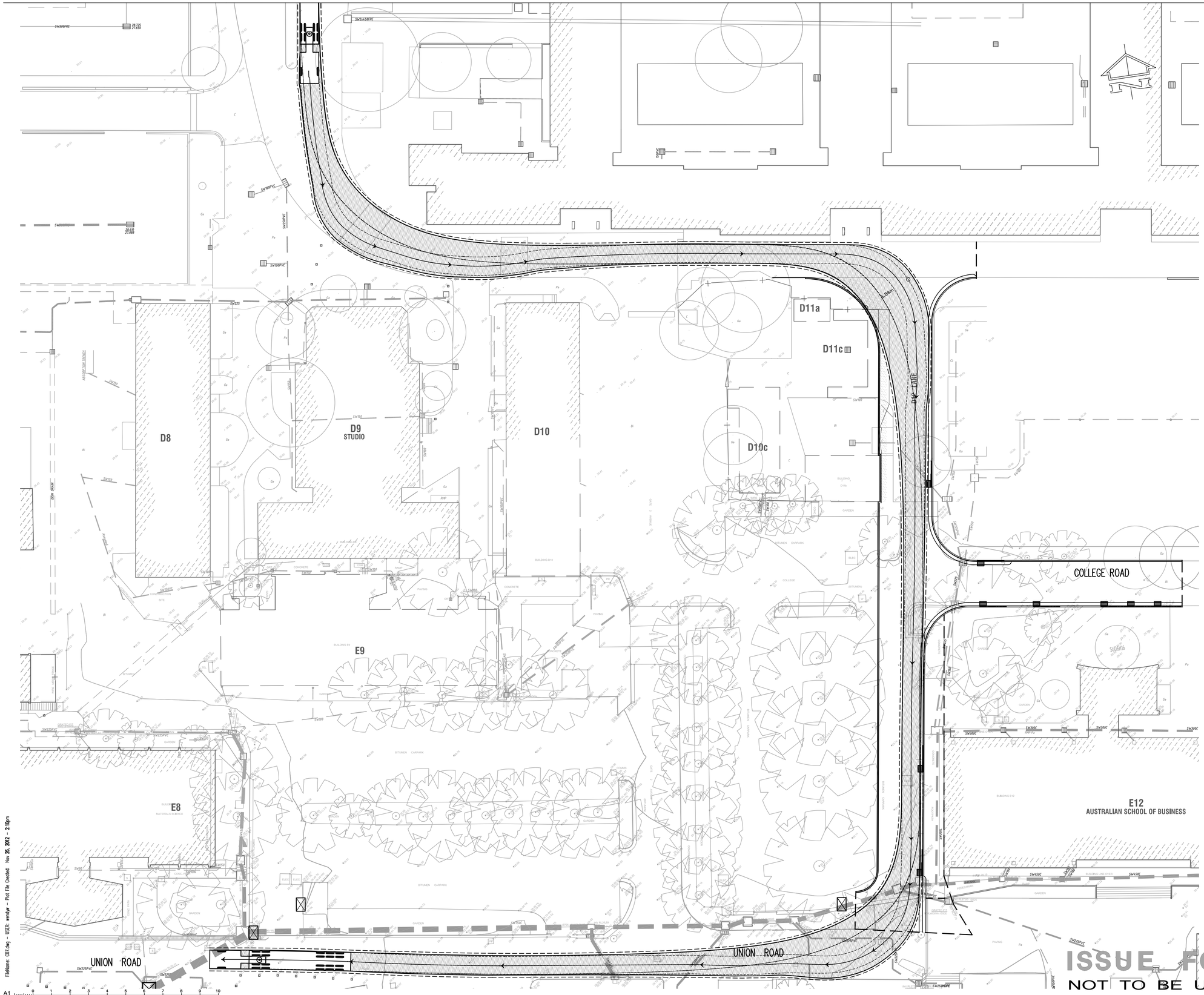
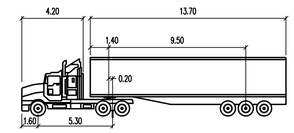
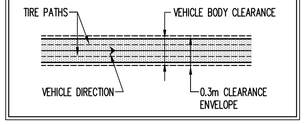




S ARTICULATED 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.7
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

SWEPT PATH LEGEND:



ISSUE FOR TENDER ONLY

NOT TO BE USED FOR CONSTRUCTION

FileName: C07.dwg – USER: wendyw – Plot File Created: Nov 26, 2012 – 2:10pm

A1 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date
C	ISSUE FOR TENDER	EC	WW	26.11.12
B	ISSUE FOR COMMENT	EC	WW	15.10.12
A	ISSUE FOR TENDER	EC	WW	27.09.12

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Project
UNSW - LOWER CAMPUS DEVELOPMENT ENABLING WORKS

