

**SEWERAGE SYSTEM (Drainage)**  
Kastens

Kastens Hill, Tract A: 2.77 Ac. 5-22-81  
 (Grant Plat. for 2005) RL

Use 60' for initial, line for main storm  
 Assume 11.240' drains to s.w.s., remainder s. to Mt. Carmel  
 Use minimum to (15 minutes) for all areas  
 95% impervious surface  
 $C_s = .085$   $C_{100} = .091$   $I_p = 4.0$   $I_m = 7.37$   
 Use Rational method @ CIA

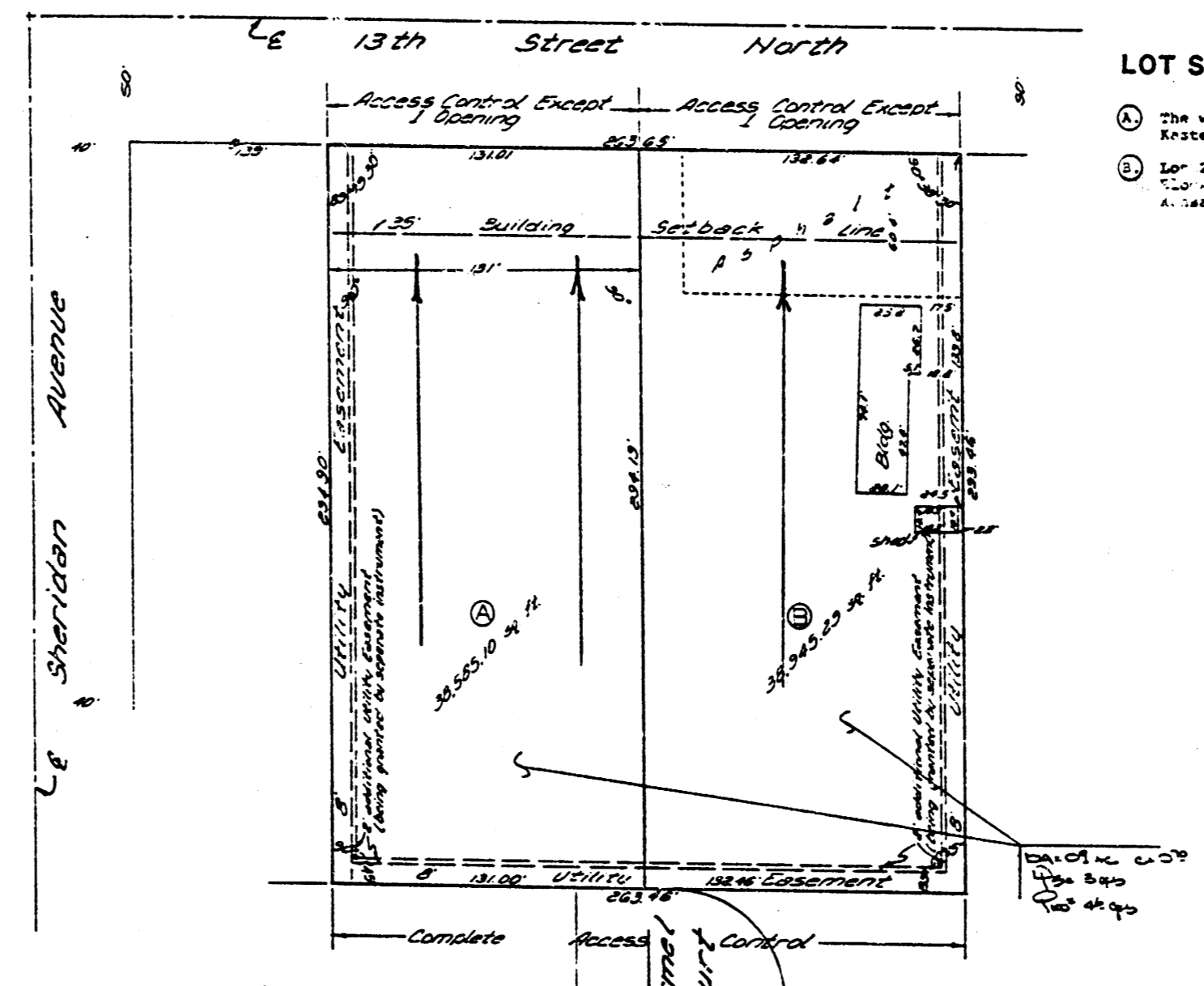
Tract A:  
 $DA = .072 \text{ Ac.}$   $Q_s = 0.8 (1.0)(.072) = 2.8 \text{ cfs}$   
 $Q_m = 0.91 (7.37)(.072) = 4.8 \text{ cfs}$

Tract B:  $DA = 0.72 \text{ Ac.}$  (equal to Tract A)

Pipe size (for total of Tracts A+B) with slope 1.42%  
 using Manning's equation,  $15" \text{ RCP}$ ,  $Q_s = 2.6 \text{ cfs}$   
 $15" \text{ RCP @ } 1.42\% \text{ will flow } 2.7 \text{ cfs} > 2.6 \text{ cfs}$

for  $12" \text{ RCP @ } 1.42\%$ ,  $Q_s = 2.6 \text{ cfs} \approx 2.6 = Q_s$

Check inlet capacity using weir formula @ 206 AT 254  
 for 2' x 2' gate,  $h = 1.22 \text{ ft}$ , assume  $h = 0.5'$   
 $Q = 0.61 (2.0) (1.22)^{1.5} = 4.4 \text{ cfs}$  per inlet  $\times 2 = 8.8 \text{ cfs} >> Q_s$



**LOT SPLIT**  
 ① The west 133 feet of Lot 1, Block A, Eastern Addition to Wichita, Kansas.  
 ② Lot 2, except the west 133 feet thereof (Lot 2, Eastern Addition to Wichita, Kansas).

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SEWERAGE PLAN