

drainage plan

2-20-85

MOBILE MANOR ADD
MAC ARTHUR RD
UNPLATTED
MERIDIAN

B.M. ELEV. 97.02 - CITY DISC 36" S 44" E
OF MERIDIAN S MAC ARTHUR RD

BAUGHMAN COMPANY, P.A.
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(VERTICAL FLOW) = $4.5 \text{ ft}^3/\text{min} \times (5.0 \text{ ft}^2) / 3 \text{ ft}$
 $\phi = 174 \text{ ft}^3/\text{min}$
SINCE THERE IS SUCH A SMALL AMOUNT OF
SIDE SHAPE AREA TO CONSIDER WE WILL NOT
CONSIDER ANY LATERAL FLOW AND CONSIDER ONLY
THE VERTICAL FLOW.
BY CRITERIA OF DESIGN THE POND IS TO
BE DISCHARGED IN FOUR DAYS TIME.
INFLOW AMOUNT = 82 ac-ft. = 574,992 cu. ft.
W. A RATE OF DISCHARGE OF $174 \text{ ft}^3/\text{min}$
TOTAL TIME = $574,992 / 174 = 3305 \text{ min}$
= 55 HOURS OR 2.3 DAYS.
SO WITH AVERAGE MAINTENANCE...

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NOTE - SIDE SLOPES AND TOP AREA OF
RETENTION SITE SHOULD BE SEEDED AND MULCHED.
THE POND IS A RETENTION POND
DESIGN WITH NO SLOW RELEASE OR PUMP STATION
SYSTEM TO GUARANTEE DISCHARGE OTHER THAN
DESIGN VERTICAL FLOW INTO THE WATER TABLE
LEVELS. THEREFORE IT IS STRONGLY RECOMMENDED
THAT SOME MAINTENANCE PRACTICE OR GUARANTEE
BE ESTABLISHED TO INSURE THAT THE POND WILL
IN FACT REMAIN AS A FUNCTIONABLE PART OF
THIS DEVELOPMENT.

SUPERVISING
ENGINEER
KELTHER, P.E. USA
GREENWOOD, P.E.
HUBBARD, P.E. & E.T.
MCDONALD, GEOLOGIST
FELDMAN, L.S.
LEWIS, L.S.
HARRIS, L.S.
JEFFERSON, L.S.
QUINN, L.S.
MOORE, L.S.

15 June 1983

Mr. B. A. Ruedebsch
3200 S.E. Boulevard
Wichita, Kansas 67216

Re: Falling Head Permeability Tests
A/L File No. 50-83016-1530

Sir:

We have completed the referenced falling head permeability tests on samples
delivered to the laboratory. Results of the tests are as follows:

- East Side
Coefficient of permeability "k" = $1.07 \times 10^{-3} \text{ cm/sec}$
= 36.3 in/day
- West Side
Coefficient of permeability "k" = $9.57 \times 10^{-4} \text{ cm/sec}$
= 32.6 in/day

All tests were conducted in accordance with Chapter VI of Lambe's "Soil Testing
for Engineers".

If there are any questions concerning this data, please call at your convenience.

