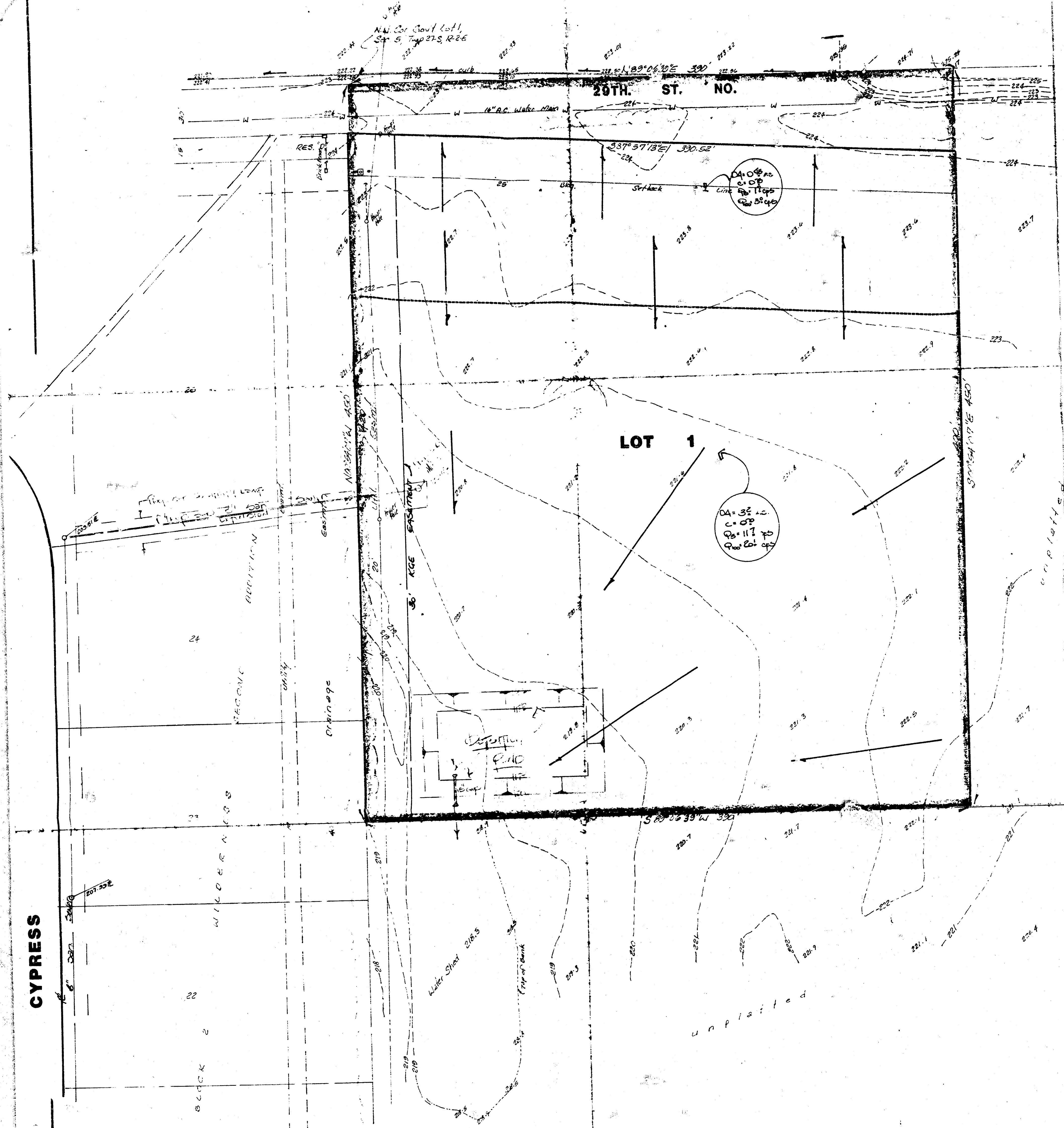




GENERAL NOTES

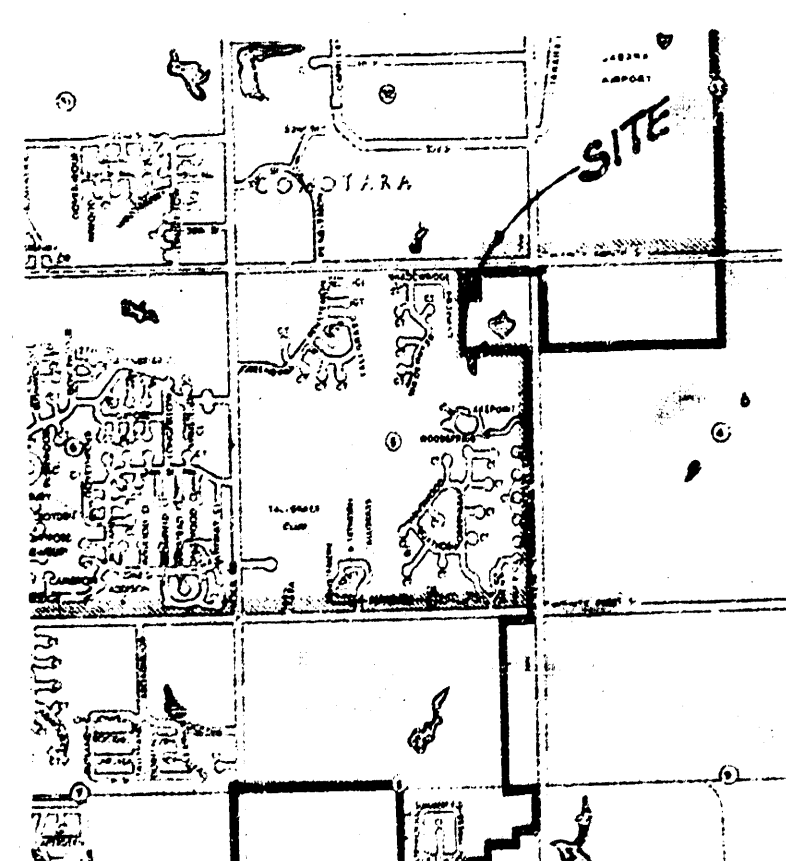
Lot 1 will be developed for a church site. The majority of the lot drains south into a drainage lake and pond located at the southwest corner of the plat. The general drainage pattern established here conforms to the areas and drainage plan designed for Wilderness Second Addition except that the north 50 feet will drain north to 29th St. No. and the small triangle at the southeast corner of the lot will drain west instead of east.

