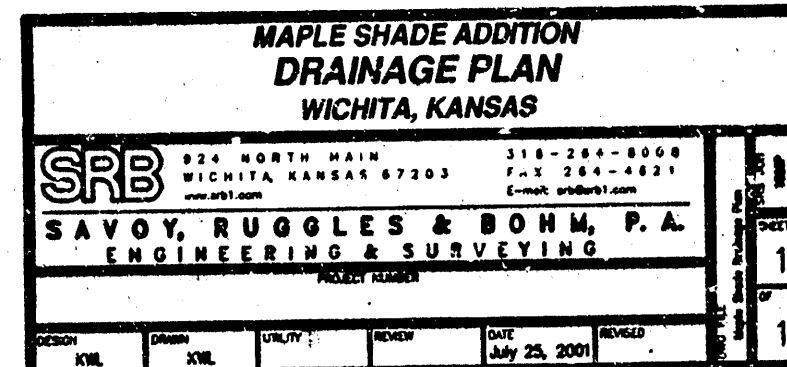
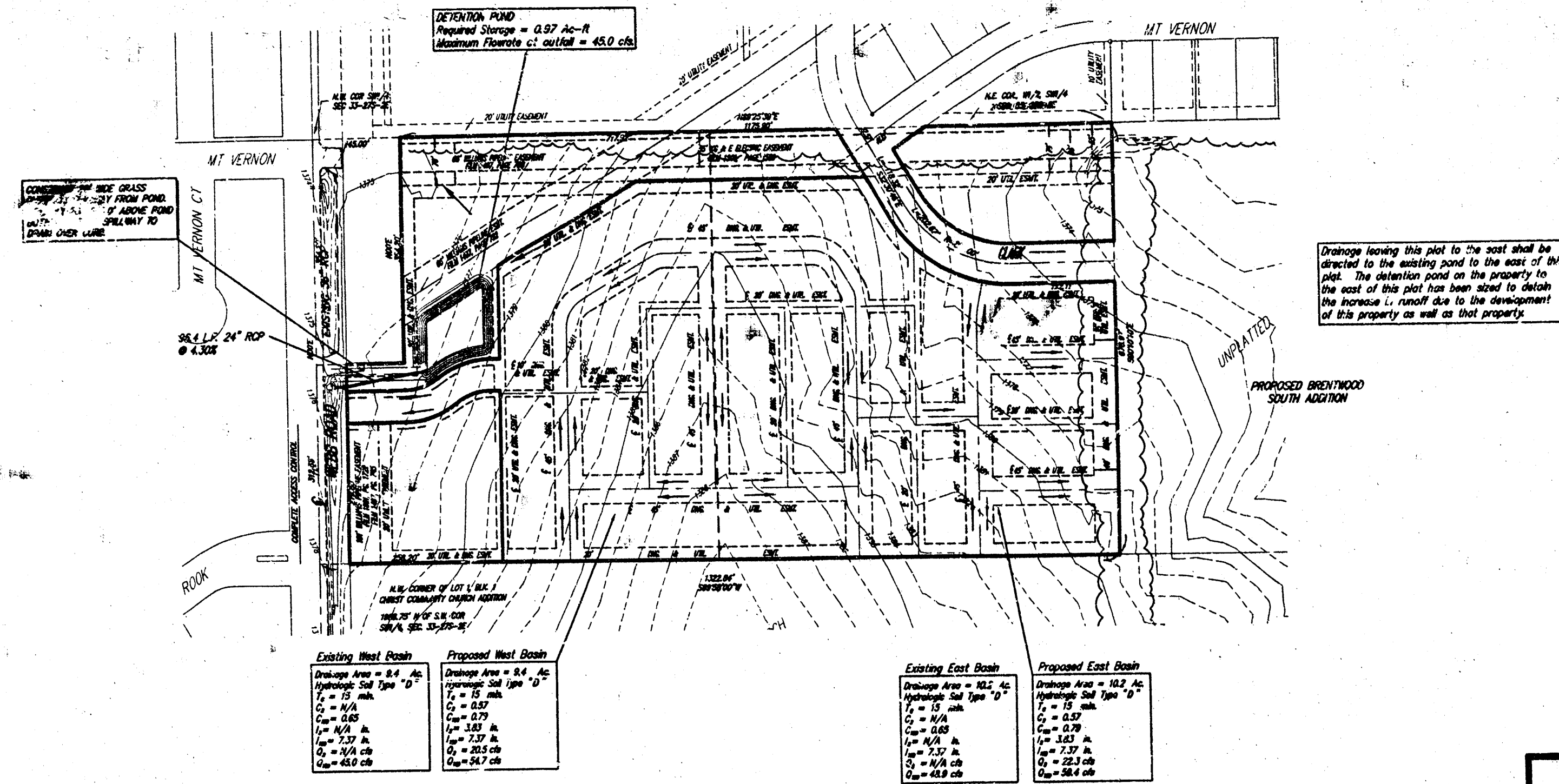


