DRAINAGE PLAN
AND
SUPPORTING CALCULATIONS

FOR
HARLEY VOTH ADDITION
AN ADDITION TO
WICHITA, KANSAS

PREPARED FOR:
SAVOY COMPANY, P.A.
433 SOUTH HYDRAULIC
WICHITA, KS 67211

JANUARY 27, 2009

PREPARED BY:

CERTIFIED ENGINEERING DESIGN, P.A.
810 WEST DOUGLAS, SUITE C
WICHITA, KANSAS 67203-6105
(316)262-8808 PHONE
(316)262-1669 FAX

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HARLAN DALE FORAKER
LICENSED
10891
KANSAS
PROFESSIONAL ENGINEER

1.28.09

Adopted: February 23, 2007

CITY OF WICHITA

Public Works, Engineering Division
Final Drainage Plan Submittal Checklist

Reviewer: _____ Date: _____

Subdivision Name: Harley Voth Addition Location: 3825 W Douglas Ave.

Total Land Area Of Ownership: 0.33 Acres

Type: ____ Residential X Commercial ____ Industrial ____ Recreation ____ Municipal ____ Other

Applicant: Larry James + Denise M James Contact: Mark Savoy Phone #: 316.265.0005

Engineer: Certified Engineering Design Contact: Harlan Forsker PE Phone # 316.262.8808

Please check the appropriate box:

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

	Applicant			Engr	
Tab 1. Project Narrative	**I**	**NA**	**Explanation / Location in Plan**	**I**	**NA**
A. Site Location Map, using USGS Map	X				
B. Discussion of development, existing conditions, and proposed impacts on stormwater, wetland, riparian, and flood plain					
C. Discussion of offsite conditions	X				
D. Summary of runoff calculations (pre/post development) No increase in peak discharge for all storm series	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	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.)		—			
H. Professional Engineer seal, signature and date on cover of report	X				
I. CD of drainage plan in PDF format (one file) and one paper copy bound with this checklist included behind the cover		—			

	Applicant			Engr	
Tab 2. Existing Conditions Runoff Calculations	**I**	**NA**	**Explanation / Location in Plan**	**I**	**NA**
A. Copy of applicable orthophoto showing proposed project boundaries (preferable in color)	X				
B. Runoff Method (Rational, Hydrograph Method, or other approved methods by Engineering)	X				
C. Existing topography (no greater than 2-foot contours, 1-foot recommend)	X				
D. Total Site Area and Total Impervious Area (acres)	X				
E. Benchmarks used for site control	X				
F. Streams, creeks, and waterway labeled		—			
G. Predominant soils from USDA soil surveys, and/or on site soil borings	X				
H. Location and boundaries of natural features such as wetlands, lakes, and ponds with the normal water elevation noted	X				
I. Location of existing roads, buildings, parking lots and other impervious areas.	X				

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J. Location of existing utilities (e.g., water, sewer, gas, electric) and easements	X				
K. Location of existing conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow	X				
L. Flow paths	X				
M. Location and dimensions of existing channels, bridges or culvert crossings		—			
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	X				
O. Assumed pre-developed runoff curve numbers	X				
P. Existing time of concentrations used in calculations	X				
Q. Evaluate immediate downstream drainage capacity, not to exceed more than 0.25 miles downstream of site		—			
R. Existing structural elevations (e.g., invert of pipes, manholes, etc.)		—			
S. Cross-section data for open channels		—			
T. Ground water elevations, if applicable		—			

	Applicant			Engr	
Tab 3. Post-Development Hydrologic Analysis	**I**	**NA**	**Explanation / Location in Plan**	**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)	X				
B. Proposed time of concentrations used in calculations	X				
C. Assumed post-developed runoff curve numbers	X				
D. Proposed contours for detention facilities (to equal area used in outlet rating curves)		—			
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		—			
G. Final analysis of potential upstream/downstream impact/effects of project, where necessary	X				
H. Existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.)		—			
I. Design water surface elevations and normal pool elevation for ponds.		—			
J. Typical detail for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc. To include height, width, elevation, and/or diameter.		—			
K. Proposed limits of clearing and grading		—			
L. Location of existing and proposed roads, buildings, parking lots and other impervious areas.	X				
M. Location of existing and proposed utilities (e.g., water, sewer) and easements	X				
N. Location of existing and proposed conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow	X				
O. Preliminary location and dimensions of proposed channel modifications, such as bridge or culvert crossings		—			

