DRAINAGE PLAN
AND
SUPPORTING CALCULATIONS

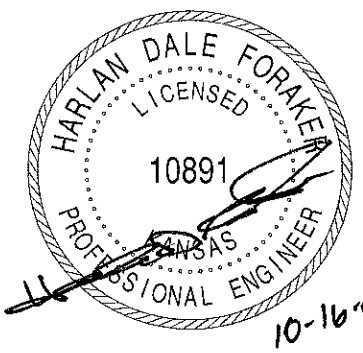
FOR
DAN SCHMIDT 2nd ADDITION
AN ADDITION TO
WICHITA, KANSAS

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

OCTOBER 16, 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



Adopted: February 23, 2007

CITY OF WICHITA

Public Works, Engineering Division
Final Drainage Plan Submittal Checklist

Reviewer: _____ Date: Oct. 20, 2009

Subdivision Name: Dan Schmidt 2nd Add. Location: 5439 S Hydraulic

Total Land Area Of Ownership: 5.06 Acres

Type: _____Residential _____Commercial _____Industrial _____Recreation _____Municipal X Other PUD #32

Applicant: Savoy Company Contact: Mark Savoy, LS Phone #: 265-0005

Engineer: Certified Engineering Design Contact: Harlan Forsker, PE Phone # 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					
B. Discussion of development, existing conditions, and proposed impacts on stormwater, wetland, riparian, and flood plain	X				
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		X			
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.)		X			
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		X			
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				

Consulting Engineer Initials _____

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	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	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		X			
R. Existing structural elevations (e.g., invert of pipes, manholes, etc.)		X			
S. Cross-section data for open channels		X			
T. Ground water elevations, if applicable		X			

	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)		X			
E. Preliminary sizing calculations for stormwater controls including contributing drainage area, storage, and outlet configuration		X			
F. Stage-storage-discharge or outlet rating curves and inflow and outflow hydrographs for storage facilities		X			
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.)		X			
I. Design water surface elevations and normal pool elevation for ponds.		X			
J. Typical detail for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc. To include height, width, elevation, and/or diameter.		X			
K. Proposed limits of clearing and grading		X			
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		X			

Consulting Engineer Initials _____

P. Preliminary selection and location of stormwater controls		X			
Q. Emergency overflow structure's flow path		X			
R. Detention facility provides one-foot of freeboard above the HWL and emergency outfall shown (top of berm elevation shown)		X			
S. The 100-year 24-hour HWL delineated on the plan for detention pond		X			
T. Lowest opening elevations table on the plat for structures located adjacent to channels or ponds		X			
U. Stormwater Management Facilities located within a Reserve		X			
V. Maintenance responsibility of stormwater management facility shall be specified in the platters text. (e.g. HOA, Lot Owners Association, or lot)		X			
W. Off-site drainage easements or agreements required, where necessary		X			

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

	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)		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.)		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.		X			
D. Kansas Department of Transportation		X			
E. Sedgwick County Right-of-way Permit		X			

Consulting Engineer Initials _____

Dan Schmidt 2nd Addition Drainage Plan(Con't)
Mr. Scott Lindebak
October 16, 2009

CERTIFIED ENGINEERING DESIGN, P.A
810 West Douglas,Suite C
Wichita, KS 67203-6105
(316)262-8808 Office
(316)262-1669 Fax

LETTER OF TRANSMITTAL

DATE: October 16, 2009

TO: Mr. Scott Lindebak, P.E.
Division of Public Works
1155 South Seneca
Wichita, KS 67202

RE: Drainage Plan
Dan Schmidt 2nd Addition
Wichita , KS

FROM: Harlan D. Foraker, P.E.

I. PROJECT NARRATIVE

The site is located on the west side of Hydraulic Avenue approximately a quarter mile north of 55th Street South. The address of the existing business is 5439 S. Hydraulic. The site currently consists of several greenhouses and nursery structures with extensive parking in the east portion of the parcel. The SCS soil present is Canadian-Waldeck fine sandy loam which is a SCS Class B Soil. The site has residential development to the north and west with undeveloped ground to the south. There is a trailer park east across Hydraulic from 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.

Dan Schmidt 2nd Addition Drainage Plan(Con't)
Mr. Scott Lindebak
October 16, 2009

Soil types were determined from the Natural Resources Conservation Service's Soil Survey web site. The SCS soil present is Canadian-Waldeck fine sandy loam (0 to 1 percent) which is a SCS Class B Soil.

The developed drainage subareas have been delineated on the 1" = 50' 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 5 storm events.

The existing site was a nursery with green houses. The proposed 6 lot addition contains several green houses, out buildings, and parking areas. The parcel has 2 undefined ridgelines. The north south ridgeline is approximately 160 feet east of the west property line. The east west ridgeline starts at the north south ridgeline and runs west. This divides the property into 3 drainage subbasins. The northwest subbasin flows to the west where the flow is intercepted by a 2'x2' drop inlet. The southwest subbasin flows to the south where it is intercepted by a slotted top manhole. The east subbasin flows to the east where it is intercepted by Hydraulic and flows immediately into a curb inlet.

NORTHWEST DRAINAGE SUBBASIN

The following table summarizes the peak discharge for the northwest drainage subbasin which includes the west portions of Lots 4 and 5, and the northwest portion of Lot 6; as this area is already developed, the existing condition is the proposed condition also. The drainage sub-basin includes 1.02 acres within the proposed Dan Schmidt 2nd Addition.

EXISTING AND PROPOSED PEAK RUNOFF FOR THE NORTHWEST DRAINAGE SUBBASIN

Description	C	Tc	I	Area	Q(cfs)
Existing Drainage Area(2 yr.)	.24	31	2.59	1.02	0.6
Existing Drainage Area(5 yr.)	.26	31	3.26	1.02	0.9
Existing Drainage Area(10 yr.)	.32	31	3.72	1.02	1.2
Existing Drainage Area(25 yr.)	.40	31	4.39	1.02	1.8
Existing Drainage Area(100 yr.)	.44	31	5.43	1.02	2.5

This sub-basin continues to flow to the west where it is intercepted by a 2'x2' drop inlet connected to the local street storm water system. There are no proposed changes within this subbasin.

Dan Schmidt 2nd Addition Drainage Plan(Con't)
Mr. Scott Lindebak
October 16, 2009

SOUTHWEST DRAINAGE SUBBASIN

The following table summarizes the peak discharge for the southwest drainage subbasin which includes the southwest portion of Lot 6; as this area is already developed, the existing condition is the proposed condition also. The drainage sub-basin includes 0.39 acres within the proposed Dan Schmidt 2nd Addition.

