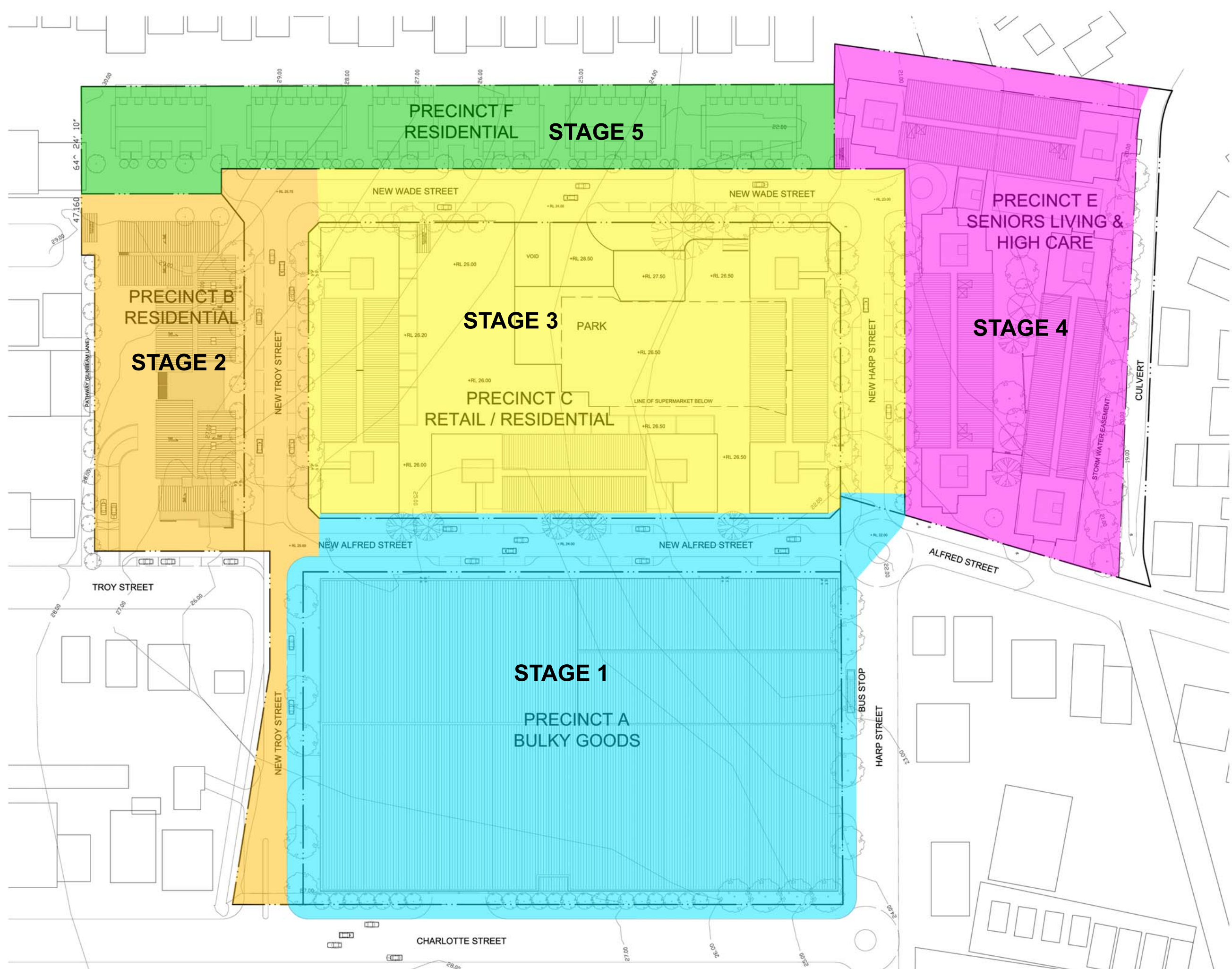


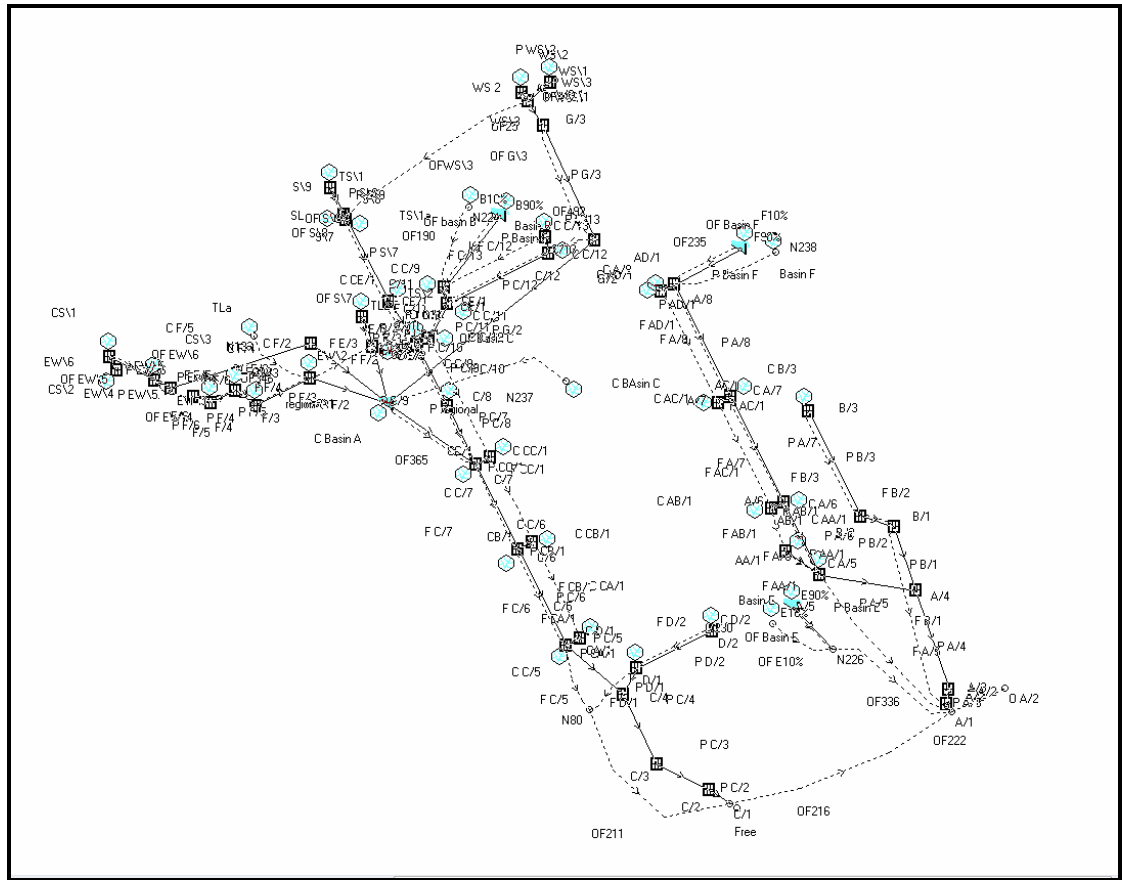
Appendix C

Precinct Plan



Appendix D

Proposed Condition – DRAINS Model Input and Output



DRAINS Model Name and File Path: F:\AA001875\0-Calculations\E-Stormwater\0-Drains\DesignFiles\4000-AA001875-00-Existing-2008-09-18.drn																	
DRAINS Version: 2008.06-15 May 2008																	
Modeler's Name: Darlan Castro																	
Description: Clemton Park Redevelopment																	
Version 9																	
PIT / NODE DETAILS		Name	Type	Family	Size	Ponding Volume	Pressure Change	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor	x	y	Bolt-down	id	Part Full Shock Loss	
						(cu.m)	Coef. Ku										
AA/1	OnGrade	NSW Dept. of Hous	2.4 m lintel (all grades)		4			22.727			0	0.2	324713.539	6244759.991	No	11	1 x Ku
A/5	Sag	NSW Dept. of Hous	2.4 m lintel (all grades)	1	0.8	22.524			0.15		0	0.2	324727.412	6244750.39	No	5	1 x Ku
A/4	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.8	20.52					0	0.2	324766.213	6244744.082	Yes	4	1 x Ku
A/3	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.8	19.956					0	0.2	324779.797	6244704.047	Yes	3	1 x Ku
A/2	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.8	19.897					0	0.2	324778.763	6244697.912	Yes	2	1 x Ku
A/1	Node					19.771							324780.707	6244694.941		1	
AB/1	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		4	22.985					0	0	324707.56	6244777.498	No	12	1 x Ku
A/6	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		0.8	22.985					0.2	324712.566	6244780.008	No	6	1 x Ku	
AC/1	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		4	23.463					0	0	324688.139	6244820.248	No	13	1 x Ku
A/7	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		1.2	23.463					0.2	324691.137	6244822.758	No	7	1 x Ku	
AD/1	OnGrade	Weldiok	GG78-62		4	24.792					0	0.2	324662.783	6244865.82	No	14	1 x Ku
A/8	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		2.5	24.792					0	0.2	324668.191	6244868.532	No	8	1 x Ku
B/3	OnGrade	unlimited	unlimited		4	23.813					0	0	324722.464	6244817.116	No	17	1 x Ku
B/2	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		1	21.917					0	0.2	324743.927	6244774.291	No	16	1 x Ku
B/1	OnGrade	Weldiok	GG78-62		1	21.283					0	0.2	324757.411	6244770.023	No	15	1 x Ku
CI/3	OnGrade	Weldiok	GG78-62		4	26.067					0	0.2	324615.785	6244887.886	No	30	1 x Ku
CI/2	OnGrade	Weldiok	GG78-62		2	26.053					0	0	324616.956	6244881.202	No	29	1 x Ku
CI/1	OnGrade	Weldiok	GG78-62		0.8	25.732					0.2	324575.833	6244860.588	No	28	1 x Ku	
C/10	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		0.8	25.331					0	0	324568.45	6244846.428	No	27	1 x Ku
C/9	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		0.8	25.331					0	0.2	324563.444	6244843.919	No	26	1 x Ku
C/8	OnGrade	unlimited	unlimited		0.5	24.629					0.2	324575.878	6244819.114	No	25	1 x Ku	
C/7	OnGrade	unlimited	unlimited		0.5	23.649					0	0.2	324587.352	6244795.22	No	24	1 x Ku
C/6	OnGrade	Weldiok	GG78-62		0.5	22.701					0	0.2	324604.535	6244760.941	No	23	1 x Ku
C/5	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		0.8	22.102					0	0.2	324624.253	6244721.608	No	22	1 x Ku
C/4	OnGrade	Weldiok	GG78-62		0.8	21.688					0	0	324647.303	6244701.985	Yes	21	1 x Ku
C/3	OnGrade	Weldiok	GG78-62		0.8	21.101					0	0	324661.087	6244673.416	Yes	20	1 x Ku
C/2	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.5	20.547					0	0	324682.392	6244663.014	Yes	19	1 x Ku
CI/1	Node					20.408							324690.84	6244657.436		18	
CA/1	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		4	22.102					0	0.2	324630.054	6244724.519	No	31	1 x Ku
CB/1	OnGrade	Weldiok	GG78-62		4	22.701					0	0.2	324610.346	6244763.854	No	32	1 x Ku
CC/1	OnGrade	Weldiok	GG78-62		4	23.652					0	0	324593.125	6244798.208	No	33	1 x Ku
CI/2	OnGrade	Weldiok	GG78-62		4	22.266					0	0	324683.366	6244727.808	No	37	1 x Ku
D/1	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		0.8	21.925					0	0.2	324652.888	6244712.53	No	36	1 x Ku
E/3	Sag	NSW Dept. of Hous	2.4 m lintel (all grades)	10	4	25.359			0	0	0	0	324541.313	6244855.107	No	40	1 x Ku
E/2	Sag	Customized	Customized 2	2	0.5	25.16			0.4	0	0.5	324545.656	6244843.168	No	39	1 x Ku	
F/6	OnGrade	NSW Dept. of Hous	2.4 m lintel (all grades)		4	26.656					0	0.2	324472.854	6244822.727	No	46	1 x Ku
F/5	OnGrade	NSW Dept. of Hous	2.4 m lintel (all grades)		2	26.706					0	0.2	324479.589	6244820.453	No	45	1 x Ku
F/4	OnGrade	NSW Dept. of Hous	2.4 m lintel (all grades)		2	26.367					0	0.2	324489.895	6244825.498	No	44	1 x Ku
F/3	OnGrade	NSW Dept. of Hous	2.4 m lintel (all grades)		2	25.689					0	0.2	324497.899	6244819.229	No	43	1 x Ku
F/2	OnGrade	NSW Dept. of Hous	3.6 m lintel (all grades)		2	25.197					0	0.2	324520.232	6244830.423	No	42	1 x Ku
O A/2	Node					19.897							324802.409	6244704.158		47	
O E/2	Node					25.328							324550.656	6244848.168		49	
N80	Node												324633.823	6244695.462		35	
N238	Node					26							324709.223	6244881.457		426	
N230	Node					26							324707.95	6244730.461		430	
N224	Node												324584.691	6244899.816		432	
EW/5	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		2	27.21					0	0.2	324441.352	6244833.678	No	441	1 x Ku
EW/6	OnGrade	unlimited	unlimited		0.5	27.18					0	0.2	324438.712	6244839.035	No	440	1 x Ku
EW/4	OnGrade	NSW Dept. of Hous	1.8 m lintel (all grades)		0.5	27.05					0	0.2	324456.811	6244829.681	No	442	1 x Ku
EW/3	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.8	26.88					0	0.2	324463.441	6244826.221	No	437	1 x Ku
EW/2	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.8	25.6					0	0.2	324520.36	6244844.576	Yes	438	1 x Ku
S/9	OnGrade	NSW Dept. of Hous	1.68 m lintel (all grades)		4	27.93					0	0.2	324528.354	6244907.654	No	444	1 x Ku
S/8	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.8	27.2					0	0.2	324533.885	6244896.852	No	439	1 x Ku
S/7	OnGrade	NSW Dept. of Hous	RM.7 Grated Accessway Pit at		0.5	27.07					0	0.2	324534.796	6244894.924	No	443	1 x Ku
CD/1	OnGrade	unlimited	unlimited		0.5	25.465					0	0.2	324552.258	6244861.406	No	294289401	1 x Ku
WS 2	OnGrade	NSW Dept. of Hous	3.6 m lintel (all grades)		4	28.78					0	0.2	324606.137	6244946.549	No	446	1 x Ku
WS/3	Sag	Customized	Customized 1	10	0.8	26.6			0.2	0	0.5	324608.617	6244942.974	No	445	1 x Ku	
