TABLE I – DISCHARGE POINT INFORMATION & DISCHARGE QUANTITY

Discharge Point	LOCATION	Latitude	Longitude	Class	C (weighted)	I (in/hr)	A (Acres)	Q (cfs)
1	Kawa Stream	21^24’21”	157^47’27”	2	0.95	4.095	2.456	9.55
2	Kawa Stream	21^24’21”	157^47’27”	2	0.95	4.095	0.045	0.18
3	Kawa Stream	21^24’21” to 21^24’28”	157^47’27” to 157^47’12”	2	0.95	4.095	0.725	2.82
4	Kawa Stream	21^24’21” to 21^24’21”	157^47’27” to 157^47’25”	2	0.95	4.095	0.196	0.76
5	Kawa Stream	21^24’28”	157^47’17”	2	0.95	4.095	0.417	1.62
6	Kawa Stream	21^24’28”	157^47’12”	2	0.95	4.095	0.113	0.44
7	Kawa Stream	21^24’28”	157^47’12”	2	0.95	4.095	0.392	1.52
8	Kawa Stream	21^24’32”	157^47’03”	2	0.30	4.095	0.018	0.02
9	Kawa Stream	21^24’32” to 21^24’38”	157^47’03” to 157^46’52”	2	0.95	4.095	0.363	1.41
10	Kaneohe Bay	21^24’40” to 21^24’42”	157^46’50” to 157^46’48”	AA	0.95	4.095	0.186	0.72
11	Kaneohe Bay	21^24’42”	157^46’47”	AA	0.94	4.095	0.829	3.19
12	Kaneohe Bay (Assumed Discharge Point)	21^24’42”	157^46’38”	AA	0.95	4.095	0.227	0.88
13	Kaneohe Bay	21^24’45”	157^46’32”	AA	0.95	4.095	1.125	4.38
14	Kaneohe Bay	21^24’42”	157^46’18”	AA	0.95	4.095	0.899	3.50
15	Kawa Stream	21^24’28”	157^47’12”	2	0.95	4.095	0.125	0.49

RUNOFF CALCULATIONS

Given: Area Disturbed = 8.12 Acres

C = 0.95 (AC Pvmt./Concrete/GRP, Weighted C for Areas 1-7, 9-10, and 12-15)
C = 0.94 (AC Pavement/Grass, Weighted C for Area 11)
C = 0.30 (Grass, Area 8)

i = (2-yr, 1-hr event) = 1.82 in./hr.

tc_1 = 10 min. (minimum)
tc_2 = 10 min. (minimum)
tc_3 = 10 min. (minimum)
tc_4 = 10 min. (minimum)
tc_5 = 10 min. (minimum)
tc_6 = 10 min. (minimum)
tc_7 = 10 min. (minimum)
tc_8 = 10 min. (minimum)
tc_9 = 10 min. (minimum)
tc_{10} = 10 min. (minimum)
tc_{11} = 10 min. (minimum)
tc_{12} = 10 min. (minimum)
tc_{13} = 10 min. (minimum)
tc_{14} = 10 min. (minimum)
tc_{15} = 10 min. (minimum)

Cf_1 = 2.25
Cf_2 = 2.25
Cf_3 = 2.25
Cf_4 = 2.25
Cf_5 = 2.25
Cf_6 = 2.25
Cf_7 = 2.25
Cf_8 = 2.25
Cf_9 = 2.25
Cf_{10} = 2.25
Cf_{11} = 2.25
Cf_{12} = 2.25
Cf_{13} = 2.25
Cf_{14} = 2.25
Cf_{15} = 2.25

I = i X Cf

Since project area is less than 100 acres, the Rational Formula will be used to calculate potential runoff.

Find: Runoff for a 2-yr 1-hr rainfall event (Q).

Solution: Q = C x I x A

Q_1 = (0.95) x (4.095 in/hr) x (2.456 Acs)
Q_1 = 9.55 cfs

Q_2 = (0.95) x (4.095 in/hr) x (0.045 Acs)
Q_2 = 0.18 cfs

Q_3 = (0.95) x (4.095 in/hr) x (0.725 Acs)
Q_3 = 2.82 cfs

Q_4 = (0.95) x (4.095 in/hr) x (0.196 Acs)
Q_4 = 0.76 cfs

Q_5 = (0.95) x (4.095 in/hr) x (0.417 Acs)
Q_5 = 1.62 cfs

Q_6 = (0.95) x (4.095 in/hr) x (0.113 Acs)
Q_6 = 0.44 cfs

Q_7 = (0.95) x (4.095 in/hr) x (0.392 Acs)
Q_7 = 1.52 cfs

Q_8 = (0.30) x (4.095 in/hr) x (0.018 Acs)
Q_8 = 0.02 cfs

Q_9 = (0.95) x (4.095 in/hr) x (0.363 Acs)
Q_9 = 1.41 cfs

Q_{10} = (0.95) x (4.095 in/hr) x (0.186 Acs)
Q_{10} = 0.72 cfs

Q_{11} = (0.94) x (4.095 in/hr) x (0.829 Acs)
Q_{11} = 3.19 cfs

Q_{12} = (0.95) x (4.095 in/hr) x (0.227 Acs)
Q_{12} = 0.88 cfs

Q_{13} = (0.95) x (4.095 in/hr) x (1.125 Acs)
Q_{13} = 4.38 cfs

Q_{14} = (0.95) x (4.095 in/hr) x (0.899 Acs)
Q_{14} = 3.50 cfs

Q_{15} = (0.95) x (4.095 in/hr) x (0.125 Acs)
Q_{15} = 0.49 cfs