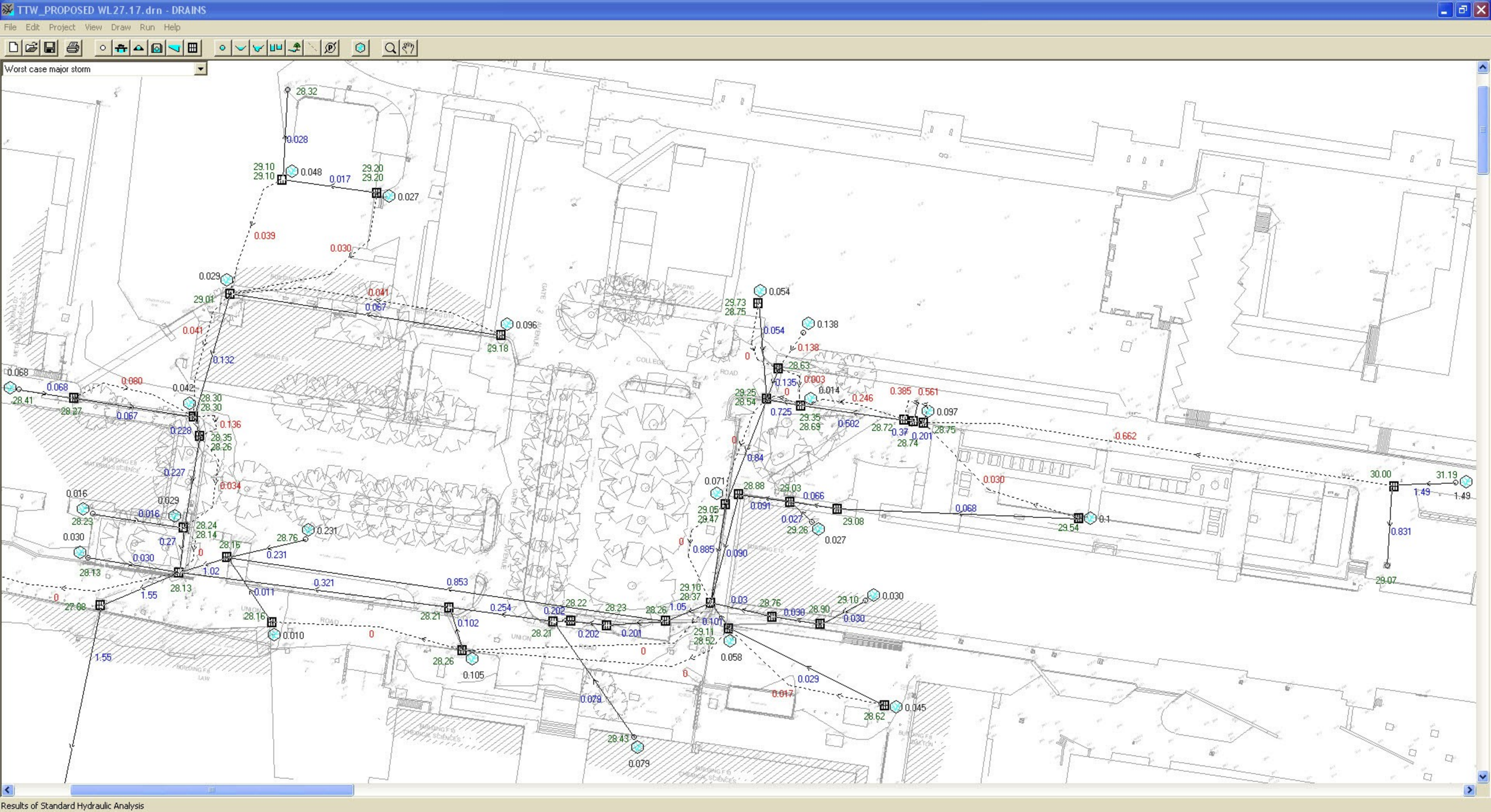
Sheet Subject
TURNING PATH - 19.0m ARTICULATED

