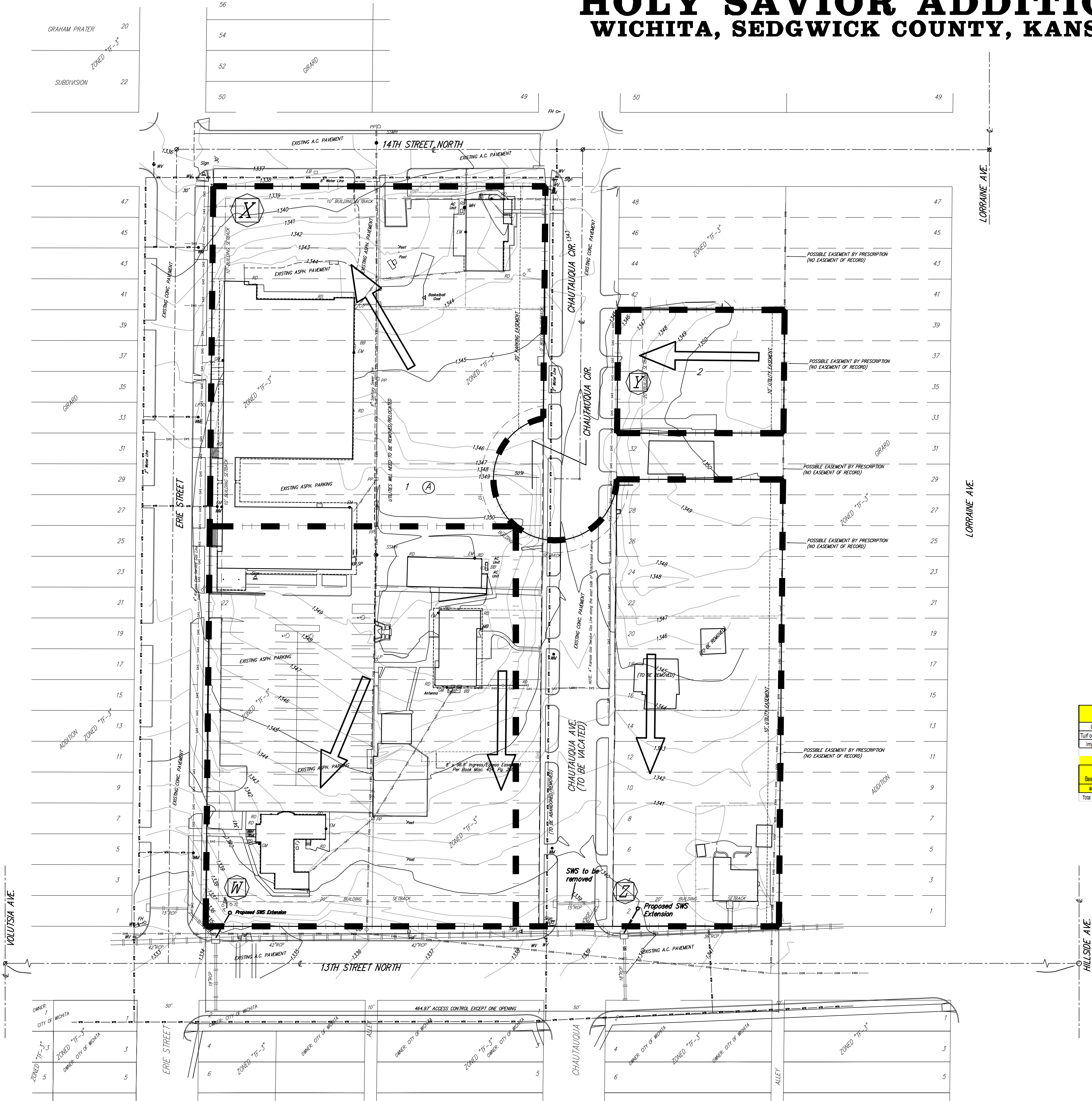


# DRAINAGE PLAN

## HOLY SAVIOR ADDITION

### WICHITA, SEDGWICK COUNTY, KANSAS



**SW**

SOUTHWEST DISCHARGE POINT	
<b>EXISTING</b>	<b>DEVELOPED</b>
Area = 1.9 acres	Area = 1.9 acres
CN = 93	CN = 98
Q <sub>2</sub> = 6.3 cfs	Q <sub>2</sub> = 7.0 cfs
Q <sub>5</sub> = 8.4 cfs	Q <sub>5</sub> = 9.0 cfs
Q <sub>10</sub> = 9.9 cfs	Q <sub>10</sub> = 10 cfs
Q <sub>100</sub> = 15 cfs	Q <sub>100</sub> = 16 cfs

**WN**

NORTHWEST DISCHARGE POINT	
<b>EXISTING</b>	<b>DEVELOPED</b>
Area = 1.6 acres	Area = 1.5 acres
CN = 93	CN = 98
Q <sub>2</sub> = 5.3 cfs	Q <sub>2</sub> = 5.5 cfs
Q <sub>5</sub> = 7.1 cfs	Q <sub>5</sub> = 7.1 cfs
Q <sub>10</sub> = 8.3 cfs	Q <sub>10</sub> = 8.2 cfs
Q <sub>100</sub> = 13 cfs	Q <sub>100</sub> = 12 cfs

**Y**

LOT 2 DISCHARGE POINT	
<b>EXISTING</b>	<b>DEVELOPED</b>
Area = 0.3 acres	Area = 0.3 acres
CN = 88	CN = 88
Q <sub>2</sub> = 1.0 cfs	Q <sub>2</sub> = 1.0 cfs
