POE & ASSOCIATES, INC.
5940 E. Central, Suite 200
Wichita, Kansas 67208

CONSULTING ENGINEERS
(316) 685-4114
FAX: (316) 685-4444

TRANSMITTAL

DATE 5/29/13	JOB NO.: 1109P
TO: Mr. Scott Lindebak	
RE: Monique's Addition	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via U.S. Mail the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Ownership List ☐ Tract Maps

☐ Copy of letter ☐ Change order ☒ Drainage Study

NO.	DATE	COPIES	DESCRIPTION
	5-28-13	1	Drainage study

THESE ARE TRANSMITTED as checked below

☒ For approval ☐ Approved as submitted ☐ For your use ☐ Approved as noted

☐ As requested ☐ Approved ☐ Not Approved

☐ Other

☐ Comments:

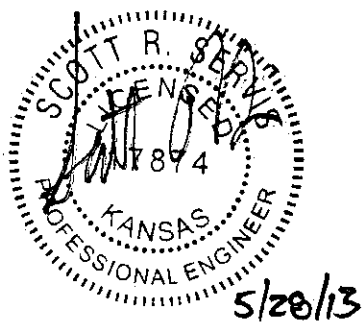
SIGNED: _____

Scott R. Servis, P.E.

POE & ASSOCIATES, INC.

MONIQUE'S ADDITION

DRAINAGE REPORT



POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

MAY 2013

City of Wichita/Sedgwick County
Subdivision Drainage Plan Checklist

Submit completed forms to:
City of Wichita Public Works & Utilities, 455 N. Main 8th Floor, Wichita KS 67202; or
Sedgwick County Stormwater Management, 1144 S. Seneca, Wichita KS 67213.

Project Name:	Monique's Addition				
Total Area of Project:	0.8 acres				
Development Type:	Residential	Other:			
Developer Name:		**Contact:**		**Phone:**	
Email:					
Engineer Name:	Poe and Associates, Inc.	**Contact:**	Scott R. Servis, P.E.	**Phone:**	(316) 685-4114
Email:	scott.servis@poeandassociates.com (5940 East Central, Suite #200, Wichita, KS 67208)				

Directions:

(1) Fill-out this checklist completely and include it with the Drainage Plan submittal. This checklist should be included in the bound copy, behind the cover sheet for the submittal. Incomplete Drainage Plans and checklists will not be accepted.

*(2) Indicate whether a plan element is included or not included in the submittal by choosing **"Yes"** or **"No"** from the dropdown list in the **"Element Included?"** column. The question must be answered for every plan element for this checklist to be considered complete. An explanation must be provided for all **"No"** answers.*

#	Plan Element Description	Element Included?	Explanation/Notes
1.0	**General**		
1.1	Digital copy of drainage plan, including preliminary Master Grading Plan, preliminary plat and proposed plat, in PDF format and one half size, bound, paper copy.		
1.2	Professional Engineer's seal, signature and date on plan cover.		
1.3	Site location map, using color ortho-imagery and showing the project boundaries, a north arrow and an accurate scale.		
1.4	Narrative of the development type, existing conditions and proposed impacts on stormwater runoff, wetlands, riparian zones and floodplains/floodways.		
1.5	Discussion of off-site conditions surrounding the proposed development.		
1.6	Summary table of runoff calculations (pre/post development).		
1.7	Narrative description of the type and function of the permanent structural stormwater management facilities.		
2.0	**Existing Conditions Information**		
2.1	**Existing Conditions Drainage Map**		
2.1.1	On-site and off-site topography: NAVD 88 datum, one-foot contours with spot elevations.		
2.1.2	On-site and off-site drainage features, including perennial and intermittent streams (with names labeled), conveyance systems such as open channels, ditches, swales and areas of overland flow. Flow direction must be indicated by arrows.		
2.1.3	Storm sewer system components, including storm drains, inlets, catch basins, gutters, manholes, headwalls, pipes and culverts. Material and size must be noted for all pipes and culverts.		
2.1.4	Location and boundaries of natural features such as wetlands, lakes, ponds with the normal water elevation noted, rock outcroppings, wooded areas and tree rows.		
2.1.5	Location, dimensions and elevations of existing bridges and culvert crossings.		
2.1.6	Location of existing utilities (e.g., water, sewer, gas, electric, cable, etc.) with labels and easement boundaries.		
2.1.7	Groundwater elevations, if applicable.		
2.1.8	Delineation of predominant soil based on USDA soil surveys and/or on-site soil borings; indicate NRCS soil name and Hydrologic Soil Group for undisturbed surface soils.		
2.1.9	Land use types per NRCS nomenclature.		
2.1.10	Footprint of existing impervious areas (labeled, area given in acres).		
2.1.11	Internal drainage subbasin boundaries used for hydrologic calculations (labeled with ID, total area in acres, impervious area in acres and curve number).		
2.1.12	Time of concentration flow paths. Indicate and label each segment separately (i.e., overland flow, shallow concentrated, channel1, channel2, etc.). For each segment, provide the appropriate data to calculate Tc (e.g., length, slope, cover type, paved/unpaved, roughness parameters, geometric properties, etc.).		
2.2	**Existing Conditions Hydrology and Hydraulics Analysis**		
2.2.1	Narrative of the hydrologic analysis methodology used (e.g., unit hydrograph or other approved methods).		

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
2.2.2	A summary table of drainage subbasin hydrologic parameters (subbasin ID, area in acres, curve number, Tc, etc.).		
2.2.3	Table of existing condition runoff curve numbers with supporting data and calculations.		
2.2.4	Table of existing condition times of concentration with supporting data and calculations.		
2.2.5	A summary table of rainfall data used in the hydrologic analysis, and a reference for the source of the data.		
2.2.6	Cross-sections and other diagrams of existing open channels, bridge and culvert sections and other hydraulic features as required to illustrate the basis for hydraulic analysis.		
2.2.7	Hydrologic and hydraulic analyses for runoff rates, volumes, velocities and elevations. Provide supporting data not specified above and identify assumptions. Include detailed calculations for the 2, 5, 10, 25 & 100-year, 24-hour storm events. Provide results in a tabular form. Provide digital copies of any computer files and models used.		
3.0	**postdevelopment Conditions Information**		
3.1	**postdevelopment Conditions Drainage Map**		
3.1.1	Proposed project boundary.		
3.1.2	on-site and off-site topography: NAVD 88 datum, one-foot contours with spot elevations.		
3.1.3	Existing on-site and off-site drainage features that are to remain after development, including perennial and intermittent streams (with names labeled), conveyance systems such as open channels, ditches, swales and areas of overland flow. Flow direction must be indicated by arrows.		
3.1.4	Location and description of off-site through-drainage conveyances which are confined to an easement, dedication and/or reserve.		
3.1.5	Footprint of proposed impervious areas, including roads, parking lots, buildings and other structures.		
3.1.6	Location of proposed utilities (e.g., water, sewer, gas, electric, cable, etc.) with labels and easement boundaries.		
3.1.7	Delineation of predominant soils, based on anticipated soil textures and NRCS guidelines if different from predevelopment soil conditions; indicate NRCS soil name and Hydrologic Soil Group for surface soils.		
3.1.8	Land use cover per NRCS nomenclature.		
3.1.9	Internal drainage subbasin boundaries used for hydrologic calculations (labeled with ID, total area in acres, impervious area in acres and curve number).		
3.1.10	Proposed limits of land disturbing activity (i.e., grading limits).		
3.1.11	Time of concentration flow paths. Indicate and label each segment separately (i.e., overland flow, shallow concentrated, channel1, channel2, etc.). For each segment, provide the appropriate data to calculate Tc (e.g., length, slope, cover type, paved/unpaved, roughness parameters, geometric properties, etc.)		
3.2	**Proposed Conveyances Map**		
3.2.1	on-site and off-site drainage features, including perennial and intermittent streams (with names labeled), proposed conveyance systems (such as open channels, ditches, swales and areas of overland flow, including backyard drainage). Flow direction must be indicated by arrows.		
3.2.2	Storm sewer system components, including storm drains, inlets, catchbasins, gutters, manholes, headwalls, pipes and culverts. Material and size must be noted for all pipes and culverts.		
3.2.3	For any subbasin or drainage area > 40 acres, show that the stormwater flow is confined to an open channel with required side benches and freeboard, or conformance to applicable policy and design requirements if partially enclosed.		
3.2.4	Location(s) of stormwater management facilities and any associated drainage easements.		
3.2.5	Proposed energy dissipaters and other channel protection devices.		
3.2.6	Location(s) and dimension(s) of proposed channel, bridge and culvert crossings.		
3.2.7	Normal pool and 100-year pool elevations for ponds and lakes.		
3.2.8	Permanent concrete outfall control structure(s) for ponds.		
3.2.9	Emergency overflow spillways and top of berm elevations for ponds and other volume/peak discharge control facilities.		
3.2.10	Floodplains, ponds, and stormwater management facilities located in reserves.		
3.3	**postdevelopment Conditions Hydrology & Hydraulics**		
3.3.1	Narrative of the hydrologic analysis methodology used (e.g., unit hydrograph or other approved methods).		
3.3.2	A summary table of drainage subbasin hydrologic parameters (subbasin ID, area in acres, curve number, Tc, etc.).		
3.3.3	Table of postdevelopment condition runoff curve numbers with supporting data and calculations.		