Scale : A1	Drawn	Authorised
1:250	WW	

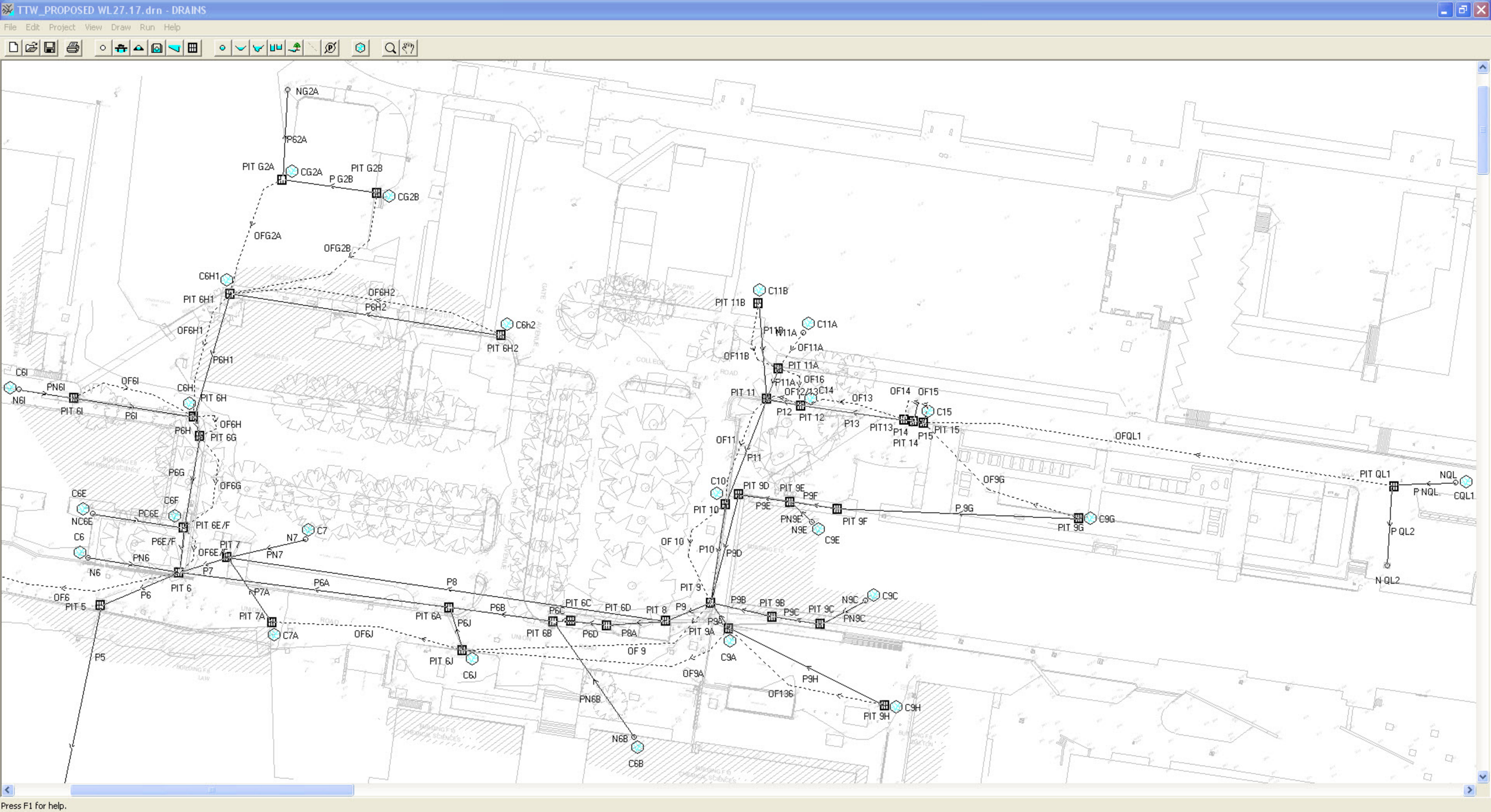
Job No	Drawing No	Revision
111144	C07	C

Plot File Created: Nov 26, 2012 - 2:10pm

APPENDIX D: DRAINS AND CATCHMENT ANALYSIS



Results of Standard Hydraulic Analysis


TTW_PROPOSED WL27.17.drn - DRAINS
File Edit Project View Draw Run Help
NG2A
P62A
PIT G2A
CG2A
P G2B
PIT G2B
CG2B
OFG2A
OFG2B
C6H1
PIT 6H1
OF6H2
P6H2
C6h2
PIT 6H2
OF6H1
P6H1
C6I
PN6I
N6I
OF6I
PIT 6I
P6I
C6H
PIT 6H
P6H
OF6H
PIT 6G
P6G
OF6G
C6E
NC6E
C6F
PC6E
PIT 6E/F
P6E/F
OF6E/F
C6
N6
PN6
PIT 7
N7
C7
PN7
P7
PIT 6
P6
OF6
PIT 5
P5
P7A
PIT 7A
C7A
P6A
P8
PIT 6A
P6J
PIT 6J
C6J
OF6J
P6B
P6C
PIT 6C
PIT 6B
PIT 6D
P6D
PIT 8
P8A
P9
OF 9
OF9A
PIT 9A
C9A
PN6B
N6B
C6B
C11B
PIT 11B
P11B
C11A
P11A
OF11A
OF11B
PIT 11A
OF16
OF12/13
C14
PIT 11
P12
PIT 12
OF13
P13
PIT13
OF14
OF15
C15
P14
PIT 14
P15
PIT 15
OFQL1
OF11
P11
C10
PIT 9D
PIT 9E
P9E
P9F
PN9E
N9E
C9E
PIT 10
OF 10
P10
P9D
PIT 9F
P 9G
PIT 9G
C9G
OF9G
PIT QL1
NQL
P NQL
CQL1
P QL2
N QL2
PIT 9
P9B
PIT 9B
P9C
PIT 9C
N9C
C9C
PN9C
P9A
P9H
OF136
PIT 9H
C9H
Press F1 for help.

DRAINS results prepared 25 September, 2012 from Version 2012.10

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
PIT 6J	28.26		0.105		0.34	0	None
PIT 6A	28.21		0		0.79		None
PIT 6	28.13		0		0.14	0	None
PIT 5	27.88		0		0.42		None
PIT 4	27.63		0		0.17		None
PIT 3	27.36		0		0.34		None
PIT 2	27.17		0		0	1.55	Outlet System
N1	27.17		0				
PIT 7A	28.16		0.01		0.29		None
PIT 7	28.16		0		0.69		None
PIT 15	28.75		0.785		0.73	0.561	Inlet Capacity
PIT 14	28.74		0.561		0.56	0.385	Inlet Capacity
PIT13	28.72		0.385		0.58	0.246	Inlet Capacity
PIT 12	28.69	29.35	0.254	2.1	0.46	0	Inlet Capacity
PIT 11	28.54	29.25	0	0	0.71	0	None
PIT 10	28.47	29.05	0.071	0.5	0.48	0	Inlet Capacity
PIT 9	28.37	29.1	0	0	0.73	0	None
PIT 8	28.26		0		1.14		None
PIT 6D	28.23		0		1.07		None
PIT 6C	28.22		0		1.08		None
PIT 6B	28.21		0		1.09		None
PIT 9H	28.62		0.045		0.77	0.017	Inlet Capacity
PIT 9A	28.52	29.11	0.076	0.5	0.48	0	Inlet Capacity
PIT 11A	28.63		0.138		0.77	0.003	Inlet Capacity
PIT 11B	28.75	29.73	0.054	0.3	0.9	0	Inlet Capacity
PIT 9G	29.54		0.1		0.51	0.03	Inlet Capacity
PIT 9F	29.08		0		0.22		None
PIT 9E	29.03		0		0.27		None
PIT 9D	28.88		0		0.32		None
NQL	31.19		1.493				
PIT QL1	30		0		0	0.662	Outlet System
N QL2	29.07		0				
N9E	29.26		0.027				
N7	28.76		0.231				
N9C	29.1		0.03				
PIT 9C	28.9		0		1.1		None
PIT 9B	28.76		0		0.74		None
N6B	28.43		0.079				
N6I	28.41		0.068				
PIT 6I	28.27		0		0	0.08	Outlet System
PIT 6H	28.3	28.3	0.14	1.7	-0.2	0.136	Outlet System
PIT 6G	28.26	28.35	0.136	0.9	-0.06	0.034	Outlet System
PIT 6E/F	28.14	28.24	0.05	0.1	0.05	0	Inlet Capacity
PIT 6H2	29.18		0.096		0.02	0.041	Inlet Capacity
PIT 6H1	29.01		0.123		0.09	0.041	Inlet Capacity
PIT G2B	29.2	29.2	0.027	1.7	-0.2	0.03	Outlet System
PIT G2A	29.1	29.1	0.048	1.7	-0.2	0.039	Outlet System
NG2A	28.32		0				
NC6E	28.23		0.016				
N6	28.13		0.03				

Outflow Volumes for Total Catchment (3.82 impervious + 0.78 pervious = 4.60 total ha)

Storm	Total Rainfa cu.m	Total Runo cu.m (Runc	Impervious Runo cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)
AR&R 100 y	1030.61	913.02 (88.	817.88 (95.5%)	95.13 (54.5%)
AR&R 100 y	1632.11	1481.74 (9(	1317.53 (97.2%)	164.21 (59.4%)
AR&R 100 y	2091.86	1914.10 (9:	1699.42 (97.8%)	214.68 (60.6%)
AR&R 100 y	2467.33	2265.88 (9:	2011.30 (98.1%)	254.57 (60.9%)
AR&R 100 y	2796.81	2569.38 (9:	2284.99 (98.4%)	284.39 (60.0%)
AR&R 100 y	3103.31	2854.30 (9:	2539.58 (98.5%)	314.72 (59.9%)
AR&R 100 y	3827.42	3528.18 (9:	3141.07 (98.8%)	387.11 (59.7%)
AR&R 100 y	4413.6	4072.62 (9:	3627.98 (99.0%)	444.65 (59.5%)
AR&R 100 y	5103.22	4694.19 (9:	4200.85 (99.1%)	493.35 (57.1%)
AR&R 100 y	5608.95	5144.21 (9:	4620.85 (99.2%)	523.36 (55.1%)

