

**Project Narrative:**  
 The site is located on the southwest corner of Armstrong St. and W 54th St N. The Total drainage area is 2.87 acres. The proposed development includes the construction of a proposed 4800 sq ft building. The majority of the drainage area is undeveloped, and the addition of the building will be the only disturbed area. The existing drainage pattern indicates that the area drains into a pond located in the northwest corner of the property with no outlet structures.

*Water Quality and TSS Removal Calculation*

Water Quality Volume (WQv) Calculation				
Calculation for water quality volume (WQv=P*Rv*A/12)		Soil Group 'B'		
85th percentile storm event (1.2 inches), P =	1.20	inches	Calculation of Rv	
Total area, A =	2.87	acres	Coeff.	Area
Rainfall Coeff, Rv, =	0.097	cf	Coeff for undisturbed area, Rv <sub>U</sub> =	0.03    2.66
Required Vol. for Water Quality =	0.028	ac-ft	Coeff for turf cover, disturbed, Rv <sub>T</sub> =	0.20    0.00
Corresponding Water Quality Peak Flow =	0.27	cfs	Coeff for impervious area, Rv <sub>F</sub> =	0.95    0.21
			Weighted, Rv =	0.097

Water Quality Peak Flow Calculation		
Area=	2.87	acres
WQv=	0.117	inches
Pond and Swamp Factor, Fp=	0.700	
Calculated CN=	78.0	
S=	2.823	inches
la=	0.565	inches
la/P=	0.470	
qu	740.0	cfs/sq.mi/in
<b>Water quality peak flow</b>	<b>0.27</b>	<b>cfs</b>

*Runoff Calculations (2-, 5-, 10-, 25-, and 100-yr)*

**EXISTING CONDITION:**  
 Total Area 1 = 2.87 acres  
 Soil Group =B (as per COW HSG map)  
 CN=71

EXISTING SITE									
DRAINAGE AREA	ACRES	Tc min	CN	Q2	Q5	Q10	Q25	Q100	REMARKS
On-site (1)	2.87	28	71	2.54	4.38	5.78	7.68	11.44	Draining to Existing Pond

**DEVELOPED CONDITION:**  
 Total Area 1 = 2.87 acres  
 Soil Group =B (as per COW HSG map)  
 CN=73

DEVELOPED SITE									
DRAINAGE AREA	ACRES	Tc min	CN	Q2	Q5	Q10	Q25	Q100	REMARKS
On-site (1)	2.87	28	73	2.88	4.80	6.25	8.21	12.03	Draining to Existing Pond

**Notes:**

- Existing and developed flows are calculated using the SCS hydrograph method. "CN" & "Runoff Depth" values are established from "City of Wichita Stormwater Design Manual." Time of concentration (Tc) are calculated using TR-55 method.
- The developed peak flows are calculated for the Type II rainfall distribution for 24 hours. The peak flows are routed to the Drainage Easement along the south line of the property.
- The site is not in designated 100-yr floodplain (FIRM 20173C0211E, dated February 2, 2007).



**Benchmark:**

Site Bench Mark: Mag Nail  
 84 ft. S &  
 13 ft. E of NE Corner Lot 14  
 Interurban Place Addition.  
 N=1721160.86 E=1644707.55  
 Elev. = 1330.04 (NAVD88)

Cao Dai Temple <b>DRAINAGE PLAN</b> 5503 N. Armstrong			
PROJECT NUMBER			
<b>KEMILLER</b> ENGINEERING PA 117 E. Lewis, Wichita, KS 67202 (316)264-0242	KEM. NO. 14078	FILE	DATE 06/2014
	DESIGN KM	DRAWN ME	REVISED
			<b>1.0</b>