DRAINAGE PLAN **MAPLE SHADE ADDITION** WICHITA, SEDGWICK COUNTY, KANSAS



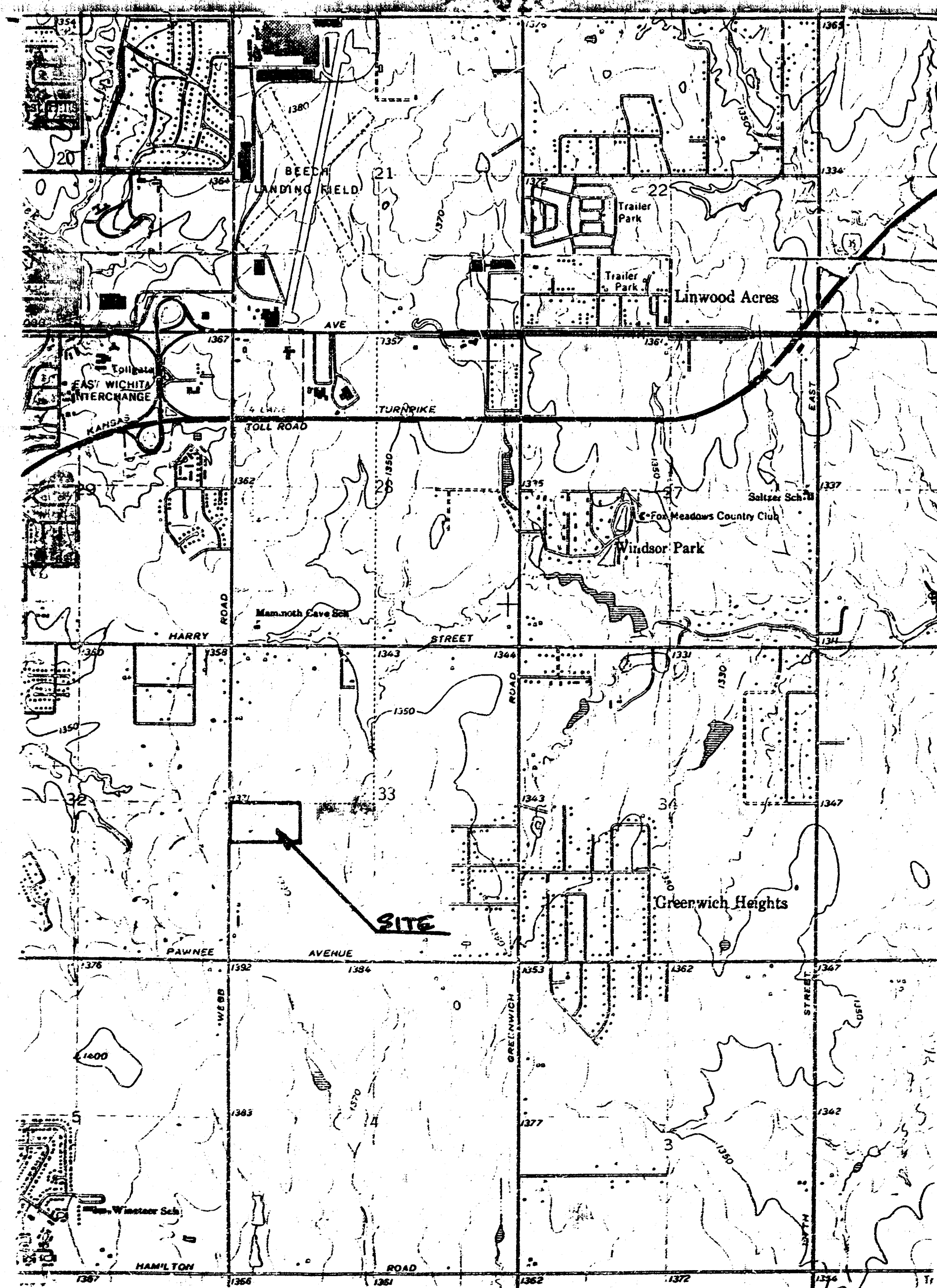
Project: **MAPLE SHADE ADD. DRAINAGE**
 By: **JDS** Date: **7-19-00** Page: **1** Of: **2**
 SRB 324 NORTH MAIN WICHITA, KANSAS 67203 316-264-8888
 SAVOY, RUGGLES & BOHM, P.A. ENGINEERING & SURVEYING

