PIT / NODE DETAILS Name	Туре	Family	Version 9 Size	Ponding Volume	Pressure Change	Surface Elev (m)	Max Pond Depth (m)	Base Inflow	Blocking Factor	x	у	Bolt-down	id	Part Full Shock Loss							
Outlet 2 Outlet 1	Node Node			(cu.m)	Coeff. Ku		56 56		0	729.0 471.2				3							
DETENTION BASIN E Name Basin 1	DETAILS Elev 56.6.56.6.56.6.56.6.56.6.56.6.56.6.56.	0.3.04 0.3.02 0.3.02 0.3.02 0.5.7.72 0.5.7.72 0.5.7.72 0.5.7.72 0.5.7.73	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Outlet Type 0 Orifice	К	Dia(mm) 1	Centre RL 03 56	Pit Family 5.2	Pit Type	x 970.9	6 -386.32	HED 2 No	Crest RL	Crest Length(m)	id 1						
SUB-CATCHMENT D Name	ETAILS Pit or Node	Total Area	Paved Area	Grass Area	Supp Area	Paved Time	Grass Time	Supp Time	Paved Length	Grass Length	Supp Length	Paved Slope(%)	Grass Slope	Supp Slope	Paved Rough	Grass Rough	Supp Rough	Lag Tim or Facto	e Gutter r Length	Gutter C	Gutter FlowFactor
Post - Development C Pre-Development Cat		(ha) 0.052 0.052		% 14 43 15 68			(min) 5 5		(m) 5 0	(m)	(m)	%	%	%	-					%	
PIPE DETAILS Name	From	То	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Туре	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From					RL (m)	etc (m)		
Pipe1	Basin 1	Outlet 2		7 56.125			1 uPVC, not under roa			4 0.0	3 NewFixed	t	1 Basin 1	0	(111)	(111)	(111)	(111)	(111)		
DETAILS of SERVICE Pipe	Chg (m)	NG PIPES Bottom Elev (m)	Height of Service (m)	e Chg (m)	Bottom Elev (m)	Height of Servi	ice Chg (m)	Bottom Elev (m)	Height of Service (m)	etc etc											
CHANNEL DETAILS Name	From	То	Туре	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed								
OVERFLOW ROUTE Name	DETAILS From	То	Travel Time	Spill Level	Crest Length	Weir Coeff. C	Cross Section	Safe Depth	SafeDepth Minor Storms	Safe DxV	Bed Slope	D/S Area Contributin	n	id							
OF1	Basin 1	Outlet 2	(min)	(m) 1 57.3	(m)		1.7 Pathway 4 m wide	(m) 0.	(m)	(sq.m/sec)	(%)	%	0	5							

PIT / NODE DETAILS		Family	Version 9	Ponding	Proceuro	Surface	Max Pond	Base	Planking	V	V	Polt down	id	Part Full						
Name	Type	Family	Size	Ponding Volume (cu.m)	Pressure Change Coeff. Ku	Elev (m)	Depth (m)	Inflow (cu.m/s)	Blocking Factor	Х	У	Bolt-down lid	iu	Shock Loss						
Outlet 2 Outlet 1	Node Node			(00)	000 110	5	56 56		0 0	729.0 471.2			3							
DETENTION BASIN D Name Basin 1	ETAILS Elev 54.9 55.1 55.1 55.1 55.1 55.1 55.1 55.1 55	88 0.3 3 0.3	6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Outlet Type 0 Orifice	К	Dia(mm)	Centre RL 8 55.	Pit Family	Pit Type	x 970.9	y 96 -386.33	HED 2 No	Crest RL	Crest Length(m) id	1					
SUB-CATCHMENT DE Name	ETAILS Pit or Node	Total Area	Paved Area	Grass Area	Supp Area	Paved Time	Grass Time	Supp Time	Paved Length	Grass Length	Supp Length	Paved Slope(%)	Grass Slope	Slope R				e Gutter (Slope Flo	
Post - Development C Pre-Development Cato		(ha) 0.057 0.057		% 4 45 5 65			(min) 5 5		(m) 5 0	(m)	(m)	%	%	%				(m) 9 0 0	%	
PIPE DETAILS Name	From	То	Length	U/S IL	D/S IL	Slope	Туре	Dia	I.D.	Rough	Pipe Is	No. Pipes	Chg From		hg RI	Chg		etc		
Pipe1	Basin 1	Outlet 2	(m)	(m) 3 55.065	(m) 5 55.036	(%) 6 0.9	7 uPVC, not under roa	(mm) ds 15	(mm) 0 15	4 0.0	3 NewFixed	d ·	1 Basin 1	0 (r	n) (m) (m)	(m)	(m)		
DETAILS of SERVICE Pipe	S CROSSIN Chg (m)	NG PIPES Bottom Elev (m)	Height of Service (m)	Chg (m)	Bottom Elev (m)	Height of Service (m)	ee Chg (m)	Bottom Elev (m)	Height of Service (m)	e etc etc										
CHANNEL DETAILS Name	From	То	Туре	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	e Manning n	Depth (m)	Roofed							
OVERFLOW ROUTE	DETAILS From	То	Travel	Spill	Crest	Weir	Cross	Safe Depth	SafeDenth	Safe	Bed	D/S Area		id						
OF1		Outlet 2	Time (min)	Level (m) 1 55.92	Length (m)	Coeff. C	Section 7 Pathway 4 m wide		Minor Storms (m)	DxV (sq.m/sec	Slope) (%)	Contributing %	-	5						

This provides a simple analysis that can be checked manually. It is useful where Council insists on a manual check on HGLs. The HGLs shown here may be different to the more accurate values normally calculated by Drains because it is assumed here that the maximum flows and HGLs throughout the system occur at the same time. In fact, in different parts of the system, they may occur during different storms, or even at different times within the one storm. Also, pipes are assumed to be flowing full (even when the more accurate analysis in DRAINS shows they are not).