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
3.3.4	Table of postdevelopment condition times of concentration with supporting data and calculations.		
3.3.5	Cross-sections and other diagrams of existing open channels, bridge and culvert sections and other hydraulic features as		
3.3.6	Hydrologic and hydraulic analyses for runoff rates, volumes, velocities and elevations. Provide supporting data not specified above and identify assumptions. Include detailed calculations for the 2, 5, 10, 25 & 100-year, 24-hour storm events. Provide results in a tabular form. Provide digital copies of any computer files and models used.		
3.3.7	Downstream peak discharge assessment (10% Rule) results and supporting data and calculations. Provide digital copies of any computer files and models used.		
3.3.8	Stage-storage-discharge or other outlet rating curves and inflow/outflow hydrographs for all ponds.		
3.3.9	Demonstrate that the pond contours on the master grading plan and the stage-storage-discharge data are consistent for all ponds.		
3.3.10	Demonstrate that all ponds have one foot of freeboard above the 100-year, 24-hour high water level.		
3.3.11	Demonstrate that runoff from the proposed project site is discharged in the same manner as prior to development, using level spreaders; energy dissipaters, other devices or grading as required, or identify an appropriate flowage easement.		
3.4	**Stormwater Quantity Control Sizing**		
3.4.1	Hydraulic sizing calculations for all stormwater management controls.		
3.4.2	Table(s) listing all stormwater management controls. Present the types, sizes, elevations, flows, velocities and depths for each control, as applicable. Verify that velocities are self-cleaning and non-erosive.		
3.4.3	Typical details (including cross-sections where applicable) for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc.		
3.5	**Stormwater Quality Management Facilities**		
3.5.1	Table(s) listing all stormwater management facilities. Present the description, % TSS removal value, water quality volume handled, contributing drainage area in acres and contributing impervious area in acres.		
3.5.2	Indicate the responsible party for maintenance, as shown in the plat text (i.e., Home Owners Association, Lot Owners Association, property owner, etc.).		
3.5.3	Water quality volume (total and by facility), with supporting data and calculations.		
3.5.4	% TSS removal value (total and by facility) with supporting data and calculation. Must be equal to or greater than 80%.		
3.5.5	Channel protection volume with supporting data and calculations.		
3.5.6	Water quality volume and channel protection volume orifice size calculations.		
3.5.7	Other calculations required for each stormwater management facility as specified in the Wichita/Sedgwick County Stormwater Manual.		
3.5.8	Typical details (including cross-sections where applicable) for outlet structures, embankments, internal grading, forebays and other siltation prefilters, filtration/infiltration media, vegetation, check dams, operational controls, etc.		
4.0	**Floodplains**		
4.1	Reference the source of flood profile, floodplain, floodway and stream discharge information.		
4.2	Delineation of nearest base flood elevations.		
4.3	Delineation of predevelopment regulatory floodplain/floodway limits using FEMA's current GIS database; limits to be per elevation and scaled location.		
4.4	Delineation of postdevelopment regulatory floodplain/floodway limits; limits to be per elevation and scaled location, with project limits shown.		
4.5	Floodway data table and discharges.		
4.6	Hydrologic and hydraulic study information for local floodplain analysis, unnumbered Zone A elevation determinations and floodplain map revisions or required permits.		
4.7	Regulatory floodway and four natural profile models (10, 50, 100 and 500-year) for existing and postdevelopment conditions.		
4.8	Floodplains and floodways located within a reserve, where necessary.		
4.9	Floodplain cut and fill calculations for volume sensitive basins.		
4.10	Demonstrate that floodway elevations and velocities do not increase due to construction in the floodway ("No Rise Certification").		
5.0	**Federal, State and Local Permits**		
5.1	US Army Corps of Engineers regulatory program permits (Section 404 permit)		

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
5.2	Kansas Department of Agriculture - Division of Water Resources Permits (Stream Obstruction, Channel Change, Floodplain Fill, Levee, Water Appropriations, Dam Safety permit, etc.)		
5.3	FEMA letters of map change/revision - LOMA, LOMR, LOMR-f, CLOMR, etc., shall be included and approved when project modifies the limits of the floodplain/floodway.		
6.0	**Half Scale Preliminary Master Grading Plan**		
6.1	One set of plans and associated PDF of plans.		
6.2	Professional Engineer's seal, signature and date.		
6.3	Title block including subdivision name and phase and dated revision documentation.		
6.4	Future phases shown but cross-hatched as information only.		
6.5	Scale, not greater than 1-inch = 60 feet.		
6.6	North arrow.		
6.7	Index or legend key.		
6.8	Benchmarks (minimum of 2) used for site control (NAVD 88 vertical datum).		
6.9	Existing contours of entire site with contour interval of one foot.		
6.10	Proposed contours for channels, ponds, and other permanent stormwater management facilities, with contour interval of one foot.		
6.11	Spot elevations shown to the nearest tenth of a foot for critical locations, including lot and property boundaries.		
6.12	Proposed lot and street layout.		
6.13	Locations of underground storm drains.		
6.14	Overflow locations for storms exceeding storm drain capacity, with elevations.		
6.15	Top elevations of storm drains at all inlets, manholes, and flow line elevations for all outfalls.		
6.16	Locations of open ditches and lakes.		
6.17	Flow direction arrows.		
6.18	Proposed flow line elevations of all open ditches at maximum 100 foot intervals, and 100-year flood elevations thereon.		
6.19	Ponds: Location, bottom elevation, normal pool elevation, 100-year flood elevation, emergency overflow elevation.		
6.20	Proposed top-of-curb elevations at points where drainage will be required to flow over the curb.		
6.21	Platted minimum building opening elevation for each lot, in table form for all lots (excluding basement floor elevations).		
6.22	Standard foundation and elevation detail for slab on grade, full basement, view-out, partial view-out and/or walk-out construction.		
6.23	Top of foundation elevation for each lot.		
6.24	Notation for builders for each lot as to the type of structure that may be constructed and the view-out, walk-out or pad elevation, as applicable.		
6.25	Indicate that all lots are above the 100-year flood elevation.		
6.26	Indicate that grading around structures conforms to perimeter drainage requirements.		
6.27	Indicate that backyard drainage grading conforms to backyard drainage requirements.		
6.28	Adjacent subdivision lot lines, with lot labels and subdivision names.		
6.29	Boundaries and labels for all easements, rights-of-way and reserves.		
6.30	Statement on proposed final plat: "*A drainage plan has been developed for the subdivision and all drainage easements, rights-of-way, or reserves shall remain at the established grades and remain unobstructed to allow for the conveyance of stormwater.*"		
End of Checklist			

1.0 General Information

1.1 Drainage Plan Files

See enclosed CD and paper copies of Drainage Plan (Exhibit 1-1), Preliminary Grading Plan (Exhibit 1-2), and One-Step Final Plat (Exhibit 1-3).

1.2 Professional Engineer's Seal

Final report includes sealed and signed cover sheet along with sealed and signed final drainage plan sheet.

1.3 Site Location Map

See Exhibit 1-4 for USGS Map and 1-5 for Aerial Photo of this area. The Monique's Addition is a 0.80-acre tract of land located in the Southeast Quarter of Section 26-T27S-R2E in the City of Wichita, Sedgwick County, Kansas. The area includes un-platted tracts inside the city. The site is bounded on the north by Gilbert Street, west by Cedar Creek Street, south by Lot 1, Block 4 of Clear Creek Addition and east by Lots 4, 5 and 6 of Block 4 of Clear Creek Addition and Lot 2, Block 8 of Springdale Lakes Addition as platted and recorded in Wichita, Sedgwick County, Kansas.

1.4 Narrative of Development

The property is currently zoned SF-5 to allow Single-Family use (refer to Exhibit 1-6 for Zoning information). The site is currently developed as a Single-Family (SF-5) Residence. No additional development is currently planned. Typically, assumptions for design flows in single-family areas with lot sizes around ¾ of an acre include up to 25% impervious area. Detention ponds are not proposed since this site is well under 1 acre in size. Flow near the northwest corner of the property will be routed to Gilbert Street to the north and Cedar Creek Street to the west. Flow near the northeast corner of the site will be routed to existing drainage swales and corresponding easements along the east property line. This flow ultimately will drain to Gilbert Street. Flow near the south have of the site will be routed to back yard storm sewer in the northwest corner of Lot 6, Block 4 of Clear Creek Addition. This routing is in accordance with existing conditions and conforms to the master drainage plans for the Clear Creek and Springdale Lakes Additions.

Presently, the entire area is developed as a single family residence, outdoor pool and lawn areas. Existing single family residences occupy the property immediately west, north and east of the site. The property to the south of the site is currently vacant and unplatted. As shown in the Drainage Plan (Exhibit 1-1), the drainage consists of three primary areas. Run-off from the property traverses over land routes to the adjacent Cedar Creek and Gilbert Street Rights-of-Way to the west and north and to an existing storm sewer inlet to the east of the property. Off-site runoff drains to existing Gilbert Street and Cedar Creek Street Rights-of-Way. According to the NRCS Soil Survey, the predominant soil types within the property

are Rosehill Silty clay and Irwin Silty Clay series material. See Exhibit 1-8 for NRCS Soil Survey map and information showing existing soil types and descriptions.

The site lies outside of the FEMA Floodway. No impact on storm water shall be addressed in the summary of runoff calculations text. The site does not contain wetland or riparian areas, and thus the development has no impact in that regard.

