PROJECT:	PAUL REES OFFICE BUILDING

STORMWATER RUN-OFF CALCULATIONS

Formulas used:

[1] RATIONAL METHOD: Q=Aci

where:
- Q= Peak discharge of watershed in cubic feet per second (cfs) due to maximum storm assumed.
- A= Area of watershed in acres.
- c= Coefficient of run-off [2].
- i= Intensity of rainfall in inches per hour based on concentration time. [3]

[4] TC= $\frac{\left(L^{0.8}\left(\frac{1000}{c}-9\right)^{0.7}\right)}{(1140(s^{0.5}))}$

where:
- TC= Time of concentration= time required for rain falling at most remote point to reach discharge point.
- c= Site run-off coefficient based on conditions shown.
- s= Percent slope of overland flow.

PRIOR DEVELOPMENT
25 Year Frequency

Q_1 = Aci

Watertight Surfaces		0	sqft =	0.000	Acres
c(1) =	0.9				
Gravel Surface		0	sqft =	0.000	Acres
c(2) =	0.25				
Green Space		10808	sqft =	0.248	Acres
c(3) =	0.15				
Summary		10808	sqft =	0.248	Acres
c =	0.15				

Duration (D) = Time of concentration (TC)

where	L =	140	run-off length ft	Elev diff = 1.4
	c =	0.15	run-off coef	
	S =	1.0000	percent slope	
therefore	TC = D =	21.69	minutes	
Expected rainfall intensity	i =	3.64	in/hr	

Q_1 = 0.135 cfs | 10% reduction 0.014 cfs

POST DEVELOPMENT
25 Year Frequency

Q_2 = Aci

Watertight Surfaces		6028	sqft =	0.138	Acres
c(1) =	0.9				
Gravel Surface		0	sqft =	0.000	Acres
c(2) =	0.25				
Green Space		4780	sqft =	0.110	Acres
c(3) =	0.15				
Summary		10808	sqft =	0.248	Acres
c =	0.57				

Duration (D) = Time of concentration (TC)

where	L =	122	run-off length ft	Elev diff = 3.1