



Ruggles & Bohm, P.A.

Engineering, Surveying, Land Planning
 924 N. Main
 Wichita, Kansas 67203

Date: Wednesday, May 25, 2011

MEMO

To: Tim Davidson
City Hall
455 N. Main Street
Wichita, KS 67213

Description:

- Confirmation
- Transmittal
- Transmittal under separate cover by

From: Alex M. Lane, P.E.

Purpose:

- Approval
- Review & comment
- Use
- Other : _____
- Distribution
- Information
- Record

Project: Lord's Diner South Hillside

RB Project No.: 3807P

Enclosures/Attachments:

- Prints
- Originals
- Diskettes containing: _____
- Change Order
- Shop Drawings
- Other: _____

Other Project Reference No.: _____

Copies	Description
1	Preliminary Drainage Plan

Remarks: _____

Copies to: _____

If checked below, please:

- Acknowledge receipt of enclosures
- Return enclosures to us.

Signed _____

DRAINAGE REPORT
Lord's Diner South Addition
WICHITA, SEDGWICK COUNTY,
KANSAS

May 19, 2011



Public Works, Engineering Division Final Drainage Plan Submittal Checklist

Reviewer: _____	Date: _____
Subdivision Name: _____	Location: _____
Total Land Area Of Ownership: _____ Acres	
Type: _____ Residential _____ Commercial _____ Industrial _____ Recreation _____ Municipal _____ Other	
Applicant: _____	Contact: _____ Phone #: _____
Engineer: _____	Contact: _____ Phone #: _____

Please check the appropriate box:

I = Included; NA = Non-Applicable; R= Required prior to development
(If "NA" is checked, an explanation must be entered)

Tab 1. Project Narrative	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Site Location Map, using USGS Map			Drainage Report	X	
B. Discussion of development, existing conditions, and proposed impacts on stormwater, wetland, riparian, and flood plain			Drainage Report	X	
C. Discussion of offsite conditions			Drainage Report	X	
D. Summary of runoff calculations (pre/post development) No increase in peak discharge for all storm series			Drainage Report	X	
E. Narrative description of the type and function of the permanent best management practices that are incorporated into the site design					
F. Copy of the plat			Drainage Report	X	
G. Preliminary grading plan (The final grading plan shall be sealed, signed and dated prior to Engineering receiving the final sanitary sewer plans. One plan sheet and PDF shall be submitted to the Subdivision Engineer.)			NO GRADING PLAN REQUIRED FOR PLATTING THIS SITE		X
H. Professional Engineer seal, signature and date on cover of report			PRELIMINARY SUBMITTAL		X
I. CD of drainage plan in PDF format (one file) and one paper copy bound with this checklist included behind the cover			PRELIMINARY SUBMITTAL WILL BE PROVIDED W/ FINAL DOCUMENT		X

Tab 2. Existing Conditions Runoff Calculations	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Copy of applicable orthophoto showing proposed project boundaries (preferable in color)			Drainage Report	X	
B. Runoff Method (Rational, Hydrograph Method, or other approved methods by Engineering)			Drainage Report	X	
C. Existing topography (no greater than 2-foot contours, 1-foot recommend)			Drainage Map	X	
D. Total Site Area and Total Impervious Area (acres)			Drainage Map	X	
E. Benchmarks used for site control			Drainage Map	X	
F. Streams, creeks, and waterway labeled			Drainage Map (Gypsum Creek)	X	
G. Predominant soils from USDA soil surveys, and/or on site soil borings			Drainage Report	X	
H. Location and boundaries of natural features such as wetlands, lakes, and ponds with the normal water elevation noted			None Present		X
I. Location of existing roads, buildings, parking lots and other impervious areas.			Drainage Map	X	



J. Location of existing utilities (e.g., water, sewer, gas, electric) and easements			Drainage Map	X	
K. Location of existing conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow			Drainage Map	X	
L. Flow paths			Drainage Map	X	
M. Location and dimensions of existing channels, bridges or culvert crossings			N/A		X
N. Existing conditions hydrologic analysis for runoff rates, volumes and velocities showing methodologies used and supporting calculations (2, 5, 10, 25 & 100 year, 24-hour storm events) or Critical Duration			Drainage Report	X	
O. Assumed pre-developed runoff curve numbers			Drainage Report	X	
P. Existing time of concentrations used in calculations			Drainage		
Q. Evaluate immediate downstream drainage capacity, not to exceed more than 0.25 miles downstream of site			Gypsum Creek has Trib area over 22 sq. miles, 10% Rcd is effect		X
R. Existing structural elevations (e.g., invert of pipes, manholes, etc.)			NONE PRESENT		X
S. Cross-section data for open channels			NONE PRESENT		X
T. Ground water elevations, if applicable			N/A		X