1.5 Discussion of Off-Site Conditions

Single-family areas are located directly west, north and east of this site. Kellogg lies to the north, 143rd Street lies to the east and Harry Street lies to the south (See Exhibit 1-6). The original, modern land use for the site was agricultural uses.

Total developed on-site drainage area equals 0.80 acres. The site development would route off-site drainage around the site through a series of streets and storm sewer systems Cedar Creek Street and Gilbert Street. Land use within the drainage basins is family in character. The existing grades convey storm water away from the subject property. Storm water is presently conveyed off-site through the previously discussed storm water sewer systems and street networks (See Exhibit 1-1).

1.6 Summary of Runoff Calculations

	Area "A" Existing Conditions (24-Hour Storm) Tc(min)= 15 Area(Ac)= 0.17						Area "A" Proposed Conditions (24-Hour Storm) Tc(min)= 15 Area(Ac)= 0.17					
		C=0.42	C=0.46	C=0.55		C=0.71		C=0.42	C=0.46	C=0.55		C=0.71
	1-Year	2-Year	5-Year	10-Year	25-Year	100-Year	1-Year	2-Year	5-Year	10-Year	25-Year	100-Year
Flow (cfs)		0.27	0.36	0.49		0.89		0.27	0.36	0.49		0.89

	Area "B" Existing Conditions (24-Hour Storm) Tc(min)= 15 Area(Ac)= 0.36						Area "B" Proposed Conditions (24-Hour Storm) Tc(min)= 15 Area(Ac)= 0.36					
		C=0.42	C=0.46	C=0.55		C=0.71		C=0.42	C=0.46	C=0.55		C=0.71
	1-Year	2-Year	5-Year	10-Year	25-Year	100-Year	1-Year	2-Year	5-Year	10-Year	25-Year	100-Year
Flow (cfs)		0.21	0.76	1.03		1.88		0.21	0.76	1.03		1.88

	Area "C" Existing Conditions (24-Hour Storm) Tc(min)= 15 Area(Ac)= 0.39						Area "C" Proposed Conditions (24-Hour Storm) Tc(min)= 15 Area(Ac)= 0.39					
		C=0.42	C=0.46	C=0.55		C=0.71		C=0.42	C=0.46	C=0.55		C=0.71
	1-Year	2-Year	5-Year	10-Year	25-Year	100-Year	1-Year	2-Year	5-Year	10-Year	25-Year	100-Year
Flow (cfs)		0.63	0.82	1.12		2.04		0.63	0.82	1.12		2.04

Using the Rational Method, calculations were made to determine the existing flows from this site. Both the existing and proposed site drainage consists of three areas as shown on the attached Drainage Plan, Exhibit 1-1. Off-site drainage is considered, and shall be routed around the north, west and east property lines through a series of existing ditches, streets and storm sewer systems and does not enter this study site. Each area is evaluated based on existing and proposed conditions.

On-site time of concentration was estimated for all separate drainage areas as shown in the summary table above. All on-site areas have a time of concentration of less than 15 minutes.

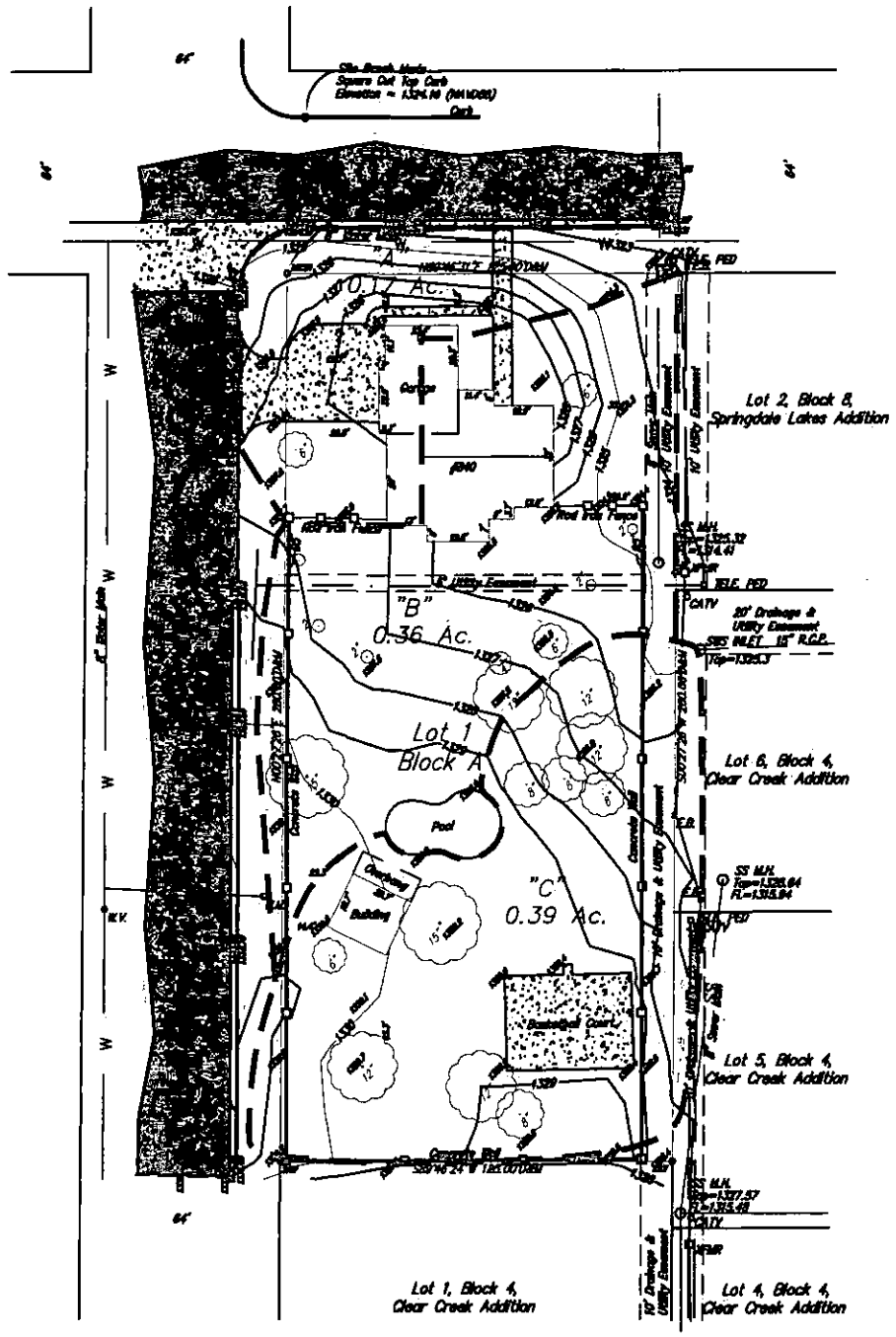
On-site areas with a time of concentration less than 15 minutes will use a 15 minute T_c for the existing and proposed condition. It is assumed that immediate downstream capacities are adequate to handle current flows leaving this site.

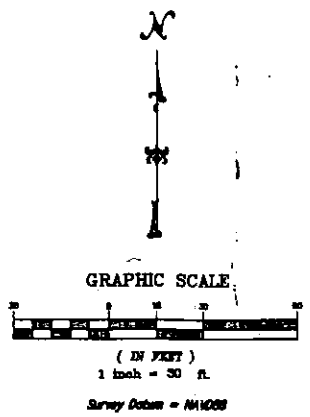
1.7 Narrative Description of Permanent Best Management Practices

No additional proposed development is planned at this time.

MONIQUE'S ADDITION

EXHIBIT 1-1





Survey Datum = NAD88

LEGEND:

P = Platted
M = Measured
C = Calculated
D = Described

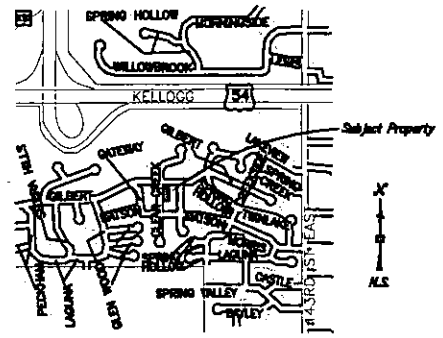
- BRN ——— 1/2" REBAR W/BAUGHMAN CAP (FOUND)
- MOEN ——— 1/2" REBAR W/MOENING CAP (FOUND)
- SAV ——— 1/2" REBAR W/SAVOY CAP (SET)

LEGEND

G = GAS MAIN
W = WATER MAIN
SS = SANITARY SEWER
SIDS = STORM WATER SEWER
UGE = UNDER GROUND ELECTRIC
UGT = UNDER GROUND TELEPHONE

- B.M. . . . . BENCH MARK
- TELE. PED . . . . TELEPHONE PEDESTAL
- CATV . . . . CABLE TELEVISION PEDESTAL
- E.B. . . . . ELECTRIC BOX
- W.M. . . . . WATER METER
- W.V. . . . . WATER VALVE
- XFMR . . . . ELECTRIC TRANSFORMER
- SS M.H. . . . . SANITARY SEWER MANHOLE
- SIDS INLET . . . . STORM WATER INLET

Site Bench Mark:
Square Cut Top Curb 40'N. of
the N.W. Corner of Lot 1, Block A,
Monique's Addition
Elevation = 1324.16 (NAVD88)



VICINITY MAP

NOTES:

1. Cross-drainage agreements shall be required at the time of platting.
2. Any revised drainage plan must be approved by storm water engineer prior to building permits being issued.

