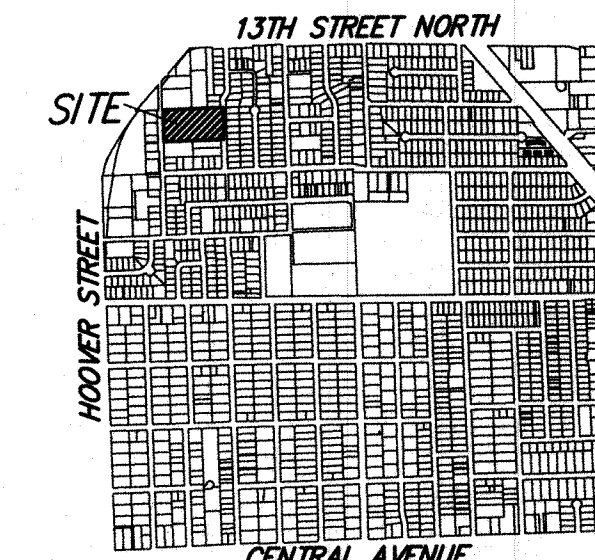


# DRAINAGE PLAN

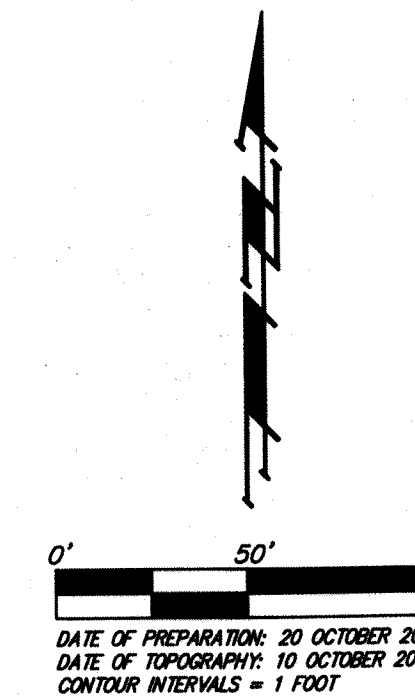
## JBAR ADDITION

### WICHITA, SEDGWICK COUNTY, KANSAS



VICINITY MAP  
SEC. 14, T27S, R1W

\* = #4 REBAR W/ "DAUGHMAN" CAP (SET)  
 Ⓢ = 1" IRON (FOUND)  
 ○ = 1/2" IRON (FOUND)



DATE OF PREPARATION: 20 OCTOBER 2014  
 DATE OF TOPOGRAPHY: 10 OCTOBER 2014  
 CONTOUR INTERVALS = 1 FOOT

**Offsite from NW**  
 Area = 1.6 acres  
 CN = 71\*  
 Tc = 21 min  
 Q<sub>2</sub> = 1.7 cfs  
 Q<sub>5</sub> = 3.0 cfs  
 Q<sub>10</sub> = 3.8 cfs  
 Q<sub>25</sub> = 5.1 cfs  
 Q<sub>100</sub> = 7.5 cfs

\*Offsite flow is not developed and is primarily discharged into the Curtis Street ROW.

**Offsite from NE**  
 Area = 1.9 acres  
 CN = 90\*  
 Tc = 20 min  
 Q<sub>2</sub> = 5.3 cfs  
 Q<sub>5</sub> = 7.3 cfs  
 Q<sub>10</sub> = 8.7 cfs  
 Q<sub>25</sub> = 10 cfs  
 Q<sub>100</sub> = 14 cfs

\*Developed area; this runoff flows and is concentrated in Doris Street.

**WEST BASIN**  
 TOTAL FLOW - OFFSITE AND ONSITE RUNOFF  
 Outfall - 5' Weir @ 1315.5  
 Infiltration - 8.9 in/hr

WEST INFILTRATION BASIN (Bottom = 1312.0)			
STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	6.0 cfs	3.0 cfs	1315.8
10 yr	11 cfs	7.7 cfs	1316.2
100 yr	19 cfs	18 cfs	1316.5

**WEST BASIN**  
 FLOW - ONSITE RUNOFF ONLY  
 Outfall - 5' Weir @ 1315.5  
 Infiltration - 8.9 in/hr

WEST INFILTRATION BASIN (Bottom = 1312.0)			
STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	5.0 cfs	0 cfs	1315.1
10 yr	7.4 cfs	3.0 cfs	1315.8
100 yr	12 cfs	9.0 cfs	1316.2

**WEST BASIN**

ELEVATION	TOTAL STORAGE (cu ft)
1312	0.0
1313	1000
1314	2800
1315	5400
1316	9000
1317	13600

**WEST BASIN**

ELEVATION	TOTAL STORAGE (cu ft)
1312	0.0
1313	1000
1314	2800
1315	5400
1316	9000
1317	13600

ONSITE ONLY FLOWS ARE FOR COMPARISON BETWEEN EXISTING AND PROPOSED SITE ONLY. DESIGN PURPOSES SHALL USE THE TOTAL BASIN CHARACTERISTICS.