DRAINAGE & UTILITY PLAN
PRELIMINARY PLAT
UNIVERSITY CONGREGATIONAL
CHURCH ADDITION

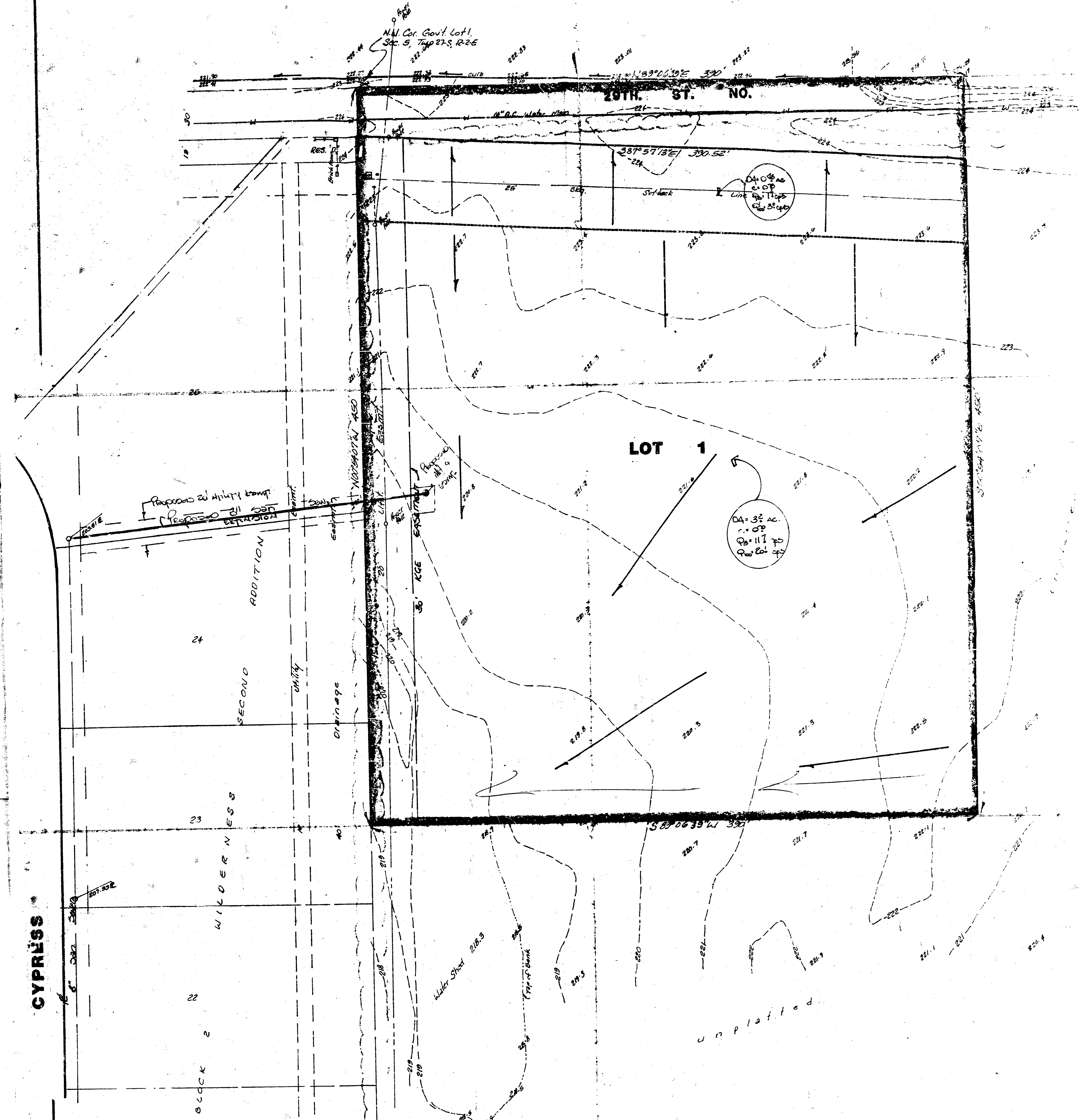
THE NORTH 450 FEET OF THE WEST 300 FEET OF GOVERNMENT LOT 1, IN
 SEC. 5, TWP. 27-S, R-2-E, OF THE 6TH P.M., SEDGWICK COUNTY, KANSAS.