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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)		—			
S. The 100-year 24-hour HWL delineated on the plan for detention pond		—			
T. Lowest opening elevations table on the plat for structures located adjacent to channels or ponds		—			
U. Stormwater Management Facilities located within a Reserve		—			
V. Maintenance responsibility of stormwater management facility shall be specified in the platters text. (e.g. HOA, Lot Owners Association, or lot)		—			
W. Off-site drainage easements or agreements required, where necessary		—			

	Applicant			Engr	
Tab 4. Floodplain *Submittal*	**I**	**NA**	**Explanation / Location in Plan**	**I**	**NA**
A. Provide source of flood profile		✗			
B. Nearest base flood elevations		✗			
C. Delineation of pre-developed regulatory floodplain/floodway limits		✗			
D. Delineation of post-developed regulatory floodplain and floodway limits		✗			
E. Floodplain boundary determination per elevation (project limits shown)		✗			
F. Provide source of floodway data table and discharges		✗			
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		✗			
H. Provide regulatory floodway and four natural profile models (10,50,100, and 500-yr) for existing and future watershed conditions		✗			
I. Location of floodplain/floodway limits and relationship of site to upstream/downstream properties (floodplain limits to be per elevation and scaled location)		✗			
J. Flood plains and floodways located within a Reserve, where necessary		✗			

	Applicant			Engr	
Tab 5. Federal, State and Local Permits (to be provided prior to construction unless otherwise specified)	**I/R**	**NA**	**Explanation / Location in Plan**	**I/R**	**NA**
A. US Army Corps of Engineers - Regulatory program permits (404 water quality certification)		✗			
B. Kansas Department of Agriculture - Division of Water Resources Permits (Stream Obstruction, Channel Change, Flood Plain Fill, Levee, Water Appropriations, Dam safety permit, etc.)		✗			
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.		✗			
D. Kansas Department of Transportation		✗			
E. Sedgwick County Right-of-way Permit		✗			

Consulting Engineer Initials AO

CERTIFIED ENGINEERING DESIGN, P.A
810 West Douglas,Suite C
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(316)262-8808 Office
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LETTER OF TRANSMITTAL

DATE: January 27, 2009

TO: Mr. Scott Lindebak, P.E.
Engineering Division
455 North Main
Wichita, KS 67202

RE: Drainage Plan
Harley Voth Addition
Wichita, KS

FROM: Harlan D. Foraker, P.E. HDF

I. PROJECT NARRATIVE

The site is located on the south side of Douglas Avenue between Illinois Avenue and McComas Street in the Southwest ¼ of the Southwest ¼ of Section 24, Township 27 South, Range 1 West. The address of the existing building is 3825 W. Douglas Avenue. The site currently has a structure and asphalt pavement over the entire site. No new construction is planned at the site.

II. EXISTING AND PROPOSED CONDITIONS RUNOFF CALCULATIONS

The rational method will be used to determine the peak discharges from the study area. Rational 'C' Factors were assigned to the existing site and proposed improvements from "Interim Drainage and Storm Sewer Policy for Design Criteria and Documentation" for the City of Wichita, Kansas. Rainfall Intensity tables from the same policy were utilized to determine the rainfall intensity for the 2, 5, 10, 25, and 100 year design storms.

The Soil Conservation Service TR-55 manual was used to compute the Time of Concentration for the drainage subareas. A design assumption was made as follows: that the minimum subarea time of concentration is 15 minutes.

The developed drainage subareas have been delineated on the 1" = 40' site and topographic mapping survey performed for this site.

Design Storm Events Evaluated: 2, 5, 10, 25, and 100 yr. storm events

The runoff calculations for the property have been completed utilizing the all 5 storm events.

The structure drains to asphalt pavement which drains to the street. The runoff then flows by means of the curb and gutter to the City storm water sewer.

The following tables summarize the peak discharge for the 0.33 acre drainage area.

EXISTING AND PROPOSED PEAK RUNOFF FOR THE HARLEY VOTH ADDITION

Description	C	Tc	I	Area	Q(cfs)
Existing Drainage Area(2 yr.)	.81	15	3.80	0.33	1.02
Existing Drainage Area(5 yr.)	.85	15	4.62	0.33	1.30
Existing Drainage Area(10 yr.)	.90	15	5.21	0.33	1.56
Existing Drainage Area(25 yr.)	.91	15	6.06	0.33	1.84
Existing Drainage Area(100 yr.)	.93	15	7.40	0.33	2.29

As there will be no change in the site after platting, the developed condition for the Harley Voth Addition is the same as the existing and it will continue to drain in the same manner as it currently does. The discharge flows out to Douglas Avenue and then to the storm water inlets. There appears to be no overland flow coming onto the site.