EXISTING AND PROPOSED PEAK RUNOFF FOR THE SOUTHWEST DRAINAGE SUBBASIN

Description	C	Tc	I	Area	Q(cfs)
Existing Drainage Area(2 yr.)	.46	16	3.69	0.39	0.7
Existing Drainage Area(5 yr.)	.49	16	4.49	0.39	0.9
Existing Drainage Area(10 yr.)	.55	16	5.07	0.39	1.1
Existing Drainage Area(25 yr.)	.61	16	5.91	0.39	1.4
Existing Drainage Area(100 yr.)	.64	16	7.21	0.39	1.8

This sub-basin continues to flow to the south where it is intercepted by a slotted covered manhole connected to the local street storm water system. There are no proposed changes within this subbasin.

EAST DRAINAGE SUBBASIN

The following table summarizes the peak discharge for the east drainage subbasin which includes all of Lots 1, 2, and 3, and the eastern section of Lots 4, 5, and 6; as this area is already developed, the existing condition is the proposed condition also. The drainage sub-basin includes 3.65 acres within the proposed Dan Schmidt 2nd Addition.

EXISTING AND PROPOSED PEAK RUNOFF FOR THE EAST DRAINAGE SUBBASIN

Description	C	Tc	I	Area	Q(cfs)
Existing Drainage Area(2 yr.)	.58	26	2.87	3.65	6.1
Existing Drainage Area(5 yr.)	.60	26	3.57	3.65	7.8
Existing Drainage Area(10 yr.)	.64	26	4.07	3.65	9.6
Existing Drainage Area(25 yr.)	.68	26	4.79	3.65	11.9
Existing Drainage Area(100 yr.)	.70	26	5.90	3.65	15.2

The east drainage subbasin drains to the east to Hydraulic Avenue. The discharge flows to a curb inlet in front of the proposed addition.

Dan Schmidt 2nd Addition Drainage Plan(Con't)
Mr. Scott Lindebak
October 16, 2009

OFF SITE DRAINAGE

There is no offsite drainage to consider for this site.

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

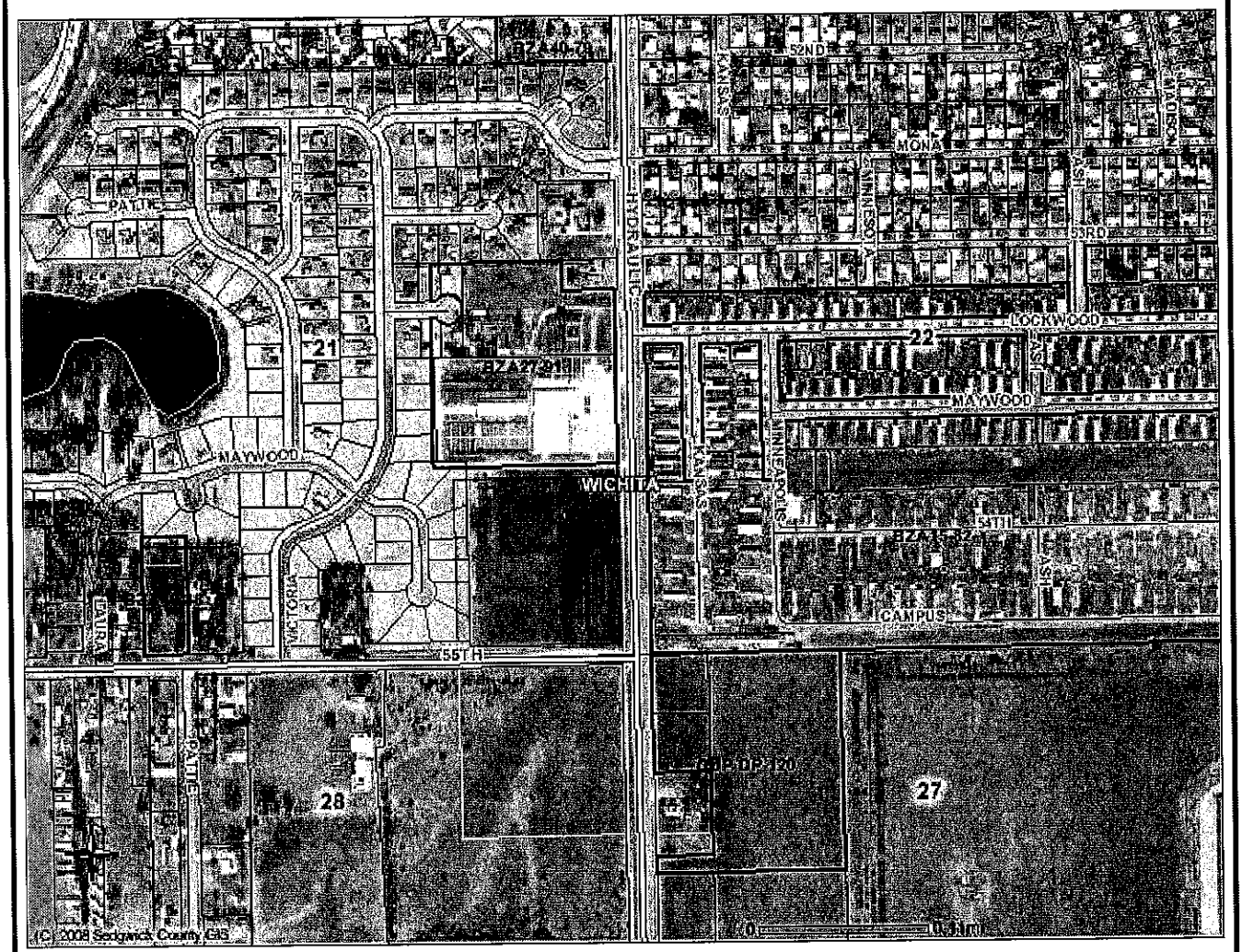
IV. FEDERAL, STATE AND LOCAL PERMITS

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

V. APPENDIX

All charts, graphs, tables including a 1"=50' scale drainage plan map are included for review.

