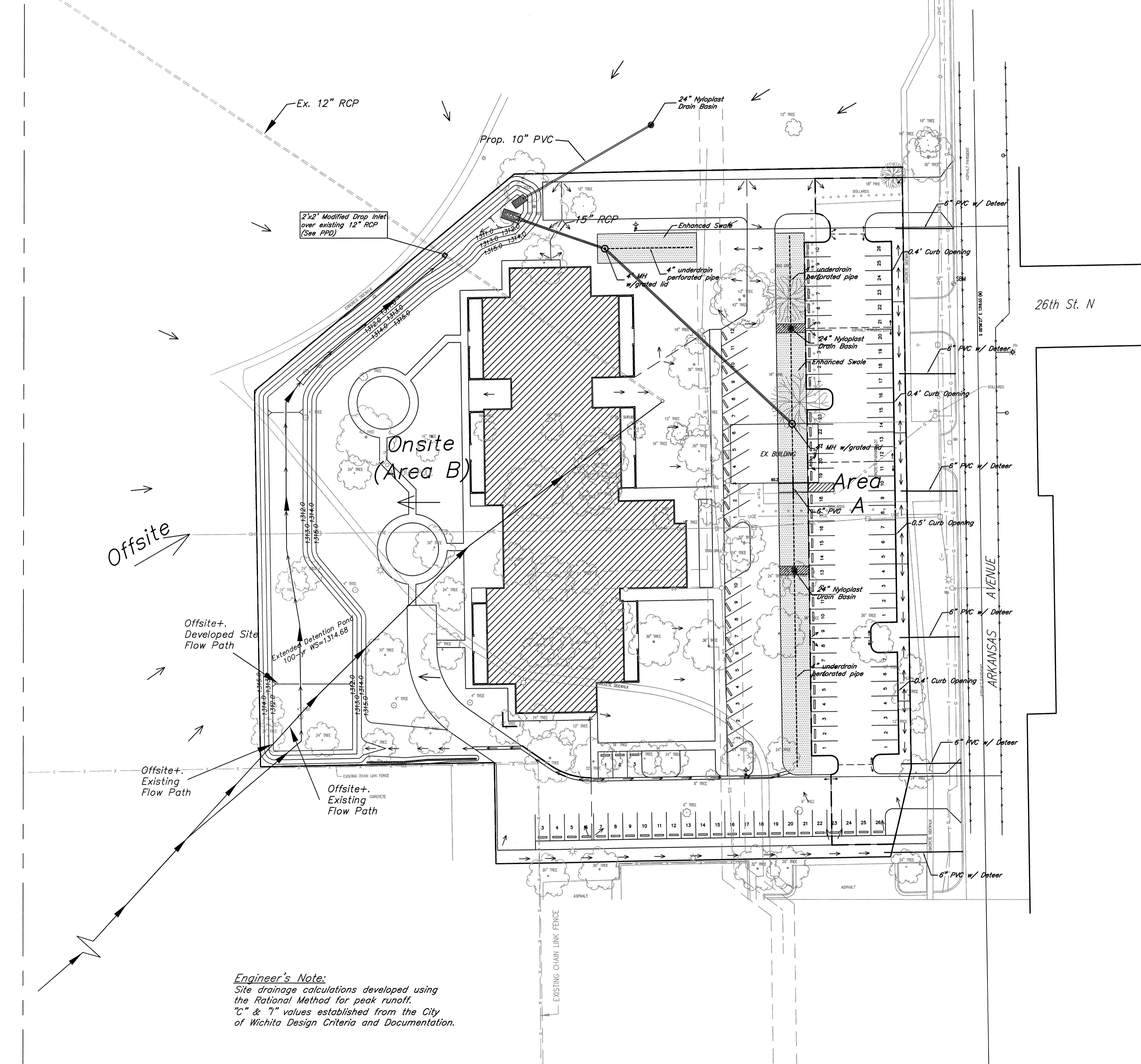


Drainage Plan for Existing Vs Developed Site Detention Analysis (w/offsite)



Engineer's Note:
Site drainage calculations developed using the Rational Method for peak runoff. "C" & "I" values established from the City of Wichita Design Criteria and Documentation.

Existing/Undeveloped Condition:
Total Site Area= 8.79 Acres
Soil Group B with average slope less than 1%

Existing Drainage Calculations													
Area #	Acres	Tc min	C2	I2	C5	I5	C10	I10	C25	I25	C100	I100	Remark
Offsite+On site (Existing)	8.79	30	0.16	2.67	0.18	3.24	0.24	3.76	0.32	4.39	0.37	5.40	Ex. onsite+offsite draining into ex. 12" RCP trough 2'x2' inlet

Area #	Existing Q, cfs					Qout, cfs					Remark
	Q2	Q5	Q10	Q25	Q100	Q2	Q5	Q10	Q25	Q100	
Offsite+On site(Existing)	3.76	5.13	7.93	12.35	17.56	2.57	2.63	2.72	2.82	2.91	Ex. onsite+offsite draining into ex. 12" RCP trough 2'x2' inlet