Tab 3. Post-Development Hydrologic Analysis	Applicant		Explanation / Location in Plan	Engr	
	I	NA		I	NA
A. Proposed (post-development) conditions hydrologic and hydraulic analysis for runoff rates, volumes, HGL, and velocities showing the methodologies used and supporting calculations for all applicable design storms (2, 5, 10, 25 & 100 year, 24-hour storm events)			Drainage Report	X	
B. Proposed time of concentrations used in calculations			Drainage Report	X	
C. Assumed post-developed runoff curve numbers			Drainage Report	X	
D. Proposed contours for detention facilities (to equal area used in outlet rating curves)			N/A no detention		X
E. Preliminary sizing calculations for stormwater controls including contributing drainage area, storage, and outlet configuration					
F. Stage-storage-discharge or outlet rating curves and inflow and outflow hydrographs for storage facilities			N/A no detention		X
G. Final analysis of potential upstream/downstream impact/effects of project, where necessary			Drainage Report	X	
H. Existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.)			N/A none planned		X
I. Design water surface elevations and normal pool elevation for ponds.			N/A none planned		X
J. Typical detail for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc. To include height, width, elevation, and/or diameter.			N/A none planned		X
K. Proposed limits of clearing and grading			N/A none planned		X
L. Location of existing and proposed roads, buildings, parking lots and other impervious areas.			Drainage Map	X	
M. Location of existing and proposed utilities (e.g., water, sewer) and easements			Drainage Map	X	
N. Location of existing and proposed conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow			Drainage Map	X	
O. Preliminary location and dimensions of proposed channel modifications, such as bridge or culvert crossings			N/A none planned		X



P. Preliminary selection and location of stormwater controls				
Q. Emergency overflow structure's flow path				
R. Detention facility provides one-foot of freeboard above the HWL and emergency outfall shown (top of berm elevation shown)			N/A none planned	X
S. The 100-year 24-hour HWL delineated on the plan for detention pond			N/A no pond	X
T. Lowest opening elevations table on the plat for structures located adjacent to channels or ponds			Drainage Map & Plat	X
U. Stormwater Management Facilities located within a Reserve			N/A none planned	X
V. Maintenance responsibility of stormwater management facility shall be specified in the platters text. (e.g. HOA, Lot Owners Association, or lot)			N/A none planned	X
W. Off-site drainage easements or agreements required, where necessary			N/A none required	X

Tab 4. Floodplain Submittal	Applicant			Engr	
	I	NA	Explanation / Location in Plan	I	NA
A. Provide source of flood profile			N/A		X
B. Nearest base flood elevations			Drainage Map		
C. Delineation of pre-developed regulatory floodplain/floodway limits			N/A		X
D. Delineation of post-developed regulatory floodplain and floodway limits			N/A		X
E. Floodplain boundary determination per elevation (project limits shown)			N/A		X
F. Provide source of floodway data table and discharges			N/A		X
G. Provide all hydrologic and hydraulic study information for site-specific floodplain studies, unnumbered Zone A area elevation determinations and flood plain map revisions or required permits			N/A		X
H. Provide regulatory floodway and four natural profile models (10,50,100, and 500-yr) for existing and future watershed conditions			N/A		X
I. Location of floodplain/floodway limits and relationship of site to upstream/downstream properties (floodplain limits to be per elevation and scaled location)			Drainage Map	X	
J. Flood plains and floodways located within a Reserve, where necessary			N/A		X

Tab 5. Federal, State and Local Permits (to be provided prior to construction unless otherwise specified)	Applicant			Engr	
	I/R	NA	Explanation / Location in Plan	I/R	NA
A. US Army Corps of Engineers - Regulatory program permits (404 water quality certification)			N/A		X
B. Kansas Department of Agriculture - Division of Water Resources Permits (Stream Obstruction, Channel Change, Flood Plain Fill, Levee, Water Appropriations, Dam safety permit, etc.)			N/A		X
C. Federal Emergency Management Agency (FEMA) Letter of Map Changes (LOMA, LOMR, LOMR-f, CLOMR, etc.) Shall be included and approved when project modifies the limits of the floodway.			N/A		X
D. Kansas Department of Transportation			N/A		X
E. Sedgwick County Right-of-way Permit			N/A		X

**Lord's Diner South Addition
DRAINAGE ANALYSIS
April 5, 2010**

INTRODUCTION

This report contains supporting documentation and calculations for the proposed Lord's Diner South Addition development. The proposed site is a 1.5 acre parcel of land located in the SE ¼ of Section 3 T28S R1E on Hillside between Pawnee and 31st St South. The site has been developed with two buildings and a parking lot on the eastern two thirds of the property. The soil type located on site is Urban Land Elandco Part in hydrologic group B. The site generally drains westerly to Gypsum Creek located just off the western property line. 0.88 acres of offsite tributary drain onto the proposed project site across the south property line. The information located on the attached FEMA FIRM 20173C0368E, effective date Feb. 2, 2007, indicates the site is located in unshaded Zone X, defined as areas outside of the 0.2% floodplain.

DETENTION

The City of Wichita requires that detention be provided for new developments to reduce the post development runoff to equal or less than pre development levels. However, the site's proximity to a major drainage channel and the location of the site within the tributary area presents the potential for detention to actually increase the peak flows in the downstream channel. To investigate this potential increase three separate HEC-HMS models were created, existing, proposed and proposed with detention. The results of the analysis is provided in the tables below,

	Area (ac.)	TC (min)	CN	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
Existing								
Offsite	0.9	17.6	87	2.5	3.3	3.8	4.6	6.0
Site	1.5	22.6	86.6	3.6	4.9	5.7	7.0	9.2
Total Site	2.4	--	--	6.1	8.2	9.4	11.6	15.2
Channel	14592	478	90	5105.9	6692	7645.5	9235.8	11938.9
Total	14594.4	--	--	5106.1	6692.2	7645.8	9236.1	11939.3

