



MEMO

TO: City of Wichita
455 North Main
Wichita, Kansas 67202

PROJECT NO. 36-85396-1934
PROJECT: Carriage Park
Cave Center Addition
DATE: 11-13-85

ATTN: Vicki Huang

FROM: Charles S. Brown, P.E.

REFERENCE: Revised Drainage Plan

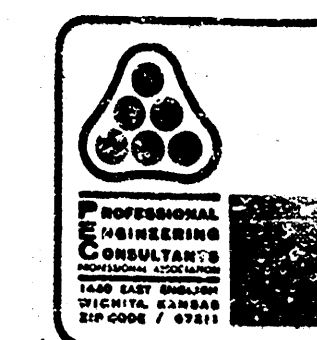
COPIES TO:

Louise Olivarez - MAPD

PLEASE ADVISE IMMEDIATELY OF ANY MISCONCEPTIONS OR OMISSIONS YOU BELIEVE TO BE CONTAINED HEREIN.

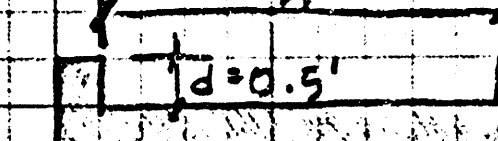
Transmitted herewith are two (2) copies of the Revised Drainage Plan and Supporting Calculations for the proposed Carriage Park Care Center Addition to Wichita.

This plan has been revised to include flume sizing at the southeast corner of the plat.



Date: 11-13-85 Page 2 of 2
Project: Carriage Park Care Center
Item: Drainage

Flume Section:

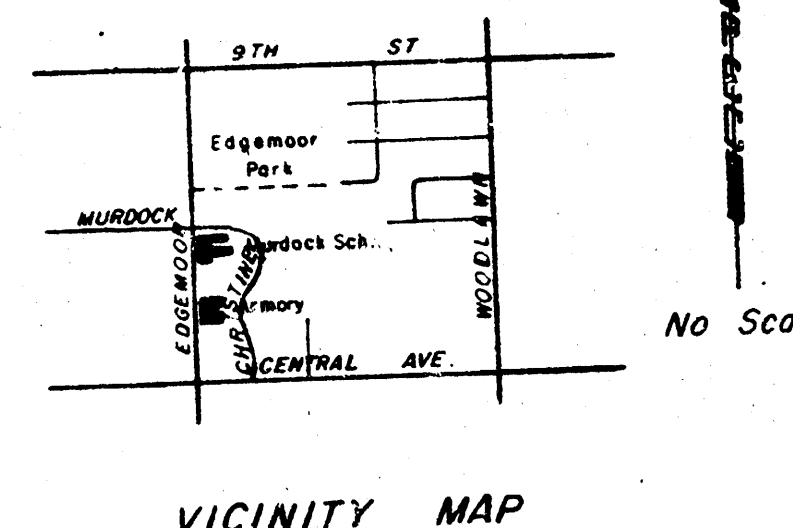
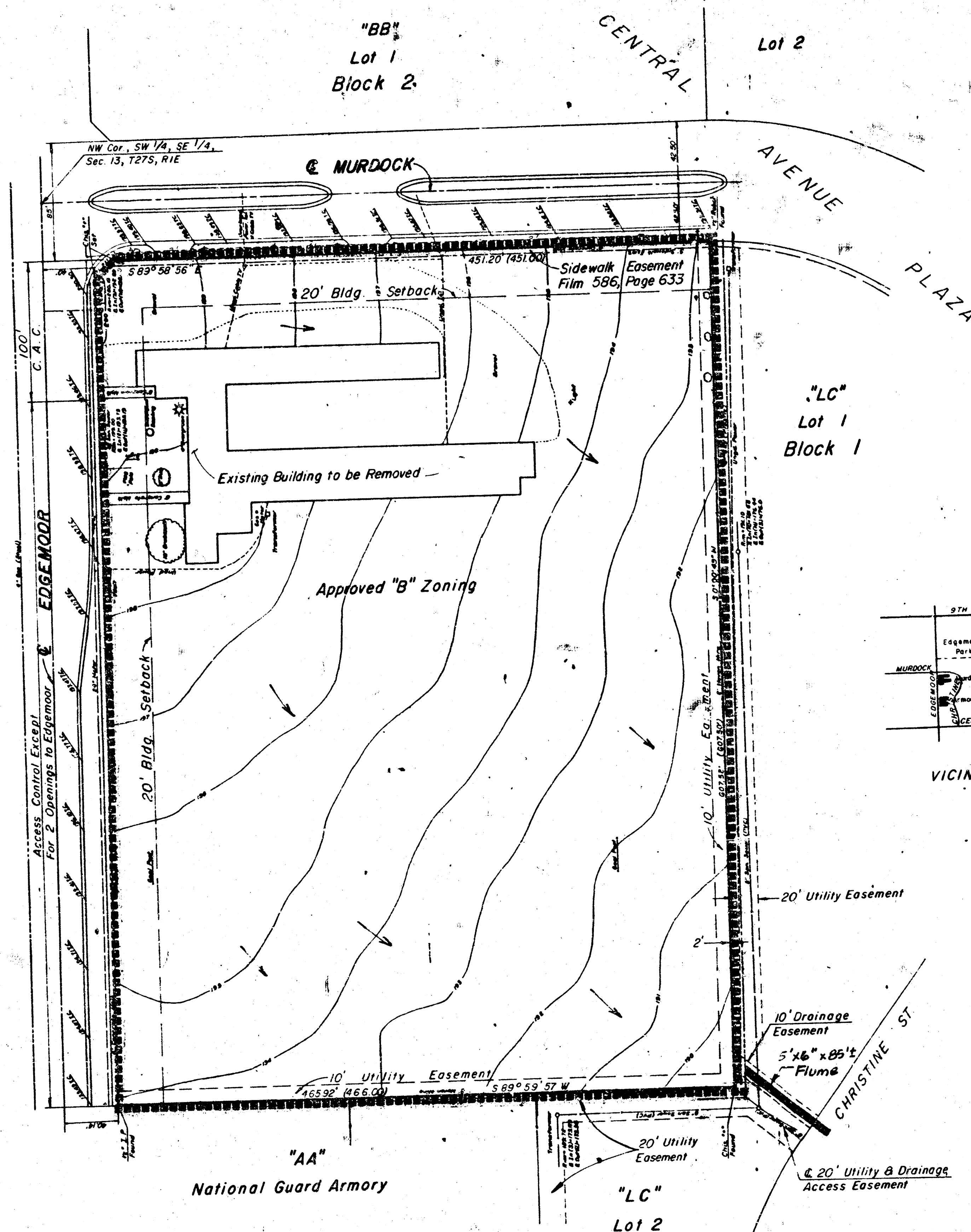