**EAST BASIN**  
 TOTAL FLOW - OFFSITE AND ONSITE RUNOFF  
 BASIN SIZE INCLUDES DORIS STREET  
 Outfall - 10' Weir @ 1316.0  
 Infiltration - 8.9 in/hr

EAST INFILTRATION BASIN (Bottom = 1311.0)			
STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	14 cfs	0.0 cfs	1313.8
10 yr	23 cfs	0.0 cfs	1314.4
100 yr	37 cfs	0.0 cfs	1315.8

**EAST BASIN**  
 FLOW - ONSITE RUNOFF ONLY  
 BASIN SIZE SMALLER ASSUMING DORIS STREET IS CONSTRUCTED  
 Outfall - 10' Weir @ 1316.0  
 Infiltration - 8.9 in/hr

EAST INFILTRATION BASIN (Bottom = 1311.0)			
STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	9.0 cfs	0 cfs	1314.0
10 yr	15 cfs	0.0 cfs	1315.1
100 yr	23 cfs	4.0 cfs	1316.3

**EAST BASIN**

ELEVATION	TOTAL STORAGE (cu ft)
1311	0.0
1312	6300
1313	15200
1314	26700
1315	41000
1316	58300
1317	77500

**EAST BASIN**

ELEVATION	TOTAL STORAGE (cu ft)
1311	0.0
1312	2600
1313	4400
1314	11500
1315	19000
1316	28000
1317	39000

**EAST BASIN**  
 TOTAL FLOW - OFFSITE AND ONSITE RUNOFF  
 BASIN SIZE SMALLER ASSUMING DORIS STREET IS CONSTRUCTED  
 Outfall - 10' Weir @ 1316.0  
 Infiltration - 8.9 in/hr

EAST INFILTRATION BASIN (Bottom = 1311.0)			
STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	14 cfs	0 cfs	1315.1
10 yr	23 cfs	4.6 cfs	1316.3
100 yr	37 cfs	24 cfs	1317.0

**EAST BASIN**

ELEVATION	TOTAL STORAGE (cu ft)
1311	0.0
1312	2600
1313	6400
1314	15000
1315	19000
1316	28000
1317	39000

**WEST BASIN**

EXISTING	DEVELOPED
Area = 1.6 acres	Area = 1.6 acres
C = 0.30	C = 0.81
Q <sub>2</sub> = 2.9 cfs	Q <sub>2</sub> = 3.7 cfs
Q <sub>5</sub> = 3.4 cfs	Q <sub>5</sub> = 4.5 cfs
Q <sub>10</sub> = 3.9 cfs	Q <sub>10</sub> = 5.1 cfs
Q <sub>100</sub> = 5.5 cfs	Q <sub>100</sub> = 7.2 cfs

**EAST BASIN**

EXISTING	DEVELOPED
Area = 3.0 acres	Area = 3.0 acres
C = 0.30	C = 0.81
Q <sub>2</sub> = 5.7 cfs	Q <sub>2</sub> = 7.0 cfs
Q <sub>5</sub> = 6.8 cfs	Q <sub>5</sub> = 8.3 cfs
Q <sub>10</sub> = 7.8 cfs	Q <sub>10</sub> = 9.6 cfs
Q <sub>100</sub> = 11 cfs	Q <sub>100</sub> = 13 cfs

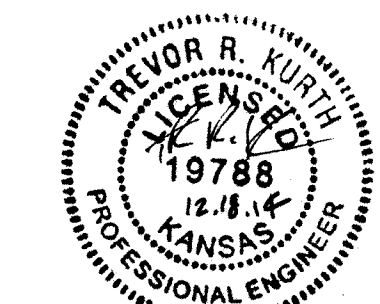


Table 4-13 Volumetric Runoff Coefficients by Land Use and Hydrologic Soil Group

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	50	71	80	84
Turf or Disturbed Soils	0.15	0.20	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<sub>v</sub>) (eq. 4-24\*)**

Basin #	Undist.	Dist.	Red. Imp.	New Imp.	Total Area	U	D	Redev. I	I	R <sub>v</sub>	WQ, ft <sup>3</sup> eq. 4-28*
Total JBAR Site	0	0	68,700	130,680	200,380	0.000	0.000	0.099	0.820	0.8196	12,415

\*Total JBAR site assumes a 65% impervious cover rate after final development.