	Area (ac.)	TC (min)	CN	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
Proposed								
Offsite	0.9	17.6	87	2.5	3.3	3.8	4.6	6.0
Site	1.5	22.6	86.6	4.4	5.6	6.4	7.6	9.8
Total Site	2.4	--	--	6.8	8.9	10.2	12.3	15.8
Channel	14592	478	90	5105.9	6692.0	7645.5	9235.8	11938.9
Total	14594.4	--	--	5106.1	6692.2	7645.8	9236.1	11939.3

Proposed w/ Detention	Area (ac.)	TC (min)	CN	Q2 (cfs)	Q5 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
Offsite	0.9	17.6	87	2.5	3.3	3.8	4.6	6.0
Site	1.5	22.6	86.6	4.4	5.6	6.4	7.6	9.8
Total Site	2.4	--	--	6.0	7.9	9.1	10.9	14.1
Channel	14592	478	90	5105.9	6692.0	7645.5	9235.8	11938.9
Total	14594.4	--	--	5106.1	6692.2	7645.8	9236.1	11939.4

CHANNEL PROTECTION AND WATER QUALITY VOLUMES

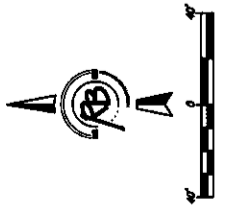
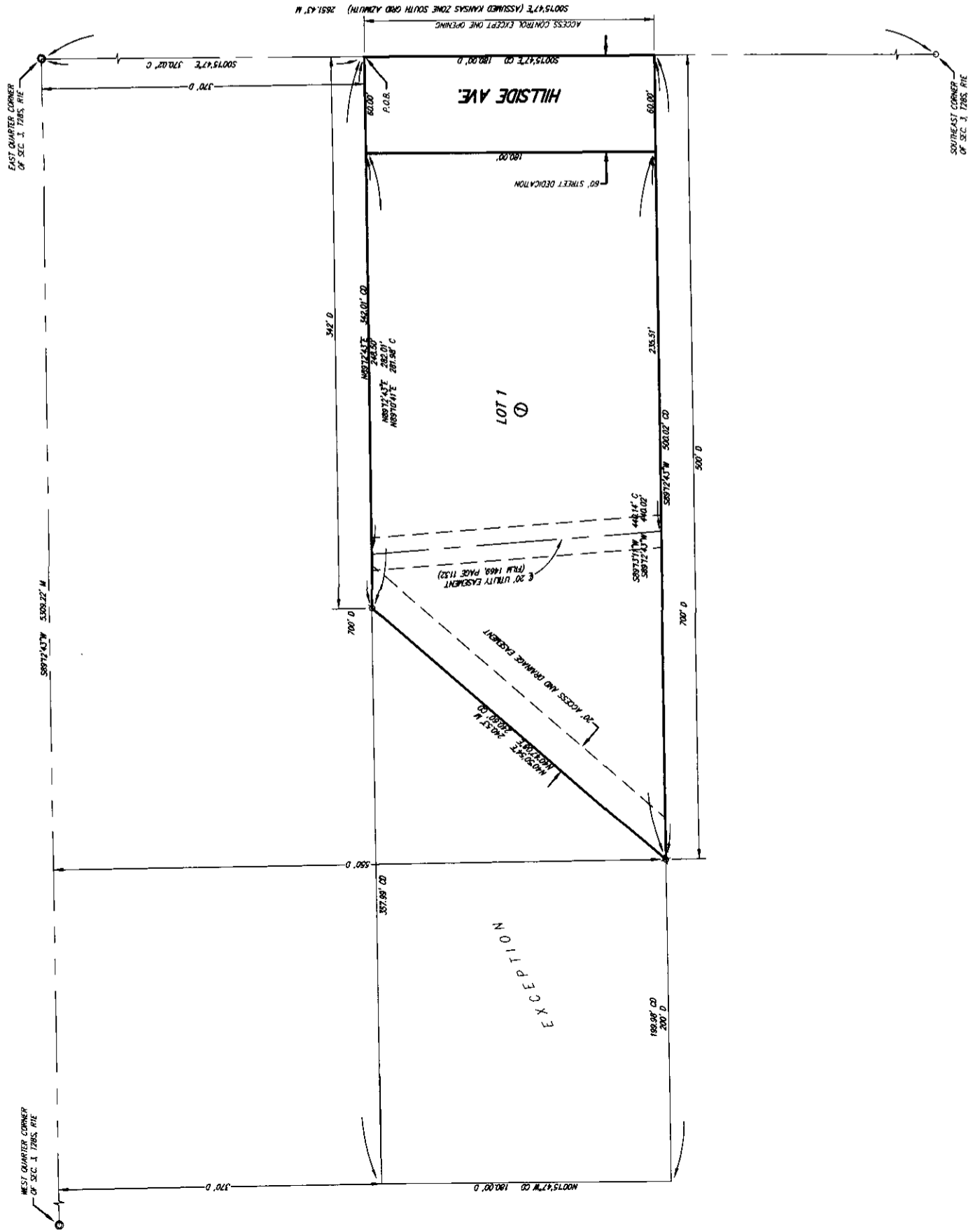
According to City of Wichita Ordinances 16.32.091 and 16.32.092 channel protection and water quality treatment is required for developments that create one acre of disturbed area for water quality or one acre of impervious area for channel protection. The proposed site will neither disturb one acre nor create an additional one acre of impervious area. Therefore the site will not provide water quality treatment or channel protection storage. However, if in the future the site is redeveloped and the disturbed area or increased impervious area is greater than one acre water quality and channel protection detention shall be provided as required.