G/3	OnGrade	unlimited	unlimited		0.5	29.334					0	0	324614.876	6244933.03	No	491615249	1 x Ku
G/2	OnGrade	Weldiok	GG78-62		0.8	26.248					0	0	324635.787	6244886.703	No	491615248	1 x Ku
WS 1	OnGrade	NSW Dept. of Hous	2.4 m lintel (all grades)		4	28.9					0	0.2	324617.765	6244950.73	No	447	1 x Ku
N226	Node					26							324732.645	6244720.29		431	
CE/1	OnGrade	Weldiok	GG78-62		2	25.855					0	0.2	324574.663	6244867.272	No	35	1 x Ku
N139	Node												324489.335	6244847.343		247452787	
N237	Node					26							324624.164	6244829.029		491615374	
Free	Node					20.408							324693.742	6244655.824		588629717	
DETENTION BASIN DETAILS																	
Name	Elev	Volume	Init Vol. (cu.m)	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length			
regional/1	22.5	823	0	0 Orifice		930	22.52			324551.678	6244820.157	No					
	23	2023															
	23.5	3223															
	24	4423															
	24.5	5623															
Basin F	24	0	0 Orifice			150	24.5			324695.245	6244883.105	No					
	24.5	2															
	24.51	37															
	25	87															
	25.5	172															
	26	257															
Basin E	24	0	0 Orifice			200	24.5			324716.315	6244737.786	No					
	24.5	2															
	24.51	57															
	25	187															
	25.5	372															
	26	557															
Basin B	24	0	0 Orifice			130	24.5			324597.322	6244896.389	No					
	24.5	2															
	24.51	34															
	25	72															
	25.5	142															
	26	212															

SUB-CATCHMENT DETAILS															
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 (%)	
C AA/1	AA/1	0.0191	100	0	0	3	0	0	0	0	0				
C A/5	A/5	0.0449	100	0	0	3	10	0	0	0	0				
C AB/1	AB/1	0.041	100	0	0	3	10	0	0	0	0				
C A/6	A/6	0.032	100	0	0	3	0	0	0	0	0				
C AC/1	AC/1	0.046	100	0	0	3	0	0	0	0	0				
C A/7	A/7	0.0339	100	0	0	3	0	0	0	0	0				
C AD/1	AD/1	0.0311	100	0	0	3	0	0	0	0	0				
C A/8	A/8	0.0564	100	0	0	3	0	0	0	0	0				
C B/3	B/3	0.73	70	30	0	5	7	0	0	0	0				
C C/13	C/13	0.0199	100	0	0	2	10	0	0	0	0				
C C/12	C/12	0.0216	100	0	0	2	10	0	-1	-1	-1	-1	-1	-1	-1
C C/11	C/11	0.046	100	0	0	3	0	0	0	0	0				
C C/10	C/10	0.0341	100	0	0	3	0	0	0	0	0				
C C/9	C/9	0.0354	100	0	0	3	0	0	0	0	0				
C C/8	C/8	0.0235	100	0	0	3	0	0	0	0	0				
C C/7	C/7	0.0242	100	0	0	3	0	0	0	0	0				
C C/6	C/6	0.0339	100	0	0	3	0	0	0	0	0				
C C/5	C/5	0.041	100	0	0	3	0	0	0	0	0				
C CA/1	CA/1	0.0406	100	0	0	3	0	0	0	0	0				
C CB/1	CB/1	0.0342	100	0	0	3	0	0	0	0	0				
C CC/1	CC/1	0.0473	100	0	0	3	0	0	0	0	0				
C D/2	D/2	0.061	100	0	0	3	0	0	0	0	0				
C D/1	D/1	0.0613	100	0	0	3	0	0	0	0	0				
TLb	E/3	0.3	100	0	0	3	10	0	0	0	0				
C E/2	E/2	0.0451	90	10	0	5	10	0							
C Basin A	regional/1	1.4	100	0	0	5	0	0							
C F/5	F/5	0.0148	100	0	0	5	0	0							
C F/4	F/4	0.0104	100	0	0	3	10	0							
C F/3	F/3	0.0391	100	0	0	3	10	0							
C F/2	F/2	0.0412	100	0	0	3	10	0							
E10%	N238	0.049	0	100	0	5	5	0							
E10%	N230	0.09	0	100	0	5	5	0							
B10%	N224	0.03	0	100	0	5	5	0							
CS/2	EW/5	0.833	70	30	0	5	7	0							
CS/1	EW/6	5.73	80	20	0	6	8	0							
CS/3	EW/4	0.337	100	0	0	3	0	0							
TS/1	S/9	1.83	70	30	0	6	8	0							
SL	S/8	0.288	70	30	0	4	6	0							
TS1a	S/7	0.0025	100	0	0	1	0	0							
TS/2	CD/1	0.0624	100	0	0	3	10	0							
WS/2	WS/2	0.243	100	0	0	3	0	0							
WS/1	WS/1	1.779	70	30	0	6	8	0							
F90%	Basin F	0.44	100	0	0	5	0	0							
E90%	Basin E	0.89	100	0	0	5	5	0							
B90%	Basin B	0.35	100	0	0	5	5	0							
C CE/1	CE/1	0.0384	100	0	0	2	0	0							
La	N139	2.38	70	30	0	6	8	0							
C Basin C	N237	1.2	90	10	0	5	5	0							
PIPE DETAILS															
Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From	At Chg	
P AA/1	AA/1	A/5	16.871	21.252	21.049	1.24	Concrete, und	375	375	0.3	New	1	AA/1	0	
P A/5	A/5	A/4	39.31	20.049	19.011	2.64	Concrete, und	450	450	0.3	New	1	A/5	0	
P A/4	A/4	A/3	42.277	18.98	18.558	1	Concrete, und	750	750	0.3	New	1	A/4	0	
P A/3	A/3	A/2	6.222	18.528	18.465	1.01	Concrete, und	750	750	0.3	New	1	A/3	0	
P A/2	A/2	A/1	3.55	18.435	18.4	0.99	Concrete, und	750	750	0.3	New	1	A/2	0	
P AB/1	AB/1	A/6	5.6	21.526	21.47	1	Concrete, und	375	375	0.3	New	1	AB/1	0	
P A/6	A/6	A/5	33.13	21.23	20.899	1	Concrete, und	375	375	0.3	New	1	A/6	0	
P AC/1	AC/1	A/7	5.601	22.005	21.949	1	Concrete, und	375	375	0.3	New	1	AC/1	0	
P A/7	A/7	A/6	47.82	21.738	21.26	1	Concrete, und	375	375	0.3	New	1	A/7	0	
P AD/1	AD/1	A/8	6.05	23.259	23.203	0.93	Concrete, und	375	375	0.3	New	1	AD/1	0	
P A/8	A/8	A/7	51.203	22.995	21.768	2.4	Concrete, und	375	375	0.3	New	1	A/8	0	
P B/3	B/3	B/2	47.902	22.257	20.406	3.86	Concrete, und	525	525	0.3	New	1	B/3	0	
P B/2	B/2	B/1	14.143	20.363	19.786	4.08	Concrete, und	525	525	0.3	New	1	B/2	0	
P B/1	B/1	A/4	27.394	19.74	19.003	2.68	Concrete, und	525	525	0.3	New	1	B/1	0	
P C/13	C/13	C/12	6.786	24.714	24.646	1	Concrete, und	375	375	0.3	New	1	C/13	0	
P C/12	C/12	C/11	46	24.616	24.156	1	Concrete, und	450	450	0.3	New	1	C/12	0	
P C/11	C/11	C/10	15.969	24.126	23.967	1	Concrete, und	450	450	0.3	New	1	C/11	0	
P C/10	C/10	C/9	5.6	23.937	23.881	1	Concrete, und	450	450	0.3	New	1	C/10	0	
P C/9	C/9	C/8	27.747	23.851	23.215	2.29	Concrete, und	750	750	0.3	New	1	C/9	0	
P C/8	C/8	C/7	25.506	23.185	22.126	4	Concrete, und	825	825	0.3	New	1	C/8	0	
P C/7	C/7	C/6	38.345	21.417	20.732	1.79	Box Culverts	2.44W x 1.21H		0.3	NewFixed	1	C/7	0	
P C/6	C/6	C/5	44	20.702	20.186	1.17	Box Culverts	2.44W x 1.21H		0.3	NewFixed	1	C/6	0	
P C/5	C/5	C/4	30.27	20.156	19.786	1.22	Box Culverts	2.44W x 1.21H		0.3	NewFixed	1	C/5	0	
P C/4	C/4	C/3	31.72	19.756	19.439	1	Box Culverts	2.44W x 1.21H		0.3	NewFixed	1	C/4	0	
P C/3	C/3	C/2	23.709	19.409	19.172	1	Box Culverts	2.44W x 1.21H		0.3	NewFixed	1	C/3	0	
P C/2	C/2	C/1	11.587	19.142	19.026	1	Box Culverts	2.44W x 1.21H		0.3	Existing	1	C/2	0	
P CA/1	CA/1	C/5	6.5	20.63	20.565	1	Concrete, und	375	375	0.3	New	1	CA/1	0	
P CB/1	CB/1	C/6	6.5	21.229	21.164	1	Concrete, und	375	375	0.3	New	1	CB/1	0	
P CC/1	CC/1	C/7	6.5	22.18	22.115	1	Concrete, und	375	375	0.3	New	1	CC/1	0	
P D/2	D/2	D/1	34.093	20.746	20.405	1	Concrete, und	375	375	0.3	New	1	D/2	0	
P D/1	D/1	C/4	11.933	20.375	20.255	1.01	Concrete, und	375	375	0.3	New	1	D/1	0	
P E/3	E/3	E/2	12.704	23.784	23.657	1	Concrete, und	450	450	0.3	New	1	E/3	0	
P E/2	E/2	regional/1	4.072	23.627	23.5	3.12	Concrete, und	1200	1200	0.3	NewFixed	1	E/2	0	