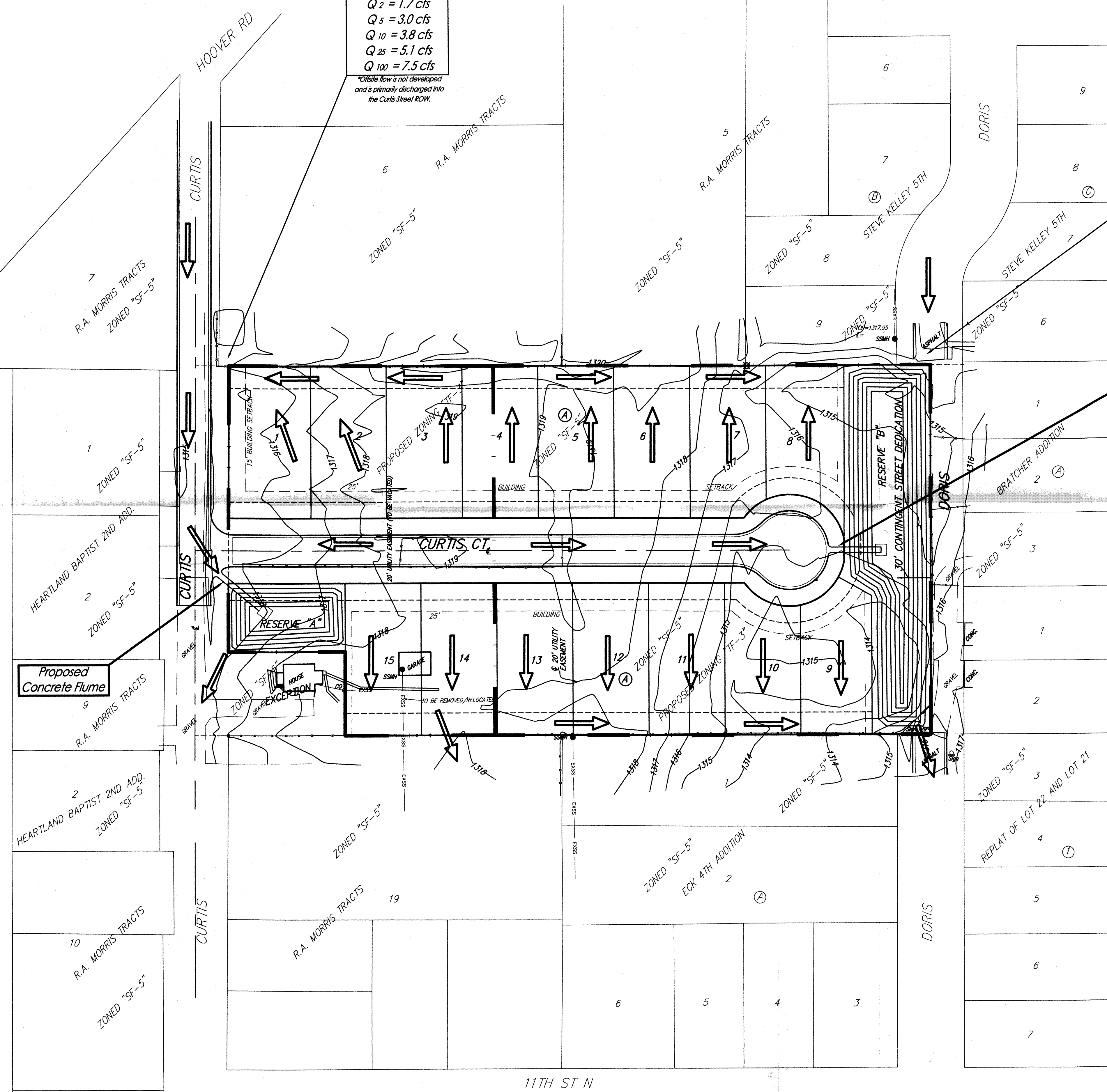
**Pond Volume Below Static Pool**

Basin	At Outfall Elev	Bottom Area	Depth	Volume
	Sq. Ft.	Acres	Feet	Acres-Ft.
East Basin	18900	0.4	5200	0.1
West Basin	5200	0.1	1400	0.0
<b>Totals</b>		<b>0.5</b>	<b>0.0</b>	<b>2.0</b>

**Pond Volume > WQv**

Pond	WQv	Check
2.0	0.3	Yes

Basin volumes are the volumes of storage under the outfall elevation. This volume will be infiltrated through bottom and sides of the basin. The basins are both sized to infiltrate the water quality storm, channel protection volume, and the lower peak.



## DRAINAGE PLAN

### JBAR ADDITION

9 December 2014  
**Baughman Company, P.A.**  
 315 Ellis St. Wichita, KS 67211 P 316-262-1491 F 316-262-0149  
 ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE  
 E:\Projects\JBAR Addition\3000\Proc\Water Resources\JBAR Addition\_P.dwg