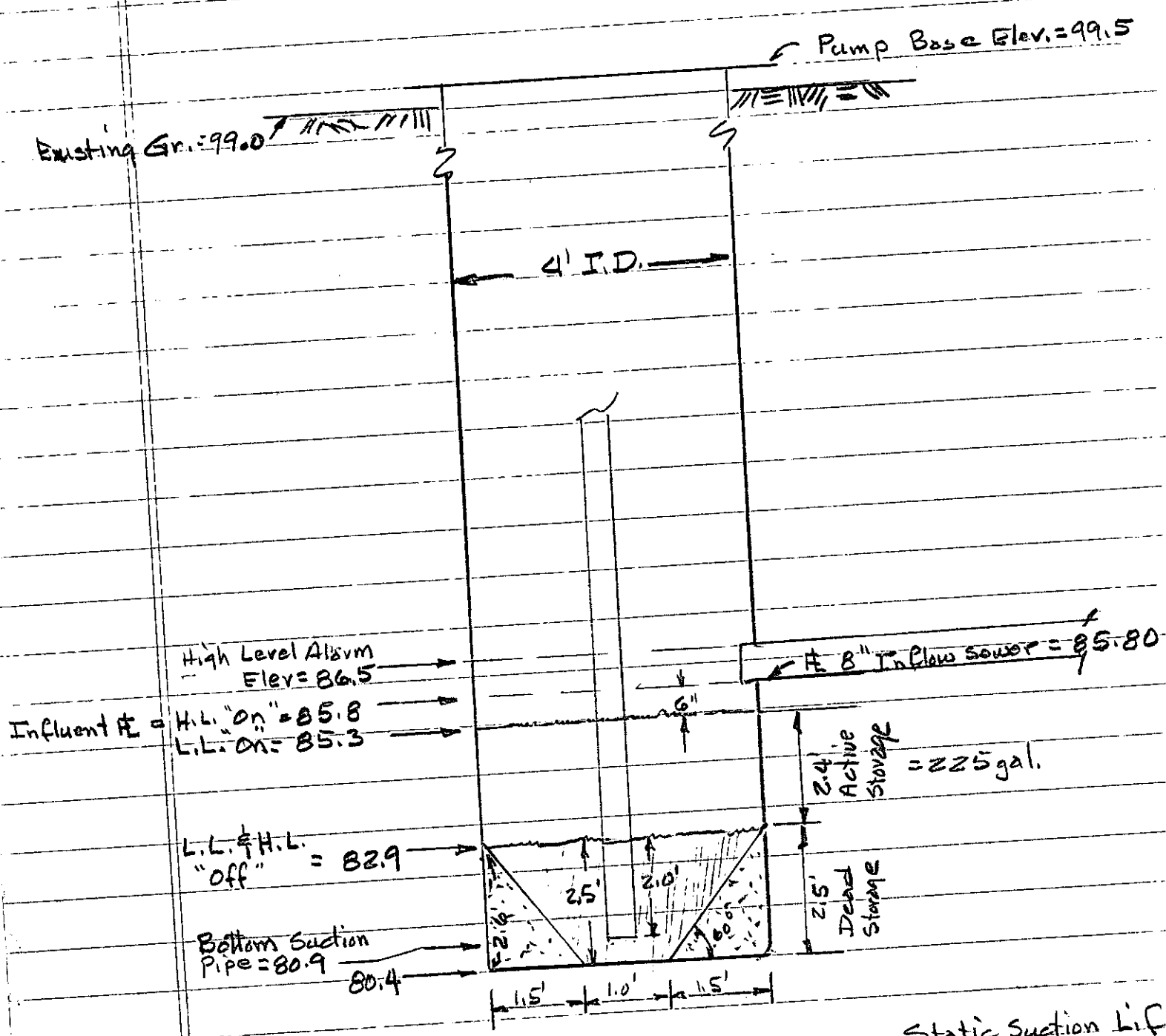
Then, increase design pumping rate to 225 gpm, to provide velocity in force main of 2.57 ft/sec.

Correspondingly, use 225 gal. as the required active storage in the Wet Well.

The wet well configuration and control elevations will then be as indicated on the following sketch.