P regional	regional/1	C/7	10	22.5	5	5	Concrete, und	1200	1200	0.3	NewFixed	1	regional/1	0	
P F/6	F/6	F/5	7.109	24.383	24.241	2	Concrete, und	900	900	0.3	New	1	F/6	0	
P F/5	F/5	F/4	11.475	24.211	23.981	2	Concrete, und	900	900	0.3	New	1	F/5	0	
P F/4	F/4	F/3	10.167	23.951	23.849	1	Concrete, und	900	900	0.3	New	1	F/4	0	
P F/3	F/3	F/2	24.981	23.819	23.57	1	Concrete, und	900	900	0.3	New	1	F/3	0	
P F/2	F/2	regional/1	3.953	23.54	23.5	1.01	Concrete, und	900	900	0.3	NewFixed	1	F/2	0	
P EW/6	EW/6	EW/5	5.97442	26.51	26.5	0.17	Concrete, und	450	450	0.3	New	1	EW/5	0	
P EW/5	EW/6	EW/4	20	25.96	25.69	1.35	Concrete, und	1050	1070	0.3	New	1	EW/6	0	
P EW/4	EW/4	EW/3	6.7062	25.69	25.489	3	Concrete, und	1050	1070	0.3	New	1	EW/4	0	
P EW/3	EW/3	EW/2	64	25.49	23.8	2.64	Concrete, und	1050	1070	0.3	New	1	EW/3	0	
P EW/2	EW/2	regional/1	25	23.8	23.55	1	Concrete, und	1050	1070	0.3	NewFixed	1	EW/2	0	
P S/9	S/9	S/8	12.02	26.87	26.3	4.74	Concrete, und	375	375	0.3	New	1	S/9	0	
P S/8	S/8	S/7	2	26.3	26.22	4	Concrete, und	450	450	0.3	New	1	S/8	0	
P S/7	S/7	CD/1	38.4	26.19	24.55	4.27	Concrete, und</								

DETAILS OF SERVICES CROSSING PIPES														
Pipe	Chg (m)	Bottom Elev (m)	Height of Service (m)	Chg (m)	Bottom Elev (m)	Height of Service (m)	Chg (m)	Bottom Elev (m)	Height of Service (m)	etc				
CHANNEL DETAILS														
Name	From	To	Type	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 DETAILS														
Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major Storms (m)	SafeDepth Minor Storms (m)	Safe DvV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %		id
F AA/1	AA/1	A/5	0.1				Pathway 4 m	0.3	0.15	0.6	1	0		131
F A/5	A/5	A/1	0.5				8 m wide road	0.3	0.15	0.4	1	0		491615260
OF222	A/1	O A/2	0.1				8 m wide road	0.3	0.15	0.6	1	0		419
F AB/1	AB/1	AA/1	0.1				8 m wide road	0.3	0.15	0.4	1	100		132
F A/6	A/6	A/5	0.1				8 m wide road	0.3	0.15	0.4	1	100		126
F AC/1	AC/1	AB/1	0.1				Dish drain	0.2	0.2	0.4	1	100		133
F A/7	A/7	A/6	0.1				Dish drain	0.2	0.2	0.4	1	100		127
F AD/1	AD/1	AC/1	0.1				Dish drain	0.2	0.2	0.4	4	100		134
F A/8	A/8	A/7	0.1				8 m wide road	0.3	0.15	0.4	4	100		128
F B/3	B/3	B/2	0.1				Dummy used	0.2	0.05	0.6	1	0		137
F B/2	B/2	B/1	0.1				8 m wide road	0.3	0.15	0.4	1	0		136
F B/1	B/1	A/1	0.5				8 m wide road	0.3	0.15	0.4	1	0		491615261
F C/13	C/13	CE/1	0.1				Dish drain	0.2	0.2	0.4	1.25	100		149
F C/12	C/12	C/11	0.1				Dish drain	0.2	0.2	0.4	1.25	100		148
F C/11	C/11	C/10	0.1				8 m wide road	0.3	0.15	0.4	1.5	100		147
F C/10	C/10	CC/1	0.2				8 m wide road	0.3	0.15	0.4	4.3	100		146
F C/9	C/9	C/8	0.1				8 m wide road	0.3	0.15	0.4	0.7	100		145
F C/8	C/8	C/7	0.1				Dish drain	0.2	0.2	0.4	4	100		144
F C/7	C/7	C/6	0.2				Dish drain	0.2	0.2	0.4	4	100		143
F C/6	C/6	C/5	0.2				Dish drain	0.2	0.2	0.4	1	100		142
F C/5	C/5	N80	0.1				8 m wide road	0.3	0.15	0.4	1	0		491615262
OF216	C/1	A/1	0.5				8 m wide road	0.3	0.15	0.6	1	0		412
F CA/1	CA/1	C/5	0.1				8 m wide road	0.3	0.15	0.4	1	0		491615263
F CB/1	CB/1	CA/1	0.2				Dish drain	0.2	0.2	0.4	1	100		151
F CC/1	CC/1	CB/1	0.2				Dish drain	0.2	0.2	0.4	4	100		152
F D/2	D/2	D/1	0.1				Dish drain	0.2	0.2	0.4	1	100		156
F D/1	D/1	N80	0.1				8 m wide road	0.3	0.15	0.4	1	0		491615265
F E/3	E/3	E/2	0.1				Pathway 4 m	0.3	0.15	0.6	1	0		158
F E/2	E/2	C/9	0.1				8 m wide road	0.3	0.15	0.4	0.5	0		491615266
OF365	regional/1	C/7	0.1	24.6		3	1.6 8 m wide road	0.3	0.15	0.6	1	0		247452941
F F/6	F/6	F/5	0.1				8 m wide road	0.3	0.15	0.4	1	0		163
F F/5	F/5	F/4	0.1				8 m wide road	0.3	0.15	0.4	1	0		162
F F/4	F/4	F/3	0.1				8 m wide road	0.3	0.15	0.4	1	0		161
F F/3	F/3	F/2	0.1				8 m wide road	0.3	0.15	0.4	1	0		160
F F/2	F/2	E/2	0.1				8 m wide road	0.3	0.15	0.4	0.5	100		491615267
OF211	N80	C/1	0.5				8 m wide road	0.3	0.15	0.6	1	0		407
OF235	N238	A/6	0.1				Dummy used	0.2	0.05	0.6	1	0		140794324
OF E10%	N230	N226	0.1				Dummy used	0.2	0.05	0.6	1	0		140794286
OF190	N224	CE/1	0.1				Dummy used	0.2	0.05	0.6	1	0		140794247
OF EW5	EW/5	EW/6	0.1				Dummy used	0.2	0.05	0.6	1	0		304
OF EW6	EW/6	EW/4	0.2				Dummy used	0.2	0.05	0.6	1	0		306
OF EW4	EW/4	F/6	0.1				8 m wide road	0.3	0.15	0.6	1	0		247452690
OF S/9	S/9	S/8	0.2				Dummy used	0.2	0.05	0.6	1	0		351
OF S/8	S/8	S/7	0.1				Dummy used	0.2	0.05	0.6	1	0		355
OF S/7	S/7	CD/1	0.5				Dummy used	0.2	0.05	0.6	1	0		247452685
F CD/1	CD/1	C/9	1				Pathway 4 m	0.3	0.15	0.6	1	0		491615264
OF25	WS 2	WS/3	0.1				Dummy used	0.2	0.05	0.6	1	0		332
OFWS/3	WS/3	S/7	1				Dummy used	0.2	0.05	0.6	1	0		491615311
OF G/3	G/3	G/2	0.3				Dummy used	0.2	0.05	0.6	1	0		491615320
OF482	G/2	C/12	0.1				Dish drain	0.2	0.2	0.6	1.25	0		491615336
OF WS/1	WS 1	WS/3	0.3				Dummy used	0.2	0.05	0.6	1	0		337
OF Basin F	Basin F	A/6	0.1	25.9		3	1.6	Dummy used	0.2	0.05	0.6	1	0	140794304
OF Basin E	Basin E	N226	0.1	25.9		5	1.6	Dummy used	0.2	0.05	0.6	1	0	140794254
OF336	N226	A/1	0.1				Dummy used	0.2	0.05	0.6	1	0		247452768
OF Basin B	Basin B	CE/1	0.1	25.9		0.5	1.6	Dummy used	0.2	0.05	0.6	1	0	140794225
F CE/1	CE/1	C/11	0.1				Pathway 4 m	0.3	0.15	0.6	1	0		154
OF346	N139	F/2	0.1				8 m wide road	0.3	0.15	0.6	1	0		247452788
OF Basin C	N237	regional/1	0.1				Dummy used	0.2	0.05	0.6	1	0		140794212

DRAINS Model Name and File Path: F:\AA001875-D-Calculations\E-Stormwater\C-DrainsDesignFiles\4000-AA001875-00-Existing-2008										RESULTS 10 YEAR ARI	
DRAINS Version:		2008.06.15 May 2008									
Modeller's Name:		Darlan Castro									
Description:		Clemton Park Redevelopment									
DRAINS results prepared 02 October, 2008 from Version 2008.06											
PIT / NODE DETAILS											
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint				
AA/1	21.38		0.009		1.34	0	None				
A/5	20.48	22.55	0.022	0.1	2.04	0	None				
A/4	19.58		0		0.94	0	None				
A/3	19.15		0		0.81	0	None				
A/2	19.03		0		0.86	0	None				
A/1	18.73		3.083								
AB/1	21.73		0.02		1.25	0	None				
A/6	21.7		0.016		1.29	0	None				
AC/1	22.24		0.026		1.22	0	None				
A/7	22.2		0.019		1.26	0	None				
AD/1	23.47		0.015		1.33	0.004	Inlet Capacity				
A/8	23.46		0.048		1.33	0.003	Inlet Capacity				
B/3	23.26		0.332		0.56	0	None				
B/2	21		0		0.91	0	None				
B/1	20.38		0		0.9	0	None				
C/13	24.87		0.01		1.2	0.002	Inlet Capacity				
C/12	24.86		0.011		1.19	0.002	Inlet Capacity				