Developed Condition:
Total Site Area= 4.25 Acres
Land Use: New School

Developed Drainage Calculations													
Area #	Acres	Tc min	C2	I2	C5	I5	C10	I10	C25	I25	C100	I100	Remark
Offsite+Dev. Onsite (Area B)	8.48	28	0.31	2.78	0.33	3.37	0.38	3.90	0.45	4.55	0.49	5.59	Developed Onsite+Offsite draining into prop. DED pond

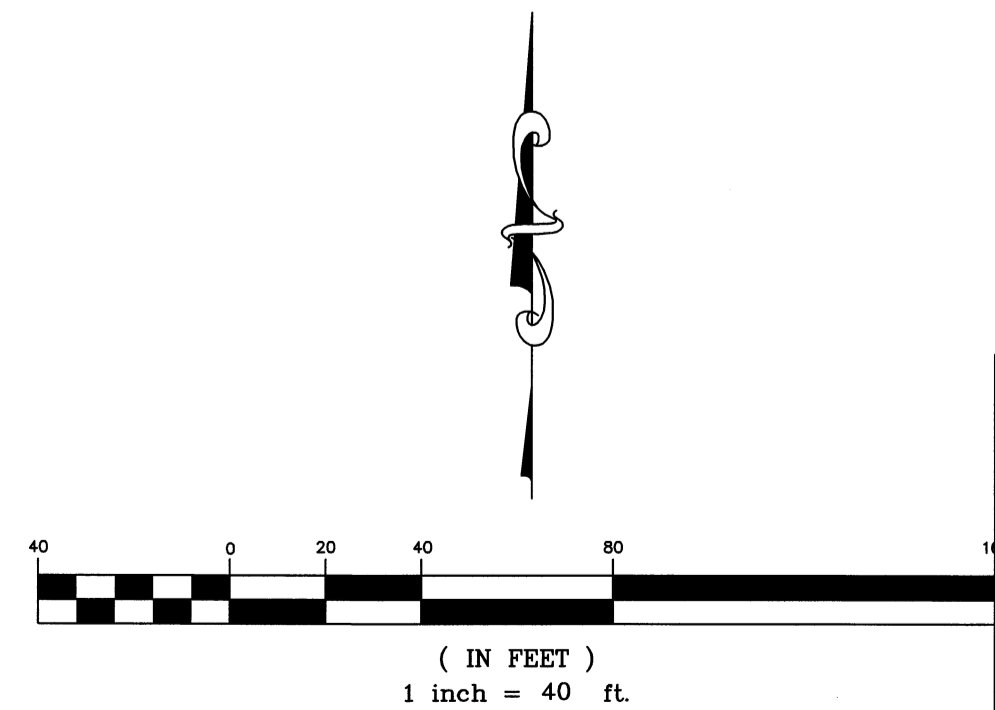
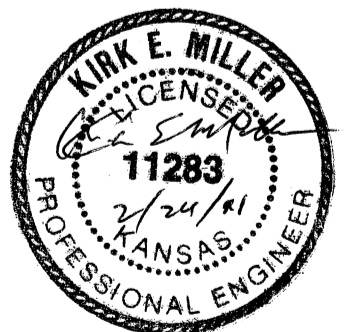
Area #	Developed Q, cfs					Qout, cfs					Remark
	Q2	Q5	Q10	Q25	Q100	Q2	Q5	Q10	Q25	Q100	
Offsite+Dev. Onsite (Area B)	7.31	9.43	12.57	17.36	23.23	2.09	2.29	2.53	2.86	3.22	Outflow from dev. onsite+offsite draining into ex. 12" RCP

Weighted C Values for Offsite+Developed Onsite

C-value	Area	2-yr	5-yr	10-yr	50-yr	100-yr
Building	0.76	0.80	0.85	0.90	0.92	0.93
Paved Area	0.9	0.87	0.87	0.88	0.88	0.89
Grass	6.14	0.16	0.18	0.24	0.32	0.37
Playground	0.7	0.33	0.35	0.42	0.50	0.55
Weighted C		0.31	0.33	0.38	0.45	0.49

TC calculation:
Offsite+ Onsite (Existing):
Total Flow Length= 570ft
Sheet Flow 150ft (Tc=23.4 min)
Shallow Conc Flow 420ft (Tc=7.0 min)
Total Time of Conc = 30.4min=30 min
Offsite+ Developed Condition:
Total Flow Length=450 ft
Sheet flow 150ft (Tc=23.4 min)
Shallow Conc Flow 300ft (Tc=4.7 min)
Total Time of Conc=28.1min=28 min

AS BUILTS
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**TOP - North Central
Drainage plan
Wichita, Kansas**

PROJECT NUMBER				
kemiller engineering 516 S. Market, Wichita, KS 67202 (316)264-0242	KEM NO. 10147	FILE	DATE 12/2010	SHEET
	DESIGN KM	DRAWN GP	REVISED 01/04/2011	6.2