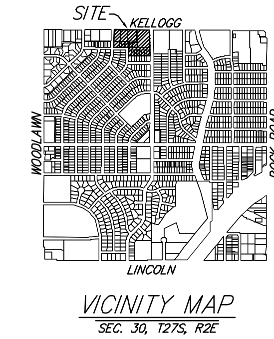
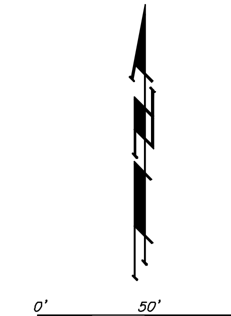
DRAINAGE PLAN

SCHOLFIELD HONDA COMMERCIAL ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS



VICINITY MAP
SEC. 30, T27S, R2E



DATE OF PREPARATION: 13 JANUARY 2014
DATE OF TOPOGRAPHY: 3 JANUARY 2014
CONTOUR INTERVALS = 1 FOOT (CONTOURS PROVIDED BY SEDGWICK COUNTY)

- = #4 REBAR W/ "BAUGHMAN" CAP (FOUND)
- = #4 REBAR W/ "BAUGHMAN" CAP (SET)
- = 3/4" IRON (FOUND)
- = #4 REBAR (FOUND)
- = 1/2" IRON (FOUND)
- = CROSS CUT (FOUND)

DI = Drop Inlet

SWSMH = Stormwater Sewer Manhole
TR = Tree

SWS = Stormwater Sewer Line

Fence Line

EXISTING PAVEMENT AND BUILDINGS TO REMAIN

CURRENT RESIDENTIAL AREA TO BE CONVERTED TO PAVED PARKING – see detention and water quality requirements to the right.

						Curve Numbers				
Land Use	Hydrologic Soil Group				Land Use	Hydrologic Soil Group			
	A	B	C	D		A	B	C	D
Undisturbed	0.02	0.03	0.04	0.05	Undisturbed	55	71	80	84
Turf or Disturbed Soils	0.15	0.2	0.22	0.25	Turf or Disturbed Soils	71	80	84	88
Impervious Cover	0.95	0.95	0.95	0.95	Impervious Cover	98	98	98	98

Weighted Volumetric Runoff Coef. (R_v) (eq. 4-24*)

Basin #	Undist. ft²	Dist ft²	Ex. Imp. ft² (Total Prop Imp Area)	New Imp. ft² (Total Prop Imp Area)	Total Area ft²	U %	D %	Redev I* %	I %	R_v %	WQ_v ft³ eq. 4-25*
D	0	0	20,000	49,700	69,700	0.000	0.000	0.082	0.677	0.7592	5,292
CN	0	0	28	70	98						

* Redeveloped Impervious is 30% of the Impervious Calculation.

Water Quality Peak Flow
Basin # [illegible]
eq. 4-[illegible]
$Q_p = q_u * A * Q_{wv} * F_p$

CN =	98	Table 4-4
[illegible] =	[illegible]	
Tc =	[illegible]	min
qu =	[illegible]	Figure 4-6
A =	[illegible]	ft²
	[illegible]	acre
	[illegible]	mi²
Rv =	[illegible]	eq. [illegible]
P =	1.2	[illegible]
Qwv =	[illegible]	eq. [illegible]
Fp =	1.00	Table 4-10
Qp =	[illegible]	cfs

DETENTION REQUIRED FOR BASIN D REDEVELOPMENT

	2 Year Q (cfs)	2 Year Volume (ft³)	10 Year Q (cfs)	10 Year Volume (ft³)	100 Year Q (cfs)	100 Year Volume (ft³)
Existing	3.9	[illegible]	5.3	[illegible]	7.4	[illegible]
Developed	5.7	[illegible]	7.8	[illegible]	11	[illegible]
Detention Required		[illegible]		[illegible]		[illegible]
Max Qout	3.9		5.3		7.4	

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FRONTAGE
DA = 1.1 acres
Impervious = 96%
C = 0.89
Q_2 = 3.7 cfs
Q_5 = 4.5 cfs
Q_{10} = 5.1 cfs
Q_{100} = 7.2 cfs

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WEST SIDE
DA = 2.1 acres
Impervious = 99%
C = 0.93
Q_2 = 7.5 cfs
Q_5 = 8.9 cfs
Q_{10} = 10 cfs
Q_{100} = 14 cfs

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MIDDLE & EAST
DA = 4.4 acres
Impervious = 99%
C = 0.93
Q_2 = 16 cfs
Q_5 = 19 cfs
Q_{10} = 21 cfs
Q_{100} = 30 cfs

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PROPOSED SOUTH EXPANSION	
EXISTING	DEVELOPED
DA = 1.6 acres	DA = 1.6 acres
Impervious = 27%	Impervious = 99%
C = 0.63	C = 0.93
Q_2 = 3.9 cfs	Q_2 = 5.7 cfs
Q_5 = 4.6 cfs	Q_5 = 6.8 cfs
Q_{10} = 5.3 cfs	Q_{10} = 7.8 cfs
Q_{100} = 7.4 cfs	Q_{100} = 11 cfs

AREA D: Parking lot expansion in Basin D will require detention to limit the peak runoff to that of at least existing conditions. This area drains to the east and into Governeour Avenue.

Upon site development, due to the redevelopment area being greater than 1 acre, this area will also need to meet City of Wichita Ordinance 16.32 pertaining to water quality treatment. Since this area is a redevelopment, water quality treatment will be provided for 30% of the existing impervious area and 100% of any additional impervious area (see calculations this page). Water Quality is expected to be accomplished with a mechanical water quality device on site. Detention is expected to be parking lot detention and outfall at grade to the east and into the adjacent ROW.

NOTES: This area is located in a FEMA Zone X as of this date per FEMA FIRM Panel 367 of 700, for Wichita, Sedgwick County, Kansas; effective February 2, 2007.

The internal Storm Water Sewer is existing and drains to the south and into the adjacent street ROW(s).

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SCHOLFIELD HONDA COMMERCIAL ADDITION
17 FEB 2014

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ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

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