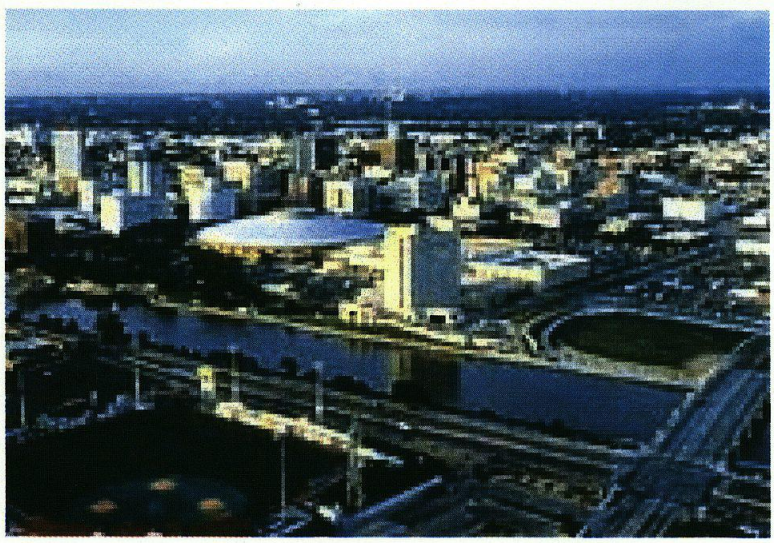
Drainage Report

Allen Williams Addition,

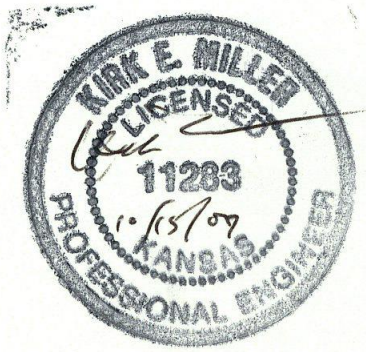
To Wichita, Sedgwick County, Kansas



October 2007

kemiller engineering

516 S. Market
Wichita, Kansas 67202
(316) 264-0242



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Drainage Report

ALLEN WILLIAMS ADDITION

Introduction

The subject property is located on the east side of Hoover Road, about one-half mile south of Harry. The north half of the property is platted is platted as Utility Contactors 4th Addition, and zoned LI. The south half of the property is un-platted and zoned SF-5. A zoning case has been filed to change the zoning to LI. The tract of land is about 3-1/2 acres total. The property is being platted into one lot.

Current Conditions

The site is served by City of Wichita utilities. Single family residential abuts the property on the south, with the Wichita-Valley Center Floodway on the east and industrial properties north and west. The property is being used as a construction yard. The soils are a Type C, with a moderate runoff coefficient. There are no signs of wetlands and the land is not in a floodplain, but it is adjacent to the ponding areas for the Wichita-Valley Center Floodway. The land drains to the south and east and into a public storm sewer system that drains to the floodway. The site drains at a slope of about 0.3%.

The attached plat with topography shows existing features including contours and utilities, including storm sewer, and proposed easements.

Proposed Improvements

The site will be developed for limited industrial use. The lot will drain from west to east as shown on the attached grading plan. The existing storm sewer will be modified to facilitate drainage from the site. Because of the ponding area and because of restrictions for excavating next to the Wichita-Valley Center Floodway, storm water detention has not been required on this property or on adjacent properties and should not be on his property. Limited detention in the parking lot could be provided if requested.

Best management practices for erosion control will include seeding disturbed areas and installing city approved measures for industrial uses. Since the total disturbed area is more than 1 acre, a notice-of-intent will be filed with KDHE. The attached calculations show the existing and developed peak runoffs, including assumed coefficients and conditions.

Site Hydrological Analysis

Existing and proposed site conditions have been modeled using the rational method. The Values for Rainfall Intensity and Runoff Coefficients were established using the *Drainage and Storm Sewer Policy for Design Criteria and Documentation, City of Wichita, Kansas.* A time of concentration of 15 minutes was used as it is the minimum inlet time. A proposed time of concentration of 15 minutes was also used.

