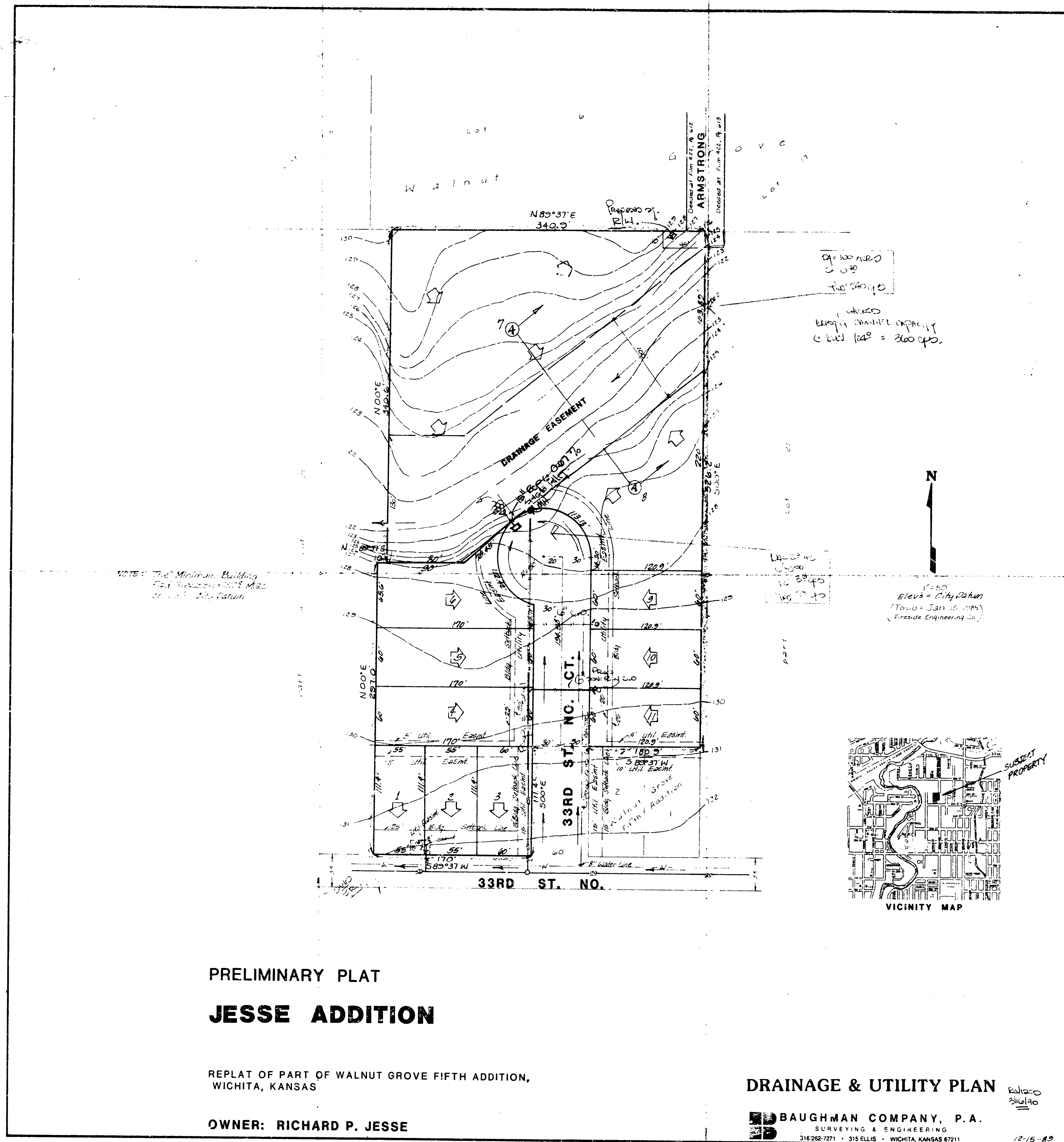




BAUGHMAN COMPANY, P.A.
SURVEYING, ENGINEERING & CONSULTING
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CONFIRMATION
MEMO

PROJECT: JESSE ADDITION
DATE: March 18, 1990
TO: Vicky Huang, P.E.
FROM: N. Brent Mooten, P.E.
REFERENCE: Drainage Plan

I am providing you herein the revised drainage plan for the Jesse Addition plat. Please review the plan and the calculations as provided and advise if you should have any questions regarding the plat or the plan.
Thank you.

