

Appendix B

Proposed Conditions Input Data & Output Data

Proposed

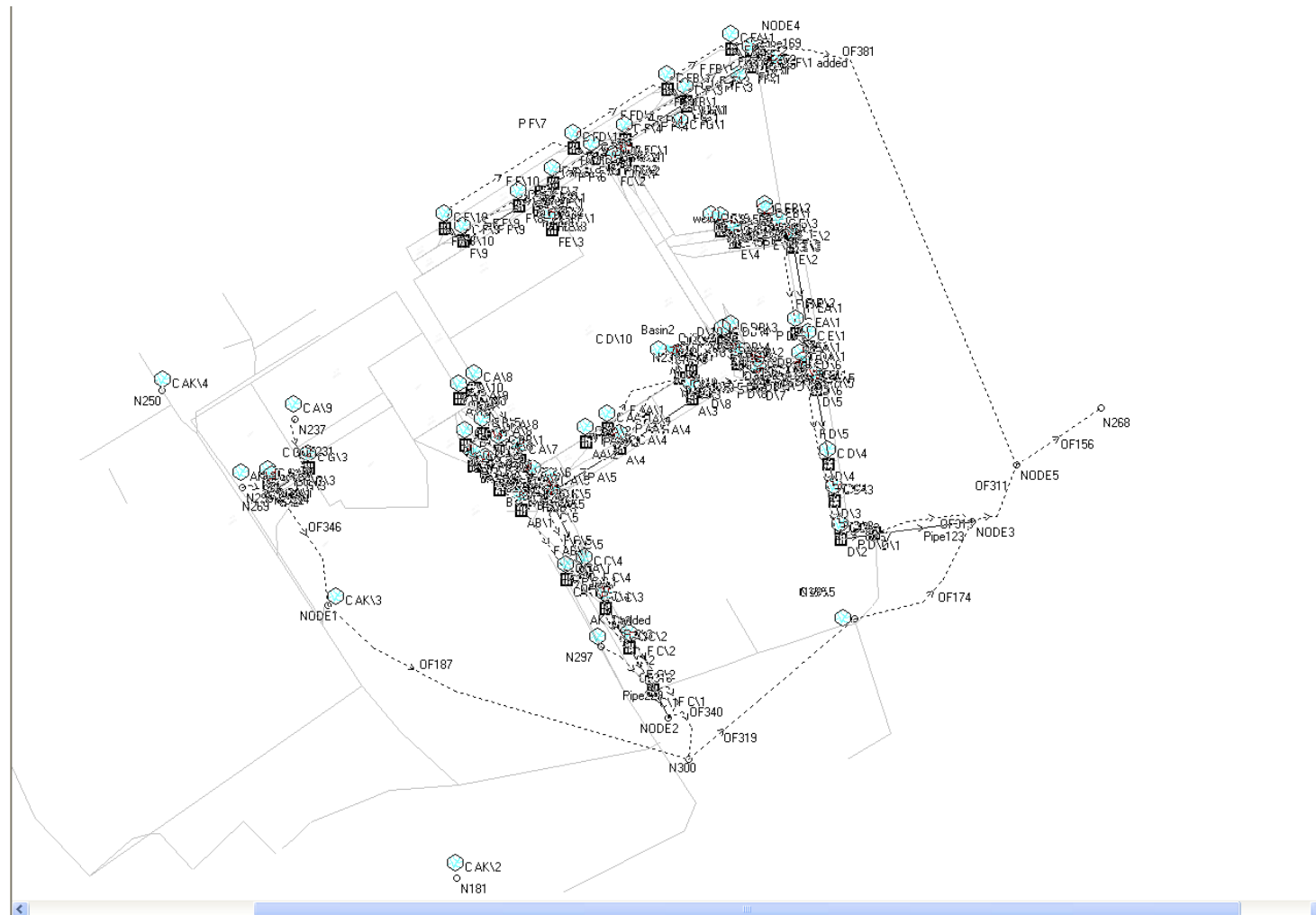
OSD Outlet Configuration

Input Data

20 year ARI Results

100 year ARI Results

DRAINS PROPOSED_MODEL LAYOUT



OSD OUT LET CONFIGURATION

ORIFICE 1			ORIFICE 2			SPILL-OVER WEIR		
C=	0.6		C=	0.6				
Orifice dia	300 (mm)		Orifice dia	300 (mm)				
No of orifices	1		No of orifices	1				
Orifice area	0.07065 (sq.m)		Orifice area	0.07065 (sq.m)		CREST LEVEL (mAHD)	84.10	
Orifice centerline level	82.7 (mAHD)		Orifice centerline level	83.1 (mAHD)				
basin bottom	81.7 (mAHD)		basin bottom	81.7 (mAHD)		LENGTH (m)	0.6	
Head	Stage	Discharge	Head	Stage	Discharge			
0	82.7	0	0	83.1	0			
0.1	82.8	0.06	0.1	83.2	0.06			
0.2	82.9	0.08	0.2	83.3	0.08			
0.3	83	0.10	0.3	83.4	0.10			
0.4	83.1	0.12	0.4	83.5	0.12			
0.5	83.2	0.13	0.5	83.6	0.13			
0.6	83.3	0.15	0.6	83.7	0.15			
0.7	83.4	0.16	0.7	83.8	0.16			
0.8	83.5	0.17	0.8	83.9	0.17			
0.9	83.6	0.18	0.9	84	0.18			
1	83.7	0.19	1	84.1	0.19			
1.1	83.8	0.20	1.1	84.2	0.20			
1.2	83.9	0.21	1.2	84.3	0.21			
1.3	84	0.21	1.3	84.4	0.21			
1.4	84.1	0.22	1.4	84.5	0.22			
1.5	84.2	0.23	1.5	84.6	0.23			
1.6	84.3	0.24	1.6	84.7	0.24			
1.7	84.4	0.24	1.7	84.8	0.24			
1.8	84.5	0.25	1.8	84.9	0.25			
1.9	84.6	0.26	1.9	85	0.26			
2	84.7	0.27	2	85.1	0.27			
2.1	84.8	0.27	2.1	85.2	0.27			
2.2	84.9	0.28	2.2	85.3	0.28			
2.3	85	0.28	2.3	85.4	0.28			
2.4	85.1	0.29	2.4	85.5	0.29			
2.5	85.2	0.30	2.5	85.6	0.30			
2.6	85.3	0.30	2.6	85.7	0.30			
2.7	85.4	0.31						
2.8	85.5	0.31						

DRAINS PROPOSED_INPUT DATA

DRAINS Model Name and File Path		F:\NS03750\ID-Calculations\Stormwater\ID-Drains\IC-DrainsDesignFiles\DEVELOPED 4100-NS03750-NSC-00-Developed_08-10-17_no trunk sys.drn												
DRAINS Version:		2008.06 -May 2008												
Modeller's Name:		Ky Tran												
Description:		Royal North shore hospital												
PIT / NODE DETAILS		Version 9												
Name	Type	Family	Size	Ponding	Pressure	Surface	Max Pond	Base	Blocking	x	y	Bolt-down	id	Part Full
				Volume	Change	Elev (m)	Depth (m)	Inflow	Factor			id		Shock Loss
				(cu.m)	Coeff. Ku			(cu.m/s)						
A\10	OnGrade	DUMMY UNL	UNLIMITED INLET		2	94.77		0	0.2	332557.85	6256170.2	No	10	1 x Ku
A\9	OnGrade	WCC STAND	450x900 CLASS D GALV		1	94.563		0	0.2	332566.11	6256175.4	No	9	1 x Ku
A\8	OnGrade	WCC STAND	2.4m LINTEL		2.5	94.623		0	0.2	332568.14	6256176.7	No	8	1 x Ku
A\7	OnGrade	WCC STAND	2.4m LINTEL		0.9	91.492		0	0.2	332597.63	6256129.6	No	7	1 x Ku
A\6	OnGrade	WCC STAND	2.4m LINTEL		2	90.106		0	0.2	332606.24	6256113.7	No	6	1 x Ku
A\5	OnGrade	WCC STAND	2.4m LINTEL		2	90.239		0	0.2	332618.59	6256108.8	No	5	1 x Ku
A\4	OnGrade	WCC STAND	3.0m LINTEL		1	89.484		0	0.2	332663.23	6256137.5	No	4	1 x Ku
A\3	OnGrade	WCC STAND	3.6m LINTEL		4	89.928		0	0.2	332710.83	6256170.2	No	3	1 x Ku
A\2	OnGrade	SURFACE C	600x600 CLASS D GALV		1	84.8		0	0.2	332702.53	6256183.5	No	2	1 x Ku
AA\2	OnGrade	WCC STAND	2.4m LINTEL		4	89.67		0	0.2	332641.04	6256141.4	No	12	1 x Ku
AA\1	OnGrade	WCC STAND	3.0m LINTEL		2.5	89.334		0	0.2	332655.2	6256150.3	No	11	1 x Ku
AB\1	OnGrade	WCC STAND	2.4m LINTEL		4	90.125		0	0.2	332598.52	6256096.2	No	13	1 x Ku
B\5	OnGrade	WCC STAND	2.4m LINTEL		4	93.582		0	0.2	332573.45	6256146.8	No	18	1 x Ku
B\4	OnGrade	WCC STAND	2.4m LINTEL		2.5	93.583		0	0.2	332561.98	6256139.6	No	17	1 x Ku
B\3	OnGrade	WCC STAND	2.4m LINTEL		1.8	91.346		0	0.2	332575.4	6256121.9	No	16	1 x Ku
B\2	OnGrade	WCC STAND	2.4m LINTEL		2.5	90.755		0	0.2	332584.48	6256109.8	No	15	1 x Ku
B\1	OnGrade	WCC STAND	2.4m LINTEL		2	90.583		0	0.2	332592.57	6256114.8	No	14	1 x Ku
BA\1	OnGrade	WCC STAND	2.4m LINTEL		2	91.98		0	0.2	332567.37	6256125.3	No	19	1 x Ku
BB\1	OnGrade	WCC STAND	2.4m LINTEL		4	91.765		0	0.2	332584.02	6256135.7	No	20	1 x Ku
C\5	OnGrade	WCC STAND	2.4m LINTEL		4	89.774		0	0.2	332619.26	6256099.9	No	25	1 x Ku
C\4	OnGrade	WCC STAND	2.4m LINTEL		1.5	86.559		0	0.2	332640.34	6256056	No	24	1 x Ku
C\3	OnGrade	WCC STAND	2.4m LINTEL		0.9	84.186		0	0.2	332654.06	6256032.4	No	23	1 x Ku
C\2	OnGrade	WCC STAND	2.4m LINTEL		0.7	81.86		0	0.2	332669.17	6256006.5	No	22	1 x Ku
C\1	OnGrade	DUMMY UNL	UNLIMITED INLET		2.5	80.526		0	0.2	332685.04	6255979.1	No	21	1 x Ku
NODE2	Node					80.52		0		332694.47	6255960.7		254540576	
CA\1	OnGrade	DUMMY UNL	UNLIMITED INLET		2	86.74		0	0.2	332628.3	6256051.3	No	26	1 x Ku
DA\1	OnGrade	WCC STAND	2.4m LINTEL		4	79.855		0	0.2	332781.43	6256190.5	No	237	1 x Ku
DI\6	OnGrade	WCC STAND	2.4m LINTEL		2	79.799		0	0.2	332783.02	6256184.6	No	238	1 x Ku
DI\5	OnGrade	WCC STAND	2.4m LINTEL		1.2	79.409		0	0.2	332791.61	6256175.9	No	239	1 x Ku
DI\4	OnGrade	WCC STAND	2.4m LINTEL		0.8	77.9		0	0.2	332799.78	6256126.8	No	240	1 x Ku
DI\3	OnGrade	WCC STAND	2.4m LINTEL		0.5	77.185		0	0.2	332803.83	6256102.6	No	241	1 x Ku
DI\2	OnGrade	WCC STAND	2.4m LINTEL		2.8	76.472		0	0.2	332807.99	6256077.8	No	242	1 x Ku
DI\1	OnGrade	WCC STAND	3.6m LINTEL		2.5	76		0	0	332829.81	6256081.3	No	136080789	1 x Ku
NODE3	Node					76		0		332893.48	6256089.1		244	
DB\4	OnGrade	WCC STAND	2.4m LINTEL		2	84.496		0	0.2	332730.54	6256206.5	No	245	1 x Ku
DB\3	OnGrade	WCC STAND	2.4m LINTEL		2.5	84.496		0	0.2	332735.99	6256209.2	No	246	1 x Ku
DB\2	OnGrade	WCC STAND	2.4m LINTEL		1.3	84.199		0	0.2	332740.36	6256193.1	No	247	1 x Ku
DB\1	OnGrade	WCC STAND	2.4m LINTEL		0.9	83.325		0	0.2	332753.48	6256186.2	No	248	1 x Ku