SUB-CATCHMENT DETAILS	2
SUB-CATORIVIENT DETAIL	

Name	Max	Paved	Grassed I	Paved	Grasse	d Supp.	Due to Storm
	Flow Q	Max Q	Max Q	Тс	Tc	Tc	
	(cu.m/s)	(cu.m/s)	(cu.m/s)	(min)	(min)	(min)	
Post - Development Ca	0.033	0.009	0.024	5		5	5 AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
Pre-Development Catch	0.028	0.013	0.015	5		12	0 AR&R 100 year, 25 minutes storm, average 144 mm/h, Zone 1

PIPE DETAILS													PIT & N	ODE DETA	ILS			
Pipe	Flow	Length	U/S IL	D/S IL	Slope	Int. Dia	Rough	Nom.Capacity	V	D/S HGL	Friction	U/S HGL	Node	Headloss	Shock Loss	HGL	Free-	Overflow
	(cu.m/s)	(m)	(m)	(m)	(%)	(mm)	(mm)	(cu.m/s)	(m/sec)	(m)	Loss (m)	(m)		Coeff (Ku)	(m)	(m)	board	(cu.m/s)
													Outlet 2	!		56.175		
													Basin 1			56.245		

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Sate Q	Max D M	1ax DxV	Max Width	Max V	Due to Storm
OF1	C	0	1.931	0	0	0	0	

This provides a simple analysis that can be checked manually. It is useful where Council insists on a manual check on HGLs. The HGLs shown here may be different to the more accurate values normally calculated by Drains because it is assumed here that the maximum flows and HGLs throughout the system occur at the same time. In fact, in different parts of the system, they may occur during different storms, or even at different times within the one storm. Also, pipes are assumed to be flowing full (even when the more accurate analysis in DRAINS shows they are not).

SHR-CA	TCHMEN	T DETAIL	9
SUB-UA	LOUINEIN	IDEIAL	•

Name	Max Flow Q	Paved Max Q		Paved Tc	Grasse Tc	ed Supp. Tc	Due to Storm
	(cu.m/s)	(cu.m/s)	(cu.m/s)	(min)	(min)	(min)	
Post - Development Ca	0.035	0.006	0.03		5	5	5 AR&R 100 year, 25 minutes storm, average 144 mm/h, Zone 1
Pre-Development Catch	0.031	0.014	0.017		5	12	0 AR&R 100 year, 25 minutes storm, average 144 mm/h, Zone 1
PIPE DETAILS							PIT & NODE DETAILS

														00000000				
Pipe	Flow	Length	U/S IL	D/S IL	Slope	Int. Dia	Rough	Nom.Capacity	V	D/S HGL	Friction	U/S HGL	Node	Headloss	Shock Loss	HGL	Free-	Overflow
	(cu.m/s)	(m)	(m)	(m)	(%)	(mm)	(mm)	(cu.m/s)	(m/sec)	(m)	Loss (m)	(m)		Coeff (Ku)	(m)	(m)	board	(cu.m/s)
													Outlet 2	<u>!</u>		55.173		
													Basin 1			55.219		

OVERFLOW ROUTE DETAILS

Name Max Q U/S Max Q D/S Safe Q Max D Max DxV Max Width Max V Due to Storm OF1 0 0 1.931 0 0 0

PIT / NODE DETAILS Name	Max HC		Max Pond HGL		Max Surface Flow Arrivin (cu.m/s)	g	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	d	Overflow (cu.m/s)	o Constraint	
Outlet 2	;	56.18				0						
SUB-CATCHMENT DETAILS Name	Max Flow Q (cu.m/s		Paved Max Q (cu.m/s)		Grassed Max Q (cu.m/s)		Paved Tc (min)	Grassed Tc (min)		Supp. Tc (min)	Due to Sto	rm
Post - Development Ca Pre-Development Catch		0.033 0.028	,	0.009 0.013		0.024 0.015		5 5	5 12			year, 1.5 hours storm, average 74 mm/h, Zone 1 year, 25 minutes storm, average 144 mm/h, Zone 1
Outflow Volumes for Total Catchment (0.05 impervious + 0.06 Storm AR&R 100 year, 5 minutes storm, average 266 mm/h, Zone 1 AR&R 100 year, 10 minutes storm, average 210 mm/h, Zone AR&R 100 year, 15 minutes storm, average 179 mm/h, Zone AR&R 100 year, 20 minutes storm, average 159 mm/h, Zone AR&R 100 year, 25 minutes storm, average 144 mm/h, Zone AR&R 100 year, 30 minutes storm, average 132 mm/h, Zone AR&R 100 year, 45 minutes storm, average 109 mm/h, Zone AR&R 100 year, 1 hour storm, average 94 mm/h, Zone 1 AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1 AR&R 100 year, 2 hours storm, average 62 mm/h, Zone 1 AR&R 100 year, 3 hours storm, average 47.9 mm/h, Zone 1	Total R. cu.m	ainfall 23.19 36.61 46.81 55.44 62.76 69.04 85.51 98.32 16.11 129.7	Total Rund	off %) 5%) 5%) 5%) 5%) 5%) 5%) 5%) 5%) 5%) 5	Impervious cu.m (Runo 6.53 (61.2% 10.49 (62.3' 13.50 (62.7' 16.05 (62.9' 12.0.06 (63.2' 24.92 (63.3' 28.70 (63.4' 33.94 (63.6' 37.95 (63.6' 44.03 (63.7'	ff %) %) %) %) %) %) %) %) %) %) %)	f Pervious Runoff cu.m (Runoff %) 9.15 (73.1%) 16.98 (85.9%) 22.84 (90.4%) 27.77 (92.8%) 31.56 (93.1%) 34.88 (93.6%) 43.78 (94.8%) 50.63 (95.4%) 59.61 (95.1%) 66.24 (94.6%) 75.53 (93.1%)					
PIPE DETAILS Name	Max Q (cu.m/s)	Max V (m/s)		Max U/S HGL (m)		Max D/S HGL (m)	Due to St	torm			
Pipe1	(0.023		1.5		56.245	56.17	5 AR&R 10	00 ye	ar, 25 mii	nutes storm, a	verage 144 mm/h, Zone 1
CHANNEL DETAILS Name	Max Q (cu.m/s)	Max V (m/s)		Chainage (m)		Max HGL (m)	Due to St	torm			
OVERFLOW ROUTE DETAILS Name OF1	Max Q	U/S 0	Max Q D/S	0	Safe Q	1.931	Max D	Max DxV 0	0		lth Max V 0	Due to Storm
DETENTION BASIN DETAILS Name	Max WI	L	MaxVol		Max Q Total		Max Q Low Level	Max Q High Leve	el			
Basin 1	!	57.31		6.6		0.023			0			
CONTINUITY CHECK for AR&R 100 year, 1.5 hours storm, a Node Basin 1	Inflow (cu.m)	4 mm/	Outflow (cu.m)	48.85	Storage Cha	ange 0.08	Difference %	0				
Outlet 2 Outlet 1		48.85 44.61		48.85 44.61		0.00		0				

