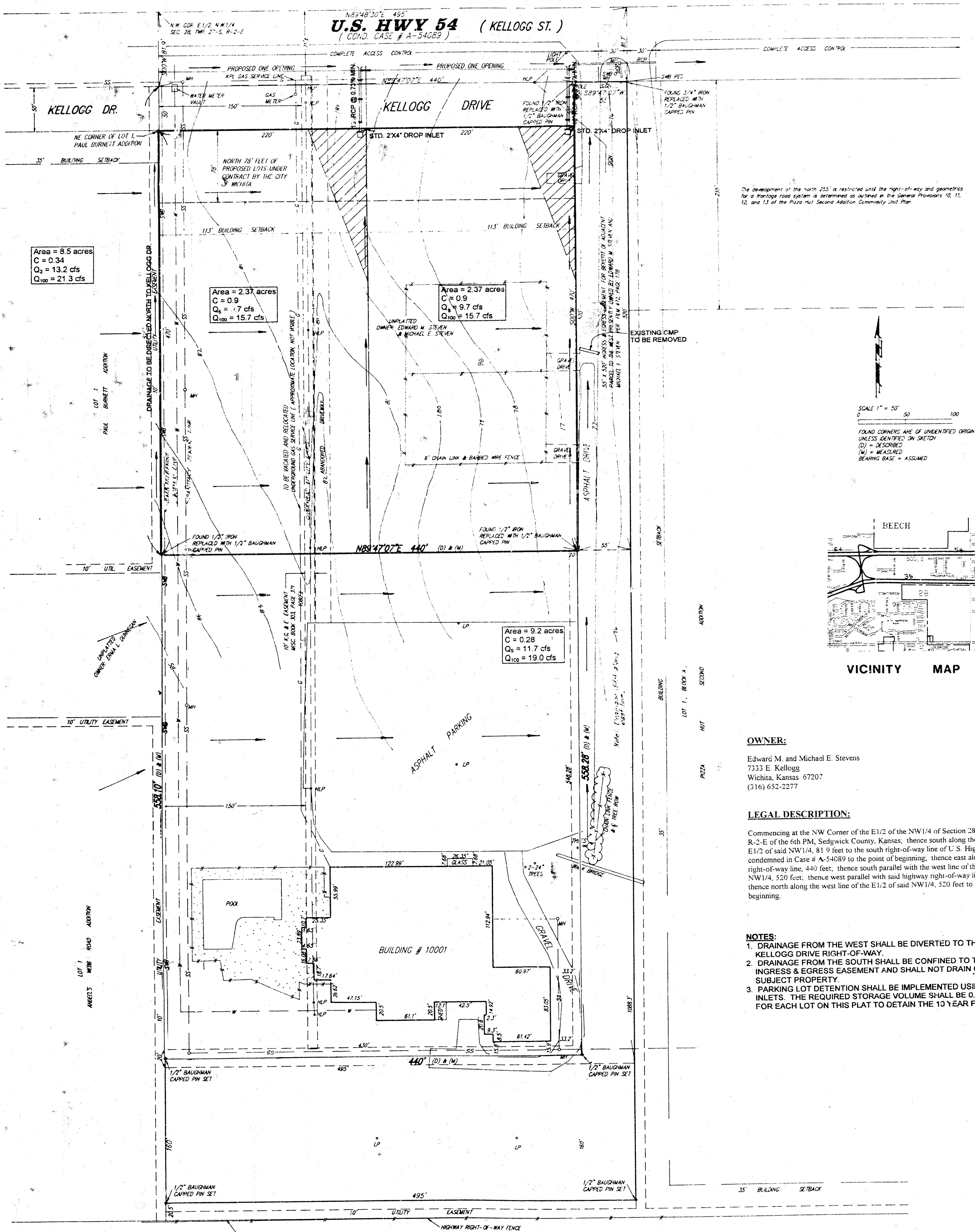


PRELIMINARY PLAT
E.M. STEVENS 4TH ADDITION



Edward M. and Michael E. Stevens
7333 E. Kellogg
Wichita, Kansas 67207
(316) 652-2277

LEGAL DESCRIPTION:

Commencing at the NW Corner of the E1/2 of the NW1/4 of Section 28, Twp-27-S, R-2-E of the 6th PM, Sedgewick County, Kansas, thence south along the west line of the E1/2 of said NW1/4, 81.9 feet to the south right-of-way line of U.S. Highway 54 as condemned in Case # A-54089 to the point of beginning, thence east along said highway right-of-way line, 440 feet, thence south parallel with the west line of the E1/2 of said NW1/4, 520 feet, thence west parallel with said highway right-of-way line, 440 feet, thence north along the west line of the E1/2 of said NW1/4, 520 feet to the point of beginning.