CALCULATION NOTES:

1. Determination of Q's was made using the Rational method.
2. Runoff Coefficients based on Table C-1 of the City of Wichita/Sedgwick County Stormwater Manual.

Existing Conditions (24-Hour Storm)						
Site	Area	c	2-Year	5-Year	10-Year	100-Year
Area "A"	0.17	Varies	0.27	0.36	0.49	0.89
Area "B"	0.36	Varies	0.21	0.76	1.03	1.88
Area "C"	0.39	Varies	0.63	0.82	1.12	2.04

Proposed Conditions (24-Hour Storm)						
Site	Area	c	2-Year	5-Year	10-Year	100-Year
Area "A"	0.17	Varies	0.27	0.36	0.49	0.89
Area "B"	0.36	Varies	0.21	0.76	1.03	1.88
Area "C"	0.39	Varies	0.63	0.82	1.12	2.04

MONIQUE'S ADDITION

A TRACT IN THE NORTHEAST QUARTER OF SECTION 26-T27S-R2E
WICHITA, SEDGWICK COUNTY, KANSAS

PROPOSED DRAINAGE PLAN

2013

PROPERTY OWNER/ SUBDIVIDER:

Roger Haynes-Robertson and Monique Haynes-Robertson
840 S. Clear Creek St.
Wichita, Kansas 67230

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 □ Wichita, KS
67208-4242
Phone 316/685-4114 □ FAX 316/685-4444

MONIQUE'S ADDITION

EXHIBIT 1-2

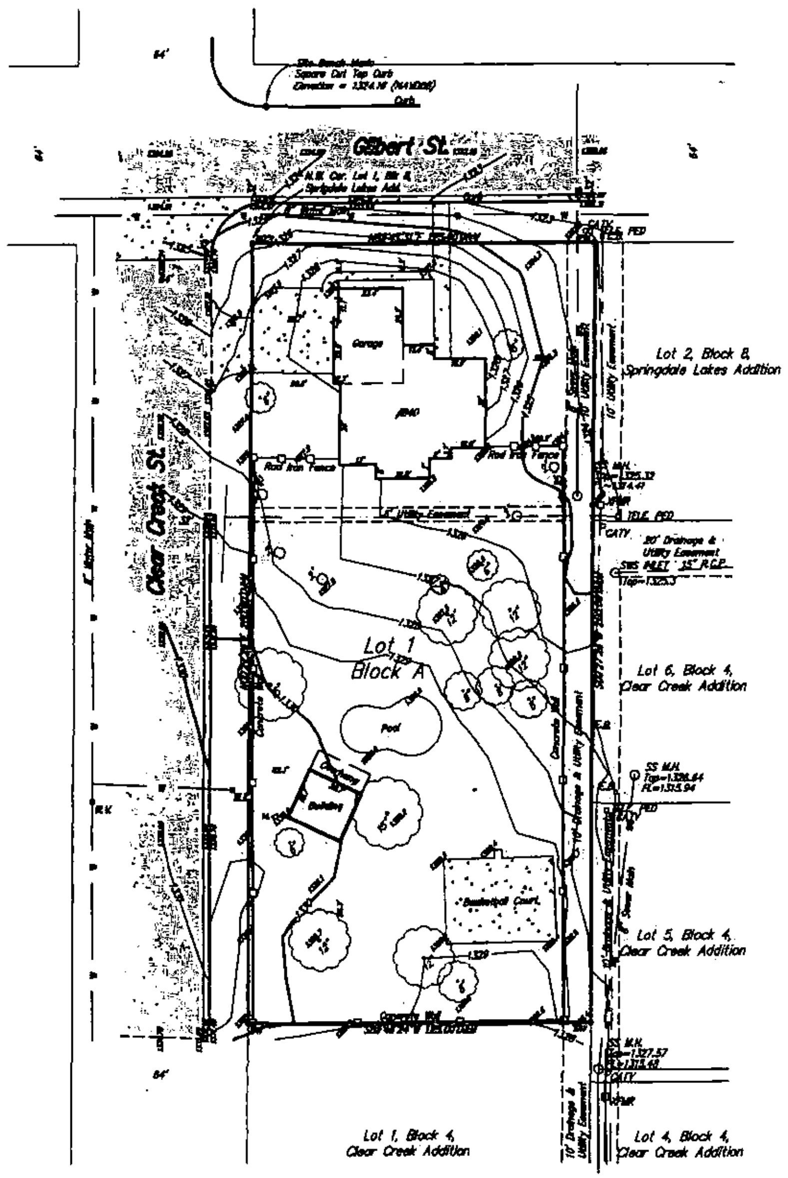
A master grading plan will not be submitted as there are no plans contemplated for further development of this site at this time.

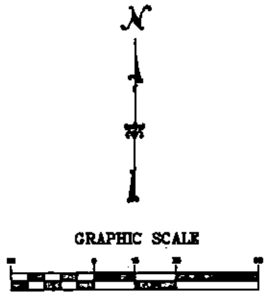
MONIQUE'S ADDITION

EXHIBIT 1-3

Preliminary Plat
MONIQUE'S ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS





GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

Survey Datum = NAVD88

LEGEND:

P = Platted
M = Measured
C = Calculated
D = Described

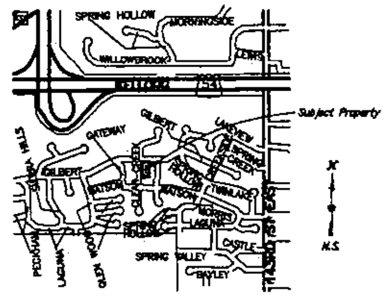
○ BPIN ________ 1/2" REBAR W/BAUGHMAN CAP (FOUND)
○ MCEH ________ 1/2" REBAR W/MCEHRING CAP (FOUND)
○ SAV ________ 1/2" REBAR W/SAVOY CAP (SET)

LEGEND

G = 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
○ CATV	CABLE TELEVISION PEDESTAL
□ E.B.	ELECTRIC BOX
□ W.M.	WATER METER
○ W.V.	WATER VALVE
□ XFMR	ELECTRIC TRANSFORMER
○ SS M.H.	SANITARY SEWER MANHOLE
○ SWS INLET	STORM WATER INLET

Site Bench Mark:
Square Cut Top Curb 49'N. of
the N.W. Corner of Lot 1, Block A,
Monique's Addition
Elevation = 1324.16 (NAVD88)



VICINITY MAP

Legal Description:

Lot 1, Block 8, Springdale Lakes Addition, to Sedgwick County, Kansas, together with a tract in the NE1/4 of Sec. 26, Twp. 27-S, R-2-E of the 6th P.M., Sedgwick County, Kansas, described as Beginning at the S.W. Corner of said Lot 1; thence East, along the South line of said Lot 1, 125.00 feet to the rear corner common to said Lots 1 and 2 in said Block 8; thence South, along the Lot line common to said Lots 1 and 2, as extended Southerly, 180.00 feet; thence Westerly parallel with the South line of said Lot 1, 125.00 feet to the intersection with the West line of said Lot 1, as extended South; thence North, along said extended West line, 180.00 feet to the point of beginning.

Owners:
Roger Haynes-Robertson and Monique Haynes-Robertson
840 S. Clear Creek St.
Wichita, Kansas 67230
Ph (316) 708-9100

Gross Area
34997.26 Sq. Ft.
0.80 Acres

Minimum Lot Size
34997.26 Sq. Ft.
0.80 Acres

ZONING: SF-5 Single-Family Residential District.