D17	OnGrade	WCC STAND	3.6m LINTEL		2.5	83.325		0	0.2	332754.41	6256180.1	No	249	1 x Ku
EA11	OnGrade	DUMMY UNL	UNLIMITED INLET		3	81.658		0	0.2	332778.63	6256212.8	No	250	1 x Ku
E1	OnGrade	WCC STAND	2.4m LINTEL		1	79.854		0	0.2	332787.15	6256203.7	No	251	1 x Ku
F10	OnGrade	WCC STAND	2.4m LINTEL		4	95.949		0	0.2	332548.36	6256281.2	No	252	1 x Ku
F9	OnGrade	WCC STAND	2.4m LINTEL		2	95.507		0	0.2	332560.97	6256273.4	No	253	1 x Ku
F8	OnGrade	WCC STAND	2.4m LINTEL		1.5	91.831		0	0.2	332597.11	6256296.1	No	254	1 x Ku
F7	OnGrade	WCC STAND	2.4m LINTEL		2	90.359		0	0.2	332611.35	6256305.9	No	255	1 x Ku
F6	OnGrade	WCC STAND	2.4m LINTEL		2.2	89.363		0	0.2	332619.23	6256311.4	No	256	1 x Ku
F5	OnGrade	WCC STAND	2.4m LINTEL		1	86.377		0	0.2	332644.8	6256327.4	No	257	1 x Ku
F4	OnGrade	WCC STAND	2.4m LINTEL		2.5	84.046		0	0.2	332666.35	6256339.5	No	258	1 x Ku
F3	OnGrade	WCC STAND	2.4m LINTEL		0.8	80.226		0	0.2	332706.81	6256364.8	No	259	1 x Ku
F2	Sag	WCC STAND	2.4m LINTEL	5	1	78.192	0.1	0	0.5	332748.9	6256391	No	260	1 x Ku
F1	OnGrade	WCC STAND	3.6m LINTEL		2	77.929		0	0	332754.58	6256395.1	No	79333856	1 x Ku
NODE4	Node					75.84		0		332753.55	6256401.4		261	
FA1	OnGrade	WCC STAND	2.4m LINTEL		4	78.142		0	0.2	332736.11	6256398.9	No	262	1 x Ku
FB1	OnGrade	WCC STAND	2.4m LINTEL		4	80.626		0	0.2	332694.2	6256372.6	No	263	1 x Ku
FC2	OnGrade	WCC STAND	2.4m LINTEL		4	85.764		0	0.2	332659.13	6256320.7	No	264	1 x Ku
FC1	OnGrade	WCC STAND	2.4m LINTEL		2	85.681		0	0.2	332666.67	6256325.4	No	265	1 x Ku
FD1	OnGrade	WCC STAND	2.4m LINTEL		4	86.955		0	0.2	332633.1	6256334.3	No	266	1 x Ku
FE3	OnGrade	DUMMY UNL	UNLIMITED INLET		2	92.268		0	0.2	332618.56	6256280.6	No	267	1 x Ku
FE2	OnGrade	WCC STAND	2.4m LINTEL		2.5	91.481		0	0.2	332610.27	6256293.8	No	268	1 x Ku
FE1	OnGrade	WCC STAND	2.4m LINTEL		2.5	90.757		0	0.2	332615.48	6256298.5	No	269	1 x Ku
G3	OnGrade	DUMMY UNL	UNLIMITED INLET		1.5	89.872		0	0.2	332459.02	6256124.4	No	271	1 x Ku
G2	Sag	WCC STAND	3.0m LINTEL	5	1	89.26	0.2	0	0.5	332435.82	6256109.6	No	272	1 x Ku
N269	Node					89.26		0		332433.91	6256105.8		254540641	
GA1	OnGrade	DUMMY UNL	UNLIMITED INLET		1	89.556		0	0.2	332433.31	6256113.6	No	279	1 x Ku
N181	Node							0		332556.02	6255855.7		281	
E6	OnGrade	DUMMY UNL	UNLIMITED INLET		2	86.943		0	0.2	332728.89	6256283.5	No	282	1 x Ku
E5	OnGrade	WCC STAND	2.4m LINTEL		4	86.817		0	0.2	332729.28	6256280.1	No	283	1 x Ku
E4	OnGrade	WCC STAND	2.4m LINTEL		2	85.624		0	0.2	332738.6	6256272.8	No	284	1 x Ku
E3	OnGrade	WCC STAND	2.4m LINTEL		2	81.984		0	0.2	332768.28	6256277.2	No	285	1 x Ku
E2	OnGrade	WCC STAND	2.4m LINTEL		1.5	81.38		0	0.2	332776.19	6256269.6	No	286	1 x Ku
EB2	OnGrade	DUMMY UNL	UNLIMITED INLET		2	84.104		0	0.2	332758.52	6256287.8	No	287	1 x Ku
EB1	OnGrade	WCC STAND	2.4m LINTEL		4	82.453		0	0.2	332758.96	6256284.5	No	288	1 x Ku
FF1	OnGrade	DUMMY UNL	UNLIMITED INLET		1.2	78.657		0	0.2	332749.37	6256387.7	No	289	1 x Ku
FG1	OnGrade	DUMMY UNL	UNLIMITED INLET		2	80.791		0	0.2	332707.32	6256361.6	No	290	1 x Ku
N237	Node							0		332450.18	6256156.2		291	
NODE5	Node					75		0		332922.63	6256126.2		293	
N297	Node							0		332650.32	6256007.5		294	
N298	Node							0		332415.56	6256111		295	
N329	Node							0		332758.1	6256395.3		296	
D10	OnGrade	DUMMY UNL	UNLIMITED INLET		0.5	84.8		0	0.2	332703.57	6256201.6	No	95793224	1 x Ku
D9	OnGrade	WCC STAND	2.4m LINTEL		0.6	84.8		0	0	332710.24	6256188.3	No	35	1 x Ku
D8	OnGrade	WCC STAND	3.0m LINTEL		2	84.8		0	0.2	332718.6	6256175	No	34	1 x Ku
N237	Node							0		332702.47	6256204		97907948	
N250	Node							0		332363.03	6256175.5		254540568	
NODE1	Node							0		332471.26	6256034.6		254540574	
N255	Node							0		332816.44	6256025.6		254540597	
N300	Node							0		332707.78	6255933.8		254540606	
N268	Node							0		332978.16	6256164.2		254540639	

DETENTION BASIN DETAILS														
Name	Elev	Surf. Area	Init Vol. (cu.m)	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length
Basin2	81.7	0	0	None						332698.13	6256200.5	No		
	82.8	16												
	82.9	16												
	83	100												
	84	700												
	85	700												
SUB-CATCHMENT DETAILS														
Name	Pit or	Total	Paved	Grass	Supp	Paved	Grass	Supp	Paved	Grass	Supp	Paved	Grass	Supp
	Node	Area	Area	Area	Area	Time	Time	Time	Length	Length	Length	Slope(%)	Slope	Slope
		(ha)	%	%	%	(min)	(min)	(min)	(m)	(m)	(m)	%	%	%
C A\10	A\10	0.2362	74.3	25.7	0	4	6	0						
C A\8	A\8	0.1042	74.3	25.7	0	3	5	0						
C A\7	A\7	0.0445	74.3	25.7	0	3	5	0						
C A\6	A\6	0.022	74.3	25.7	0	3	5	0						
C A\5	A\5	0.0087	74.3	25.7	0	3	5	0						
C A\4	A\4	0.0675	74.3	25.7	0	3	5	0						
C A\3	A\3	0.0859	74.3	25.7	0	3	5	0						
C D\10	Basin2	1.6953	96.4	3.6	0	5	7	0						
C A A\12	AA\12	0.0211	74.3	25.7	0	3	5	0						
C A A\1	AA\1	0.0788	74.3	25.7	0	3	5	0						
C A B\1	AB\1	0.0314	74.3	25.7	0	3	5	0						
C B\5	B\5	0.0132	74.3	25.7	0	3	5	0						
C B\4	B\4	0.0148	74.3	25.7	0	3	5	0						
C B\3	B\3	0.0544	74.3	25.7	0	3	5	0						
C B A\1	BA\1	0.0568	74.3	25.7	0	3	5	0						
C B B\1	BB\1	0.0267	74.3	25.7	0	3	5	0						
C C\5	C\5	0.0691	74.3	25.7	0	3	5	0						
C C\4	C\4	0.0779	74.3	25.7	0	3	5	0						
C C\3	C\3	0.0297	74.3	25.7	0	3	5	0						
C C\2	C\2	0.028	74.3	25.7	0	3	5	0						
C C A\1	CA\1	0.3153	74.3	25.7	0	5	7	0						
C D A\1	DA\1	0.0244	77.6	22.4	0	3	5	0						
C D\6	D\6	0.0219	77.6	22.4	0	3	5	0						
C D\5	D\5	0.0496	77.6	22.4	0	3	5	0						
C D\4	D\4	0.0499	77.6	22.4	0	3	5	0						
C D\3	D\3	0.0246	77.6	22.4	0	3	5	0						
C D\2	D\2	0.0254	77.6	22.4	0	3	5	0						
C D B\4	DB\4	0.0513	77.6	22.4	0	5	7	0						
C D B\3	DB\3	0.0547	77.6	22.4	0	5	7	0						
C D B\2	DB\2	0.0252	77.6	22.4	0	4	6	0						
C D B\1	DB\1	0.0127	77.6	22.4	0	3	5	0						
C D\7	D\7	0.0536	74.3	25.7	0	5	7	0						
C E A\1	EA\1	0.3464	77.6	22.4	0	5	7	0						
C E\1	E\1	0.0675	77.6	22.4	0	4	6	0						