PIT / NODE DETAILS Name Outlet 2	Max HGL Max Pond HGL 55.17	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
SUB-CATCHMENT DETAILS Name	Max Paved Flow Q Max Q (cu.m/s) (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Post - Development Ca Pre-Development Catch	0.035	0.006 0. 0.014 0.0		5 í ! 5 12	5	5 AR&R 100 year, 25 minutes storm, average 144 mm/h, Zone 1 0 AR&R 100 year, 25 minutes storm, average 144 mm/h, Zone 1
Outflow Volumes for Total Catchment (0.05 impervious + 0.06 p Storm AR&R 100 year, 5 minutes storm, average 266 mm/h, Zone 1 AR&R 100 year, 10 minutes storm, average 210 mm/h, Zone 1 AR&R 100 year, 25 minutes storm, average 179 mm/h, Zone 1 AR&R 100 year, 25 minutes storm, average 159 mm/h, Zone 1 AR&R 100 year, 30 minutes storm, average 144 mm/h, Zone 1 AR&R 100 year, 45 minutes storm, average 132 mm/h, Zone 1 AR&R 100 year, 45 minutes storm, average 109 mm/h, Zone 1 AR&R 100 year, 1 hour storm, average 94 mm/h, Zone 1 AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1 AR&R 100 year, 2 hours storm, average 62 mm/h, Zone 1 AR&R 100 year, 3 hours storm, average 47.9 mm/h, Zone 1	Total Rainfall Total Runo cu.m cu.m (Runo 25.45 17.05 (67.0 40.18 29.95 (74.5 51.37 39.66 (77.2 60.84 47.84 (78.6 68.88 54.34 (78.5 75.77 60.00 (79.2 93.85 75.05 (80.0 107.91 86.68 (80.3 127.43 102.22 (80 142.35 113.84 (80	ff %) cu.m (Runoff %) %) 5.95 (52.0%) %) 9.56 (52.9%) %) 12.31 (53.2%) %) 14.63 (53.4%) %) 16.59 (53.5%) %) 18.28 (53.6%) %) 22.71 (53.8%) %) 26.16 (53.9%) 2%) 30.94 (54.0%)	off Pervious Runof cu.m (Runoff % 11.10 (79.3%) 20.39 (92.3%) 27.35 (96.8%) 33.21 (99.3%) 37.75 (99.6%) 41.72 (100.1%) 52.34 (101.4%) 60.53 (102.0%) 71.28 (101.7%) 79.24 (101.2%) 90.46 (99.7%)			
PIPE DETAILS Name Pipe1	Max Q Max V (cu.m/s) (m/s) 0.025	Max U/S HGL (m) 1.4 55.2	Max D/S HGL (m) 13 55.17	Due to Storn		utes storm, average 144 mm/h, Zone 1
CHANNEL DETAILS Name	Max Q Max V (cu.m/s) (m/s)	Chainage (m)	Max HGL (m)	Due to Storn	n	
OVERFLOW ROUTE DETAILS Name OF1	Max Q U/S Max Q D/S 0	Safe Q 0 1.9	Max D 31	Max DxV	Max Widt 0	h Max V Due to Storm 0 0
DETENTION BASIN DETAILS Name	Max WL MaxVol	Max Q Total	Max Q Low Level	Max Q High Level		
Basin 1	55.91	7.3 0.0			0	
CONTINUITY CHECK for AR&R 100 year, 25 minutes storm, av Node Basin 1 Outlet 2 Outlet 1	Inflow Outflow (cu.m) (cu.m) 28.34 28.25	Storage Change (cu.m) 28.25 0. 28.25 26.01	%	.1 0 0		

PIT / NODE DETAILS Name	Туре	Family	Version 9 Size	Ponding Volume	Pressure Change		Max Pond Depth (m)	Base Inflow	Blocking Factor	x	у	Bolt-down	id	Part Full Shock Loss						
Outlet 2 Outlet 1	Node Node			(cu.m)	Coeff. Ku	,	56 56	(cu.m/s)	0	729.0 471.2		4	3	3						
DETENTION BASIN D Name Basin 1	DETAILS Elev 56.0 56.1 56.1 56.2 56.2 56.2 56.2 56.2 56.3 56.3 56.3 56.3 56.3 56.3 56.3 56.3	44 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Outlet Type 0 Orifice	К	Dia(mm)	Centre RL 103 56.	Pit Family 2	Pit Type	x 970.8	y 96 -386.32	HED 2 No	Crest RL	Crest Length(m)	id 1					
SUB-CATCHMENT DI Name	Pit or Node	Total Area (ha)	Paved Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%) %	Grass Slope %	Supp Slope %				or Facto	(m)	Gutter FlowFactor
Post - Development C Pre-Development Cate		0.052 0.052		4 43 5 65					5 0										0	
PIPE DETAILS Name	From	То	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Туре	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From	At Chg		RI (m)		RL (m)	etc (m)	
Pipe1	Basin 1	Outlet 2			5 56.055		1 uPVC, not under road			4 0.0	3 NewFixed	t t	1 Basin 1	0		()	()	()	()	
DETAILS of SERVICE Pipe	Chg (m)	NG PIPES Bottom Elev (m)	Height of Service (m)	e Chg (m)	Bottom Elev (m)	Height of Sen	vice Chg (m)	Bottom Elev (m)	Height of Service (m)	e etc etc										
CHANNEL DETAILS Name	From	То	Туре	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slop (1:?)	e Manning n	Depth (m)	Roofed							
OVERFLOW ROUTE Name	DETAILS From	То	Travel Time	Spill Level	Crest Length	Weir Coeff, C	Cross Section		SafeDepth Minor Storms	Safe DxV	Bed Slope	D/S Area Contributing	1	id						
OF1	Basin 1	Outlet 2	(min)	(m) 1 57.31	(m)		1.7 Pathway 4 m wide	(m)	(m) 3 0.1	(sq.m/sec) (%)	%)	5	i					