# WET WELL DESIGN & CONTROL ELEVATIONS

See Tabulation on following page



Static Suction Lift

$$= 99.5 - 80.9$$

$$= 18.6 \text{ Ft}$$

DESIGN COMPUTATIONS —  
LIFT STATION & FORCE MAIN

THE SHORES  
in  
KINKAID PARK 5<sup>th</sup> ADD. (4)

I - Initial Data: - Elevations  
(City Datum)

A - Bottom of Wet Well	= 80.4
B - Bottom of Suction Pipe	= 80.9
C - $\pi$ " in - 8" Gravity Sewer	= 85.8
D - L.W.L. (Both Lead & Lag Pumps)	= 82.9
E - H.W.L. (Lead Pump "On")	= 85.3
F - H.W.L. (Lag Pump "On")	= 85.8
G - Alarm Level (Power or Pumping Failure)	
= top of 8" Gravity Sewer Pipe	= 86.5
H - High Point in Force Main	= 93.0
I - $\pi$ of Force Main leaving Lift Sta	= 88.67

Design Pumping Rate = 225 gpm

Force Main = 6" P.V.C. (SDR 21); C=150

Use "C" = 140 for sewage

Velocity = 2.55 ft/sec.

$H_f = 0.74 \times 0.54$  (from Smith & Loveless)

Length of Force Main = 1408 L.F.

w/ 3 - Std. Radius 45° D.I Bends

Elevation Head -

Maximum Elevation = High Point in Force Main = 93.50 ✓

L.W.L. Elevation (at the end of pump cycle) = 82.90

Max. Elev. Head = 10.60 f

Maximum Elevation = 93.50

H.W.L. Elev. (at the beginning of pump cycle) = 85.30

Min. Elev. Head = 8.20

(Cont'd)

Friction Head —

Equivalent length of 45° Bend = 7.7'  
x 3 45° Bends

Fitting Equiv. Length = 22.1'

Then, Equivalent Length of  
Force Main & Fittings = 1408 + 22.1 = 1430.1

Use 1430 L.F. Equiv. Length

Velocity Head — At pipe outlet into receiving

M.H.  $H_f = \frac{K V^2}{2g}$  w/  $K=1.0$

Max.  $H_f = \frac{1.0 \times (2.55)^2}{64.4} = 0.10'$

T.D.H. = Elevation Head + Friction + Velocity

Then, determine T.D.H. values at various pumping rates, and plot values for "System Curve". Determine for both both conditions, i.e. with maximum and Minimum Elevation Head conditions.

Plot system curves on Pump Performance Curves, to determine Min. & Max. pumping rates, impeller diameter and maximum horse power requirements

(Cont'd)

System Curve - w/ Max. Elev. Head Conditions

(6)

Pumping Rate (GPM)	A Equiv. Length of Force Main $\times h_f \times \text{conv. factor} =$ Friction Head Losses	B Elev. Head (Max)	C Velocity Head ( $V^2/2g$ )	D Sta. losses (ft)	T.D.H. A+B+C+D (ft)
100	$14.30 \times 0.14 \times 0.54 = 1.08$	10.60	0.10	0.7	11.248
125	$14.30 \times 0.28 \times 0.54 = 2.16$	10.60	0.10	1.0	13.86
150	$14.30 \times 0.32 \times 0.54 = 2.47$	10.60	0.10	1.4	14.52
200	$14.30 \times 0.62 \times 0.54 = 4.79$	10.60	0.10	2.4	17.89
225	$14.30 \times 0.74 \times 0.54 = 5.71$	10.60	0.10	3.0 <sup>2.45</sup>	19.41
250	$14.30 \times 0.92 \times 0.54 = 7.10$	10.60	0.10	3.6	21.40
275	$14.30 \times 1.15 \times 0.54 = 8.88$	10.60	0.10	4.3	23.88

System Curve - w/ Min. Elev. Head Conditions

100	= 1.08	8.20	0.10	0.7	10.08
125	= 2.16	8.20	0.10	1.0	11.46
150	= 2.47	8.20	0.10	1.4	12.17
200	= 4.79	8.20	0.10	2.4	15.49
225	= 5.71	8.20	0.10	3.0	17.01
250	= 7.10	8.20	0.10	3.6	19.0
275	= 8.88	8.20	0.10	4.3	21.48

Plot the above T.D.H. values on Pump performance curves, as system performs

(A)

4B2B - 1170 RPM  
w/ 2 BHP Motor operating  
@  $\pm 63\%$  efficiency

225 gpm @ 19.41 T.D.H.

The anticipated operating head range is from 17.01 minimum to 19.41 maximum.

(B)

4B2B - 875 RPM  
w/ 2 BHP Motor  
operating @  $\pm 66\%$  effie.