W	d	A	P	R	R ^{2/3}	AR ^{2/3}
30'	0.5'	15.0	31'	0.48	0.62	9.25
25'	0.5'	12.5	28'	0.48	0.61	7.67
20'	0.5'	10.0	24'	0.48	0.61	6.10
15'	0.5'	7.5	16'	0.47	0.60	4.52
10'	0.5'	5.0	11'	0.45	0.59	2.96
5'	0.5'	2.5	6'	0.42	0.56	1.39

SUMMARY:

5' wide x 6" deep @ 4.71% will handle
280 cfs (greater than 5-yr. storm.)

Scale: 1" = 60'
Date of Topo: 8-28-85
B.M. - Brass rod in concrete post,
38' north and 3.4' west of north property
line of Central and west property line of
Edgemoor. Elev. 185.657

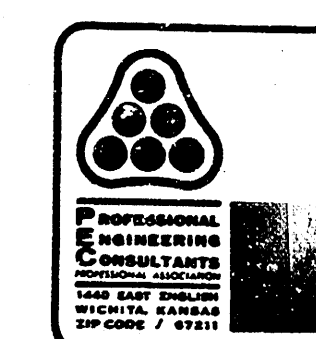


DRAINAGE PLAN OF CARRIAGE PARK CARE CENTER

Owner: U.S.D. 259
Attn: Dr. Richard L. Holstead
Engineer: P.E.C. p.o.
1440 English, Wichita, Ks. 67211

10-1-85
Revised 11-13-85

Note: The 5' x 6' x 85" Flume shown is based on Q_s & based on draining 100% of the proposed plat. Upon completion of the Site Development & Site Grading Plans for the proposed improvements, the hydrology & hydraulics of the flume shall be revised as necessary.



Date: 11-13-85 Page 1 of 2
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I Determine 5-yr. Runoff From Entire Site

1. $D.A. = 466' \times 607.5' = 283,095' = 6.5 A_c$
2. $C = 0.7$
3. $t_c = 15 \text{ min} \therefore I_s = 5.21$

$$Q_s = C I_s A$$

$$= 0.7 \times 5.21 \times 6.5$$

$$= 23.7 \text{ cfs}$$

II Determine Flume Size to Handle Q_s

Use Mannings Eq'n 1

$$Q = \frac{1.486}{n} A R^{2/3} s^{1/2}$$

$$23.7 = \frac{1.486}{0.016} (A R^{2/3}) (0.0471)^{1/2}$$

$$23.7 = (92.88) (A R^{2/3}) (0.217)$$

$$\text{Req'd } A R^{2/3} = .18$$

$$Q = 23.7 \text{ cfs}$$

where $n = 0.016$
(conc.)

$$s = 4.71\%$$

$$s = \frac{184.0 - 185.0}{85} = 0.0471$$

$$s = \frac{184.0 - 185.0}{85} = 0.0471$$

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