IV. FLOODPLAIN SUBMITTAL – No FEMA floodplain is located on this plat.

V. FEDERAL, STATE AND LOCAL PERMITS

A. US Army Corp of Engineers-Not Applicable
B. Kansas Dept. of Agriculture-Not Applicable
C. FEMA- Not Applicable
D. Kansas Department of Transportation-Not Applicable
E. Sedgwick County Right-of-Way Permit-Not Applicable

VII. APPENDIX I:

All charts, graphs, tables including a 1"=40' scale drainage plan map are included for review.

APPENDIX

Harley Voth Addition

Legend

Historic Site Buffers

- 1000' National Historic Site Buffers
- 500' Local Historic Site Buffers
- Historic Districts
- Nationally Registered Historic Sites
- Locally Registered Historic Sites
- Special Use Cases

Zoning Districts

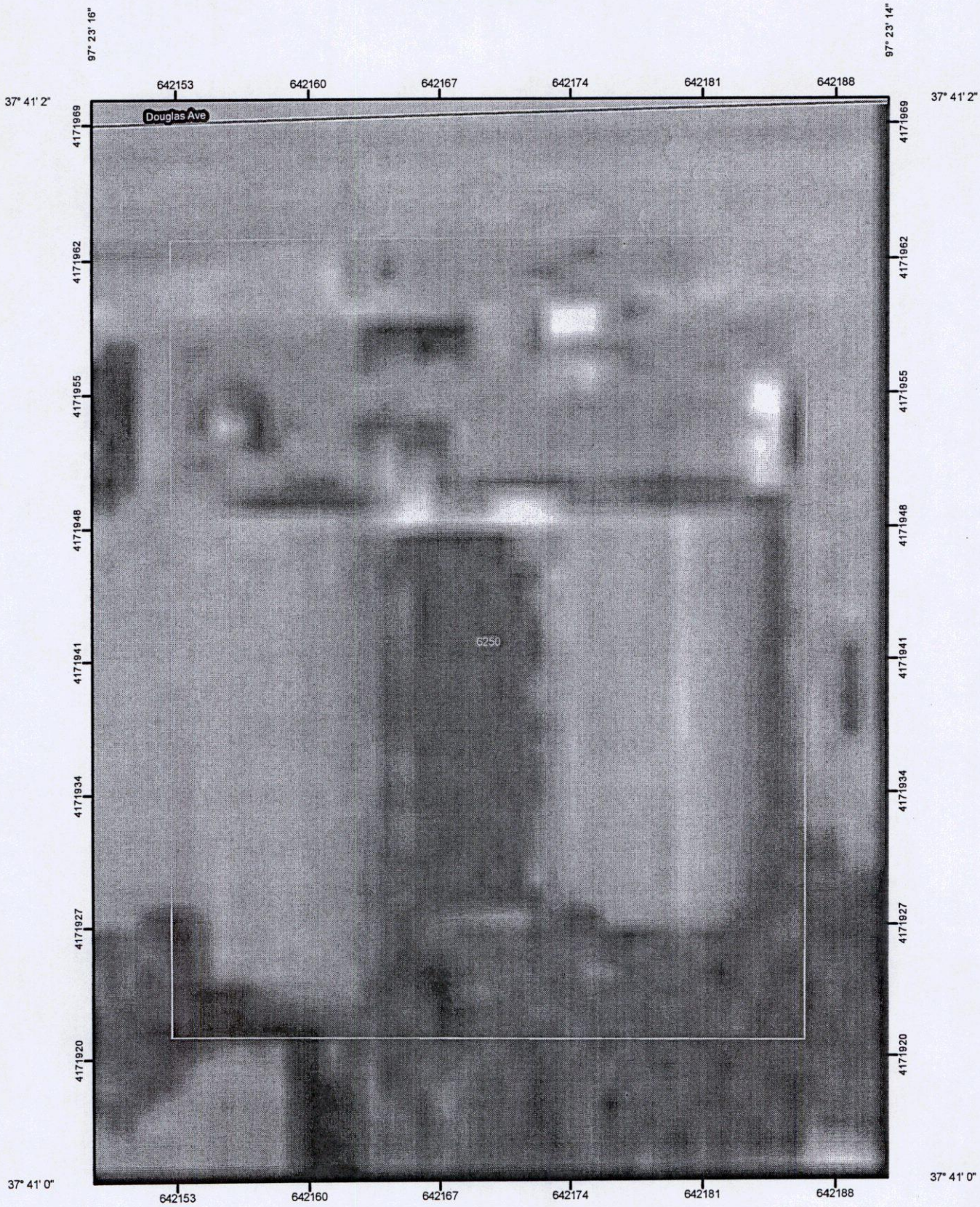
- Rural Residential
- Single Family 20,000
- Single Family 10,000
- Single Family 5,000
- Two-Family
- Multi-Family 18 d.u./ac
- Multi-Family 29 d.u./ac
- Multi-Family 75 d.u./ac
- Manufactured Housing
- Neighborhood Office
- General Office
- Neighborhood Retail
- Limited Commercial
- Office Warehouse
- General Commercial
- Industrial Park
- Industrial Park - Airport
- Central Business District
- Limited Industrial
- General Industrial
- University
- Planned Unit Development
- Air Force Base
- Unknown
- Not Zoned