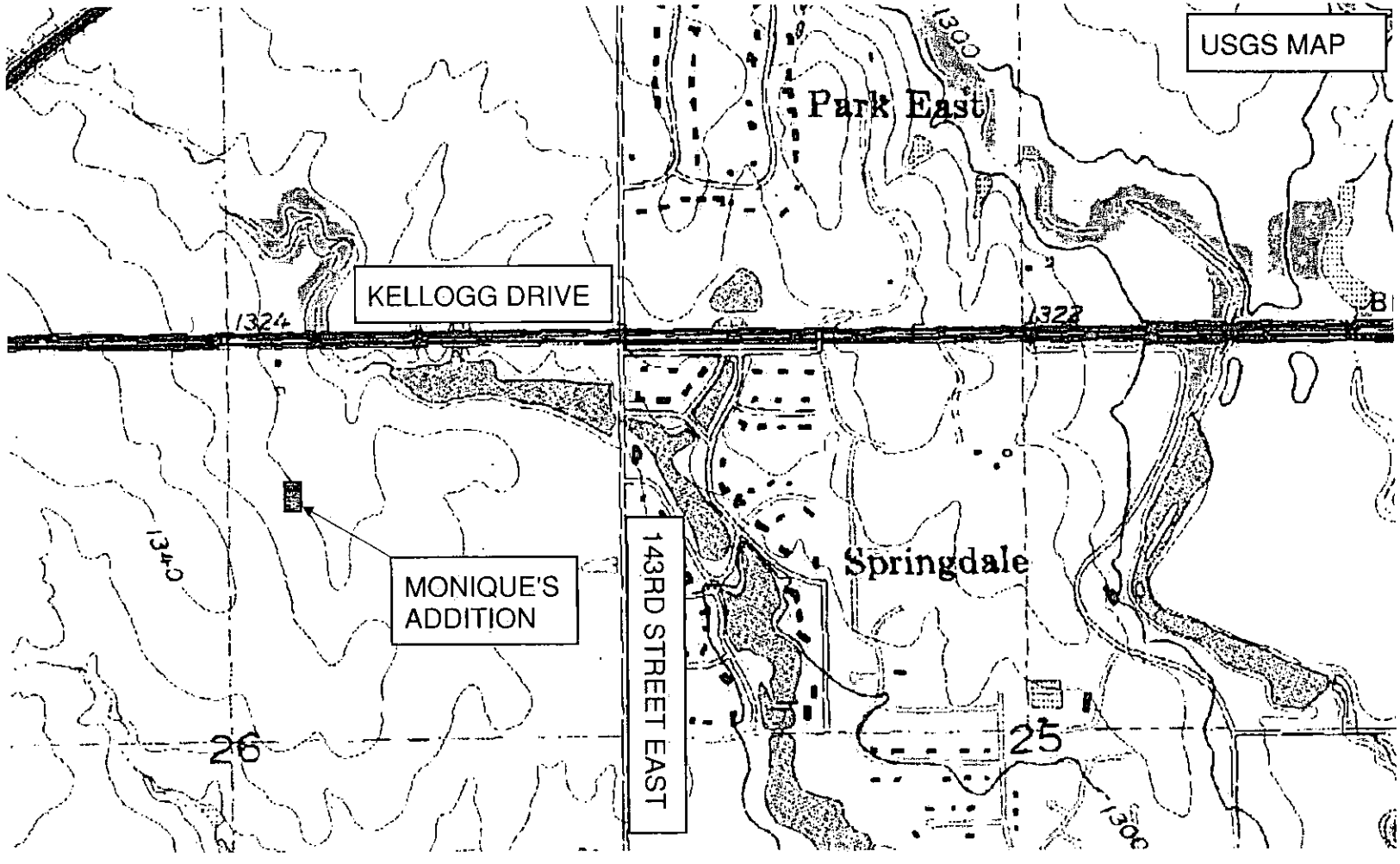
CONTROL NUMBER
482432
553830

PROJECT NO. 13001301 P

Savoy Company, P.A.

MONIQUE'S ADDITION

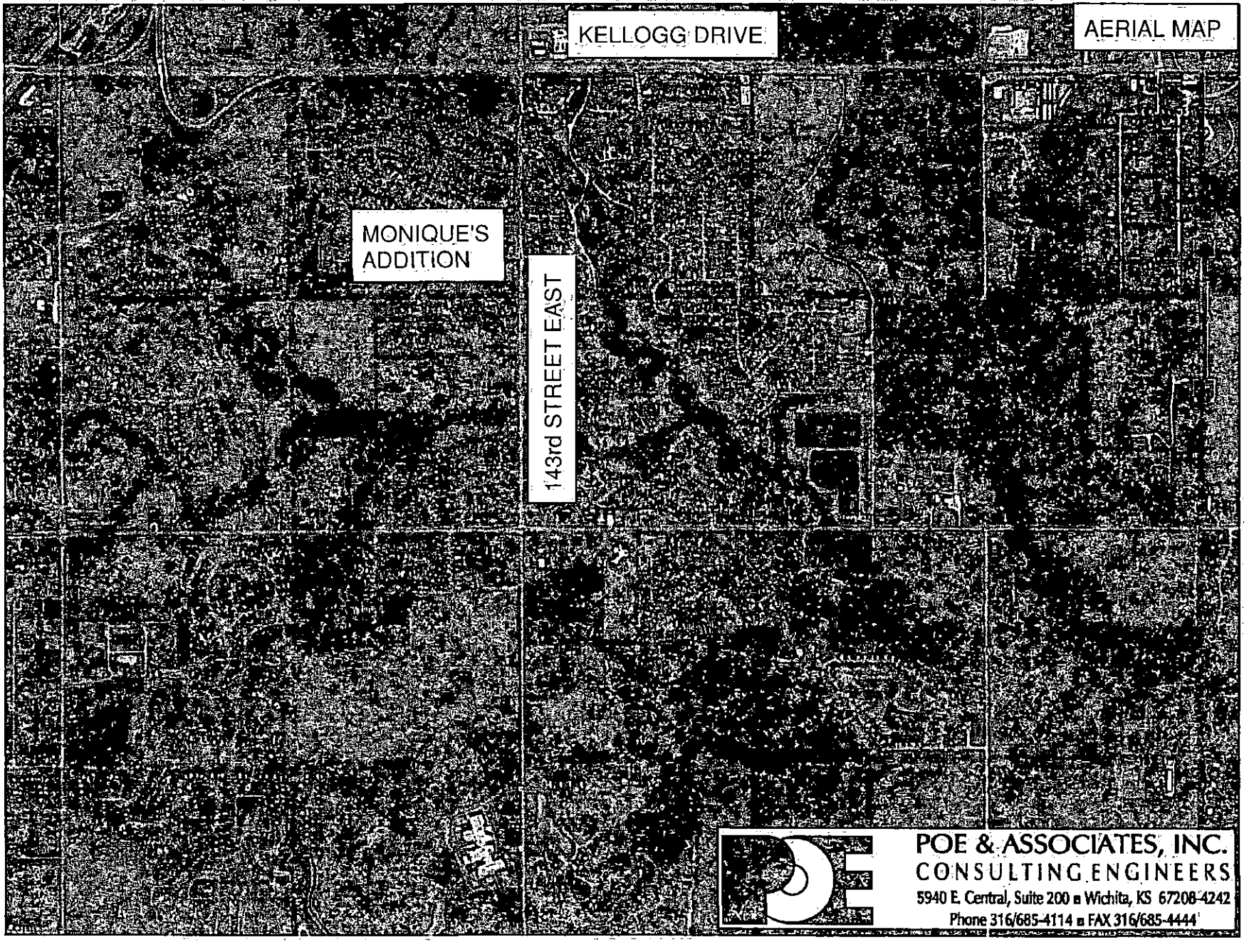
EXHIBIT 1-4



POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

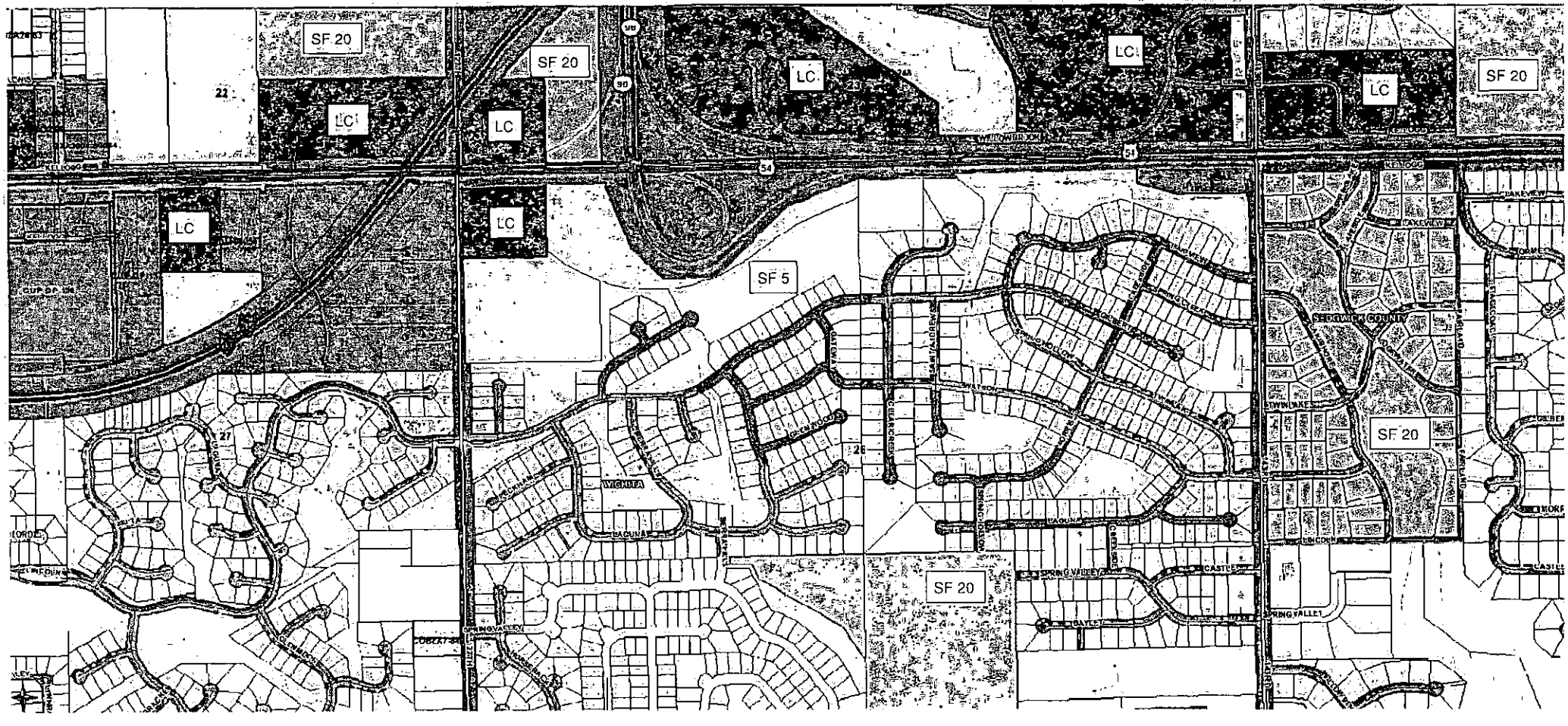
MONIQUE'S ADDITION

EXHIBIT 1-5


KELLOGG DRIVE
AERIAL MAP
MONIQUE'S ADDITION
143rd STREET EAST
POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ▪ Wichita, KS 67208-4242
Phone 316/685-4114 ▪ FAX 316/685-4444