C/11	24.85		0.036		0.88	0.013	Inlet Capacity				
C/10	24.84		0.03		0.49	0	None				
C/9	24.82		0.017		0.51	0	None				
C/8	23.93		0.011		0.7	0	None				
C/7	22.04		0.012		1.61	0	None				
C/6	21.33		0.017		1.37	0.004	Inlet Capacity				
C/5	20.89		0.024		1.21	0	None				
C/4	20.5		0		1.19	0	None				
C/3	20.15		0		0.95	0	None				
C/2	19.78		0		0.77	0	None				
C/1	19.33		0.001								
CA/1	20.9		0.027		1.2	0	None				
CB/1	21.4		0.023		1.3	0.007	Inlet Capacity				
CC/1	22.36		0.023		1.29	0.006	Inlet Capacity				
D/2	20.95		0.03		1.32	0.009	Inlet Capacity				
D/1	20.6		0.039		1.32	0.001	Inlet Capacity				
E/3	24.4	25.36	0.146	10	0.96	0.146	None				
E/2	24.4	25.16	1.502	0	0.76	0	None				
F/6	24.75		0.893		1.9	0.781	Inlet Capacity				
F/5	24.66		0.788		2.05	0.675	Inlet Capacity				
F/4	24.55		0.68		1.82	0.567	Inlet Capacity				
F/3	24.47		0.584		1.22	0.472	Inlet Capacity				
F/2	24.29		1.477		0.91	1.355	Inlet Capacity				
EW/5	27.19		0.379		0.02	0.326	Inlet Capacity				
EW/6	27.18		2.873		0	0.844	Outlet System				
EW/4	26.97		1.001		0.08	0.893	Inlet Capacity				
EW/3	26.79		0		0.07	0	None				
EW/2	24.97		0		0.63	0	None				
S/9	27.44		0.796		0.49	0.688	Inlet Capacity				
S/8	26.68		0.807		0.52	0.751	Inlet Capacity				
S/7	26.58		0.752		0.49	0.696	Inlet Capacity				
CD/1	25.03		0.721		0.44	0	None				
WS 2	28.52		0.118		0.26	0.027	Inlet Capacity				
WS/3	27.89	28.72	0.686	1.8	0.71	0	None				
G/3	27.3		0		2.03	0	None				
G/2	25.24		0		1.01	0	None				
WS 1	28.68		0.774		0.22	0.661	Inlet Capacity				
N226	24.02		0.038								
CE/1	24.87		0.033		0.99	0.012	Inlet Capacity				
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 Storm				
C AA/1	0.009	0.009	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C A/5	0.022	0.022	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C AB/1	0.02	0.02	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C A/6	0.016	0.016	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C AC/1	0.022	0.022	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C A/7	0.016	0.016	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C AD/1	0.015	0.015	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C A/8	0.027	0.027	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C B/3	0.332	0.249	0.083	5	7	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/13	0.01	0.01	0	2	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/12	0.011	0.011	0	2	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/11	0.022	0.022	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/10	0.017	0.017	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/9	0.017	0.017	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/8	0.011	0.011	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/7	0.012	0.012	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/6	0.017	0.017	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/5	0.02	0.02	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C CA/1	0.02	0.02	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C CB/1	0.017	0.017	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C CC/1	0.023	0.023	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C D/2	0.03	0.03	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C D/1	0.03	0.03	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
TLB	0.146	0.146	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C E/2	0.021	0.019	0.001	5.39	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C Basin A	0.682	0.682	0	5	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C F/5	0.007	0.007	0	5	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C F/4	0.005	0.005	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C F/3	0.019	0.019	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C F/2	0.02	0.02	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
E10%	0.021	0	0.021	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
E10%	0.038	0	0.038	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
B10%	0.013	0	0.013	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
CS/2	0.379	0.284	0.095	5	7	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
CS/1	2.549	2.13	0.419	6	8	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
CS/3	0.164	0.164	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
TS/1	0.796	0.595	0.201	6	8	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
SL	0.123	0.091	0.032	4	6	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
TS/1a	0.001	0.001	0	1	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
TS/2	0.03	0.03	0	3	10	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
WS/2	0.118	0.118	0	3	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
WS/1	0.774	0.579	0.195	6	8	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
F90%	0.215	0.215	0	5	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
E90%	0.434	0.434	0	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
CCE/1	0.171	0.171	0	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/6	0.019	0.019	0	2	0	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C C/5	0.023	0.023	0.261	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
C Basin A	0.682	0.682	0.682	5	5	0	0 AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				

Outflow Volumes for Total Catchment (16.2 impervious + 3.79 pervious = 20.0 total ha)									
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)					
AR&R 10 year	2877.61	2371.07 (82.42%)	12170.12 (93.200.94)	1156.97 (38.8%)					
AR&R 10 year	4491.07	3907.04 (87.0%)	3477.58 (95.6%)	429.45 (50.4%)					
AR&R 10 year	5688.69	5040.89 (88.6%)	4448.09 (96.5%)	592.79 (54.9%)					
AR&R 10 year	6653.43	5954.31 (89.5%)	5229.86 (97.0%)	724.46 (57.4%)					
AR&R 10 year	7485.11	6724.73 (90.0%)	5903.74 (97.3%)	821.00 (57.8%)					
AR&R 10 year	8283.52	7469.83 (90.2%)	6550.81 (97.6%)	919.02 (58.5%)					
AR&R 10 year	10030.05	9093.38 (90.7%)	7966.15 (98.0%)	1127.23 (59.3%)					
AR&R 10 year	11576.97	10543.65 (91.1%)	9219.65 (98.3%)	1324.00 (60.3%)					
AR&R 10 year	13353.44	12162.15 (91.1%)	10658.96 (98.1%)	1503.19 (59.4%)					
AR&R 10 year	14850.47	13530.16 (91.1%)	11872.04 (98.1%)	1658.13 (58.9%)					
AR&R 10 year	17125.94	15598.74 (91.1%)	13715.13 (98.1%)	1883.60 (58.0%)					
AR&R 10 year	19760.7	17926.73 (90.8%)	15851.48 (99.2%)	2075.25 (55.4%)					