PIT / NODE DETAILS Name	Type	Family	Version 9 Size	Ponding Volume		Elev (m)	Max Pond Depth (m)	Base Inflow	Blocking Factor	x	у	Bolt-down	id	Part Full Shock Loss							
Outlet 2	Node			(cu.m)	Coeff. Ku		56		0	729.0				3							
Outlet 1	Node						56		0	471.2	8 -394.96	5		2							
DETENTION BASIN I	ETAILS Elev 54.9 55.1 55.1 55.1 55.1 55.1 55.1 55.1 55	88 0.3634 4 9.2655 9.2666 9.2.22 9.222 9.2.22 9.2.22 9.2.21 9.2.23 9.2.34 9.2.34 9.2.35 9.2.37 9.3.37 9.3.3		Outlet Type Orifice	К	Dia(mm)	Centre RL 18 55.1	Pit Family 4	Pit Type	x 970.9	y 96 -386.32	HED 2 No	Crest RL	Crest Length	m) id 1						
SUB-CATCHMENT D Name	ETAILS Pit or Node	Total Area	Paved Area	Grass Area	Supp Area	Paved Time	Grass Time	Supp Time	Paved Length	Grass Length	Supp Length	Paved Slope(%)	Grass Slope	Supp Slope					Gutter Gutter Length Slope		
Post - Development C Pre-Development Cat	a Basin 1	(ha) 0.0574 0.0574	% 1 14	% 1 45	% 41	(min)	(min) 5	(min) 5	(m) 5 0	(m)	(m)	%	%	%	9"			C	(m) %		
PIPE DETAILS Name	From	То	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Туре	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From	n At Chg				RL m)	etc (m)		
Pipe1	Basin 1	Outlet 2			55.036		.97 uPVC, not under road		50 154	4 0.0	3 NewFixed	d 1	1 Basin 1		0	···/ ('	, (,	····		
DETAILS of SERVICE Pipe	Chg (m)	NG PIPES Bottom Elev (m)	Height of Service (m)	e Chg (m)	Bottom Elev (m)	Height of Servi	ice Chg (m)	Bottom Elev (m)	Height of Service (m)	etc etc											
CHANNEL DETAILS Name	From	То	Туре	Length (m)		D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	e Manning n	Depth (m)	Roofed								
OVERFLOW ROUTE Name	DETAILS From	То	Travel Time		Length	Weir Coeff. C	Cross Section	Major Storm	SafeDepth s Minor Storms				g	id							
OF1	Basin 1	Outlet 2	(min)	(m) I 55.91	(m) 0.9		1.7 Pathway 4 m wide	(m) 0	(m) 3.3 0.1	(sq.m/sec) 5 0.) (%) 6 1	% 1 (0		5						

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SUB-CA	CHME	NT I	DETAIL	Ç

Name	Max	Paved	Grassed	Paved	Grassed	l Supp.	Due to Storm
	Flow Q	Max Q	Max Q	Tc	Tc	Tc	
	(cu.m/s)	(cu.m/s)	(cu.m/s)	(min)	(min)	(min)	
Post - Development Ca	0.027	0.007	0.02	5	5	5	5 AR&R 20 year, 25 minutes storm, average 110 mm/h, Zone 1
Pre-Development Catch	0.022	0.011	0.011	5	5 1	2	0 AR&R 20 year, 25 minutes storm, average 110 mm/h, Zone 1
PIPE DETAILS							PIT & NODE DETAILS

U/S IL D/S IL Slope Int. Dia Rough Nom.Capacity V D/S HGL Friction U/S HGL Node Headloss Shock Loss HGL Free- Overflow Pipe Flow Length (cu.m/s) (m) (m) (m) (%) (mm) (mm) (cu.m/s) (m/sec) (m) Loss (m) (m) Coeff (Ku) (m) (m) board (cu.m/s) Outlet 2 56.16 Basin 1 56.23

OVERFLOW ROUTE DETAILS

Name Max Q U/S Max Q D/S Safe Q Max D Max DxV Max Width Max V Due to Storm OF1 0 0.565 0 0 0 0

This provides a simple analysis that can be checked manually. It is useful where Council insists on a manual check on HGLs. The HGLs shown here may be different to the more accurate values normally calculated by Drains because it is assumed here that the maximum flows and HGLs throughout the system occur at the same time. In fact, in different parts of the system, they may occur during different storms, or even at different times within the one storm. Also, pipes are assumed to be flowing full (even when the more accurate analysis in DRAINS shows they are not).

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)		Tc	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Post - Development Ca Pre-Development Catch	0.03	0.005	0.025	` ′ 5	5 1.	5 ` ′	5 AR&R 20 year, 25 minutes storm, average 110 mm/h, Zone 1 0 AR&R 20 year, 25 minutes storm, average 110 mm/h, Zone 1
PIPE DETAILS							PIT & NODE DETAILS

PIPE DETAILS

Pipe	Flow	Length	U/S IL	D/S IL	Slope	Int. Dia	Rough	Nom.Capacity	V	D/S HGL	Friction	U/S HGL	Node	Headloss	Shock Loss	HGL	Free-	Overflow
	(cu.m/s)	(m)	(m)	(m)	(%)	(mm)	(mm)	(cu.m/s)	(m/sec)	(m)	Loss (m)	(m)		Coeff (Ku)	(m)	(m)	board	(cu.m/s)
													Outlet 2	<u>.</u>		55.149		
													Basin 1			55.178		

OVERFLOW ROUTE DETAILS

Name	Max Q U/S I	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
OF1	0	0	0.565	0	0	0	0	