PLAT

One - Step Final Plat

LORDS DINER, S. HILLSIDE

an Addition to Wichita, Sedgwick County, Kansas



- BRUSH MARK CHISELED SQUARE ON THE TOP OF CURB ON THE WEST SIDE OF HILLSIDE AVE AT THE NORTH LINE OF LOT 1, BLOCK 1, LORDS DINER, S. HILLSIDE, WICHITA, KANSAS. ELEVATION = 1291.17 (N/A488)
- MINIMUM PAD ELEVATION FOR LONEST OPENING = 1298.0 (N/A488)
- M = Measured
 D = Discovered
 CD = Calculated from Described
 SURVEY MARKER LEGEND:
 ○ 1/2" IRON PIPE IN TIMBER (FOUND - ORIGIN UNKNOWN)
 ○ 3/4" IRON PIPE IN TIMBER (FOUND - ORIGIN UNKNOWN)
 ⊗ 1/2" REBAR W/ELS CAP (FOUND)
 ⊗ 3/4" IRON PIPE IN TIMBER (FOUND - ORIGIN UNKNOWN)
 ● 5/8" REBAR W/CAP (ST)

State of Kansas) SS
Sedgwick County)

We, Ruggles & Bohm, P.A., Land Surveyors in aforesaid county and state do hereby certify that, under the supervision of the undersigned, we have surveyed and platted LORDS DINER, S. HILLSIDE, an Addition to Wichita, Sedgwick County, Kansas, and that the accompanying plat is a true and correct exhibit of the property surveyed, described as follows:

A tract beginning at a point 370 feet south of the Northeast corner of the SE1/4 of Sec. 3, T8S, R1E of the 6th P.M., Sedgwick County, Kansas; thence West, 700 feet to a point 370 feet south of the north line of said SE1/4 of Sec. 3; thence South, 180 feet; thence East, 700 feet; thence North, 180 feet to the place of beginning; EXCEPT beginning 370 feet south and 342 feet west of the Northeast corner of said SE1/4; thence Southeastwesterly to a point 550 feet south and 500 feet west of said Northeast corner; thence West, 200 feet; thence North, 180 feet to a point 370 feet south and 700 feet west of said Northeast corner; thence East to the point of beginning.

All public easements and dedications are hereby vacated by virtue of K.S.A. 12-512(b).

Ruggles & Bohm, P.A.
Land Surveyor
William K. Clevenger

Know all men by these presents that we, the undersigned, have caused the land described in the surveyor's certificate to be platted into a Lot, a Block and a Street, to be known as LORDS DINER, S. HILLSIDE, an Addition to Wichita, Sedgwick County, Kansas. Access Contracts as indicated are hereby granted to the appropriate governing body. The street is hereby dedicated to and for the use of the public. A drainage plan has been developed for this plat and all drainage easements shall remain at established grades, or as modified with the approval of the City Engineer, and unobstructed to allow for the conveyance of storm water.

Catholic Diocese of Wichita
President
Michael O. Jackels

State of Kansas) SS
Sedgwick County)

The foregoing instrument acknowledged before me, this _____ day of _____, 2011, by Michael O. Jackels, President, on behalf of Catholic Diocese of Wichita.

My appointment expires _____.

Notary Public

This plat of LORDS DINER, S. HILLSIDE, an Addition to Wichita, Sedgwick County, Kansas, has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this _____ day of _____, 2011.

Wichita-Sedgwick County Metropolitan Area Planning Commission
Chair _____ Debra Miller Stevens
Secretary _____ John L. Schlegel

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this _____ day of _____, 2011.

At the Direction of the City Council
Mayor _____ Carl Brewer
City Clerk _____ Karen Sublett

Reviewed in accordance with K.S.A. 58-2005 on this _____ day of _____, 2011.

Deputy County Surveyor
Tricia L. Robella, LS #1246
Sedgwick County Kansas

Entered on transfer record this _____ day of _____, 2011.
Kelly B. Arnold
County Clerk

State of Kansas) SS
Sedgwick County)

This is to certify that this plat has been filed for record in the office of the Register of Deeds, this _____ day of _____, 2011, at _____ o'clock _____ M, and is duly recorded.

Register of Deeds
Bill Meek
Deputy
Tonya Buckingham



Ruggles & Bohm, P.A.
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E-mail: info@rbkansas.com

DNW FILE SURVEY BASE
PROJECT NO. 3807P
MAY 14, 2011

AERIAL

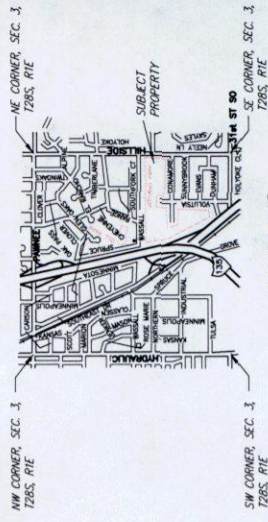
Aerial

LORDS DINER, S. HILLSIDE

an Addition to Wichita, Sedgwick County, Kansas



BENCH MARK, CIRCLED SQUARE ON THE TOP OF CURB ON THE WEST SIDE OF OLIVER AVE. AT THE NORTH LINE OF LOT 1, BLOCK 1, LORDS DINER, S. OLIVER, ELEVATION = 1291.17 (MWD08)