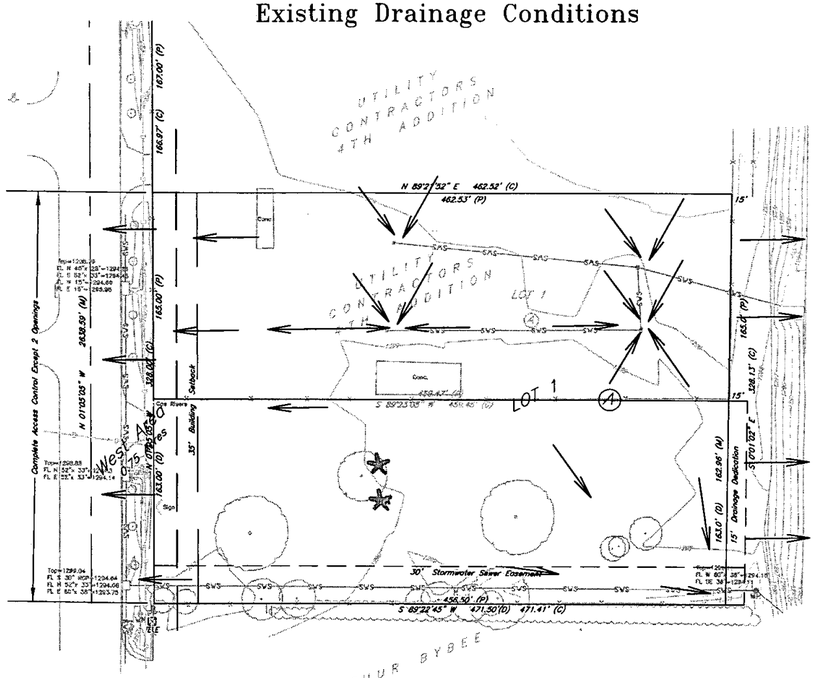
Future Development

There will be no future development of this plat after the structure is built.

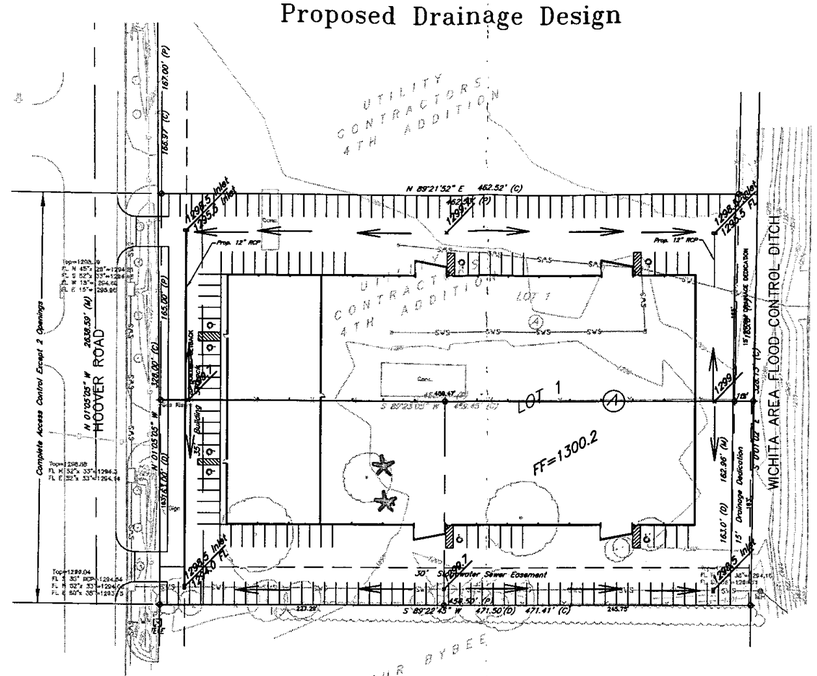
Appendix A

Drainage Plan
Final Plat
USGS map with area highlighted
Aerial Photograph

Existing Drainage Conditions



Proposed Drainage Design



Existing Site Drainage								
Area	Acres	Tc	C5	I5	C100	I100	Q5	Q100
Lot 1, Blk A	3.46	15.0 min	0.52	4.56	0.68	7.37	8.20cfs	17.34cfs