Sedgwick County GIS

Geographic Information Services
Division of Information & Operations
www.sedgwickcounty.org/gis
525 N. Main, Suite 212, Wichita, KS 67203
Tel: 316.660.9290 Fax: 316.262.1174

DISCLAIMER: It is understood that, while Sedgwick County Geographic Information Services (SCGIS), City of Wichita GIS, (for purposes of the road centerline file), participating agencies, and information suppliers, have no indication or reason to believe that there are inaccuracies in information provided, SCGIS, its suppliers make no representations of any kind, including, but not limited to, warranties of merchantability or fitness for a particular use, nor are any such warranties to be implied with respect to the information, data or service furnished herein. In no event shall the Data Providers become liable to users of these data, or any other party, for any loss or damages, consequential or otherwise, including but not limited to time, money, or goodwill, arising from the use, operation or modification of the data. In using these data, users further agrees to indemnify, defend, and hold harmless the Data Providers for any and all liability of any nature arising out of or resulting from the lack of accuracy or correctness of the data, or the use of the data. No person shall sell, give or receive for the purpose of selling or offering for sale, any portion of the information provided herein.

Soil Map—Sedgwick County, Kansas
(Harley Voth Addition)



Map Scale: 1:271 if printed on A size (8.5" x 11") sheet.

N

Meters: 0 2.5 5 10 15

Feet: 0 10 20 40 60

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:271 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sedgwick County, Kansas
Survey Area Data: Version 5, Dec 3, 2008

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Sedgwick County, Kansas (KS173)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
6250	Urban land-Canadian complex, 0 to 3 percent slopes	0.4	100.0%
Totals for Area of Interest		**0.4**	**100.0%**

PROJECT: Harley Voth Addition

LOCATION: SW 1/4 of SW 1/4 of Sec 24

CLIENT:

DATE 1/27/09

BY CKD

JOB NO. SHEET NO. OF

Existing + Proposed

Area = 0.33 acres

Soil 85% Roof
15% Parking

Time of Concentration

use 15 minutes

$i_2 = 3.80$
$i_5 = 4.62$
$i_{10} = 5.21$
$i_{25} = 6.06$
$i_{100} = 7.40$

C Factor

use wtd "C"

	Roof		Asphalt		
$C_2 =$	.85 .80	+	.15 .87	=	.81
$C_5 =$	.85 .85	+	.15 .87	=	.85
$C_{10} =$	.85 .90	+	.15 .88	=	.90
$C_{25} =$	.85 .91	+	.15 .88	=	.91
$C_{100} =$	.85 .93	+	.15 .89	=	.93

Peak Flow

$Q = CiA$

$Q_2 = .81 \quad 3.80 \quad .33 = 1.02$ cfs

$Q_5 = .85 \quad 4.62 \quad .33 = 1.30$

$Q_{10} = .90 \quad 5.21 \quad .33 = 1.56$

$Q_{25} = .91 \quad 6.06 \quad .33 = 1.84$

$Q_{100} = .93 \quad 7.40 \quad .33 = 2.29$

(3 pages)