RICHARD J. HATTRUP
UNIVERSITY CONGREGATIONAL CHURCH

1" = 30'
 Elev. = City Datum



N



GENERAL NOTES

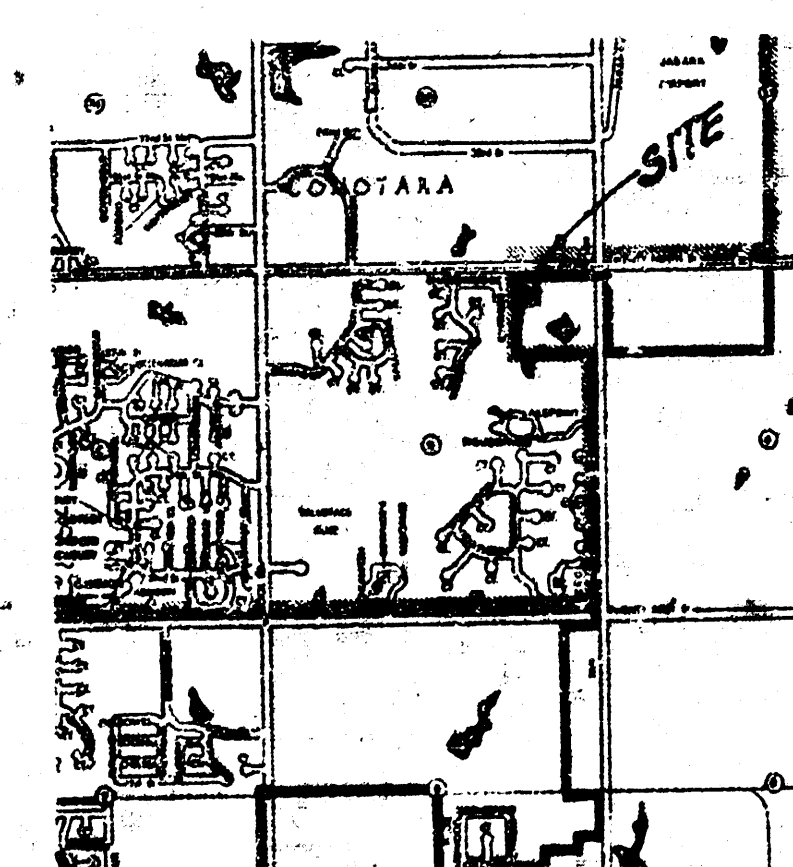
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DRAINAGE & UTILITY PLAN
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CHURCH ADDITION

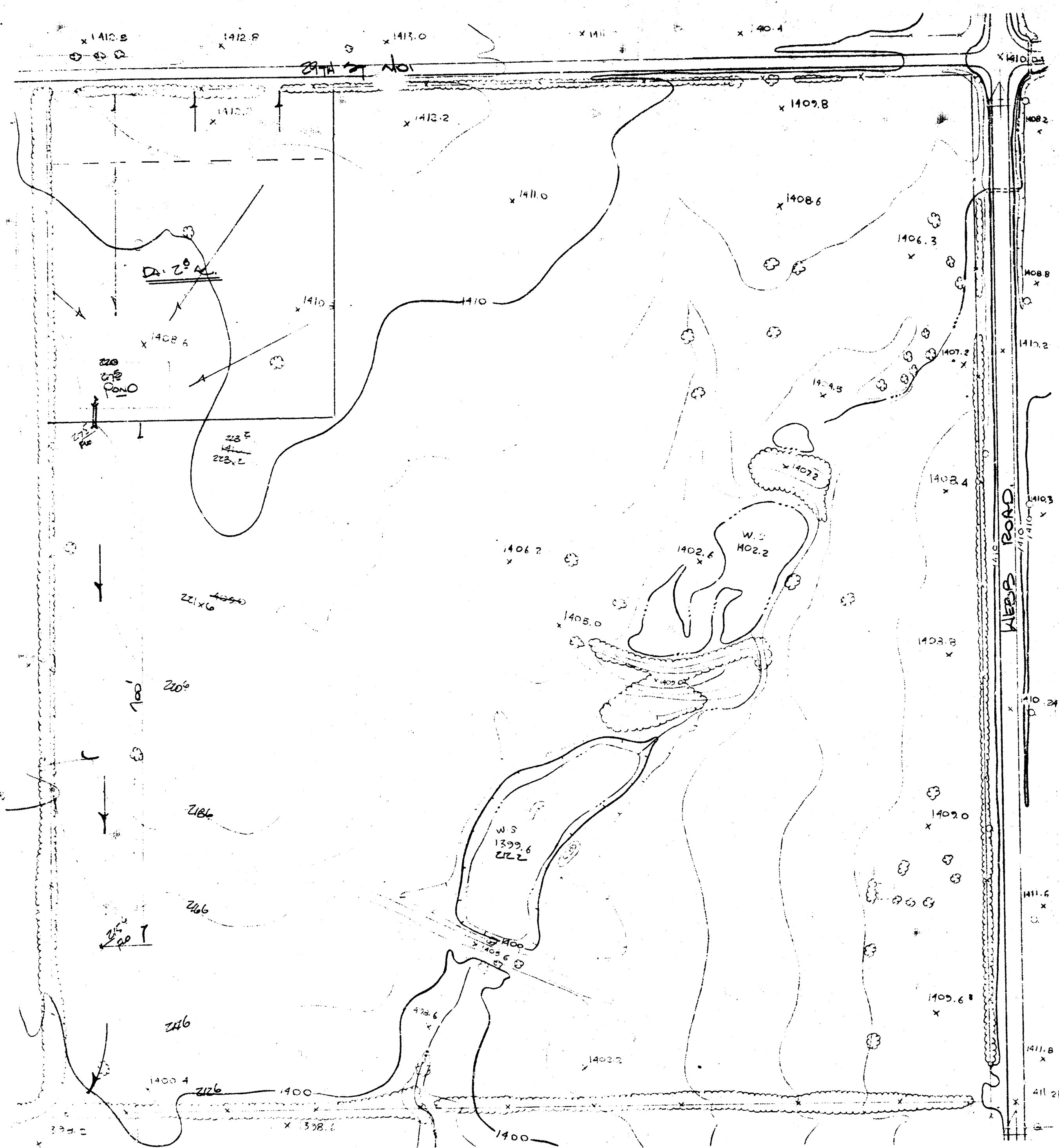
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N