PIPE DETAILS									
Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm				
P AA/1	0.009	1.1	21.3	21.097	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/5	0.201	3.3	20.234	19.579	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/4	0.534	2.8	19.311	19.15	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/3	0.534	1.7	19.034	19.034	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/2	0.534	2.8	18.767	18.732	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P AB/1	0.02	0.4	21.697	21.697	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/6	0.171	2.2	21.483	21.152	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P AC/1	0.026	0.4	22.203	22.203	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/7	0.137	2.1	21.952	21.697	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P AD/1	0.011	0.2	23.46	23.46	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P A/8	0.094	2.6	23.131	22.203	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P B/3	0.332	4.2	22.463	21.002	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P B/2	0.332	4.3	20.566	20.379	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P B/1	0.332	3.7	19.966	19.579	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P C/13	0.008	0.2	24.859	24.859	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P C/12	0.016	0.2	24.855	24.854	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P C/11	0.08	0.5	24.845	24.838	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/10	0.108	0.7	24.821	24.816	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/9	1.048	4.6	24.233	23.931	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P C/8	1.057	5.6	23.503	22.444	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P C/7	2.884	4.8	21.665	21.327	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/6	2.905	4.2	20.987	20.893	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/5	2.941	3.5	20.5	20.5	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/4	2.984	3.1	20.153	20.153	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/3	2.984	3.3	19.778	19.778	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P C/2	2.984	4	19.447	19.331	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P CA/1	0.027	0.3	20.893	20.893	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P CB/1	0.016	0.7	21.327	21.327	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P CC/1	0.017	1.3	22.245	22.18	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P D/2	0.02	1.4	20.819	20.605	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P D/1	0.059	1.7	20.509	20.5	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P E/3	0	0	24.402	24.402	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P E/2	1.502	3.3	24.139	24.139	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P regional	2.072	7.2	22.863	22.363	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P F/6	0.112	0.7	24.657	24.657	AR&R 10 year, 30 minutes storm, average 83 mm/h, Zone 1				
P F/5	0.225	1	24.551	24.551	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P F/4	0.337	0.9	24.471	24.471	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P F/3	0.448	1.3	24.288	24.288	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P F/2	0.57	1.3	24.139	24.139	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P EW/6	0.053	0.3	27.182	27.18	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P EW/5	2.102	2.3	27.045	26.967	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1				
P EW/4	2.191	2.4	26.816	26.787	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P292	2.191	5.8	25.96	24.968	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P EW/2	2.191	4	24.726	24.171	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P S/9	0.108	3.5	26.991	26.683	AR&R 10 year, 20 minutes storm, average 100 mm/h, Zone 1				
P S/8	0.164	1.6	26.584	26.584	AR&R 10 year, 20 minutes storm, average 100 mm/h, Zone 1				
P S/7	0.22	3.9	26.362	25.027	AR&R 10 year, 20 minutes storm, average 100 mm/h, Zone 1				
P CD/1	0.941	2.1	24.912	24.816	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P WS/2	0.091	3.3	28.194	28.024	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P WS/3	0.882	3.6	27.417	27.302	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P G/3	0.882	5.8	26.783	25.238	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P G/2	0.882	5.5	24.641	24.139	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1				
P WS/1	0.112	2.3	28.327	28.089	AR&R 10 year, 15 minutes storm, average 114 mm/h, Zone 1				
P Basin F	0.044	1.6	24.091	23.991	AR&R 10 year, 1 hour storm, average 58 mm/h, Zone 1				
P Basin E	0.079	1.9	24.124	24.024	AR&R 10 year, 1 hour storm, average 58 mm/h, Zone 1				
P Basin B	0.037	0.1	24.867	24.867	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1				
P CE/1	0.049	0.4	24.856	24.854	AR&R 10 year, 2 hours storm, average 37.2 mm/h, Zone 1				
CHANNEL DETAILS									
Name	Max Q (cu.m/s)	Max V (m/s)	Chainage (m)	Max HGL (m)	Due to Storm				
OVERFLOW ROUTE DETAILS									
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max Dv	Max Width	Max V	Due to Storm	
F AA/1	0	0	0.565	0	0	0	0		
F A/5	0	0	0.238	0	0	0	0		
OF222	3.502	3.502	0.238	0.338	0.88	6.4	2.59	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1	
F AB/1	0	0.009	0.238	0.056	0.04	0.5	0.73	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F A/6	0	0.022	0.238	0.073	0.06	1.09	0.82	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F AC/1	0	0.02	1.133	0.066	0.06	0.71	0.85	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F A/7	0	0.016	1.133	0.06	0.05	0.65	0.8	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F AD/1	0.004	0.026	0.937	0.057	0.09	0.61	1.52	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F A/8	0.003	0.019	0.476	0.056	0.08	0.52	1.46	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F B/3	0	0	0.256	0	0	0	0		
F B/2	0	0	0.238	0	0	0	0		
F B/1	0	0	0.238	0	0	0	0		