ATTACHMENT D

DRAINAGE CRITERIA

CITY OF WICHITA, KANSAS

RECOMMENDED RUNOFF COEFFICIENTS FOR RATIONAL METHOD
AND PERCENT IMPERVIOUS FOR UNIT HYDROGRAPH METHOD

Land Use or Surface Characteristics	Percent Impervious	Frequency 2	5	10	100
1. Business:					
Downtown Areas	95	0.84	0.85	0.87	0.91
Neighborhood Areas	70	0.68	0.69	0.73	0.80
2. Residential:					
Single Family (Soil Group D)					
1/8 Acre	50	0.57	0.61	0.66	0.79
1/4 Acre	38	0.50	0.54	0.62	0.76
1/3 Acre	30	0.46	0.50	0.59	0.73
1/2 Acre	25	0.42	0.48	0.56	0.72
3/4 Acre	22	0.42	0.46	0.55	0.71
1 Acre	20	0.41	0.45	0.54	0.71
Multi-Family (Soil Group D)					
Multi-Unit (detached)	60	0.62	0.66	0.72	0.82
Multi-Unit (attached)	65	0.64	0.68	0.73	0.83
Apartments	75	0.70	0.73	0.79	0.86
Single Family (Soil Group C)					
1/8 Acre	50	0.55	0.58	0.64	0.73
1/4 Acre	38	0.48	0.51	0.57	0.68
1/3 Acre	30	0.43	0.46	0.53	0.65
1/2 Acre	25	0.40	0.43	0.50	0.63
3/4 Acre	22	0.39	0.42	0.49	0.62
1 Acre	20	0.37	0.40	0.48	0.61
Multi-Family (Soil Group C)					
Multi-Unit (detached)	60	0.60	0.63	0.69	0.77
Multi-Unit (attached)	65	0.63	0.66	0.71	0.79
Apartments	75	0.68	0.72	0.77	0.83
Single-Family (Soil Group B)					
1/8 Acre	50	0.52	0.54	0.59	0.67
1/4 Acre	38	0.44	0.46	0.52	0.61
1/3 Acre	30	0.39	0.41	0.47	0.57
1/2 Acre	25	0.36	0.38	0.44	0.54
3/4 Acre	22	0.34	0.36	0.42	0.52
1 Acre	20	0.33	0.35	0.40	0.51
Multi-Family (Soil Group B)					
Multi-Unit (detached)	60	0.58	0.60	0.65	0.72
Multi-Unit (attached)	65	0.61	0.64	0.68	0.75
Apartments	75	0.67	0.70	0.74	0.80

Land Use or face Characteristics	Percent Impervious	Frequency 2	5	10	100
Single Family (Soil Group A)					
1/8 Acre	50	0.47	0.50	0.54	0.60
1/4 Acre	38	0.39	0.41	0.45	0.52
1/3 Acre	30	0.33	0.35	0.39	0.47
1/2 Acre	25	0.30	0.31	0.35	0.44
3/4 Acre	22	0.28	0.29	0.33	0.42
1 Acre	20	0.26	0.28	0.32	0.40
Multi-Family (Soil Group A)					
Multi-Unit (detached)	60	0.55	0.57	0.61	0.67
Multi-Unit (attached)	65	0.58	0.60	0.64	0.70
Apartments	75	0.65	0.68	0.72	0.77
3. Industrial:					
Light Areas	70	0.68	0.69	0.73	0.80
Heavy Areas	80	0.74	0.76	0.79	0.84
4. Playgrounds:	15	0.33	0.35	0.42	0.55
5. Schools:	40	0.49	0.51	0.56	0.66
6. Railroad Yard Areas:	30	0.43	0.45	0.50	0.62
Undeveloped Urban Areas: Offsite Flow Analysis (when land use not defined)	45	0.52	0.54	0.59	0.68
8. Streets:					
Paved	99	0.87	0.88	0.90	0.93
Gravel	00	0.24	0.26	0.33	0.48
9. Drive, Parking Lots and Walks:	96	0.87	0.87	0.88	0.89
10. Roofs:	90	0.80	0.85	0.90	0.93
11. Urban Lawn Areas (See Note No. 1 below):					
Soil Group A					
Slope less than 1%	00	0.08	0.09	0.13	0.23
Slope 1% to 4%	00	0.12	0.13	0.17	0.27
Slope more than 4%	00	0.16	0.17	0.21	0.31
Soil Group B					
Slope less than 1%	00	0.16	0.18	0.24	0.37
Slope 1% to 4%	00	0.20	0.22	0.28	0.41
Slope more than 4%	00	0.24	0.26	0.32	0.45
Soil Group C					
Slope less than 1%	00	0.24	0.27	0.35	0.51
Slope 1% to 4%	00	0.26	0.29	0.37	0.53
Slope more than 4%	00	0.28	0.31	0.39	0.55

Land Use or Face Characteristics	Percent Impervious	Frequency 2	5	10	100
Soil Group D					
Slope less than 1%	00	0.28	0.33	0.43	0.63
Slope 1% to 4%	00	0.30	0.35	0.45	0.65
Slope more than 4%	00	0.32	0.37	0.47	0.67