Ruggles & Bohm, P.A.
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 E-mail: info@rbkansas.com

DWG. FILE: D:\chicago\Plan
 PROJECT NO. 3807P
 May 19, 2011

EXISTING CONDITIONS

Project: 3807P Simulation Run: 002 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Existing
End of Run: 02Jan2011, 12:05 Meteorologic Model: 002-yr
Compute Time: 20May2011, 13:04:15 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	5105.9	02Jan2011, 04:50	2.78
Site	0.002328	3.6	02Jan2011, 00:05	2.64
Offsite	0.001375	2.5	02Jan2011, 00:05	2.84
Total Site	0.003703	6.1	02Jan2011, 00:05	2.71
Junction-2	22.803703	5106.1	02Jan2011, 04:50	2.78

Project: 3807P Simulation Run: 005 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Existing
End of Run: 02Jan2011, 12:05 Meteorologic Model: 005-yr
Compute Time: 20May2011, 13:04:19 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	6692.0	02Jan2011, 04:50	3.64
Site	0.002328	4.9	02Jan2011, 00:05	3.58
Offsite	0.001375	3.3	02Jan2011, 00:05	3.79
Total Site	0.003703	8.2	02Jan2011, 00:05	3.66
Junction-2	22.803703	6692.2	02Jan2011, 04:50	3.64

Project: 3807P Simulation Run: 010 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Existing
End of Run: 02Jan2011, 12:05 Meteorologic Model: 010-yr
Compute Time: 20May2011, 13:04:24 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	7645.5	02Jan2011, 04:50	4.16
Site	0.002328	5.7	02Jan2011, 00:05	4.16
Offsite	0.001375	3.8	02Jan2011, 00:05	4.37
Total Site	0.003703	9.4	02Jan2011, 00:05	4.24
Junction-2	22.803703	7645.8	02Jan2011, 04:50	4.16

Project: 3807P Simulation Run: 025 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Existing
End of Run: 02Jan2011, 12:05 Meteorologic Model: 025-yr
Compute Time: 20May2011, 13:04:28 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	9235.8	02Jan2011, 04:50	5.03
Site	0.002328	7.0	02Jan2011, 00:05	5.12
Offsite	0.001375	4.6	02Jan2011, 00:05	5.35
Total Site	0.003703	11.6	02Jan2011, 00:05	5.20
Junction-2	22.803703	9236.1	02Jan2011, 04:50	5.03

Project: 3807P Simulation Run: 100 Exist

Start of Run: 01Jan2011, 12:00 Basin Model: Existing
End of Run: 02Jan2011, 12:05 Meteorologic Model: 100-yr
Compute Time: 20May2011, 13:04:32 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	11938.9	02Jan2011, 04:50	6.51
Site	0.002328	9.2	02Jan2011, 00:05	6.78
Offsite	0.001375	6.0	02Jan2011, 00:05	7.01
Total Site	0.003703	15.2	02Jan2011, 00:05	6.87
Junction-2	22.803703	11939.3	02Jan2011, 04:50	6.51

PROPOSED CONDITIONS

Project: 3807P Simulation Run: Prop 002

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed
End of Run: 02Jan2011, 12:05 Meteorologic Model: 002-yr
Compute Time: 20May2011, 14:55:32 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	5105.9	02Jan2011, 04:50	2.78
Site	0.002328	4.4	02Jan2011, 00:05	3.49
Offsite	0.001375	2.5	02Jan2011, 00:05	2.84
Total Site	0.003703	6.8	02Jan2011, 00:05	3.25
Junction-2	22.803703	5106.1	02Jan2011, 04:50	2.78

Project: 3807P Simulation Run: Prop 005

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed
End of Run: 02Jan2011, 12:05 Meteorologic Model: 005-yr
Compute Time: 20May2011, 14:55:40 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	6692.0	02Jan2011, 04:50	3.64
Site	0.002328	5.6	02Jan2011, 00:05	4.49
Offsite	0.001375	3.3	02Jan2011, 00:05	3.79
Total Site	0.003703	8.9	02Jan2011, 00:05	4.23
Junction-2	22.803703	6692.2	02Jan2011, 04:50	3.64

Project: 3807P Simulation Run: Prop 010

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed
End of Run: 02Jan2011, 12:05 Meteorologic Model: 010-yr
Compute Time: 20May2011, 14:55:44 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	7645.5	02Jan2011, 04:50	4.16
Site	0.002328	6.4	02Jan2011, 00:05	5.09
Offsite	0.001375	3.8	02Jan2011, 00:05	4.37
Total Site	0.003703	10.2	02Jan2011, 00:05	4.82
Junction-2	22.803703	7645.8	02Jan2011, 04:50	4.16

Project: 3807P Simulation Run: Prop 025

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed
End of Run: 02Jan2011, 12:05 Meteorologic Model: 025-yr
Compute Time: 20May2011, 14:55:47 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	9235.8	02Jan2011, 04:50	5.03
Site	0.002328	7.6	02Jan2011, 00:05	6.08
Offsite	0.001375	4.6	02Jan2011, 00:05	5.35
Total Site	0.003703	12.3	02Jan2011, 00:05	5.81
Junction-2	22.803703	9236.1	02Jan2011, 04:50	5.03