Dan Schmidt 2nd 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

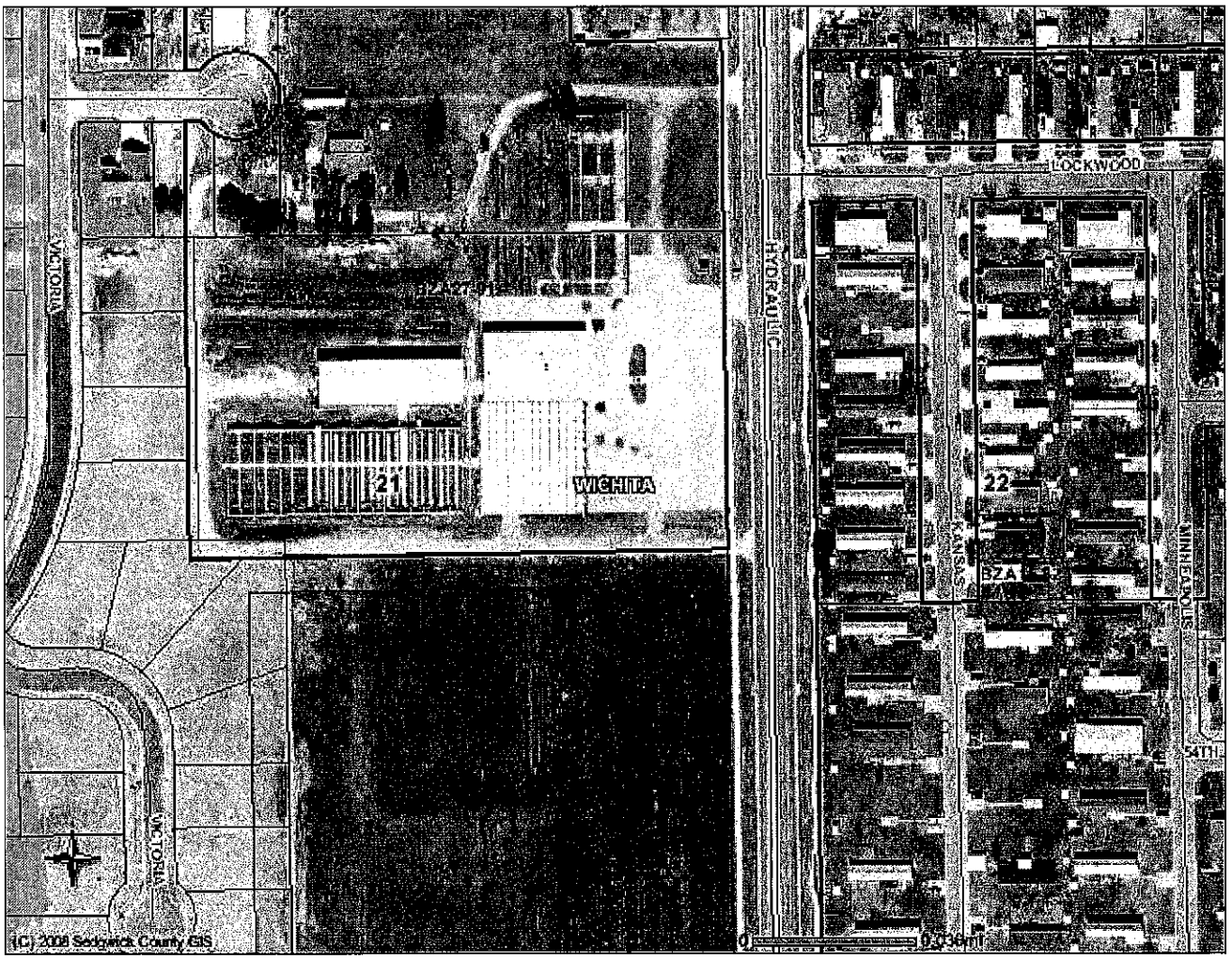
Zoning Districts

- 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

Dan Schmidt 2nd Addition



Legend

Historic Site Buffers

- 1000' National Historic Site Buffers
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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
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- University
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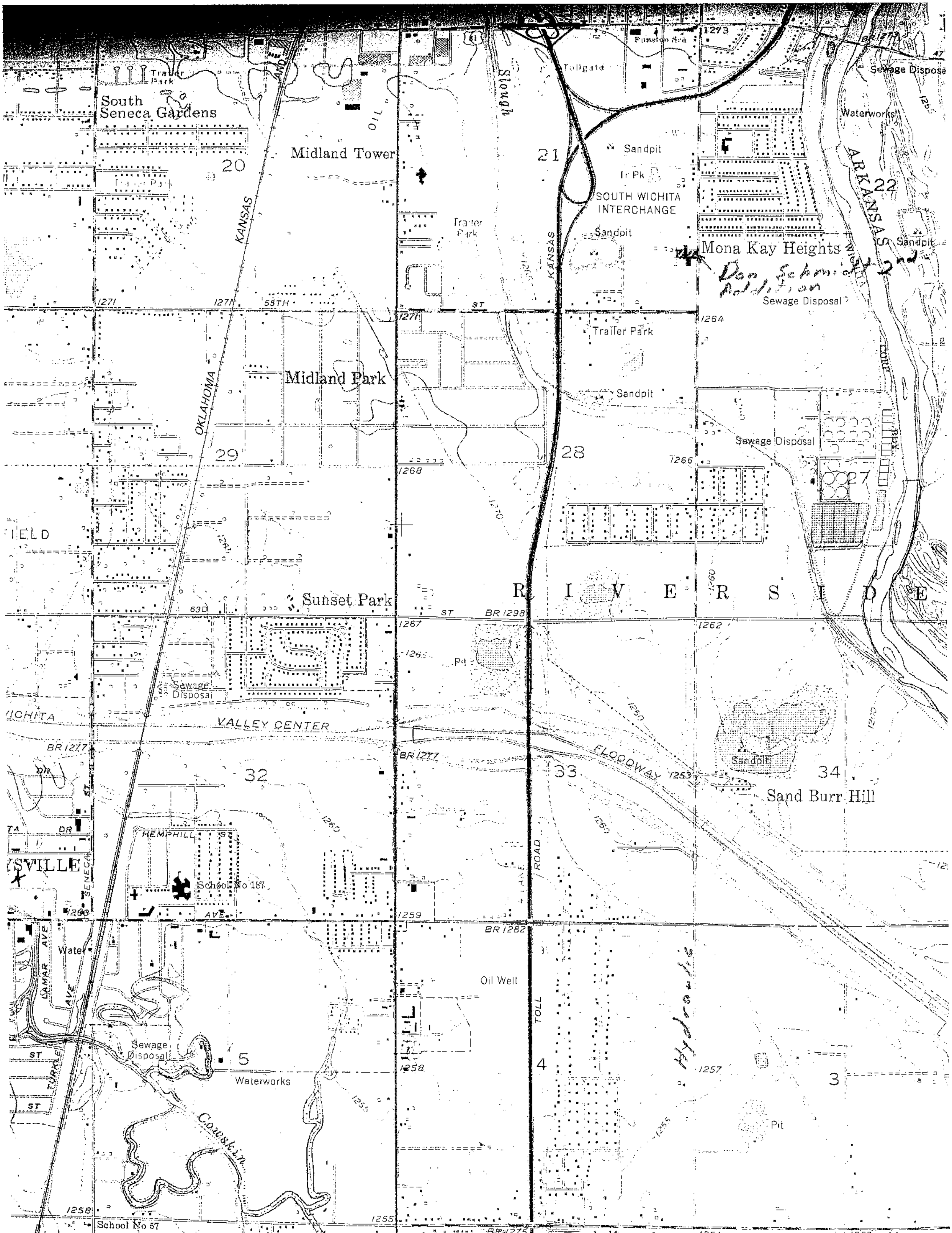
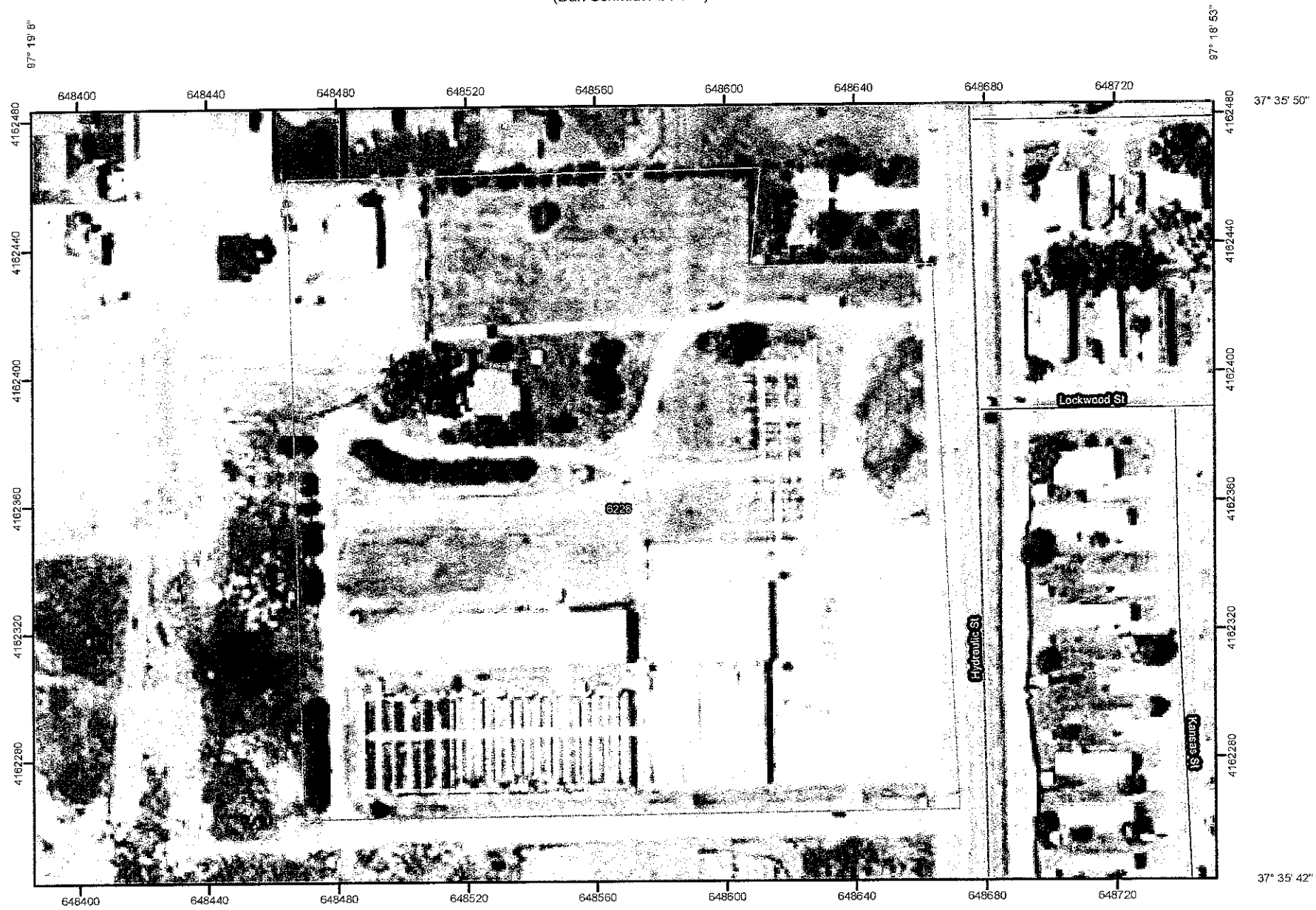


South Seneca Gardens
Trailer Park
Midland Tower
20
KANSAS
OKLAHOMA
21
Slough
Tollgate
1273
Sandpit
Tr Pk
SOUTH WICHITA INTERCHANGE
Sandpit
Mona Kay Heights
Don Schmidt 2nd Addition
Sewage Disposal
Waterworks
ARKANSAS
22
Sandpit
55TH ST
1271
Midland Park
Trailer Park
1264
Sandpit
Sewage Disposal
29
28
27
1268
1266
FIELD
Sunset Park
R I V E R S I D E
63D ST
BR 1298
1267
1262
Pit
Sewage Disposal
WICHITA
VALLEY CENTER
FLOODWAY
BR 1277
32
33
34
1253
Sandpit
Sand Burr Hill
HEMPHILL ST
School No 187
SENECA
AVE
1259
BR 1282
TOLL ROAD
LAMAR AVE
Water
Oil Well
Sewage Disposal
5
4
3
Waterworks
Cowskin
Hydraulic
1258
1257
Pit
TURKLE
School No 57
1255

Soil Map—Sedgwick County, Kansas
(Dan Schmidt Addition)



