

Q	3.99375	m ³ /s
C	0.75	
I	270	mm/hr
A	71000	m ²
Catchment 1	7.10	ha

Discharge	3.994	m ³ /s
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Pipe Diameter	0.225	m
fall	0.17	m
length	17.00	m
n	0.011	
Slope	0.01	m/m
Pipe Radius	0.1125	m
Area	0.039760782	m ²
100% Wetted Perimeter	0.706858347	m
Hydraulic Radius	0.05625	m

Velocity	1.334613969	m/s
Pipe Capacity	0.053065295	m ³ /s
Pipe Check	Under Capacity	

Pipe required	225	mm
minimum Cover	900	mm
Total Depth Required	1125	
Minimum cover	595	mm
Depth of Channel	820	mm
Diameter	225	mm
Number of pipes required	75.26105326	

$$Q_c = CIA_c/360$$

where

Q_c = catchment run-off (m³/s).

C = run-off coefficient (see Table 1).

I = rainfall intensity (mm/hr).

A_c = area (hectares) of catchment above the point being considered.

TABLE 5: PEAK SECONDARY FLOW RATES IN OVERLAND FLOW PATHS (RATIONAL METHOD)

OVERLAND FLOW PATH	CATCHMENT FROM SOUTH OF ARAWA ROAD	ASSUMED RUNOFF COEFFICIENT ²	PEAK RUNOFF IN 100YR, 10 MINUTE STORM EVENT (270mm/hr) ¹
OLFP 1	2.0Ha (20%)	0.75	1.13m ³ /s
OLFP 2	7.1Ha (70%)	0.75	3.99m ³ /s
OLFP 3	1.0Ha (10%)	0.75	0.56m ³ /s

TABLE 6: OLFP REQUIRED CHANNEL DIMENSIONS

OVERLAND FLOW PATH	CHANNEL SHAPE	ASSUMED GRADE	ASSUMED BASE WIDTH	FLOW DEPTH	REQUIRED CHANNEL DEPTH	RESULTING CHANNEL WIDTH
OLFP 1	Trapezoidal	1%	1.0m	400mm	550mm	4.3m
OLFP 2	Trapezoidal	1%	1.3m	670mm	820mm	6.3m
OLFP 3	Trapezoidal	1%	1.0m	280mm	430mm	3.6m

Groundwater Depth

CPT10 1.6m