Q <sub>5</sub> = 1.2 cfs	Q <sub>5</sub> = 1.2 cfs
Q <sub>10</sub> = 1.4 cfs	Q <sub>10</sub> = 1.4 cfs
Q <sub>100</sub> = 2.3 cfs	Q <sub>100</sub> = 2.3 cfs

**Z**

SOUTH DISCHARGE POINT	
<b>EXISTING</b>	<b>DEVELOPED</b>
Area = 1.7 acres	Area = 1.7 acres
CN = 93	CN = 93
Q <sub>2</sub> = 5.6 cfs	Q <sub>2</sub> = 5.6 cfs
Q <sub>5</sub> = 7.5 cfs	Q <sub>5</sub> = 7.5 cfs
Q <sub>10</sub> = 8.8 cfs	Q <sub>10</sub> = 8.8 cfs
Q <sub>100</sub> = 14 cfs	Q <sub>100</sub> = 14 cfs

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	83	84	88
Impervious Cover	0.95	0.95	0.95	0.95	Impervious Cover	98	98	98	98

Weighted Volumetric Runoff Coeff. (R <sub>w</sub> ) [eq. 4.24]											
Basin #	Under	Dist	Dist	Dist	Dist	Top	U	D	Redev	WQ	
	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	%	%	%	ft <sup>3</sup>	
Total Site	0	83,200	115,000	41,500	235,500	0.000	0.075	0.137	0.164	0.371	9,811