MONIQUE'S ADDITION

EXHIBIT 1-6


SF 20
SF 20
LC
LC
LC
LC
SF 20
LC
LC
LC
LC
SF 5
SF 20
SF 20
SF 20
WICHITA
SPRING VALLEY
SPRING VALLEY
CASTLE
CASTLE
CHEROKEE COUNTY
LAKEVIEW
LAKEVIEW
TWIN LAKE
TWIN LAKE
CLEARCREEK
CLEARCREEK
SANTA LOREN
SANTA LOREN
CUP-DP 28
CUP-DP 28
27
28
22
54
51
90
90

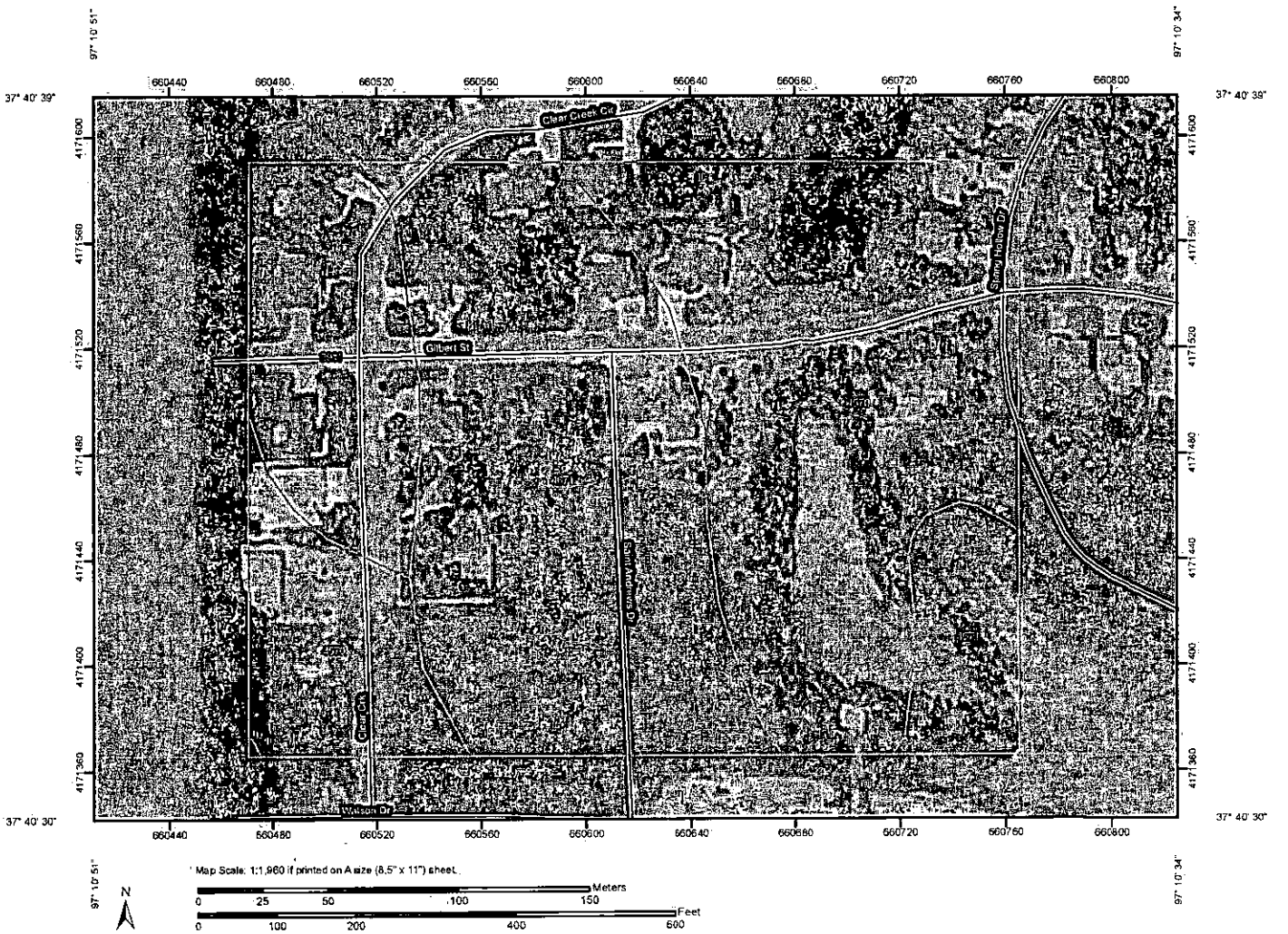
MONIQUE'S ADDITION

EXHIBIT 1-7

MONIQUE'S ADDITION

EXHIBIT 1-8

Soil Map—Sedgwick County, Kansas



USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

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
- Streams and Canals

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

MAP INFORMATION

Map Scale: 1:1,960 if printed on A size (8.5" × 11") sheet.

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 8, Sep 20, 2012

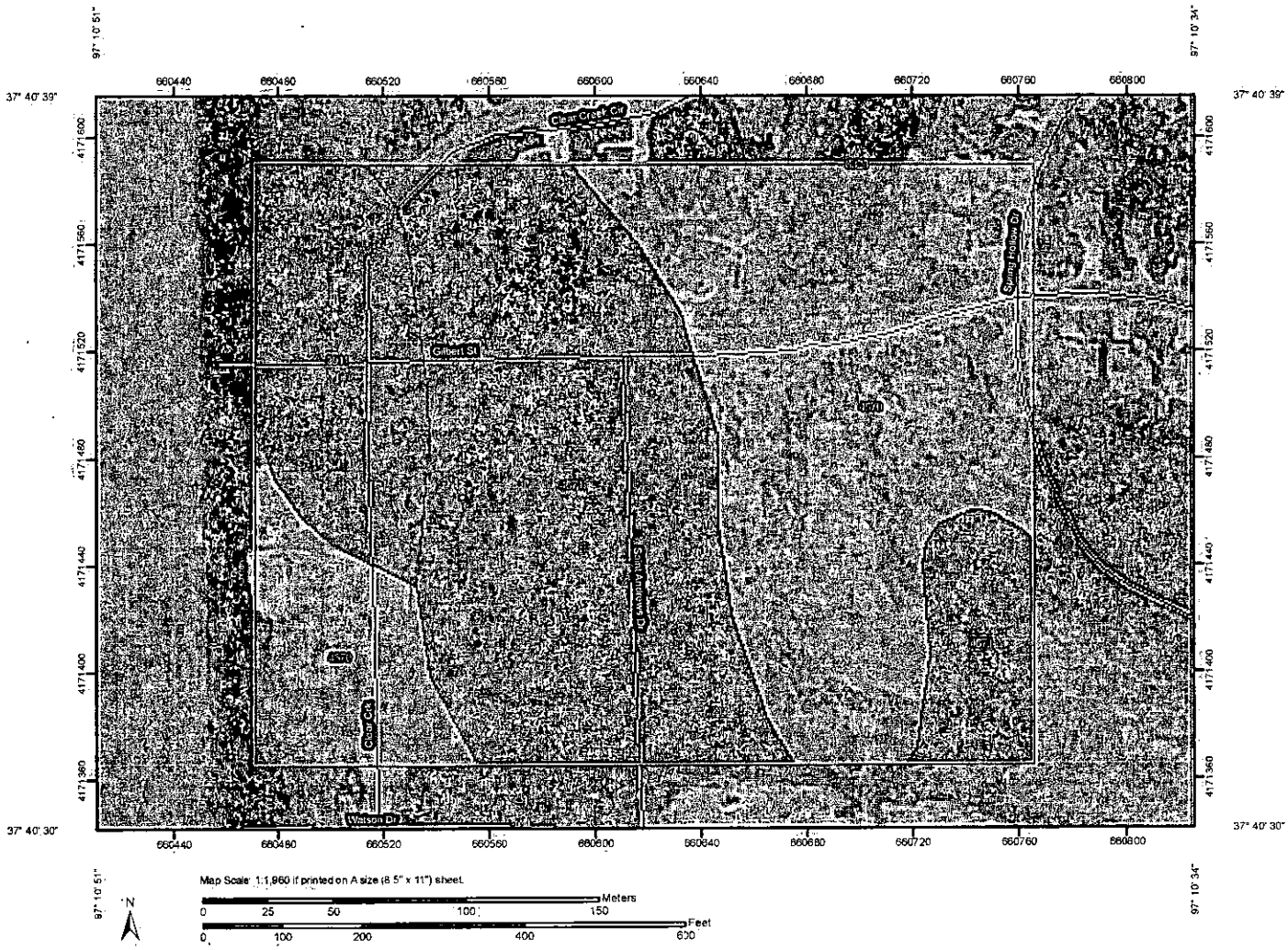
Date(s) aerial images were photographed: 6/19/2006

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
3911	Rosehill silty clay, 1 to 3 percent slopes	2.1	12.8%
4570	Clime silty clay, 3 to 7 percent slopes	7.4	45.6%
4671	Irwin silty clay loam, 1 to 3 percent slopes	6.8	41.6%
6323	Blanket silt loam, 1 to 3 percent slopes	0.0	0.0%
Totals for Area of Interest		**16.3**	**100.0%**

Hydrologic Soil Group—Sedgwick County, Kansas



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

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

MAP INFORMATION

Map Scale: 1:1,960 if printed on A size (8.5" × 11") sheet.