CONTINUITY CHECK for AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1

Node	Inflow (cu.m)	Outflow (cu.m)	Storage Change (cu.m)	Difference %
PIT 6J	145.94	145.84	0	0.1
PIT 6A	351.4	351.81	0	-0.1
PIT 6	2245.54	2246	0	0
PIT 5	2246	2246.12	0	0
PIT 4	2246.12	2246.2	0	0
PIT 3	2246.2	2246.27	0	0
PIT 2	2246.27	2246.61	0	0
N1	-39.93	-39.93	0	0
PIT 7A	15.4	15.47	0	-0.5
PIT 7	1397.01	1397.25	0	0
PIT 15	420.27	420.12	0	0
PIT 14	420.12	420.06	0	0
PIT13	420.06	419.98	0	0
PIT 12	442.07	441.76	0	0.1
PIT 11	664.09	664.32	0	0
PIT 10	764.13	763.96	0	0
PIT 9	1114.06	1113.6	0	0
PIT 8	1113.6	1113.85	0	0
PIT 6D	84.28	84.36	0	-0.1
PIT 6C	84.36	84.43	0	-0.1
PIT 6B	204.99	205.55	0	-0.3
PIT 9H	69.3	69.23	0	0.1
PIT 9A	158.33	158.96	0	-0.4
PIT 11A	140.07	140.02	0	0
PIT 11B	82.5	82.41	0	0.1
PIT 9G	134.29	134.03	0	0.2
PIT 9F	113.96	114.18	0	-0.2
PIT 9E	144.71	144.78	0	-0.1
PIT 9D	144.78	144.94	0	-0.1
N11A	140.07	140.07	0	0
NQL	2616.27	2616.3	0	0
PIT QL1	2616.3	2617.03	0	0
N QL2	2364.82	2364.82	0	0
VGB	2286.29	2286.29	0	0
N9E	30.54	30.53	0	0
N7	352	351.95	0	0
N9C	46.2	46.2	0	0
PIT 9C	46.2	46.18	0	0
PIT 9B	46.18	46.21	0	-0.1
N6B	121	120.56	0	0.4
N6I	103.4	103.31	0	0.1
PIT 6I	103.31	103.61	0	-0.3
PIT 6H	385.86	386.03	0	0
PIT 6G	386.03	386.13	0	0
PIT 6E/F	454.31	454.33	0	0
PIT 6H2	146.3	146.41	0	-0.1
PIT 6H1	218.53	218.46	0	0
PIT G2B	41.8	41.4	0	0.9
PIT G2A	104.33	109.25	0	-4.7
NG2A	90.81	90.81	0	0
NC6E	24.2	24.18	0	0.1
N6	42.25	42.16	0	0.2
NIR1	0	0	0	0

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
C6J	0.105	0.077	0.028	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C7A	0.01	0.01	0	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C15	0.097	0.097	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C14	0.014	0.014	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C10	0.071	0.055	0.016	5	5	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C9H	0.045	0.045	0	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C9A	0.058	0.058	0	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C11B	0.054	0.054	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C9G	0.1	0.064	0.037	5	5	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C11A	0.138	0	0.138	5	5	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
CQL1	1.493	1.286	0.207	11	6	0	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
C9E	0.027	0.006	0.021	5	5	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C7	0.231	0.231	0	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C9C	0.03	0.03	0	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6B	0.079	0.079	0	5	5	5	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6I	0.068	0.068	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6H	0.042	0.042	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6F	0.029	0.029	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6h2	0.096	0.096	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6H1	0.029	0.029	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
CG2B	0.027	0.027	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
CG2A	0.048	0.048	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6E	0.016	0.016	0	5	0	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
C6	0.03	0.022	0.008	5	5	0	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
P6J	0.102	0.64	28.22	28.209	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P6A	0.321	0.73	28.169	28.128	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P6	1.548	1.72	27.925	27.883	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P5	1.549	1.72	27.785	27.635	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P4	1.549	1.72	27.391	27.356	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P3	1.55	1.72	27.258	27.17	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P2	0	0	27.17	27.17	AR&R 100 year, 5 minutes storm, average 269 mm/h, Zone 1
P7A	0.011	0.16	28.163	28.162	AR&R 100 year, 5 minutes storm, average 269 mm/h, Zone 1
P7	1.015	1.13	28.136	28.128	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P15	0.201	0.22	28.738	28.738	AR&R 100 year, 20 minutes storm, average 161 mm/h, Zone 1
P14	0.37	0.41	28.723	28.722	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P13	0.502	0.56	28.694	28.691	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P12	0.725	0.81	28.545	28.541	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P11	0.84	0.93	28.486	28.468	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P10	0.885	0.98	28.388	28.37	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P9	1.05	1.17	28.27	28.256	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P8A	0.201	0.71	28.243	28.232	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P8	0.853	0.9	28.233	28.162	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P6D	0.202	0.71	28.227	28.22	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P6C	0.202	0.71	28.215	28.212	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P6B	0.254	0.28	28.211	28.209	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P9H	0.029	0.72	28.585	28.519	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P9A	0.101	1.42	28.391	28.37	AR&R 100 year, 15 minutes storm, average 182 mm/h, Zone 1
P11A	0.135	0.91	28.549	28.541	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P11B	0.054	2.11	28.597	28.541	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P 9G	0.068	3.45	29.347	29.083	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P9F	0.066	0.94	29.074	29.035	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P9E	0.091	1.29	29.017	28.882	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P9D	0.09	2.17	28.771	28.424	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P NQL	1.494	5.28	31.185	30	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
P QL2	0.831	3.47	29.855	29.074	AR&R 100 year, 10 minutes storm, average 213 mm/h, Zone 1
PN9E	0.027	1.45	29.256	29.035	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
PN7	0.231	3.2	28.758	28.303	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
PN9C	0.03	1.66	29.101	28.901	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P9C	0.03	1.18	28.887	28.818	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P9B	0.03	2.1	28.737	28.37	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
PN6B	0.079	1.72	28.428	28.212	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
PN6I	0.068	1.71	28.408	28.27	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
P6I	0.067	0.95	28.27	28.3	AR&R 100 year, 5 minutes storm, average 269 mm/h, Zone 1
P6H	0.228	1.43	28.275	28.257	AR&R 100 year, 20 minutes storm, average 161 mm/h, Zone 1
P6G	0.227	1.43	28.179	28.137	AR&R 100 year, 20 minutes storm, average 161 mm/h, Zone 1
P6E/F	0.27	0.75	28.131	28.128	AR&R 100 year, 20 minutes storm, average 161 mm/h, Zone 1
P6H2	0.067	0.94	29.127	29.008	AR&R 100 year, 5 minutes storm, average 269 mm/h, Zone 1
P6H1	0.132	1.86	28.656	28.3	AR&R 100 year, 20 minutes storm, average 161 mm/h, Zone 1
P G2B	0.017	0.94	29.185	29.1	AR&R 100 year, 5 minutes storm, average 269 mm/h, Zone 1
P62A	0.028	1.59	28.89	28.322	AR&R 100 year, 45 minutes storm, average 111 mm/h, Zone 1
PC6E	0.016	0.92	28.233	28.137	AR&R 100 year, 5 minutes storm, average 269 mm/h, Zone 1
PN6	0.03	0.51	28.134	28.128	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1