Proposed Site Drainage								
Area	Acres	Tc	C5	I5	C100	I100	Q5	Q100
Lot 1, Blk A	3.46	15.0 min	0.69	4.56	0.80	7.37	10.89cfs	20.40cfs

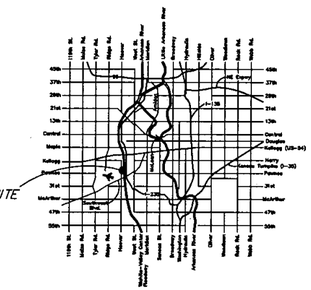
Engineer's Note:
Site drainage calculations developed using the Rational Method for peak runoff. "C" & "I" values established from the City of Wichita Design Criteria and Documentation.

LEGEND
- Cedar Tree
- Fire Hydrant
- Light Pole
- MH Manhole
- PP Power Pole
- Sign
- Tree
- Water Valve
- KGS Kansas Gas Service Line
- Sanitary Sewer
- Fence

AREA: 3.46 acres (On Site)

Benchmark:
Hoover and May, C.O.W. disc at 48' E of 1/4 section corner and 5' S of 1/4 section corner.
Elev. = 1297.97

- 1/2" Rebar (found) PEC LS #65
- 1/2" Rebar (found)
- 5/8" Rebar (found)
- 3/4" Iron Pipe (found)
- 3/4" Pinched Iron Pipe (found)



LOCATION MAP

50 25 0 50
(IN FEET)
1 inch = 50 ft.

DRAINAGE PLAN FOR LOT 1, BLOCK A ALLEN WILLIAMS ADDITION TO WICHITA, KANSAS

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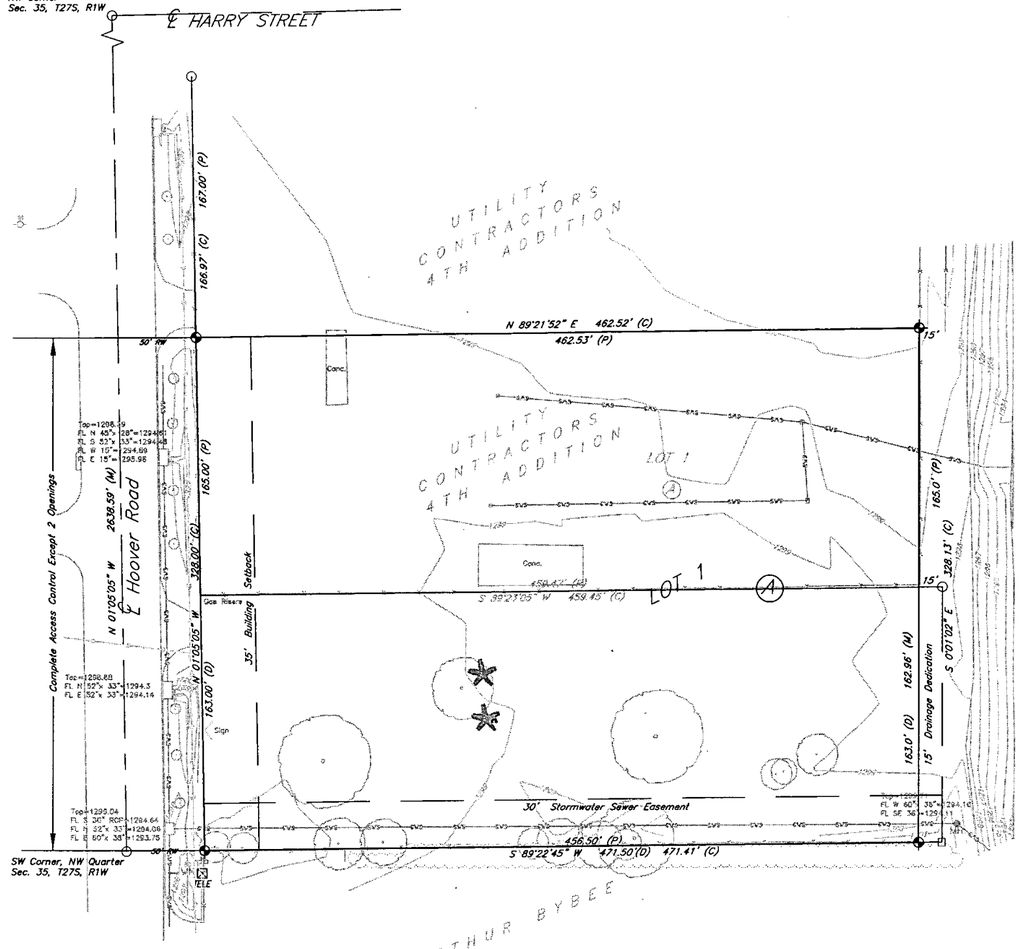
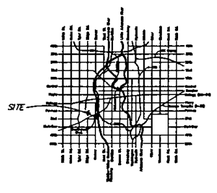
Wichita, KS 67202
316/264-0242