C F10	F10	0.0239	79.1	20.9	0	3	5	0						
C F9	F9	0.0308	79.1	20.9	0	3	5	0						
C F8	F8	0.0419	79.1	20.9	0	3	5	0						
C F6	F6	0.0325	79.1	20.9	0	3	5	0						
C F5	F5	0.0273	79.1	20.9	0	3	5	0						
C F4	F4	0.0565	79.1	20.9	0	3	5	0						
C F3	F3	0.0375	79.1	20.9	0	4	6	0						
C F2	F2	0.0439	79.1	20.9	0	4	6	0						
C FA1	FA1	0.0566	79.1	20.9	0	4	6	0						
C FB1	FB1	0.0784	79.1	20.9	0	4	6	0						
C FC2	FC2	0.0328	79.1	20.9	0	3	5	0						
C FC1	FC1	0.0345	79.1	20.9	0	3	5	0						
C FD1	FD1	0.0968	79.1	20.9	0	4	6	0						
C FE1	FE3	0.4637	79.1	20.9	0	5	7	0						
C G3	G3	0.3664	78.7	12.3	0	7	11	0						
C G2	G2	0.005	78.7	12.3	0	3	5	0						
C GA1	GA1	0.3715	78.7	12.3	0	7	11	0						
C AK2	N181	11.4	30	70	0	21.5	23.5	0						
C E6	E6	0.12	77.6	22.4	0	5	7	0						
C E5	E5	0.024	77.6	22.4	0	3	5	0						
C E4	E4	0.0326	77.6	22.4	0	3	5	0						
C E3	E3	0.0269	77.6	22.4	0	3	5	0						
C E2	E2	0.0386	77.6	22.4	0	3	5	0						
C EB2	EB2	0.112	77.6	22.4	0	5	7	0						
C EB1	EB1	0.0216	77.6	22.4	0	3	5	0						
C FF1	FF1	0.2	0	100	0	5	16	0						
C FG1	FG1	0.3	100	0	0	5	0	0						
C A19	N237	0.5015	87.7	12.3	0	8	12	0						
AK17 added	N297	0.13	81	19	0	4	6	0						
AK19 added	N298	0.08	80	20	0	5	7	0						
C F1 added	N329	0.14	81	19	0	4	6	0						
C AK4	N250	4.94	50	50	0	8	20	0						
C AK3	NODE1	0.6235	70	30	0	8	12	0						
C AK5	N255	4.01	78	22	0	7	10	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 A10	A10	A19	9.747	93.202	93.104	1.01	Concrete, un	375	375	0.3	New	1	A10	0
P A9	A9	A18	2.4	93.074	93.05	1	Concrete, un	375	375	0.3	New	1	A9	0
P A8	A8	A17	55.508	93.02	89.412	6.5	Concrete, un	375	375	0.3	New	1	A8	0
P A7	A17	A16	18.105	89.382	88.658	4	Concrete, un	375	375	0.3	New	1	A7	0
P A6	A16	A15	13.289	88.454	88.321	1	Concrete, un	450	450	0.3	New	1	A6	0

PAI5	AI5	AI4	53.068	88.291	87.76	1	Concrete, ur	525	525	0.3	New	1	AI5	0
PAI4	AI4	AI3	57.735	87.73	87.153	1	Concrete, ur	525	525	0.3	New	1	AI4	0
PAI3	AI3	AI2	15.728	83.175	83.018	1	Concrete, ur	525	525	0.3	New	1	AI3	0
PAI2	AI2	Basin2	16.34	82.988	82.824	1	Concrete, ur	750	750	0.3	New Fixed	1	AI2	0
PAAI2	AAI2	AAI1	16.716	89.114	89.03	0.5	Concrete, ur	150	150	0.3	New	1	AAI2	0
PAAI1	AAI1	AI4	15.102	88.8	88.724	0.5	Concrete, ur	300	300	0.3	New	1	AAI1	0
PBI1	ABI1	AI5	23.707	88.41	88.291	0.5	Concrete, ur	375	375	0.3	New	1	ABI1	0
PBI5	BI5	BI4	13.54	92.127	91.991	1	Concrete, ur	375	375	0.3	New	1	BI5	0
PBI4	BI4	BI3	22.285	91.752	89.635	9.5	Concrete, ur	375	375	0.3	New	1	BI4	0
PBI3	BI3	BI2	15.065	89.605	89.328	1.84	Concrete, ur	375	375	0.3	New	1	BI3	0
PBI2	BI2	BI1	9.5	89.103	88.958	1.53	Concrete, ur	375	375	0.3	New	1	BI2	0
PBI1	BI1	AI6	13.712	88.928	88.585	2.5	Concrete, ur	375	375	0.3	New	1	BI1	0
PBAI1	BAI1	BI3	8.728	90.447	89.843	6.92	Concrete, ur	375	375	0.3	New	1	BAI1	0
PBB1	BBI1	BI3	16.324	90.338	89.785	3.39	Concrete, ur	375	375	0.3	New	1	BBI1	0
PCI5	C5	C4	48.738	87.905	84.859	6.25	Concrete, ur	375	375	0.3	New	1	C5	0
PCI4	C4	C3	27.326	84.829	82.411	8.85	Concrete, ur	375	375	0.3	New	1	C4	0
PCI3	C3	C2	29.992	82.381	79.882	8.33	Concrete, ur	450	450	0.3	New	1	C3	0
PCI2	C2	C1	31.586	79.852	78.904	3	Concrete, ur	525	525	0.3	New	1	C2	0
Pipe229	C1	NODE2	1	78.94	78.93	1	Concrete, ur	525	525	0.3	New	1	C1	0
PCA1	CA1	C4	12.922	85.273	85.105	1.3	Concrete, ur	375	375	0.3	New	1	CA1	0
PDA1	DA1	DI6	6.136	78.702	78.64	1.01	Concrete, ur	375	375	0.3	New	1	DA1	0
PDI6	DI6	DI5	12.186	78.035	77.425	5.01	Concrete, ur	675	675	0.3	New	1	DI6	0
PDI5	DI5	DI4	49.797	77.385	75.901	2.98	Concrete, ur	750	750	0.3	New	1	DI5	0
PDI4	DI4	DI3	24.517	75.871	75.381	2	Concrete, ur	750	750	0.3	New	1	DI4	0
PDI3	DI3	DI2	25.195	75.351	74.351	3.97	Concrete, ur	750	750	0.3	New	1	DI3	0
PDI2	DI2	DI1	22.111	74.321	74	1.45	Concrete, ur	900	900	0.3	New	1	DI2	0
Pipe123	DI1	NODE3	23	71.48	71.36	0.52	Concrete, ur	1800	1800	0.3	New	1	DI1	0
PDB4	DB4	DBI3	6.084	82.888	82.827	1	Concrete, ur	375	375	0.3	New	1	DBI4	0
PDB3	DB3	DBI2	16.635	82.797	82.556	1.45	Concrete, ur	375	375	0.3	New	1	DBI3	0
PDBI2	DBI2	DBI1	14.857	82.526	81.709	5.5	Concrete, ur	375	375	0.3	New	1	DBI2	0
PDBI1	DBI1	DI7	6.1	81.679	81.618	1	Concrete, ur	375	375	0.3	New	1	DBI1	0
PDI7	DI7	DI6	28.951	79.513	78.065	5	Concrete, ur	600	600	0.3	New	1	DI7	0
PEA1	EA1	E1	12.471	79.626	78.379	10	Concrete, ur	375	375	0.3	New	1	EA1	0
PE1	E1	DI5	28.075	78.349	78.03	1.14	Concrete, ur	450	450	0.3	New	1	E1	0
FR10	F10	F9	14.824	94.474	94.066	2.75	Concrete, ur	375	375	0.3	New	1	F10	0
FR9	F9	F8	42.647	93.989	90.408	8.4	Concrete, ur	375	375	0.3	New	1	F9	0
FR8	F8	F7	17.336	90.266	88.898	7.89	Concrete, ur	375	375	0.3	New	1	F8	0
FR7	F7	F6	9.552	88.724	87.832	9.34	Concrete, ur	450	450	0.3	New	1	F7	0
FR6	F6	F5	30.187	87	84.685	7.67	Concrete, ur	450	450	0.3	New	1	F6	0
FR5	F5	F4	24.708	84.2	82.28	7.77	Concrete, ur	450	450	0.3	New	1	F5	0
FR4	F4	F3	47.756	81.8	78.52	6.87	Concrete, ur	450	450	0.3	New	1	F4	0
FR3	F3	F2	49.568	78.482	76.521	3.96	Concrete, ur	450	450	0.3	New	1	F3	0
FR2	F2	F1	6.986	76.491	76.421	1	Concrete, ur	450	450	0.3	New	1	F2	0
Pipe169	F1	NODE4	48	76.4	74.5	3.96	Concrete, ur	450	450	0.3	New	1	F1	0
FAI1	FAI1	F2	15.024	76.671	76.521	1	Concrete, ur	375	375	0.3	New	1	FAI1	0
PFB1	FB1	F3	14.824	79.148	78.779	2.49	Concrete, ur	375	375	0.3	New	1	FB1	0
FCI2	FCI2	FCI1	8.9	84.306	84.217	1	Concrete, ur	375	375	0.3	New	1	FCI2	0
FCI1	FCI1	F4	14.061	84.148	82.641	10.72	Concrete, ur	375	375	0.3	New	1	FCI1	0
FDI1	FDI1	F5	13.599	85.469	84.942	3.88	Concrete, ur	375	375	0.3	New	1	FDI1	0
FEI3	FEI3	FEI2	15.616	90.759	90.043	4.59	Concrete, ur	450	450	0.3	New	1	FEI3	0

P FE2	FE2	FE1	7.002	89.949	89.339	8.71	Concrete, ur	450	450	0.3	New	1	FE2	0
P FE1	FE1	F7	8.505	89.132	88.774	4.21	Concrete, ur	450	450	0.3	New	1	FE1	0
P G3	G3	G2	27.495	88.395	87.782	2.23	Concrete, ur	600	600	0.3	New	1	G3	0
P G2	G2	N269	23.35	87.622	87.2	1.81	Concrete, ur	750	750	0.3	New	1	G2	0
P GA1	GA1	G2	4.743	87.943	87.895	1.01	Concrete, ur	450	450	0.3	New	1	GA1	0
P E6	E6	E5	3.343	85.358	85.325	0.99	Concrete, ur	375	375	0.3	New	1	E6	0
P E5	E5	E4	11.854	85.295	84.22	9.07	Concrete, ur	375	375	0.3	New	1	E5	0
P E4	E4	E3	30	82.758	80.058	9	Concrete, ur	375	375	0.3	New	1	E4	0
P E3	E3	E2	10.954	80.028	79.904	1.13	Concrete, ur	375	375	0.3	New	1	E3	0
P E2	E2	E1	66.83	79.874	78.379	2.24	Concrete, ur	375	375	0.3	New	1	E2	0
P EB2	EB2	EB1	3.351	81.002	80.969	0.98	Concrete, ur	375	375	0.3	New	1	EB2	0
P EB1	EB1	E3	11.854	80.939	80.492	3.77	Concrete, ur	375	375	0.3	New	1	EB1	0
P FF1	FF1	F2	3.32	76.836	76.787	1.48	Concrete, ur	375	375	0.3	New	1	FF1	0
P FG1	FG1	F3	3.3	78.777	78.612	5	Concrete, ur	375	375	0.3	New	1	FG1	0
P D10	D10	D9	16.35	81.796	81.633	1	Concrete, ur	600	600	0.3	New Fixed	1	D10	0
P D9	D9	D8	15.75	81.603	81.445	1	Concrete, ur	600	600	0.3	New	1	D9	0
P D8	D8	D7	36.179	81.415	81.053	1	Concrete, ur	600	600	0.3	New	1	D8	0
DETAILS of SERVICES CROSSING PIPES														
Pipe	Chg	Bottom	Height of Set	Chg	Bottom	Height of Set	Chg	Bottom	Height of Set	etc				
	(m)	Elev (m)	(m)	(m)	Elev (m)	(m)	(m)	Elev (m)	(m)	etc				
CHANNEL DETAILS														
Name	From	To	Type	Length	U/S IL	D/S IL	Slope	Base Width	L.B. Slope	R.B. Slope	Manning	Depth	Roofed	
				(m)	(m)	(m)	(%)	(m)	(1:?)	(1:?)	n	(m)		
OVERFLOW ROUTE DETAILS														
Name	From	To	Travel	Spill	Crest	Weir	Cross	Safe Depth	SafeDepth	Safe	Bed	D/S Area		id
			Time	Level	Length	Coeff. C	Section	Major Storms	Minor Storms	DxV	Slope	Contributing		
			(min)	(m)	(m)			(m)	(m)	(sq.m/sec)	(%)	%		
OF94	A\10	A\9	0.1				Pathway 4 n	0.3	0.15	0.6	1	0		492
F A\9	A\9	A\7	1				Pathway 4 n	0.3	0.15	0.6	1	100		214
F A\8	A\8	A\7	1				7 m wide road	0.14	0.14	0.6	5	100		213
F A\7	A\7	A\6	1				7 m wide road	0.14	0.14	0.6	7	100		212
F A\6	A\6	C\5	1				7 m wide road	0.14	0.14	0.6	7	100		211
F A\5	A\5	C\5	1				7 m wide road	0.14	0.14	0.6	5	100		210
F A\4	A\4	A\2	0.1				Pathway 4 n	0.3	0.15	0.6	2	100		513
OF111	A\3	A\2	0.1				Pathway 4 n	0.3	0.15	0.6	2	100		509
OF113	A\2	Basin2	0.1				Dummy used	0.3	0.3	0.6	1	0		511
weir	Basin2	N237	0.1	84.1	0.6	1.6	Dummy used	0.2	0.05	0.6	1	0		270108949
Orifice1	Basin2	N237	0.1	82.7			Dummy used	0.2	0.05	0.6	1	0		95793211
Orifice2	Basin2	N237	0.1	83.1			Dummy used	0.3	0.3	0.6	1	0		538
F AA\2	AA\2	AA\1	1				7 m wide road	0.14	0.14	0.6	4	100		216
F AA\1	AA\1	A\2	1				7 m wide road	0.14	0.14	0.6	1	100		215
F AB\1	AB\1	C\4	1				7 m wide road	0.14	0.14	0.6	6	100		217
F B\5	B\5	BB\1	1				7 m wide road	0.14	0.14	0.6	7	100		222