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
OF6J	0	0	2.502	0	0	0	0	
OF2	1.762	1.762	1.486	0.218	0.47	4	2.17	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF15	0.879	0.879	2.502	0.207	0.3	7.88	1.46	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF14	0.65	0.65	2.502	0.19	0.26	6.93	1.37	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF12/13	0.148	0.148	2.502	0.117	0.12	2.96	1.06	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF109	0	0	2.502	0	0	0	0	
OF 10	0	0	2.502	0	0	0	0	
OF 9	0	0	2.502	0	0	0	0	
OF136	0.017	0.017	1.486	0.027	0.01	4	0.36	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
OF9A	0	0	1.486	0	0	0	0	
OF16	0.003	0.003	1.486	0.014	0	1.43	0.26	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
OF11B	0	0	2.206	0	0	0	0	
OF9G	0.03	0.03	1.451	0.029	0.02	4	0.53	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
OF11A	0.138	0.138	1.486	0.058	0.05	4	0.81	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
OFQL1	1.036	1.036	2.132	0.197	0.39	7.43	1.98	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF6I	0.081	0.081	1.486	0.046	0.03	4	0.65	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF6H	0.169	0.169	1.486	0.064	0.06	4	0.87	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF6G	0.117	0.117	1.486	0.054	0.04	4	0.76	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF6E/F	0	0	1.486	0	0	0	0	
OF6H2	0.038	0.038	1.486	0.035	0.02	4	0.47	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OF6H1	0.034	0.034	1.486	0.033	0.02	4	0.47	AR&R 100 year, 25 minutes storm, average 146 mm/h, Zone 1
OFG2B	0.019	0.019	1.486	0.028	0.01	4	0.35	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1
OFG2A	0.029	0.029	1.486	0.032	0.01	4	0.43	AR&R 100 year, 1.5 hours storm, average 74 mm/h, Zone 1

Run Log for TTW_PROPOSED.drn run at 11:46:34 on 7/9/2012

Upwelling occurred at PIT QL1, PIT 2, PIT 6I, PIT 6H
Freeboard was less than 0.15m at PIT G2B, PIT G2A, PIT 6H1, PIT 6H2, PIT 9A, PIT 6G, PIT 6E/F, PIT 6, PIT 7A, PIT 6J, PIT 10, PIT 14, PIT 12/13
The maximum flow exceeded the safe value in the following overflow routes: OF2

The following overflow routes carried water uphill (adding energy): OF6I, OF6H, OF14
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 NETWORK DATA

