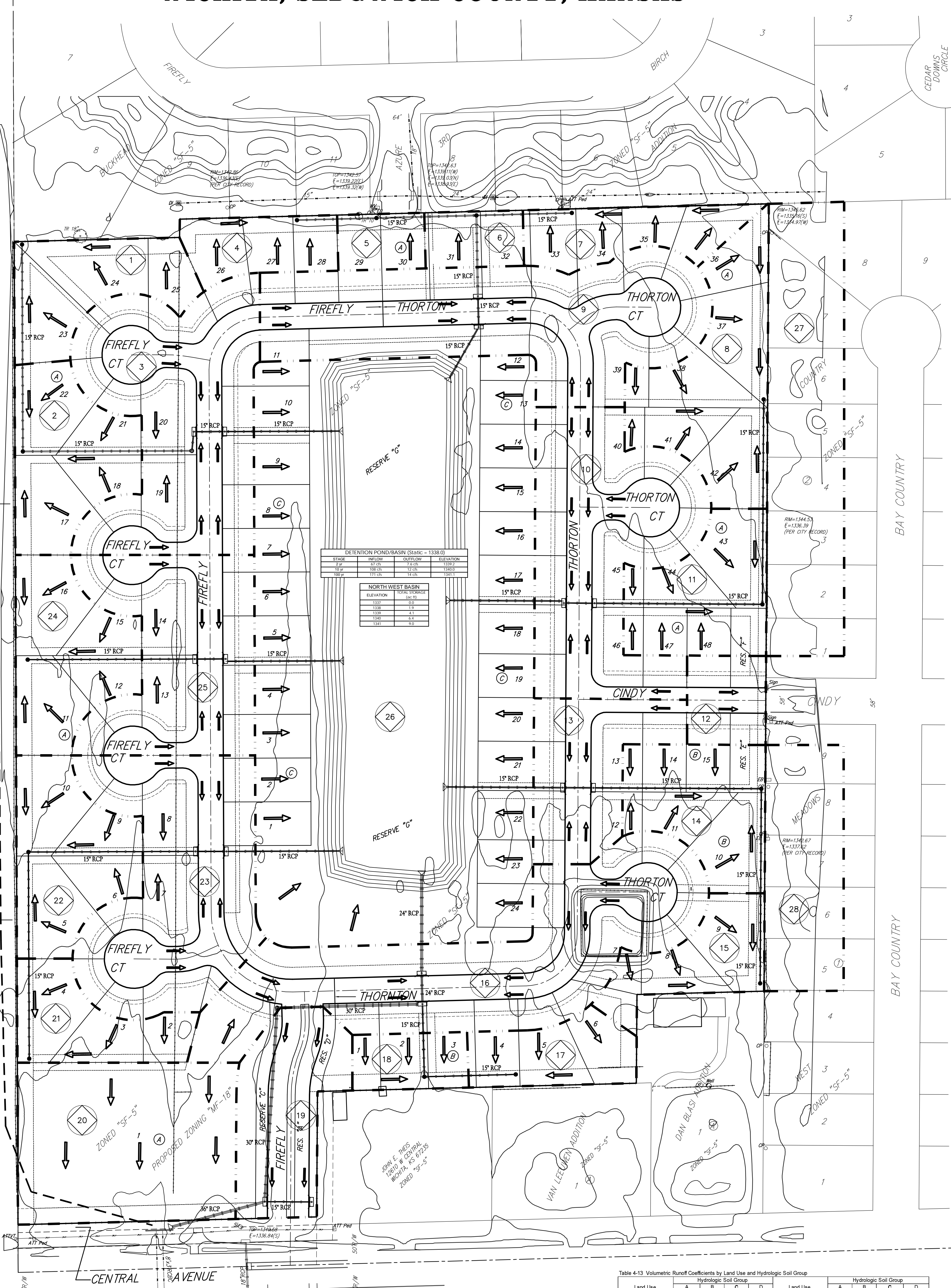


DRAINAGE PLAN CASTLEGATE ADDITION WICHITA, SEDGWICK COUNTY, KANSAS

Offsite from North
34 RCBC
Area = 31.1 acres
CN = 80
Tc = 43 min
Q₂ = 36 cfs
Q₅ = 54 cfs
Q₁₀ = 68 cfs
Q₂₅ = 86 cfs
Q₁₀₀ = 120 cfs