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: 1:1,730 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: 6/20/2006

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**
6228	Canadian-Waldeck fine sandy loams, rarely flooded	9.5	100.0%
Totals for Area of Interest		**9.5**	**100.0%**

WORKSHEET 3: TIME OF CONCENTRATION

Project: Dan Schmidt 2nd By Date

Section: _____ SE 1/4, Sec 21, T28S, R1E, Wichita Checked Date

Parcel Description: _____ Greenhouses, out buildings, and parking lot

Existing and Developed Northwest Sub-basin

Sheet Flow

1	Surface Description (Table 3-1): _____ mix	
2	Manning's Roughness Coeffiecient, n (Table 3-1)	0.19
3	Flow Length, L<=300 ft	227 ft.
4	Two-yr 24-hr rainfall, P2	3.5 in
5	Land Slope, s	0.008 ft./ft.
6	$T = \frac{0.007 (nL)^{0.8}}{(P2^{0.5})(s^{0.4})}$	0.52439 hr

Shallow Concentrated Flow

7	Surface Desription (Paved or Unpaved)	
8	Flow Length, L	0 ft.
9	Watercourse Slope, s	0.004 ft./ft.
10	Average Velocity, V (Figure 3-1)	0.9 ft./s
11	T = L / 3600 V	0 hr

Channel Flow

12	Cross sectional Flow Area, a	0 ft^2
13	Wetted Perimeter, P	0 ft.
14	Hydraulic Radius r = a / P	0 ft.
15	Channel Slope , S	0 ft./ft.
16	Mannin's Roughness Coeff., n	0
17	V = 1.49 (r^2/3)(s^1/2) / n	0 ft./s
18	Flow Length, L	0 ft.
19	T = L / 3600 V	0 hr
20	T= T + T + T	0.52 hr