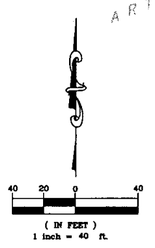
ONE-STEP PLAT OF
ALLEN WILLIAMS ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS

Part of the NE 1/4, Section 28, Township 27 South, Range 2 East of the 6th. P.M.





LOCATION MAP



LEGEND

- Fire Hydrant
- Light Pole
- Pine Tree
- Power Pole
- Telephone Pedestal
- Tree
- Water Meter
- Water Valve
- RW Marker (found)
- ½" Iron Pipe (found)
- 5/8" Rebar (set) KEMPA CLS #157

Benchmark:
Hoover and May, C.O.W. disc at 48' E of 1/4 section corner and 5' S of 1/4 section corner. Elev. = 1297.97

State of Kansas)
County of Sedgwick) ss

I, Bradley C. Ward, a licensed land surveyor of the State of Kansas, do hereby certify that the following described tract of land was surveyed on the 27th day of August, 2007 and the accompanying final plat prepared and that all the monuments shown herein actually exist and their positions are correctly shown to the best of my knowledge and belief:

Lot 1, Block A, Utility Contractors 4th Addition, Wichita, Kansas, and beginning at the Southwest Corner of the Northwest Quarter of Section 35; thence, East 521.50 feet; thence, North 163.0 feet; thence, West 524.47 feet; thence, South 163.0 feet to beginning, EXCEPT the West 50.0 feet for right-of-way.

All being situated in the NW 1/4 of Sec. 35, Twp. 27-S, R-1-W of the 6th P.M., Sedgwick County, Kansas.

Parcel contains 3.57 acres ±.

All easements and rights-of-way within said lots are hereby vacated by virtue of KSA 12-512(b) ammended.

Bradley C. Ward, L.S. #920 date

State of Kansas)
County of Sedgwick) ss

Know all men by these presents, that we, the undersigned, have caused the land described in the surveyor's certificate to be platted into a Lot and Block to be known as Allen Williams Addition, Sedgwick County, Kansas. Any easements are hereby granted as indicated for constructing, maintaining, operating, and repairing public utilities. A drainage plan has been developed for the plat and all drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the applicable City or County Engineer, and unobstructed to allow for the conveyance of stormwater. And further that the land contained herein is held and shall be conveyed subject to any applicable restrictions, reservations and covenants now on file or hereafter filed in the Office of the Register of Deeds of Sedgwick County, Kansas.