East Basin
 Area = $660' \times 670' = 442,200' = 10.2 \text{ Ac}$
 Soil types from all basins are Rosehill (Rd) and Irwin (Ia) Both are in hydrologic soil group D.
 $T_r = 15 \text{ min}$
 $C_p = 0.57$
 $C_{ra} = 0.79$
 $T_r = 3.83 \text{ in}$
 $T_{ra} = 7.37 \text{ in}$
 $Q = CIA \text{ (Rational Method)}$
 $Q_{ra} = (0.57)(3.83)(10.2) = 22.3 \text{ cfs}$
 $Q_{ra} = (0.79)(7.37)(10.2) = 59.4 \text{ cfs}$
 For undeveloped flows: Use $C_p = 0.30$ and $C_{ra} = 0.65$
 $Q_{undev} = (0.65)(7.37)(10.2) = 48.9 \text{ cfs}$

West Basin
 Area = $610' \times 670' = 408,700' = 9.4 \text{ Ac}$
 $Q_{ra} = (0.57)(3.83)(9.4) = 20.5 \text{ cfs}$
 $Q_{ra} = (0.79)(7.37)(9.4) = 54.7 \text{ cfs}$
 $Q_{undev} = (0.65)(7.37)(9.4) = 45.0 \text{ cfs}$
 Reg'd Storage = $(Q_{ra} - Q_{undev})(3)(72)(0.5)(60 \text{ sec/min}) / K$
 where $K = 1.5$
 West Basin Storage = $(54.7 - 45.0)(3)(15)(0.5)(60)(1.5) = 19,642.5 \text{ cu ft}$
 East Basin Storage = $(59.4 - 48.9)(3)(15)(0.5)(60)(1.5) = 21,242.5 \text{ cu ft}$

Project: **MAPLE SHADE ADD. DRAINAGE**
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Partial West Basin (Part of Lot 2)
 Area = $355' \times 470' = 166,850' = 3.8 \text{ Ac}$
 $Q_{undev} = (0.79)(7.37)(3.8) = 22.0 \text{ cfs}$
 Difference between the full basin and partial basin is $(54.7 \text{ cfs} - 22.0 \text{ cfs}) = 32.7 \text{ cfs}$
 $\therefore 32.7 \text{ cfs}$ will run off west basin without detention
 45.0 cfs is allowed to run off west basin
 The difference $(45.0 - 32.7)$ is 12.3 cfs.
 $\therefore 12.3 \text{ cfs}$ is allowed to run off partial basin on Lot 2
 Reg'd Storage in NW corner of Lot 2 = $(22.0 - 12.3)(3)(15)(0.5)(60)(1.5) = 19,642.5 \text{ cu ft}$
 = 0.45 Ac-ft