N.E. 1/4, N.E. 1/4, SEC. 5
T. 27 S. R. 2 E
SEDGWICK COUNTY, KANSAS
SCALE: 1" = 100' CONTOUR INTERVAL: 2'

COMPILED FROM PHOTOGRAPHY TAKEN MARCH 3, 1968
GROUND CONTROL — BAUGHMAN CO.
TOPOGRAPHY BY KUCERA & ASSOCIATES, INC.

DRAINAGE PLAN

Lot 1 will drain generally as indicated on the plan. The usage of the lot is to be for a church site. The runoff factor for the development planned will be 0.60.

Approximately 0.45 acres will drain north to 29th Street. The remaining 3.2 acres will drain south and be contained by a retention pond site which will be located at the southwest corner of the lot as indicated. This area will receive runoff from the 3.2 acres and will have an overflow release either to the west and south in the existing drainage easement or back to the east into a proposed street which will convey the discharge on the south via storm sewers and street pavement.

Runoff calculations are indicated below for this site. The typical soil type (SCS) for the plot is Rd (Rosell), Group D, which is a silty clay. Water typically moves slowly thru these soils.

The maximum runoff discharge to be anticipated from the 100 year storm is:

$$Q_{100} = CIA = 0.70 (3.98) (3.2 \text{ ac.}) = 20 \text{ CFS.}$$

The undeveloped runoff amount as the ground drains today will be:

$$Q_{100} = 3.25 (8.98) (3.2 \text{ ac.}) = 7.2 \text{ CFS.}$$

The difference between the developed runoff and the existing undeveloped runoff is what must be stored on the site in the form of a retention pond. The detention pond must discharge slowly to the south thru off-site drainage easements or to the east to a proposed street and storm sewer system to be constructed in the future. Fill the ground to the south and east-developes or plates, the direction of discharge from this lot will not be determined, but it will be controlled to only discharging the undeveloped runoff amount.

Revised 3/16/68
JH

UNIVERSITY CONGREGATIONAL CHURCH ADDITION APPENDIX TO THE FINAL DRAINAGE REPORT AND PLAN.

The drainage area to be considered within this plan for additional on-site is 2.8 acres. The runoff from the 2.8 acres in the calculations is 0.70 for the proposed church site. The time of concentration for the 2.8 acres will be 15 minutes.

The maximum storm is considered for the design of the pond size in order to allow the passage of the undeveloped existing runoff amount. The soil within this plot is Rosell Type which typically is a deep, well-drained but slowly permeable soil. The average slope for this ground is 1 to 2 percent. The existing runoff factor for this group D soil will be considered as 0.50.