Access Control is hereby granted as follows:
1. There shall be a maximum of 2 openings on Hoover Road.

By:_____
Allen Williams, owner Date

State of Kansas)
County of Sedgwick) ss
This instrument was acknowledged before me on this _____day of _____ 2007, by _____

_____
Notary Public

My Commission Expires: _____

We, ????? Bank, N.A., holders of a mortgage on the above described property, do hereby consent to the plat of Allen Williams Addition, Wichita, Sedgwick County, Kansas.

By:_____
Date

State of Kansas)
County of Sedgwick) ss
This instrument was acknowledged before me on this _____day of _____ 2007, by_____

_____
Notary Public

My Commission Expires: _____

State of Kansas)
City of Wichita) ss

This plat of Allen Williams Addition, Wichita, Sedgwick County, Kansas, has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas. Dated this _____ day of _____ 2007. Wichita-Sedgwick County Metropolitan Area Planning Commission.

_____
M.S. Mitchell, Chair

_____
John L. Schlegel, Secretary

State of Kansas)
City of Wichita) ss

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this_____ day of_____ , 2007.

At the Direction of the City Council

_____
Carl Brewer, Mayor

_____
Karen Sublett, City Clerk

Entered on transfer record this _____ day of _____ , 2007.

_____
Donald Brace, County Clerk

State of Kansas)
County of Sedgwick) ss

This is to certify that this plat has been filed for record in the Office of the Register of Deeds this_____day of_____, 2007, at _____ o'clock__M; and is duly recorded.