FB\4	B\4	BA\1	1				7 m wide roa	0.14	0.14	0.6	7	100		221
FB\3	B\3	B\2	1				7 m wide roa	0.14	0.14	0.6	5	100		220
FB\2	B\2	C\5	1				7 m wide roa	0.14	0.14	0.6	5	100		219
FB\1	B\1	A\6	1				7 m wide roa	0.14	0.14	0.6	6	100		218
FBA\1	BA\1	B\3	1				7 m wide roa	0.14	0.14	0.6	8	100		223
FB\1	BB\1	B\3	1				7 m wide roa	0.14	0.14	0.6	7	100		224
FC\5	C\5	C\4	1				7 m wide roa	0.14	0.14	0.6	7	100		227
FC\4	C\4	C\3	0.1				8 m wide roa	0.3	0.15	0.4	5	100		518
FC\3	C\3	C\2	1				7 m wide roa	0.14	0.14	0.6	5	100		225
FC\2	C\2	C\1	0.1				8 m wide roa	0.3	0.15	0.4	5	100		522
FC\1	C\1	NODE2	0.5				Dummy used	0.2	0.05	0.6	5	100		433
OF340	NODE2	N300	0.1				Dummy used	0.2	0.05	0.6	1	0		254540634
OF118	CA\1	C\4	0.1				Pathw ay 4 m	0.3	0.15	0.6	1	0		516
FDA\1	DA\1	D\6	0.2				7 m wide roa	0.14	0.14	0.6	1	100		395
FD\6	D\6	D\5	0.5				7 m wide roa	0.14	0.14	0.6	1	100		396
FD\5	D\5	D\4	0.5				7 m wide roa	0.14	0.14	0.6	8	100		397
FD\4	D\4	D\3	0.5				7 m wide roa	0.14	0.14	0.6	5	100		398
FD\3	D\3	D\2	0.5				7 m wide roa	0.14	0.14	0.6	8	100		399
OF67	D\2	D\1	0.1				Dummy used	0.2	0.05	0.6	1	100		400
OF313	D\1	NODE3	0.1				Dummy used	0.2	0.05	0.6	1	0		401
OF311	NODE3	NODE5	0.1				Dummy used	0.2	0.05	0.6	1	0		402
FDB\4	DB\4	D\7	0.5				7 m wide roa	0.14	0.14	0.6	4	100		403
FDB\3	DB\3	DB\2	0.5				7 m wide roa	0.14	0.14	0.6	3	100		404
FDB\2	DB\2	DB\1	0.5				7 m wide roa	0.14	0.14	0.6	7	100		405
FDB\1	DB\1	DA\1	0.5				7 m wide roa	0.14	0.14	0.6	13	100		406
FD\7	D\7	D\6	0.5				7 m wide roa	0.14	0.14	0.6	13	100		407
FEA\1	EA\1	E\1	0.5				7 m wide roa	0.14	0.14	0.6	1	100		408
FE\1	E\1	D\5	0.5				Pathw ay 4 m	0.3	0.15	0.6	7	100		409
FR10	F\10	FD\1	0.5				7 m wide roa	0.14	0.14	0.6	11	100		410
FR9	F\9	F\8	0.5				7 m wide roa	0.14	0.14	0.6	9	100		411
FR8	F\8	F\7	0.5				7 m wide roa	0.14	0.14	0.6	10	100		412
FR7	F\7	F\6	0.5				7 m wide roa	0.14	0.14	0.6	10	80		413
FR6	F\6	F\5	0.5				7 m wide roa	0.14	0.14	0.6	10	100		414
FR5	F\5	F\4	0.5				7 m wide roa	0.14	0.14	0.6	9	80		415
FR4	F\4	F\3	0.5				7 m wide roa	0.14	0.14	0.6	8	100		416
FR3	F\3	F\2	1				7 m wide roa	0.14	0.14	0.6	5	100		417
FR2	F\2	F\1	0.1				Pathw ay 4 m	0.3	0.15	0.6	3	0		418
FR1	F\1	NODE4	0.1				8 m wide roa	0.3	0.15	0.4	5	0		79333876
OF381	NODE4	NODE5	0.1				Dummy used	0.2	0.05	0.6	1	0		419
FA\1	FA\1	NODE4	0.1				7 m wide roa	0.3	0.15	0.4	5	100		420
FB\1	FB\1	FA\1	0.5				7 m wide roa	0.14	0.14	0.6	5	100		421
FC\2	FC\2	FC\1	0.5				Pathw ay 4 m	0.3	0.15	0.6	2	100		422
FC\1	FC\1	F\4	0.5				7 m wide roa	0.14	0.14	0.6	8	20		423
FD\1	FD\1	FB\1	0.5				7 m wide roa	0.14	0.14	0.6	11	100		424
FE\3	FE\3	FE\2	0.5				7 m wide roa	0.14	0.14	0.6	1	100		425
FE\2	FE\2	FE\1	0.5				7 m wide roa	0.14	0.14	0.6	1	100		426
FE\1	FE\1	F\6	0.5				7 m wide roa	0.14	0.14	0.6	1	20		427

FG\3	G\3	G\2	0.3				7 m wide roa	0.3	0.15	0.4	5	100		428
OF344	G\2	N269	0.1				Dummy used	0.2	0.05	0.6	1	0		254540646
OF346	N269	NODE1	0.5				Dummy used	0.2	0.05	0.6	1	0		254540648
F GA\1	GA\1	G\2	0.1				Dummy used	0.2	0.05	0.6	1	0		435
OF199	E\6	E\5	0.1				Dummy used	0.2	0.05	0.6	1	0		437
F E\5	E\5	EB\1	0.5				7 m wide roa	0.14	0.14	0.6	15	100		438
F E\4	E\4	E\3	0.5				7 m wide roa	0.14	0.14	0.6	14	20		439
F E\3	E\3	E\2	0.5				7 m wide roa	0.14	0.14	0.6	7	100		440
F E\2	E\2	E\1	0.5				7 m wide roa	0.14	0.14	0.6	5	100		441
OF202	EB\2	EB\1	0.1				Dummy used	0.2	0.05	0.6	1	0		442
F EB\1	EB\1	E\3	0.5				Pathw ay 4 m	0.3	0.15	0.6	1	20		443
F FF\1	FF\1	F\2	0.1				Dummy used	0.2	0.05	0.6	1	0		444
F FG\1	FG\1	F\3	0.1				Dummy used	0.2	0.05	0.6	1	0		445
OF231	N237	G\3	0.1				Dummy used	0.2	0.05	0.6	1	0		446
OF156	NODE5	N268	0.1				Dummy used	0.2	0.05	0.6	1	0		597
OF316	N297	C\1	0.1				Pathw ay 4 m	0.3	0.15	0.6	5	100		447
OF318	N298	G\2	0.1				Dummy used	0.2	0.05	0.6	1	0		448
OF59	N329	F\1	2				Pathw ay 4 m	0.3	0.15	0.6	3	100		449
OF262	D\10	D\9	0.1				Dummy used	0.2	0.05	0.6	1	0		95793231
F D\9	D\9	D\8	1				Pathw ay 4 m	0.3	0.15	0.6	2	100		231
F D\8	D\8	D\7	1				7 m wide roa	0.14	0.14	0.6	8	100		230
OF269	N237	D\10	0.1				Dummy used	0.2	0.05	0.6	1	0		97907949
OF187	NODE1	N300	8				Dummy used	0.2	0.05	0.6	5	0		431
OF174	N255	NODE3	0.1				Dummy used	0.2	0.05	0.6	1	0		434
OF319	N300	N255	2				Dummy used	0.2	0.05	0.6	1	0		254540600