Note No. 1: Coefficients shown in the above table are for pervious open space areas with thick turf which includes pervious areas in parks and cemeteries. Coefficients shown above must be increased 0.02 for use with agricultural pasture areas. Coefficients shown above must be reduced by 0.04 for use with agricultural cultivated areas. Group A soils are well-drained, coarse textured sands with high infiltration rates. Group B soils are moderately well-drained, moderately coarse textured soils with moderate infiltration rates. Group C soils are moderately poor-drained, moderately fine textured soils with slow infiltration rates. Group D soils are poor-drained, fine textured soils with very slow infiltration rates.

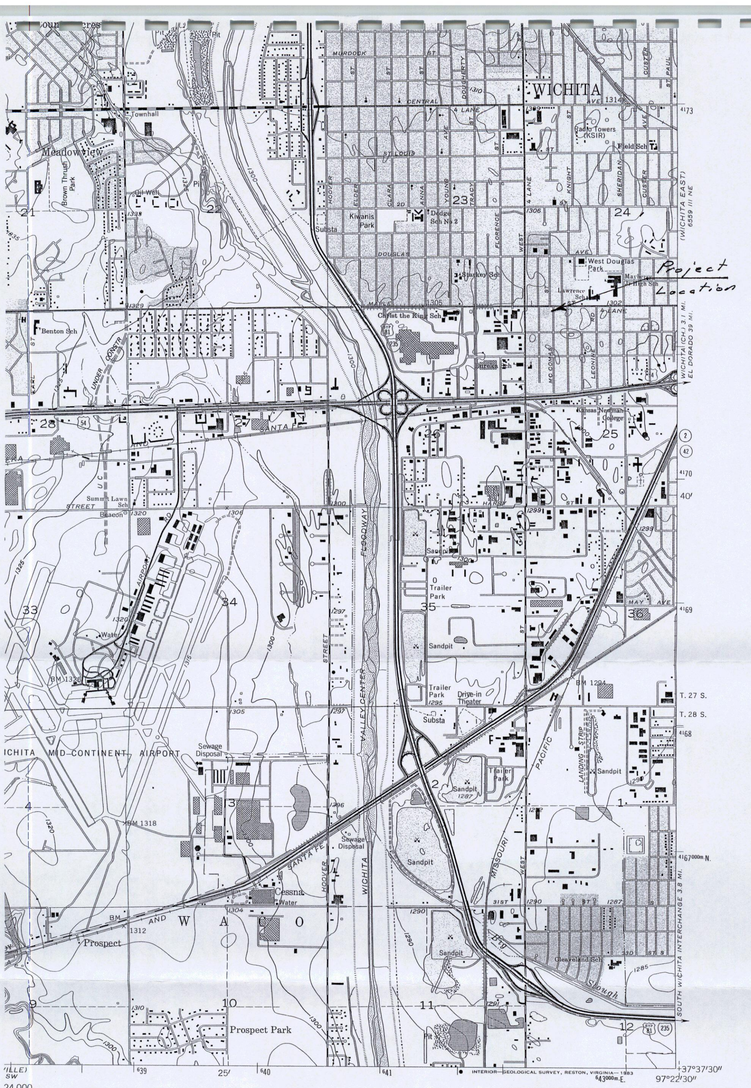
GENERAL NOTE: These Rational Formula Coefficients may not be valid for basins 320 acres or larger.

RAINFALL INTENSITY TABLE
SEDGWICK COUNTY
KANSAS

THIS TABLE CONTAINS AVERAGE RAINFALL INTENSITIES
IN INCHES PER HOUR.

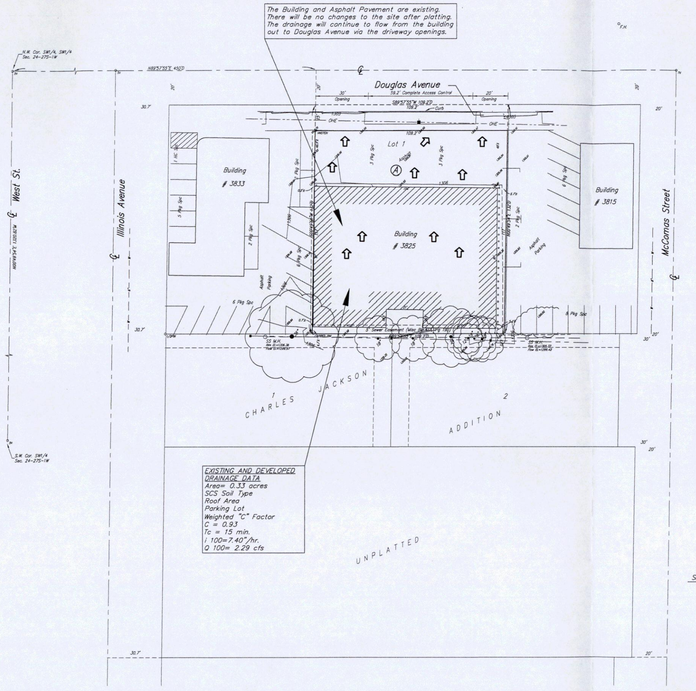
Time of conc.

