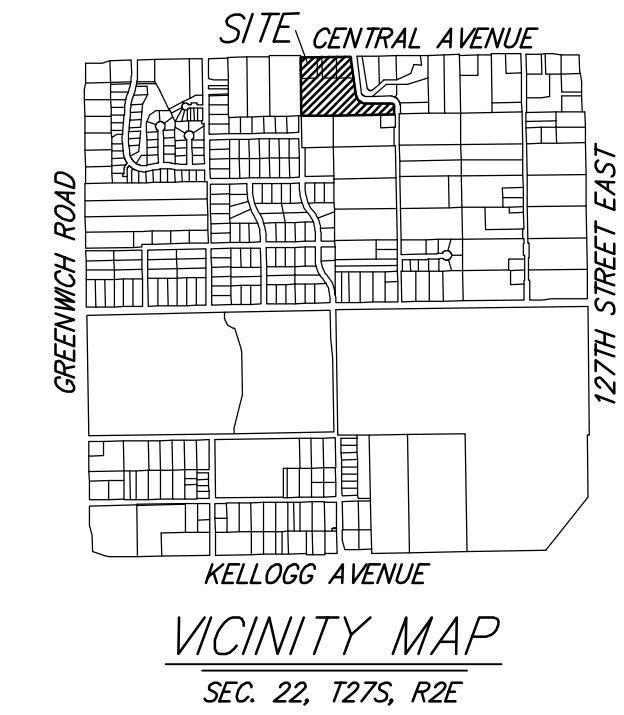
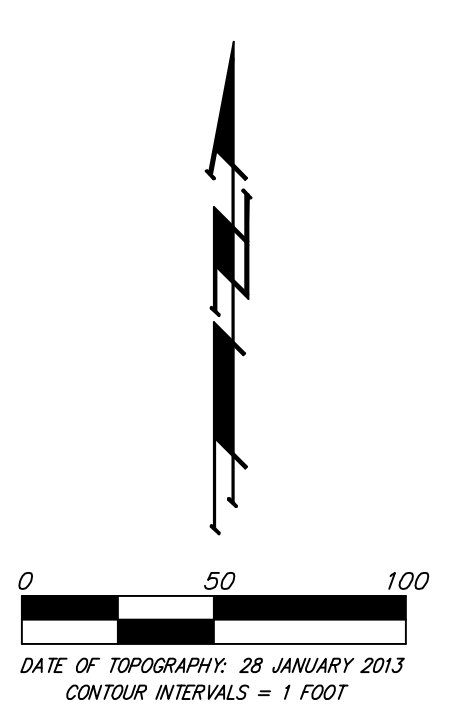
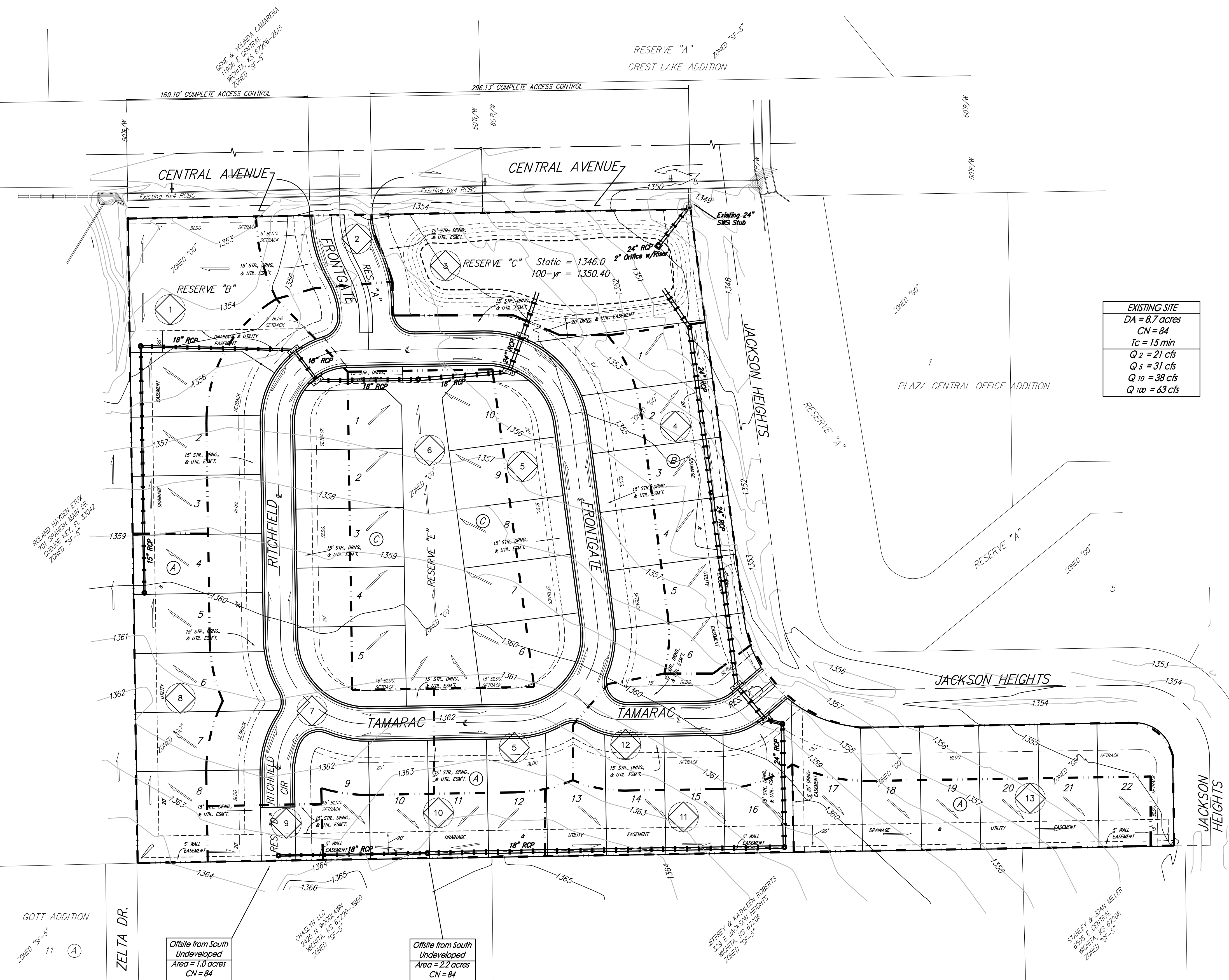