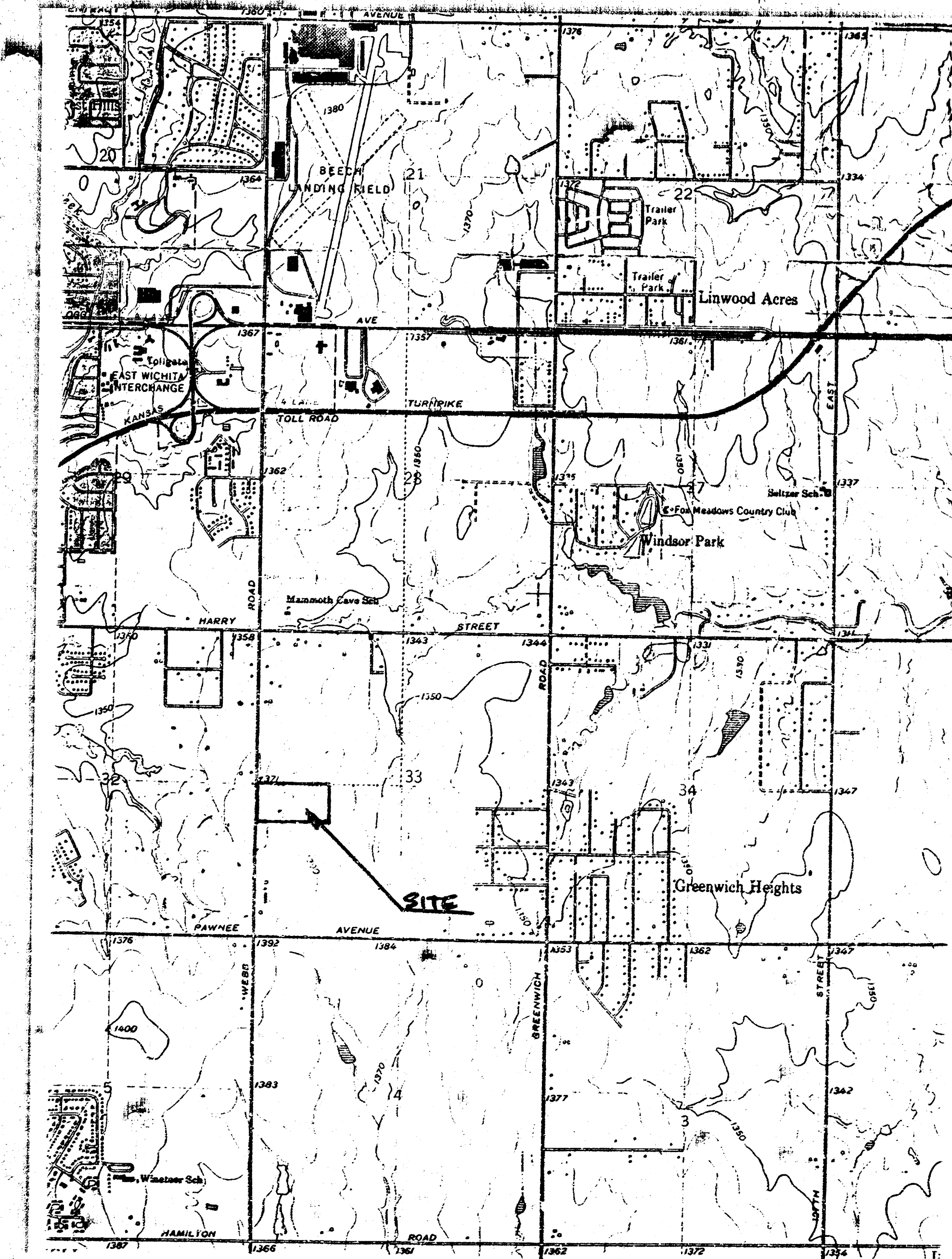
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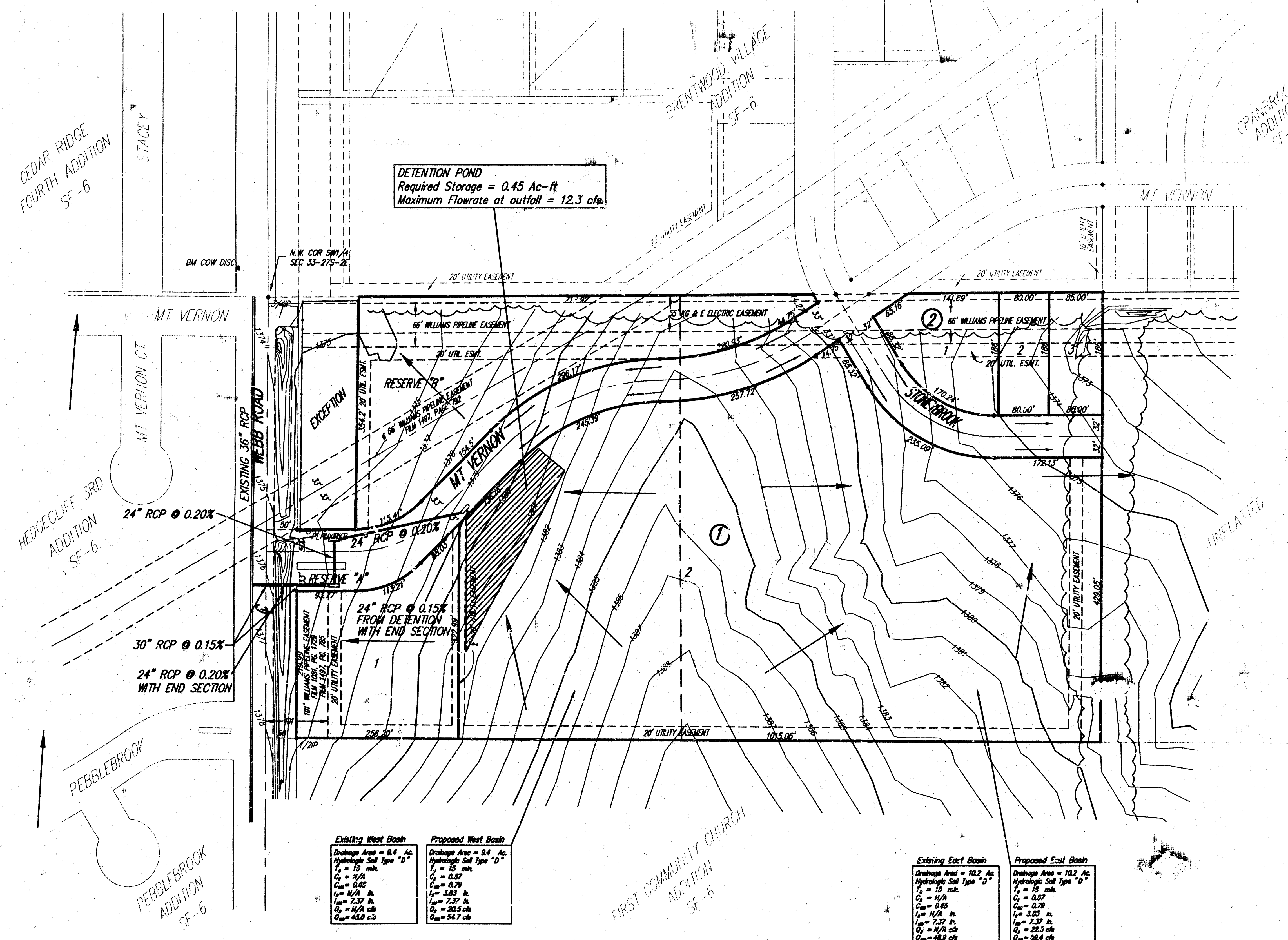
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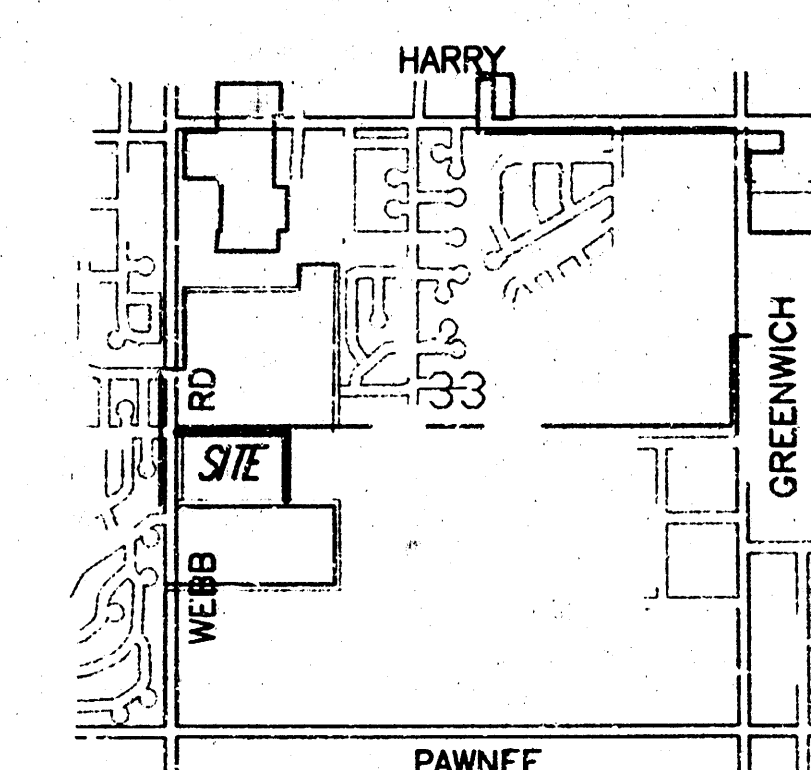


DRAINAGE PLAN MAPLE SHADE ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS



Drainage leaving this plat to the east shall be directed to the existing pond to the east of this plat and the detention pond on the property to the east of this plat shall be sized to detain the increase in runoff due to the development of this property as well as that property.



VICINITY MAP
NO SCALE