F C/13	0.002	0.021	1.179	0.064	0.06	0.69	0.94	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F C/12	0.002	0.024	1.179	0.068	0.07	0.73	0.97	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F C/11	0.013	0.03	0.291	0.075	0.08	1.15	1.02	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F C/10	0	0.023	0.493	0.059	0.09	0.61	1.57	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F C/9	0	0.011	0.199	0.063	0.04	0.75	0.66	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F C/8	0	0.012	0.937	0.042	0.05	0.45	1.24	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F C/7	0	0.017	0.937	0.047	0.07	0.51	1.38	AR&R 10 year, 5 minutes storm, average 173 mm/h, Zone 1	
F C/6	0.004	0.024	1.133	0.071	0.06	0.77	0.89	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F C/5	0	0	0.238	0	0	0	0		
OF216	2.984	2.984	0.238	0.318	0.78	6.4	2.44	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1	
F CA/1	0	0	0.238	0	0	0	0		
F CB/1	0.007	0.027	1.133	0.074	0.07	0.8	0.91	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F CC/1	0.006	0.023	0.933	0.054	0.08	0.58	1.49	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F D/2	0.009	0.039	1.133	0.096	0.06	2.86	0.64	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F D/1	0.001	0.028	1.021	0.021	0.01	0.17	0.35	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F E/3	0.146	0.146	0.565	0.092	0.08	3.88	0.85	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F E/2	0	0	0.168	0	0	0	0		
OF365	0	0	0.238	0	0	0	0		
F F/6	0.781	0.781	0.238	0.21	0.31	6.4	1.46	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F F/5	0.675	0.675	0.238	0.203	0.28	6.4	1.38	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F F/4	0.567	0.567	0.238	0.195	0.25	6.26	1.29	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F F/3	0.001	0.028	0.186	0.23	0.52	5.82	0.23	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
F F/2	1.355	1.375	0.168	0.274	0.4	6.4	1.46	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	
OF211	0.991	0.991	0.238	0.291	0.91	6.17	0.91	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1	

OF235	0.021	0.021	0.256	0.019	0.01	6.44	0.33	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF E10%	0.038	0.038	0.256	0.025	0.01	8.23	0.37	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF190	0.013	0.013	0.256	0.017	0	5.54	0.27	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF EW/5	0.326	0.326	0.256	0.055	0.04	15.05	0.7	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF EW/6	0.844	0.844	0.256	0.081	0.07	20.25	0.91	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF EW/4	0.893	0.893	0.238	0.218	0.33	6.4	1.53	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF S/9	0.688	0.688	0.256	0.075	0.06	19	0.86	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF S/8	0.751	0.751	0.256	0.078	0.07	19.54	0.88	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF S/7	0.696	0.696	0.256	0.075	0.07	19	0.87	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
F CD/1	0	0	0.565	0	0	0	0	
OF25	0.027	0.027	0.256	0.022	0.01	7.33	0.34	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OFWS/3	0	0	0.256	0	0	0	0	
OF G/3	0	0	0.256	0	0	0	0	
OF492	0	0	1.267	0	0	0	0	
OF WS/1	0.661	0.661	0.256	0.073	0.06	18.64	0.86	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF Basin F	0	0	0.256	0	0	0	0	
OF Basin E	0	0	0.256	0	0	0	0	
OF336	0.106	0.106	0.256	0.035	0.02	11.09	0.51	AR&R 10 year, 1.5 hours storm, average 44.6 mm/h, Zone 1
OF basin B	0	0	0.256	0	0	0	0	
F CE/1	0.012	0.012	0.565	0.036	0.02	1.43	0.46	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF346	1.035	1.035	0.238	0.227	0.37	6.4	1.62	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
OF Basin C	0.577	0.577	0.256	0.07	0.06	17.92	0.82	AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1
DETENTION BASIN DETAILS								
Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level			
regional\1	24.14	3557.4	2.072	2.072	0			
Basin F	25.37	149.4	0.044	0.044	0			
Basin E	25.36	320.9	0.079	0.079	0			
Basin B	25.4	128.5	0.037	0.037	0			
CONTINUITY CHECK for AR&R 10 year, 25 minutes storm, average 90 mm/h, Zone 1								
Node	Inflow (cu.m)	Outflow (cu.m)	Storage Change (cu.m)	Difference %				
AA/1	6.97	6.97	0	0				
A/5	268.87	268.8	0	0				
A/4	503.7	503.88	0	0				
A/3	503.88	503.81	0	0				
A/2	503.81	503.74	0	0				
A/1	6562.62	6562.55	0	0				
AB/1	14.96	14.96	0	0				
A/6	245.57	245.51	0	0				
AC/1	18.86	18.86	0	0				
A/7	218.97	218.92	0	0				
AD/1	11.35	11.35	0	0				
A/8	188.18	188.11	0	0				
B/3	234.09	234.09	0	0				
B/2	234.09	234.89	0	-0.3				
B/1	234.89	234.9	0	0				
C/13	7.26	7.26	0	0				
C/12	14.13	14.13	0	0				
C/11	160.63	160.56	0	0				
C/10	173.01	172.85	0	0.1				
C/9	881.95	881.99	0	0				
C/8	890.57	890.53	0	0				
C/7	5663.31	5662.69	0	0				
C/6	5687.33	5687.18	0	0				
C/5	5720.75	5720.38	0	0				
C/4	5764.9	5764.37	0	0				
C/3	5764.37	5764.16	0	0				
C/2	5764.16	5763.94	0	0				
C/1	5764.05	5763.51	0	0				
CA/1	18.61	18.61	0	0				
CB/1	16.08	16.08	0	0				
CC/1	17.26	17.26	0	0				
D/2	22.26	22.27	0	0				
D/1	44.64	44.63	0	0				
E/3	109.5	99.5	10	0				
E/2	772.78	772.78	0	0				
regional\1	4819.44	4750.28	68.51	0				
F/6	219.65	219.65	0	0				
F/5	225.05	225.05	0	0				
F/4	228.85	228.85	0	0				
F/3	243.12	243.12	0	0				
F/2	1020.93	1020.93	0	0				
O A/2	6562.08	6562.08	0	0				
O E/2	0	0	0	0				
N80	0.11	0.11	0	0				
N238	10.7	10.7	0	0				
N230	19.66	19.66	0	0				
N224	6.55	6.55	0	0				
EW/5	267.12	267.12	0	0				
EW/6	2188.55	2188.55	0	0				
EW/4	2311.55	2311.66	0	0				
EW/3	2092.01	2091.98	0	0				
EW/2	2091.98	2092.03	0	0				
S/9	586.5	586.5	0	0				
S/8	672.49	672.49	0	0				
S/7	673.41	673.4	0	0				
CD/1	696.18	696.18	0	0				
WS/2	88.69	88.69	0	0				
WS/3	658.85	658.85	0	0				
G/3	658.85	659.75	0	-0.1				
G/2	659.75	659.78	0	0				
WS/1	570.16	570.16	0	0				
Basin F	160.6	147.6	13.1	-0.1				
Basin E	324.85	277.12	47.88	0				
N226	296.79	296.62	0	0.1				
Basin B	127.75	108.21	19.63	-0.1				
CE/1	129.79	129.71	0	0.1				
N139	762.77	762.77	0	0				
N237	420.41	420.41	0	0				
Free	0	0	0	0				
Run Log for 4000 run at 12:27:16 on 2/10/2008								
No water upwelling from any pit.								
Freeboard was less than 0.15m at EW/4, EW/5, EW/6, EW/3								
The maximum flow exceeded the safe value in the following overflow routes: F F/2, OF346, OF EW/4, OF S/7, OF Basin C, OF S/8, OF EW/6, OF S/9, OF WS/1, OF222, OF								
The following overflow routes carried water uphill (adding energy): F F/6								
These results may be invalid. You should check for water flowing round in circles at these locations. You may need to reformulate the model.								