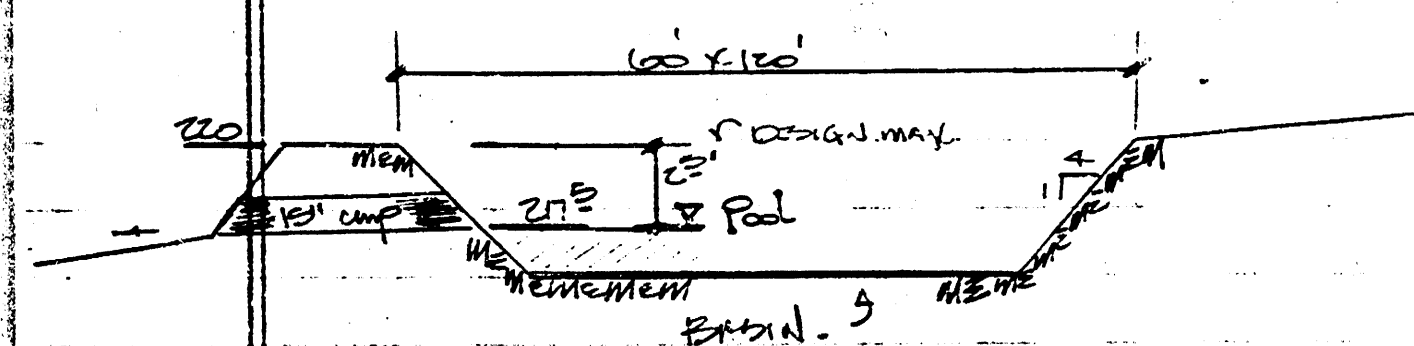
The maximum runoff amount allowed for this plot is $Q = CIA = 0.50 (3.98) (2.8 \text{ ac.}) = 5.6 \text{ CFS.}$

Peak inflow calculations will be $CIA = 17.6 \text{ CFS.}$

Off-site drainage system to be constructed.

Approved 3/16/68

The outflow device will be a 15" pipe with an outflow elevation of 217.5. The maximum top of the pond will be 220.0. Using the basic data from the storm will be required thru the proposed pond site located below and indicated as to its depth.



Proposed pond size = 10 x 6
Bottom of Retention Pond is 5' 6" below
Design max. water level.

The property to the south of this church site will need to be cleared out for a swales for a distance to allow any discharge from the pond to drain into the drainage area or storm sewer easement. Easement in this area lying south of the plot.

Water Level	Surf Area	Vol.	Inc. Vol.
0' 21.5	4500 SF	2355 CF	0
0.5' 21.5	5040	2555	200 CF
1.0' 21.5	5580	2755	200 CF
1.5' 21.5	6120	2955	200 CF
2.0' 21.5	6660	3155	200 CF
2.5' 21.5	7200	3355	200 CF

Water Level	Height	Area
0	0	0
0.5	1.4	1.0
1.0	1.8	4.0
1.5	1.2	5.0
2.0	1.6	6.0
2.5	2.0	7.5

Water Level	Height	Area	Volume
0.5	0.4	1.5	1
1.0	1.0	15.0	11.0
1.5	0.6	12.5	10.6
2.0	0.2	20.0	20.2
2.5	0.0	45.0	1.2

TIME	INFLOW	STORAGE	OUTFLOW
0	0	0	0
5	4	1.0	0
10	10	1.5	0
15	17.6	1.5	3.0
20	12.0	1.5	5.5
25	8.0	1.5	6.0
30	5.5	1.5	6.0
35	4.0	1.5	5.0
40	2.5	1.5	3.5
45	1.0	1.5	2.5
50	0.5	1.5	2.0
55	0.5	1.5	1.5
60	0	1.5	1.0
65	0	1.5	0.5
70	0	1.5	0.5
75	0	1.5	0.5
80	0	1.5	0.5
85	0	1.5	0.5
90	0	1.5	0.5
95	0	1.5	0.5
100	0	1.5	0.5

From the calculations it can be determined that the pond is somewhat oversized. Erosion should not be a problem to the property to the south.