_____
Bill Meek, Register of Deeds

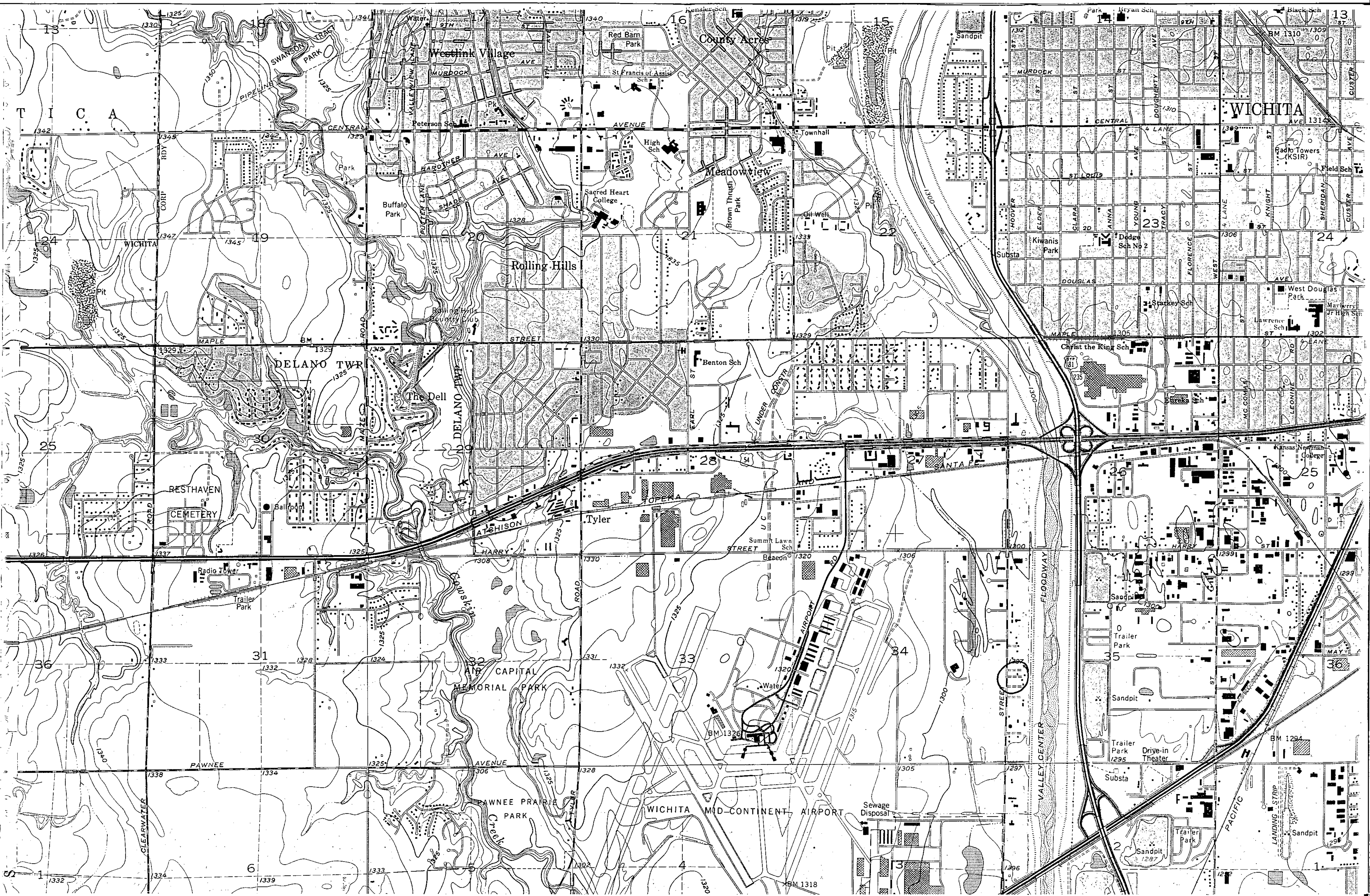
_____
Tonya Buckingham, Deputy

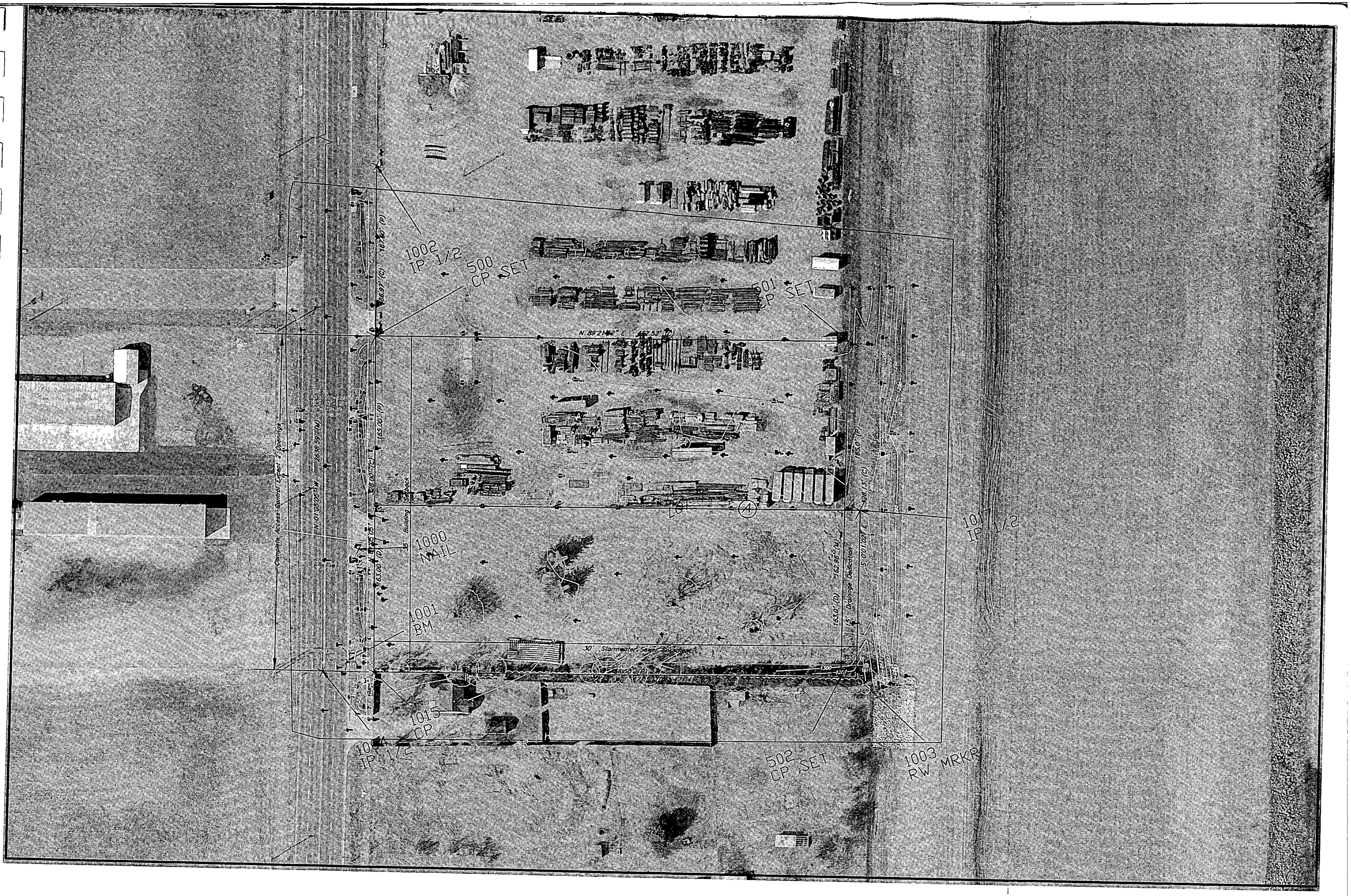
Reviewed in accordance with K.S.A. 58-2005 on this_____day of_____, 2007.