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 8, Sep 20, 2012

Date(s) aerial images were photographed: 6/19/2006

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.

Hydrologic Soil Group

Hydrologic Soil Group—Summary by Map Unit — Sedgwick County, Kansas (KS173)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3911	Rosehill silty clay, 1 to 3 percent slopes	D	2.1	12.8%
4570	Clime silty clay, 3 to 7 percent slopes	C	7.4	45.6%
4671	Irwin silty clay loam, 1 to 3 percent slopes	D	6.8	41.6%
6323	Blanket silt loam, 1 to 3 percent slopes	C	0.0	0.0%
Totals for Area of Interest			16.3	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

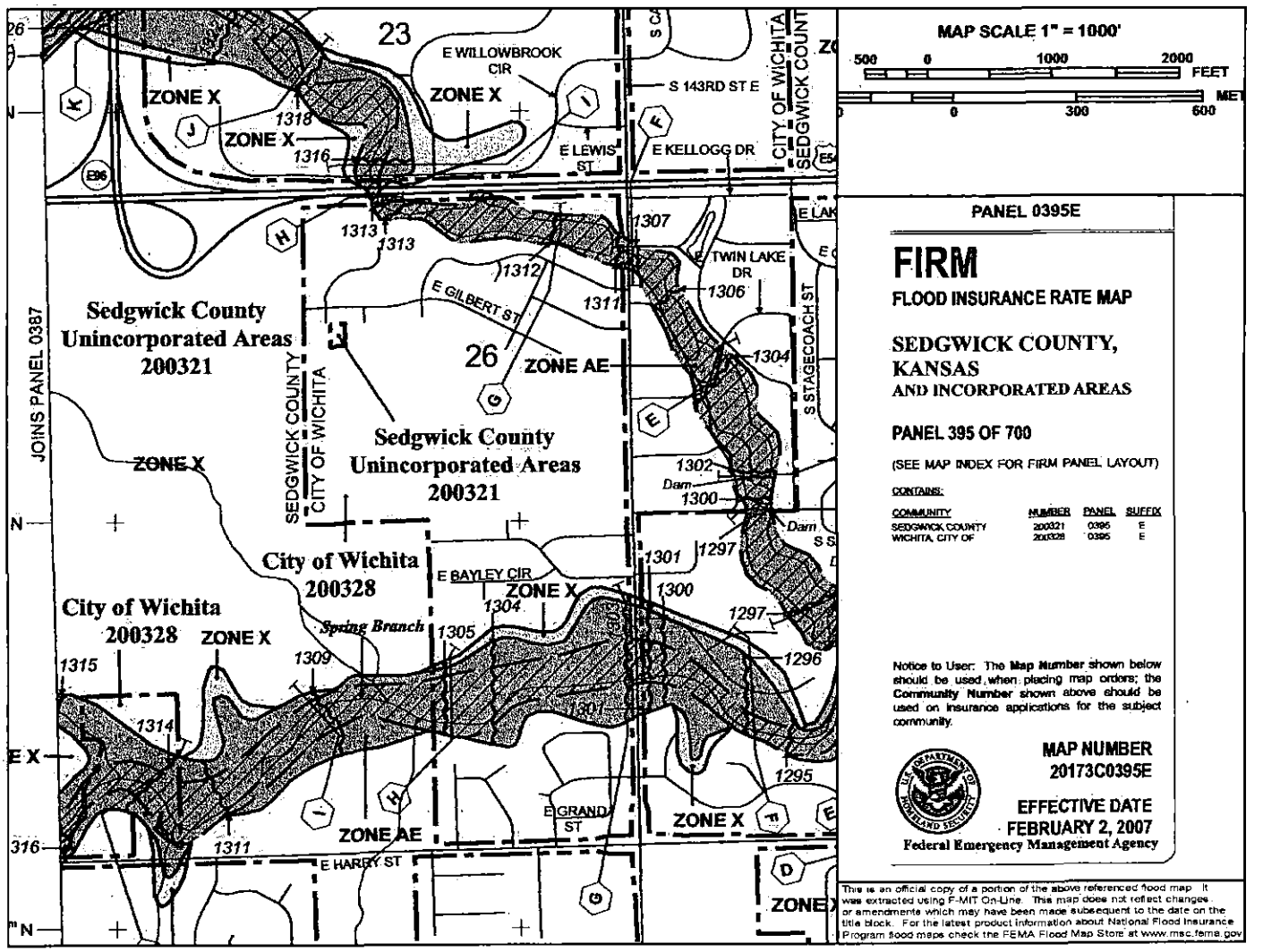
Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

MONIQUE'S ADDITION

EXHIBIT 1-9


MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
0 300 600
PANEL 0395E
FIRM
FLOOD INSURANCE RATE MAP
SEDGWICK COUNTY, KANSAS
AND INCORPORATED AREAS
PANEL 395 OF 700
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SEDGWICK, COUNTY 200321 0395 E
WICHITA, CITY OF 200328 0395 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
20173C0395E
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
Sedgwick County Unincorporated Areas 200321
City of Wichita 200328
ZONE X
ZONE AE
E WILLOWBROOK CIR
S 143RD ST E
E LEWIS ST
E KELLOGG DR
TWIN LAKE DR
S STAGECOACH ST
E GILBERT ST
E BAYLEY CIR
E HARRY ST
E GRAND ST
Spring Branch
Dam
JOINS PANEL 0387
SEDGWICK COUNTY
CITY OF WICHITA

2.0 Existing Conditions Information

2.1 Existing Conditions Drainage Map

See Existing Conditions Drainage Map on Exhibit 2-1.

2.1.1 On-Site and Off-Site Topography

The existing topography is shown on Exhibit 2-1.

2.1.2 On-Site and Off-Site Drainage Features

Exhibit 2-1 shows any water features within the site.

2.1.3 Storm Sewer System Components

Flow within the site is carried by overland flow, of which a majority is sheet flow. Roadways along the west and north side of the site route offsite flows around the site. These flows are routed to a storm sewer system within the adjoining residential neighborhoods that discharge to downstream receiving streams south of the site.

2.1.4 Location and Boundaries of Natural Features

The site does not contain wetlands or lakes. 0.39 acres of runoff near the south half of the property will be routed to back yard storm sewer in Lot 6, Block 4 of Clear Creek Addition. This existing storm sewer pipe and associated drainage swale has been sized to handle the 100 year runoff from said 0.39 acre tract in Monique's Addition.

2.1.5 Location, Dimensions, and Elevations of Existing Bridges and Culvert Crossings

There are no bridges or culvert crossings within the boundaries of this site.

2.1.6 Location of Existing Utilities

No additional development is currently planned for the area to be platted as Monique's Addition.

2.1.7 Groundwater Elevations

No additional development is currently planned for the area to be platted as Monique's Addition.

2.1.8 Delineation of Predominate Soils Based on USDA Soil Surveys

The predominant soil type is a Rosehill Silty Clay (3911) series material, which is found in about 15.0% of the overall existing drainage areas. The drainage basin also contains 85.0%

of Irwin Silty Clay (4671) soil. See Exhibit 1-6 for NRCS Soil Survey map and information showing existing soil types and descriptions. These soils are classified as Hydrologic Group D. The Hydrologic Groups are used to select curve numbers for the runoff calculations in both the existing and developed conditions.

2.1.9 Land Use Types per NRCS Nomenclature

The current land use type can be classified as single family residential. Previous use of the land included agricultural uses.

2.1.10 Footprint of Existing Impervious Areas

Currently, the property is developed as a single family home, outdoor swimming pool and lawn areas.

2.1.11 Internal Drainage Sub-Basin Boundaries

The total area of Todd Parker Addition encompasses 0.80 acres. The north basin denoted as basin "A" is approximately 0.17 acres and runs across the northern 1/3 of the property as shown on the existing plan. Basin "B" is approximately 0.36 acres and runs across the middle 1/3 of the property. Basin "C" is approximately 0.39 acres and runs across the southern 1/3 of the property.

2.1.12 Time of Concentration Flow Paths

The existing condition drainage plan shows the general flow paths for each drainage area in the basin. The site drainage is all collected in existing street networks and in backyard storm sewers within adjoining residential lots to the east.

2.2 Existing Conditions Hydrology and Hydraulics Analysis

2.2.1 Narrative of the Hydrologic Analysis Methodology

The runoff method used to determine storm water flows was the Rational method. Supporting data and calculation results are shown on Exhibit 2-2. The analysis was completed using the Rational method. The 1, 2, 5, 10, 25, & 100 year, 24-hour storm events were evaluated.

2.2.2 Summary Table of Drainage Sub-Basin Hydrologic Parameters

Drainage Basin	Area (Acres)	Curve Number	T_c (min)
Existing Area "A"	0.17	Varies	15.0
Existing Area "B"	0.36	Varies	15.0
Existing Area "C"	0.39	Varies	15.0

2.2.3 Table of Existing Condition Runoff Curve Numbers

The rational method was used to determine existing flow rates since this site is well under 1 acre in size. Therefore, runoff curve numbers have not been calculated based on soil type.