DRAINS PROPOSED_20YR RESULTS

DRAINS Model Name and File Path		F:\NS03750\ID-Calculations\Stormwater\ID-Drains\IC-DrainsDesignFiles\DEVELOPED 4100-NS03750-NSC-00-Developed_08-10-17_no trunk sys.drn								
DRAINS Version:		2008.06 -May 2008								
Modeller's Name:		Ky Tran								
Description:		Royal North shore hospital								
DRAINS results prepared		17 October, 2008 from Version 2008.06								
DRAINS results prepared		17 October, 2008 from Version 2008.06								
PIT / NODE DETAILS				Version 8						
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			
A\10	94		0.132		0.77	0	None			
A\9	93.82		0		0.75	0	None			
A\8	93.73		0.059		0.89	0.01	Inlet Capacity			
A\7	89.95		0.035		1.54	0.003	Inlet Capacity			
A\6	89.6		0.015		0.51	0	None			
A\5	89.07		0.005		1.17	0	None			
A\4	88.46		0.038		1.03	0	None			
A\3	85.53		0.049		4.39	0	None			
A\2	84.45		0		0.35	0	None			
AA\2	89.36		0.012		0.31	0	None			
AA\1	89.18		0.045		0.15	0	None			
AB\1	89.08		0.018		1.05	0	None			
B\5	92.24		0.007		1.34	0	None			
B\4	91.91		0.008		1.68	0	None			
B\3	89.98		0.033		1.37	0.003	Inlet Capacity			
B\2	89.81		0.003		0.94	0	None			
B\1	89.7		0		0.88	0	None			
BA\1	90.65		0.032		1.33	0.002	Inlet Capacity			
BB\1	90.51		0.015		1.26	0	None			
C\5	88.17		0.039		1.6	0.005	Inlet Capacity			
C\4	85.59		0.049		0.97	0.007	Inlet Capacity			
C\3	82.96		0.023		1.23	0.001	Inlet Capacity			
C\2	80.33		0.017		1.53	0	None			
C\1	79.81		0.074		0.71	0	None			
NODE2	79.25		0							
CA\1	85.93		0.175		0.81	0	None			
DA\1	79.1		0.014		0.75	0	None			
D\6	79.1		0.012		0.7	0	None			
D\5	78.51		0.033		0.9	0.003	Inlet Capacity			
D\4	76.88		0.031		1.02	0.002	Inlet Capacity			
D\3	76.26		0.016		0.93	0	None			
D\2	75.45		0.014		1.02	0	None			
D\1	72.38		0		3.62	0	None			
NODE3	71.76		2.687							
DB\4	83.12		0.029		1.38	0.002	Inlet Capacity			
DB\3	83.1		0.031		1.39	0.002	Inlet Capacity			
DB\2	82.82		0.016		1.38	0	None			
DB\1	81.96		0.007		1.37	0	None			
D\7	80.88		0.031		2.45	0	None			
EA\1	80.46		0.194		1.2	0	None			
E\1	79.31		0.039		0.55	0.004	Inlet Capacity			
F\10	94.63		0.014		1.31	0	None			
F\9	94.2		0.018		1.31	0	None			
F\8	90.53		0.024		1.3	0.001	Inlet Capacity			
F\7	89.56		0.001		0.8	0	None			
F\6	87.93		0.019		1.43	0	Inlet Capacity			
F\5	84.95		0.016		1.43	0	None			
F\4	83.31		0.033		0.74	0.003	Inlet Capacity			
F\3	80.23		0.024		0	0.121	Outlet System			
F\2	78.29	78.29	0.141	1	-0.1	0.328	Outlet System			
F\1	77.93		0.407		0	0.247	Outlet System			
NODE4	75.69		0.365							
FA\1	78.14		0.04		0	0.126	Outlet System			
FB\1	80.27		0.053		0.36	0.008	Inlet Capacity			
FC\2	84.5		0.019		1.27	0	Inlet Capacity			
FC\1	84.38		0.02		1.3	0	Inlet Capacity			
FD\1	85.79		0.055		1.17	0.008	Inlet Capacity			
FE\3	91.47		0.26		0.79	0	None			

FE2	90.73		0		0.75	0	None				
FE1	89.95		0		0.81	0	None				
G3	89.16		0.424		0.71	0	None				
G2	88.34	89.33	0.047	0.6	0.92	0	None				
N269	87.51		0								
GA1	88.42		0.175		1.14	0	None				
E6	85.82		0.067		1.12	0	None				
E5	85.78		0.014		1.04	0	None				
E4	83.21		0.019		2.41	0	Inlet Capacity				
E3	80.9		0.015		1.08	0	None				
E2	80.52		0.022		0.86	0.001	Inlet Capacity				
EB2	81.44		0.063		2.66	0	None				
EB1	81.41		0.012		1.05	0	None				
FF1	78.32		0.064		0.34	0	None				
FG1	80.51		0.175		0.29	0	None				
D10	83.06		0.641		1.74	0	None				
D9	82.8		0		2	0	None				
D8	82.53		0		2.27	0	None				
SUB-CATCHMENT DETAILS											
Name	Max	Paved	Grassed	Paved	Grassed	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)					
CA10	0.132	0.103	0.03	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA8	0.059	0.045	0.014	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA7	0.025	0.019	0.006	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA6	0.012	0.01	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA5	0.005	0.004	0.001	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA4	0.038	0.029	0.009	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA3	0.049	0.037	0.011	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD10	0.985	0.956	0.029	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CAA2	0.012	0.009	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CAA1	0.045	0.034	0.01	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CAB1	0.018	0.014	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CB5	0.007	0.006	0.002	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CB4	0.008	0.006	0.002	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CB3	0.031	0.024	0.007	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CBA1	0.032	0.025	0.008	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CBB1	0.015	0.012	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CC5	0.039	0.03	0.009	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CC4	0.044	0.034	0.01	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CC3	0.017	0.013	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CC2	0.016	0.012	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CCA1	0.175	0.137	0.038	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CDA1	0.014	0.011	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD6	0.012	0.01	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD5	0.028	0.023	0.006	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD4	0.028	0.023	0.006	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD3	0.014	0.011	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD2	0.014	0.012	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CDB4	0.029	0.023	0.005	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CDB3	0.031	0.025	0.006	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CDB2	0.014	0.011	0.003	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CDB1	0.007	0.006	0.001	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CD7	0.03	0.023	0.006	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CEA1	0.194	0.157	0.036	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CE1	0.038	0.031	0.007	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF10	0.014	0.011	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF9	0.018	0.014	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF8	0.024	0.019	0.005	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF6	0.019	0.015	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF5	0.016	0.013	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF4	0.032	0.026	0.006	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				

CF3	0.021	0.017	0.004	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF2	0.025	0.02	0.004	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA1	0.032	0.026	0.006	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CFB1	0.044	0.036	0.008	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF2	0.019	0.015	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF1	0.02	0.016	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CFD1	0.055	0.045	0.01	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CFE1	0.26	0.215	0.045	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CG3	0.173	0.155	0.018	7	11	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CG2	0.003	0.002	0	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CGA1	0.175	0.157	0.018	7	11	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CAK2	3.35	1.156	2.225	21.5	23.5	0	AR&R 20 year, 2 hours storm, average 46.5 mm/h, Zone 1				
CE6	0.067	0.054	0.013	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CE5	0.014	0.011	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CE4	0.019	0.015	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CE3	0.015	0.012	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CE2	0.022	0.018	0.004	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CEB2	0.063	0.051	0.012	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CEB1	0.012	0.01	0.003	3	5	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CFR1	0.064	0	0.064	5	16	0	AR&R 20 year, 2 hours storm, average 46.5 mm/h, Zone 1				
CFG1	0.175	0.175	0	5	0	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CA9	0.252	0.23	0.023	8	12	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
AKI7 added	0.074	0.062	0.012	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
AKI9 added	0.045	0.037	0.007	5	7	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CF1 added	0.079	0.066	0.013	4	6	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CAK4	1.904	1.217	0.75	8	20	0	AR&R 20 year, 2 hours storm, average 46.5 mm/h, Zone 1				
CAK3	0.295	0.228	0.069	8	12	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
CAK5	2.062	1.682	0.38	7	10	0	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1				
Outflow Volumes for Total Catchment (15.5 impervious + 12.8 pervious = 28.3 total ha)											
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)							
AR&R 20 year	4805.39	3195.70 (66.5%)	2471.32 (94.4%)	724.37 (33.2%)							
AR&R 20 year	7524.35	5691.99 (75.8%)	3957.20 (96.4%)	1734.79 (50.8%)							
AR&R 20 year	9594.26	7590.88 (79.1%)	5088.40 (97.7%)	2502.47 (57.5%)							
AR&R 20 year	11300.69	9145.52 (80.9%)	6020.94 (97.3%)	3124.58 (61.0%)							
AR&R 20 year	12745.14	10421.40 (81.8%)	6810.31 (97.3%)	3611.10 (62.5%)							
AR&R 20 year	14019.65	11518.51 (82.2%)	7506.74 (98.2%)	4011.77 (63.1%)							
AR&R 20 year	17120.97	14223.61 (83.1%)	9201.66 (98.2%)	5021.95 (64.7%)							
AR&R 20 year	19570.87	16374.49 (83.7%)	10540.56 (98.3%)	5833.94 (65.7%)							
AR&R 20 year	23366.09	19651.73 (84.1%)	12614.45 (98.3%)	7037.28 (66.4%)							
AR&R 20 year	26339.96	22191.49 (84.3%)	14240.05 (98.3%)	7951.44 (66.6%)							
AR&R 20 year	31013.18	26149.20 (84.3%)	16791.36 (99.1%)	9357.84 (66.5%)							
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						
PA10	0.132	1.2	93.853	93.816	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA9	0.132	1.2	93.742	93.733	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA8	0.182	4.5	93.169	89.948	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA7	0.213	1.9	89.778	89.601	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA6	0.322	2	89.183	89.069	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA5	0.345	2	88.691	88.455	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA4	0.44	3.8	88.102	87.429	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA3	0.489	2.3	84.513	84.449	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PA2	0.489	1.1	84.437	84.433	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PAA2	0.012	0.7	89.247	89.18	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PAA1	0.057	1.6	88.977	88.878	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PAB1	0.018	0.2	89.071	89.069	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PB5	0.007	1	92.173	92.037	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PB4	0.016	2.4	91.793	89.979	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PB3	0.091	1.3	89.838	89.81	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PB2	0.094	0.8	89.719	89.7	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PB1	0.094	0.8	89.628	89.601	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						
PBA1	0.03	3.1	90.501	89.979	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1						

PBB1	0.015	1.9	90.385	89.979	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PC5	0.035	3.1	87.964	85.588	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PC4	0.252	5.5	84.991	82.96	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PC3	0.274	5.4	82.541	80.329	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PC2	0.291	3.7	80.058	79.814	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
Ppe229	0.363	2.6	79.455	79.249	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PCA1	0.175	1.6	85.674	85.588	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PDA1	0.014	0.1	79.1	79.1	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PD6	0.709	2.4	78.559	78.506	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PD5	1.112	5.2	77.752	76.876	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PD4	1.14	3.2	76.44	76.259	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PD3	1.156	5.8	75.696	75.449	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PD2	1.17	4	74.966	74.424	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
Ppe123	1.17	2.7	71.884	71.764	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PDB4	0.027	0.4	83.103	83.103	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PDB3	0.055	1.9	82.913	82.819	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PDB2	0.071	3.5	82.616	81.957	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PDB1	0.078	1.8	81.835	81.774	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PD7	0.7	5.6	79.784	79.1	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PEA1	0.194	5.3	79.763	79.307	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PE1	0.439	2.8	78.935	78.506	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF10	0.014	1.7	94.521	94.197	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF9	0.031	3.3	94.041	90.127	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF8	0.054	3.8	90.336	89.564	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF7	0.315	11.4	88.892	87.935	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF6	0.333	5.5	87.182	84.949	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF5	0.395	5.8	84.399	80.529	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF4	0.463	5.8	82.025	80.226	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PF3	0.586	3.7	79.672	78.292	AR&R 20 year, 5 minutes storm, average 203.6 mm/h, Zone 1			
PF2	0.469	2.9	78.022	77.929	AR&R 20 year, 5 minutes storm, average 203.6 mm/h, Zone 1			
Ppe169	0.528	3.7	76.783	75.69	AR&R 20 year, 45 minutes storm, average 80.6 mm/h, Zone 1			
PFA1	0.019	0.2	78.143	78.292	AR&R 20 year, 10 minutes storm, average 159.4 mm/h, Zone 1			
PFB1	0.045	0.4	80.233	80.226	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFC2	0.019	1.2	84.38	84.38	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFC1	0.038	3.9	84.202	83.309	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFD1	0.046	2.8	85.547	85.02	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFE3	0.26	4.3	90.942	90.733	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFE2	0.26	5.4	90.102	89.951	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFE1	0.26	1.6	89.612	89.564	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PG3	0.424	3.7	88.652	88.339	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PG2	0.646	3.7	87.934	87.512	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PGA1	0.175	1.1	88.357	88.339	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PE6	0.067	0.6	85.781	85.778	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PE5	0.081	4.9	85.379	84.298	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PE4	0.099	4.6	82.852	80.902	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PE3	0.189	1.7	80.603	80.519	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PE2	0.211	3.2	80.091	79.307	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PEB2	0.063	0.6	81.409	81.407	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PEB1	0.075	3	81.043	80.902	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PFF1	0.064	0.6	78.298	78.292	AR&R 20 year, 2 hours storm, average 46.5 mm/h, Zone 1			
PFG1	0.175	1.6	80.248	80.226	AR&R 20 year, 25 minutes storm, average 108 mm/h, Zone 1			
PD10	0.641	2.3	82.925	82.802	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PD9	0.641	2.3	82.645	82.527	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
PD8	0.641	5.6	81.85	81.309	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zone 1			
CHANNEL DETAILS								
Name	Max Q	Max V	Chainage	Max	Due to Storm			
	(cu.m/s)	(m/s)	(m)	HGL (m)				
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
OF94	0	0	1.931	0	0	0	0	
FA9	0	0.025	1.931	0.048	0.03	1.92	0.55	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
FA8	0.01	0.035	0.425	0.066	0.12	0.84	1.77	AR&R 20 year, 25 minutes storm, average 108 mm/h
FA7	0.003	0.015	0.503	0.047	0.08	0.39	1.66	AR&R 20 year, 25 minutes storm, average 108 mm/h
FA6	0	0.039	0.503	0.064	0.14	0.79	2.12	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
FA5	0	0.039	0.425	0.068	0.12	0.93	1.78	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
FA4	0	0	1.834	0	0	0	0	
OF111	0	0	1.834	0	0	0	0	
OF113	0	0	19.77	0	0	0	0	
weir	0.185	0.185	7.665	0.044	0.03	12.71	0.61	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Z