Respectfully submitted,

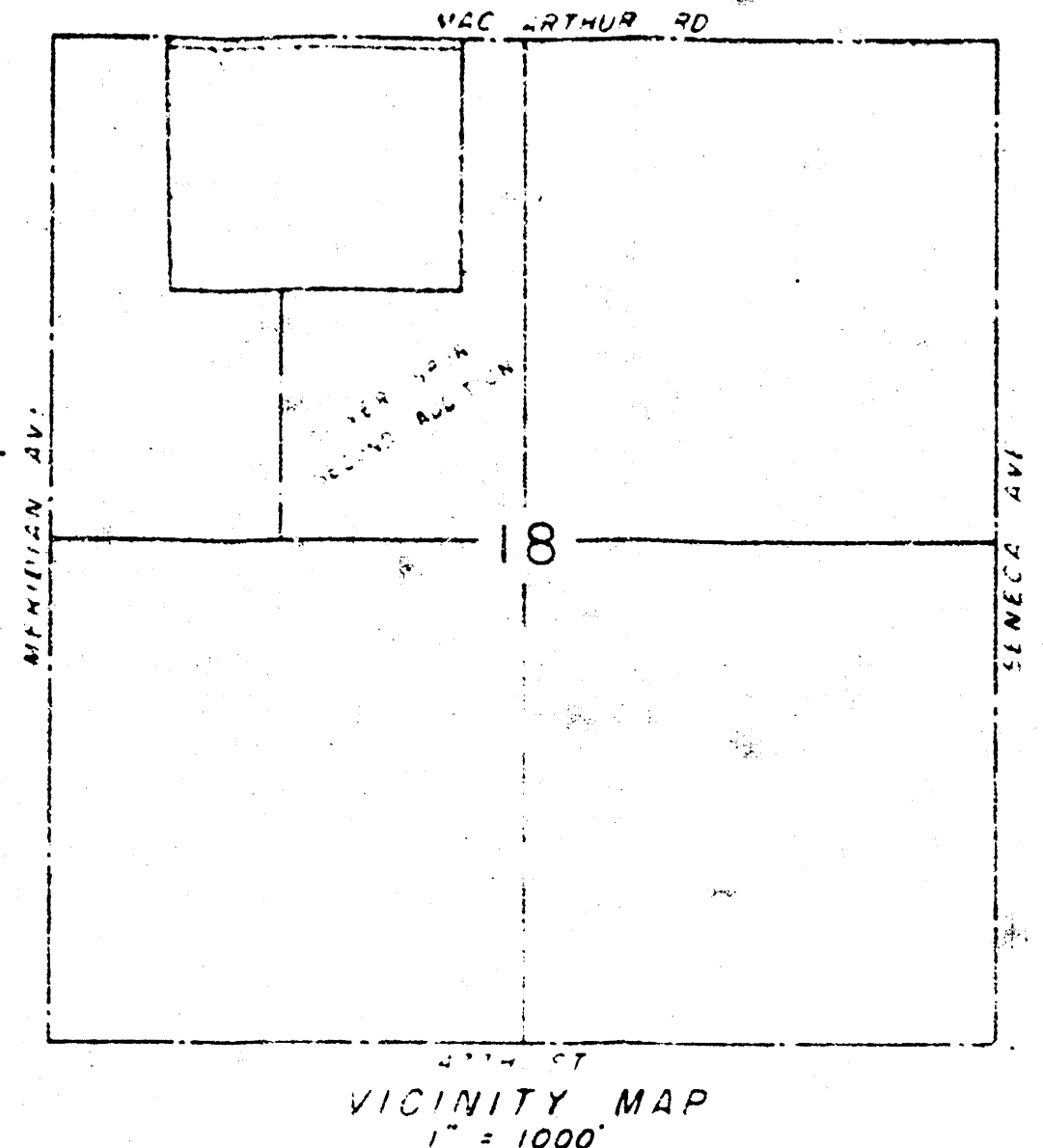
ALLIED LABORATORIES

John S. McDaniel, Jr.
Manager, Geo-Test Division

MOBILE MANOR SOUTH

FOR B A RUEDEBUSCH
3200 S.E. BLVD
WICHITA, KANSAS

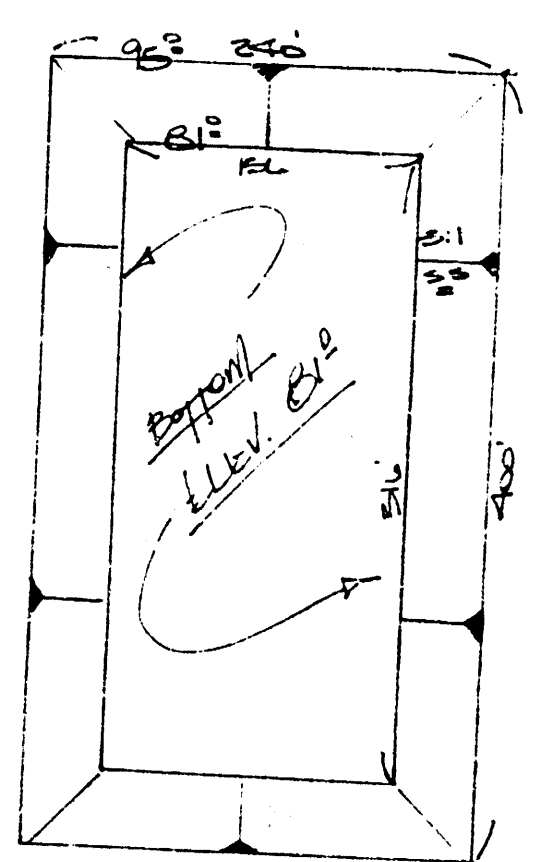
TOPO MADE JANUARY, 1983



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PROJECT: Mobile Manor Addition
TO: Chris Breitenstein
FROM: Brent Mooton
REFERENCE: Drainage Plan Addendum
DATE: June 20, 1983
COPIES TO: _____

THE REQUIRED STORAGE VOLUME FOR THIS SITE IS
82 AC-FT. FOR THE MAJOR STORM DISCHARGE.
PROPOSED POND SITE DIMENSIONS FOR THE
RETENTION POND ARE INDICATED BELOW.



3:1 SIDE SLOPES
TOP: 95.0 ELEV.
WATER LEVEL = 84.0 ELEV.
TOTAL POND DEPTH
= 11.0 FEET

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EXISTING GROUND ELEVATION AT THE SITE = 95.0
EXISTING WATER LEVEL GROUND WATER = 84.0

PROPOSED BOTTOM OF POND SITE = 81.0
OR THREE FEET BELOW GROUND WATER.
PROPOSED FREEBOARD FOR SITE = TWO FEET
W/INCH OF REQUIRED ONE FOOT.

POND CAPACITY CONSIDERED ONLY FROM ELEVATION
OF 84 TO 93. AVAILABLE CAPACITY = 15.1 AC-FT

THE COEFFICIENT OF PERMEABILITY AVG FOR THE SITE
AT THE ELEVATION OF 84.0 IS 34.45 IN/DAY.

FLOW FROM THE SITE VERTICALLY INTO THE WATER TABLE
WOULD BE CALCULATED FROM $Q = K h A / L$
 $h = 9 \text{ FOOT TOTAL AVERAGE HEAD}$
 $A = \text{AREA OF SITE AT ELEV. 84.0} = 58,116 \text{ SF}$
 $L = \text{THICKNESS OF SAND LAYER AFFECTING FLOW} = 3 \text{ FT}$
 $K = \text{PERM. FACTOR}$

COPY