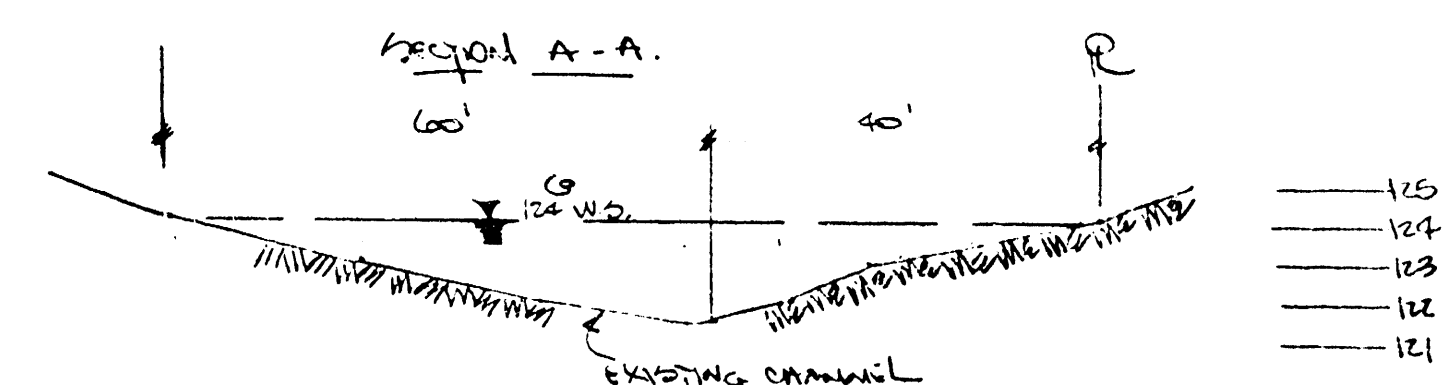
Jesse Addition - Drainage
1 3

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Drainage Plan - Jesse Addition is a proposed 11 lot residential plat which has a drainage way flowing thru the plat from east to west. The plat is proposed to be graded and developed so 33rd Street could will drain north and discharge into the drainage easement thru a storm sewer as indicated on the plan.

The drainage easement discharging from the east into Jesse Addition is receiving water from actual fields (reservoirs). The total area equals approximately 100 acres. The 100 year storm is routed thru the plat in order to size the required drainage easement and establish an accurate minimum ground elevation.

Existing channel configuration.



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Routing calculations -

QA = 100 ACRES
Average C factor = 0.40
(C = 20 min) I₁₀₀ = 2.5 in. = 6" wide
C = 2000 ft. per sec.
Q = CIA = 0.40 (6) (100) = 240 cfs.
So Q₁₀₀ = 240 cfs. (MAJOR STORM DRAINAGE CONSIDERATION)

Channel capacity is checked at elevations 123 & 124 (city datum) for width & flow.

$Q = \frac{1.49}{n} (A) (R)^{2/3} (S)^{1/2}$
At elevation 123 - A = 44 sq. ft. WP = 58' N = 0.20 S_{avg} = 0.00010 (assumed)

$Q_{capacity} = \frac{1.49}{.02} (44) \left(\frac{44}{60}\right)^{2/3} (.00010)^{1/2}$
Q = 100 cfs. (Insufficient)

At elevation 124 - A = 116 sq. ft. WP = 45' N = 0.20 S_{avg} = 0.00010

$Q_{capacity} = \frac{1.49}{.02} (116) \left(\frac{116}{60}\right)^{2/3} (.00010)^{1/2}$
Q = 360 cfs. (THIS IS SUFFICIENT)

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Summary -
If 124' elevation is assumed to be an accurate water surface, then a minimum ground elevation of 123' should be used for lots 6-7-8.
The drainage easement width should be a minimum of 100 feet to accommodate a proposed water surface of 124.0.