31 minutes

Dan Schmidt 2nd Addition
SE 1/4, Sec 21, T 28 S, R1E

Site
Existing North West Sub-Basin

Drainage Area =	1.02 Acres

Time of Concentratio	31 Minutes

Soil	Canadian-Waldeck Sandy Loam Type B Lawn 77%
Soil	Roofs 11%
Soil	Gravel Drive 12%
Soil	

C	Weighted				
	B,Lawn	Roofs	Gravel		Total
	77%	11%	12%		Average
2	0.16	0.80	0.24		0.24
5	0.18	0.85	0.26		0.26
10	0.24	0.90	0.33		0.32
25	0.32	0.92	0.42		0.40
100	0.37	0.93	0.48		0.44

I	
2	2.59
5	3.26
10	3.72
25	4.39
100	5.43

Peak Flow						
Year		C	I	A	=	Q
						cfs
2		0.24	2.59	1.02		0.63
5		0.26	3.26	1.02		0.88
10		0.32	3.72	1.02		1.23
25		0.40	4.39	1.02		1.78
100		0.44	5.43	1.02		2.46

WORKSHEET 3: TIME OF CONCENTRATION

Project: Dan Schmidt 2nd By Date

Section: _____ SE 1/4, Sec 21, T28S, R1E, Wichita Checked Date

Parcel Description: _____ Greenhouses, out buildings, and parking lot

Existing and Developed
SW Area

Sheet Flow

1	Surface Description (Table 3-1): _____ mix	
2	Manning's Roughness Coeffiecient, n (Table 3-1)	0.19
3	Flow Length, L<=300 ft	121 ft.
4	Two-yr 24-hr rainfall, P2	3.5 in
5	Land Slope, s	0.012 ft./ft.
6	T= 0.007 (nL)^0.8 / (P2^0.5)(s^0.4)	0.26954 hr

Shallow Concentrated Flow

7	Surface Desription (Paved or Unpaved)	
8	Flow Length, L	0 ft.
9	Watercourse Slope, s	0.004 ft./ft.
10	Average Velocity, V (Figure 3-1)	0.9 ft./s
11	T = L / 3600 V	0 hr

Channel Flow

12	Cross sectional Flow Area, a	0 ft^2
13	Wetted Perimeter, P	0 ft.
14	Hydraulic Radius r = a / P	0 ft.
15	Channel Slope , S	0 ft./ft.
16	Mannin's Roughness Coeff., n	0
17	V = 1.49 (r^2/3)(s^1/2) / n	0 ft./s
18	Flow Length, L	0 ft.
19	T = L / 3600 V	0 hr
20	T= T + T + T	0.27 hr

16 minutes

Dan Schmidt 2nd Addition
SE 1/4, Sec 21, T 28 S, R1E

Site
Existing South West Sub-Basin

Drainage Area =	0.39 Acres

Time of Concentratio	16 Minutes

Soil	Canadian-Waldeck Sandy Loam Type B Lawn 34%
Soil	Roofs 44%
Soil	Gravel Drive 22%
Soil	

C	Weighted				Total
	B, .5 SF	Roofs	Gravel		Average
	34%	44%	22%		
2	0.16	0.80	0.24		0.46
5	0.18	0.85	0.26		0.49
10	0.24	0.90	0.33		0.55
25	0.32	0.92	0.42		0.61
100	0.37	0.93	0.48		0.64

I	
2	3.69
5	4.49
10	5.07
25	5.91
100	7.21

Peak Flow					
Year		C	I	A	=	Q
						cfs
2		0.46	3.69	0.39		0.66
5		0.49	4.49	0.39		0.86
10		0.55	5.07	0.39		1.09
25		0.61	5.91	0.39		1.40
100		0.64	7.21	0.39		1.80

WORKSHEET 3: TIME OF CONCENTRATION

Project: Dan Schmidt 2nd By Date

Section: _____ SE 1/4, Sec 21, T28S, R1E, Wichita Checked Date

Parcel Description: _____ Greenhouses, out buildings, and parking lot

Existing and Developed
East Area

Sheet Flow

1	Surface Description (Table 3-1): _____ mix	
2	Manning's Roughness Coeffiecient, n (Table 3-1)	0.19
3	Flow Length, L<=300 ft	122 ft.
4	Two-yr 24-hr rainfall, P2	3.5 in
5	Land Slope, s	0.008 ft./ft.
6	T= $\frac{0.007 (nL)^{0.8}}{(P2^{0.5})(s^{0.4})}$	0.31909 hr

Shallow Concentrated Flow

7	Surface Desription (Paved or Unpaved)	
8	Flow Length, L	350 ft.
9	Watercourse Slope, s	0.0034 ft./ft.
10	Average Velocity, V (Figure 3-1)	0.9 ft./s
11	T = L / 3600 V	0.10802 hr

Channel Flow

12	Cross sectional Flow Area, a	0 ft^2
13	Wetted Perimeter, P	0 ft.
14	Hydraulic Radius r = a / P	0 ft.
15	Channel Slope , S	0 ft./ft.
16	Mannin's Roughness Coeff., n	0
17	V = 1.49 (r^2/3)(s^1/2) / n	0 ft./s
18	Flow Length, L	0 ft.
19	T = L / 3600 V	0 hr
20	T= T + T + T	0.43 hr

26 minutes

Dan Schmidt 2nd Addition
SE 1/4, Sec 21, T 28 S, R1E

Site
Existing and Proposed East Sub-Basin

Drainage Area =	3.65	Acres

Time of Concentratio	26	Minutes

Soil	Canadian-Waldeck Sandy Loam Type B Lawn 38%
Soil	Roofs 29%
Soil	Concrete Parking 33%
Soil	

C	Weighted				Total
	B, Lawn	Roofs	Concrete		Average
	38%	29%	33%		
2	0.16	0.80	0.87		0.58
5	0.18	0.85	0.87		0.60
10	0.24	0.90	0.88		0.64
25	0.32	0.92	0.88		0.68
100	0.37	0.93	0.89		0.70

I	
2	2.87
5	3.57
10	4.07
25	4.79
100	5.9

Peak Flow					
Year		C	I	A	=	Q
						cfs
2		0.58	2.87	3.65		6.07
5		0.60	3.57	3.65		7.84
10		0.64	4.07	3.65		9.55
25		0.68	4.79	3.65		11.87
100		0.70	5.9	3.65		15.16

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

RAINFALL INTENSITY TABLE

SEDGWICK COUNTY

KANSAS

THIS TABLE CONTAINS AVERAGE RAINFALL INTENSITIES
IN INCHES PER HOUR.