**Water Quality Peak Flow**

Basin # 4

Eq. 4-15<sup>a</sup>

Q<sub>p</sub> = q<sub>p</sub> \* A \* C<sub>u</sub> \* F<sub>p</sub>

C<sub>u</sub> = 93 Table 4-9

q<sub>p</sub> = 0.19

T<sub>c</sub> = 15 min

q<sub>p</sub> = 650 Figure 4-6

A = 239,500 ft<sup>2</sup>

C<sub>u</sub> = 5.50 ac-ft

F<sub>p</sub> = 0.00650 ac-ft<sup>2</sup>

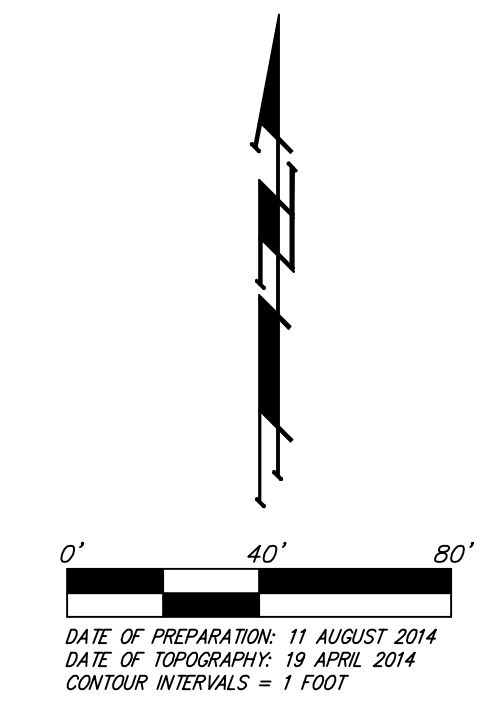
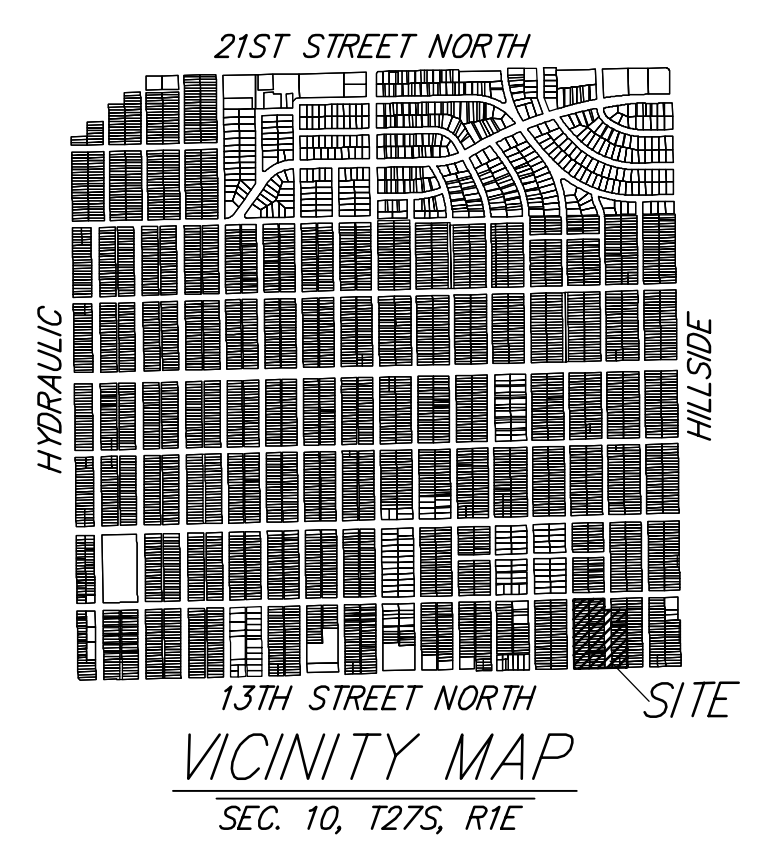
Q<sub>p</sub> = 0.371 ft<sup>3</sup>/s [eq. 4.24]

P = 1.2 (Sedg. Slab)

Q<sub>u</sub> = 0.4525127 [eq. 4.26]