DRAINS Model Name and File Path: F:\AA001875-D-Calculations\E-Stormwater\C-DrainsDesignFiles\4000-AA001875-00-Existing-2008										RESULTS	
DRAINS Version: 2008.06.15 May 2008										100 YEAR ARI	
Modeller's Name: Darlan Castro											
Description: Clemton Park Redevelopment											
DRAINS results prepared 02 October, 2008 from Version 2008.06											
PIT / NODE DETAILS											
Name	Max HGL	Max Pond	Max Surface	Max Pond	Min	Overflow	Constraint				
		HGL	Flow Arriving	Volume	Freeboard	(cu.m/s)					
			(cu.m/s)	(cu.m)	(m)						
AA/1	21.41		0.014		1.31	0	None				
A/5	21.38	22.55	0.032	0.1	1.14	0	None				
A/4	21		0		-0.48		Outlet System				
A/3	20.8		0		-0.85		Outlet System				
A/2	20.7		0		-0.8		Outlet System				
A/1	20.6		4.906								
AB/1	21.99		0.029		0.99	0	None				
A/6	21.98		0.023		1	0	None				
AC/1	22.56		0.04		0.9	0	None				
A/7	22.53		0.033		0.93	0	None				
AD/1	23.53		0.022		1.27	0.007	Inlet Capacity				
A/8	23.52		0.068		1.27	0.011	Inlet Capacity				
B/3	23.71		0.465		0.1	0	None				
B/2	21.63		0		0.29	0	None				
B/1	21.28		0		0	0.089	Outlet System				
C/13	25.09		0.014		0.97	0.004	Inlet Capacity				
C/12	25.09		0.015		0.96	0.004	Inlet Capacity				
C/11	25.09		0.054		0.64	0.023	Inlet Capacity				
C/10	25.06		0.047		0.27	0	Inlet Capacity				
C/9	25.02		0.025		0.31	0	None				
C/8	24.19		0.017		0.44	0	None				
C/7	22.39		1.237		1.26	0	None				
C/6	22.22		0.024		0.48	0.008	Inlet Capacity				
C/5	22.1		0.071		0	0.983	Outlet System				
C/4	22.01		0		-0.32		Outlet System				
C/3	21.93		0		-0.83		Outlet System				
C/2	21.85		0		-1.3		Outlet System				
C/1	21.8		1.122								
CA/1	22.1		0.042		0	0.037	Outlet System				
CB/1	22.22		0.036		0.48	0.013	Inlet Capacity				
CC/1	22.4		0.034		1.26	0.011	Inlet Capacity				
D/2	21.95		0.044		0.32	0.016	Inlet Capacity				
D/1	21.92		0.06		0	0.197	Outlet System				
E/3	25.01	25.36	0.215	10	0.34	0.215	None				
E/2	25.01	25.16	3.203	0	0.15	0	None				
F/6	25.16		2.104		1.49	1.992	Inlet Capacity				
F/5	25.15		2.002		1.55	1.89	Inlet Capacity				
F/4	25.14		1.896		1.23	1.784	Inlet Capacity				
F/3	25.11		1.807		0.58	1.695	Inlet Capacity				
F/2	25.06		3.117		0.14	2.997	Inlet Capacity				
EW/5	27.2		0.53		0.01	0.478	Inlet Capacity				
EW/6	27.18		4.031		0	1.995	Outlet System				
EW/4	26.97		2.212		0.08	2.104	Inlet Capacity				
EW/3	26.79		0		0.07	None	None				
EW/2	25.34		0		0.26	None	None				
S/9	27.44		1.117		0.49	1.009	Inlet Capacity				
S/8	26.68		1.176		0.52	1.12	Inlet Capacity				
S/7	26.58		1.121		0.49	1.065	Inlet Capacity				
CD/1	25.44		1.1		0.03	0	None				
WS/2	28.63		0.174		0.15	0.065	Inlet Capacity				
WS/3	28.15	28.75	1.025	2.8	0.45	0	None				
G/3	27.44		0		1.9	0	None				
G/2	25.46		0		0.79	0	None				
WS/1	28.68		1.086		0.22	0.974	Inlet Capacity				
N226	24.04		0.056								
CE/1	25.11		0.048		0.75	0.019	Inlet Capacity				
SUB-CATCHMENT DETAILS											
Name	Max Flow Q	Paved Max Q	Grassed Max Q	Paved Tc	Grassed Tc	Supp. Tc	Due to Storm				
	(cu.m/s)	(cu.m/s)	(cu.m/s)	(min)	(min)	(min)					
C AA/1	0.014	0.014	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C A/5	0.032	0.032	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C AB/1	0.029	0.029	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C A/6	0.023	0.023	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C AC/1	0.033	0.033	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C A/7	0.024	0.024	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C AD/1	0.022	0.022	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C A/8	0.04	0.04	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C B/3	0.465	0.346	0.118	5	7	0	0 AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
C C/13	0.014	0.014	0	2	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/12	0.015	0.015	0	2	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/11	0.033	0.033	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/10	0.024	0.024	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/9	0.025	0.025	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/8	0.017	0.017	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/7	0.017	0.017	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/6	0.024	0.024	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C C/5	0.029	0.029	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C CA/1	0.029	0.029	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C CB/1	0.025	0.025	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C CC/1	0.034	0.034	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C CD/1	0.044	0.044	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C D/1	0.044	0.044	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
TLB	0.215	0.215	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C E/2	0.029	0.027	0.002	5.39	10	0	0 AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
C Basin A	0.957	0.957	0	5	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C F/5	0.01	0.01	0	5	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C F/4	0.007	0.007	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C F/3	0.028	0.028	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C F/2	0.03	0.03	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
F10%	0.031	0	0.031	5	5	0	0 AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
E10%	0.056	0	0.056	5	5	0	0 AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
B10%	0.019	0	0.019	5	5	0	0 AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
CS/2	0.53	0.395	0.135	5	7	0	0 AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
CS/1	3.557	2.943	0.614	6	8	0	0 AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
CS/3	0.242	0.242	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
TS/1	1.117	0.823	0.294	6	8	0	0 AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
SL	0.173	0.127	0.046	4	6	0	0 AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
TS1a	0.002	0.002	0	1	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
VS/2	0.045	0.045	0	3	10	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
WS/2	0.174	0.174	0	3	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
WS/1	1.086	0.8	0.286	6	8	0	0 AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
F90%	0.301	0.301	0	5	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
E90%	0.608	0.608	0	5	5	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
F90%	0.239	0.239	0	5	5	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
C E/1	0.028	0.028	0	2	0	0	0 AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
TLA	1.452	1.07	0.383	6	8	0	0 AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
C Basin G	6.894	6.732	6.872	0	5	0	0 AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				

Outflow Volumes for Total Catchment (16.2 impervious + 3.79 pervious = 20.0 total ha)									
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Impervious %)	Pervious Runoff cu.m (Pervious %)					
AR&R 100 ye	4291.46	3781.49 (88.1%)	3315.83 (95.3%)	465.66 (57.2%)					
AR&R 100 ye	6753.23	6164.56 (91.3%)	5310.70 (97.0%)	853.85 (66.7%)					
AR&R 100 ye	8632.83	7977.40 (92.4%)	6833.89 (97.7%)	1143.51 (69.6%)					
AR&R 100 ye	10113.22	9399.61 (92.9%)	8033.51 (98.0%)	1366.10 (71.2%)					
AR&R 100 ye	11477.17	10703.68 (93.3%)	9138.74 (98.3%)	1564.94 (71.9%)					
AR&R 100 ye	12574.99	11750.94 (93.5%)	10026.40 (98.1%)	1722.54 (72.2%)					
AR&R 100 ye	15569.04	14620.78 (93.9%)	12454.64 (98.2%)	2166.14 (73.4%)					
AR&R 100 ye	17764.67	16718.68 (94.1%)	14233.83 (98.2%)	2484.85 (73.8%)					
AR&R 100 ye	20658.91	19458.04 (94.2%)	16579.49 (99.0%)	2878.55 (73.5%)					
AR&R 100 ye	22754.74	21423.74 (94.2%)	18277.43 (99.3%)	3146.31 (72.9%)					
AR&R 100 ye	26347.59	24787.19 (94.1%)	21189.48 (99.3%)	3597.71 (72.0%)					
AR&R 100 ye	30269.79	28403.67 (93.8%)	24365.40 (99.9%)	4038.26 (70.3%)					
PIPE DETAILS									
Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm				
P AA/1	0.014	0.4	21.383	21.383	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P A/5	0.293	1.8	21.254	20.995	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P A/4	0.654	1.5	20.906	20.802	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P A/3	0.854	1.5	20.713	20.698	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P A/2	0.654	1.5	20.609	20.6	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P AB/1	0.029	0.3	21.981	21.98	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P A/6	0.24	2.2	21.788	21.383	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P AC/1	0.04	0.4	22.537	22.535	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P A/7	0.191	1.7	22.352	21.98	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P AD/1	0.016	0.2	23.52	23.52	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P A/8	0.121	2.8	23.151	22.535	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P B/3	0.465	4.7	22.504	21.629	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
P B/2	0.465	2.1	21.394	21.283	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
P B/1	0.399	1.8	21.133	20.995	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
P C/13	0.011	0.1	25.092	25.092	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P C/12	0.023	0.1	25.09	25.088	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P C/11	0.106	0.7	25.073	25.061	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/10	0.151	1	25.03	25.023	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/9	1.468	3.5	24.524	24.186	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P C/8	1.48	6.2	23.564	22.505	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P C/7	4.744	2.3	22.257	22.219	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/6	4.756	1.6	22.14	22.102	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/5	3.791	1.3	22.021	22.012	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/4	3.675	1.2	21.937	21.927	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/3	3.675	1.2	21.851	21.848	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P C/2	3.675	1.2	21.8	21.8	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P CA/1	0.041	0.4	22.102	22.102	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P CB/1	0.023	0.2	22.219	22.219	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P CC/1	0.023	0.4	22.393	22.393	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P D/2	0.028	0.3	21.334	21.925	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P D/1	0.081	0.7	21.928	22.012	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P E/3	0	0	25.014	25.014	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1				