Orifice1	0.243	0.243	7.665	0.049	0.03	13.79	0.65	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zi
Orifice2	0.213	0.213	19.77	0.046	0.03	13.25	0.63	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zi
F AA\2	0	0.045	0.38	0.073	0.12	1.09	1.67	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F AA\1	0	0	0.19	0	0	0	0	
F AB\1	0	0.044	0.466	0.069	0.13	0.95	1.95	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F B\5	0	0.015	0.503	0.047	0.08	0.39	1.68	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F B\4	0	0.032	0.503	0.061	0.12	0.68	2.01	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F B\3	0.003	0.003	0.425	0.026	0.02	0.22	0.95	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F B\2	0	0.039	0.425	0.068	0.12	0.93	1.78	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F B\1	0	0.012	0.466	0.045	0.07	0.37	1.51	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F BA\1	0.002	0.033	0.538	0.06	0.13	0.66	2.14	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F BB\1	0	0.031	0.503	0.06	0.12	0.63	2.04	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F C\5	0.005	0.049	0.503	0.069	0.15	0.95	2.14	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F C\4	0.007	0.023	0.659	0.058	0.1	0.57	1.69	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F C\3	0.001	0.017	0.425	0.051	0.08	0.43	1.51	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F C\2	0	0	0.659	0	0	0	0	
F C\1	0	0	13.138	0	0	0	0	
OF340	0.363	0.363	7.665	0.058	0.04	15.58	0.72	AR&R 20 year, 25 minutes storm, average 108 mm/h,
OF118	0	0	1.931	0	0	0	0	
F DA\1	0	0.012	0.19	0.061	0.05	0.68	0.78	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F D\6	0	0.028	0.19	0.079	0.07	1.29	0.83	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F D\5	0.003	0.031	0.538	0.059	0.12	0.61	2.11	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F D\4	0.002	0.016	0.425	0.051	0.08	0.42	1.51	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F D\3	0	0.014	0.538	0.045	0.08	0.37	1.76	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
OF67	0	0	7.665	0	0	0	0	
OF313	0	0	7.665	0	0	0	0	
OF311	3.857	3.857	7.665	0.151	0.21	34.26	1.36	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zi
F DB\4	0.002	0.031	0.38	0.066	0.1	0.84	1.59	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F DB\3	0.002	0.016	0.329	0.056	0.07	0.5	1.26	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F DB\2	0	0.007	0.503	0.036	0.05	0.3	1.37	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F DB\1	0	0.014	0.686	0.041	0.08	0.34	2.04	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F D\7	0	0.012	0.686	0.039	0.08	0.32	2.03	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F EA\1	0	0.038	0.19	0.086	0.07	1.52	0.87	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F E\1	0.004	0.033	1.64	0.037	0.04	1.47	1.21	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F F\10	0	0.055	0.631	0.067	0.18	0.88	2.63	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F F\9	0	0.024	0.571	0.053	0.11	0.44	2.07	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F F\8	0.001	0.001	0.602	0.015	0.01	0.12	0.89	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F F\7	0	0.015	0.602	0.043	0.08	0.36	1.92	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F F\6	0	0.016	0.602	0.044	0.09	0.36	1.95	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F F\5	0	0.026	0.571	0.054	0.12	0.45	2.12	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F F\4	0.003	0.024	0.538	0.054	0.11	0.45	1.95	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F F\3	0.121	0.141	0.425	0.101	0.21	2	2.05	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F F\2	0.328	0.328	1.805	0.101	0.16	4	1.6	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F F\1	0.247	0.247	0.659	0.119	0.26	2.6	2.22	AR&R 20 year, 25 minutes storm, average 108 mm/h,
OF381	0.893	0.893	7.665	0.083	0.08	20.61	0.93	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F FA\1	0.126	0.126	0.6	0.097	0.2	1.89	2.02	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F FB\1	0.008	0.04	0.425	0.068	0.12	0.93	1.8	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F FC\2	0	0.02	1.834	0.038	0.03	1.54	0.67	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F FC\1	0	0.007	0.538	0.034	0.05	0.28	1.42	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F FD\1	0.008	0.053	0.631	0.066	0.17	0.86	2.6	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F FE\3	0	0	0.19	0	0	0	0	
F FE\2	0	0	0.19	0	0	0	0	
F FE\1	0	0.004	0.19	0.04	0.02	0.33	0.56	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F G\3	0	0.003	0.6	0.026	0.02	0.21	0.97	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
OF344	0	0	7.665	0	0	0	0	
OF346	0.646	0.646	7.665	0.073	0.06	18.64	0.84	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F GA\1	0	0	7.665	0	0	0	0	
OF199	0	0	7.665	0	0	0	0	
F E\5	0	0.012	0.737	0.038	0.08	0.31	2.08	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F E\4	0	0.003	0.712	0.023	0.03	0.19	1.42	AR&R 20 year, 25 minutes storm, average 108 mm/h,
F E\3	0	0.022	0.503	0.054	0.1	0.45	1.81	AR&R 20 year, 5 minutes storm, average 203.6 mm/h
F E\2	0.001	0.039	0.425	0.068	0.12	0.91	1.8	AR&R 20 year, 25 minutes storm, average 108 mm/h,

OF202	0	0	7.665	0	0	0	0				
F EB\1	0	0.003	1.931	0.022	0.01	0.87	0.32	AR&R 20 year, 5 minutes storm, average 203.6 mm/h			
F FF\1	0	0	7.665	0	0	0	0				
F FG\1	0	0	7.665	0	0	0	0				
OF231	0.252	0.252	7.665	0.05	0.03	13.97	0.65	AR&R 20 year, 25 minutes storm, average 108 mm/h,			
OF156	4.693	4.693	7.665	0.164	0.23	36.78	1.43	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zi			
OF316	0.074	0.074	1.698	0.053	0.07	2.12	1.32	AR&R 20 year, 25 minutes storm, average 108 mm/h,			
OF318	0.045	0.045	7.665	0.026	0.01	8.83	0.38	AR&R 20 year, 25 minutes storm, average 108 mm/h,			
OF59	0.079	0.079	1.805	0.06	0.07	2.4	1.11	AR&R 20 year, 25 minutes storm, average 108 mm/h,			
OF262	0	0	7.665	0	0	0	0				
F D\9	0	0	1.834	0	0	0	0				
F D\8	0	0.03	0.538	0.058	0.12	0.59	2.08	AR&R 20 year, 5 minutes storm, average 203.6 mm/h			
OF269	0.641	0.641	7.665	0.072	0.06	18.46	0.85	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zi			
OF187	0.931	0.931	13.138	0.061	0.1	16.12	1.69	AR&R 20 year, 25 minutes storm, average 108 mm/h,			
OF174	2.687	2.687	7.665	0.131	0.16	30.13	1.24	AR&R 20 year, 1.5 hours storm, average 55 mm/h, Zi			
OF319	0.996	0.996	7.665	0.087	0.08	21.33	0.96	AR&R 20 year, 25 minutes storm, average 108 mm/h,			
DETENTION BASIN DETAILS											
Name	Max WL	MaxVol	Max Q	Max Q	Max Q						
			Total	Low Level	High Level						
Basin2	84.43	670.9	0.641	0	0.641						
CONTINUITY CHECK for AR&R 20 year, 2 hours storm, average 46.5 mm/h, Zone 1											
Node	Inflow (cu.m)	Outflow (cu.m)	Storage Cha (cu.m)	Difference %							
A\10	199.29	199.29	0	0							
A\9	199.29	199.29	0	0							
A\8	287.22	287.26	0	0							
A\7	324.8	324.8	0	0							
A\6	483.33	483.35	0	0							
A\5	517.18	517.37	0	0							
A\4	658.63	658.67	0	0							
A\3	731.15	731.2	0	0							
A\2	731.2	730.95	0	0							
Basin2	2272.5	2268.1	4.41	0							
AA\2	17.8	17.8	0	0							
AA\1	84.3	84.3	0	0							
AB\1	26.5	26.49	0	0							
B\5	11.14	11.14	0	0							
B\4	23.63	23.63	0	0							
B\3	139.98	139.98	0	0							
B\2	139.98	139.98	0	0							
B\1	139.98	139.96	0	0							
BA\1	47.93	47.92	0	0							
BB\1	22.53	22.53	0	0							
C\5	58.31	58.29	0	0							
C\4	390.03	390.03	0	0							
C\3	415.1	415.14	0	0							
C\2	438.76	438.76	0	0							
C\1	551.03	551.03	0	0							
NODE2	551.03	551.03	0	0							
CA\1	266	266	0	0							
DA\1	20.83	20.83	0	0							
D\6	2475.64	2475.7	0	0							
D\5	3192.07	3192.86	0	0							
D\4	3235.46	3235.58	0	0							
D\3	3256.57	3256.65	0	0							
D\2	3278.33	3278.33	0	0							
D\1	3278.33	3280.61	0	-0.1							
NODE3	8882.18	8882.18	0	0							
DB\4	43.78	43.77	0	0							
DB\3	90.13	90.12	0	0							
DB\2	111.63	111.63	0	0							
DB\1	122.47	122.47	0	0							
D\7	2436.12	2436.12	0	0							
EA\1	295.64	295.64	0	0							

