

Ruggles & Bohm, P.A.

Engineering, Surveying, Land Planning

924 N. Main  
Wichita, Kansas 67203

(316) 264-8008  
fax (316) 264-4621

www.rbkansas.com

**FACSIMILE TRANSMITTAL**

To Scott Lindebak  
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Date 5-19-08  
Fax Number 268-4114  
From Tom Ruggles

Project Heartland Preparedness Center

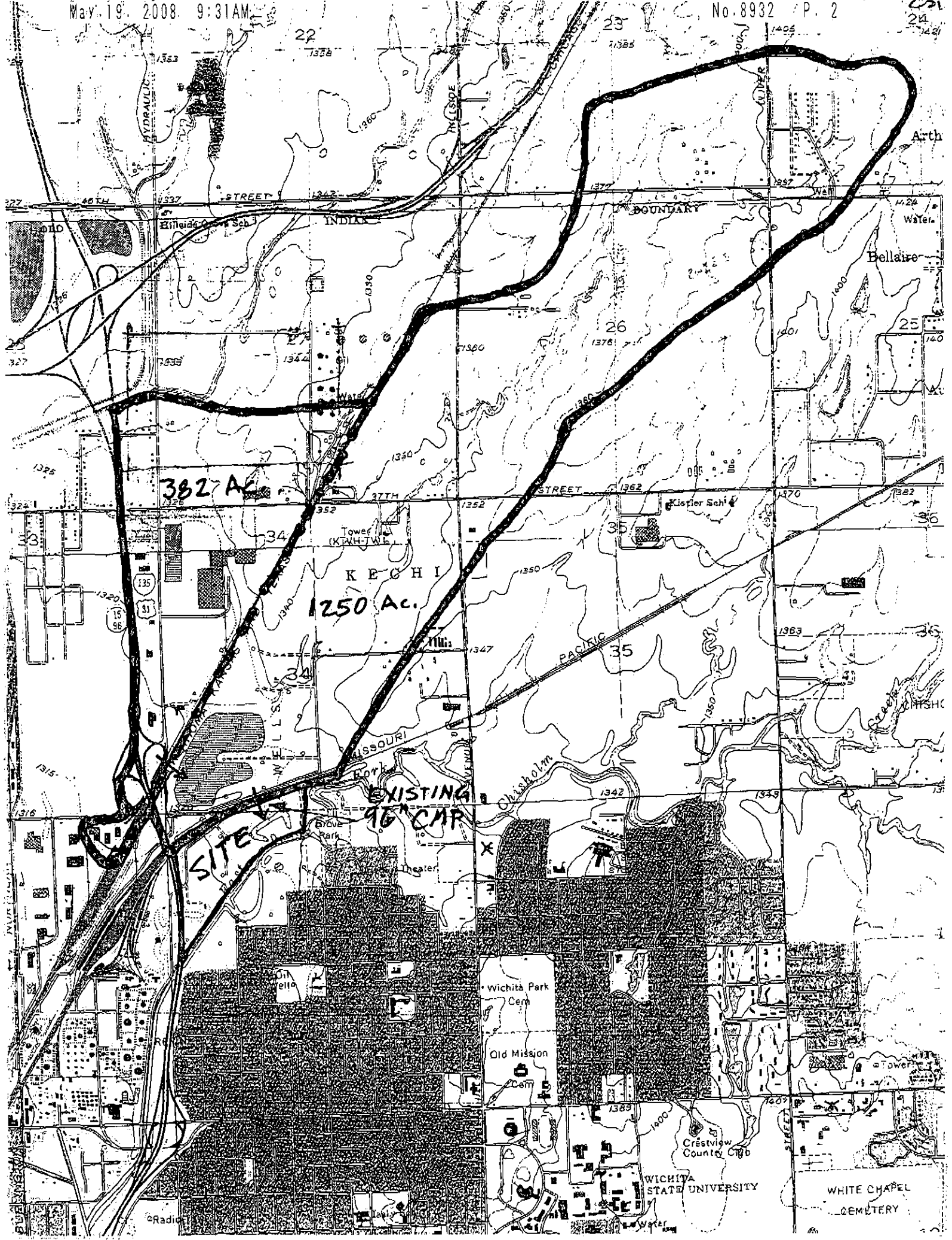
Number of pages including this page 5

The following pages are a preliminary calculation of drainage area, runoff and detention in the lake upstream from the Heartland site. The 1632 acres is the total area draining to the 96" pipe that drains under the railroad to our site. We will have more explanatory information at the meeting tomorrow.

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Project : 2316P Simulation Run : 100-yr Reservoir: Reservoir-1  
Start of Run : 01Jan2008, 12:00 Basin Model : Grove Park Outlet  
End of Run : 02Jan2008, 12:05 Meteorologic Model : Met 1  
Compute Time : 19May2008, 07:52:37 Control Specifications : Control 1

Volume Units : IN

Computed Results

Peak Inflow :	1568.0 (CFS)	Date/Time of Peak Inflow :	02Jan2008, 02:40
Peak Outflow :	439.2 (CFS)	Date/Time of Peak Outflow :	02Jan2008, 06:45
Total Inflow :	4.80 (IN)	Peak Storage :	395.8 (AC-FT)
Total Outflow :	2.37 (IN)	Peak Elevation :	1319.2 (FT)

Heartland Preparedness Center

5-19-08 AML

Area = 1032 ac.

T<sub>c</sub> calculations are the same as ~~the~~ calculations performed on 5-24-08.  $\Rightarrow T_c = 154.7$  min.

Curve Number

Soil is 83% Agricultural, contoured w/ crop residue

80% Soil Group B  $\Rightarrow$  CN 7420% Soil Group C/D  $\Rightarrow$  CN 8317% Industrial Soil Group B  $\Rightarrow$  CN 88 $\Rightarrow$  weighted CN = 77HEC HMS 3.1.0  $\Rightarrow Q_{100} = 1568.0$  cfs

Heartland Preparedness Center

2316P

5-06-08 AML

Area = 1250 ac.

L = 18950'

L<sub>1</sub> = 300', V<sub>1</sub> = short grass 1% = 0.28 fps;  $\frac{300'}{0.28 \text{ fps}} = 17.9 \text{ min.}$

L<sub>2</sub> = 2900', V<sub>2</sub> = 0.8 grassed water way = 0.98 fps;  $\frac{2900'}{0.98 \text{ fps}} = 49.3 \text{ min.}$

L<sub>3</sub> = 15,750' S = 0.49% V<sub>3</sub> = 3.00 fps (assumed) = 87.5 min.

T<sub>c</sub> = 154.7 min.

Curve Number

Soil is 80% Soil Group B => 74 Weighted CN = 76

20% Soil Group C & D => 83

Land use is agricultural ~~soil~~ cropland, crop residue

HEC-NMS 3.10 => 100-yr Q = 1173.1

see 5-19-08 revised D, A.

0 24.1

24 23.1

161 23.3

278 23.6

370 24.2