PIT / NODE DETAILS Name	Max HGL	Max Pond		Max Surface		Version 8 Max Pond		Min	(Overflow	Const	raint								
Name	Maximal	HGL		Flow Arriving (cu.m/s)		Volume (cu.m)	- 1	Freeboard (m)		(cu.m/s)	Conoc	·								
Outlet 2	56.1	6		(0	(55)		()												
SUB-CATCHMENT DETAILS	Mau	Paved		Cuasas		Paved		Cuanad	,	2	Dua t	o Storm								
Name	Max Flow Q	Max Q		Grassed Max Q		Тс		Grassed Tc	1	Supp. Tc	Due to	Storin								
Post - Development Ca	(cu.m/s) 0.02		.007		0.02	(min)	5	(min)	5 `		5 AR&F									
Pre-Development Catch	0.02	.2 0	.011	0.	011		5		12		0 AR&F	? 20 yea	ar, 25 mi	nutes s	torm, a	verage	110 mm	n/h, Zo	one 1	
Outflow Volumes for Total Catchment (0.05 impervious + 0.06	pervious = 0	.10 total ha)																		
Storm	Total Rainfa	all Total Runoff cu.m (Runof		Impervious Ru cu.m (Runoff %		Pervious Runo cu.m (Runoff %														
AR&R 20 year, 5 minutes storm, average 206 mm/h, Zone 1	17.9	6 10.55 (58.8%	%) [′]	4.99 (60.4%)	,	5.56 (57.4%)	-,													
AR&R 20 year, 10 minutes storm, average 162 mm/h, Zone 1 AR&R 20 year, 15 minutes storm, average 138 mm/h, Zone 1		!4 19.24 (68.1% !9 25.84 (71.6%	,	8.02 (61.8%) 10.34 (62.3%)		11.22 (73.5%) 15.50 (79.5%)														
AR&R 20 year, 20 minutes storm, average 121 mm/h, Zone 1		9 30.84 (73.1%		12.14 (62.5%)		18.71 (82.1%)														
AR&R 20 year, 25 minutes storm, average 110 mm/h, Zone 1 AR&R 20 year, 30 minutes storm, average 100 mm/h, Zone 1)4 35.33 (73.7% .3 38.48 (73.6%	,	13.83 (62.7%) 15.12 (62.8%)		21.49 (83.0%) 23.36 (82.7%)														
AR&R 20 year, 45 minutes storm, average 82 mm/h, Zone 1		3 47.89 (74.4%		18.67 (63.1%)		29.22 (84.1%)														
AR&R 20 year, 1 hour storm, average 71 mm/h, Zone 1 AR&R 20 year, 1.5 hours storm, average 56 mm/h, Zone 1		?7 55.66 (74.9% 86 65.60 (74.7%		21.60 (63.2%) 25.61 (63.4%)		34.06 (84.9%) 39.98 (84.3%)														
AR&R 20 year, 2 hours storm, average 46.6 mm/h, Zone 1	97.4	9 72.22 (74.1%	%)	28.45 (63.4%)		43.77 (83.1%)														
AR&R 20 year, 3 hours storm, average 36.2 mm/h, Zone 1	113.	.6 83.46 (73.5%	%)	33.20 (63.5%)		50.25 (81.9%)														
PIPE DETAILS Name	Max Q	Max V		Max U/S		Max D/S		Due to Stor	rm											
	(cu.m/s)	(m/s)		HGL (m)		HGL (m)														
Pipe1	0.0	12	1.5	56	5.23	56.	.16	AR&R 20 y	ear,	25 minu	tes storr	n, aver	age 110	mm/h,	Zone 1					
CHANNEL DETAILS				OL .				D . O.												
Name	Max Q (cu.m/s)	Max V (m/s)		Chainage (m)		Max HGL (m)		Due to Stor	rm											
OVERFLOW ROUTE DETAILS																				
Name OF1	Max Q U/S	Max Q D/S 0	0	Safe Q 0.	565	Max D	0	Max DxV	0	Max Widt	h Max V 0	, (Due to	Storm						
				-																
DETENTION BASIN DETAILS																				
Name	Max WL	MaxVol		Max Q Total		Max Q Low Level		Max Q High Level	l											
Basin 1	56.9	9	4.7		0.02		.02	3	0											
CONTINUITY CHECK for AR&R 20 year, 25 minutes storm, a Node	verage 110 m Inflow	nm/h, Zone 1 Outflow		Storage Chang	~~	Difference														
IAOGG	(cu.m)	(cu.m)		(cu.m)		%														
Basin 1	18.7		8.67		80.C	(0.1													
Outlet 2 Outlet 1	18.6 16.5		8.67 6.57		0		0													

PIT / NODE DETAILS Name	Max HGL	Max Pond HGL		Max Surfac Flow Arrivir (cu.m/s)	-	Version 8 Max Pond Volume (cu.m)		Min Freeboard (m)	Overfl (cu.m/	-	Constrai	nt					
Outlet 2	55.1	15			C)											
SUB-CATCHMENT DETAILS Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)		Grassed Max Q (cu.m/s)		Paved Tc (min)		Grassed Tc (min)	Supp. Tc (min)		Due to S	torm					
Post - Development Ca Pre-Development Catch	0.02		0.005		0.025		5 5		5 12) year, 25 r) year, 25 r			0	,	
Fie-Development Caton	0.02	-4	0.012	-	0.012	-	J		12	0 .	Anan 20	year, 25 r	illilutes s	toriii, ave	rage in	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Zone i
Outflow Volumes for Total Catchment (0.05 impervious + 0.0 Storm AR&R 20 year, 5 minutes storm, average 206 mm/h, Zone 1 AR&R 20 year, 10 minutes storm, average 162 mm/h, Zone AR&R 20 year, 15 minutes storm, average 138 mm/h, Zone AR&R 20 year, 25 minutes storm, average 121 mm/h, Zone AR&R 20 year, 25 minutes storm, average 110 mm/h, Zone AR&R 20 year, 30 minutes storm, average 100 mm/h, Zone AR&R 20 year, 45 minutes storm, average 82 mm/h, Zone 1 AR&R 20 year, 1 hour storm, average 71 mm/h, Zone 1 AR&R 20 year, 2 hours storm, average 46.6 mm/h, Zone 1 AR&R 20 year, 3 hours storm, average 46.6 mm/h, Zone 1 AR&R 20 year, 3 hours storm, average 36.2 mm/h, Zone 1	Total Rainf cu.m 19.7 19.7 19.7 19.7 19.7 19.7 19.7 19.7	all Total Rund	off (off %) 9%) 5%) 0%) 6%) 2%) 1%) 0%) 5%) 6%)	Impervious cu.m (Rund 4.55 (51.3° 7.31 (52.4° 9.42 (52.9° 11.06 (53.1° 12.61 (53.3° 17.02 (53.6° 19.69 (53.7° 23.34 (53.8° 25.93 (53.8° 30.26 (53.8° 25.93 (53.8°	off %) %) %) %) %) %) %) 3%) 4%) 3%) 3%) 3%)	f Pervious Rur cu.m (Runoff 6.87 (63.4%) 13.61 (79.8% 18.71 (85.9% 22.54 (88.5% 25.89 (89.5% 28.16 (89.2% 35.20 (90.7% 41.02 (91.5% 48.20 (90.9% 52.82 (89.8% 60.70 (88.5%	%) ») ») ») ») »)										
PIPE DETAILS Name	Max Q	Max V		Max U/S		Max D/S		Due to Sto	rm								
	(cu.m/s)	(m/s)		HGL (m)		HGL (m)											
Pipe1	0.02	21	1.4	ļ	55.178	3 55	.149	AR&R 20 y	/ear, 25 m	inutes	s storm,	average 11	0 mm/h,	Zone 1			
CHANNEL DETAILS Name	Max Q (cu.m/s)	Max V (m/s)		Chainage (m)		Max HGL (m)		Due to Sto	rm								
OVERFLOW ROUTE DETAILS Name OF1	Max Q U/S	Max Q D/S 0	S C	Safe Q	0.565	Max D	0	Max DxV	Max W 0	Vidth 0	Max V	Due t	to Storm				
DETENTION BASIN DETAILS Name	Max WL	MaxVol		Max Q Total		Max Q Low Level		Max Q High Level									
Basin 1	55.6	69	5.2	2	0.021	0	.021		0								
CONTINUITY CHECK for AR&R 20 year, 25 minutes storm, a Node	average 110 r Inflow (cu.m)	nm/h, Zone 1 Outflow (cu.m)		Storage Ch	nange	Difference %											
Basin 1	20.3	32	20.21	, ,	0.05	5	0.2										
Outlet 2 Outlet 1	20.2 18.1		20.21 18.19		C		0										
Dun Los for 101700Detention Lete 0, run et 11,10,00 en 10/0	/0010																