Project: 3807P Simulation Run: Prop 100

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed
End of Run: 02Jan2011, 12:05 Meteorologic Model: 100-yr
Compute Time: 20May2011, 14:55:51 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	11938.9	02Jan2011, 04:50	6.51
Site	0.002328	9.8	02Jan2011, 00:05	7.78
Offsite	0.001375	6.0	02Jan2011, 00:05	7.01
Total Site	0.003703	15.8	02Jan2011, 00:05	7.50
Junction-2	22.803703	11939.3	02Jan2011, 04:50	6.51

DETENTION POND

Project: 3807P Simulation Run: Det 002

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed w/ Detention
End of Run: 02Jan2011, 12:05 Meteorologic Model: 002-yr
Compute Time: 20May2011, 15:24:00 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	5105.9	02Jan2011, 04:50	2.78
Site	0.002328	4.4	02Jan2011, 00:05	3.49
Offsite	0.001375	2.5	02Jan2011, 00:05	2.84
Pond 1	0.003703	6.0	02Jan2011, 00:10	3.22
Total Site	0.003703	6.0	02Jan2011, 00:10	3.22
Junction-2	22.803703	5106.1	02Jan2011, 04:50	2.78

Project: 3807P Simulation Run: Det 005

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed w/ Detention
End of Run: 02Jan2011, 12:05 Meteorologic Model: 005-yr
Compute Time: 20May2011, 15:24:06 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	6692.0	02Jan2011, 04:50	3.64
Site	0.002328	5.6	02Jan2011, 00:05	4.49
Offsite	0.001375	3.3	02Jan2011, 00:05	3.79
Pond 1	0.003703	7.9	02Jan2011, 00:10	4.20
Total Site	0.003703	7.9	02Jan2011, 00:10	4.20
Junction-2	22.803703	6692.2	02Jan2011, 04:50	3.64

Project: 3807P Simulation Run: Det 010

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed w/ Detention
End of Run: 02Jan2011, 12:05 Meteorologic Model: 010-yr
Compute Time: 24May2011, 08:00:01 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	7645.5	02Jan2011, 04:50	4.16
Site	0.002328	6.4	02Jan2011, 00:05	5.09
Offsite	0.001375	3.8	02Jan2011, 00:05	4.37
Pond 1	0.003703	9.1	02Jan2011, 00:10	4.79
Total Site	0.003703	9.1	02Jan2011, 00:10	4.79
Junction-2	22.803703	7645.8	02Jan2011, 04:50	4.16

Project: 3807P Simulation Run: Det 025

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed w/ Detention
End of Run: 02Jan2011, 12:05 Meteorologic Model: 025-yr
Compute Time: 20May2011, 15:24:15 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	9235.8	02Jan2011, 04:50	5.03
Site	0.002328	7.6	02Jan2011, 00:05	6.08
Offsite	0.001375	4.6	02Jan2011, 00:05	5.35
Pond 1	0.003703	10.9	02Jan2011, 00:10	5.78
Total Site	0.003703	10.9	02Jan2011, 00:10	5.78
Junction-2	22.803703	9236.1	02Jan2011, 04:50	5.03

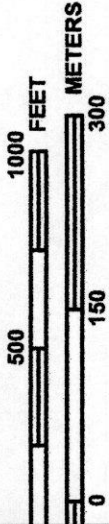
Project: 3807P Simulation Run: Det 100

Start of Run: 01Jan2011, 12:00 Basin Model: Proposed w/ Detention
End of Run: 02Jan2011, 12:05 Meteorologic Model: 100-yr
Compute Time: 20May2011, 15:24:20 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Channel	22.800000	11938.9	02Jan2011, 04:50	6.51
Site	0.002328	9.8	02Jan2011, 00:05	7.78
Offsite	0.001375	6.0	02Jan2011, 00:05	7.01
Pond 1	0.003703	14.1	02Jan2011, 00:10	7.46
Total Site	0.003703	14.1	02Jan2011, 00:10	7.46
Junction-2	22.803703	11939.4	02Jan2011, 04:50	6.51

FEMA FIRM

MAP SCALE 1" = 500'