PIT / NODE DETAILS

Version 11

Name	Type	Family	Size	Ponding Volume (cu.m)	Pressure Change Coeff. Ku	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	**Blocking Factor**	x	y	Bolt-down lid	id	Part Full Shock Loss	Inflow Hydrograph
PIT 6J	OnGrade	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel		3.9	28.6		0	**0.5**	336223	6245665	No	10	1 x Ku	No
PIT 6A	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		1.5	29		0	**0.5**	336221.1	6245671	No	17	1 x Ku	No
PIT 6	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		1.4	28.27		0	**0.5**	336182.3	6245676	No	18	1 x Ku	No
PIT 5	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.7	28.3		0	**0.5**	336171	6245671	No	19	1 x Ku	No
PIT 4	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		1.6	27.8		0	**0.5**	336162.5	6245630	No	25	1 x Ku	No
PIT 3	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.7	27.7		0	**0.5**	336156.7	6245619	No	26	1 x Ku	No
PIT 2	OnGrade	Surface Inlet Pit	900x900		1	27.17		0	**0.5**	336164.5	6245586	No	27	1 x Ku	No
N1	Node					26.2		0		336164.7	6245582		491		
PIT 7A	OnGrade	Surface Inlet Pit	900x900		3.3	28.45		0	**0.5**	336195.6	6245669	No	12	1 x Ku	No
PIT 7	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.4	28.85		0	**0.5**	336189.2	6245678	No	11	1 x Ku	No
PIT 15	OnGrade	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel		4.6	29.48		0	**0.5**	336289.3	6245697	No	13	1 x Ku	No
PIT 14	OnGrade	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel		1.8	29.3		0	**0.5**	336287.9	6245698	No	6	1 x Ku	No
PIT13	OnGrade	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel		1.8	29.3		0	**0.5**	336286.5	6245698	No	16913749	1 x Ku	No
PIT 12	Sag	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel	5	4.9	29.15	0.3	0	**0.5**	336271.7	6245700	No	2	1 x Ku	No
PIT 11	Sag	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel	2	1.3	29.25	0.2	0	**0.5**	336266.8	6245701	No	4	1 x Ku	No
PIT 10	Sag	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel	2	1.7	28.95	0.2	0	**0.5**	336260.8	6245686	No	9	1 x Ku	No
PIT 9	Sag	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel	2	1.5	29.1	0.3	0	**0.5**	336258.7	6245672	No	3	1 x Ku	No
PIT 8	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.5	29.4		0	**0.5**	336252.2	6245669	No	1	1 x Ku	No
PIT 6D	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.2	29.3		0	**0.5**	336243.8	6245668	No	14	1 x Ku	No
PIT 6C	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.2	29.3		0	**0.5**	336238.6	6245669	No	15	1 x Ku	No
PIT 6B	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		0.2	29.3		0	**0.5**	336236.1	6245669	No	16	1 x Ku	No
PIT 9H	OnGrade	Surface Inlet Pit	600x600		2.1	29.39		0	**0.5**	336283.7	6245657	No	119	1 x Ku	No
PIT 9A	Sag	Surface Inlet Pit	600x600	1	2.2	29	0.15	0	**0.5**	336261.3	6245668	No	28	1 x Ku	No
PIT 11A	OnGrade	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel		3.8	29.4		0	**0.5**	336268.4	6245705	No	122	1 x Ku	No
PIT 11B	Sag	NSW Dept. of Housing RM10 Inlet,	RM10 3.6 m lintel	2	4	29.65	0.3	0	**0.5**	336265.6	6245715	No	123	1 x Ku	No
PIT 9G	OnGrade	Surface Inlet Pit	900x900		5.3	30.05		0	**0.5**	336311.6	6245684	No	199	1 x Ku	No
PIT 9F	OnGrade	Surface Inlet Pit	600x600		0.2	29.3		0	**0.5**	336276.9	6245685	No	31	1 x Ku	No
PIT 9E	OnGrade	Surface Inlet Pit	600x600		1	29.3		0	**0.5**	336270.1	6245686	No	32	1 x Ku	No
PIT 9D	OnGrade	Junction Pit or Manhole (sealed)	Junction Pit or Manhole		1.1	29.2		0	**0.5**	336262.7	6245687	No	33	1 x Ku	No
N11A	Node					29.6		0		336272	6245710		220		
NQL	Node					31		0		336369.1	6245689		236		
PIT QL1	OnGrade	Surface Inlet Pit	900x900		1.3	30		0	**0.5**	336360.3	6245688	No	241	1 x Ku	No
N QL2	Node					29.8		0		336356	6245677		363		
VGB	Node					26.6		0		336165.3	6245573		1916662		
N9E	Node					30		0		336273.3	6245683		4915117		
N7	Node					29.5		0		336200.4	6245681		5441641		
N9C	Node					30		0		336280.9	6245672		5847512		
PIT 9C	OnGrade	Surface Inlet Pit	600x600		0.2	30		0	**0.5**	336274.5	6245668	No	30	1 x Ku	No
PIT 9B	OnGrade	Surface Inlet Pit	600x600		0.2	29.5		0	**0.5**	336267.6	6245670	No	29	1 x Ku	No
N6B	Node					30		0		336247.7	6245652		6018625		
N6I	Node					28.5		0		336158.6	6245702		6061451		
PIT 6I	OnGrade	Surface Inlet Pit	600x600		0.2	28.27		0	**0.5**	336167.2	6245701	No	24	1 x Ku	No
PIT 6H	Sag	Surface Inlet Pit	900x900	2	2	28.1	0.2	0	**0.5**	336184.4	6245698	No	23	1 x Ku	No
PIT 6G	Sag	Surface Inlet Pit	900x900	1	1.4	28.2	0.15	0	**0.5**	336185.2	6245696	No	22	1 x Ku	No
PIT 6E/F	Sag	NSW Dept. of Housing RM10 Inlet,	Double Pit 3.6m lintels	1	0.4	28.19	0.3	0	**0.5**	336183	6245682	No	20	1 x Ku	No
PIT 6H2	OnGrade	Surface Inlet Pit	900x900		2.3	29.2		0	**0.5**	336228.6	6245710	No	7015109	1 x Ku	No
PIT 6H1	OnGrade	Surface Inlet Pit	900x900		2.1	29.1		0	**0.5**	336189.6	6245716	No	7015131	1 x Ku	No
PIT G2B	Sag	Surface Inlet Pit	600x600	2	2.1	29	0.2	0	**0.5**	336210.7	6245731	No	7498639	1 x Ku	No
PIT G2A	Sag	Surface Inlet Pit	600x600	2	2.1	28.9	0.2	0	**0.5**	336197.1	6245732	No	7431590	1 x Ku	No
NG2A	Node					29.3		0		336197.8	6245745		7431598		
NC6E	Node					30		0		336169.8	6245684		8316149		
N6	Node					28.3		0		336169.1	6245678		8910410		
NIR1	Node					28.05		0		336133	6245682		13048886		