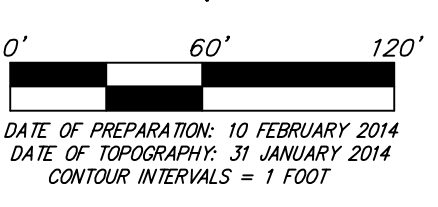
Offsite runoff to be conveyed to the south via ditch section (as shown) on adjacent property.

LESLIE & WENDISS, ALBERT
1460 W CENTRAL
WICHITA, KS 67205



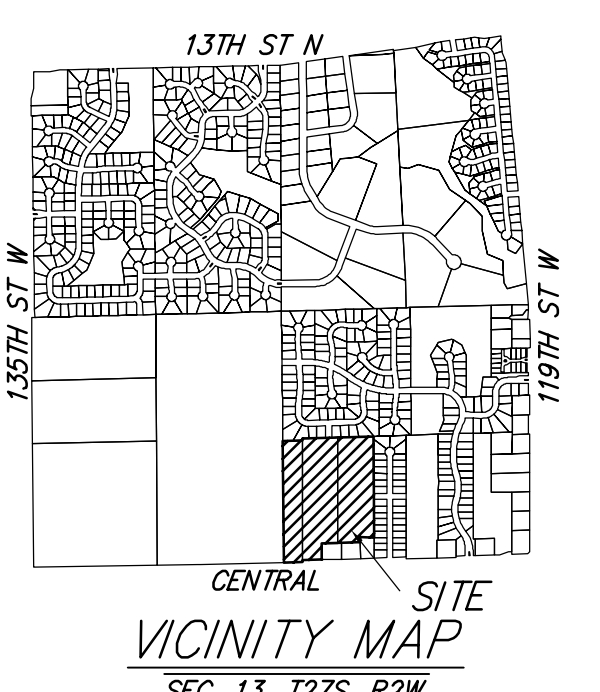
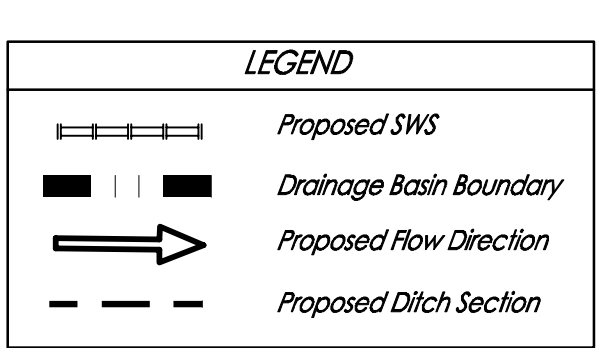
STAGE	INFLOW	OUTFLOW	ELEVATION
2'P	108 cfs	12 cfs	1340.0
10'P	171 cfs	14 cfs	1341.0

ELEVATION	(ft)
1337	0.0
1338	1.5
1339	4.1
1340	8.4
1341	9.0



DATE OF PREPARATION: 10 FEBRUARY 2014
DATE OF TOPOGRAPHY: 31 JANUARY 2014
CONTOUR INTERVALS = 1 FOOT

- CP ○ = Cable TV Pedestal
- DI ⊕ = Drop Inlet
- EB □ = Electric Box
- LP ○ = Light Pole
- Sign □ = Sign
- SPC = Tornado Siren
- SSM = Stormwater Manhole
- ATT V = ATT Vault
- ATT Ped □ = ATT Pedestal
- SSM = Stormwater Sewer Manhole
- TR ○ = Tree
- Well ○ = Cased Well
- WV = Water Valve