PANEL 0368E

FIRM
FLOOD INSURANCE RATE MAP
SEDGWICK COUNTY,
KANSAS
AND INCORPORATED AREAS

PANEL 368 OF 700

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

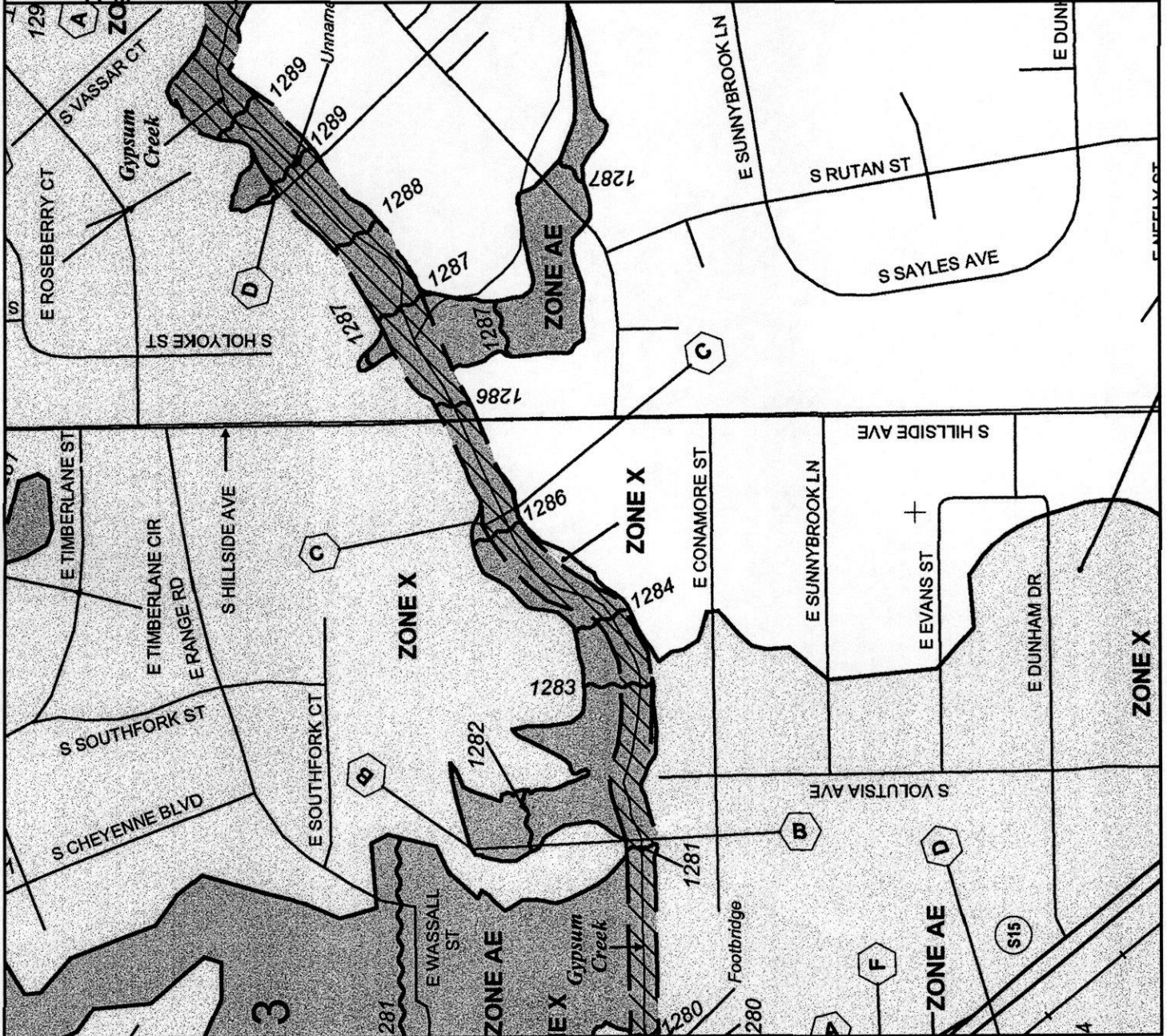
COMMUNITY	NUMBER	PANEL	SUFFIX
SEDGWICK COUNTY	200321	0368	E
MCHITA, CITY OF	200328	0368	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
20173C0368E
EFFECTIVE DATE
FEBRUARY 2, 2007
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



USGS MAP



DRAINAGE MAP

Table 5 - Summary of Discharges (Continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (square miles)</u>	<u>Peak Discharges (cubic feet per second)</u>			
		<u>10-Percent- Annual-Chance</u>	<u>2-Percent- Annual-Chance</u>	<u>1-Percent- Annual-Chance</u>	<u>0.2-Percent- Annual-Chance</u>
GYPSUM CREEK					
At confluence with Wichita Drainage Canal	22.80	6,750	10,360	12,000	15,920
At South Oliver Avenue	17.10	5,170	7,540	8,710	11,956
Just downstream of East Harry Street	12.70	4,680	6,800	7,800	9,912
Just downstream of East Kellogg Drive	8.70	3,760	5,120	6,110	5,882
HOVER STREET DRAIN- DUGAN TRIBUTARY					
Just upstream of South Hoover Street	2.73	900	1,470	1,720	2,312
At South Dugan Road	0.90	312	520	619	847
LITTLE ARKANSAS RIVER					
Just downstream of Control Structure No. 1	*	5,500	5,500	5,500	5,500
At Control Structure No. 2	*	4,000	4,000	4,000	4,000
LITTLE ARKANSAS RIVER (CONT'D)					
At North 55 th Street West ¹	1,200	18,500	34,100	41,600	60,700
LITTLE SLOUGH					
At confluence with Big Slough North	6.20	650	960	1,080	1,390
MAIN FORK CHISHOLM CREEK					
At confluence with Little Arkansas River (Lower Reach)	46.40	6,500	11,800	14,100	21,000
MIDDLE BRANCH GYPSUM CREEK					
At confluence with Gypsum Creek	3.34	877	1,330	1,550	1,999
MIDDLE FORK CALFSKIN CREEK					
At confluence with Calfskin Creek	*	3,457	7,263	8,965	12,963