_____
Tricia L. Robello, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

Filename: 07124 Allen Williams Plat\dwg\Allen Williams prelim plat.dwg

kemiller engineering
516 S. Market, Wichita, KS 67202 316/264-0242


Westlink Village
Red Barn Park
County Acres
Kensler Sch
St Francis of Assisi Sch
Bryan Sch
Black Sch
WICHITA
Peterson Sch
Townhall
High Sch
Meadowview
Sacred Heart College
Brown Thrush Park
Buffalo Park
Radio Towers (KSIR)
Field Sch
Rolling Hills
Kiwanis Park
Dodge Sch No 2
Substa
West Douglas Park
Starkey Sch
Mayberry Jr High Sch
Lawrence Sch
Christ the King Sch
Benton Sch
DELANO TWP
The Dell
Eureka Sch
Kansas Newman College
RESTHAVEN CEMETERY
Ballpond
ATCHISON
TOPEKA
SANTA FE
Tyler
Summit Lawn Sch
Beacon
Radio Tower
Trailer Park
AIR CAPITAL MEMORIAL PARK
Water
BM 1326
PAWNEE PRAIRIE PARK
Cowskin Creek
WICHITA MID-CONTINENT AIRPORT
Sewage Disposal
VALLEY CENTER FLOODWAY
Sandpit
Drive-in Theater
PACIFIC
LANDING STRIP
CENTRAL AVENUE
MAPLE STREET
HARRY STREET
PAWNEE AVENUE
MURDOCK
DOUGLAS AVE
CLEARWATER
TYLER ROAD
AIRPORT RD
Pit
Oil Well
BM 1310
BM 1294
BM 1318


1002
IP 1/2
500
CP SET
501
CP SET
1000
NAIL
1001
BM
1015
CP
502
CP SET
1003
RW MRKR

Appendix B

Public Works, Eng. Div. Storm water checklist

WICHITA

Public Works, Engineering Division
Stormwater Management Subdivision Submittal Checklist

Reviewer:_____ Date:_____

Subdivision Name: Allen Williams Addition Location: Hoover - 1/2 Mi South of Harry