225 gpm @ 19.41 TDH

Anticipated operating head range is from 17.01 minimum to 19.41 maximum

# ENGINEERING DATA

**ECODYNE**

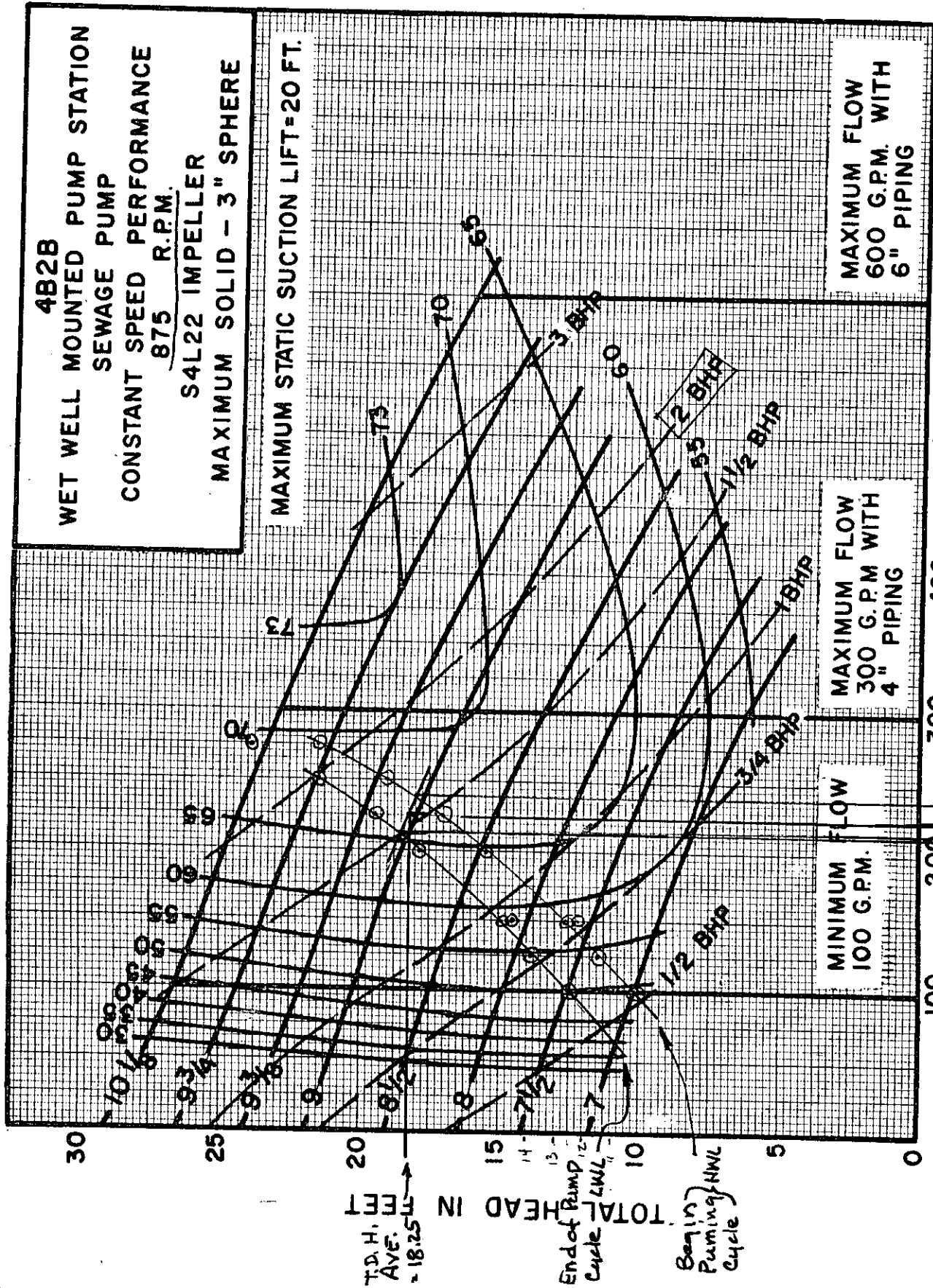
Smith & Loveless  
Division

14040 W. Santa Fe Trail Dr.  
Lenexa, Kansas 66215

Wastewater Pumps  
Constant Speed  
Model 4B2B  
June, 1976

**4B2B**  
WET WELL MOUNTED PUMP STATION  
SEWAGE PUMP  
CONSTANT SPEED PERFORMANCE  
875 R.P.M.  
S4L22 IMPELLER  
MAXIMUM SOLID - 3" SPHERE

MAXIMUM STATIC SUCTION LIFT=20 FT.



MAXIMUM FLOW  
600 G.P.M. WITH  
6" PIPING

MAXIMUM FLOW  
300 G.P.M WITH  
4" PIPING

MINIMUM FLOW  
100 G.P.M.