F<sub>p</sub> = 1.001 Table 4-10

Q<sub>p</sub> = 3.63 cfs



OWNER: CATHOLIC DIOCESE OF WICHITA  
424 N. BROADWAY  
WICHITA, KS 67202  
PH: (316) 269-3800

LEGAL DESCRIPTION:  
LOTS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 EXCEPT THE NORTH HALF THEREOF, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 45 AND 47 ON CHAUTAUQUA AVENUE TOGETHER WITH LOTS 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46 AND 48 ON ERIE AVENUE TOGETHER WITH THAT PORTION OF SAID CHAUTAUQUA AVENUE LYING NORTHERLY OF AND ABUTTING THE FOLLOWING DESCRIBED LINE: BEGINNING AT THE SOUTHWEST CORNER OF LOT 1 ON SAID CHAUTAUQUA AVENUE; THENCE EASTERS 17.6500 FEET TO THE SOUTHWEST CORNER OF LOT 2 ON SAID CHAUTAUQUA AVENUE; AND FOR A POINT OF TERMINATION, AND LYING SOUTHERLY OF AND ABUTTING THE FOLLOWING DESCRIBED LINE: BEGINNING AT THE NORTHWEST CORNER OF THE SOUTH HALF OF LOT 10 ON SAID CHAUTAUQUA AVENUE; THENCE SOUTHERLY AND SOUTHWESTERLY ALONG A TANGENT CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 105°17'17" AND HAVING A RADIUS OF 5620 FEET, AN ARC DISTANCE OF 88.61 FEET TO A POINT ON THE WEST LINE OF SAID CHAUTAUQUA AVENUE; SAID POINT BEING 114.5 FEET NORTH OF THE SOUTHWEST CORNER OF LOT 1 ON SAID CHAUTAUQUA AVENUE; AND FOR A POINT OF TERMINATION, ALL AS PLATTED AND DESIGNATED IN GRANT ADDITION TO WICHITA, KANSAS, SEDGWICK COUNTY, KANSAS.

BENCHMARK:  
LOCATION AND ELEVATIONS ARE SHOWN ON THE FACE OF THE PLAT.

• = #4 REBAR W/ "DIAUGHMAN" CAP (SET)  
+ = CROSS (FOUND)  
⊕ = 3/4" IRON IN TRIMBLE (FOUND)  
⊙ = 600 NAIL IN CONCRETE (FOUND)  
⊖ = 3/4" IRON W/ "DIAUGHMAN" CAP (FOUND)  
○ = 1/2" IRON IN TRIMBLE (FOUND)

(M) = MEASURED  
(D) = DESCRIBED  
(P) = PLATTED  
(C) = CALCULATED  
(CP) = CALCULATED PER PLATTED INFO.

CD = CONDUIT  
ATT = ATT Field = A.T.E.: Telephone Pedestal  
BB = Breaker Box  
EB = Electric Box  
EM = Electric Meter  
FH = Fire Hydrant  
GM = Gas Meter  
G = Gas Anchor  
LP = Light Pole  
MB = Mail Box  
MH = Manhole  
P = Pole  
PP = Power Pole  
RD = Roof Drain  
Sgn = Sign  
Sgn = Sign Pole  
SP = Stand Pipe  
SSM = Sanitary Sewer Manhole  
TM = Traffic Manhole  
TP = Telephone Pole  
M = Meter  
W = Water Meter  
WV = Water Valve  
TL = Traffic Light

WATER LINE  
GAS LINE  
CABLE, TV  
FORCE  
SANITARY SEWER

NOTES: Existing buildings on site to be removed. New church and facilities proposed on the overall site. At this time, a preliminary site plan has been provided to us. The drainage basins, as shown, were based on said preliminary site plan (attached).

Specific water quality and conveyance structures will be addressed at time of Site Plan. We expect the Water Quality structures to be in the form of Hydroguard units located along the south side of the property and tie directly into the City SWS in 13th Street. Since this overall site eventually drains to the SWS system to the west, the southern WQ units will be sized to treat the entire site even though the north basins discharge freely to the north 14th Street ROW.

Since this is a redevelopment site and is expected to add less than 1 acre of additional impervious area, there is no proposed detention or downstream channel protection on the subject property.

**DRAINAGE PLAN**  
**HOLY SAVIOR ADDITION**  
15 SEPT 2014

**Baughman Company, P.A.**  
315 Ellis St. Wichita, KS 67211 P 316.262.1271 F 316.262.0149  
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

E:\Project\Holy Savior Addition\_13081914\Water Resources\Holy Savior\_P\_Drain Plan.dwg