Total Land Area Of Ownership: 3.4 Acres

Type: _____Residential _____Commercial X Industrial _____Recreation _____Municipal _____Other

Applicant: Allen Williams Contact:_____ Phone #: 264-1964

Engineer: K E Miller Eng. PA Contact: Kirk Miller Phone # 264-0242

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		App A		
B. Discussion of development, existing conditions, and proposed impacts on stormwater, wetland, riparian, and flood plain	X		Report		
C. Discussion of offsite conditions	X		Report		
D. Summary of runoff calculations (pre/post development) No increase in peak discharge for all storm series	X		App A		
E. Narrative description of the type and function of the permanent best management practices that are incorporated into the site design	X		Report		
F. Copy of the plat	X		App A		
G. Prelim. four corner lot grading plan (The final grading plan shall be sealed, signed and dated prior to Engineering receiving the final paving and stormwater drain plans.One plan sheet and PDF shall be submitted to the Subdivision Engineer.)	X		App A		
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	X				

	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		App A		
B. Runoff Method (Rational, Hydrograph Method, or other approved methods by Engineering)	X		App A		
C. Existing topography (no greater than 2-foot contours, 1-foot recommend)	X		App A		
D. Total Site Area and Total Impervious Area (acres)	X		App A		
E. Benchmarks used for site control	X		App A		
F. Streams, creeks, and waterway labeled		X			
G. Predominant soils from USDA soil surveys, and/or on site soil borings	X		Report/App A		
H. Location and boundaries of natural features such as wetlands, lakes, and ponds with the normal water elevation noted		X	No Such Features		
I. Location of existing roads, buildings, parking lots and other impervious areas	X		Plan		

Consulting Engineer Initials KM

J. Location of existing utilities (e.g., water, sewer, gas, electric) and easements	X		Plan		
K. Location of existing conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow	X		Plan		
L. Flow paths	X		Plan		
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		Plan		
O. Assumed pre-developed runoff curve numbers	X		Plan		
P. Existing time of concentrations used in calculations	X		Plan		
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	Not Required		

	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		Plan		
B. Proposed time of concentrations used in calculations	X		Plan		
C. Assumed post-developed runoff curve numbers	X		Plan		
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. Dam safety analysis, where necessary		X			
I. Existing and proposed structural elevations (e.g., invert of pipes, manholes, etc.)	X		Plan		
J. Design water surface elevations and normal pool elevation for ponds.		X			
K. Typical detail for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc. To include height, width, elevation, and/or diameter.		X			
L. Proposed limits of clearing and grading		X	Includes Entire Site		
M. Location of existing and proposed roads, buildings, parking lots and other impervious areas.	X		Plan		
N. Location of existing and proposed utilities (e.g., water, sewer) and easements	X		Plan		
O. Location of existing and proposed conveyance systems such as storm drains, inlets, catch basins, channels, swales, and areas of overland flow	X		Plan		
P. Preliminary location and dimensions of proposed channel modifications, such as bridge or culvert crossings		X	No Downstream Improv		

Consulting Engineer Initials KM

Q. Preliminary selection and location of stormwater controls		X			
R. Emergency overflow structure's flow path		X			
S. Detention facility provides one-foot of freeboard above the HWL and emergency outfall shown (top of berm elevation shown)		X			
T. The 100-year 24-hour HWL delineated on the plan for detention pond		X			
U. Lowest opening elevations table on the plat for structures located adjacent to channels or ponds		X			
V. Stormwater Management Facilities located within a Reserve		X			
W. Maintenance of stormwater management facility specified in the platters text as the responsibility of the Homeowner or Business Association		X			
X. Off-site drainage easements or agreements required		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		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		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.) CLOMR shall be included and approved for fill placed in the regulatory floodway		X			
D. Kansas Department of Transportation		X			
E. Sedgwick County Right-of-way Permit		X			

Consulting Engineer Initials KM