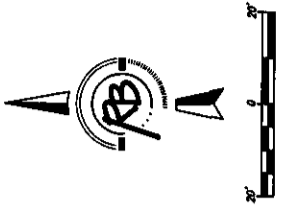
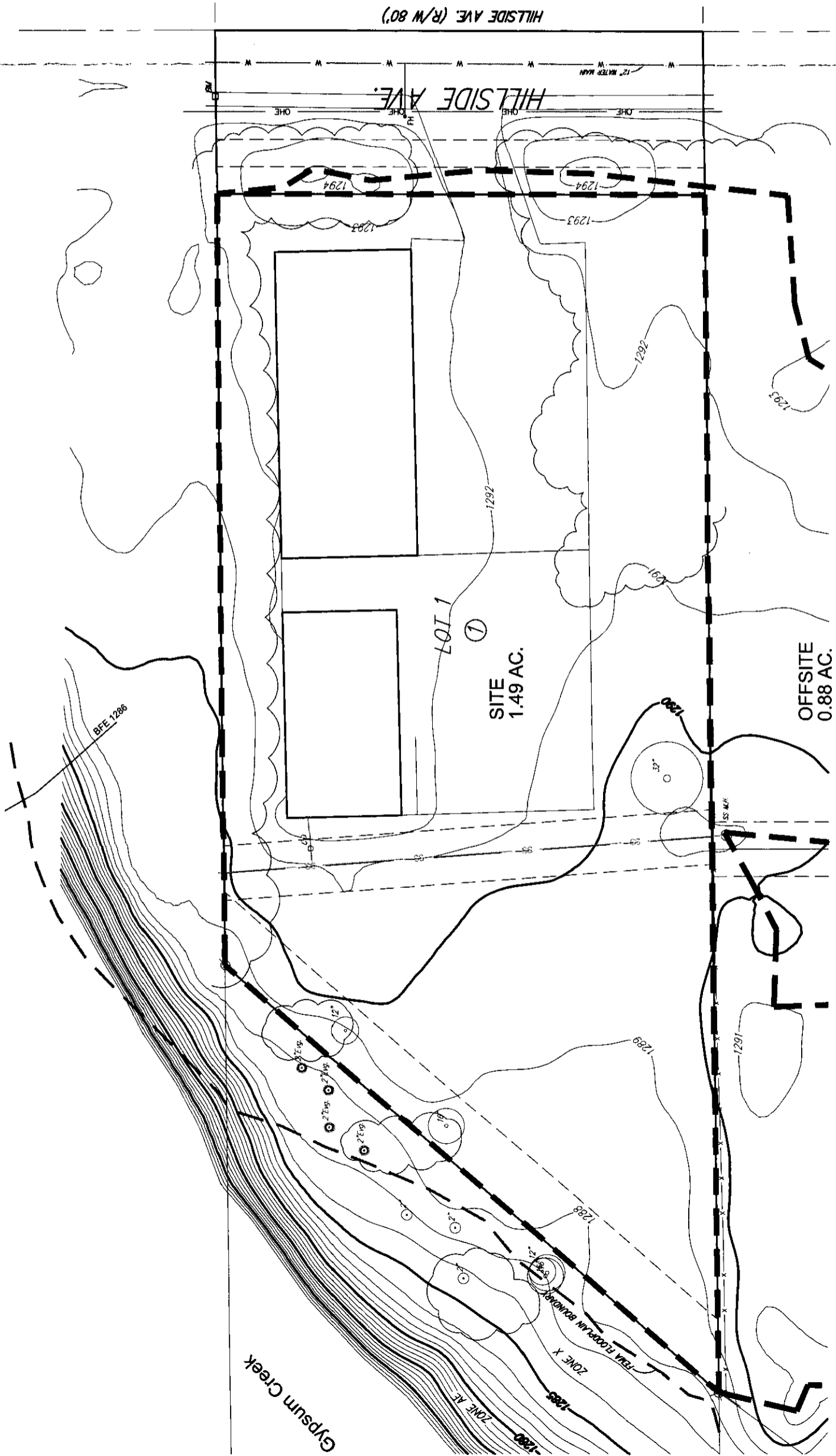
¹ June 3, 1986, Sedgwick County Flood Insurance Study

* Data not Available

Drainage Plan

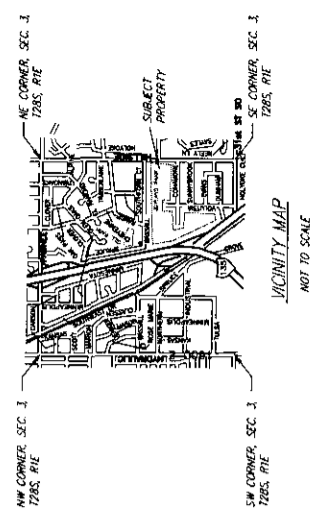
LORDS DINER, S. HILLSIDE

an Addition to Wichita, Sedgwick County, Kansas



BENCH MARK CHISELED SQUARE ON THE TOP OF CURB ON THE WEST SIDE OF GUMPER AVE. AT THE NORTH LINE OF LOT 1, BLOCK 1, LORDS DINER, S. GUMPER, ELEVATION = 1291.17 (NAVD88)

EXISTING IMPERVIOUS AREA: 0.55 ACRES
EXISTING GRASSED AREA: 0.84 ACRES



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THIS FILE, Includes Plan
PROJECT NO. 2007
May 16, 2011