DURATION, HR:MIN	RETURN PERIOD 1 YR	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
0:05	4.91	5.64	6.64	7.38	8.48	9.34	10.20
0:06	4.62	5.34	6.33	7.07	8.15	9.00	9.84
0:07	4.38	5.09	6.08	6.80	7.86	8.69	9.52
0:08	4.17	4.87	5.85	6.56	7.60	8.41	9.22
0:09	4.00	4.68	5.63	6.33	7.34	8.14	8.93
0:10	3.84	4.50	5.43	6.11	7.10	7.87	8.64
0:11	3.70	4.34	5.25	5.90	6.86	7.61	8.36
0:12	3.56	4.19	5.07	5.71	6.64	7.36	8.09
0:13	3.44	4.05	4.91	5.53	6.43	7.14	7.84
0:14	3.33	3.92	4.76	5.36	6.24	6.92	7.61
0:15	3.22	3.80	4.62	5.21	6.06	6.73	7.40
0:16	3.12	3.69	4.49	5.07	5.91	6.56	7.21
0:17	3.03	3.58	4.37	4.94	5.76	6.40	7.04
0:18	2.94	3.48	4.26	4.82	5.63	6.26	6.88
0:19	2.85	3.39	4.16	4.71	5.50	6.12	6.74
0:20	2.77	3.30	4.06	4.60	5.38	5.99	6.60
0:21	2.70	3.22	3.97	4.50	5.27	5.87	6.47
0:22	2.63	3.14	3.88	4.41	5.17	5.76	6.35
0:23	2.56	3.07	3.80	4.32	5.07	5.65	6.23
0:24	2.50	3.00	3.72	4.23	4.97	5.54	6.12
0:25	2.44	2.93	3.64	4.15	4.88	5.44	6.01
0:26	2.38	2.87	3.57	4.07	4.79	5.35	5.90
0:27	2.33	2.81	3.50	4.00	4.70	5.26	5.80
0:28	2.27	2.75	3.44	3.92	4.62	5.17	5.71
0:29	2.23	2.69	3.37	3.86	4.54	5.08	5.61
0:30	2.18	2.64	3.31	3.79	4.47	4.99	5.52
0:31	2.14	2.59	3.26	3.72	4.39	4.91	5.43
0:32	2.09	2.54	3.20	3.66	4.32	4.83	5.34
0:33	2.05	2.50	3.14	3.60	4.25	4.76	5.26
0:34	2.02	2.45	3.09	3.54	4.18	4.68	5.18
0:35	1.98	2.41	3.04	3.48	4.12	4.61	5.10
0:36	1.94	2.37	2.99	3.43	4.05	4.54	5.02
0:37	1.91	2.33	2.94	3.38	3.99	4.47	4.95
0:38	1.88	2.29	2.90	3.32	3.93	4.40	4.87
0:39	1.85	2.25	2.85	3.27	3.87	4.34	4.80
0:40	1.82	2.22	2.81	3.23	3.82	4.28	4.73
0:41	1.79	2.18	2.77	3.18	3.76	4.22	4.67
0:42	1.76	2.15	2.73	3.13	3.71	4.16	4.60
0:43	1.73	2.12	2.69	3.09	3.66	4.10	4.54
0:44	1.71	2.09	2.65	3.05	3.61	4.04	4.48
0:45	1.68	2.06	2.62	3.01	3.56	3.99	4.42