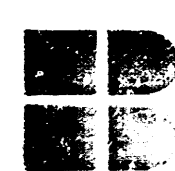
NOTES:

- NOTES:**
1. DRAINAGE FROM THE WEST SHALL BE DIVERTED TO THE NORTH TO KELLOGG DRIVE RIGHT-OF-WAY.
 2. DRAINAGE FROM THE SOUTH SHALL BE CONFINED TO THE 55' X 520' INGRESS & EGRESS EASEMENT AND SHALL NOT DRAIN ONTO SUBJECT PROPERTY.
 3. PARKING LOT DETENTION SHALL BE IMPLEMENTED USING AREA INLETS. THE REQUIRED STORAGE VOLUME SHALL BE 0.38 ACRE FEET FOR EACH LOT ON THIS PLAT TO DETAIN THE 10 YEAR FREQUENCY.

NORTHERLY RIGHT OF WAY LINE OF
KANSAS TURNPIKE AUTHORITY
(COND. CASE # A-55770)

DRAINAGE PLAN

May 15, 1995



BAUGHMAN COMPANY P. A.
SURVEYING & ENGINEERING
316/262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

E.M. STEVENS 4th ADD. Date 4-18-95 Page 1 of 3 BAUGHMAN COMPANY, P.A.

TOTAL DRAINAGE AREA:
(FROM USGS MAP)

D.A. = 23.0 ACRES OFF-SITE AREA = 17.7 ACRES

LAND USE OF OFF-SITE DRAINAGE:

60% COMMERCIAL
40% AGRICULTURAL

COMPOSITE "C" = $\frac{0.6(0.3) + 0.4(0.2)}{2} = 0.31$

LAND USE OF ON-SITE DRAINAGE:

POST PRE
100% COMMERCIAL 100% GRASS/OPEN SPACE

"C" = 0.90 "C" = 0.30

PEAK FLOW RATES:
(USING RATIONAL METHOD)