PIT / NODE DETAILS			Version 9																		
Name	Туре	Family	Size	Ponding Volume (cu.m)		Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor	x	у	Bolt-down lid	id	Part Full Shock Loss							
Outlet 2 Outlet 1	Node Node			(cu.m)	Oden. Ro		56 56		0	729.04 471.28			;	3 2							
DETENTION BASIN I Name Basin 1	DETAILS Elev 56.6.56.6.56.6.56.6.56.6.56.6.56.6.56	144 0.3.9.4 0.3.9.2.2 5.7.7.1 1.5.7.7.7.1 1.5.7.7.1 1.5.7.7.1 1.5.7.7.1 1.5.7.1 1.5.7.7 1.5.7.7 1.5.7.7 1.5.7 1.5.7 1.5.7 1.5.7 1.5.7 1.5.7 1.5.7 1.5.7 1.5.7 1.5.7 1.	19 19 19 19 19 19 19 19 19 19 19 19 19 1	Outlet Type 0 Orifice	K	Dia(mm)	Centre RL 103 56.	Pit Family 2	Pit Type	x 970.96	y -386.32	HED 2 No	Crest RL	Crest Length(m) i	d 1						
SUB-CATCHMENT D Name	ETAILS Pit or Node	Total Area	Paved Area	Grass Area	Supp Area	Paved Time	Grass Time	Supp Time	Paved Length	Length	Supp Length	Paved Slope(%)	Grass Slope	Slope I					r Length	Gutter G Slope FI	
Post - Development C Pre-Development Cat		(ha) 0.052 0.052		% 24 4 85 6		(min) 3 0			(m) 5 0	(m)	(m)	%	%	%					(m) 0 0	%	
PIPE DETAILS Name	From	То	Length	U/S IL	D/S IL (m)	Slope	Туре	Dia (mm)	I.D.	Rough	Pipe Is	No. Pipes	Chg From					RL (m)	etc		
Pipe1	Basin 1	Outlet 2	(m)	(m) 7 56.12	5 56.05	(%) 5	1 uPVC, not under roads		(mm) i0 15	4 0.03	NewFixed	. t	1 Basin 1	0	(111)	(m)	(m)	(m)	(m)		
DETAILS of SERVICE Pipe	Chg (m)	NG PIPES Bottom Elev (m)	Height of Service (m)	ce Chg (m)	Bottom Elev (m)	Height of Ser (m)	vice Chg (m)	Bottom Elev (m)	Height of Service (m)	e etc etc											
CHANNEL DETAILS Name	From	То	Туре	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed								
OVERFLOW ROUTE Name	DETAILS From	То	Travel Time	Spill Level		Weir Coeff. C	Cross Section		SafeDepth s Minor Storms		Bed Slope	D/S Area Contributing	n	id							
OF1	Basin 1	Outlet 2	(min)	(m) 1 57.3	(m)		1.7 Pathway 4 m wide	(m)	(m) .3 0.1	(sq.m/sec)	(%)	%	0	5							