DURATION,	RETURN PERIOD						
HR:MIN	1 YR	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR
0:46	1.66	1.89	2.38	2.86	3.51	3.94	4.36
0:47	1.63	1.86	2.35	2.83	3.47	3.89	4.30
0:48	1.61	1.83	2.31	2.79	3.41	3.84	4.25
0:49	1.58	1.80	2.28	2.75	3.38	3.79	4.20
0:50	1.57	1.78	2.25	2.71	3.34	3.74	4.15
0:51	1.55	1.76	2.22	2.68	3.30	3.70	4.10
0:52	1.53	1.74	2.19	2.65	3.26	3.65	4.05
0:53	1.51	1.72	2.16	2.61	3.22	3.61	4.00
0:54	1.49	1.69	2.13	2.58	3.18	3.57	3.95
0:55	1.47	1.67	2.10	2.55	3.14	3.53	3.91
0:56	1.45	1.65	2.08	2.52	3.11	3.49	3.86
0:57	1.43	1.63	2.05	2.49	3.07	3.45	3.82
0:58	1.41	1.61	2.02	2.46	3.04	3.41	3.78
0:59	1.40	1.59	2.00	2.43	3.01	3.37	3.74
1:00	1.38	1.57	1.97	2.40	2.97	3.34	3.70
1:05	1.30	1.48	1.86	2.26	2.80	3.15	3.49
1:10	1.23	1.40	1.76	2.14	2.65	2.98	3.30
1:15	1.17	1.33	1.67	2.03	2.52	2.83	3.14
1:20	1.11	1.27	1.59	1.93	2.39	2.69	2.98
1:25	1.06	1.21	1.52	1.85	2.29	2.57	2.85
1:30	1.01	1.16	1.45	1.77	2.19	2.46	2.73
1:35	0.97	1.11	1.39	1.69	2.10	2.36	2.62
1:40	0.93	1.06	1.33	1.62	2.01	2.26	2.51
1:45	0.89	1.02	1.28	1.55	1.93	2.17	2.41
1:50	0.86	0.98	1.23	1.50	1.86	2.09	2.32
1:55	0.82	0.94	1.18	1.44	1.79	2.01	2.23
2:00	0.79	0.91	1.14	1.39	1.72	1.94	2.15
2:05	0.76	0.87	1.10	1.34	1.66	1.87	2.08
2:10	0.74	0.85	1.06	1.29	1.61	1.81	2.01
2:15	0.71	0.82	1.03	1.25	1.56	1.75	1.95
2:20	0.69	0.79	0.99	1.21	1.51	1.70	1.89
2:25	0.66	0.77	0.96	1.17	1.46	1.65	1.83
2:30	0.64	0.74	0.93	1.14	1.42	1.60	1.78
2:35	0.62	0.72	0.90	1.10	1.38	1.55	1.73
2:40	0.61	0.70	0.88	1.07	1.34	1.51	1.68
2:45	0.59	0.68	0.85	1.04	1.30	1.47	1.64
2:50	0.57	0.66	0.83	1.01	1.27	1.43	1.59
2:55	0.56	0.64	0.81	0.98	1.23	1.39	1.55
3:00	0.55	0.63	0.79	0.96	1.20	1.36	1.51

(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
Aparîments	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.

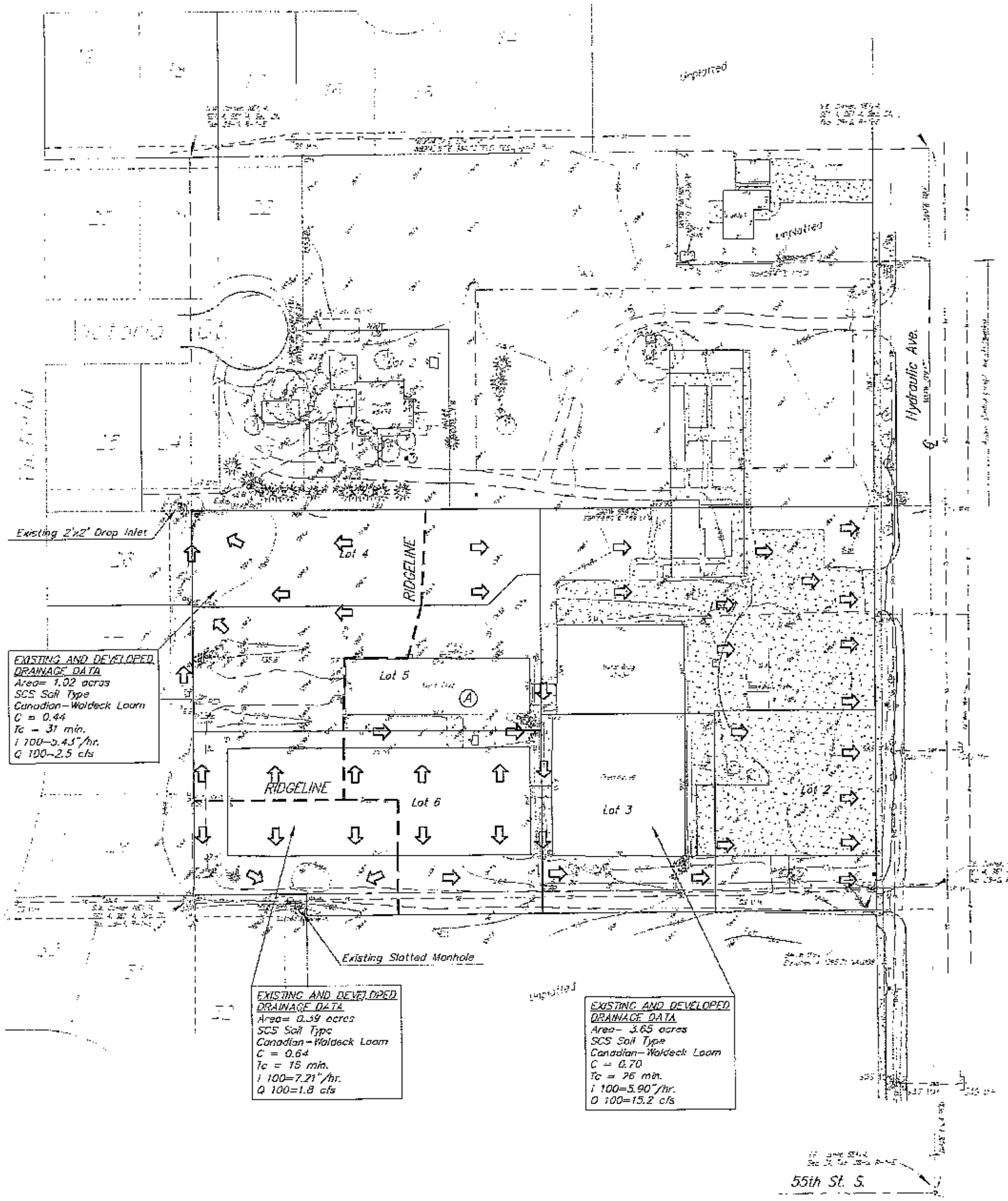
GENERAL NOTE: These Rational Formula Coefficients may not be valid for basins 320 acres or larger.