P E/2	3.203	2.8	25.005	25.004	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1				
P regional	2.65	7.6	22.918	22.418	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P F/6	0.112	0.2	25.155	25.154	AR&R 100 year, 10 minutes storm, average 203 mm/h, Zone 1				
P F/5	0.225	0.4	25.143	25.141	AR&R 100 year, 10 minutes storm, average 203 mm/h, Zone 1				
P F/4	0.337	1.5	25.115	25.112	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P F/3	0.449	0.7	25.067	25.058	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P F/2	0.571	0.9	25.004	25.004	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P EW/6	0.053	0.3	27.187	27.18	AR&R 100 year, 30 minutes storm, average 126 mm/h, Zone 1				
P EW/5	2.102	2.3	27.048	26.97	AR&R 100 year, 3 hours storm, average 44 mm/h, Zone 1				
P EW/4	2.197	0.4	26.817	26.789	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P EW/3	2.197	5.8	25.961	25.343	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P EW/2	2.197	2.4	25.102	25.004	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P S/9	0.108	3.5	26.991	26.683	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1				
P S/8	0.164	1.6	26.584	26.584	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1				
P S/7	0.22	3.9	26.362	25.437	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1				
P D/1	0.024	0.3	25.211	25.023	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P WS/2	0.109	1.4	28.574	28.147	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1				
P WS/3	1.236	3.5	27.661	27.436	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P G/3	1.236	6.4	26.844	25.462	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P G/2	1.236	3.5	25.103	25.004	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P WS/1	0.112	1.6	28.327	28.147	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1				
P Basin F	0.107	1.8	24.103	24.003	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1				
P Basin E	0.101	2	24.142	24.042	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P Basin B	0.045	0.2	25.107	25.107	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1				
P CE/1	0.058	0.5	25.091	25.088	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1				
CHANNEL DETAILS									
Name	Max Q (cu.m/s)	Max V (m/s)	Chainage (m)	Max HGL (m)	Due to Storm				
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	
F AA/1	0	0	1.931	0	0	0	0		
F A/5	0	0	1.19	0	0	0	0		
OF222	5.196	5.196	2.134	0.396	1.19	6.4	3.02	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F AB/1	0	0.014	1.19	0.063	0.05	0.75	0.78	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F A/6	0	0.032	1.19	0.082	0.07	1.38	0.85	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F AC/1	0	0.029	1.133	0.077	0.07	0.82	0.94	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F A/7	0	0.023	1.133	0.07	0.06	0.75	0.88	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F AD/1	0.007	0.004	0.937	0.066	0.11	0.71	1.69	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F A/8	0.011	0.033	0.731	0.067	0.11	0.88	1.58	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F B/3	0	0	7.665	0	0	0	0		
F B/2	0	0	1.19	0	0	0	0		
F B/1	0.089	0.089	1.19	0.111	0.11	2.35	0.96	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F C/13	0.004	0.031	1.179	0.075	0.08	0.8	1.03	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/12	0.004	0.037	1.179	0.079	0.09	0.85	1.08	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/11	0.023	0.047	1.073	0.087	0.09	1.54	1.05	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/10	0	0.034	0.719	0.067	0.11	0.88	1.65	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/9	0	0.017	1.29	0.071	0.05	1.02	0.68	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/8	0	0.017	0.937	0.049	0.07	0.52	1.36	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/7	0	0.024	0.937	0.055	0.08	0.59	1.48	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/6	0.008	0.037	1.133	0.095	0.06	2.62	0.65	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F C/5	0.983	0.983	1.19	0.223	0.36	6.4	1.59	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
OF216	4.797	4.797	2.134	0.383	1.12	6.4	2.93	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F CA/1	0.037	0.037	1.19	0.086	0.07	1.49	0.86	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F CB/1	0.013	0.042	1.133	0.099	0.06	3.21	0.62	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
CC/11	0.011	0.036	0.937	0.063	0.11	0.68	1.27	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F D/2	0.016	0.06	1.133	0.105	0.07	4.25	0.65	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F D/1	0.197	0.197	1.19	0.141	0.16	3.35	1.11	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F E/3	0.215	0.215	1.931	0.106	0.1	4	0.97	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1	
F E/2	0	0	1.364	0	0	0	0		
OF365	1.232	1.232	0.134	0.238	0.41	6.4	1.73	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	
F F/6	1.992	1.992	1.19	0.276	0.58	6.4	2.09	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1	
F F/5	1.89	1.89	1.19	0.271	0.56	6.4	2.05	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1	
F F/4	1.784	1.784	1.19	0.266	0.53	6.4	2	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1	
F F/3	1.695	1.695	1.19	0.262	0.51	6.4	1.96	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1	
F F/2	2.997	3.024	1.364	0.365	0.72	6.4	1.98	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1	
OF211	1.122	1.122	2.134	0.231	0.39	6.4	1.68	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1	

OF235	0.031	0.031	7.665	0.023	0.01	7.63	0.35	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1
OF E10%	0.056	0.056	7.665	0.028	0.01	9.43	0.42	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1
OF190	0.019	0.019	7.665	0.018	0.01	6.14	0.33	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1
OF EW/5	0.478	0.478	7.665	0.064	0.05	16.84	0.78	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1
OF EW/6	1.995	1.995	7.665	0.115	0.13	27.08	1.15	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
OF EW/4	2.104	2.104	2.134	0.281	0.6	6.4	2.13	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
OF S/9	1.009	1.009	7.665	0.088	0.08	21.51	0.95	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
OF S/8	1.12	1.12	7.665	0.091	0.09	22.23	0.99	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
OF S/7	1.065	1.065	7.665	0.089	0.09	21.87	0.97	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
F CD/1	0	0	1.931	0	0	0		
OF25	0.065	0.065	7.665	0.03	0.01	10.02	0.43	AR&R 100 year, 5 minutes storm, average 258 mm/h, Zone 1
OF WS/3	0	0	7.665	0	0	0		
OF G/3	0	0	7.665	0	0	0		
OF492	0	0	1.267	0	0	0		
OF WS/1	0.974	0.974	7.665	0.086	0.08	21.15	0.96	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
OF Basin F	0.011	0.011	7.665	0.015	0	4.94	0.29	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1
OF Basin E	0.013	0.013	7.665	0.017	0	5.54	0.27	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1
OF336	0.142	0.142	7.665	0.04	0.02	11.99	0.55	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1
OF basin B	0.013	0.013	7.665	0.017	0	5.54	0.28	AR&R 100 year, 1 hour storm, average 89 mm/h, Zone 1
F CE/1	0.019	0.019	1.931	0.043	0.02	1.73	0.51	AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1
OF346	1.452	1.452	2.134	0.25	0.46	6.4	1.85	AR&R 100 year, 25 minutes storm, average 138 mm/h, Zone 1
OF Basin C	0.804	0.804	7.665	0.079	0.07	19.9	0.9	AR&R 100 year, 15 minutes storm, average 173 mm/h, Zone 1
DETENTION BASIN DETAILS								
Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level			
regional/1	25	5632.4	3.882	2.65	1.232			
Basin F	25.92	242.9	0.068	0.057	0.011			
Basin E	25.91	525	0.113	0.101	0.013			
Basin B	25.96	206.9	0.058	0.045	0.013			
CONTINUITY CHECK for AR&R 100 year, 1.5 hours storm, average 69 mm/h, Zone 1								
Node	Inflow (cu.m)	Outflow (cu.m)	Storage Chart (cu.m)	Difference %				
AA/1	19.58	19.58	0	0				
A/5	745.74	745.62	0	0				
A/4	1428.07	1428.07	0	0				
A/3	1428.07	1428.07	0	0				
A/2	1428.07	1428.07	0	0				
A/1	19077.38	19077.22	0	0				
AB/1	42.03	42.03	0	0				
A/6	680.25	680.15	0	0				
AC/1	52.48	52.48	0	0				
A/7	605.52	605.42	0	0				
AD/1	31.88	31.88	0	0				
A/8	519.48	519.32	0	0				
B/3	690.35	690.35	0	0				
B/2	690.35	690.77	0	-0.1				
B/1	690.77	690.81	0	0				
C/13	20.4	20.4	0	0				
C/12	40.34	40.34	0	0				
C/11	447.64	447.53	0	0				
C/10	482.48	482.34	0	0				
C/9	2568.98	2568.96	0	0				
C/8	2593.06	2593.31	0	0				
C/7	16549.5	16549.37	0	0				
C/6	16618.62	16618.35	0	0				
C/5	16711.79	16711.84	0	0				
C/4	16269.29	16269.31	0	0				
C/3	16269.31	16269.31	0	0				
C/2	16269.31	16269.31	0	0				
C/1	16837.19	16836.88	0	0				
CA/1	51.46	51.44	0	0				
CB/1	44.42	44.42	0	0				
CC/1	48.53	48.53	0	0				
D/2	62.52	62.51	0	0				
D/1	125.35	125.32	0	0				
E/3	307.5	297.5	10	0				
E/2	2433.49	2433.49	0	0				
regional/1	13966.59	13892.37	73.91	0				
F/6	769.43	769.43	0	0				
F/5	784.6	784.6	0	0				
F/4	795.25	795.15	0	0				
F/3	835.23	833.44	0	0.2				
F/2	3126.18	3123.76	0	0.1				
O A/2	19076.43	19076.43	0	0				
O E/2	0	0	0	0				
N80	567.87	567.87	0	0				
N238	37.31	37.31	0	0				
N230	68.52	68.52	0	0				
N224	22.84	22.84	0	0				
EW/5	787.76	787.76	0	0				
EW/6	6357.63	6357.62	0	0				
EW/4	6703.08	6703.06	0	0				
EW/3	5933.61	5933.61	0	0				
EW/2	5933.61	5933.76	0	0				
S/9	1730.41	1730.41	0	0				
S/8	1983.88	1983.89	0	0				
S/7	1986.45	1986.45	0	0				
CD/1	2050.4	2050.41	0	0				
WS 2	249.08	249.07	0	0				
WS/3	1931.25	1931.26	0	0				
G/3	1931.26	1933.08	0	-0.1				
G/2	1933.08	1933.19	0	0				
WS 1	1682.19	1682.19	0	0				
Basin F	451	397.81	53.32	0				
Basin E	912.25	737.8	174.71	0				
N225	806.32	806	0	0				
Basin B	358.75	295.82	63.01	0				
CE/1	360.22	360.15	0	0				
N139	2250.48	2250.48	0	0				
N237	1198.36	1198.36	0	0				
Free	0	0	0	0				
Run Log for 4000 run at 12:23:12 on 2/10/2008								
Upwelling occurred at D/1, CA/1, C/5, B/1								
Freeboard was less than 0.15m at CD/1, WS 2, EW/4, EW/5, EW/6, EW/3, F/2, E/2, B/3								
The maximum flow exceeded the safe value in the following overflow routes: F F/2, OF222, OF216, F F/3, F F/4, F F/5, F F/6								
The following overflow routes carried water uphill (adding energy): F C/5, F D/1, F F/6								
These results may be invalid. You should check for water flowing round in circles at these locations. You may need to reformulate the model.								