PIT / NODE DETAILS Name	Туре	Family	Version 9 Size	Ponding Volume	Pressure Change	Surface Elev (m)	Max Pond Depth (m)	Base Inflow	Blocking Factor	x	у	Bolt-down	id	Part Full Shock Loss						
Outlet 2	Node			(cu.m)	Coeff. Ku	1	56	(cu.m/s)	0		9.04 -396			3						
Outlet 1	Node						56		0	47	1.28 -394.9	96	:	2						
DETENTION BASIN E Name Basin 1	Elev 54. Elev 54. Elev 54. 55. 55. 55. 55. 55. 55. 55. 55. 55.	88 0.3 0.3 0.3 1.3 0.3 1.3 0.3 1.3 0.3 1.3 0.3 1.3 0.3 1.5 0.5	6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Outlet Type 0 Orifice	К	Dia(mm)	Centre RL 118 55.1	Pit Family 4	Pit Type	x 97	9 0.96 -386.3	HED 32 No	Crest RL	Crest Length(m) id	3 1					
SUB-CATCHMENT D		Total	Paved	Cross	Cumm	Davied	Cross	Cum	Davad	Cross	Cum	Dovad	Cross	Cupp F	au ad	Cross	Cumm	Las Tima	Cuttor Cu	ttor Cuttor
Name	Pit or Node	Total Area (ha)	Area %	Grass Area %	Supp Area %	Paved Time (min)	Grass Time (min)	Supp Time (min)	Paved Length (m)	Grass Length (m)	Supp Length (m)	Paved Slope(%) %	Grass Slope %						Gutter Gu Length Slo (m) %	pe FlowFactor
Post - Development C Pre-Development Cat		0.057 0.057	4 1	4 45 5 65	41	1	5	5 ′	5 0	()	(,		,-					0		
PIPE DETAILS Name	From	То	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Туре	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From					RL (m)	etc (m)	
Pipe1	Basin 1	Outlet 2		3 55.065	55.036	6 0	.97 uPVC, not under road			4	0.03 NewFixe	ed	1 Basin 1	0 `	,	,	,	,	,	
DETAILS of SERVICE Pipe	Chg (m)	NG PIPES Bottom Elev (m)	Height of Service (m)	e Chg (m)	Bottom Elev (m)	Height of Serv	ice Chg (m)	Bottom Elev (m)	Height of Service (m)	e etc etc										
CHANNEL DETAILS Name	From	То	Туре	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slo (1:?)	ope Manning n	Depth (m)	Roofed							
OVERFLOW ROUTE		To	Traval	Spill	Crost	Woir	Cross	Cafa Danti-	SafaDanth	Cofo	Dad	D/C A===		id						
Name	From	То	Travel Time (min)	(m)	(m)	Weir Coeff. C	Cross Section	Major Storms (m)	SafeDepth Minor Storms (m)	(sq.m/s	sec) (%)	D/S Area Contributin %	-	id						
OF1	Basin 1	Outlet 2		1 55.92		9	1.7 Pathway 4 m wide		3 0.15				0	5						

This provides a simple analysis that can be checked manually. It is useful where Council insists on a manual check on HGLs. The HGLs shown here may be different to the more accurate values normally calculated by Drains because it is assumed here that the maximum flows and HGLs throughout the system occur at the same time. In fact, in different parts of the system, they may occur during different storms, or even at different times within the one storm. Also, pipes are assumed to be flowing full (even when the more accurate analysis in DRAINS shows they are not).

SUB-CAT	CHMEN	IT DET	

Name	Max Flow Q	Paved Max Q		Paved Tc	Grassed Tc	d Supp. Tc	Due to Storm
	(cu.m/s)	(cu.m/s)	(cu.m/s)	-		(min)	
Post - Development Ca	0.02	0.006	0.015	Ę	5	5	5 AR&R 5 year, 25 minutes storm, average 83 mm/h, Zone 1
Pre-Development Catch	0.015	0.008	0.007		5 1	2	0 AR&R 5 year, 1.5 hours storm, average 41.7 mm/h, Zone 1
PIPE DETAILS							PIT & NODE DETAILS

Pipe Flow U/S IL D/S IL Slope Int. Dia Rough Nom.Capacity V D/S HGL Friction U/S HGL Node Headloss Shock Loss HGL Free- Overflow Length (cu.m/s) (m) (m) (m) (%) (mm) (mm) (cu.m/s) (m/sec) (m) Loss (m) (m) Coeff (Ku) (m) (m) board (cu.m/s) Outlet 2 56.141 Basin 1 56.211

OVERFLOW ROUTE DETAILS

Name Max Q U/S Max Q D/S Safe Q Max D Max DxV Max Width Max V Due to Storm OF1 0 0 0.565 0 0 0 0 0

This provides a simple analysis that can be checked manually. It is useful where Council insists on a manual check on HGLs. The HGLs shown here may be different to the more accurate values normally calculated by Drains because it is assumed here that the maximum flows and HGLs throughout the system occur at the same time. In fact, in different parts of the system, they may occur during different storms, or even at different times within the one storm. Also, pipes are assumed to be flowing full (even when the more accurate analysis in DRAINS shows they are not).

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Pa Max Q Tc (cu.m/s) (m	Tc	sed Supp. Tc (min)	Due to Storm
Post - Development Ca	0.022	2 0.004	4 0.018 ·	´5 ` ´	5 `´	5 AR&R 5 year, 25 minutes storm, average 83 mm/h, Zone 1
Pre-Development Catch	0.017	7 0.009	0.008	5	12	0 AR&R 5 year, 1.5 hours storm, average 41.7 mm/h, Zone 1
PIPE DETAILS						PIT & NODE DETAILS

(m/sec) (m)

Loss (m) (m)

D/S HGL Friction U/S HGL Node Headloss Shock Loss HGL Free- Overflow

Outlet 2

Basin 1

Coeff (Ku) (m)

board (cu.m/s)

(m) 55.128

55.157

Rough Nom.Capacity V

(mm) (cu.m/s)

OVERFLOW ROUTE DETAILS

Pipe

Name	Max Q U/S	Max Q D/S	Safe Q	Max D N	Max DxV	Max Width	Max V	Due to Storm
OF1	0	0	0.565	0	0	0	0	

(m)

Length

(m)

Flow

(cu.m/s)

U/S IL D/S IL Slope

(m)

(%)

Int. Dia

(mm)