PIPE DETAILS

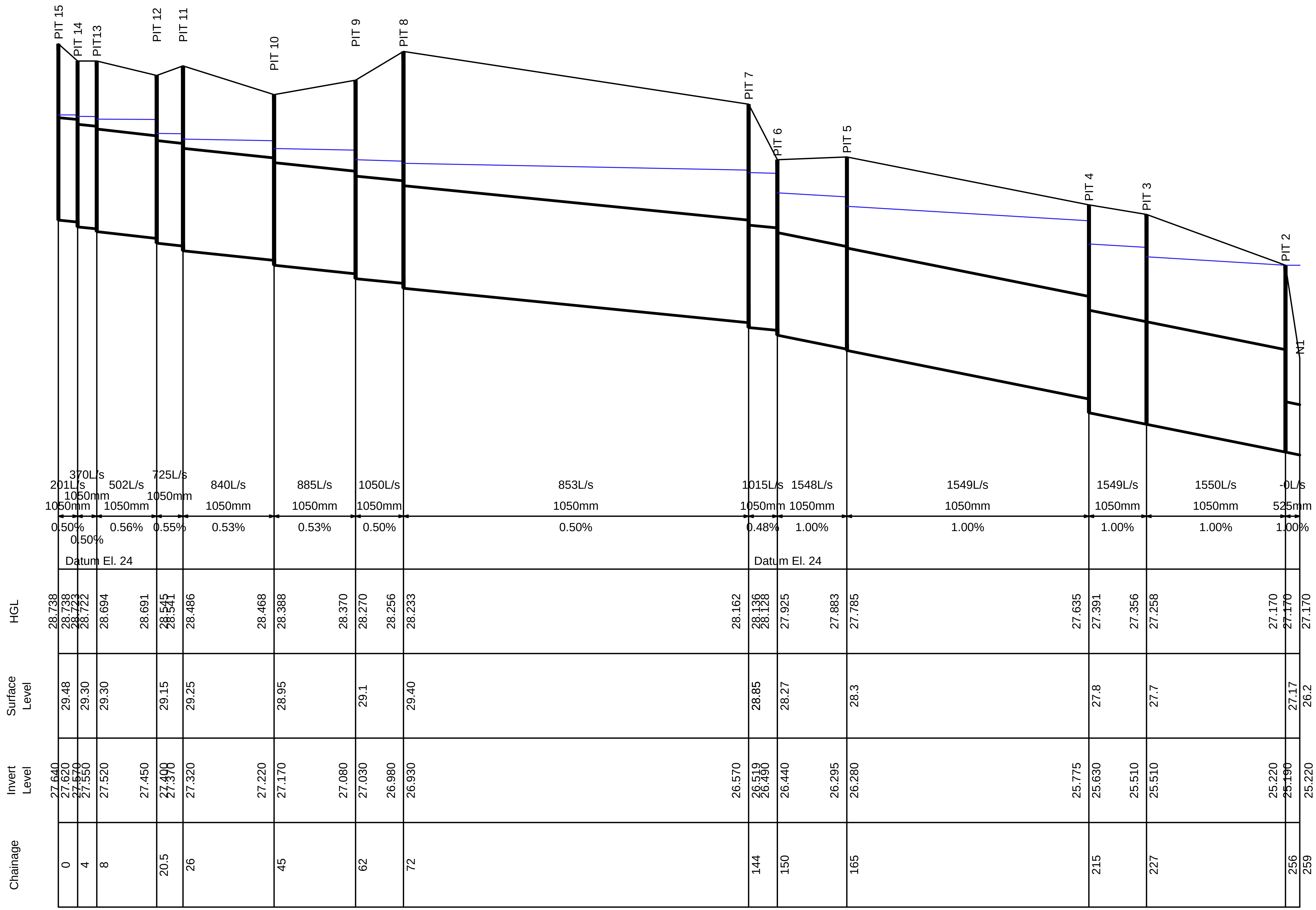
Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From
P6J	PIT 6J	PIT 6A	6	27.47	26.92	9.17	Concrete, r	450	450	0.013	New	1	PIT 6J
P6A	PIT 6A	PIT 6	47	26.91	26.44	1	Concrete, r	750	750	0.013	New	1	PIT 6A
P6	PIT 6	PIT 5	14.5	26.44	26.295	1	Concrete, r	1050	1070	0.013	New	1	PIT 6
P5	PIT 5	PIT 4	50.5	26.28	25.775	1	Concrete, r	1050	1070	0.013	New	1	PIT 5
P4	PIT 4	PIT 3	12	25.63	25.51	1	Concrete, r	1050	1070	0.013	New	1	PIT 4
P3	PIT 3	PIT 2	29	25.51	25.22	1	Concrete, r	1050	1070	0.013	New	1	PIT 3
P2	PIT 2	N1	3	25.22	25.19	1	Concrete, r	525	525	0.013	New	1	PIT 2
P7A	PIT 7A	PIT 7	9	27.55	27.37	2	Concrete, r	300	300	0.013	New	1	PIT 7A
P7	PIT 7	PIT 6	6	26.519	26.49	0.48	Concrete, r	1050	1070	0.013	New	1	PIT 7
P15	PIT 15	PIT 14	4	27.64	27.62	0.5	Concrete, r	1050	1070	0.013	New	1	PIT 15
P14	PIT 14	PIT13	4	27.57	27.55	0.5	Concrete, r	1050	1070	0.013	New	1	PIT 14
P13	PIT13	PIT 12	12.5	27.52	27.45	0.56	Concrete, r	1050	1070	0.013	New	1	PIT13
P12	PIT 12	PIT 11	5.5	27.4	27.37	0.55	Concrete, r	1050	1070	0.013	New	1	PIT 12
P11	PIT 11	PIT 10	19	27.32	27.22	0.53	Concrete, r	1050	1070	0.013	New	1	PIT 11
P10	PIT 10	PIT 9	17	27.17	27.08	0.53	Concrete, r	1050	1070	0.013	New	1	PIT 10
P9	PIT 9	PIT 8	10	27.03	26.98	0.5	Concrete, r	1050	1070	0.013	New	1	PIT 9
P8A	PIT 8	PIT 6D	10	27.38	27.28	1	Concrete, c	600	600	0.013	New	1	PIT 8
P8	PIT 8	PIT 7	72	26.93	26.57	0.5	Concrete, r	1050	1070	0.013	New	1	PIT 8
P6D	PIT 6D	PIT 6C	5.5	27.175	27.12	1	Concrete, r	600	600	0.013	New	1	PIT 6D
P6C	PIT 6C	PIT 6B	3	27.12	27.09	1	Concrete, r	600	600	0.013	New	1	PIT 6C
P6B	PIT 6B	PIT 6A	18	27.09	26.91	1	Concrete, r	1050	1070	0.013	New	1	PIT 6B
P9H	PIT 9H	PIT 9A	28	27.92	27.53	1.39	Concrete, r	225	225	0.013	New	1	PIT 9H
P9A	PIT 9A	PIT 9	4	27.53	27.45	2	Concrete, r	300	300	0.013	New	1	PIT 9A
P11A	PIT 11A	PIT 11	5	28.15	28	3	Concrete, r	450	450	0.013	New	1	PIT 11A
P11B	PIT 11B	PIT 11	16	28.48	28	3	Concrete, r	300	300	0.013	New	1	PIT 11B
P 9G	PIT 9G	PIT 9F	45	29.25	28.8	1	Concrete, r	300	300	0.013	New	1	PIT 9G
P9F	PIT 9F	PIT 9E	8	28.76	28.68	1	Concrete, r	300	300	0.013	New	1	PIT 9F
P9E	PIT 9E	PIT 9D	8	28.67	28.59	1	Concrete, r	300	300	0.013	New	1	PIT 9E
P9D	PIT 9D	PIT 9	20	28.6	28.24	1.8	Concrete, r	300	300	0.013	New	1	PIT 9D
P NQL	NQL	PIT QL1	20	29.45	29.05	2	Concrete, r	600	600	0.013	New	1	NQL
P QL2	PIT QL1	N QL2	20	29	28.6	2	Concrete, r	600	600	0.013	New	1	PIT QL1
PN9E	N9E	PIT 9E	10	28.88	28.68	2	uPVC, not	150	154	0.012	New	1	N9E
PN7	N7	PIT 7	10	28.2	28	2	uPVC, not	300	303	0.012	New	1	N7
PN9C	N9C	PIT 9C	10	29	28.8	2	uPVC, not	225	242	0.012	New	1	N9C
P9C	PIT 9C	PIT 9B	7.5	28.77	28.7	0.93	Concrete, r	300	300	0.013	New	1	PIT 9C
P9B	PIT 9B	PIT 9	10	28.66	28.19	4.7	Concrete, r	300	300	0.013	New	1	PIT 9B
PN6B	N6B	PIT 6B	25	28	27.5	2	uPVC, not	225	242	0.012	New	1	N6B
PN6I	N6I	PIT 6I	6	27.55	27.49	1	Concrete, r	225	225	0.013	New	1	N6I
P6I	PIT 6I	PIT 6H	20	27.44	27.2	1.2	Concrete, r	300	300	0.013	New	1	PIT 6I
P6H	PIT 6H	PIT 6G	3	27.18	26.9	9.33	Concrete, r	450	450	0.013	New	1	PIT 6H
P6G	PIT 6G	PIT 6E/F	13	26.88	26.77	0.85	Concrete, r	450	450	0.013	New	1	PIT 6G
P6E/F	PIT 6E/F	PIT 6	5	26.77	26.67	2	Concrete, r	675	675	0.013	New	1	PIT 6E/F
P6H2	PIT 6H2	PIT 6H1	50	27.95	27.45	1	Concrete, r	300	300	0.013	New	1	PIT 6H2
P6H1	PIT 6H1	PIT 6H	21	27.41	27.2	1	Concrete, r	300	300	0.013	New	1	PIT 6H1
P G2B	PIT G2B	PIT G2A	15	28.5	28.35	1	Concrete, c	150	150	0.013	New	1	PIT G2B
P62A	PIT G2A	NG2A	15	28.33	28.18	1	Concrete, c	150	150	0.013	New	1	PIT G2A
PC6E	NC6E	PIT 6E/F	20	27.5	27.1	2	Concrete, r	150	150	0.013	New	1	NC6E
PN6	N6	PIT 6	15	27.9	27.6	2	Concrete, r	300	300	0.013	New	1	N6