E1	673.98	674.03	0	0								
F10	20.51	20.51	0	0								
F9	46.93	46.93	0	0								
F8	82.88	82.88	0	0								
F7	480.73	480.73	0	0								
F6	508.61	508.63	0	0								
F5	611.65	611.72	0	0								
F4	717.91	718	0	0								
F3	1094.16	1094.23	0	0								
F2	1239.38	1239.7	0	0								
F1	1360.6	1360.48	0	0								
NODE4	1428.29	1428.29	0	0								
FA1	51.27	51.27	0	0								
FB1	70.7	70.69	0	0								
FC2	28.14	28.13	0	0.1								
FC1	57.73	57.71	0	0								
FD1	83.05	83.04	0	0								
FE3	397.81	397.81	0	0								
FE2	397.81	397.82	0	0								
FE1	397.82	397.85	0	0								
G3	736.26	736.26	0	0								
G2	1106.5	1106.5	0	0								
N269	1106.5	1106.5	0	0								
GA1	297.39	297.39	0	0								
N181	8078.71	8078.71	0	0								
E6	102.41	102.41	0	0								
E5	122.9	122.92	0	0								
E4	150.74	150.74	0	0								
E3	287.74	287.76	0	0								
E2	320.7	320.73	0	0								
EB2	95.59	95.59	0	0								
EB1	114.02	114.04	0	0								
FF1	124.03	124.03	0	0								
FG1	276	276	0	0								
N237	442.96	442.96	0	0								
NODE5	10310.47	10310.47	0	0								
N297	112.27	112.27	0	0								
N298	68.85	68.85	0	0								
N329	120.91	120.91	0	0								
D10	2268.1	2268.1	0	0								
D9	2268.1	2268.1	0	0								
D8	2268.1	2268.1	0	0								
N237	2268.1	2268.1	0	0								
N250	3801.41	3801.41	0	0								
NODE1	1624.25	1624.25	0	0								
N255	5601.55	5601.56	0	0								
N300	2175.28	2175.28	0	0								
N268	10310.47	10310.47	0	0								
Run Log for 4100 run at 16:37:57 on 17/10/2008												
Upw elling occurred at FA1, F2, F3												
Freeboard w as less than 0.15m at F1												

DRAINS PROPOSED_100YR RESULTS

DRAINS Model Name and File Path		F:\NS03750\ID-Calculations\Stormwater\ID-Drains\IC-DrainsDesignFiles\DEVELOPED									
		4100-NS03750-NSC-00-Developed_08-10-17_no trunk sys.drn									
DRAINS Version:		2008.06 -May 2008									
Modeller's Name:		Ky Tran									
Description:		Royal North shore hospital									
DRAINS results prepared 17 October, 2008 from Version 2008.06											

FE2	90.89		0		0.59	0	None						
FE1	90.33		0		0.43	0	None						
G3	89.23		0.509		0.64	0	None						
G2	88.5	89.34	0.058	0.8	0.76	0	None						
N269	87.54		0										
GA1	88.47		0.21		1.08	0	None						
E6	85.89		0.082		1.05	0	None						
E5	85.83		0.017		0.99	0	None						
E4	83.25		0.023		2.37	0.001	Inlet Capacity						
E3	81.77		0.019		0.21	0	Inlet Capacity						
E2	81.2		0.027		0.18	0.001	Inlet Capacity						
EB2	81.99		0.076		2.12	0	None						
EB1	81.94		0.015		0.52	0	None						
FF1	78.34		0.086		0.32	0	None						
FG1	80.64		0.214		0.15	0	None						
DI10	84.8		0.966		0	0.079	Outlet System						
DI9	84.32		0.079		0.48	0.014	Inlet Capacity						
DI8	83.72		0.014		1.08	0	None						
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)							
CA10	0.162	0.125	0.037	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CA18	0.073	0.055	0.018	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CA17	0.031	0.024	0.008	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CA16	0.015	0.012	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CA15	0.006	0.005	0.001	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CA14	0.047	0.036	0.012	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CA13	0.06	0.045	0.015	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD10	1.199	1.165	0.034	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CAA12	0.015	0.011	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CAA11	0.055	0.042	0.013	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CAB11	0.022	0.017	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CB15	0.009	0.007	0.002	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CB14	0.01	0.008	0.003	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CB13	0.038	0.029	0.009	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CBA11	0.04	0.03	0.01	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CBB11	0.019	0.014	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CC15	0.048	0.037	0.012	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CC14	0.055	0.041	0.013	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CC13	0.021	0.016	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CC12	0.02	0.015	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CCA11	0.213	0.167	0.046	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CDA11	0.017	0.013	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD16	0.015	0.012	0.003	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD15	0.035	0.027	0.007	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD14	0.035	0.028	0.007	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD13	0.017	0.014	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD12	0.018	0.014	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD14	0.035	0.028	0.006	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD13	0.037	0.03	0.007	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD12	0.017	0.014	0.003	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD11	0.009	0.007	0.002	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CD17	0.036	0.028	0.008	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CEA11	0.235	0.192	0.044	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CE1	0.047	0.037	0.009	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF10	0.017	0.013	0.003	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF9	0.022	0.017	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF8	0.029	0.024	0.006	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF6	0.023	0.018	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF5	0.019	0.015	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF4	0.04	0.032	0.008	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF3	0.026	0.021	0.005	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF2	0.03	0.025	0.006	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CFA11	0.039	0.032	0.007	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CFB11	0.054	0.044	0.01	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF2	0.023	0.018	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CF1	0.024	0.019	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CFD1	0.067	0.055	0.012	4	6		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CFE1	0.316	0.261	0.055	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CG3	0.207	0.184	0.023	7	11		0 AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1						
CG2	0.003	0.003	0	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CGA1	0.21	0.186	0.023	7	11		0 AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1						
CAK12	4.453	1.546	2.99	21.5	23.5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CE6	0.082	0.066	0.015	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CE5	0.017	0.013	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CE4	0.023	0.018	0.005	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CE3	0.019	0.015	0.004	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CE2	0.027	0.021	0.006	3	5		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						
CEB12	0.076	0.062	0.014	5	7		0 AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1						

C EB1	0.015	0.012	0.003	3	5	0	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1		
C FF1	0.086	0	0.086	5	16	0	AR&R 100 year, 1 hour storm, average 91.5 mm/h, Zone 1		
C FG1	0.214	0.214	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1		
C A19	0.303	0.274	0.03	8	12	0	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1		
AK17 added	0.09	0.075	0.015	4	6	0	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1		
AK19 added	0.055	0.046	0.009	5	7	0	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1		
C F1 added	0.097	0.081	0.016	4	6	0	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1		
CAK14	2.458	1.439	1.019	8	20	0	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1		
CAK13	0.361	0.271	0.09	8	12	0	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1		
CAK15	2.46	1.995	0.466	7	10	0	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1		
Outflow Volumes for Total Catchment (15.5 impervious + 12.8 pervious = 28.3 total ha)									
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)					
AR&R 100 y	6179.03	4555.69 (73.7%)	3222.00 (95.1%)	1333.68 (47.6%)					
AR&R 100 y	9738.23	7885.40 (81.1%)	5167.06 (97.1%)	2718.34 (61.6%)					
AR&R 100 y	12490.24	10453.00 (83.7%)	6671.04 (97.1%)	3781.95 (66.8%)					
AR&R 100 y	14765.48	12568.96 (85.2%)	7914.37 (98.1%)	4654.59 (69.5%)					
AR&R 100 y	16710.3	14319.60 (85.7%)	8977.18 (98.1%)	5342.41 (70.5%)					
AR&R 100 y	18423.81	15877.09 (86.2%)	9913.61 (98.1%)	5963.48 (71.4%)					
AR&R 100 y	22622.63	19694.40 (87.0%)	12208.20 (98.1%)	7486.21 (73.0%)					
AR&R 100 y	25915.12	22680.44 (87.5%)	14007.51 (98.1%)	8672.93 (73.8%)					
AR&R 100 y	31055.66	27311.80 (88.0%)	16816.39 (98.1%)	10495.41 (74.5%)					
AR&R 100 y	35119.95	30937.48 (88.1%)	19038.05 (98.1%)	11899.43 (74.7%)					
AR&R 100 y	41464.19	36514.32 (88.1%)	22501.50 (98.1%)	14012.82 (74.5%)					
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				
PA10	0.162	1.5	94.073	94.018	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA19	0.162	1.5	93.908	93.895	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA18	0.221	4.7	93.184	90.608	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA17	0.26	2.4	90.356	90.095	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA16	0.396	2.5	89.466	89.294	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA15	0.423	2	88.909	88.557	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA14	0.54	4.7	88.255	87.429	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA13	0.601	2.8	84.917	84.748	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PA12	0.601	1.4	84.717	84.709	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PAA12	0.015	0.8	89.323	89.222	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PAA11	0.07	1.9	89.009	88.878	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PAB1	0.021	0.2	89.297	89.294	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PB15	0.009	1.1	92.176	92.04	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PB4	0.02	2.7	91.795	90.543	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PB13	0.11	1	90.452	90.412	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PB12	0.115	1	90.273	90.246	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PB11	0.115	1	90.135	90.095	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PBA11	0.035	1.5	90.545	90.543	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PBB11	0.019	0.3	90.544	90.543	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PC5	0.042	3.3	87.97	85.77	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PC4	0.306	5.8	85.01	83.023	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PC3	0.335	5.7	82.56	80.466	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PC2	0.356	2.9	80.142	79.996	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
Pipe229	0.446	2.7	79.455	79.306	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PCA11	0.213	1.9	85.896	85.77	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDA11	0.017	0.2	79.799	79.799	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PD16	1.063	3	78.983	78.863	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PD15	1.536	3.5	78.122	77.466	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PD4	1.568	3.5	76.952	76.615	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PD3	1.587	3.6	76.286	75.93	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PD12	1.604	4.4	75.022	74.506	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
Pipe123	1.604	2.9	71.967	71.847	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDB4	0.032	0.4	83.132	83.132	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDB3	0.065	2	82.924	82.85	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDB12	0.085	3.6	82.626	82.054	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDB11	0.094	0.9	82.035	82.028	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PD17	1.044	3.7	80.33	79.799	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PEA11	0.235	2.1	80	79.854	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PE1	0.524	3.3	79.388	78.863	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF10	0.017	1.9	94.525	94.221	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF9	0.038	3.6	94.046	90.558	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF8	0.066	4	90.344	89.752	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF7	0.384	6.2	88.91	88.164	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF6	0.406	5.8	87.202	85.092	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF5	0.48	6.1	84.422	83.81	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF4	0.562	6.2	82.05	80.226	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PF3	0.588	3.7	79.674	78.292	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1				