PIT / NODE DETAILS Name	Max HGL	Max Pond HGL		Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	/ Constraint		
Outlet 2	56.1	4)	()				
SUB-CATCHMENT DETAILS										
Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)		Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Stor	rm	
Post - Development Ca Pre-Development Catch	0.0 0.01		006 008				5 12		ear, 25 minutes storm, average 83 mm/h, Zonear, 1.5 hours storm, average 41.7 mm/h, Zon	
Outflow Volumes for Total Catchment (0.05 impervious + 0.00		,								
Storm	Total Rainfa	all Total Runoff cu.m (Runoff	%)	Impervious Runof cu.m (Runoff %)	f Pervious Runoff cu.m (Runoff %)					
AR&R 5 year, 5 minutes storm, average 161 mm/h, Zone 1 AR&R 5 year, 10 minutes storm, average 125 mm/h, Zone 1	14.0	3 6.81 (48.5%) 9 12.94 (59.4%)	ĺ	3.83 (59.4%) 6.12 (61.1%)	2.98 (39.3%) 6.82 (57.9%)					
AR&R 5 year, 15 minutes storm, average 106 mm/h, Zone 1	27.7	'2 17.64 (63.6%	6)	7.87 (61.7%)	9.77 (65.3%)					
AR&R 5 year, 20 minutes storm, average 93 mm/h, Zone 1 AR&R 5 year, 25 minutes storm, average 83 mm/h, Zone 1		13 21.23 (65.5% 7 23.81 (65.8%		9.26 (62.1%) 10.36 (62.3%)	11.98 (68.4%) 13.45 (68.8%)					
AR&R 5 year, 30 minutes storm, average 76 mm/h, Zone 1	39.7	75 26.10 (65.7%	6)	11.42 (62.4%)	14.68 (68.4%)					
AR&R 5 year, 45 minutes storm, average 62 mm/h, Zone 1 AR&R 5 year, 1 hour storm, average 53 mm/h, Zone 1		34 32.53 (66.9% 34 37.18 (67.1%		14.04 (62.8%) 16.05 (62.9%)	18.49 (70.4%) 21.13 (70.6%)					
AR&R 5 year, 1.5 hours storm, average 41.7 mm/h, Zone 1 AR&R 5 year, 2 hours storm, average 35.1 mm/h, Zone 1		3 43.47 (66.4% 3 48.56 (66.1%	,	18.99 (63.1%) 21.35 (63.2%)	24.48 (69.3%) 27.21 (68.6%)					
AR&R 5 year, 3 hours storm, average 27.4 mm/h, Zone 1		98 56.42 (65.6%	,	25.06 (63.3%)	31.36 (67.6%)					
PIPE DETAILS										
Name	Max Q (cu.m/s)	Max V (m/s)		Max U/S HGL (m)	Max D/S HGL (m)	Due to Stor	m			
Pipe1	0.01		1.4			1 AR&R 5 yea	ar, 25 minut	tes storm, aver	rage 83 mm/h, Zone 1	
CHANNEL DETAILS										
Name	Max Q (cu.m/s)	Max V (m/s)		Chainage (m)	Max HGL (m)	Due to Stor	m			
OVERFLOW ROUTE DETAILS										
Name OF1	Max Q U/S	Max Q D/S 0	0	Safe Q 0.569	Max D	Max DxV 0	Max Wid	lth Max V 0	Due to Storm 0	
DETENTION BASIN DETAILS										
Name	Max WL	MaxVol		Max Q Total	Max Q Low Level	Max Q High Level				
Basin 1	56.6	57	2.9				0			
CONTINUITY CHECK for AR&R 5 year, 1.5 hours storm, ave Node	rage 41.7 mm Inflow	n/h, Zone 1 Outflow		Storage Change	Difference					
Basin 1	(cu.m) 23.7	(cu.m)	3.64	(cu.m)	% 3 0.	1				
Outlet 2	23.6		3.64 3.64			0				
Outlet 1	19.7	⁷ 2 19	9.72	()	0				

PIT / NODE DETAILS Name Outlet 2	Max HGL 55.1	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)		nd M F	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
SUB-CATCHMENT DETAILS Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	ī	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Post - Development Ca Pre-Development Catch	0.02 0.01			0.018 0.008	5 5	12		5 AR&R 5 year, 25 minutes storm, average 83 mm/h, Zone 1 0 AR&R 5 year, 1.5 hours storm, average 41.7 mm/h, Zone 1
Outflow Volumes for Total Catchment (0.05 impervious + 0.0 Storm AR&R 5 year, 5 minutes storm, average 161 mm/h, Zone 1 AR&R 5 year, 10 minutes storm, average 125 mm/h, Zone 1 AR&R 5 year, 15 minutes storm, average 93 mm/h, Zone 1 AR&R 5 year, 20 minutes storm, average 93 mm/h, Zone 1 AR&R 5 year, 25 minutes storm, average 83 mm/h, Zone 1 AR&R 5 year, 30 minutes storm, average 76 mm/h, Zone 1 AR&R 5 year, 45 minutes storm, average 62 mm/h, Zone 1 AR&R 5 year, 1 hour storm, average 53 mm/h, Zone 1 AR&R 5 year, 1.5 hours storm, average 41.7 mm/h, Zone 1 AR&R 5 year, 2 hours storm, average 35.1 mm/h, Zone 1 AR&R 5 year, 3 hours storm, average 27.4 mm/h, Zone 1	Total Rainf- cu.m 15. 23.9 30.4 35.5 39. 43.6 53.3 60.8 71.8	0.11 total ha) all Total Runoff cu.m (Runoff 9 4 7.31 (47.4%) 2 14.00 (58.5%) 2 19.14 (62.9%) 9 23.06 (64.8%) 7 25.86 (65.1%) 2 28.35 (65.0%) 8 35.37 (66.3%) 4 40.43 (66.4%) 1 47.27 (65.8%) 9 52.79 (65.5%) 7 61.26 (64.9%)	•	3.81 (45 8.42 (64 11.97 (7 11.97 (7 11.97 (7 16.42 (7 17.95 (7 17.95 (7 17.96 (25.80 (7 18.96 (7) 19.96 (7) 19	unoff %) .0%) .0%) (1.5%) (4.7%) (5.2%) (4.8%) (6.9%) (7.1%) (5.8%) (5.2%)			
PIPE DETAILS Name Pipe1	Max Q (cu.m/s) 0.01	Max V (m/s) 6 1	Max U/S HGL (m)	Max D/S HGL (m 55.157)	Due to Storn		es storm, average 83 mm/h, Zone 1
CHANNEL DETAILS Name	Max Q (cu.m/s)	Max V (m/s)	Chainage (m)	Max HGL (m		Due to Storn	n	
OVERFLOW ROUTE DETAILS Name OF1		Max Q D/S 0	Safe Q 0	Max D 0.565	0	Max DxV	Max Widt	h Max V Due to Storm 0 0
DETENTION BASIN DETAILS Name	Max WL	MaxVol	Max Q Total	Max Q Low Lev		Max Q High Level		
Basin 1	55.4	6 3		0.016	0.016	nigri Levei ()	
CONTINUITY CHECK for AR&R 5 year, 1.5 hours storm, avenue. Node	erage 41.7 mi Inflow (cu.m)	Outflow (cu.m)	(cu.m)	ange Differen %	ce			
Basin 1 Outlet 2 Outlet 1	25.6 25.4 21.6	3 25.4	3	0.05 0 0	0.5 0 0			