WICHITA
Meadow View
Project Location
Christ the King Sch
Kennedy Sch
Kroll Sch
Kingsley Sch
Knapp Sch
Kingsley Park
Knapp Park
Kingsley Sch
West Douglas Park
Lawrence Park
Benton Sch
Benton Park
Sunny Lane Sch
Sacred Heart
Trailer Park
Drive-in Theater
Sandpit
Substa
Sewage Disposal
Cessna Water
Prospect
Prospect Park
Oaklawn
Sloughs
WICHITA MID-CONTINENT AIRPORT
WICHITA VALLEY CENTER
WICHITA EAST
WICHITA (N.J.) 3.1 MI.
EL DORADO 3.9 MI.
EDDY HIGHWAY INTERCHANGE 3.8 MI.
T. 27 S.
T. 28 S.
24 000
1 MILE
4000 5000 6000 7000 FEET
1 KILOMETER
RVAL 5 FEET
TICAL DATUM OF 1929
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1983
97°22'30"
37°37'30"
ROAD CLASSIFICATION
Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route
KANSAS
QUADRANGLE LOCATION
IAL MAP ACCURACY STANDARDS
COLORADO 80225, OR RESTON, VIRGINIA 22092
Y, LAWRENCE, KANSAS 66044
ND SYMBOLS IS AVAILABLE ON REQUEST
Revisions shown in purple compiled from aerial photographs taken 1980 and other sources
This information not field checked. Map edited 1982
Purple tint indicates extension of urban area
WICHITA WEST, KANS.
N3737.5—W9722.5/7.5
1961
PHOTOREVISED 1982
DMA 6559 III NW—SERIES V878

Drainage Plan
for
Preliminary Plat
Harley Voth Addition

Wichita, Sedgwick County, Kansas



Legal Description

A tract of land beginning 20 feet south and 430 feet east of the N.W. Cor. of the SW1/4 of Sec. 24, T-27-S, R-1-W of the 6th P.M., Sedgwick County, Kansas; thence south 132 feet; thence east 109.2 feet; thence north 132 feet; thence west 109.2 feet to the point of beginning.

OWNER:
Harley J. Voth Living Trust (Restated)
C/O Bob Kaplan
430 N. Market
Wichita, Ks. 67202
Ph. 316-262-5175

Contract Purchaser:
Larry James and Denise M. James
3825 W. Douglas
Wichita, Ks. 67213
Ph. 316-440-2510

GROSS SIZE:
14423.73 Sq. Ft.
0.33 Acres±

NET SIZE OF PLAT:
12784.74 Sq. Ft.
0.29 Acres±

MINIMUM LOT SIZE:
12784.74 Sq. Ft.
0.29 Acres±

ZONING:
LC - Light Commercial

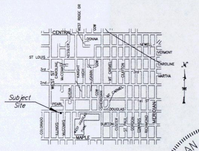
CONTROL NUMBER:
208784

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

LEGEND
Survey Datum = NAVD 88
F = Flowline
T = Top of Curb
B = Gutterline
C = Centerline
Top = Top of Curb

DRAINAGE KEY
= Proposed Surface Drainage Direction
= Existing Contours
= Proposed Contours

Site Bench Mark: Chiseled "X" S. side concrete walk @ N.W. Corner of Proposed Lot 1, Block A, Harley Voth Addition Elevation = 1305.73 NAVD88



IMPERVIOUS AREA CALCULATION
Gross Area =14,423 sq.ft. (0.33 acres)

Existing Building and Paved Driveway Impervious Area=13,987 sq.ft. (0.32 acres)

Pervious Area to remain in Gross = 436 sq.ft. (0.01 acres)

UTILITIES SHOWN REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIGN. ADDITIONAL UTILITIES MAY BE PRESENT ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH AND SIZE OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE CAUSED BY THE FAILURE TO DO SO.

SURVEY DISCLAIMER:
TOPOGRAPHIC SURVEY AND CONTOUR MAP USED IN PREPARING PLANS WAS PROVIDED BY SAVOY COMPANY, P.A., 535 S. EMPORIA, SUITE 104, WICHITA, KS. ENGINEER DOES NOT GUARANTEE SURVEY ELEVATIONS FOR ACCURACY. CONTRACTOR SHALL VERIFY ELEVATIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

HARLAN DALE FORK
LICENSED
10801
KANSAS
PROFESSIONAL ENGINEER
12-8-09

REGISTRATION: 2008

CERTIFIED ENGINEERING DESIGN, P.A.
810 WEST DOUGLAS, SUITE C
WICHITA, KANSAS 67203
PH: (316) 262-8808
FAX: (316) 262-1669

SHEET 1 TOTAL 1

Savoy Company, P.A.
Land Surveyors
430 S. Hydraulic, Wichita, KS. 67211-1912
PH: (316) 265-5808
FAX: (316) 265-5279
www.savoyco.com

PROJECT NO. DRAW2008 F

22 JAN 09