EXHIBIT NO. 1

SOIL LEGEND

SYMBOL	HYDROLOGIC GROUP	NAME
Aa	B	Albion-Shellabarger sandy loams, 1 to 4 percent slopes
Ab	B	Albion and Shellabarger sandy loans, 7 to 15 percent slopes
Ba	C	Blanket silt loam, 0 to 1 percent slopes
Bb	C	Blanket silt loan, 1 to 3 percent slopes
Ca	B	Canadian fine sandy loan
Cb	B	Canadian-Waldeck fine sandy loams
Cc	D	Carwile fine sandy loam
Cd	B	Clark-Ost clay loams, 1 to 4 percent slopes
Ce	C	Clime silty clay, 3 to 6 percent slopes
Ea	B	Elandco silt loam
Eb	B	Elandco silt loam, occasionally flooded
Ec	B	Elandco silt loam, frequently flooded
Fa	B	Farnum loam, 0 to 1 percent slopes
Fb	B	Farnum loam, 1 to 3 percent slopes
Fc	B	Farnum loam, sandy substratum, 0 to 1 percent slopes
Ga	D	Goessel silty clay, 0 to 1 percent slopes
Gb	D	Goessel silty clay, 1 to 2 percent slopes
Ia	D	Irwin silty clay loam, 1 to 3 percent slopes
Ib	D	Irwin silty clay loam, 3 to 6 percent slopes
Ic	D	Irwin silty clay loam, 2 to 6 percent slopes, eroded
La	C	Lesho loam
Lb	A	Lincoln soils
Ma	B	Milan loam, 1 to 3 percent slopes
Mb	B	Milan form, 3 to 6 percent slopes
Mc	B	Milan clay loam, 2 to 6 percent slopes, eroded
Na	B	Naron fine sandy loam
Oc	D	Owens clay loam, 1 to 3 percent slopes
Od	D	Owens-Rock outcrop complex, 3 to 10 percent slopes
Pa		Pits
Pb	D	Plevna fine sandy loam
Pc	A	Pratt loamy fine sand, undulating
Pd	A	Pratt-Tivoli complex, rolling
Ra	D	Renfrow silty clay loam, 1 to 3 percent slopes
Rb	D	Renfrow silty clay loam, 3 to 6 percent slopes
Rc	D	Renfrow-Owens clay loams, 1 to 4 percent slopes
Rd	D	Rosehill silty clay, 1 to 3 percent slopes
Sa	B	Shellabarger sandy loam, 1 to 3 percent slopes
Sb	B	Shellabarger sandy loam, 3 to 6 percent slopes
Sc	B	Shellabarger sandy loam, 3 to 6 percent slopes, eroded
Ta	D	Tabler silty clay loam
Tb	D	Tabler-Drummond complex
Ua	B	Urban land-Canadian complex
Ub	B	Urban land-Elandco complex
Uc	B	Urban land-Farnum complex, 0 to 3 percent slopes
Ud	D	Urban land-Irwin complex, 1 to 3 percent slopes
Ue	D	Urban land-Tabler complex
Va	B	Vanoss silt loam, 0 to 1 percent slopes
Vb	B	Vanoss silt loam, 1 to 3 percent slopes
Vc	B	Vanoss silt loam, 3 to 6 percent slopes
Vd	B	Vanoss silt loam, 3 to 6 percent slopes, eroded
Ve	D	Vernon sandy loam, 1 to 3 percent slopes
Vf	D	Vernon sandy loam, 3 to 6 percent lopes
Wa	C	Waldeck sandy loam
Wb	D	Waurika silt loam

DRAINAGE PLAN
DAN SCHMIDT 2ND ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

Bench Mark:
North Rim of M.H. located 52.5' West of the S.E. Corner of the NE1/4 of the SE1/4 of the SE1/4 of Sec. 21-28S-1E
Elevation = 1283.31 NAVD88

LEGEND

C = GAS MAIN
W = WATER MAIN
SS = SANITARY SEWER
SWS = STORM WATER SEWER
UGE = UNDER GROUND ELECTRIC
UGT = UNDER GROUND TELEPHONE

B.M.	BENCH MARK
TELE. PED	TELEPHONE PEDESTAL
C.O.	CLEAN OUT
E.B.	ELECTRIC BOX
←	GUY ANCHOR
G.M.	GAS METER
G.P.	GUARD POST
L.P.	LIGHT POLE
M.B.	MAIL BOX
	POWER POLE W/LIGHT
	POST
	POWER POLE
	ROOF VENT
	SIGN
WELL	WATER WELL
W.H.	WATER HYDRANT
W.M.	WATER METER
W.M.V	WATER METER VAULT
W.V.	WATER VALVE
TRANS	ELECTRIC TRANSFORMER
SS M.H.	SANITARY SEWER MANHOLE
SWS M.H.	STORM WATER SEWER MANHOLE

DRAINAGE KEY

= Proposed Surface Drainage Direction
= Existing Contours
= Proposed Contours

Legal Description:

That part of the SE1/4 of the SE1/4 of Sec. 21, Twp. 28-S, R-1-E of the 6th P.M., Sedgwick County, Kansas described as: Commencing at the N.E. Corner of the SE1/4 of the SE1/4 of said Sec. 21; thence south, along the east line of said SE1/4, 319.17 feet for a point of beginning; thence continuing south along the east line of the SE1/4 of the SE1/4 of said Sec. 21, 363.00 feet more or less to a point 20 feet south of the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, thence west parallel with the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 560.17 feet more or less to a point 20 feet south of the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, and 100.00 feet east of the west line of the SE1/4 of the SE1/4 of the SE1/4 of said Sec. 21; thence north parallel with the west line of the SE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 20.00 feet more or less to the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21; thence west along the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 100.00 feet more or less to the S.W. Corner of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21; thence north along the west line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 345.96 feet; thence east deflecting right 89°57'39", 659.92 feet more or less to the point of beginning, subject to road right-of-way over the east 50.00 feet thereof.