OFF-SITE DRAINAGE: $Q_s = 17.7(0.31)(4.56) = 25.0 \text{ cfs}$

$Q_{so} = 17.7(0.31)(7.37) = 40.4 \text{ cfs}$

ON-SITE DRAINAGE (POST-DEV): $Q_s = 2.37(0.9)(4.56) = 9.7 \text{ cfs}$

$Q_{so} = 2.37(0.9)(7.37) = 15.7 \text{ cfs}$

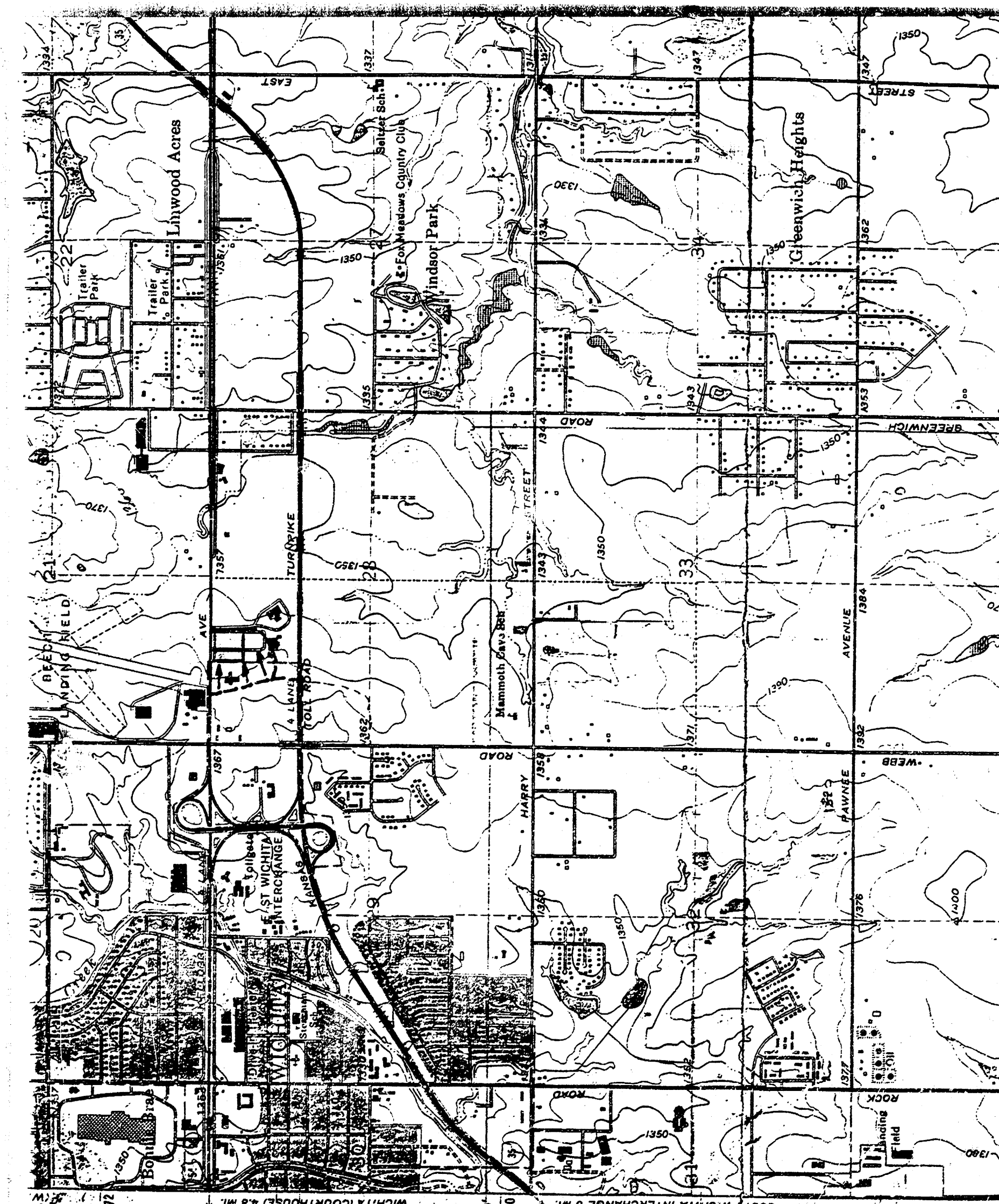
ON-SITE DRAINAGE (PRE-DEV): $Q_s = 2.37(0.3)(4.56) = 3.2 \text{ cfs}$

$Q_{so} = 2.37(0.3)(7.37) = 5.2 \text{ cfs}$

"INCH-ROOTS"

$Q_s = 9.2 \left[\frac{0.9(0.3) + 0.2(0.2)}{2} \right] (4.56) = 11.7 \text{ cfs}$

$Q_{so} = 9.2 \left[\frac{0.9(0.3) + 0.2(0.2)}{2} \right] (7.37) = 19.0 \text{ cfs}$



E.M. STEVENS 4th ADDITION Date 4-18-95 Page 2 of 3 BAUGHMAN COMPANY, P.A.

DETENTION STORAGE (10 Year)

$A = 2.37 \text{ AC}$
 $CN = 95 (C = 0.90)$
 $Q_r = 2.37(1.5) = 3.55 \text{ cfs}$
 $T_c = 15.0 \text{ min. } (i = 5.22)$
 $P = 5.52$

$Q_1 = 0.90 * 2.37 * 5.22 = 11.1 \text{ cfs}$
 $S = (1000/95) * 10 = 0.2041$
 $Q_2 = \frac{(5.52 - 0.2)(0.2041)}{5.52 + 0.5(0.2041)} = 5.28 \text{ cfs (24 hour runoff)}$

$VR = (Q/12) * A * 43,560$
 $VR = \frac{5.28}{12} (2.37) (43,560) = 45,445 \text{ cu. ft.}$

$\frac{Q_1}{Q_2} = \frac{3.55}{11.1} = 0.3198$

FROM GRAPH, TYPE II STORM: $V_s/V_r = 0.368$

$V_s \text{ Ret'd} = 0.368 * 45,445 = 16,724 \text{ cu. ft.} = 0.38 \text{ ac-ft.}$