2.2.4 Table of Existing Condition Times of Concentration

Area "A" Exist.	15.0
Area "B" Exist.	15.0
Area "C" Exist.	15.0

Supporting data and calculations are found on the time of concentration worksheet attached as Exhibit 2-3.

2.2.5 Summary Table of Rainfall Data

Rainfall information shown in Exhibit 2-4.

2.2.6 Cross-Section Data of Existing Open Channels

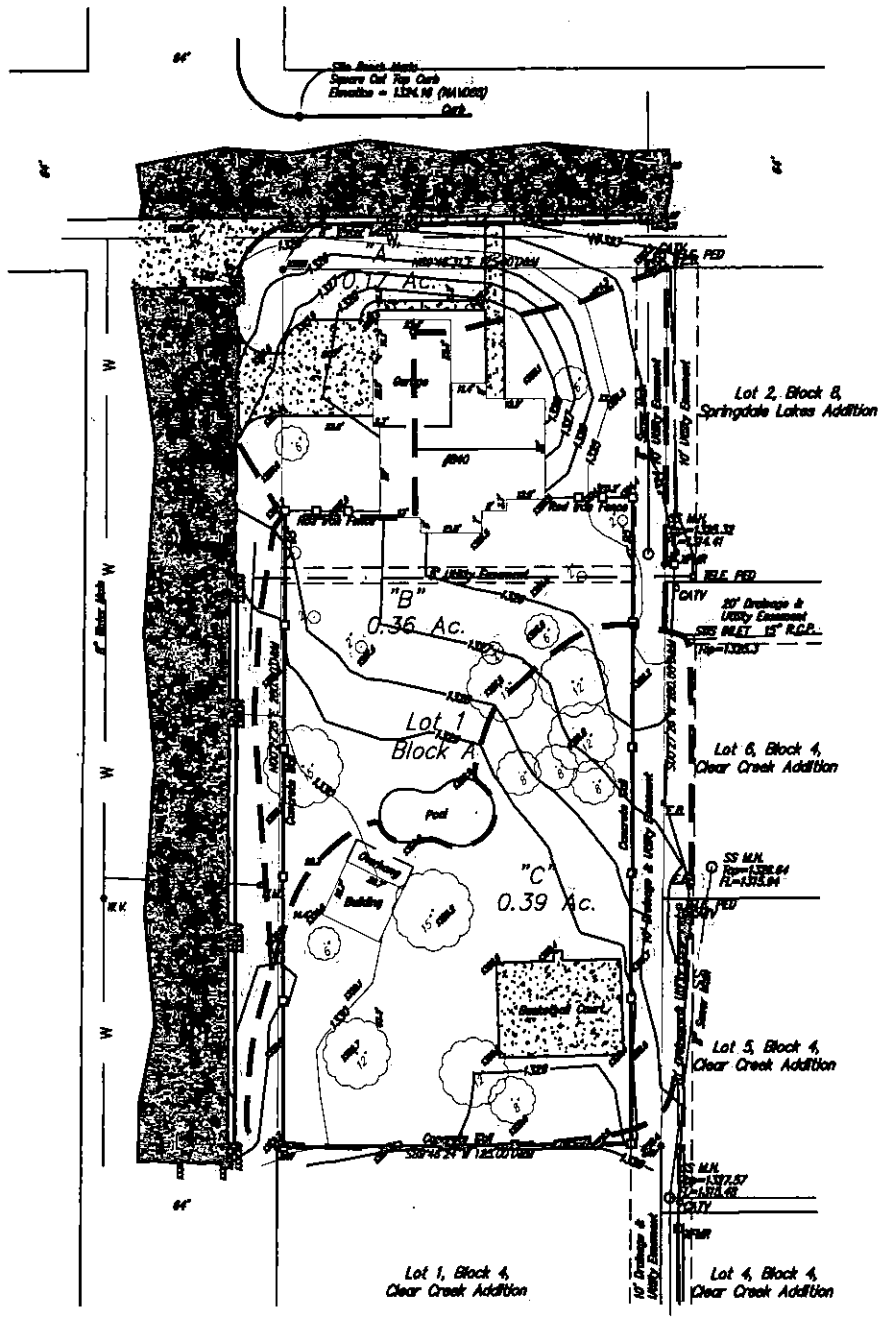
There are no open channels adjacent to the site. However, Clear Creek Street lies to the west and Gilbert Street to the north. These roadways will intercept offsite flows and keep them from entering the site.

2.2.7 Existing Condition Hydrologic and Hydraulic Analyses

Existing condition analysis report attached as Exhibit 2-2.

MONIQUE'S ADDITION

EXHIBIT 2-1



N

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

Survey Datum = NAVD88

LEGEND:

P = Platted
M = Measured
C = Calculated
D = Described

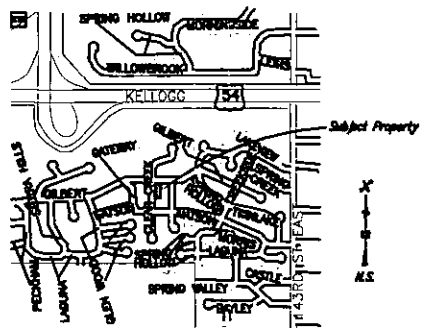
- BPM ——— 1/2" REBAR W/BOHLMAN CAP (FOUND)
- MOEN ——— 1/2" REBAR W/ANDERSONS CAP (FOUND)
- SAV ——— 1/2" REBAR W/SAVOY CAP (SET)

LEGEND

G = 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
- CATV . . . . CABLE TELEVISION PEDESTAL
- E.B. . . . . ELECTRIC BOX
- W.M. . . . . WATER METER
- W.V. . . . . WATER VALVE
- XFMR . . . . ELECTRIC TRANSFORMER
- SS M.H. . . . . SANITARY SEWER MANHOLE
- SWS INLET . . . . STORM WATER INLET

Site Bench Mark:
Square Cut Top Curb 45'N. of the N.W. Corner of Lot 1, Block A, Meadows Addition
Elevation = 1324.16 (NAVD88)



VICINITY MAP

NOTES:

1. Cross-drainage agreements shall be required at the time of platting.
2. Any revised drainage plan must be approved by storm water engineer prior to building permits being issued.

CALCULATION NOTES:

1. Determination of Q's was made using the Rational method.
2. Runoff Coefficients based on Table C-1 of the City of Wichita/Sedgwick County Stormwater Manual.

Existing Conditions (24-Hour Storm)						
Site	Area	c	2-Year	5-Year	10-Year	100-Year
Area "A"	0.17	Varies	0.27	0.36	0.49	0.89
Area "B"	0.36	Varies	0.21	0.76	1.03	1.88
Area "C"	0.39	Varies	0.63	0.82	1.12	2.04

Proposed Conditions (24-Hour Storm)						
Site	Area	c	2-Year	5-Year	10-Year	100-Year
Area "A"	0.17	Varies	0.27	0.36	0.49	0.89
Area "B"	0.36	Varies	0.21	0.76	1.03	1.88
Area "C"	0.39	Varies	0.63	0.82	1.12	2.04

MONIQUE'S ADDITION

A TRACT IN THE NORTHEAST QUARTER OF SECTION 26-T27S-R2E
WICHITA, SEDGWICK COUNTY, KANSAS

EXISTING DRAINAGE PLAN

2013

PROPERTY OWNER/ SUBDIVIDER:

Roger Haynes-Robertson and Monique Haynes-Robertson
840 S. Clear Creek St.
Wichita, Kansas 67230

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ◻ Wichita, KS
67208-4242
Phone 316/685-4114 ◻ FAX 316/685-4444

3.0 Post-Development Conditions Information

This section was intentionally omitted, as prost-development conditions will be identical to pre-development conditions since no additional development of the area to be platted is currently contemplated.

4.0 Floodplains

4.1 Source of Flood Profile

Current FEMA mapping attached as Exhibit 1-9.

4.2 Nearest Base Flood Elevations

Existing base flood elevations are not applicable as is outside the mapped FEMA Floodplain.

4.3 Delineation of Pre-Development Regulatory Floodplain/Floodway Limits

Current FEMA mapping attached as Exhibit 1.9.

4.4 Delineation of Post-Development Regulatory Floodplain/Floodway Limits

Site development will not affect current FEMA mapping.

4.5 Floodplain Data Table and Discharges

This site is outside the mapped FEMA Floodplain.

4.6 Hydrologic and Hydraulic Study Information

This site is outside the mapped FEMA Floodplain.

4.7 Provide regulatory floodway and four natural profile models (10, 50, 100, & 500-yr) for existing and future watershed conditions

This site is outside the mapped FEMA Floodplain.

4.8 Floodplains and Floodways Located within a Reserve

Not applicable to this development.

5.0 Federal, State, and Local Permits

5.1 US Army Corps of Engineers Regulatory Program Permits

Not applicable to this development.

5.2 Kansas Department of Agriculture Division of Water Resources Permits

Not applicable to this development.

5.3 Federal Emergency Management Agency (FEMA) Letter of Map Changes

Not applicable to this development.

6.0 Preliminary Master Grading Plan

Not applicable since no additional development is currently contemplated.