OWNER:
Dan S. & Kathy R. Schmidt
5439 S. Hydraulic Ave.
Wichita, Kansas
Ph. 204-5222

GROSS AREA:
220,418.57 Sq. Ft.±
5.06 Acres±

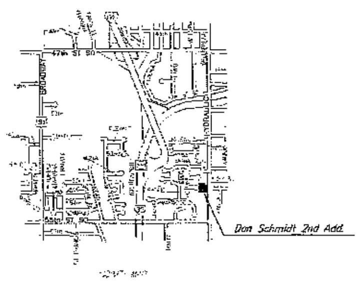
NET AREA:
220,418.57 Sq. Ft.±
5.06 Acres±

MINIMUM LOT SIZE:
25,923 Sq. Ft.±
0.60 Acres±

EXISTING ZONING: SF-5 –
PROPOSED ZONING: PUD #32

CONTROL NO. 481688

BZA27-91



IMPERVIOUS AREA CALCULATION
Gross Area –220,418 sq.ft. (5.06 acres)

Existing Greenhouses, Out Buildings, and Concrete Parking Lot Impervious Area=112,176 sq.ft. (2.57 acres)

Existing Gravel Drive
Impervious Area ≈14,425 sq.ft. (0.33 acres)

Pervious Area to remain in Gross=93,817 sq.ft. (2.15 acres)

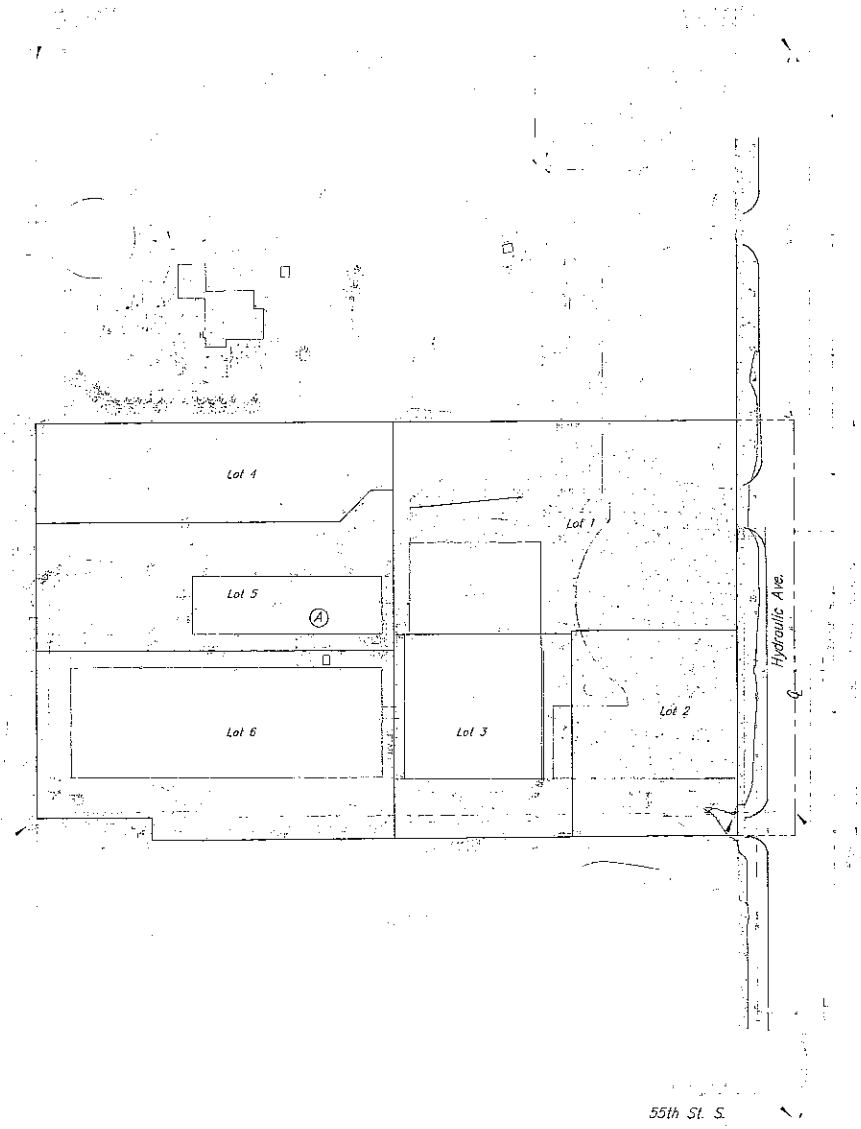
HARLAN DALE FORAKER
LICENSED
10891
KANSAS
PROFESSIONAL ENGINEER
10-20-09

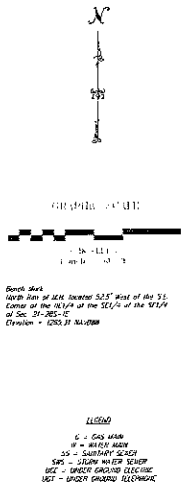
CEDPROJ.NO.: 20091837
CERTIFIED ENGINEERING DESIGN, P.A.
CED
810 WEST DOUGLAS, SUITE C
WICHITA, KANSAS 67203
PH: (316) 262-8608
FAX: (316) 262-1669
SHEET 1
TOTAL 1

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.

Savoy Company, P.A.
Land Surveyors

PRELIMINARY PLAT
DAN SCHMIDT 2ND ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS





Legal Description:

That part of the SE1/4 of the SE1/4 of Sec. 21, Twp. 28-S, R-1-E of the 6th P.M., Sedgwick County, Kansas described as: Commencing at the N.E. Corner of the SE1/4 of the SE1/4 of said Sec. 21; thence south, along the east line of said SE1/4, 319.17 feet for a point of beginning; thence continuing south along the east line of the SE1/4 of the SE1/4 of said Sec. 21, 163.00 feet more or less to a point 20 feet south of the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, thence west parallel with the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 560.17 feet more or less to a point 20 feet south of the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, and 100.00 feet east of the west line of the SE1/4 of the SE1/4 of the SE1/4 of said Sec. 21; thence north parallel with the west line of the SE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 20.00 feet more or less to the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21; thence west along the south line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 100.00 feet more or less to the S.W. Corner of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21; thence north along the west line of the NE1/4 of the SE1/4 of the SE1/4 of said Sec. 21, 343.96 feet, thence east deflecting right 89°57'39", 659.92 feet more or less to the point of beginning, subject to road right-of-way over the east 50.00 feet thereof.

OWNER:
Dan B. & Kathy R. Schmidt
5459 S. Hydraulic Ave
Wichita, Kansas
Ph. 204-5222

GROSS AREA:
220,418.57 Sq. Ft.±
5.06 Acres±

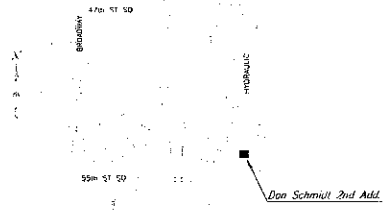
NET AREA:
220,418.57 Sq. Ft.±
5.06 Acres±

MINIMUM LOT SIZE:
25,923 Sq. Ft.±
0.60 Acres±

EXISTING ZONING: SF-5 -
PROPOSED ZONING: PUD #22

CONTROL NO. 481688

BZA27-91



Savoy Company, P.A.
Land Surveyors
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