Developed Intensity	2yr	10yr	100yr
Rational C	3.8	5.19	7.36
	0.55	0.64	0.73

Basin ID	Area	Developed Flowrates		
		2-yr cfs	10-yr cfs	100-yr cfs
1	0.5	1.0	1.7	2.7
2	0.7	1.4	2.2	3.5
3	1.5	3.1	5.0	8.1
4	0.3	0.6	1.0	1.6
5	0.1	0.3	0.4	0.6
6	0.2	0.4	0.7	1.1
7	0.4	0.8	1.3	2.1
8	0.9	1.9	3.0	4.8
9	1.7	3.6	5.8	9.1
10	1.4	2.9	4.7	7.5
11	0.6	1.3	2.0	3.2
12	0.3	0.6	0.8	1.3
13	0.6	1.3	2.1	3.3
14	0.6	1.3	2.0	3.2
15	0.4	0.8	1.3	2.1
16	1.8	3.8	6.0	10
17	0.4	0.8	1.2	2.0
18	0.2	0.5	0.8	1.2
19	0.7	1.4	2.2	3.5
20	1.3	2.7	4.3	7.0
21	0.4	0.9	1.4	2.3
22	0.7	1.4	2.2	3.6
23	1.4	2.9	4.7	7.5
24	0.7	1.4	2.2	3.5
25	1.1	2.3	3.7	5.9
26	6.0	12.5	19.9	32.2
27*	1.2	2.5	4.0	6.4
28*	0.8	1.7	2.7	4.3
TOTAL	26.8	55.9	88.9	143.7

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	0.55	0.71	0.80	0.84
Turf or Disturbed Soils	0.15	0.20	0.22	0.26	Turf or Disturbed Soils	0.71	0.80	0.84	0.88
Impervious Cover	0.95	0.95	0.95	0.95	Impervious Cover	0.98	0.98	0.98	0.98

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

Basin #	Undist.	Dist.	Red. Imp.	New Imp.	Total Area	U	D	Redew. I	I	R _v	WQ, ft ³
Total Site	0	468,270	0	48,270	936,540	0.000	0.125	0.000	0.475	0.6000	56,192
Basin CN	0	42	0	49	91						

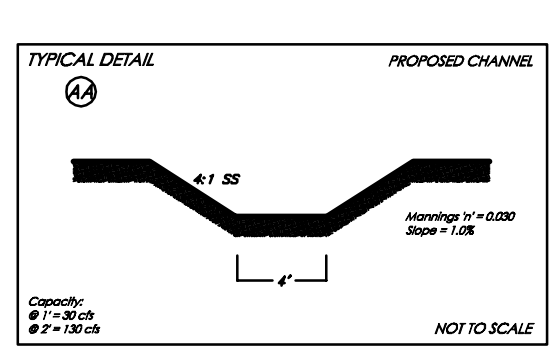
Pond Volume Below Static Pool

Basin	Sq. Ft.	Acres	Pond Bottom Area	Depth	Volume
			Sq. Ft.	Feet	Acres-Ft.
Pond	80000	1.8	58000	1.3	10
Totals:		1.8		1.3	15.8

Pond Volume > WQ₂

Pond	WQ ₂	Check
15.8	1.3	Yes

The proposed pond is approximately 3.5 acres in surface area and is not included in the total basin area. Basins 19 & 20 will flow from the site untreated. To make up for this, the onsite detention pond will accept and treat the same area from Basins 27 & 28 from developed offsite to offset the aforementioned untreated flow.



DRAINAGE PLAN CASTLEGATE ADDITION

REV 19 MAR 2014
10 MAR 2014

Baughman Company, P.A.
315 Ellis St. Wichita, KS 67211 P 316.262.7271 F 316.262.0149
Baughman ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

E:\PROJECTS\CASTLEGATE ADDITION_131414\DWG\WATER RESOURCES\CASTLEGATE_P_DRAIN PLAN.DWG