PF2	0.455	2.9	78.022	77.929	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1				
Ppe169	0.528	4.8	76.692	74.792	AR&R 100 year, 1 hour storm, average 91.5 mm/h, Zone 1				
PFA1	0.019	0.2	78.143	78.292	AR&R 100 year, 15 minutes storm, average 176.4 mm/h, Zone 1				
PFB1	0.054	0.5	80.239	80.226	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFC2	0.022	0.9	84.407	84.407	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFC1	0.046	4.1	84.207	83.81	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFD1	0.055	2.9	85.554	85.092	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFE3	0.316	3.3	91.022	90.892	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFE2	0.316	2	90.384	90.326	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFE1	0.316	2	89.823	89.752	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PG3	0.509	3.8	88.68	88.499	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1				
PG2	0.773	3.9	88.029	87.544	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1				
PGA1	0.21	1.3	88.385	88.499	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1				
PE6	0.082	0.7	85.834	85.83	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PE5	0.098	5.8	85.389	84.299	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PE4	0.121	4.7	82.865	81.774	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PE3	0.231	2.1	81.328	81.204	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PE2	0.257	2.3	80.789	79.854	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PBB2	0.076	0.7	81.939	81.935	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PBB1	0.091	0.8	81.796	81.774	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PFF1	0.086	0.8	78.301	78.292	AR&R 100 year, 1 hour storm, average 91.5 mm/h, Zone 1				
PFG1	0.214	1.9	80.26	80.226	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDI10	0.944	3.3	84.551	84.321	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDI9	0.96	3.4	83.977	83.725	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
PDI8	0.972	3.4	82.595	82.028	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1				
CHANNEL DETAILS									
Name	Max Q	Max V	Chainage	Max	Due to Storm				
	(cu.m/s)	(m/s)	(m)	HGL (m)					
OVERFLOW ROUTE DETAILS									
Name	Max Q US	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm	
OF94	0	0	0.565	0	0	0	0		
FA19	0	0.031	0.565	0.052	0.03	2.07	0.58	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FA18	0.014	0.044	0.425	0.071	0.13	1.02	1.8	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FA17	0.006	0.021	0.503	0.053	0.1	0.44	1.81	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FA16	0	0.049	0.503	0.069	0.15	0.95	2.15	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FA15	0	0.048	0.425	0.073	0.13	1.07	1.85	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FA14	0	0	0.799	0	0	0	0		
OF111	0	0	0.799	0	0	0	0		
OF113	0	0	19.77	0	0	0	0		
weir	0.456	0.456	0.256	0.063	0.05	16.66	0.77	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
Orifice1	0.27	0.27	0.256	0.051	0.03	14.15	0.67	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
Orifice2	0.24	0.24	19.77	0.049	0.03	13.79	0.64	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FAA12	0	0.055	0.38	0.079	0.13	1.27	1.66	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FAA11	0	0	0.19	0	0	0	0		
FAB1	0.001	0.055	0.466	0.074	0.15	1.11	1.99	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FBI5	0	0.019	0.503	0.051	0.09	0.42	1.75	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FBI4	0	0.04	0.503	0.065	0.14	0.82	2.09	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FBI3	0.005	0.005	0.425	0.034	0.04	0.28	1.15	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FBI2	0	0.048	0.425	0.073	0.13	1.07	1.85	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FBI1	0	0.015	0.466	0.049	0.08	0.4	1.57	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FBA11	0.005	0.043	0.538	0.065	0.15	0.82	2.23	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FBB11	0	0.038	0.503	0.064	0.13	0.79	2.06	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FC5	0.007	0.061	0.503	0.074	0.16	1.11	2.2	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FC4	0.01	0.031	0.532	0.064	0.11	0.77	1.73	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FC3	0.002	0.022	0.425	0.056	0.09	0.52	1.64	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FC2	0	0	0.532	0	0	0	0		
FC1	0	0	0.572	0	0	0	0		
OF340	0.446	0.446	0.256	0.062	0.05	16.48	0.77	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
OF118	0	0	0.565	0	0	0	0		
FDA11	0	0.015	0.19	0.066	0.05	0.84	0.78	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FD16	0.002	0.035	0.19	0.084	0.07	1.45	0.85	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FD15	0.011	0.04	0.538	0.064	0.14	0.77	2.22	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FD4	0.005	0.022	0.425	0.057	0.09	0.54	1.62	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FD3	0.001	0.018	0.538	0.049	0.09	0.4	1.86	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
OF67	0	0	0.256	0	0	0	0		
OF313	0	0	0.256	0	0	0	0		
OF311	4.975	4.975	0.256	0.168	0.24	37.68	1.44	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FDB14	0.003	0.039	0.38	0.071	0.11	1	1.62	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FDB13	0.004	0.021	0.329	0.06	0.08	0.66	1.33	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FDB12	0	0.009	0.503	0.039	0.06	0.32	1.45	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	
FDB11	0	0.017	0.686	0.044	0.09	0.36	2.14	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FD17	0	0.015	0.686	0.042	0.09	0.35	2.12	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FEA11	0	0.047	0.19	0.092	0.08	1.7	0.88	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1	
FE1	0.031	0.062	1.494	0.046	0.07	1.86	1.45	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1	

FR10	0	0.067	0.631	0.071	0.19	1.02	2.71	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
FR9	0	0.03	0.571	0.057	0.13	0.54	2.21	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR8	0.002	0.002	0.602	0.02	0.02	0.17	1.14	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR7	0	0.018	0.602	0.047	0.09	0.39	2.03	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
FR6	0.001	0.02	0.602	0.049	0.1	0.4	2.01	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR5	0	0.032	0.571	0.058	0.13	0.59	2.24	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR4	0.005	0.031	0.538	0.059	0.12	0.61	2.1	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR3	0.275	0.3	0.425	0.126	0.29	2.84	2.31	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR2	0.51	0.51	0.978	0.117	0.22	4	1.89	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FR1	0.445	0.445	0.532	0.142	0.35	3.37	2.47	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF381	1.102	1.102	0.256	0.09	0.09	22.05	0.99	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FFA1	0.137	0.137	0.542	0.1	0.2	1.98	2.02	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FFB1	0.012	0.051	0.425	0.074	0.14	1.11	1.84	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FFC2	0.001	0.025	0.799	0.042	0.03	1.66	0.72	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FFC1	0.001	0.009	0.538	0.037	0.06	0.31	1.55	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FFD1	0.012	0.066	0.631	0.071	0.19	1.02	2.67	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FFE3	0	0	0.19	0	0	0	0	
FFE2	0	0	0.19	0	0	0	0	
FFE1	0	0.005	0.19	0.043	0.03	0.36	0.59	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
FG3	0	0.003	0.542	0.028	0.03	0.23	1.02	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
OF344	0	0	0.256	0	0	0	0	
OF346	0.773	0.773	0.256	0.079	0.07	19.72	0.89	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1
FGA1	0	0	0.256	0	0	0	0	
OF199	0	0	0.256	0	0	0	0	
FE5	0	0.015	0.737	0.041	0.09	0.34	2.23	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
FE4	0.001	0.004	0.712	0.026	0.04	0.21	1.62	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FE3	0	0.027	0.503	0.058	0.11	0.57	1.97	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FE2	0.001	0.048	0.425	0.073	0.13	1.07	1.83	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF202	0	0	0.256	0	0	0	0	
FEB1	0	0.004	0.565	0.023	0.01	0.93	0.35	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
FFR1	0	0	0.256	0	0	0	0	
FFG1	0	0	0.256	0	0	0	0	
OF231	0.303	0.303	0.256	0.053	0.04	14.69	0.69	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1
OF156	6.034	6.034	0.256	0.182	0.28	40.37	1.52	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF316	0.09	0.09	1.263	0.057	0.08	2.29	1.38	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF318	0.055	0.055	0.256	0.028	0.01	9.43	0.41	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF59	0.097	0.097	0.978	0.064	0.08	2.57	1.18	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF262	0.079	0.079	0.256	0.032	0.01	10.38	0.47	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FD9	0.014	0.014	0.799	0.034	0.02	1.34	0.61	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
FD8	0	0.036	0.538	0.062	0.14	0.7	2.19	AR&R 100 year, 5 minutes storm, average 261.8 mm/h, Zone 1
OF269	0.966	0.966	0.256	0.086	0.08	21.15	0.95	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF187	1.125	1.125	0.572	0.066	0.12	17.2	1.76	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1
OF174	3.393	3.393	0.256	0.144	0.19	32.83	1.31	AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1
OF319	1.247	1.247	0.256	0.096	0.1	23.13	1.01	AR&R 100 year, 25 minutes storm, average 141.6 mm/h, Zone 1
DETENTION BASIN DETAILS								
Name	Max WL	Max Vol	Max Q	Max Q	Max Q			
			Total	Low Level	High Level			
Basin2	84.71	863.8	0.966	0	0.966			
CONTINUITY CHECK for AR&R 100 year, 1.5 hours storm, average 73.1 mm/h, Zone 1								
Node	Inflow	Outflow	Storage Change	Difference				
	(cu.m)	(cu.m)	(cu.m)	%				
A10	240.6	240.6	0	0				
A19	240.6	240.62	0	0				
A18	346.77	346.78	0	0				
A17	392.12	392.11	0	0				
A16	583.48	583.49	0	0				
A15	624.21	624.39	0	0				
A14	794.92	795.07	0	0				
A13	882.58	882.69	0	0				
A12	882.69	882.09	0	0.1				
Basin2	2707.9	2703.49	4.41	0				
AA12	21.5	21.5	0	0				
AA11	101.77	101.77	0	0				
AB1	31.99	31.98	0	0				
B15	13.45	13.45	0	0				
B14	28.52	28.52	0	0				
B13	168.97	168.96	0	0				
B12	168.95	168.95	0	0				
B11	168.95	168.96	0	0				
BA1	57.86	57.85	0	0				
BB1	27.2	27.18	0	0.1				

C5	70.43	70.43	0	0										
C4	471.01	471.03	0	0										
C3	501.29	501.37	0	0										
C2	529.9	529.91	0	0										
C1	664.63	664.66	0	0										
NODE2	664.66	664.66	0	0										
CA11	321.14	321.14	0	0										
DA1	25.07	25.06	0	0										
D6	2953.42	2953.45	0	0										
D5	3815.67	3816.17	0	0										
D4	3867.43	3867.55	0	0										
D3	3892.81	3892.89	0	0										
D2	3918.99	3918.99	0	0										
D1	3918.99	3925.65	0	-0.2										
NODE3	10661.86	10661.86	0	0										
DB4	52.7	52.68	0	0										
DB3	108.01	107.99	0	0										
DB2	133.88	133.87	0	0										
DB1	146.92	146.92	0	0										
D7	2905.86	2905.85	0	0										
EA11	355.84	355.84	0	0										
E1	811.24	811.25	0	0										
F10	24.65	24.65	0	0										
F9	56.41	56.41	0	0										
F8	99.62	99.61	0	0										
F7	577.84	577.85	0	0										
F6	611.37	611.4	0	0										
F5	732.73	732.81	0	0										
F4	860.49	860.53	0	0										
F3	1306.99	1306.99	0	0										
F2	1447.44	1447.57	0	0										
F1	1592.65	1592.49	0	0										
NODE4	1725.03	1725.02	0	0										
FA11	63.99	63.98	0	0										
FB11	87.46	87.45	0	0										
FC2	33.83	33.82	0	0										
FC1	69.41	69.4	0	0										
FD1	99.83	99.78	0	0.1										
FE3	478.18	478.18	0	0										
FE2	478.18	478.21	0	0										
FE1	478.21	478.23	0	0										
GI3	878.73	878.73	0	0										
GI2	1321.35	1321.38	0	0										
N269	1321.38	1321.38	0	0										
GA11	355.15	355.15	0	0										
N181	10226.39	10226.39	0	0										
E6	123.27	123.27	0	0										
E5	147.93	147.96	0	0										
E4	181.45	181.47	0	0										
E3	346.38	346.39	0	0										
E2	386.05	386.05	0	0										
EB2	115.05	115.05	0	0										
EB1	137.25	137.28	0	0										
FF1	163.73	163.72	0	0										
FG1	325.95	325.95	0	0										
N237	528.45	528.45	0	0										
NODE5	12386.89	12386.88	0	0										
N297	134.72	134.72	0	0										
N298	82.69	82.69	0	0										
N329	145.09	145.09	0	0										
DI10	2703.49	2703.49	0	0										
DI9	2703.49	2703.49	0	0										
DI8	2703.49	2703.5	0	0										
N237	2703.49	2703.49	0	0										
N250	4702.03	4702.03	0	0										
NODE1	1948.99	1948.99	0	0										
N255	6736.21	6736.21	0	0										
N300	2613.66	2613.65	0	0										
N268	12386.88	12386.88	0	0										

Run Log for 4100 run at 16:40:48 on 17/10/2008

Upwelling occurred at FA11, F2, F3

Freeboard was less than 0.15m at DI10, F1, FG1, E1, D6, DA11, AA11, A16, A12

The maximum flow exceeded the safe value in the following overflow routes: weir, OF346, OF340, OF319, OF269, Orifice1, OF156, OF311, OF381, OF187, OF174, OF231