Reg'd  
2 H.P. - operating  
@ 66% efficiency

U.S. GALLONS PER MINUTE

Max  
" 240 "  
" 210 "  
" 3 "

1.5 ft choice

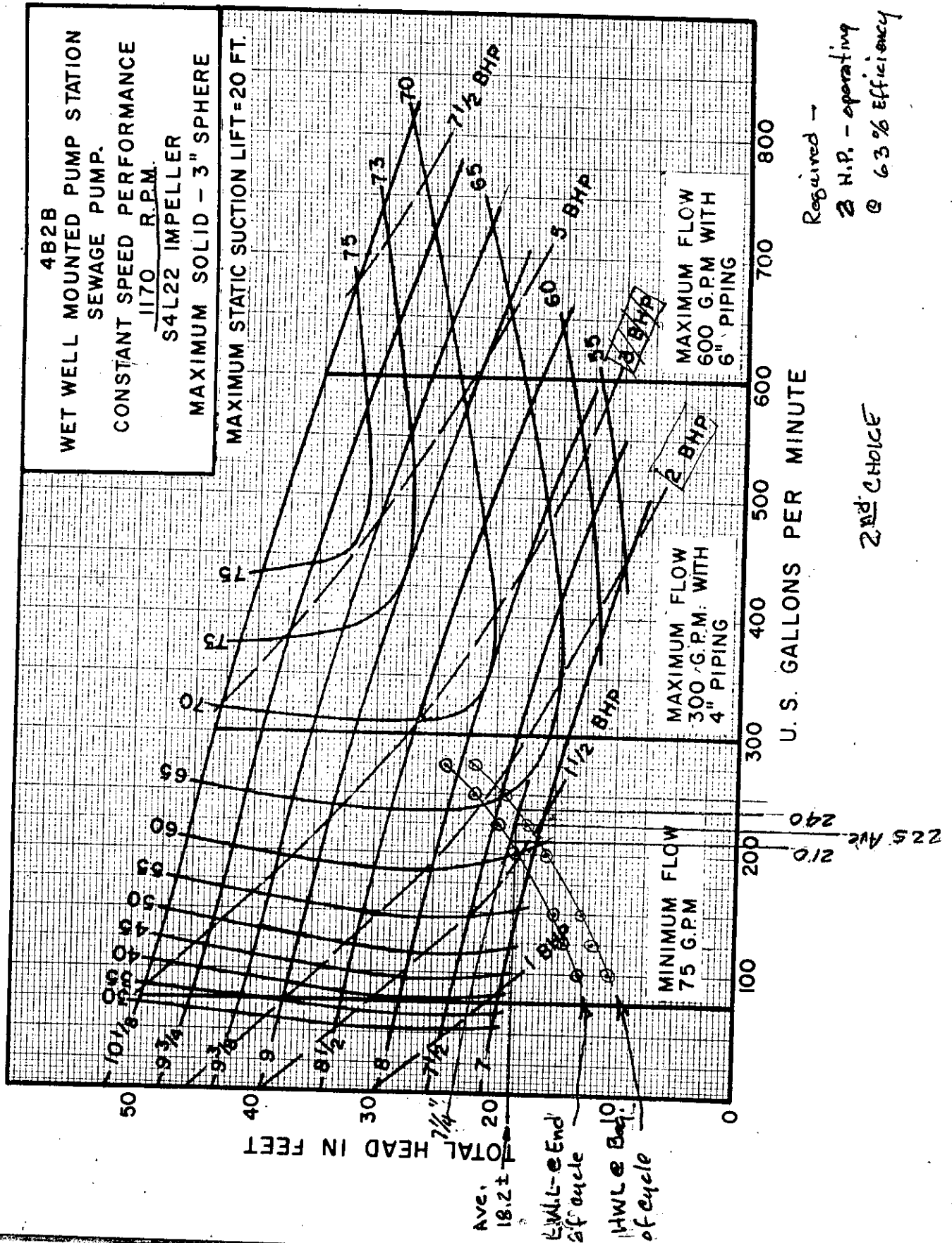
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14040 W. Santa Fe Trail Dr.  
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Wastewater Pumps  
Constant Speed  
Model 4B2B  
June, 1976



Either pump will be acceptable for the design conditions.

The 875 rpm pump would cost \$60 to \$100 more, initially, but the slower rpm pump normally would have lower maintenance costs, and operating at slightly greater efficiency would eventually save enough in power costs to offset the difference in initial cost.

The standby generator size would be the same for either pump installation.

The engine generator should be 7.5 kW, 9.37 KVA (standby power rating) 3 phase, 60 Hz., powered by a 1.5 H.P. Natural Gas engine; w/ Automatic Transfer Switch 100 Amps