FORM C ATTACHMENT A-2

Tables and Calculations

TABLE 1 – DISCHARGE POINT INFORMATION AND DISCHARGE QUANTITY

Discharge Point	Location	Latitude	Longitude	Class	C	I (in/hr	A (Acres)	Q (cfs)
Outfall 1	Stream Perennial	N22.0040667D	W159.3465891D	2	0.85	5.52	3.03	14.22
Outfall 2	Stream Perennial	N22.0096587D	W159.3453269D	2	0.85	5.52	1.05	4.93
Outfall 3	Stream Perennial	N22.0208974D	W159.3417759D	2	0.85	5.52	10.66	50.02
Outfall 4	Wailua River	N22.0450119D	W159.3369393D	2	0.85	5.52	0.99	4.64
Outfall 5	Wailua River	N22.0447313D	W159.3363945D	2	0.85	5.52	1.16	5.44

Total Discharge (Q_{total}) = 79.25 cfs

Runoff Calculations

Q = CIA

where: Q = quantity of storm water runoff in cu. ft/sec.

C = runoff coefficient

A = disturbed area in acres

Tc = Rainfall intensity for the duration equal to time of concentration

= 10 min (minimum)

For this project:

C = 0.87 for paved areas

C = 0.80 for unpaved shoulders

(Using composite drainage areas, a weighted value runoff coefficient shall be computed. The weighted value of runoff coefficient for this project, C = 0.85)

I = 5.52 (see calculations below)

A = varies (see table below)

I = I x Cf

i = 2.4 (intensity of a 2-yr 1-hr rainfall)

Cf = 2.30 (correction factor)

I = 2.40 x 2.30 = 5.52

Disturbed Area: (Includes Staging/Storage Areas, see note below)

I-1 = 0.18 Acs

I-2 = 0.07 Acs

I-3 = 0.06 Acs

I-4 = 0.28 Acs

I-5 = 0.07 Acs

I-6 = 0.44 Acs

I-7 = 0.14 Acs

I-8 = 0.11 Acs

I-9 = 0.59 Acs

I-10 = 0.61 Acs

I-11 = 0.51 Acs

I-12 = 5.25 Acs

I-13 = 1.33 Acs

I-14 = 1.38 Acs

S-1 = 0.48 Acs

S-2 = 0.54 Acs

S-3 = 2.70 Acs

S-4 = 0.99 Acs

S-5 = 1.16 Acs

NOTE: Since this is a linear project, there will be several locations of Staging/Storage Areas. Probable Storage/Staging Areas will be located along the unpaved shoulder within the state right of way.

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-1} = (0.85) x (5.52 in/hr) x (0.18 Acs)

Q_{I-1} = 0.84 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-2} = (0.85) x (5.52 in/hr) x (0.07 Acs)

Q_{I-2} = 0.33 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-3} = (0.85) x (5.52 in/hr) x (0.06 Acs)

Q_{I-3} = 0.28 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-4} = (0.85) x (5.52 in/hr) x (0.28 Acs)

Q_{I-4} = 1.31 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-5} = (0.85) x (5.52 in/hr) x (0.07 Acs)

Q_{I-5} = 0.33 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-6} = (0.85) x (5.52 in/hr) x (0.44 Acs)

Q_{I-6} = 2.06 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-7} = (0.85) x (5.52 in/hr) x (0.14 Acs)

Q_{I-7} = 0.66 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-8} = (0.85) x (5.52 in/hr) x (0.11 Acs)

Q_{I-8} = 0.52 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-9} = (0.85) x (5.52 in/hr) x (0.59 Acs)

Q_{I-9} = 2.77 cfs

Discharge (Q) to Outfall 1 (Stream perennial)

Q_{I-10} = (0.85) x (5.52 in/hr) x (0.61 Acs)

Q_{I-10} = 2.86 cfs

Discharge (Q) to Outfall 2 (Stream perennial)

Q_{I-11} = (0.85) x (5.52 in/hr) x (0.51 Acs)

Q_{I-11} = 2.39 cfs

Discharge (Q) to Outfall 3 (Stream perennial)

Q_{I-12} = (0.85) x (5.52 in/hr) x (5.25 Acs)

Q_{I-12} = 24.63 cfs

Discharge (Q) to Outfall 3 (Stream perennial)

Q_{I-13} = (0.85) x (5.52 in/hr) x (1.33 Acs)

Q_{I-13} = 6.24 cfs

Discharge (Q) to Outfall 3 (Stream perennial)

Q_{I-14} = (0.85) x (5.52 in/hr) x (1.38 Acs)

Q_{I-14} = 6.47 cfs

Discharge (Q) to Outfall 1 (Stream Perennial)

Q_{S-1} = (0.85) x (5.52 in/hr) x (0.48 Acs)

Q_{S-1} = 2.25 cfs

Discharge (Q) to Outfall 2 (Stream Perennial)

Q_{S-2} = (0.85) x (5.52 in/hr) x (0.54 Acs)

Q_{S-2} = 2.53 cfs

Discharge (Q) to Outfall 3 (Stream Perennial)

Q_{S-3} = (0.85) x (5.52 in/hr) x (2.70 Acs)

Q_{S-3} = 12.67 cfs

Discharge (Q) to Outfall 4 (Wailua River)

Q_{S-4} = (0.85) x (5.52 in/hr) x (0.99 Acs)

Q_{S-4} = 4.65 cfs

Discharge (Q) to Outfall 5 (Wailua River)

Q_{S-5} = (0.85) x (5.52 in/hr) x (1.16 Acs)

Q_{S-5} = 5.44 cfs