DRAINAGE PLAN FRONTGATE ADDITION WICHITA, SEDGWICK COUNTY, KANSAS



EXISTING SITE
 DA = 8.7 acres
 CN = 84
 Tc = 15 min
 Q 2 = 21 cfs
 Q 5 = 31 cfs
 Q 10 = 38 cfs
 Q 100 = 63 cfs

PROPOSED POND (Bottom = 1346.0)

STAGE	INFLOW	OUTFLOW	ELEVATION
2 yr	28 cfs	14 cfs	1348.7
10 yr	44 cfs	38 cfs	1349.1
100 yr	69 cfs	38 cfs	1350.4

NORTH WEST BASIN

ELEVATION	AREA (sq ft)
1346	12000
1347	14000
1348	16000
1349	18000
1350	21800

The pond outfall will ultimately consist of a 24" RCP at flowline elevation approximately 1343.0 located at the bottom of the riser structure. The RCP outfall will directly connect to the existing 24" SWS stub from the Central Avenue box culvert. Channel protection will be provided via a 2" orifice at static elevation (1346.0) with a larger storm overflow via a box structure (riser) at elevation 1348.2.

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	.55	.71	.80	.84
Turf or Disturbed Soil	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_w) (eq. 4-24')

Basin	Undist.	Dist.	Red. Imp.	New Imp.	Total	U	D	Revel. I	J	R _w	WQ, R'
Total Site	0	134,000	0	245,000	379,000	0.000	0.008	0.000	0.614	0.7025	26,625
CN		31	0	63	94						

Pond Volume Below Static Pool

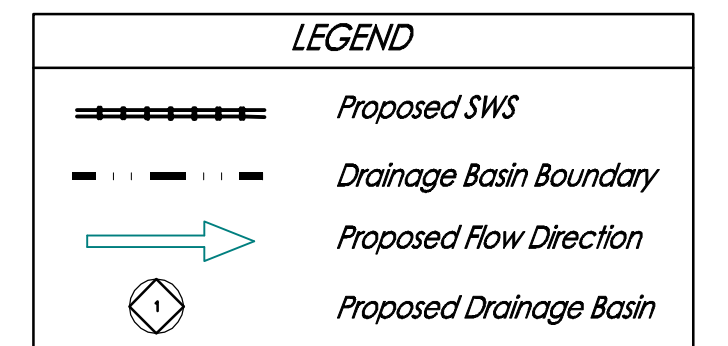
Basin	Static		Pond Bottom Area		Depth Feet	Volume Acre-Ft.
	Sq. Ft.	Acres	Sq. Ft.	Acres		
Pond	12000	0.3	2300	0.1	7	1.1
Total:						

Pond Volume > WQv

Pond	WQv	Check
1.1	0.6	Yes

Developed Intensity Rational C	2yr	10yr	100yr
	3.8	5.19	7.36

Basin ID	Area acres	Developed Flowrates		
		2-yr cfs	10-yr cfs	100-yr cfs
1	0.62	1.5	2.3	3.7
2	0.17	0.4	0.6	1.0
3	0.70	1.6	2.6	4.2
4	0.53	1.2	2.0	3.2
5	1.50	3.5	5.6	9.1
6	1.00	2.4	3.7	6.0
7	1.48	3.5	5.5	8.9
8	0.49	1.2	1.8	3.0
9	0.13	0.3	0.5	0.8
10	0.29	0.7	1.1	1.8
11	0.33	0.8	1.2	2.0
12	0.91	2.1	3.4	5.5
13	0.50	1.2	1.9	3.0
TOTAL	8.7	20.4	32.3	52.2



Offsite from South Undeveloped
 Area = 1.0 acres
 CN = 84
 Tc = 15 min
 Q 2 = 2.5 cfs
 Q 5 = 3.5 cfs
 Q 10 = 4.3 cfs
 Q 25 = 5.3 cfs
 Q 100 = 7.2 cfs

Offsite from South Undeveloped
 Area = 2.2 acres
 CN = 84
 Tc = 15 min
 Q 2 = 3.4 cfs
 Q 5 = 7.8 cfs
 Q 10 = 9.5 cfs
 Q 25 = 11 cfs
 Q 100 = 16 cfs

NOTES: There is no FEMA SFHA located on this property as of this date per FEMA FIRM Panel 379 of 700, for Wichita, Sedgwick County, Kansas; effective February 2, 2007.

The internal Storm Water Sewer will drain the developed lots/streets into the proposed pond system. SWS has been preliminarily sized for this plan and will be finalized upon SWD and street engineering plans submittal.

DRAINAGE PLAN FRONTGATE ADDITION

REVISED 11 APR 2013
13 FEB 2013

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ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

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