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)	Lag Time or Factor
C6J	PIT 6J	0.152	70	30	0	5	5	5	0
C7A	PIT 7A	0.014	100	0	0	5	5	5	0
C15	PIT 15	0.134	100	0	0	5	0	0	0
C14	PIT 12	0.02	100	0	0	5	0	0	0
C10	PIT 10	0.1015	75	25	0	5	5	0	0
C9H	PIT 9H	0.063	100	0	0	5	5	5	0
C9A	PIT 9A	0.081	100	0	0	5	5	5	0
C11B	PIT 11B	0.075	100	0	0	5	0	0	0
C9G	PIT 9G	0.147	60	40	0	5	5	0	0
C11A	N11A	0.221	0	100	0	5	5	0	0
CQL1	NQL	2.54	85	15	0	11	6	0	0
C9E	N9E	0.042	20	80	0	5	5	0	0
C7	N7	0.32	100	0	0	5	5	5	0
C9C	N9C	0.042	100	0	0	5	5	5	0
C6B	N6B	0.11	100	0	0	5	5	5	0
C6I	N6I	0.094	100	0	0	5	0	0	0
C6H	PIT 6H	0.058	100	0	0	5	0	0	0
C6F	PIT 6E/F	0.04	100	0	0	5	0	0	0
C6h2	PIT 6H2	0.133	100	0	0	5	0	0	0
C6H1	PIT 6H1	0.04	100	0	0	5	0	0	0
CG2B	PIT G2B	0.038	100	0	0	5	0	0	0
CG2A	PIT G2A	0.066	100	0	0	5	0	0	0
C6E	NC6E	0.022	100	0	0	5	0	0	0
C6	N6	0.044	70	30	0	5	5	0	0

OVERFLOW ROUTE DETAILS

Name	From	To	Travel Time (min)	Cross Section	Safe Depth Major Stor (m)	SafeDepth Minor Stor (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	id
OF6J	PIT 6J	PIT 7A		1 6m roadway with	0.3	0.3	0.6	1	0	5826418
OF6	PIT 6	NIR1		1 6m roadway with	0.3	0.3	0.6	1	0	13048872
OF2	PIT 2	VGB		1 4 m wide pathway	0.3	0.15	0.4	1	0	1916659
OF15	PIT 15	PIT 14		1 6m roadway with	0.3	0.3	0.6	1	0	1250108
OF14	PIT 14	PIT13		1 6m roadway with	0.3	0.3	0.6	1	0	16913794
OF13	PIT13	PIT 12		1 6m roadway with	0.3	0.3	0.6	1	0	1250113
OF12/13	PIT 12	PIT 11		1 6m roadway with	0.3	0.3	0.6	1	0	1574311
OF11	PIT 11	PIT 10		1 6m roadway with	0.3	0.3	0.6	1	0	5374109
OF 10	PIT 10	PIT 9		1 6m roadway with	0.3	0.3	0.6	1	0	1574430
OF 9	PIT 9	PIT 6J		1 6m roadway with	0.3	0.3	0.6	1	0	2248559
OF136	PIT 9H	PIT 9A		1 4 m wide pathway	0.3	0.15	0.4	1	0	5892099
OF9A	PIT 9A	PIT 6J		1 4 m wide pathway	0.3	0.15	0.4	1	0	5996946
OF16	PIT 11A	PIT 12		1 4 m wide pathway	0.3	0.15	0.4	1	0	1250102
OF11B	PIT 11B	PIT 11A		1 10 m roadway wit	0.3	0.15	0.6	1	0	931442
OF9G	PIT 9G	PIT 15		1 4 m wide pathway	0.3	0.15	0.4	2	0	4498722
OF11A	N11A	PIT 11A		1 4 m wide pathway	0.3	0.15	0.4	1	0	218
OFQL1	PIT QL1	PIT 15		1 6m roadway with	0.3	0.3	0.6	2	0	372
OF6I	PIT 6I	PIT 6H		1 4 m wide pathway	0.3	0.15	0.4	1	0	6635186
OF6H	PIT 6H	PIT 6G		1 4 m wide pathway	0.3	0.15	0.4	1	0	6039982
OF6G	PIT 6G	PIT 6E/F		1 4 m wide pathway	0.3	0.15	0.4	1	0	6039986
OF6E/F	PIT 6E/F	PIT 6		1 4 m wide pathway	0.3	0.15	0.4	1	0	10431043
OF6H2	PIT 6H2	PIT 6H1		1 4 m wide pathway	0.3	0.15	0.4	1	0	7015145
OF6H1	PIT 6H1	PIT 6H		1 4 m wide pathway	0.3	0.15	0.4	1	0	7015154
OFG2B	PIT G2B	PIT 6H1		1 4 m wide pathway	0.3	0.15	0.4	1	0	7431600
OFG2A	PIT G2A	PIT 6H1		1 4 m wide pathway	0.3	0.15	0.4	1	0	7498646



LONG SECTION FROM PIT 15 TO N1